3. Hardware Installation

3.1 Common Item of Installation and De-Installation

3.1.1 How to open/close the cover

1. Front Logic Box Cover

Removal

a. Loosen the three screws.
b. Open the four hooks.
c. Remove the Front Logic Box cover from the Front Logic Box.

Attachment

a. Attach the Front Logic Box cover to the Front Logic Box.
b. Close the four hooks.
c. Fasten the three screws.

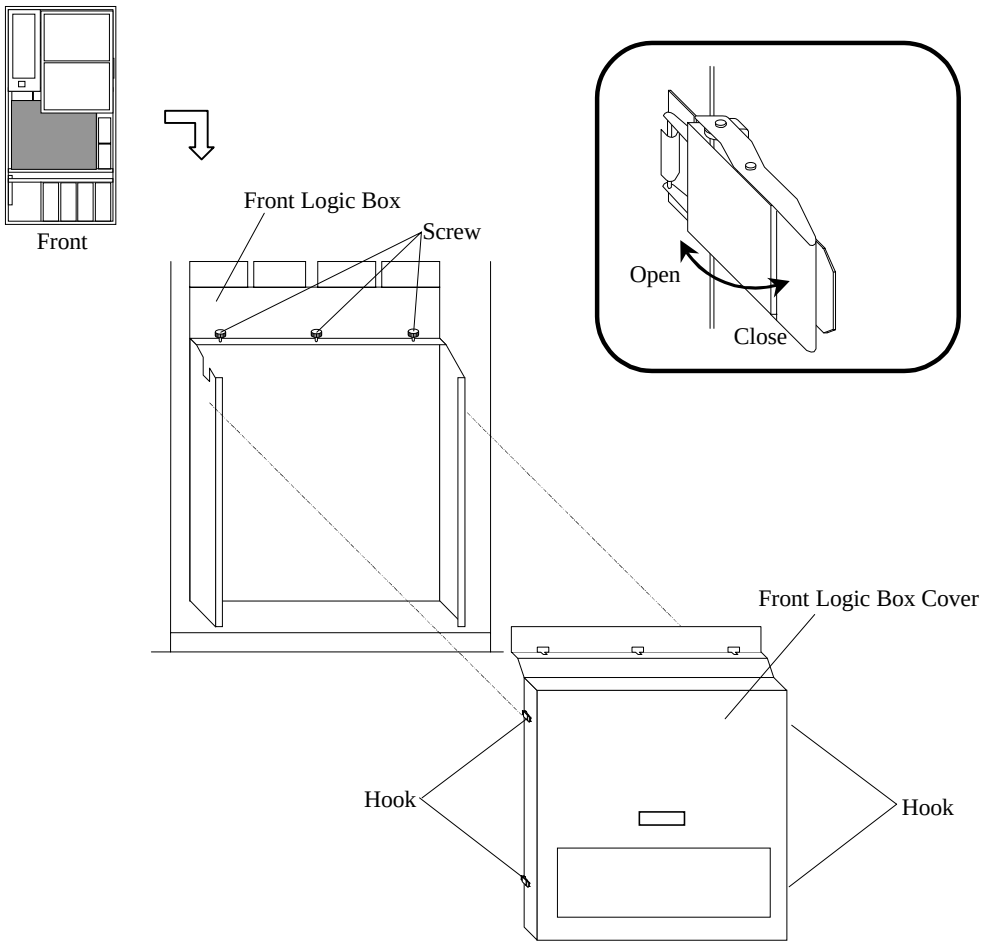

Fig. 3.1.1-1 Open the Front Logic Box Cover

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3.1.2 Attaching the Wrist Strap

(1) To protect the IC and LSI on the PCB from static electricity damage, put on the wrist straps and connect them into the ground wires on the DKC before starting work (see Fig. 3.1.2-1).

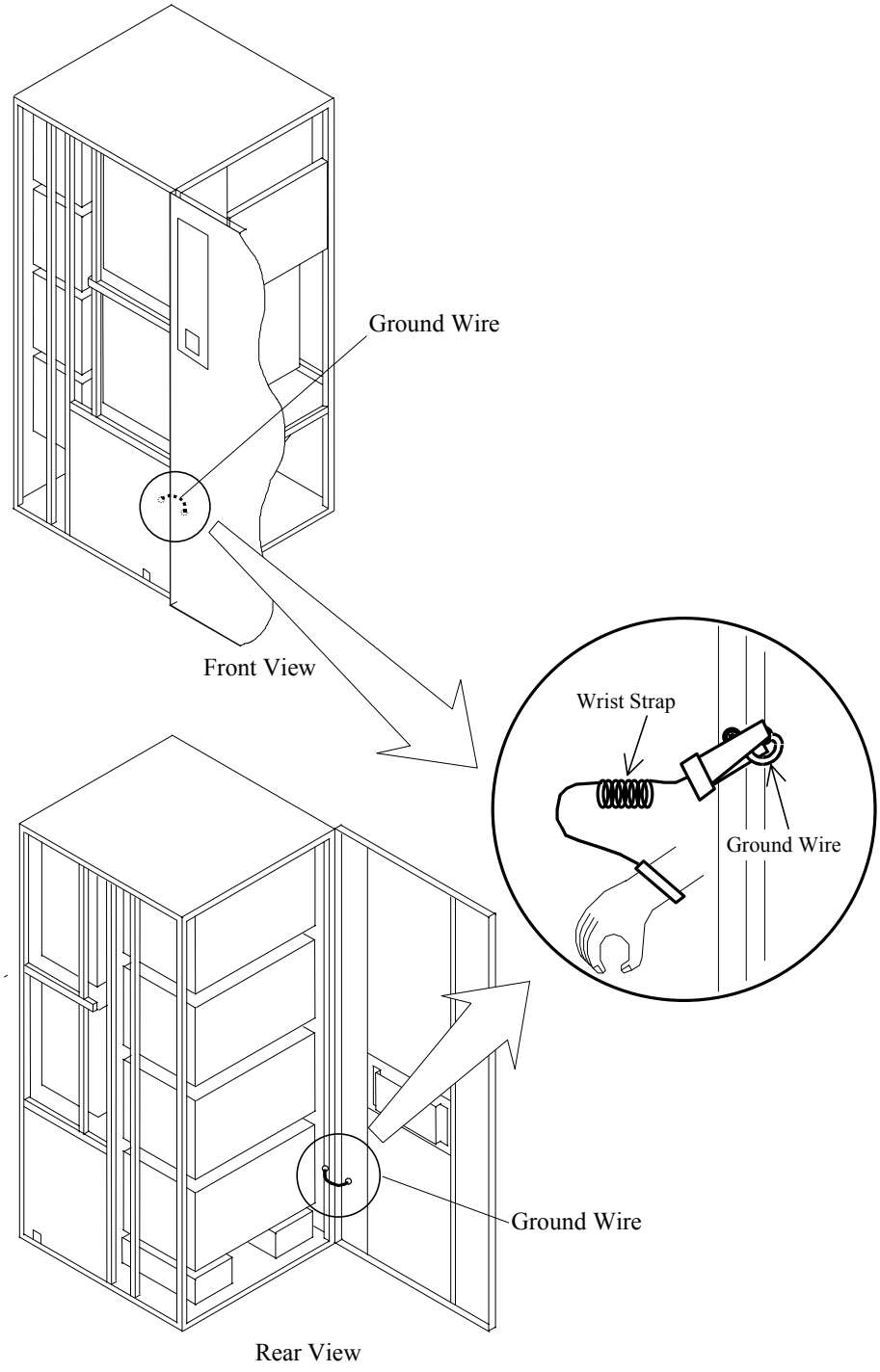

Fig. 3.1.2-1 Location of Ground Wire on the DKC

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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 Disk Subsystem (DKC465I)

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

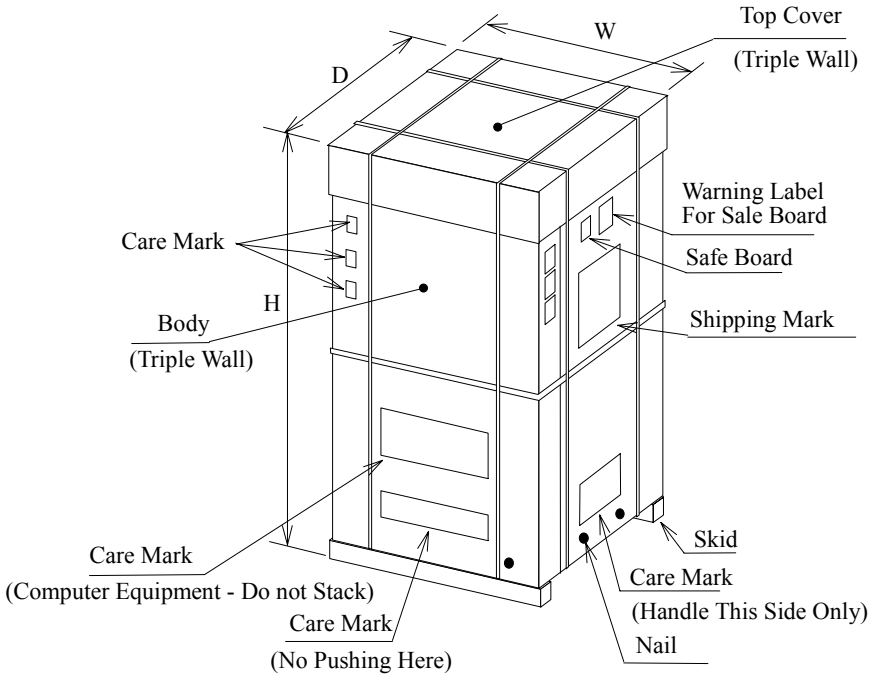

Fig. 3.2.1.1-1 Card Board Crate Overview

4. Remove Top Cover and Side Covers.

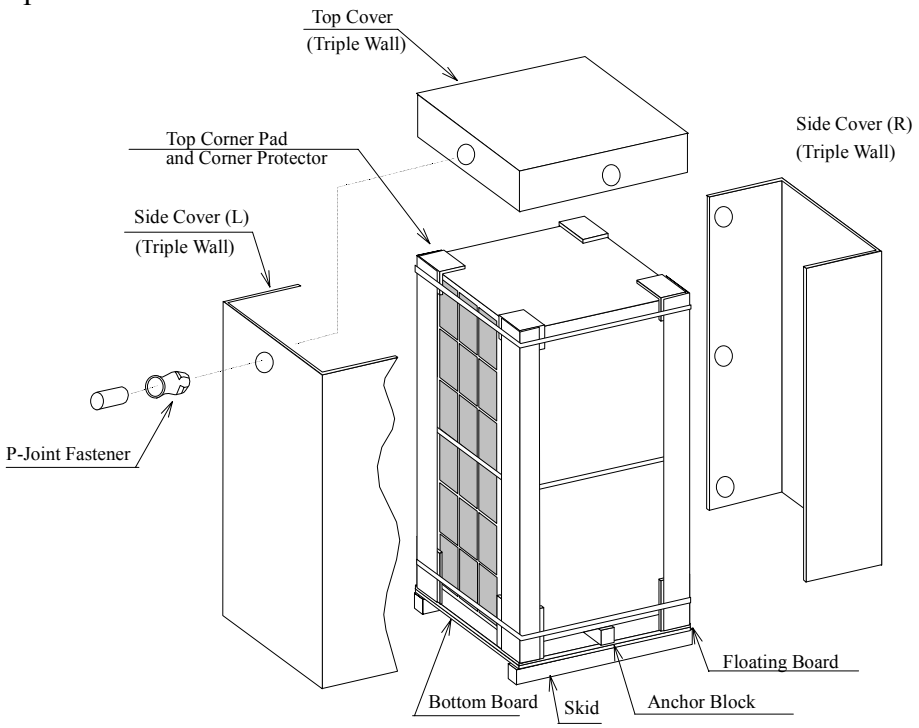

Fig. 3.2.1.1-2 Breakdown of CARD BOARD Crate

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5. Take the equipment down from FLOATER by lifting the equipment with forklift a minimum amount needed to remove the FLOATER/DECK/SKID assembly.
6. Gently lower the equipment onto floor.
7. Remove adhesive tape and corner protectors.

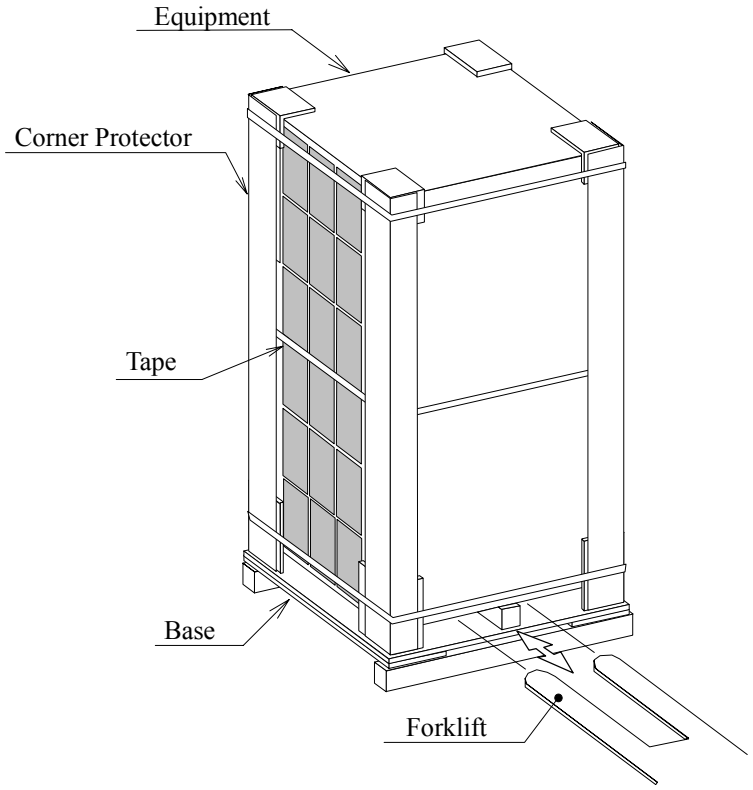

Fig. 3.2.1.1-3 Lift of Equipment

8. Remove the polyethylene bag and adhesive tape.

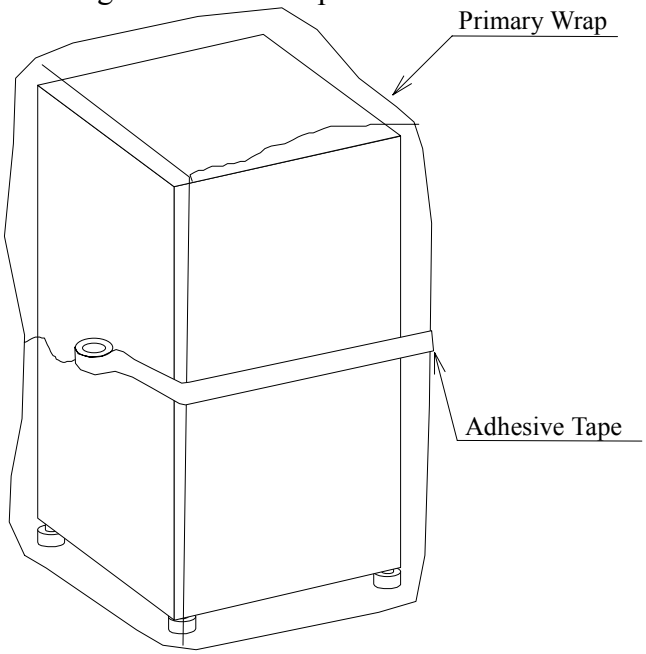

Fig. 3.2.1.1-4 Removal of Wrap Material

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

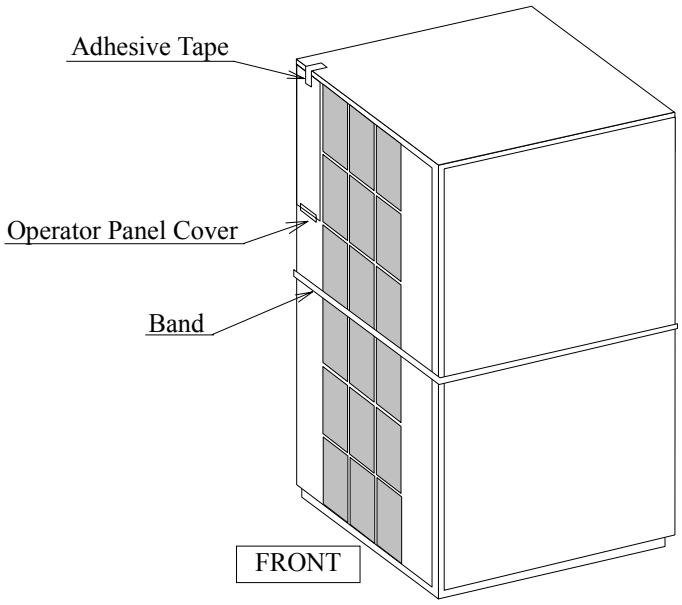

Fig. 3.2.1.1-5 Surface Unpacking

11. Open the front and rear door, remove the shipping cushions and tapes from the container.
12. Visually check the unit for any damage.

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3.2.2 Inspection of Packaged Parts and Accessories

1. Match the unpacked parts against the parts lists in Tables 3.3.2-1 to verify that all parts are supplied.

DKC465I

Table 3.2.2-1 List of Packaged Parts and Accessories

No.	Name of parts	Parts number	Quantity/Unit	Remarks
1	Disk Subsystem	---------	1	
2	Kick Plate (Side)	3263389-2	2	
3	Kick Plate (F/R)	3263388-2	2	
4	Screw (Black)	5411531-2	4	
5	Label (V/Hz/PH.)	3264271-1	1	
6	Label (QTY)	3264290-1	1	

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3.3 Subsystem Installation

3.3.1 Flowchart

(1) Cabinet Setting
↓
(2) Installation of Kick Plate
↓
(3) Installation of Jumper Plugs
↓
(4) Labeling

3.3.2 Cabinet Setting

1. Open the front and rear doors on the DKC.
2. Remove the screws for transporting the movable rack and SVP rack, and then fasten the screws.

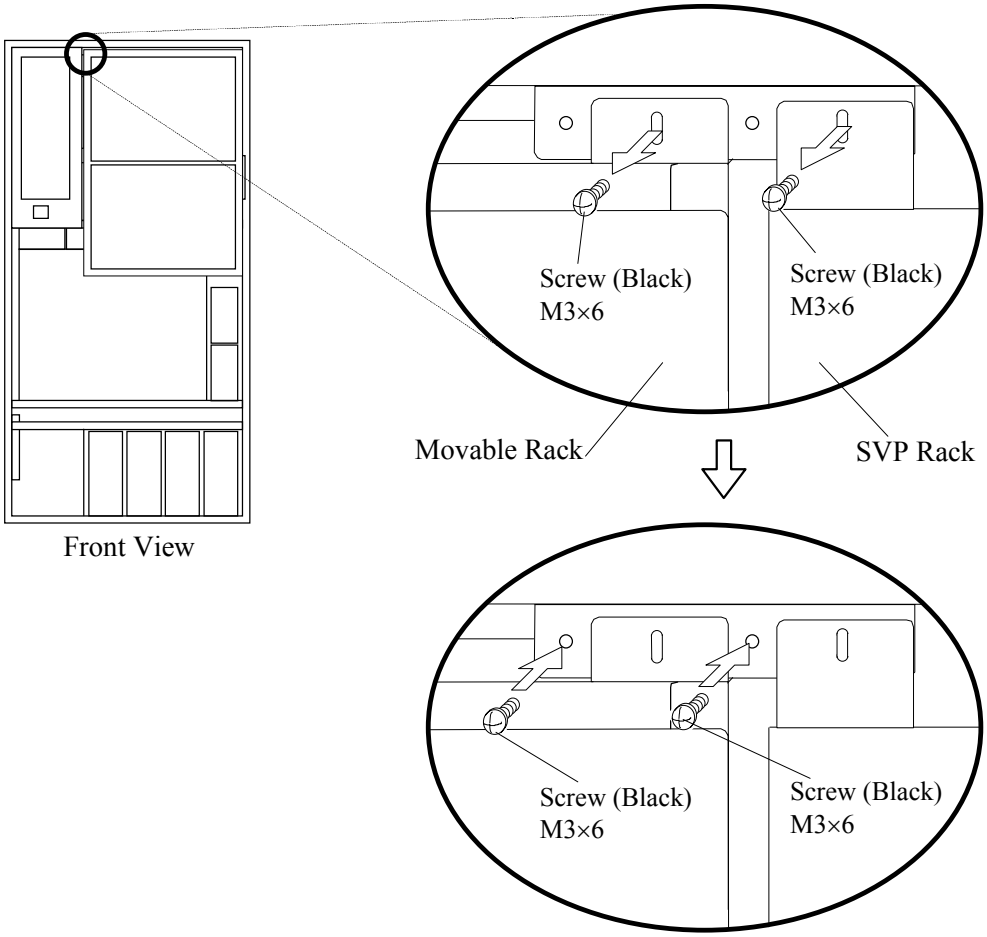

Fig. 3.3.2-1 Removal of Screw for Transporting the Movable Rack

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3. Loosen the screws fastening the SVP stopper, slide the stopper toward the left, and tighten the screws again. When no SVP is to be added, it is not required to shift the stopper.

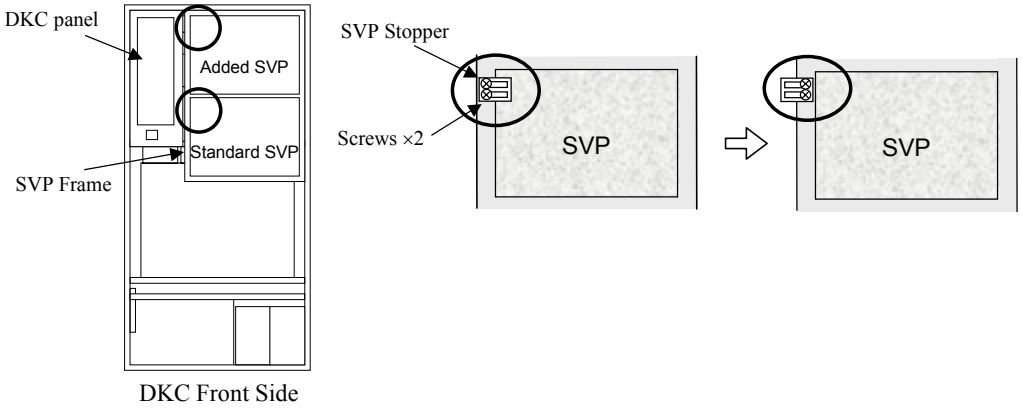

Fig. 3.3.2-2 Shifting SVP Stopper

⚠ 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.

4. Lower the screw jacks until caster is 2.5mm (0.1in.) from the floor.
5. Level the device as shown Fig. 3.3.2-3b.

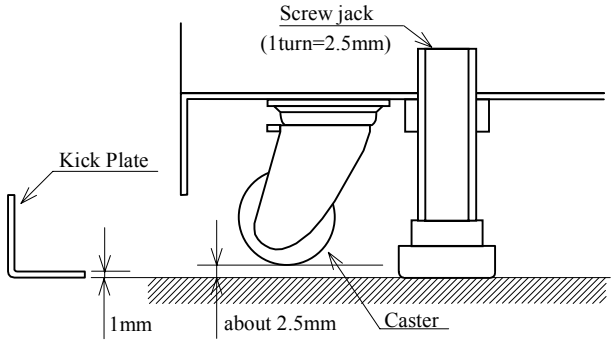

Fig. 3.3.2-3a Gap between Caster and Floor

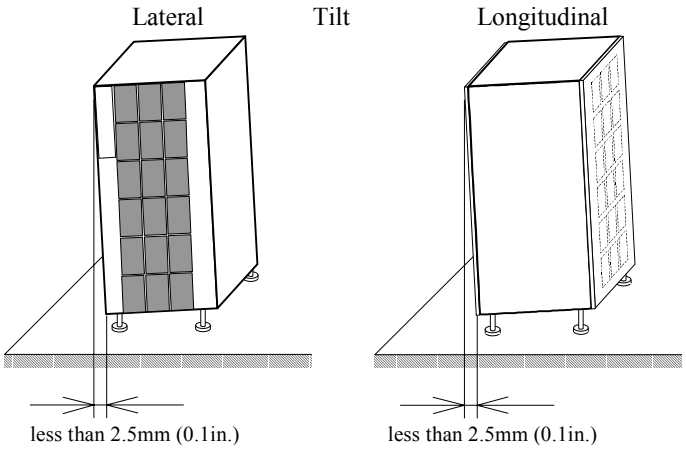

Fig. 3.3.2-3b Unit Layout, Height, and Tilt

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3.3.3 Installation of Kick Plate

1. Attach the kick plates with the binding screws. See Fig. 3.3.3-1.

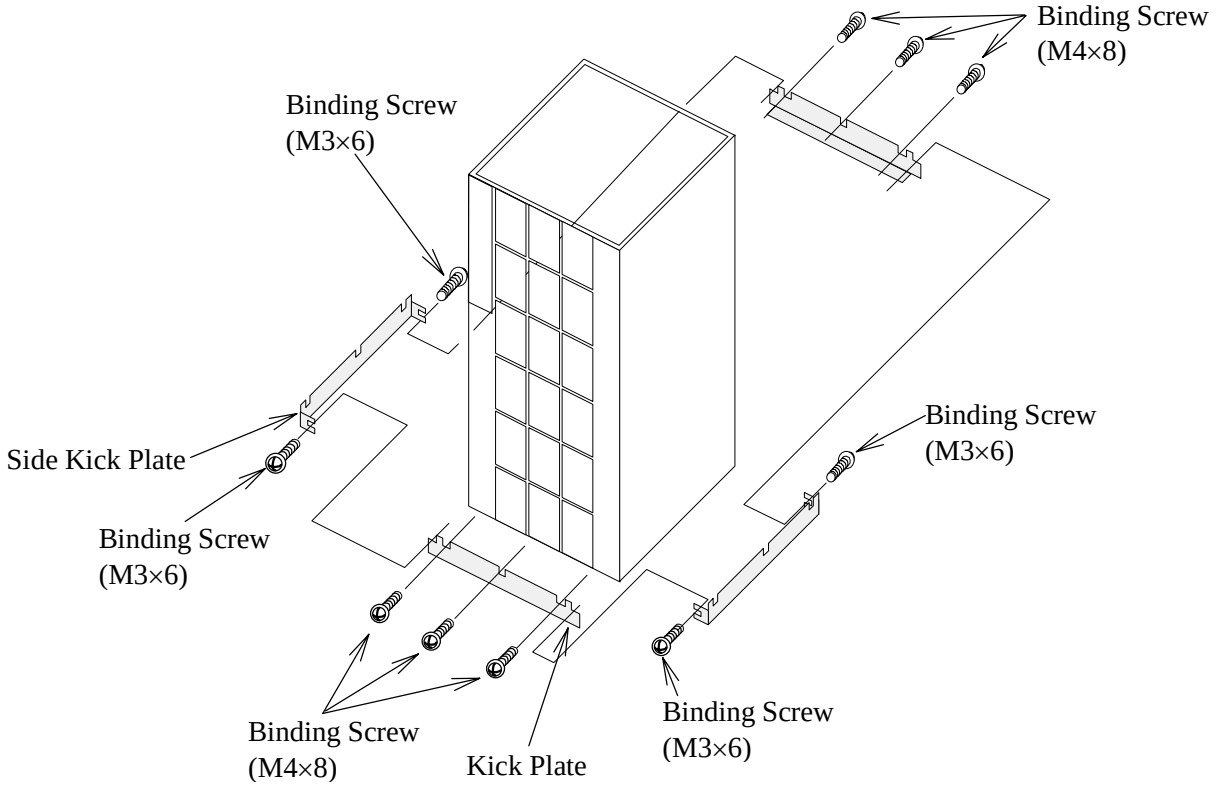

Fig. 3.3.3-1 Installation of Kick Plate

NOTICE: Contact the kick plate to the floor to prevent static electricity.

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3.3.4 Installation of Jumper Plugs

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.

3.3.4.1 Installation of Jumper Plugs in PCI CON PCB

Install the jumper plugs in the PCI CON PCB as indicated in the table below.

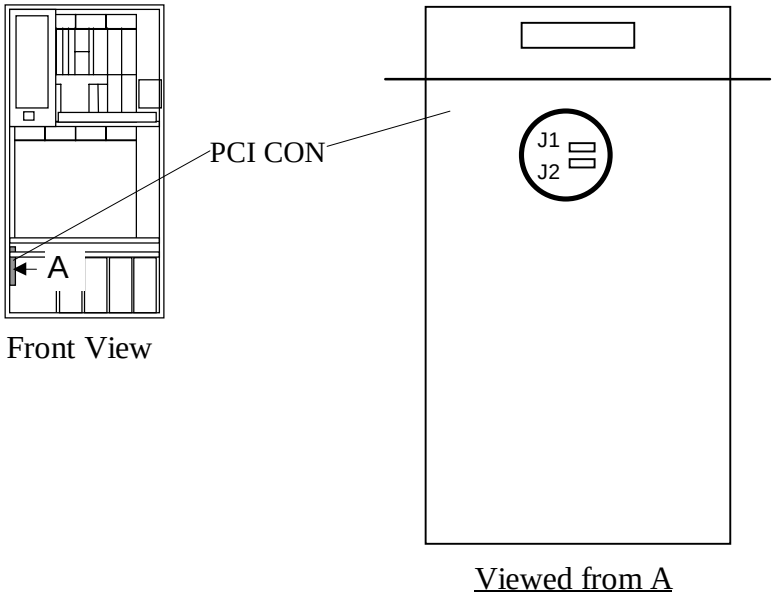
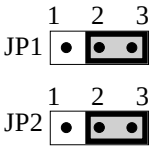
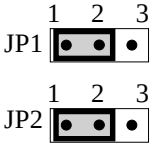


Fig. 3.3.4.1-1 Installation of Jumper Plugs in PCI CON PCB

Table 3.3.4.1-1 Installation of Jumper Plugs in PCI CON PCB

No.	Description	Installing status JP1 and JP2
1	When power is controlled from the host(at least one PCI cable attached to JP1-JP8 on PCI CON PCB and the upper PCI is operating), set the jumpers as shown.	
2	When power is not controlled from the host, no PCI cable attached to JP1-JP8 PCI CON PCB or to disable the EPO of host, set the jumpers as shown.	

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3.3.4.2 Installation of Jumper Connectors in BATCTR PCB

1. Open the locking clamp and remove the two jumper connectors.

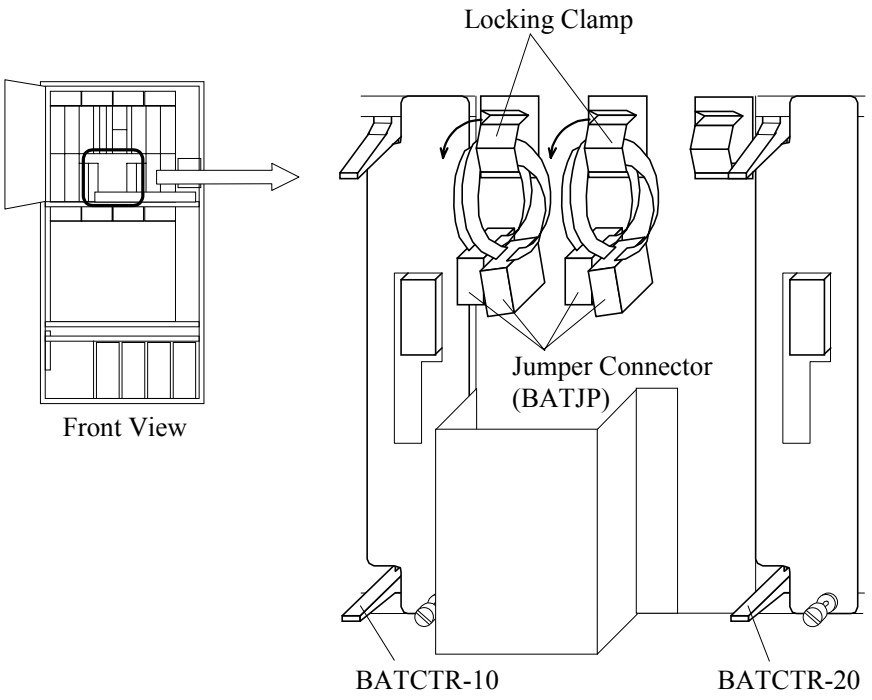
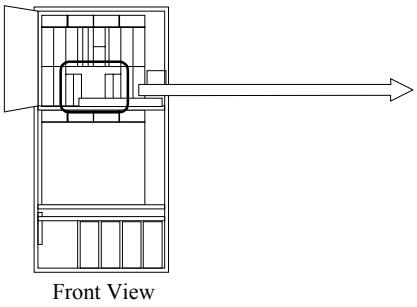


Fig. 3.3.4.2-1 Removal of Jumper Connectors

2. Install the jumper connectors in the BATCTR PCBs as indicated in the figure below.



–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP / HUB	DKC MN 2	SVP PS 1	SUB PS 2	5/3V PS 2B	5/3V PS 2A
						SVP PS 2			
						EU			
3V PS 1A	3V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B	3V PS 2A
–	–	AL	BL			CL	DL	–	–

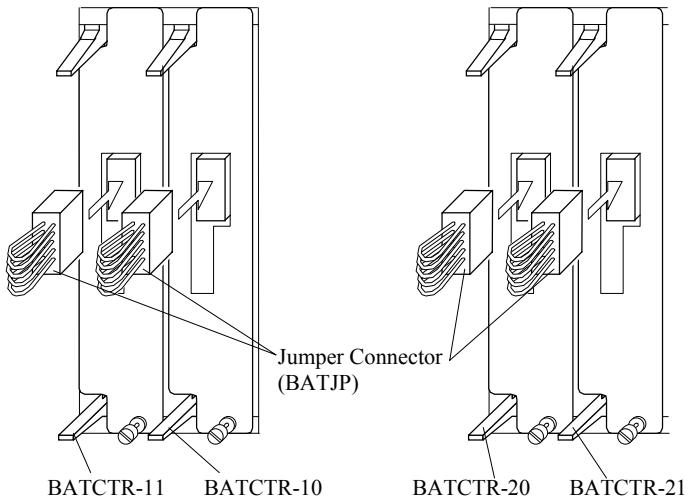


Fig. 3.3.4.2-2 Installation of Jumper Connectors in BATCTR PCB

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3.3.4.3 Check of Jumper Settings

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.

1. Check the jumper settings on the MPS. Refer to LOCATION SECTION [LOCATION06-120]. When the jumper plugs are not installed to the correct locations, install the jumper plugs to the correct locations.

3.3.5 Labeling

1. Attach the label (V/Hz/PH.) to the DKC bottom base. Label (V/Hz/PH.) should be selected among the sheet of Label (V/Hz/PH.) corresponding to the operating voltage and frequency.

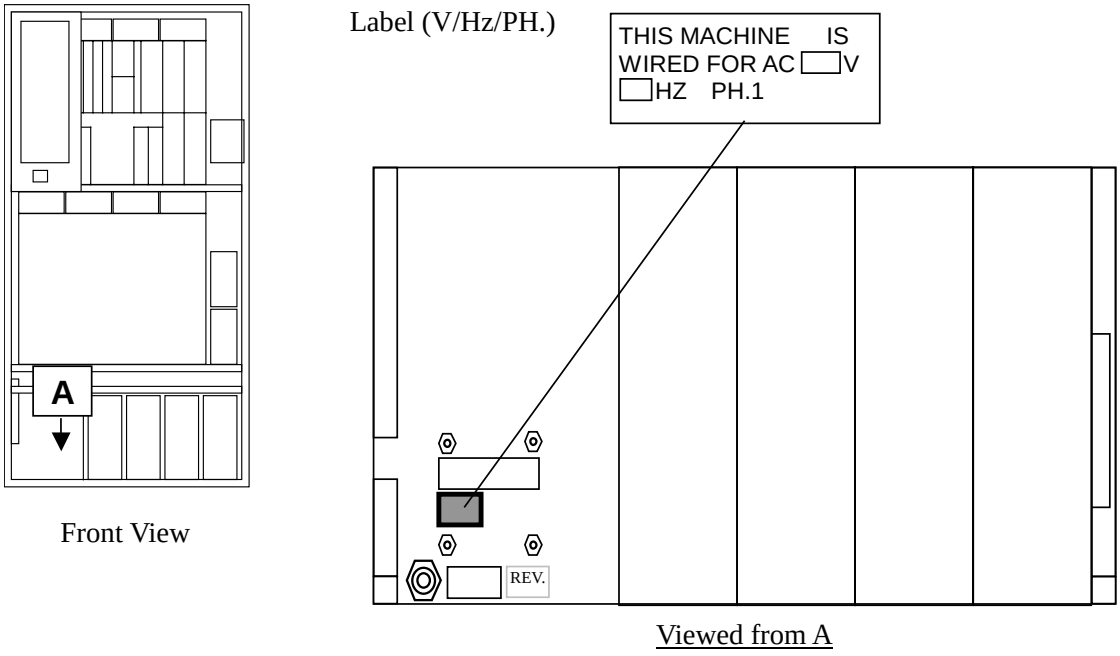

Fig. 3.3.5-1 Attachment of Label

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3.4 Installation of AC Box Kit

Notice:
Perform this addition after you have separate the subsystem from the host (OS) and turned off the subsystem powered.

3.4.1 Installation of AC Box Kit for Single Phase/50A or 3 Phase/30A (DKC-F465I-1PS/3PS)

Table 3.4.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-1PS	AC Box	5513939-A	2	
		Screw	SB306N	4	
		Nameplate (HDS)	2105894-1	1	RSD
		Nameplate (HP)	2105894-101	1	RSD
2	DKC-F465I-3PS	AC Box	5513938-A	2	
		Screw	SB306N	4	
		Nameplate (HDS)	2105894-2	1	RSD
		Nameplate (HP)	2105894-102	1	RSD

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1. Attach the AC Boxes.
   a. Remove the screws and remove the plates from the bases.

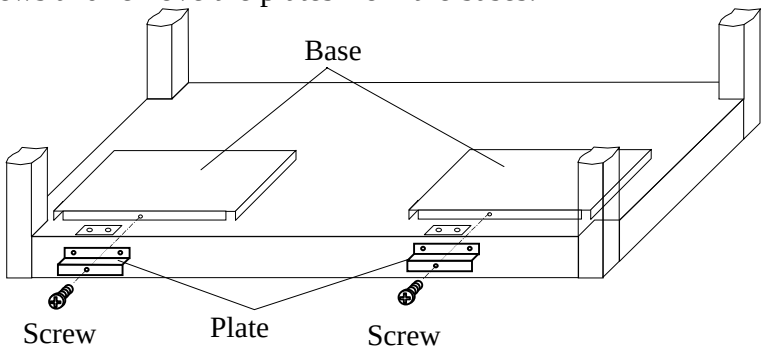

Fig. 3.4.1-1 Removal of Plates

   b. Attach the AC Boxes to the bases.

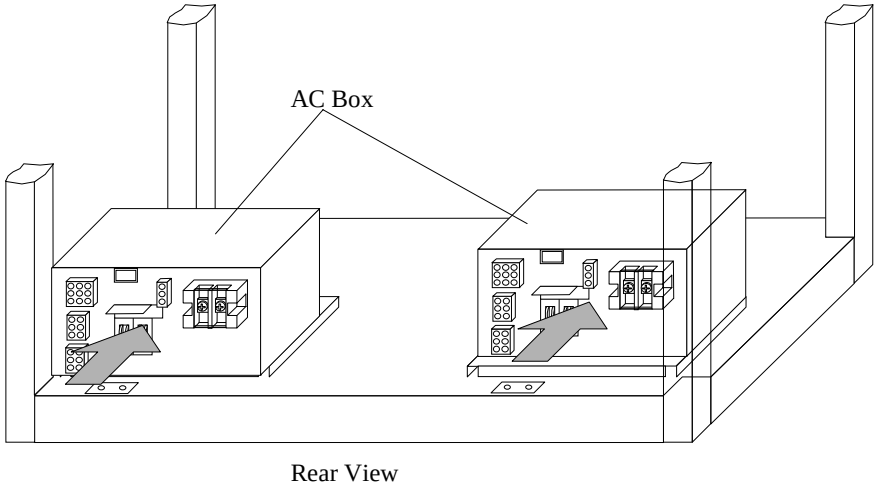

Fig. 3.4.1-2 Attachment of AC Boxes

   c. Attach the plates with the screws.

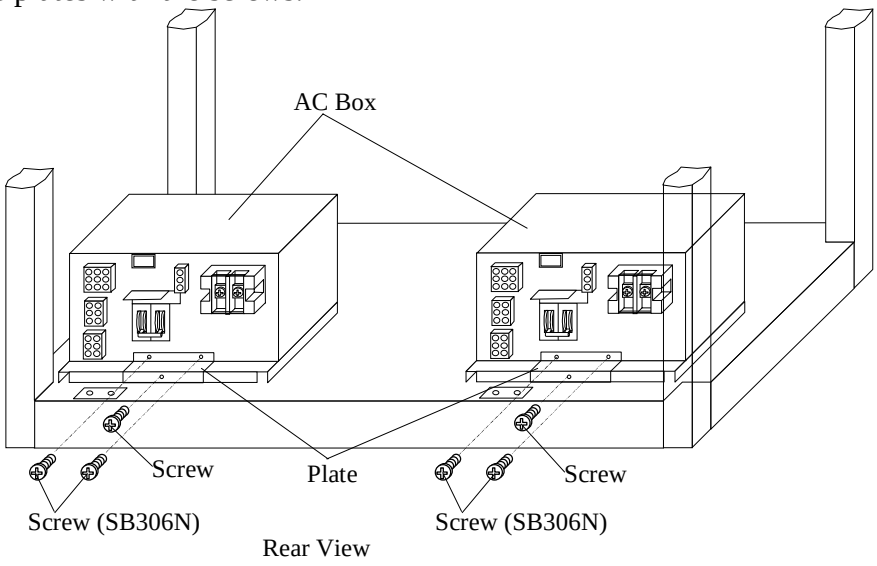

Fig. 3.4.1-3 Attachment of Plates

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d. Attach frame ground cable with the screw and lock washer.

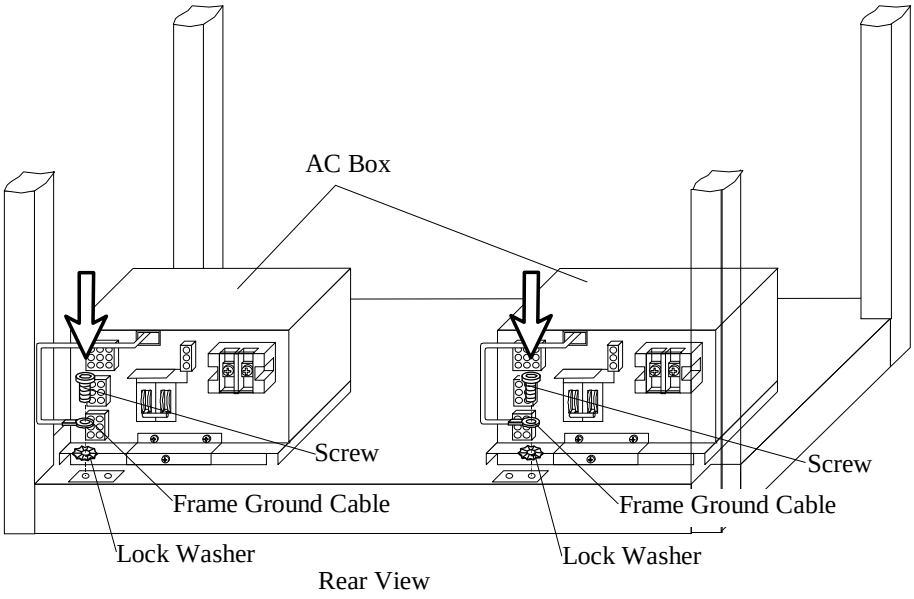

Fig. 3.4.1-4 Attachment of Ground Cables

2. Connect the cables.

DKC-F465I-1PS

a. Connect the cables to the AC Boxes.

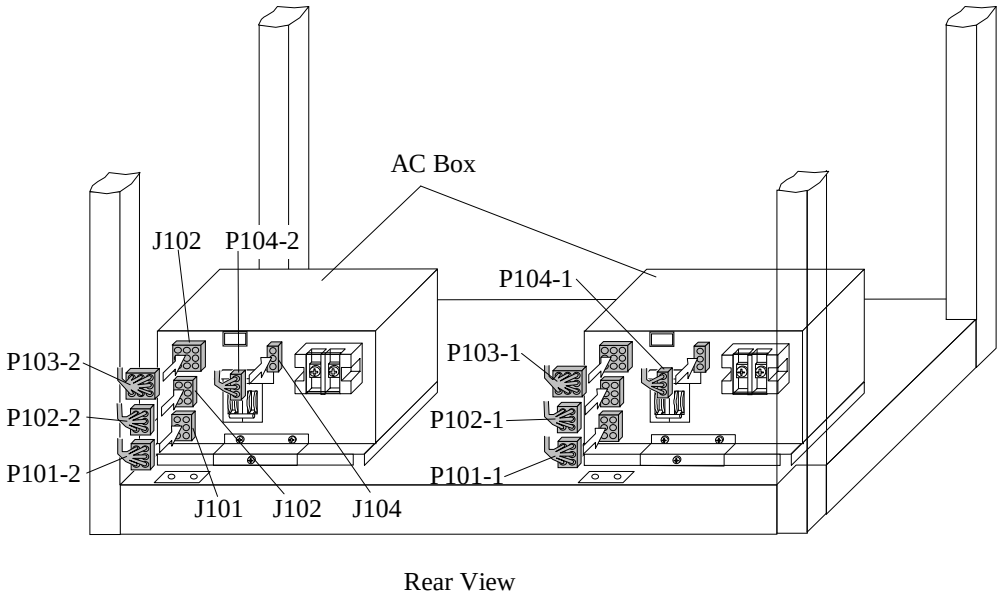

Fig. 3.4.1-5 Connection of Cables

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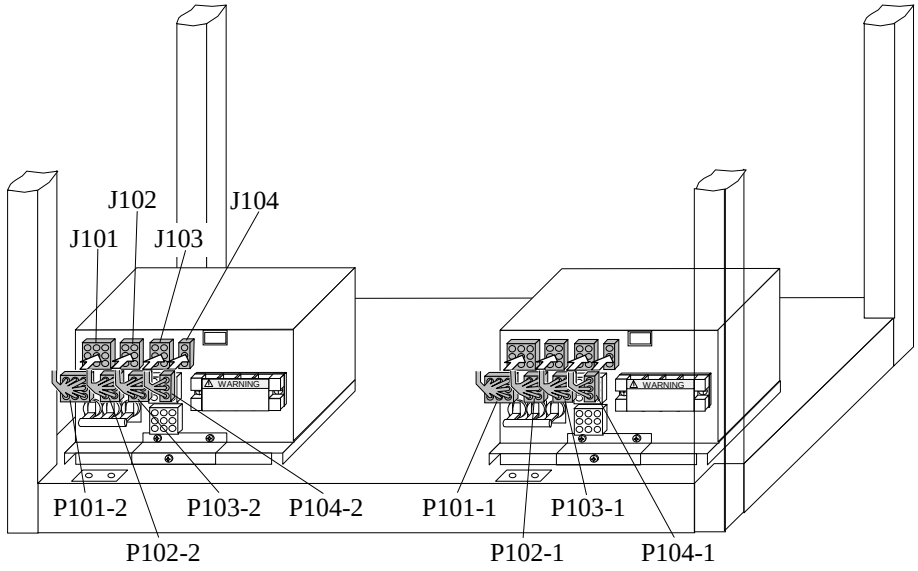
DKC-F465I-3PS

a. Connect the cables and dummy connector to the AC Boxes.
b. Connect the Voltage setting jumper (P105) correspond to AC Input Voltage, connect the dummy connector to free connector.



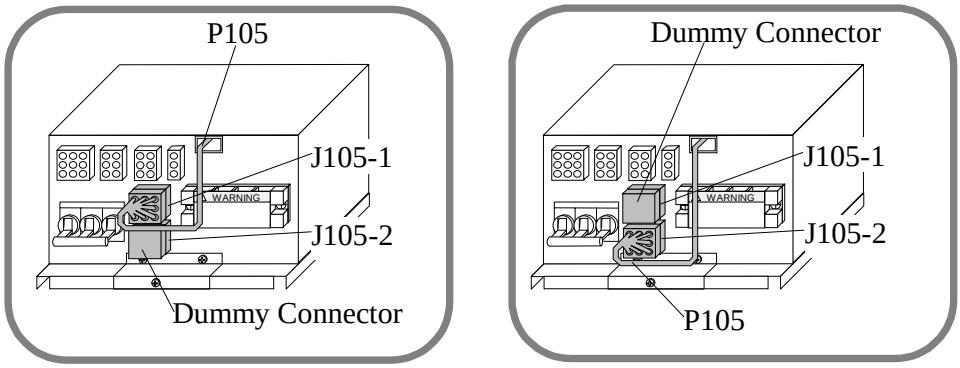


Fig. 3.4.1-6 Connection of Cables

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3. Attach the Nameplate.
   a. Attach the nameplate to the Front Logic Box cover.

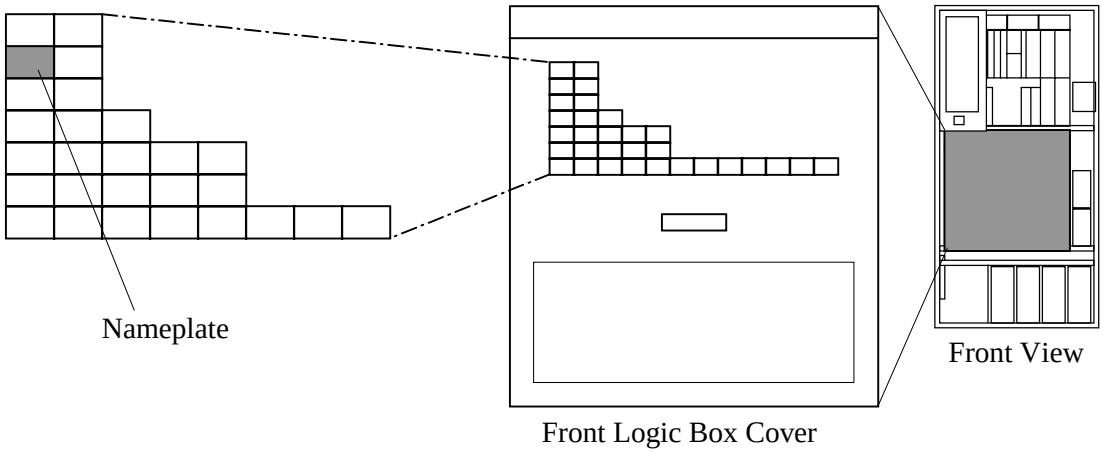

Fig. 3.4.1-7 Location of Nameplate

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3.4.2 Installation of AC Box Kit for Single Phase/30A (DKC-F465I-1PSD)

Table 3.4.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-1PSD	AC Box	5518053-A	2	For 30A
		Bracket	3265678-1	1	
		Cover	5513750-1	1	
		Screw	SB306N	6	
		Label (V.Hz.PH.A.W)	3265705-1	1	
		Nameplate (HDS)	2105894-13	1	RSD
		Nameplate (HP)	2105894-110	1	RSD

Notice:
There are some subsystems in which the AC Box Kit for Single Phase/30A (DKC-F465I-S1PSD) cannot be installed depending on the serial numbers (S#) of the subsystem because they have no connector for connecting the FG cable.

Serial numbers of subsystems in which the AC Box Kit above cannot be installed:
20025-20120, 20126, 20130, 20134, 20136, and 20137

Serial numbers of subsystems in which the AC Box Kit above can be installed:
20121-20125, 20127-20129, 20131-20133, 20135, and 20138 and over

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1. Attach the AC Boxes.
   a. Remove the screws and remove the plates from the bases.

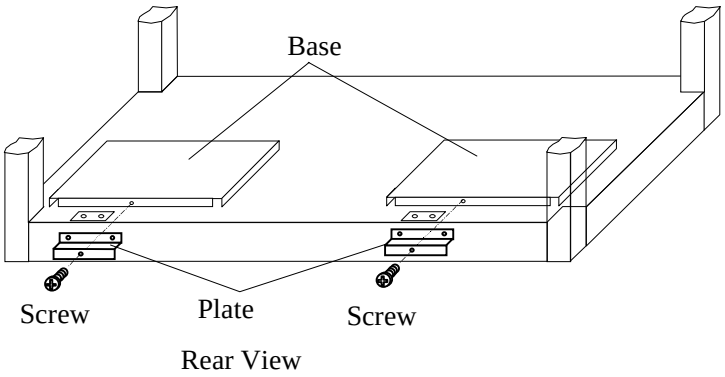

Fig. 3.4.2-1 Removal of Plates

   b. Attach the AC Boxes to the bases.

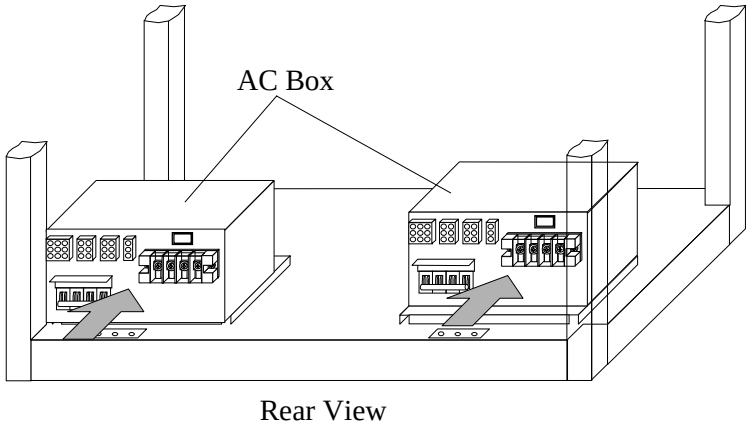

Fig. 3.4.2-2 Attachment of AC Boxes

   c. Attach the plates with the screws.

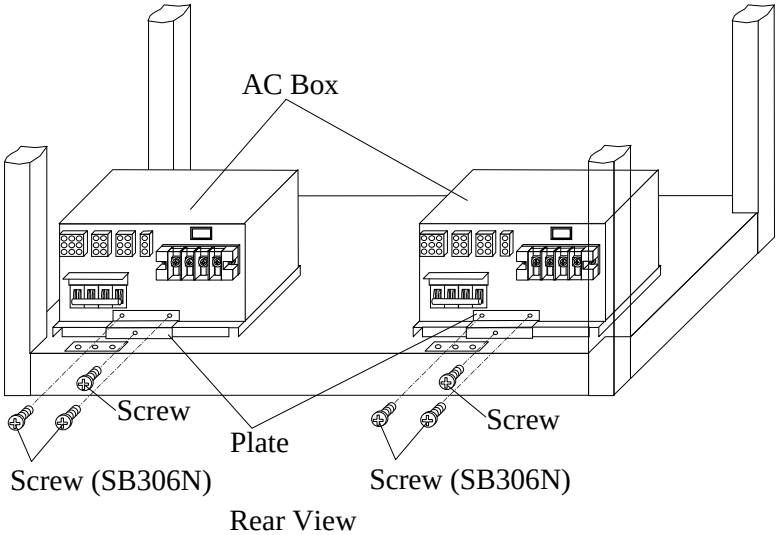

Fig. 3.4.2-3 Attachment of Plates

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d. Attach frame ground cable with the screw and lock washer.

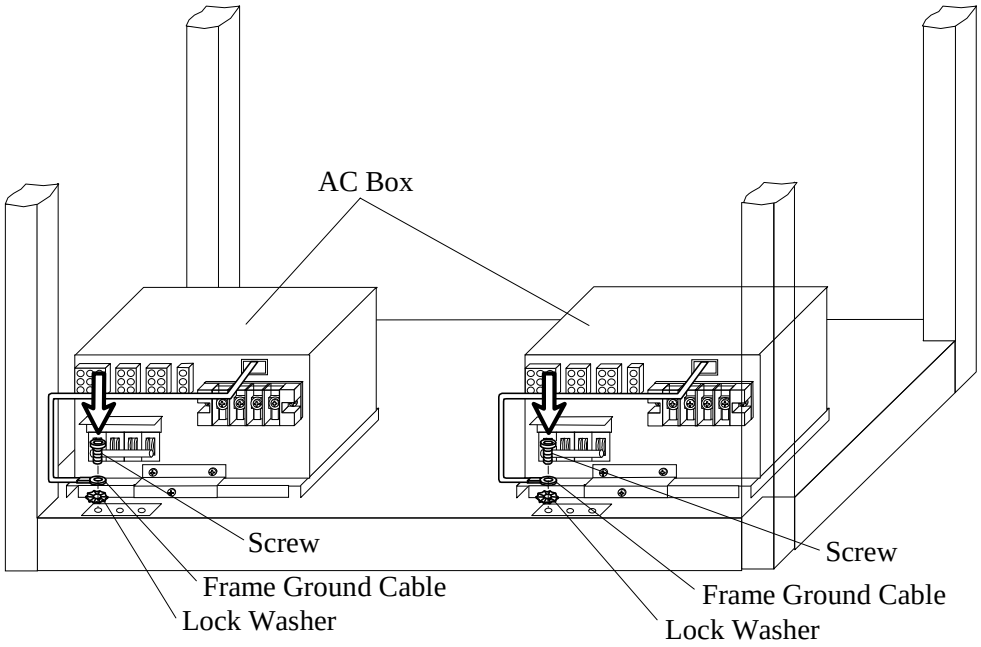

Fig. 3.4.2-4 Attachment of Ground Cables

2. Connect the cables.
   a. Connect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) to the AC Boxes.

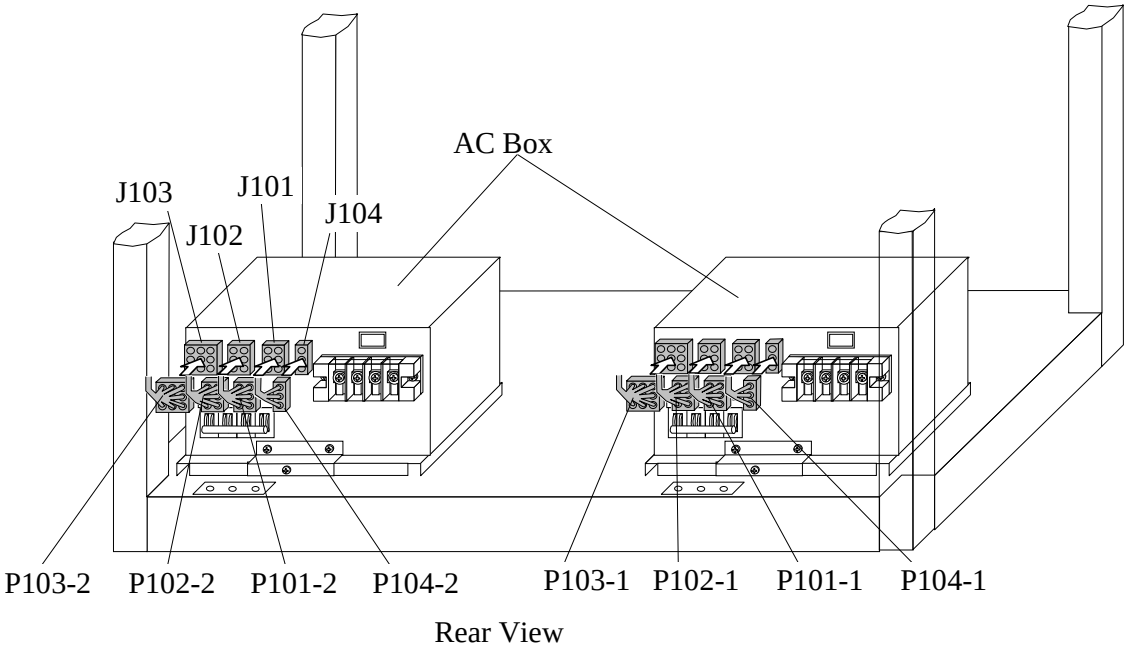

Fig. 3.4.2-5 Connection of Cables

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3. Attach the Power Cable Unit.
   a. Attach the power cable unit to the bracket and fasten the six screws.

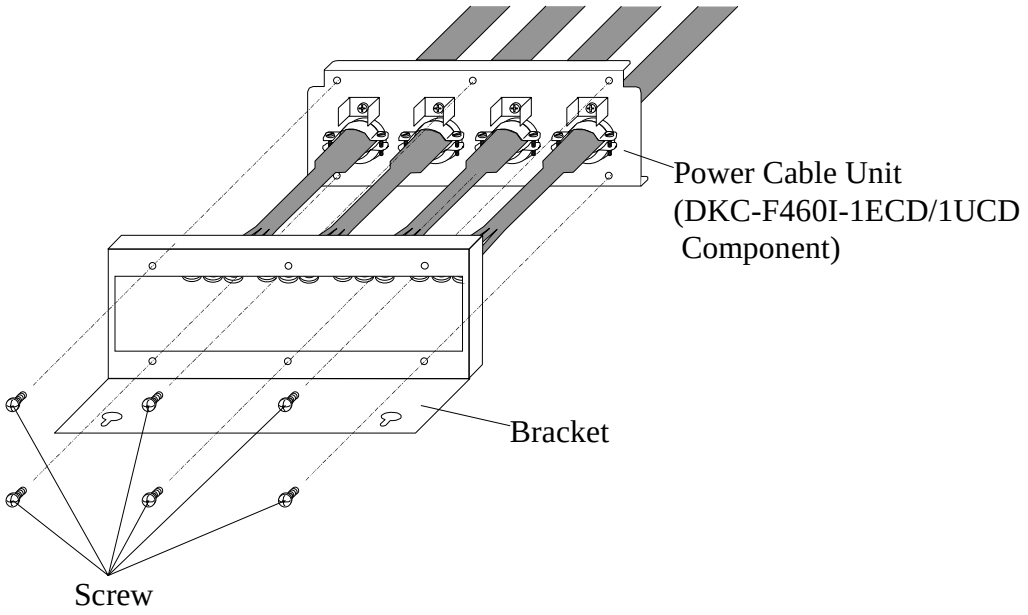

Fig. 3.4.2-6 Attachment of Power Cable Unit

   b. Attach the bracket with the two screws.
   c. Attach the cover with the two screws.

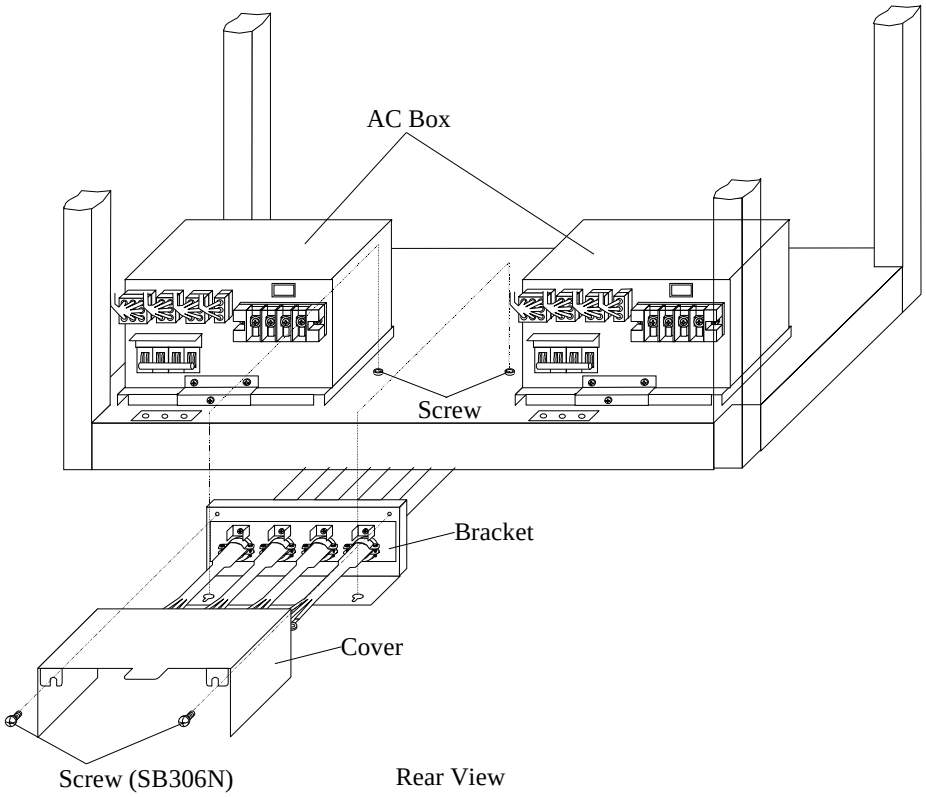

Fig. 3.4.2-7 Attachment of Bracket

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4. Attach the Nameplate and Labels.
   a. Attach the nameplate to the Front Logic Box cover.

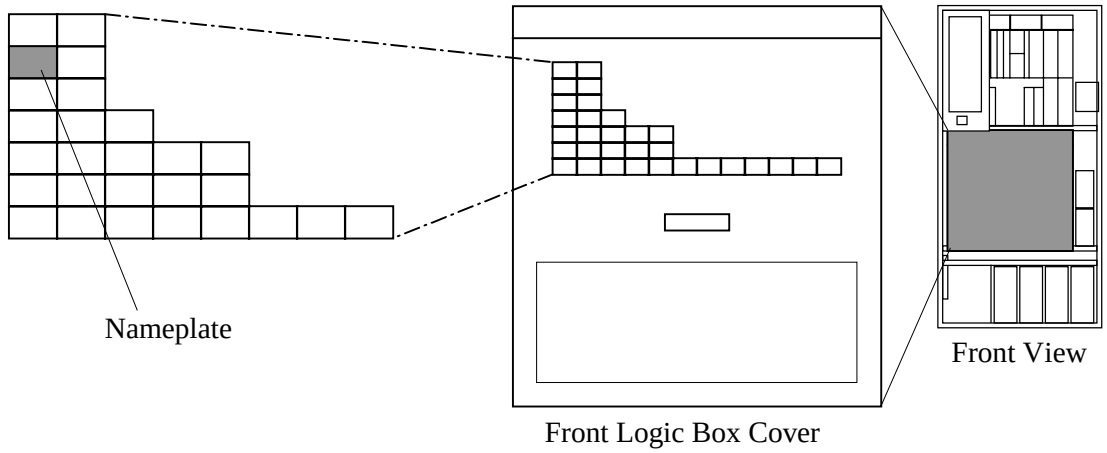

Fig. 3.4.2-8 Location of Nameplate

   b. Attach the label (V/Hz/PH.). 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.PH.A.W) to the frame.

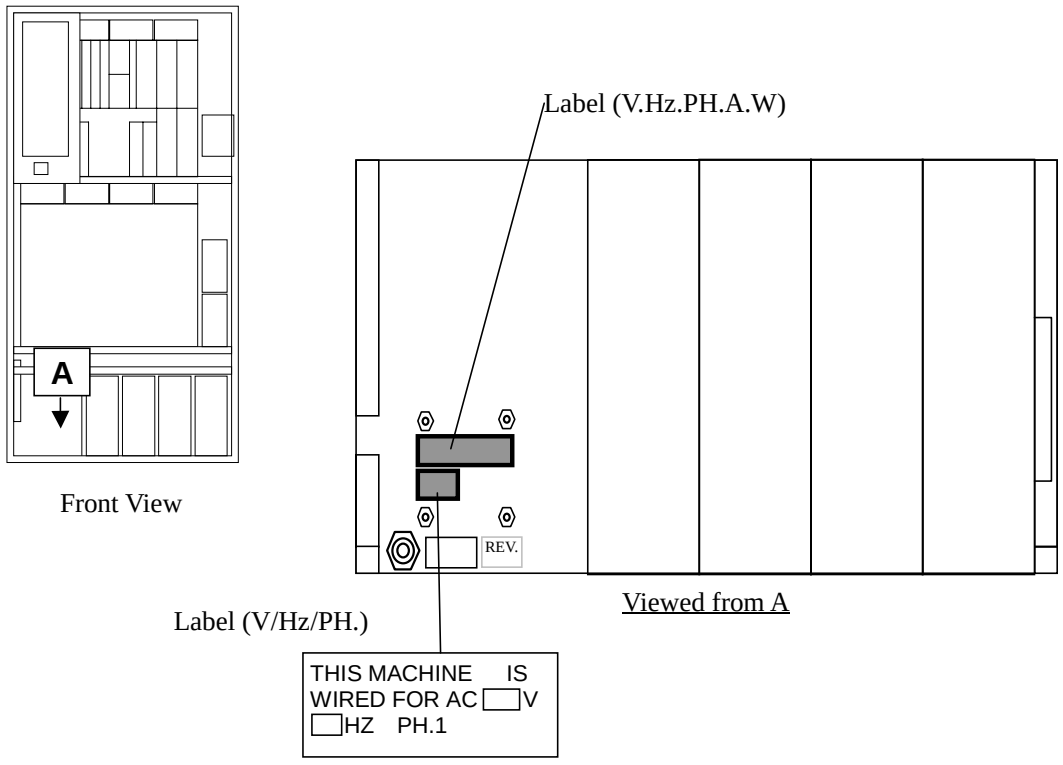

Fig. 3.4.2-9 Attachment of Labels

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3.4.3 AC Box Configuration Setting and Confirmation

1. Confirmation of DKC status

1-1 <Initial screen>

1-2 <Changing the mode>

Change the mode by selecting [Modify Mode].

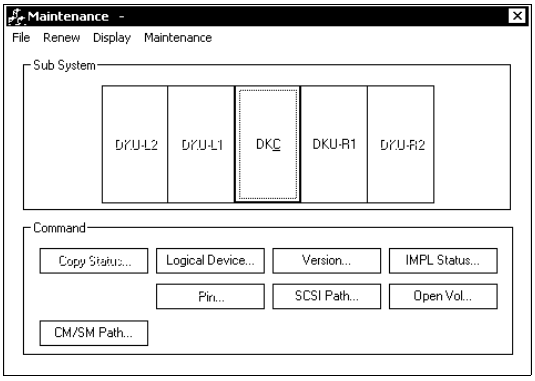
1-3 <Maintenance window>

The ‘Maintenance’ window is displayed.

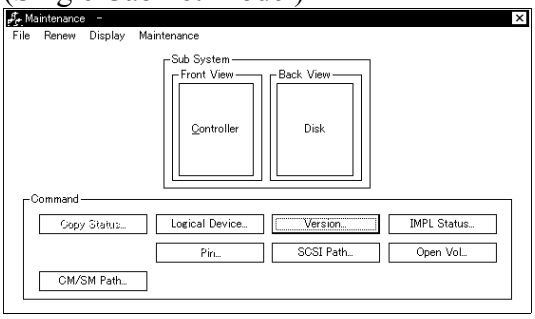
Make sure that all parts are not blinking.

Close the ‘Maintenance’ window.

(Multi Cabinet Model)



(Single Cabinet Model)



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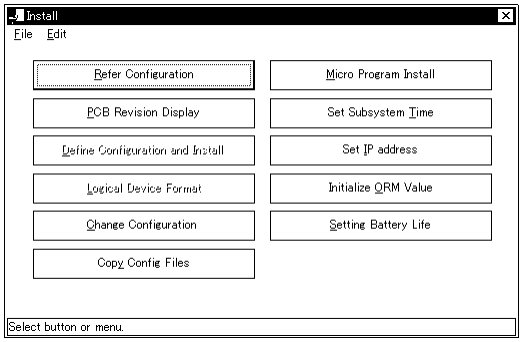
2. Configuration Setting

2-1 <Start [Install]>

Select [Install] from ‘SVP’ (CL).

2-2

Select [Change Configuration] (CL) from ‘Install’.



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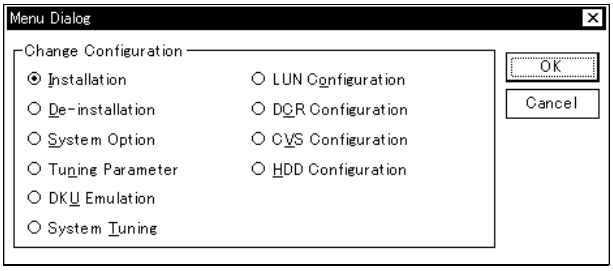
2-3 <Specify the beginning of installation>
Select [System Tuning] from 'Menu Dialog' (CL), and select [OK] (CL).

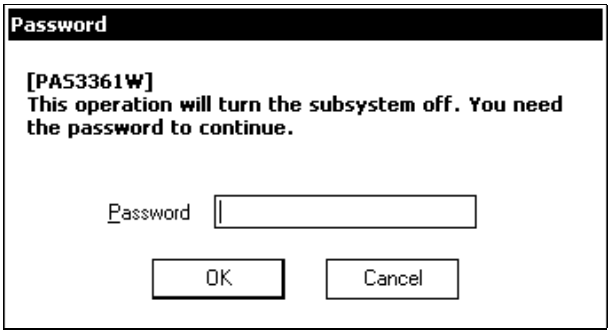


2-4

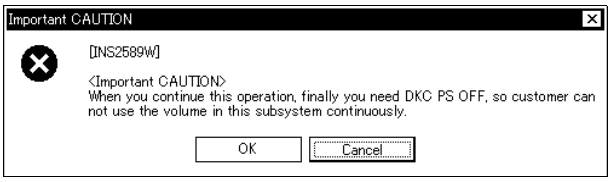
NOTICE
Powering off/on is required owing to the performance of this operation.
Ask the technical support center about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

(1) Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Center 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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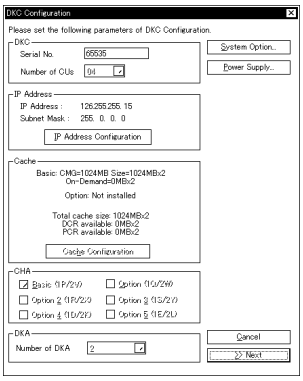
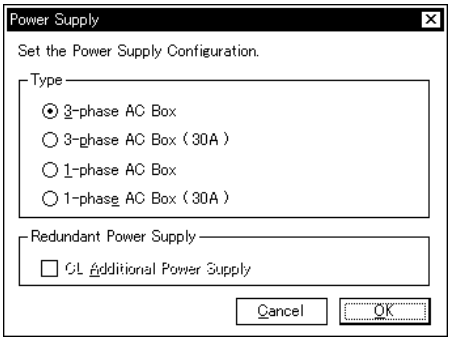
2-5 <DKC Configuration window>

Select (CL) [Power Supply].



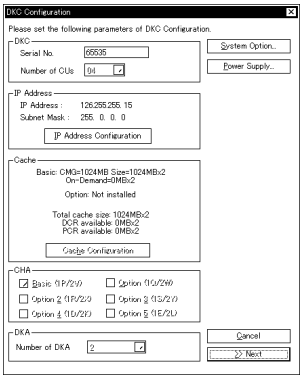
2-6 <Set AC Box Type>

Set the AC Box Type in the 'Power Supply' dialog box, and select (CL) [OK].



2-7 <To the next window>

Select (CL) [>>Next].



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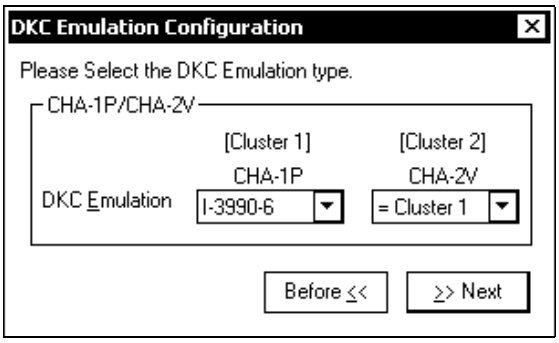
2-8 <To the next window>

Select (CL) [>>Next].

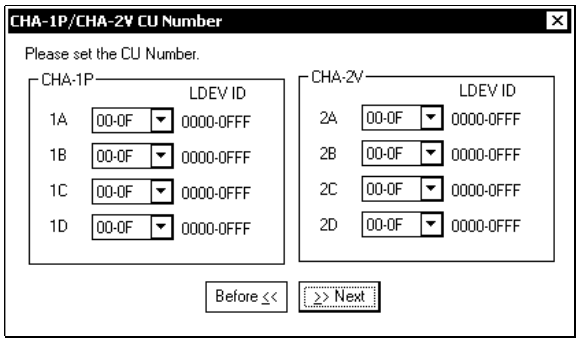
Note: This window is displayed when Serial (8S) Channel or MFibre (8MS/8ML) channel is installed.



2-9 <To the next window>

Select (CL) [>>Next].

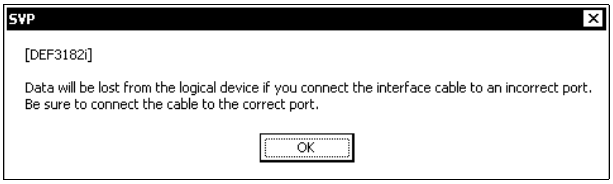
Note: This window is displayed when Serial (8S) Channel is installed.



2-10 <SVP message>

Select (CL) [OK] in response to the confirmation message.

Note: This window is displayed when Serial (8S) Channel is installed.



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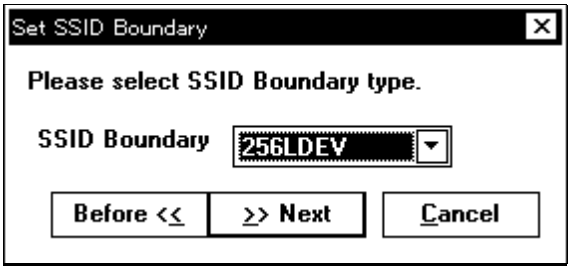
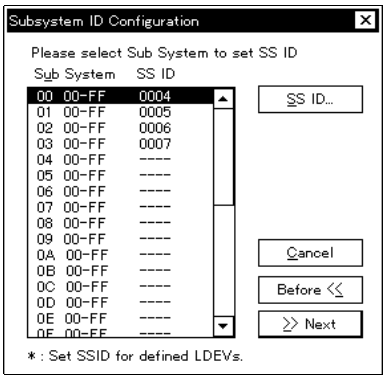
2-11 <To the next window>
Select (CL) [>>Next].



2-12 <To the next window>
Select (CL) [>>Next].



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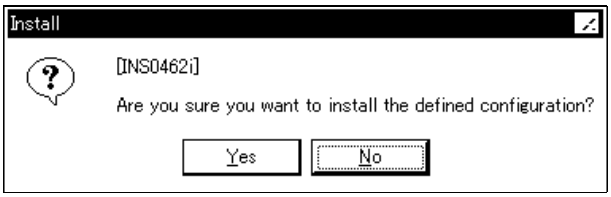
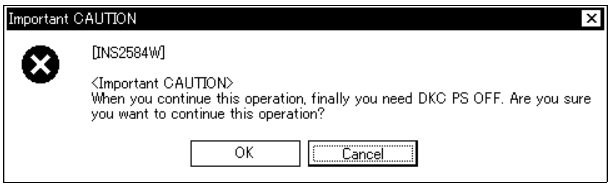
2-13 <Include configuration information>

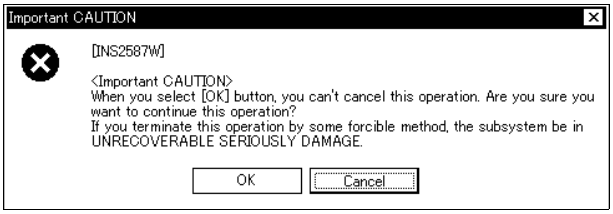
(1) Select (CL) [Yes] in response to the confirmation message “Are you sure you want to install the defined configuration?”. “Wait...” is displayed, then “Turn off the subsystem” is displayed.



(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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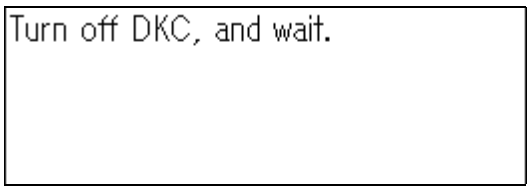
2-14

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.

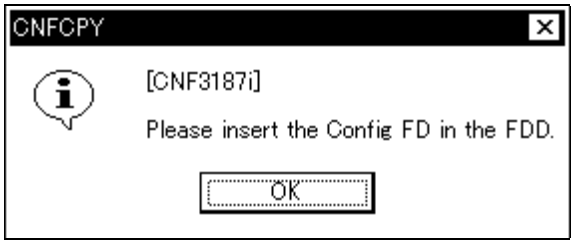


2-15

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.

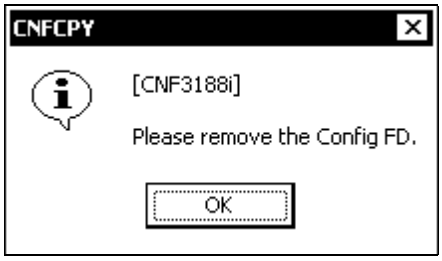
2-16

Insert the configuration FD into FDD, and select [OK].



2-17

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, and then select [OK].



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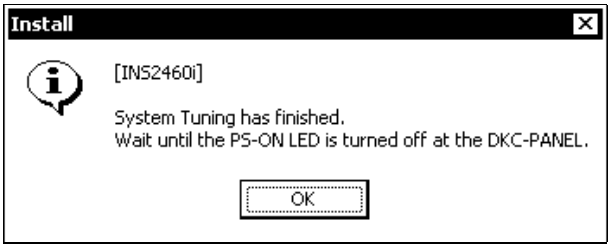
2-18

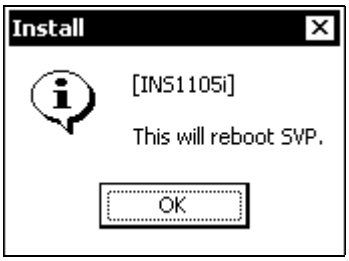
After making sure that the DKC power is turned off, select [OK] (CL) in response to "System Tuning has finished.".

Note : The SVP power will not turn off even when DKC is powered off.



2-19

"This will reboot SVP." is displayed.
Select [OK] (CL).



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3. Confirmation after the setting

3-1 <PS-ON>

Turn on the PS of the DKC
Wait until the READY lamp on the DKC-PANEL is turned on.

3-2 <Initial screen>

3-3 <Changing the mode>

Change the mode by selecting [Modify Mode].

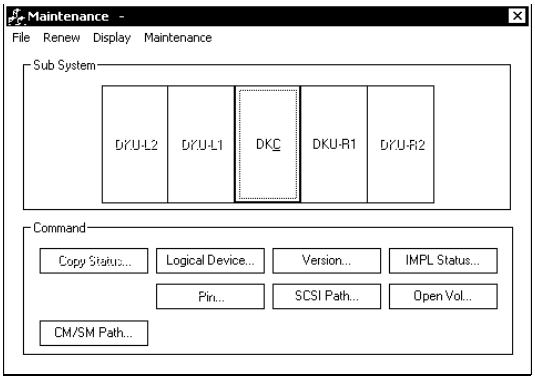
3-4 <Maintenance window>

The 'Maintenance' window is displayed.

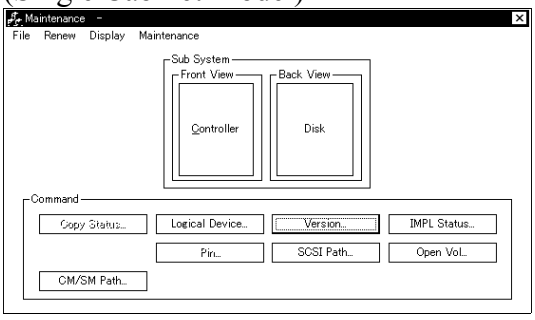
Make sure that all parts are not blinking.

Close the 'Maintenance' window.

(Multi Cabinet Model)



(Single Cabinet Model)



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3-5 <Confirmation of the Log>

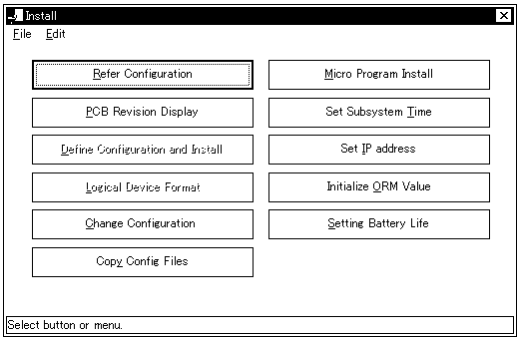
Confirm the normality of the DKC referring to the SIM Log.

3-6 <Start [Install]>

Select (CL) [Install] from 'SVP'.

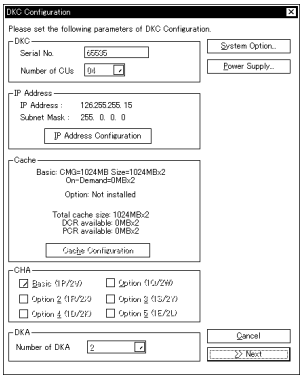
3-7

Select (CL) [Refer Configuration].



3-8 <DKC Configuration window>

Select (CL) [Power Supply...].



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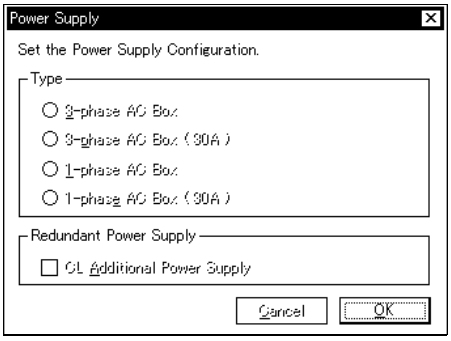
3-9 <Confirmation of the AC Box Type>

Confirm the AC Box Type.
Select (CL) [OK].



3-10 <Close the DKC Configuration window>

Select (CL) [Cancel].

3-11 <Close Install window>

Close Install window.

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3.5 Installation of Power Cable Kit (DKC-F465I-1EC/1UC/3EC/3UC, DKC-F460I-1ECD/1UCD)

CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

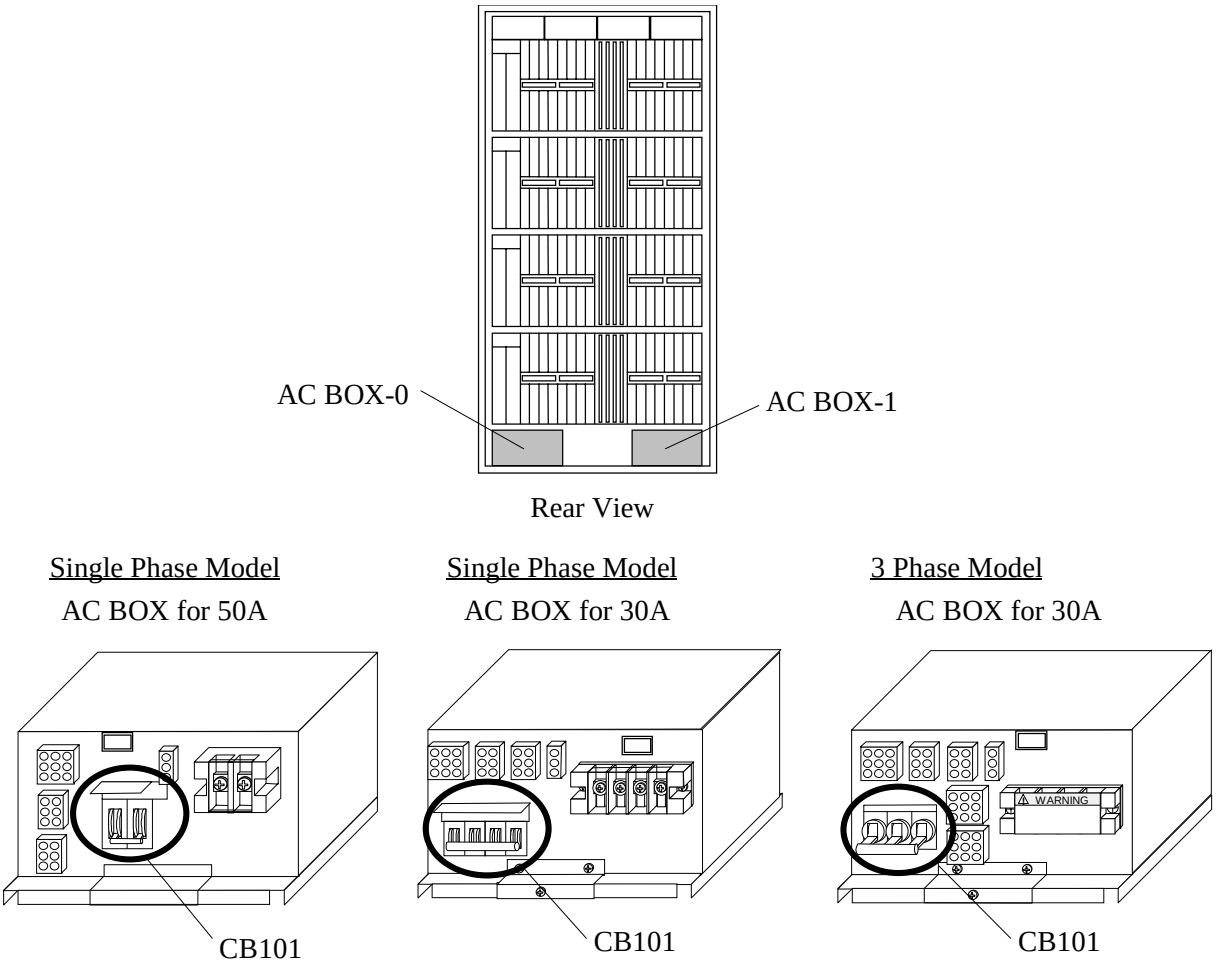

Fig. 3.5-1 Location of the Circuit Breakers

Table 3.5-1 Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-0	CB101	
2	AC BOX-1	CB101	

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3.5.1 Installation of Power Cable Kit for Single Phase/50A or 3 Phase/30A

Table 3.5.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-1UC	Power Cable	3263436-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-3	1	RSD
		Nameplate (HP)	2105894-103	1	RSD
2	DKC-F465I-1EC	Power Cable	3263438-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-5	1	RSD
		Nameplate (HP)	2105894-105	1	RSD
3	DKC-F465I-3UC	Power Cable	3263437-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-4	1	RSD
		Nameplate (HP)	2105894-104	1	RSD
4	DKC-F465I-3EC	Power Cable	3263439-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-6	1	RSD
		Nameplate (HP)	2105894-106	1	RSD

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1. Install the Power Cable.
   a. Loosen the two screws①. Attach the Power Cable and secure the two screws.
   b. Attach the cover with the two screws②.

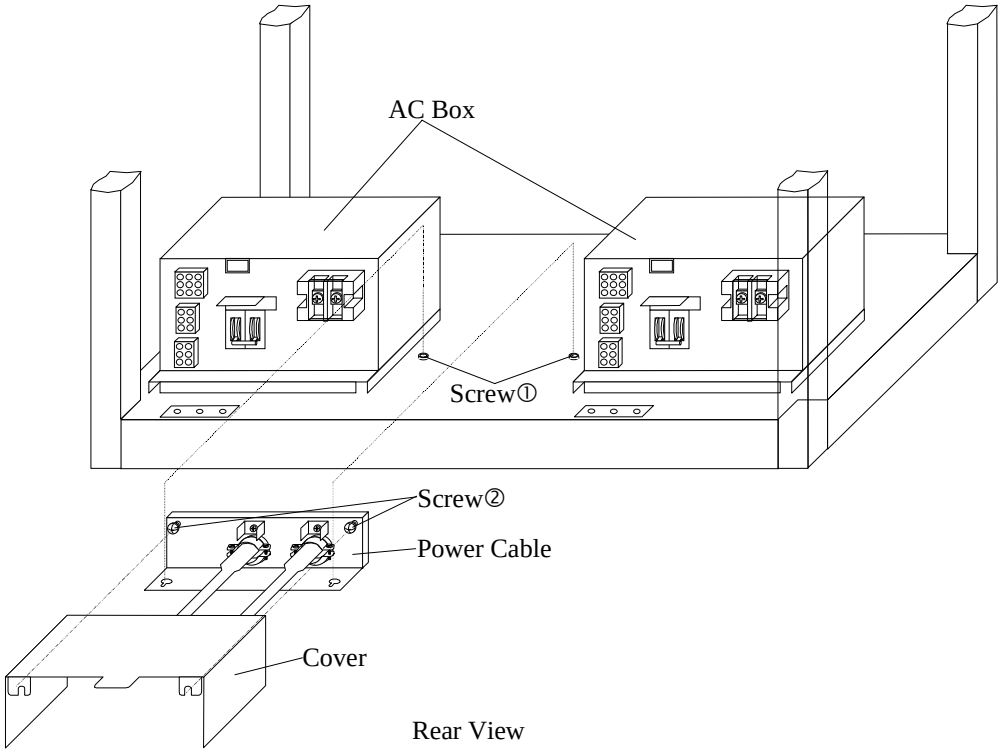

Fig. 3.5.1-1 Attachment of Power Cable

c. Attach frame ground cable with the screw and lock washer.

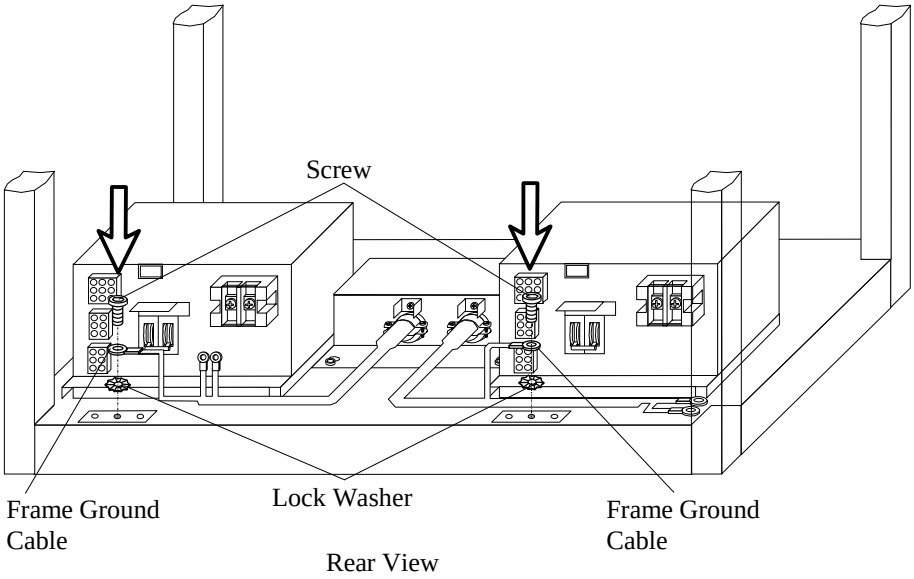

Fig. 3.5.1-2 Attachment of Frame Ground Cable

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d. Remove the terminal block covers.

e. Connect the AC power cables to the terminal block and attach terminal block cover. Refer to Fig. 3.5.1-3, Fig. 3.5.1-4 and Table 3.5.1-2.

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

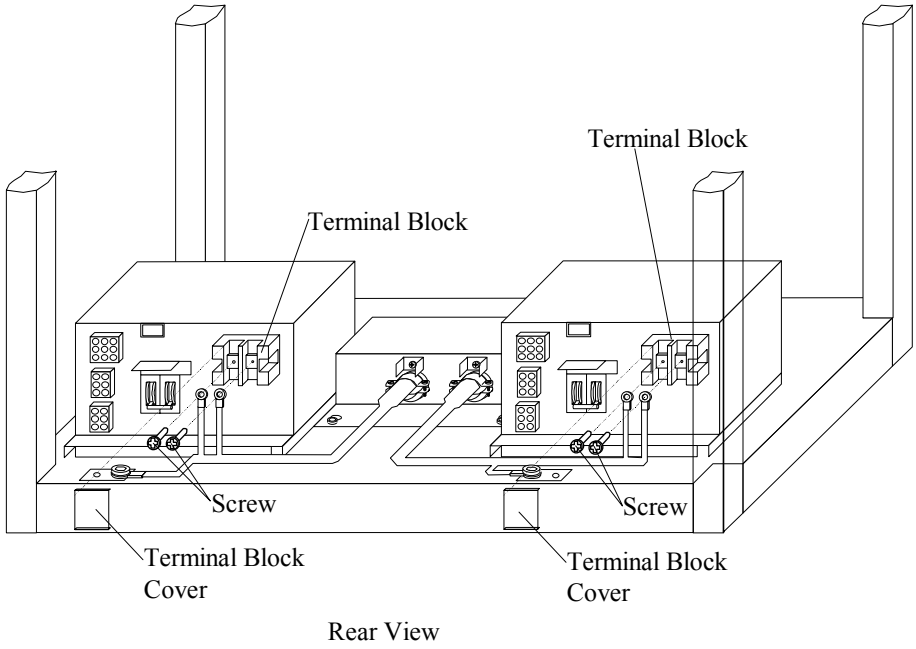

Fig. 3.5.1-3 Connection of AC Power Cable

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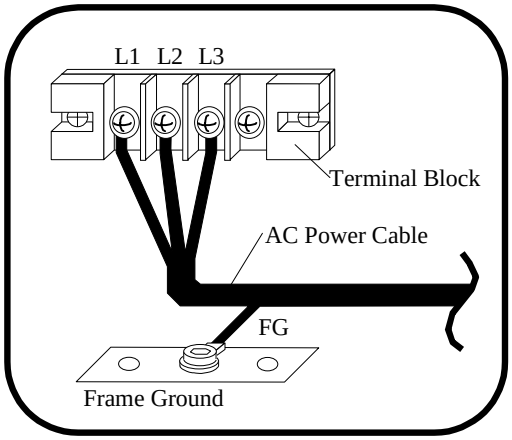
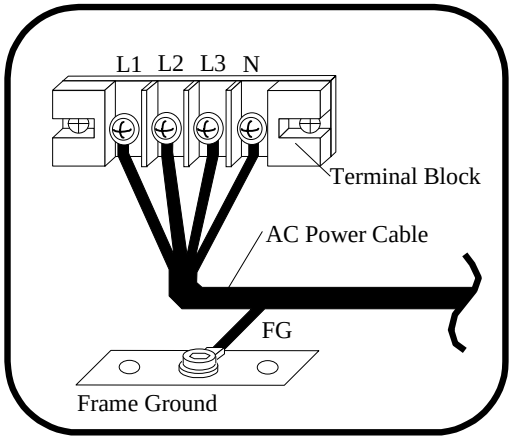
Table 3.5.1-2 AC Power Cable Conductors Numbers

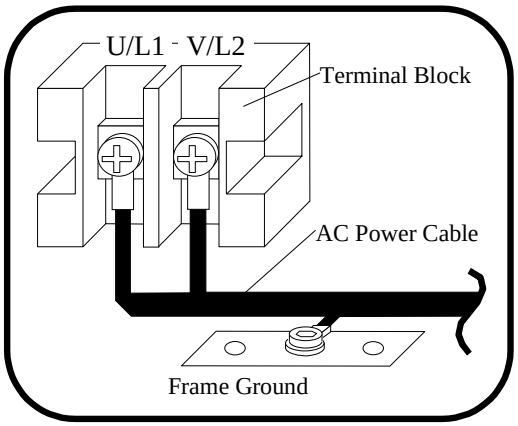
No.	Model Number	Input Voltage	AC Power Cable Conductors	Remarks
1	DKC-F465I-1UC	200-230V	3 conductors (U/L1, V/L2, FG)	
2	DKC-F465I-1EC	200-240V	3 conductors (U/L1, V/L2, FG)	
3	DKC-F465I-3UC	200-230V	4 conductors (L1, L2, L3, FG)	
4	DKC-F465I-3EC	380-415V	5 conductors (L1, L2, L3, N, FG)	



DKC-F465I-3UC



DKC-F465I-3EC



DKC-F465I-1UC/1EC

Fig. 3.5.1-4 Connection of AC Power Cables to the Terminal Block

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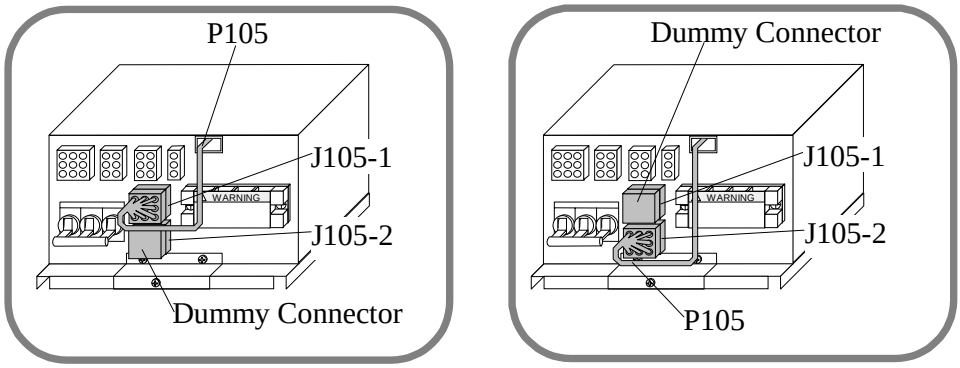
2. Reset the Jumper Cable Setting.
   a. When the 3 Phase Model (DKC-F465I-3UC/3EC) is installed, connect the jumper cable (P105) as indicated in the table below.
   When the Single Phase Model (DKC-F465I-1UC/1EC) is installed, go to step 3.

Table 3.5.1-3 Jumper Cable (P105) Locations

No.	Model Number	Input Voltage	Jumper Cable (P105) Location	Remarks
1	DKC-F465I-3UC	200-230V	J105-1	J105-2: Dummy Connector
2	DKC-F465I-3EC	380-415V	J105-2	J105-1: Dummy Connector



Input AC Voltage: 200-240V Input AC Voltage: 380-415V

Fig. 3.5.1-5 Jumper Cable P105 Setting

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3. Attach the Nameplate.
   a. Attach the nameplate to the Front Logic Box cover.

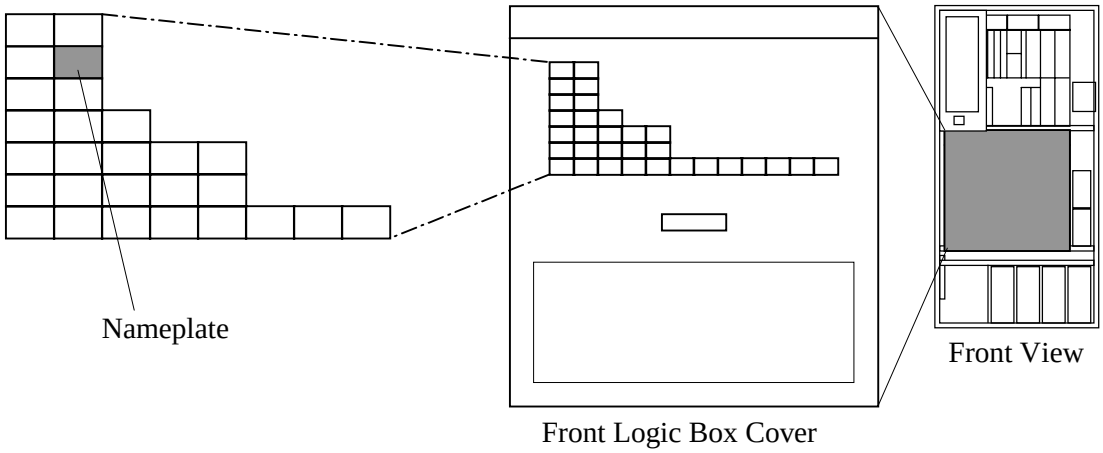

Fig. 3.5.1-6 Location of Nameplate

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3.5.2 Installation of Power Cable Kit for Single Phase/30A

Table 3.5.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1UCD	Power Cable Unit	3265665-A	1	
		Screw	SB408N	2	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		Nameplate (HDS)	2105902-131	1	RSD
			2105903-131/231		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
2	DKC-F460I-1ECD	Power Cable Unit	3265664-A	1	
		Screw	SB408N	2	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		Nameplate (HDS)	2105902-130	1	RSD
			2105903-130/230		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF

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1. Attach the Power Cable Unit.
   a. Attach the power cable unit to the bracket and fasten the six screws.

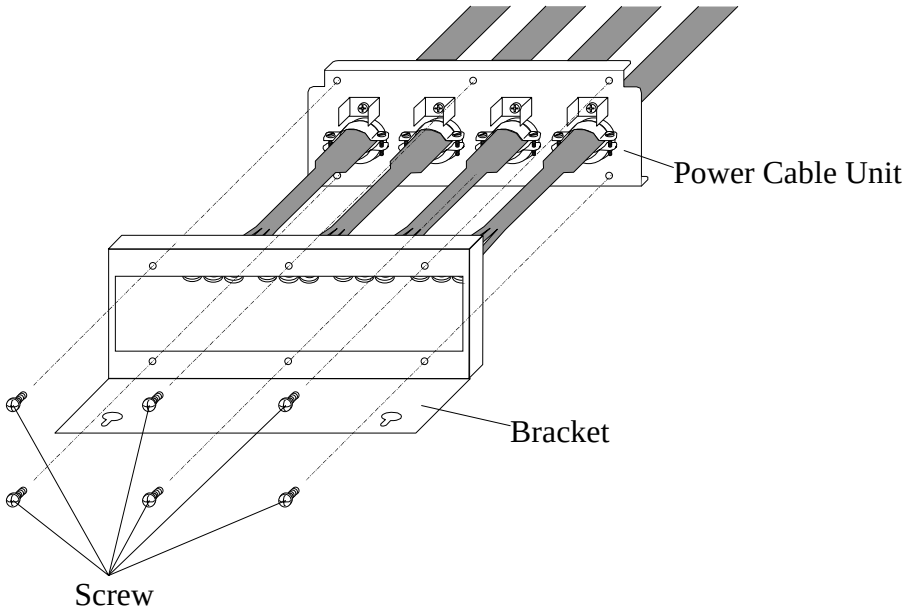

Fig. 3.5.2-1 Attachment of Power Cable Unit

   b. Attach the bracket with the two screws.
   c. Attach the cover with the two screws.

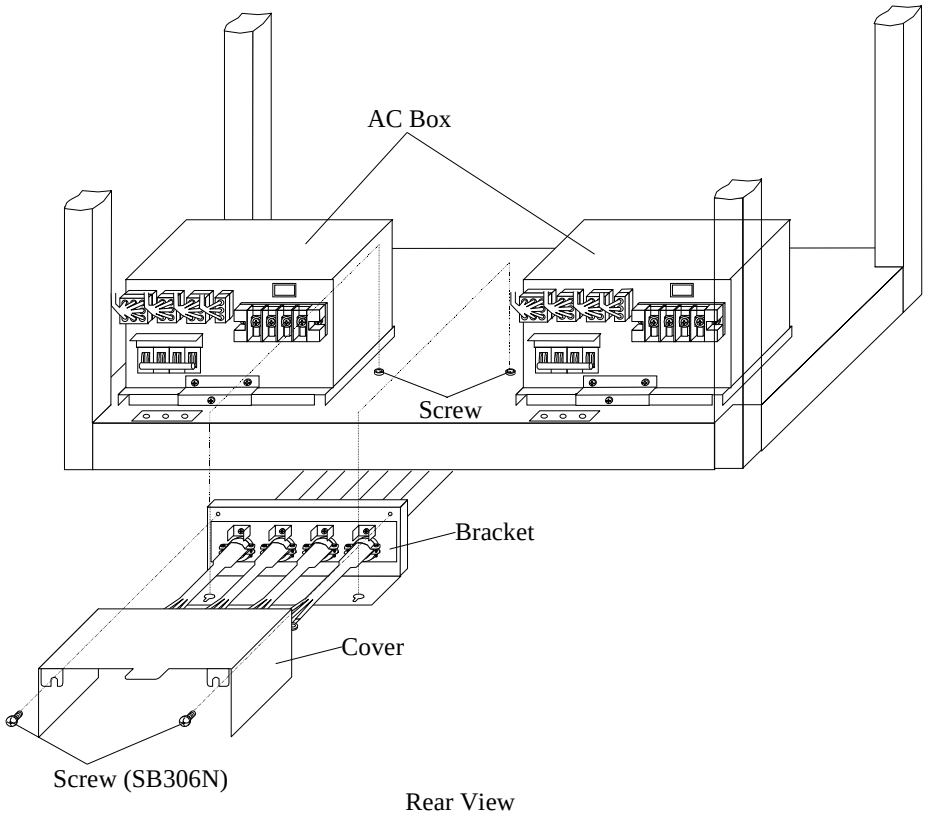

Fig. 3.5.2-2 Attachment of Power Cable

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d. Attach frame ground cable with the screw and lock washer.

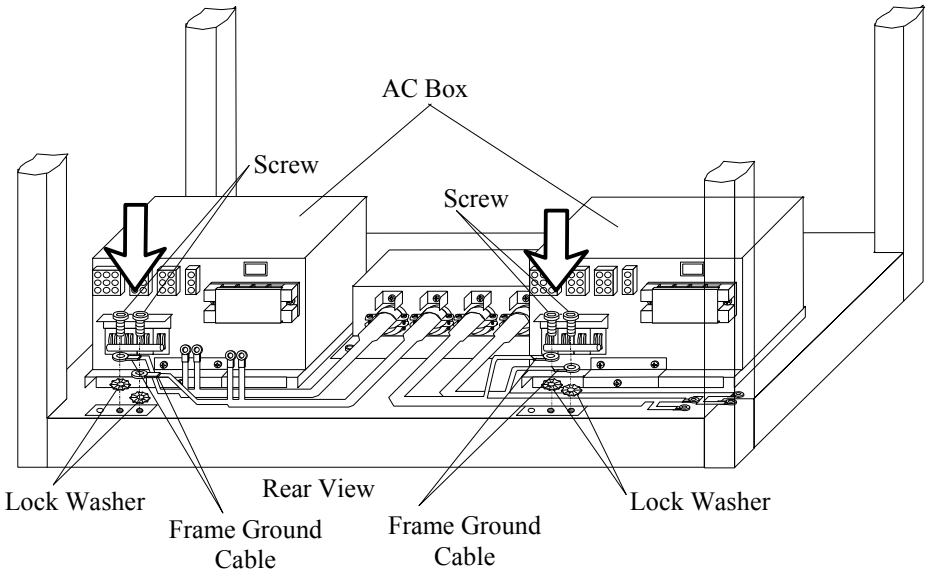

Fig. 3.5.2-3 Attachment of Frame Ground Cable

e. Remove the terminal block covers.

f. Connect the AC power cables to the terminal block and attach terminal block cover. Refer to Fig. 3.5.2-4, Fig. 3.5.2-5 and Table 3.5.2-2.

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

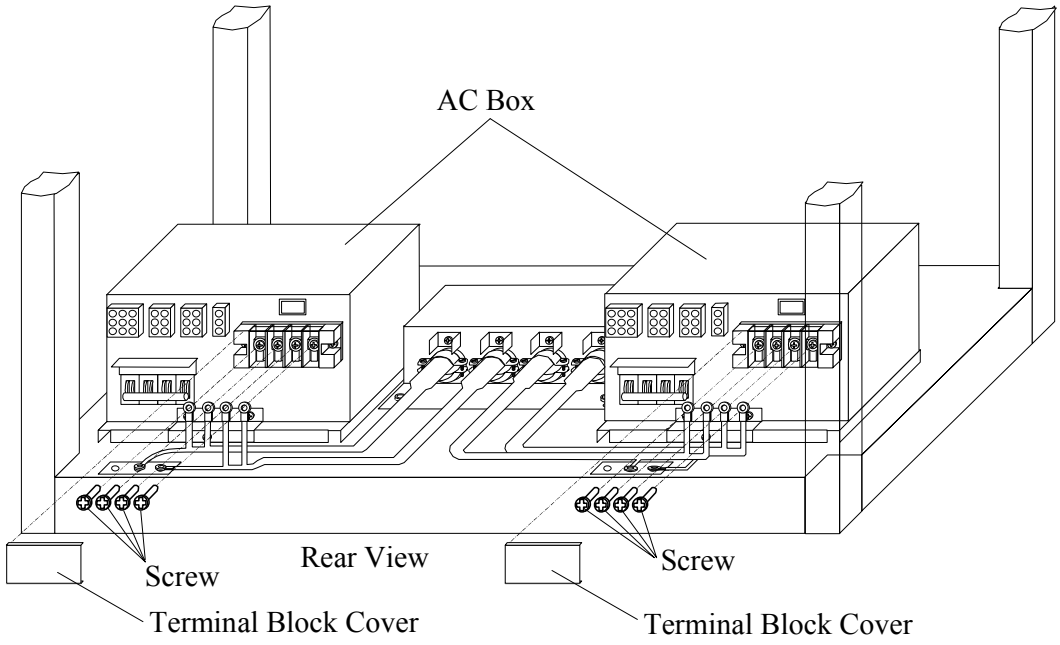

Fig. 3.5.2-4 Connection of AC Power Cable

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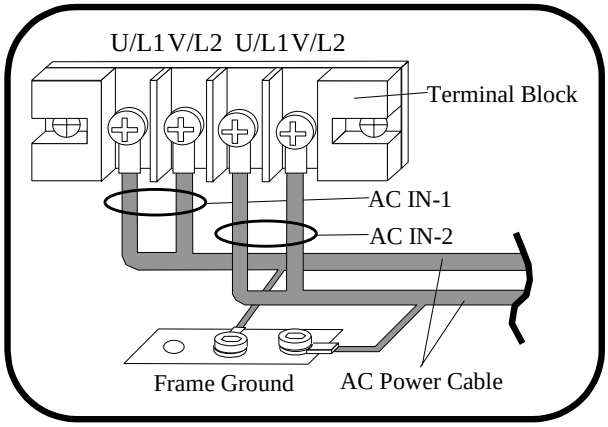
Table 3.5.2-2 AC Power Cable Conductors Numbers

No.	Model Number	Input Voltage	AC Power Cable Conductors	Remarks
1	DKC-F460I-1UCD	200-230V	6 conductors (U/L1, V/L2, FG) ×2	
2	DKC-F460I-1ECD	200-240V	6 conductors (U/L1, V/L2, FG) ×2	



DKC-F460I-1UCD/1ECD

Fig. 3.5.2-5 Connection of AC Power Cables to the Terminal Block

2. Attach the Nameplate.
   a. Attach the nameplate to the Front Logic Box cover.

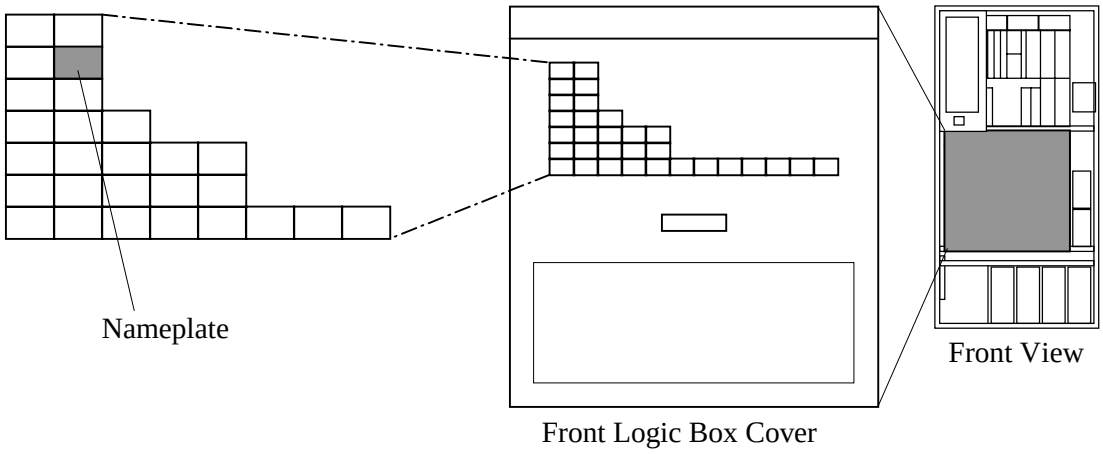


Fig. 3.5.2-6 Location of Nameplate

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3.6 Installation of Channel Adapter

3.6.1 Installation of Serial 8-port Adapter (DKC-F460I-8S/8SE)

Table 3.6.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8S	Serial 4-port Adapter PCB	5513983-A	2	Color of PCB lever: Blue
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-106	1	RSD
			2105903-106		HICAM
			2105903-206		HICEF
		Nameplate (HP)	2105902-206	1	RSD
			2105903-306		HICAM
			2105903-406		HICEF
2	DKC-F460I-8SE	Serial 4-port Adapter PCB	5513983-B	2	Color of PCB lever: Blue
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-144	1	RSD
			2105903-144		HICAM
			2105903-244		HICEF
		Nameplate (HP)	2105902-244	1	RSD
			2105903-344		HICAM
			2105903-444		HICEF

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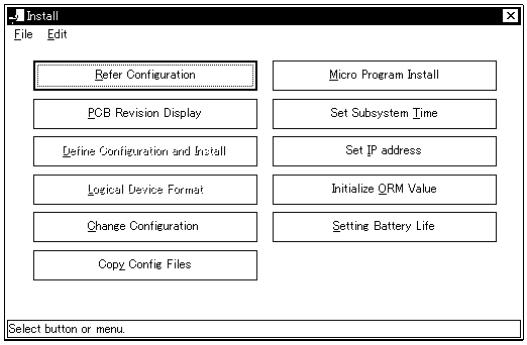
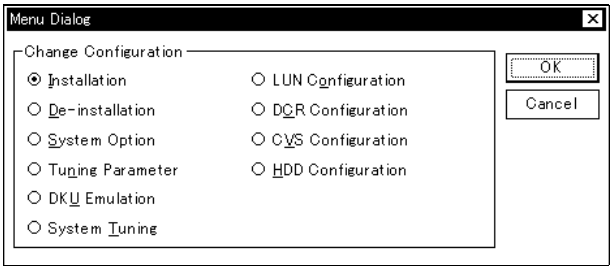
1. Setting up the New Device Structure Information

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

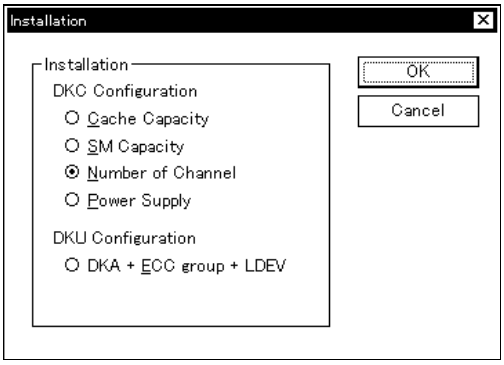
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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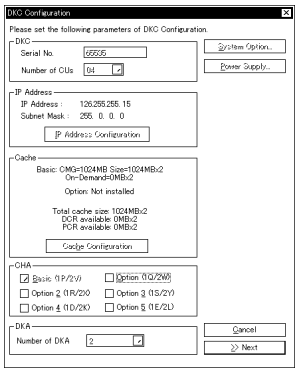
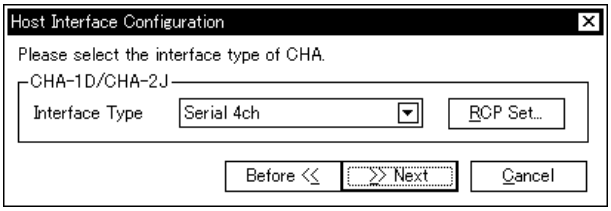
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].

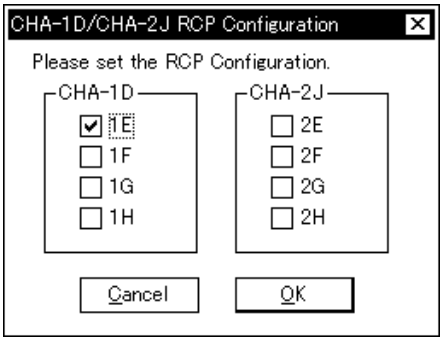


2-1. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Serial 4ch]. When setting the HRC/HORC, select (CL) [RCP Set...] and go to step 2-2.

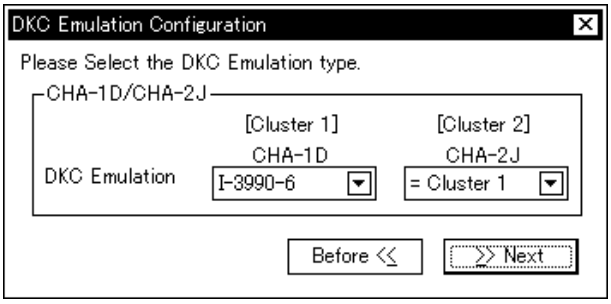


   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.

2-2. <Defining RCP port>
   When setting the HRC/HORC, select (CL) the item defined as an RCP port and select (CL) [OK].
   The routine returns to step 2-1.
   When [Cancel] is selected (CL), the routine returns to step 2-1.



3. <Defining DKC emulation type>
   Define the DKC emulation type in the "DKC Emulation Configuration" window.
   After the setting is completed, select (CL) [>>Next].



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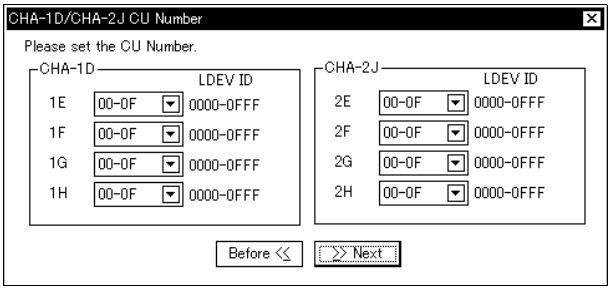
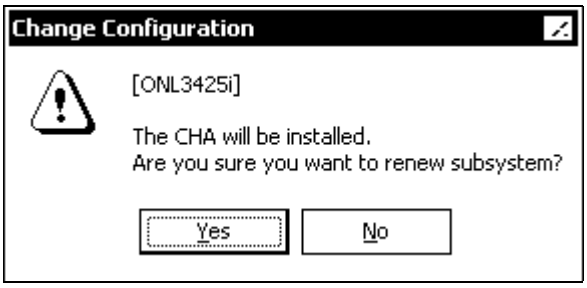
4. <Setting CU number>
   CU number is displayed.
   After the setting is completed, select (CL) [>>Next].



5. <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.”.

6. <Start installation>
   Select (CL) [Yes] in response to “The CHA will be installed. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST03-8S-20 step 3.



7. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

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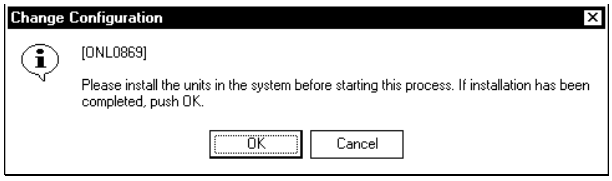
8. <Install CHA >
   "Upgrading of the CHA..."

9. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Serial 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 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.6.1-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.6.1-2.
c. Fasten the two screws referring to Fig. 3.6.1-2.

Table 3.6.1-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 3 serial 8-port adapters can be installed in the subsystem.

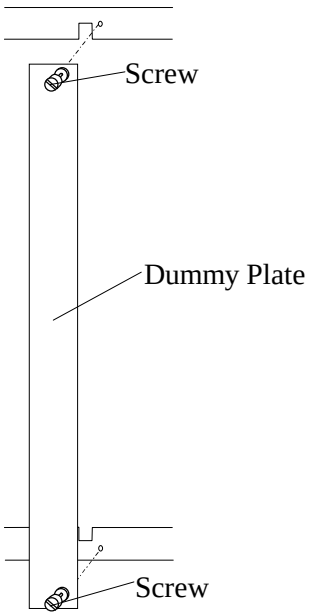

Fig. 3.6.1-1 Removal of Dummy Plate

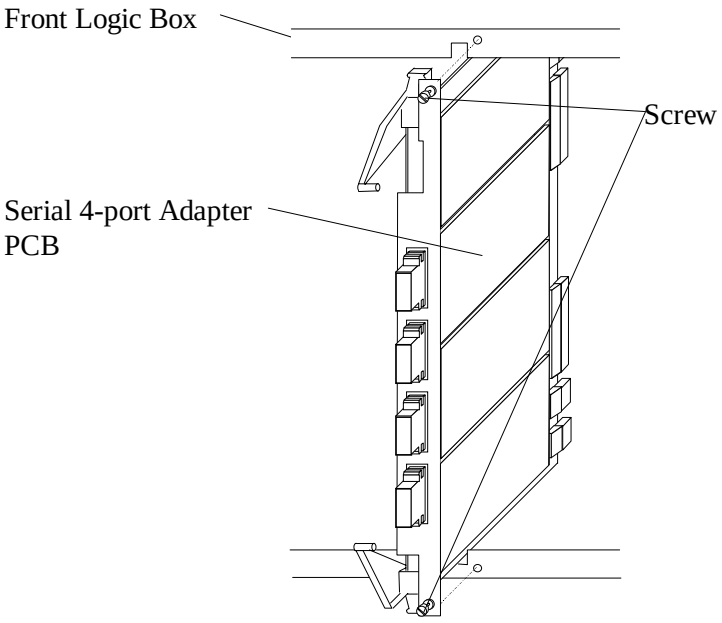

Fig. 3.6.1-2 Insertion of PCB

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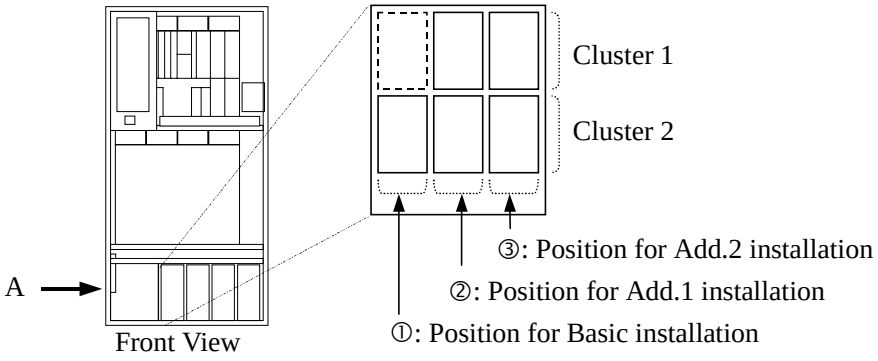
3-2 Remove the bracket and fibre cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.6.1-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

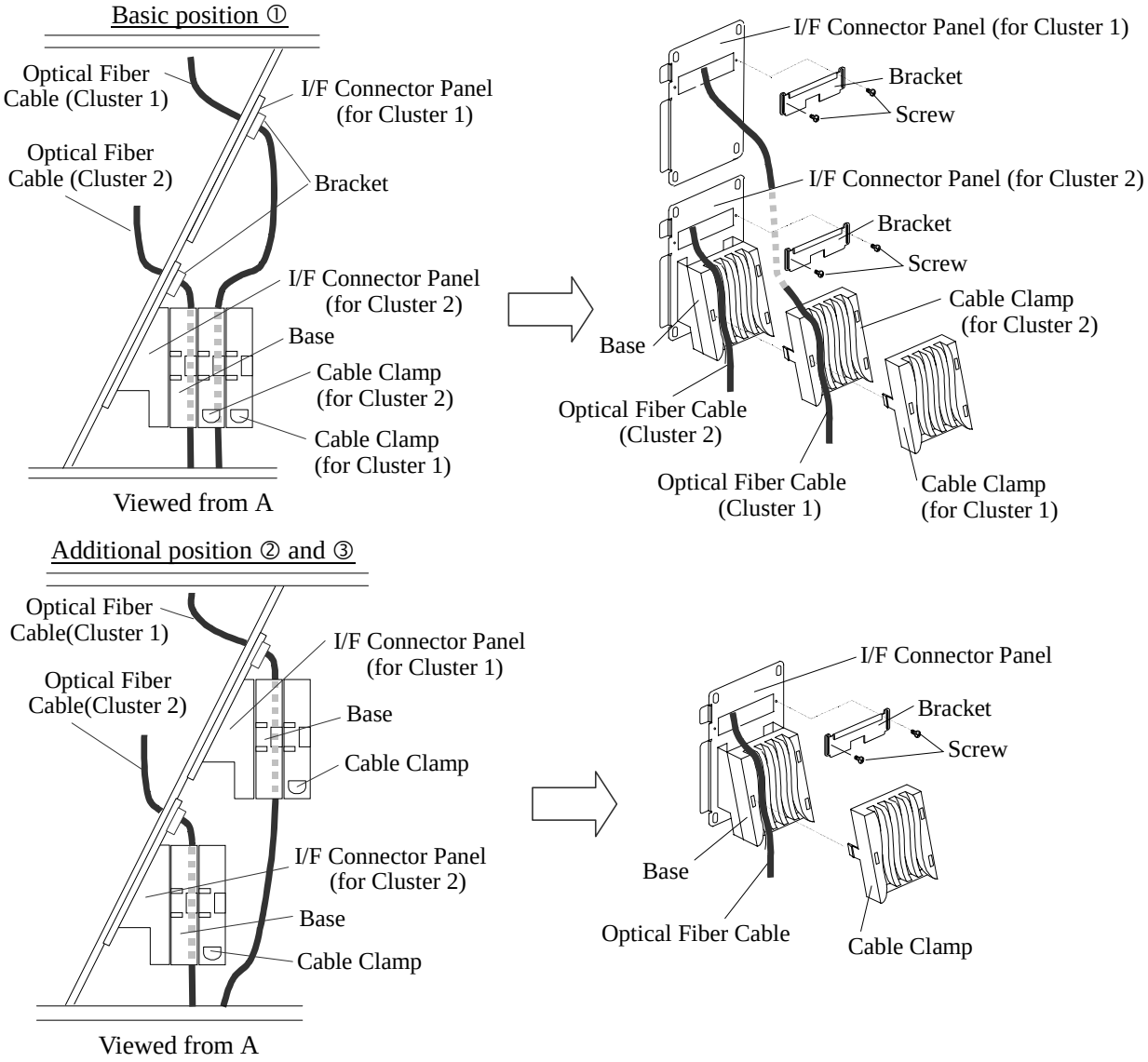


Fig. 3.6.1-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber 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.)

3-4 Connection of the optical fibre cables

a. Connect the optical fiber cable to the PCB referring to Fig. 3.6.1-4.
b. Fix the cable with Holder.
c. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.6.1-3.

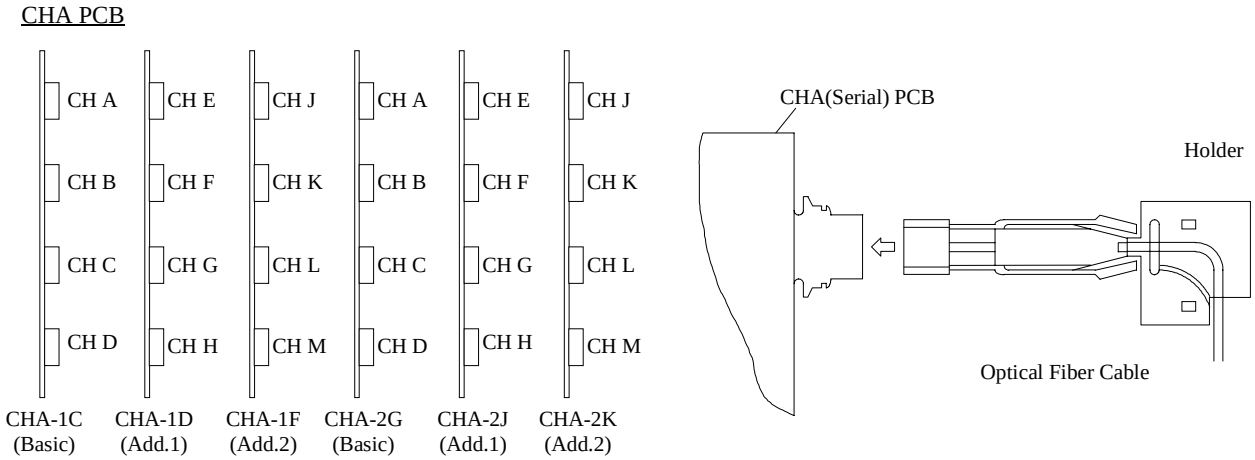

Fig. 3.6.1-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.6.1-5.

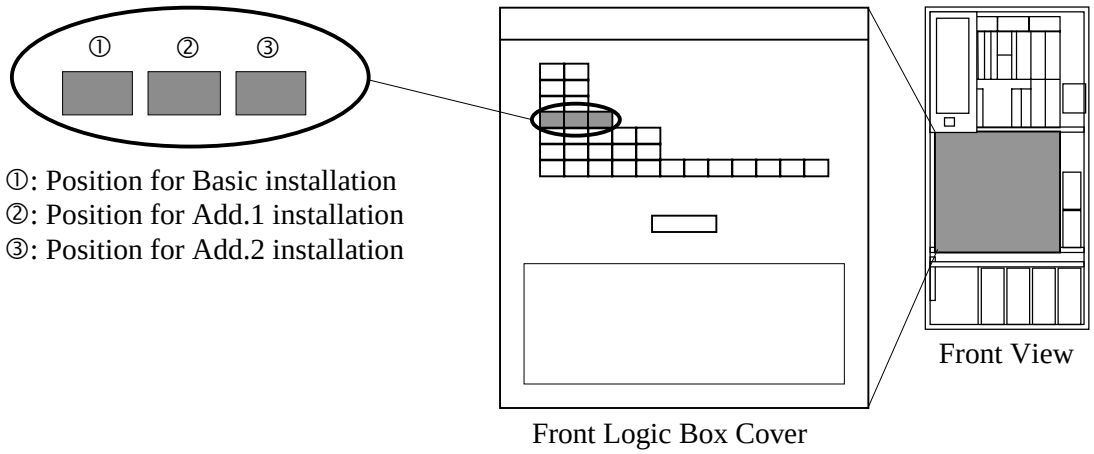

Fig. 3.6.1-5 Attachment of Nameplate

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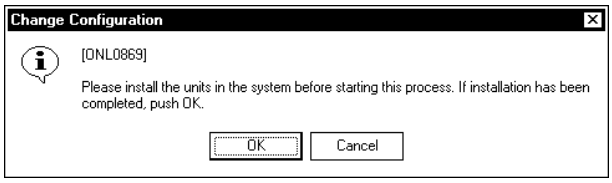
4. SVP post procedure

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, push OK.”.



When [Cancel] is selected (CL), returns to INST03-8S-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. (INST02-630)

---

3. <DKU PATH INLINE>
When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

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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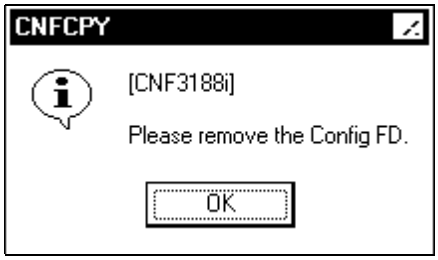
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

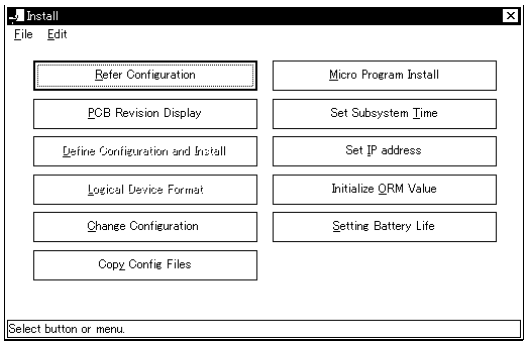
6.

When this procedure is completed, the message "Please remove the Config FD." 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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3.6.2 Installation of Fibre 4/8-port Adapter (DKC-F460I-8GSE/4HSE/8HSE/8HLE/8GSF/4HSF/8HSF/8HLF)

Table 3.6.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8GSE	Fibre 4-port Adapter PCB	5513980-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-107	1	RSD
			2105903-107		HICAM
			2105903-207		HICEF
		Nameplate (HP)	2105902-207	1	RSD
			2105903-307		HICAM
			2105903-407		HICEF
2	DKC-F460I-4HSE (Short Wavelength)	Fibre 2-port Adapter PCB	5513981-C	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-108	1	RSD
			2105903-108		HICAM
			2105903-208		HICEF
		Nameplate (HP)	2105902-208	1	RSD
			2105903-308		HICAM
			2105903-408		HICEF
3	DKC-F460I-8HSE (Short Wavelength)	Fibre 4-port Adapter PCB	5513981-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-109	1	RSD
			2105903-109		HICAM
			2105903-209		HICEF
		Nameplate (HP)	2105902-209	1	RSD
			2105903-309		HICAM
			2105903-409		HICEF
4	DKC-F460I-8HLE (Long Wavelength)	Fibre 4-port Adapter PCB	5513981-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-110	1	RSD
			2105903-110		HICAM
			2105903-210		HICEF

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
5	DKC-F460I-8GSF (DB Validator support)	Fibre 4-port Adapter PCB	5518079-C	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-136	1	RSD
			2105903-136		HICAM
			2105903-236		HICEF
		Nameplate (HP)	2105902-236	1	RSD
			2105903-336		HICAM
			2105903-436		HICEF
6	DKC-F460I-4HSF (Short Wavelength, DB Validator support)	Fibre 2-port Adapter PCB	5518079-D	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-137	1	RSD
			2105903-137		HICAM
			2105903-237		HICEF
		Nameplate (HP)	2105902-237	1	RSD
			2105903-337		HICAM
			2105903-437		HICEF
7	DKC-F460I-8HSF (Short Wavelength, DB Validator support)	Fibre 4-port Adapter PCB	5518079-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-138	1	RSD
			2105903-138		HICAM
			2105903-238		HICEF
		Nameplate (HP)	2105902-238	1	RSD
			2105903-338		HICAM
			2105903-438		HICEF
8	DKC-F460I-8HLF (Long Wavelength, DB Validator support)	Fibre 4-port Adapter PCB	5518079-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-139	1	RSD
			2105903-139		HICAM
			2105903-239		HICEF

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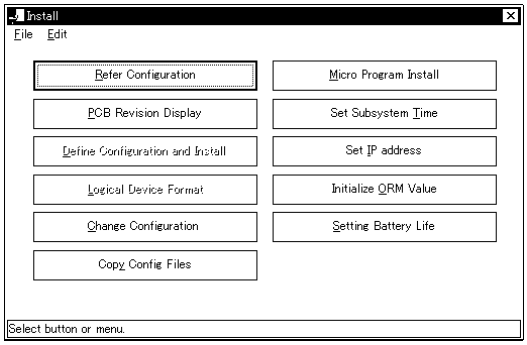
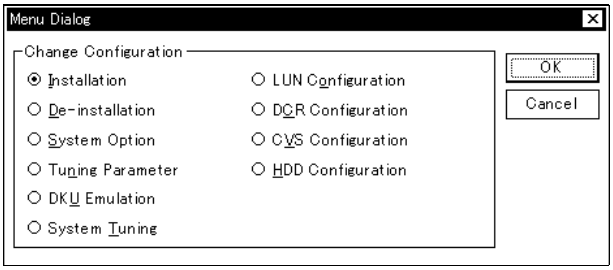
1. Setting up the New Device Structure Information

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

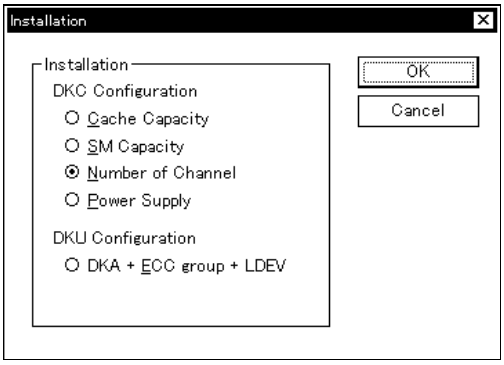
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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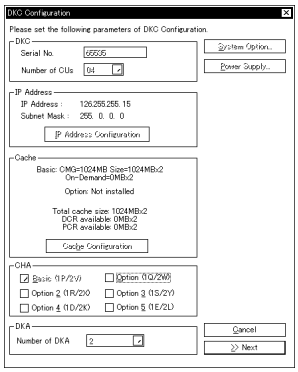
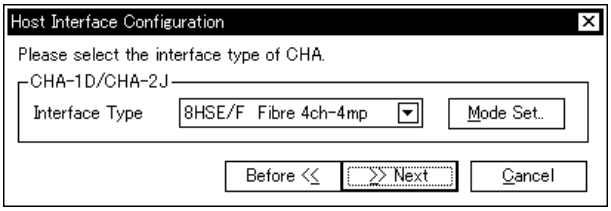
2. SVP pre procedure

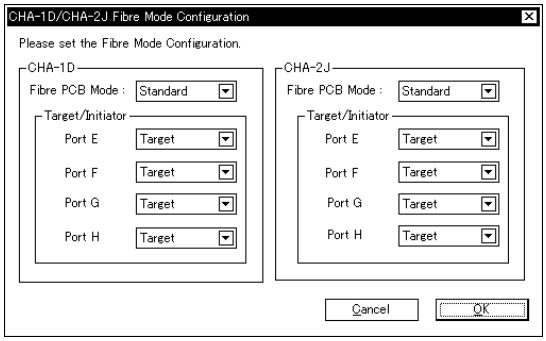
1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].



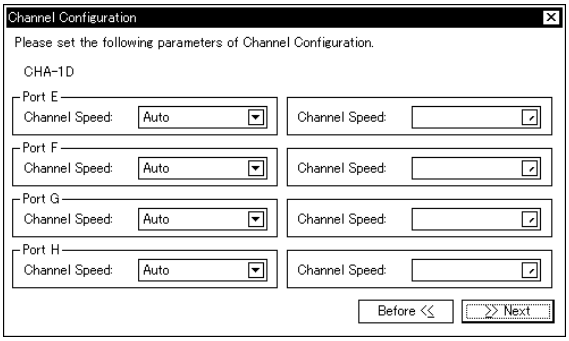
2-1. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Fibre *]. When setting the HRC/HORC, select (CL) [Mode Set...] and go to step 2-2.
   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.



2-2. <Defining Fibre Mode>
   Select (CL) the item defined as an Fibre Mode (set the 'Target/Initiator' only when setting the 'Fibre PCB Mode' or HRC/HORC) and select (CL) [OK].
   The routine returns to step 2-1.
   When [Cancel] is selected (CL), the routine returns to step 2-1.



3. <Setting Channel>
   Set the 'Channel Speed'.
   After setting up, select (CL) [>>Next].



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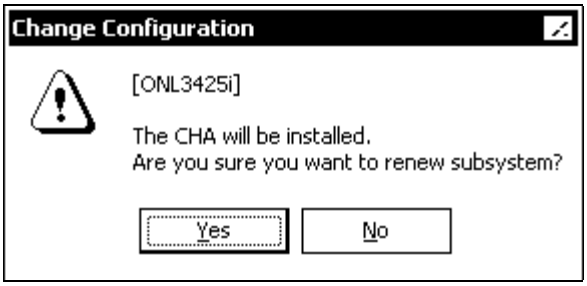
4. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

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

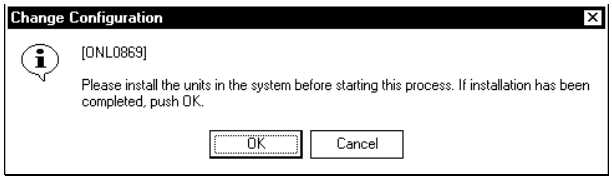


5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   "Upgrading of the CHA..."

7. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Fibre 4/8-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 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.6.2-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.6.2-2.
c. Fasten the two screws referring to Fig. 3.6.2-2.

Table 3.6.2-1 Inserting Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 3 Fibre 4/8-port adapters can be installed in the subsystem.

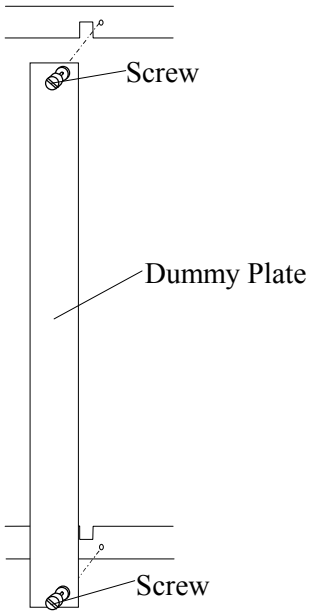

Fig. 3.6.2-1 Removal of Dummy Plate

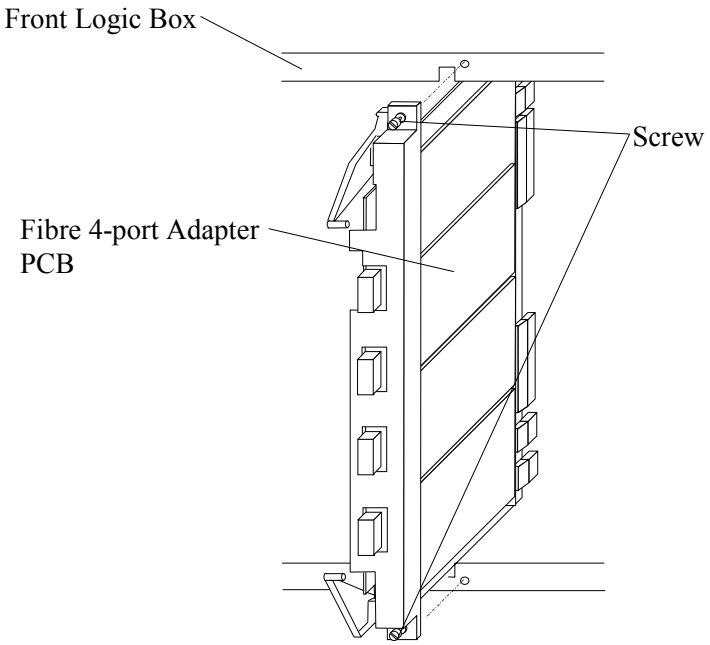

Fig. 3.6.2-2 Insertion of PCB

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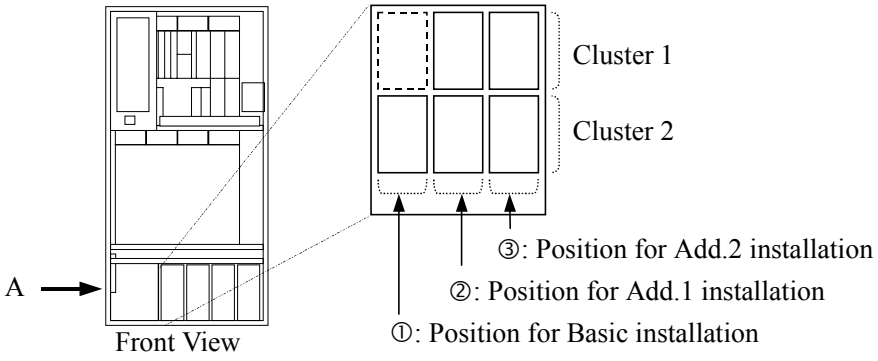
3-2 Remove the bracket and fibre cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.6.2-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

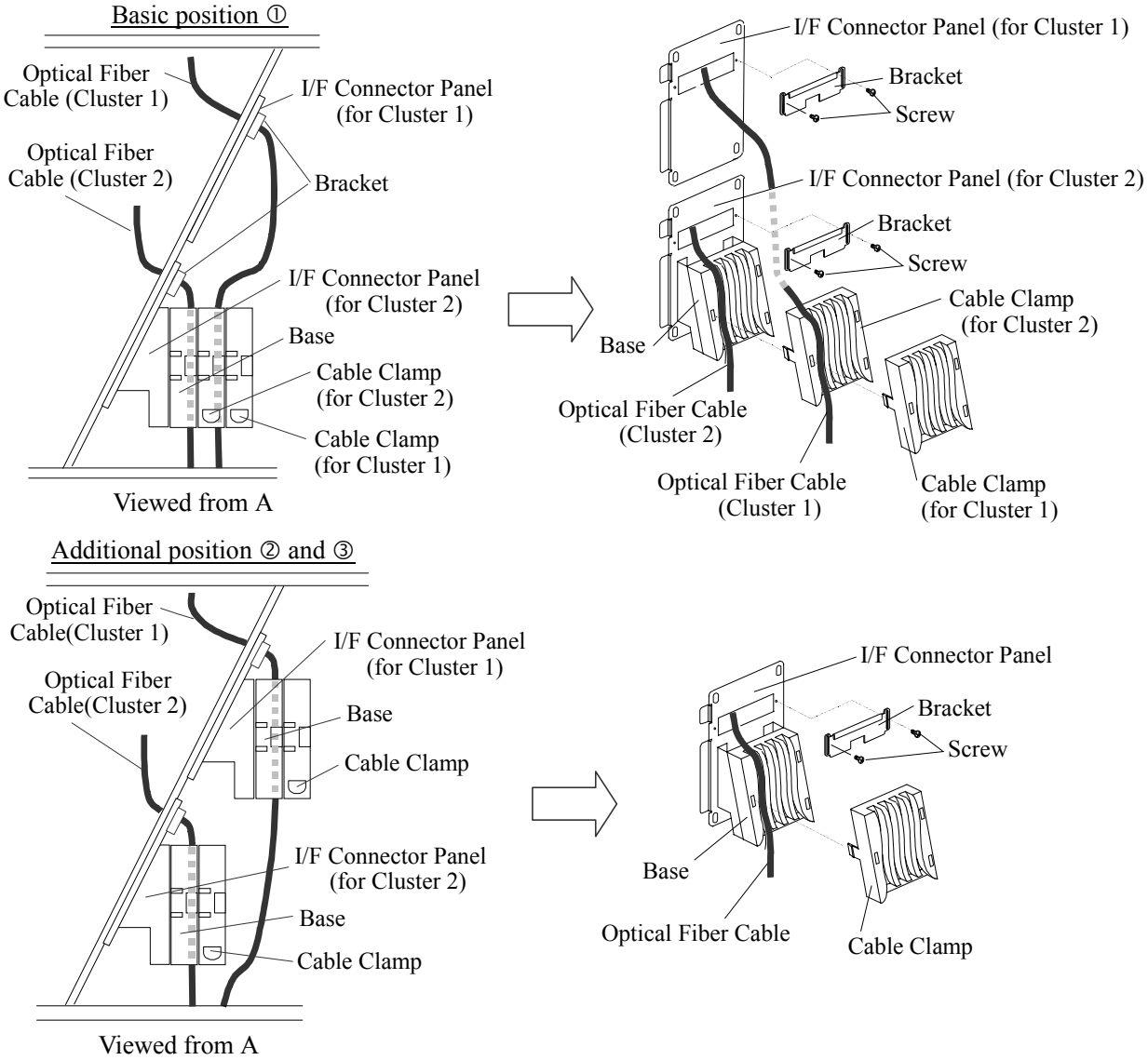


Fig. 3.6.2-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber 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.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.6.2-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.6.2-3.

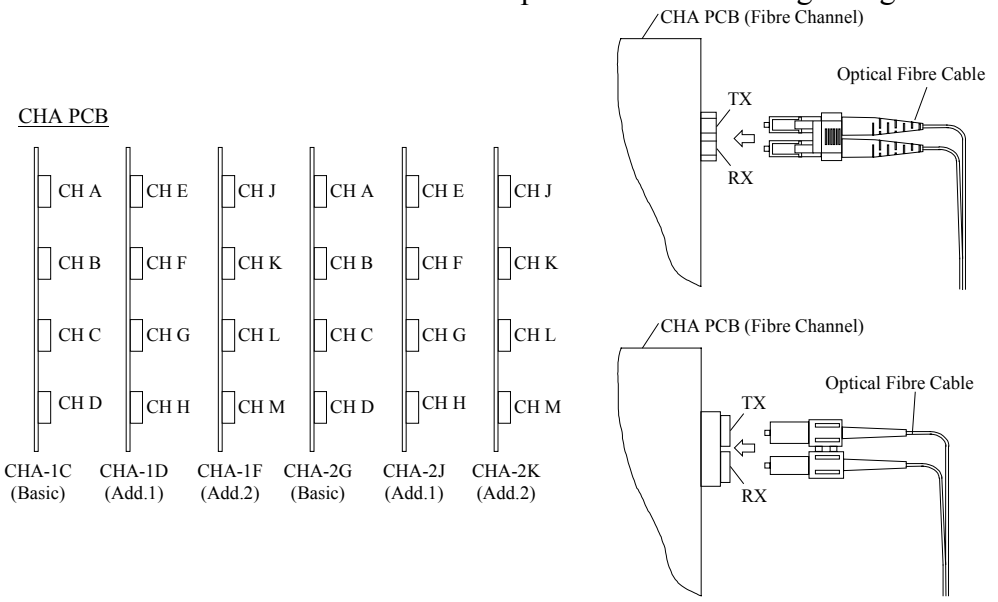

Fig. 3.6.2-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.6.2-5.

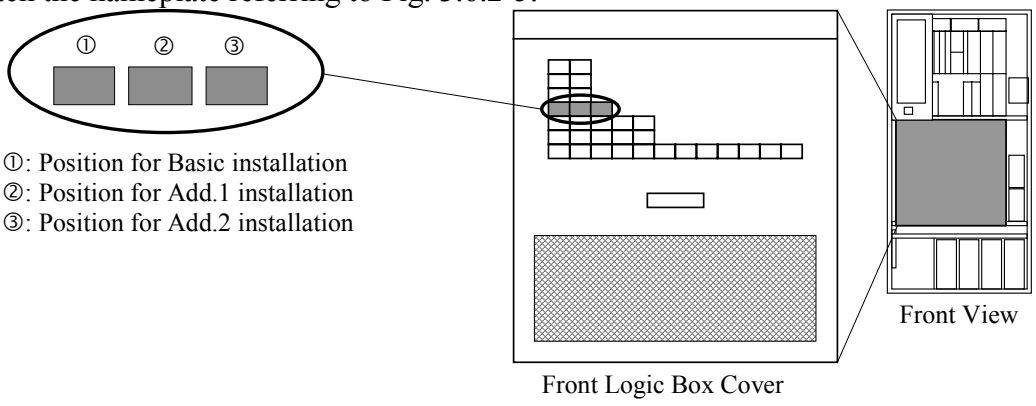

Fig. 3.6.2-5 Attachment of Nameplate

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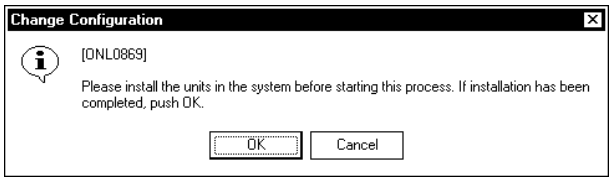
4. SVP post procedure

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, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-FIB-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. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

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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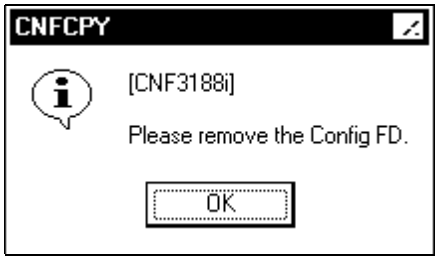
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

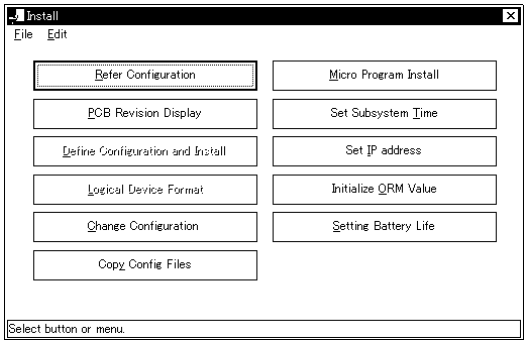
6.

When this procedure is completed, the message "Please remove the Config FD." 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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3.6.3 Installation of Mainframe Fibre 8-port Adapter (DKC-F460I-8MS/8ML)

Table 3.6.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8MS (Short Wavelength)	Fibre 4-port Adapter PCB	5513984-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-112	1	RSD
			2105903-112		HICAM
			2105903-212		HICEF
2	DKC-F460I-8ML (Long Wavelength)	Fibre 4-port Adapter PCB	5513984-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-113	1	RSD
			2105903-113		HICAM
			2105903-213		HICEF

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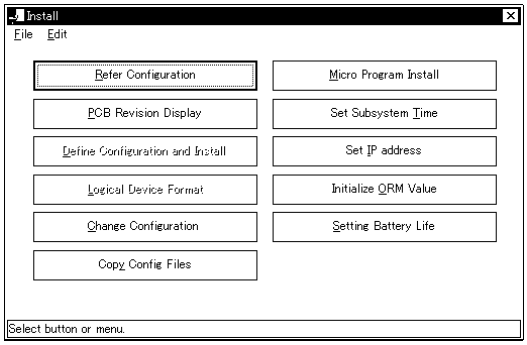
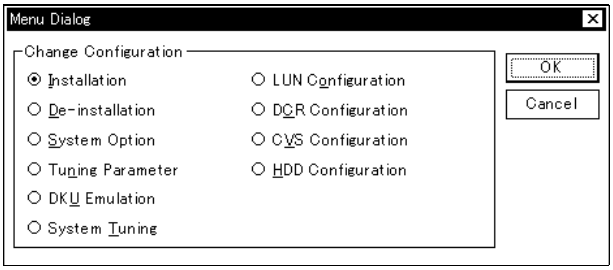
1. Setting up the New Device Structure Information

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

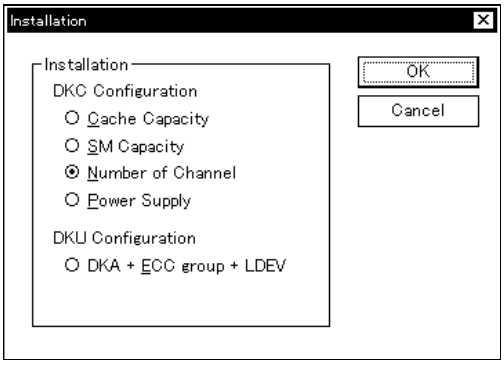
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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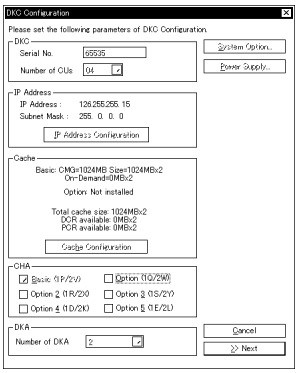
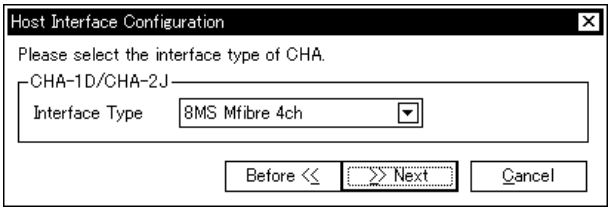
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Make sure that the entered item is correct and select (CL) [>>Next].

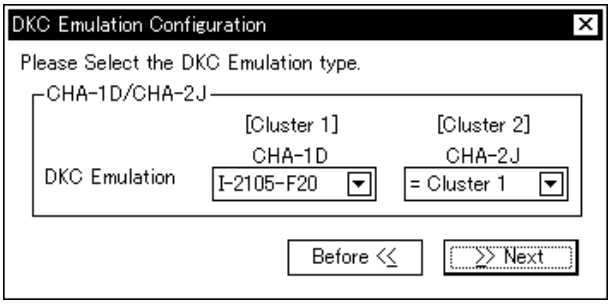


2. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Mfibre *].



   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.

3. <Defining DKC emulation type>
   Define the DKC emulation type in the "DKC Emulation Configuration" window.
   After the setting is completed, select (CL) [>>Next].



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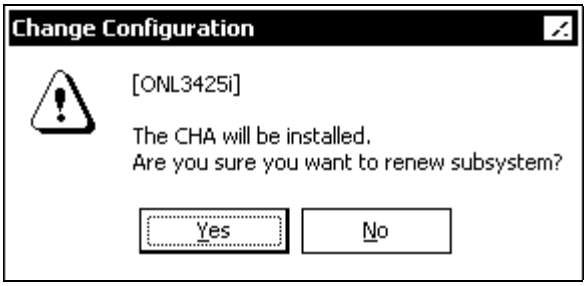
4. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

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

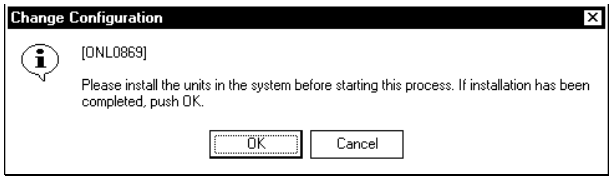


5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   "Upgrading of the CHA..."

7. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK.".
   is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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Blank Sheet

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3. Installation Procedure of Mainframe Fibre 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 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.6.3-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.6.3-2.
c. Fasten the two screws referring to Fig. 3.6.3-2.

Table 3.6.3-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 3 Mainframe Fibre 8-port adapters can be installed in the subsystem.

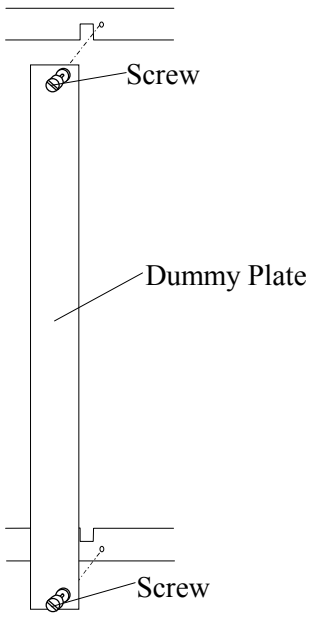

Fig. 3.6.3-1 Removal of Dummy Plate

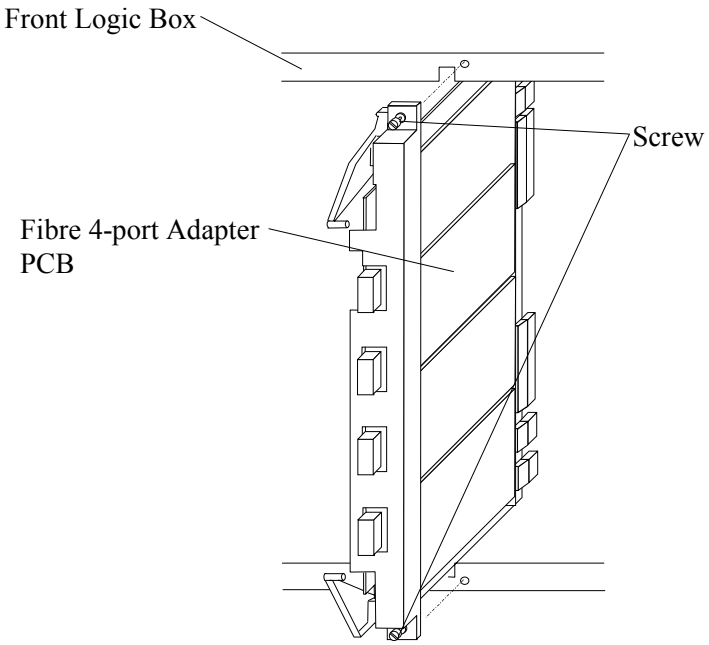

Fig. 3.6.3-2 Insertion of PCB

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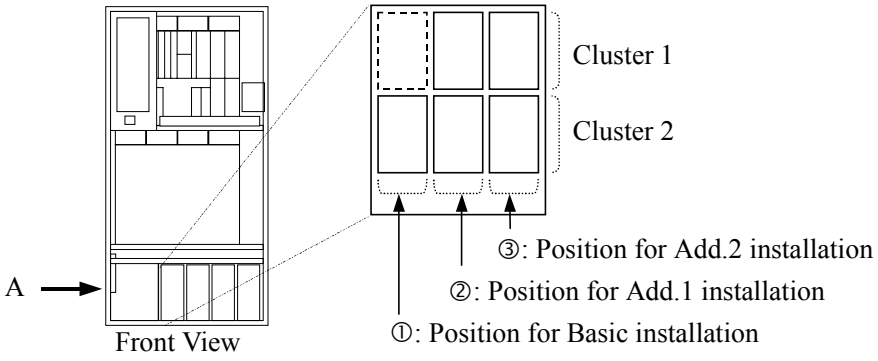
3-2 Remove the strain relief and fibre cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.6.3-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

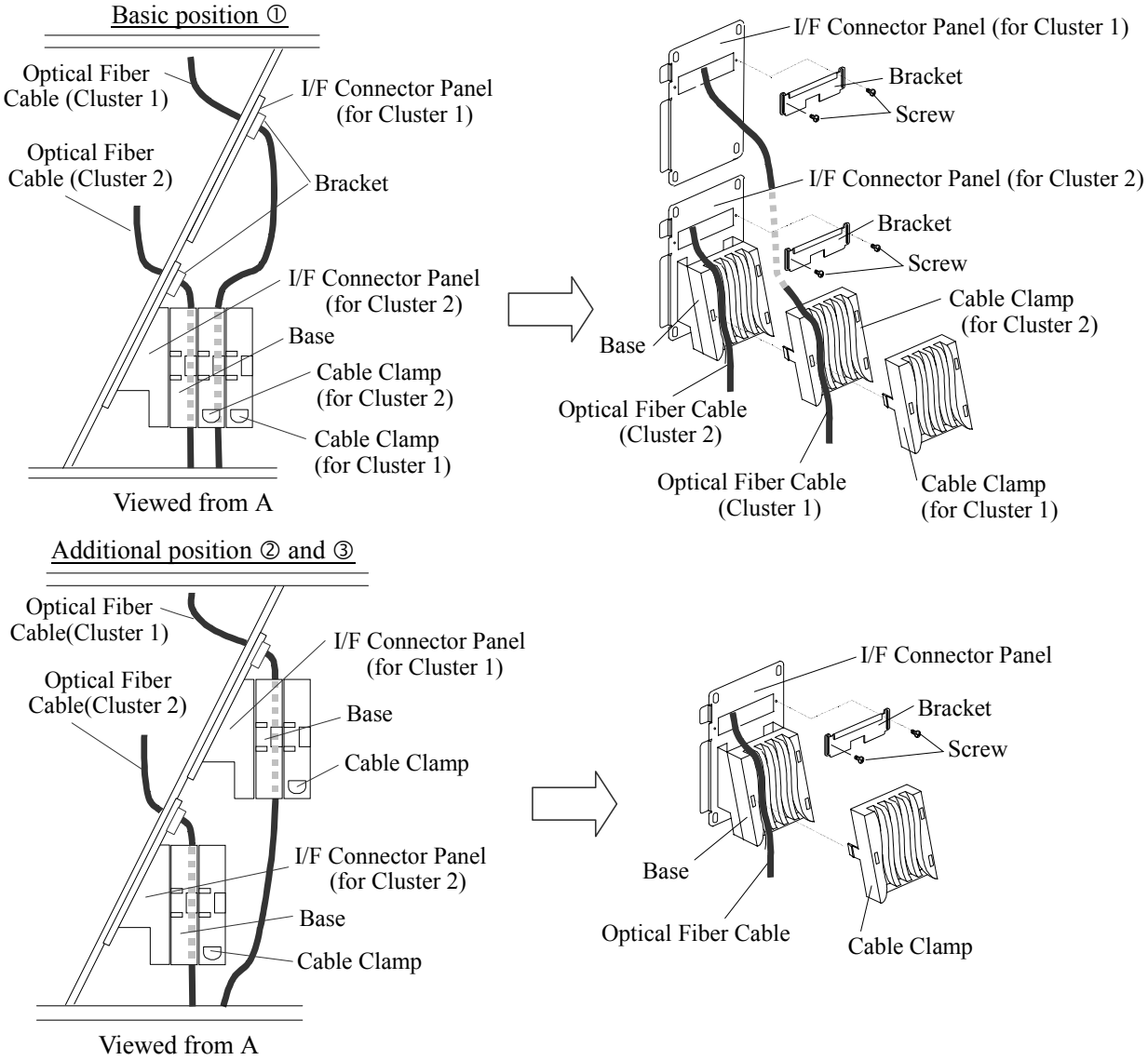


Fig. 3.6.3-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber 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.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.6.3-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.6.3-3.

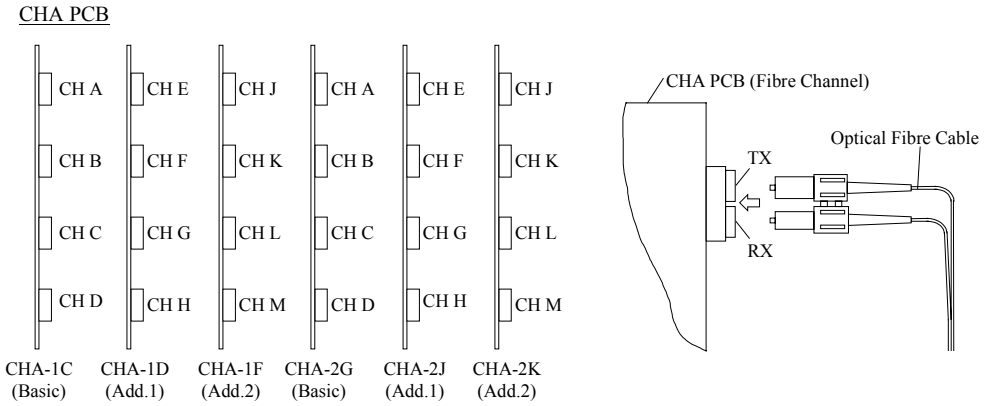

Fig. 3.6.3-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.6.3-5.

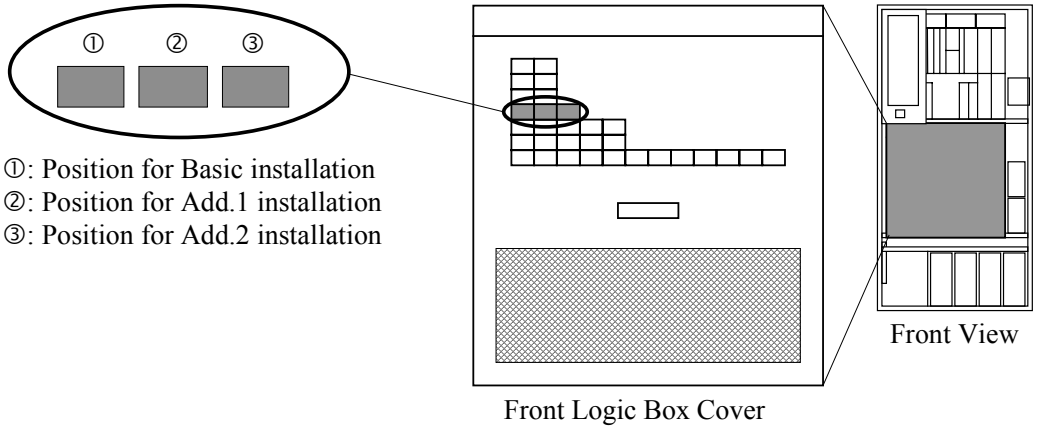

Fig. 3.6.3-5 Attachment of Nameplate

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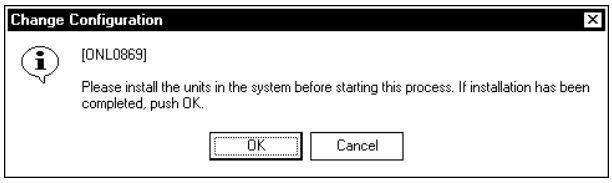
4. SVP post procedure

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, push OK.”.



When [Cancel] is selected (CL), returns to INST03-MF-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. (INST02-630)

---

3. <DKU PATH INLINE>
When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

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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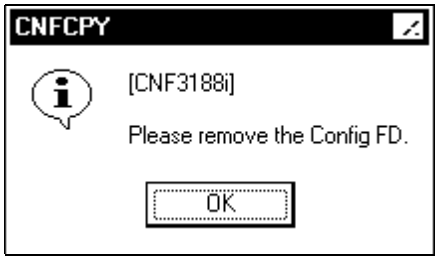
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

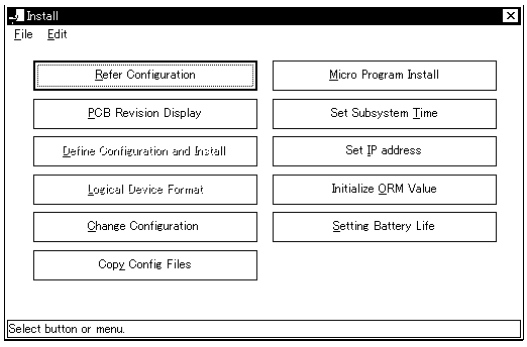
6.

When this procedure is completed, the message "Please remove the Config FD." 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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3.6.4 Installation of Fibre 16-port Adapter for 1-2Gbps Short Wavelength (DKC-F460I-16HSF)

Table 3.6.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-16HSF (DB Validator support)	Fibre 8-port Adapter PCB	5518079-E	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	4	
		Nameplate (HDS)	2105902-140	1	RSD
			2105903-140		HICAM
			2105903-240		HICEF
		Nameplate (HP)	2105902-240	1	RSD
			2105903-340		HICAM
			2105903-440		HICEF

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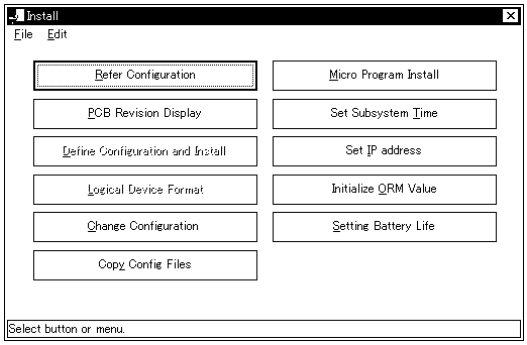
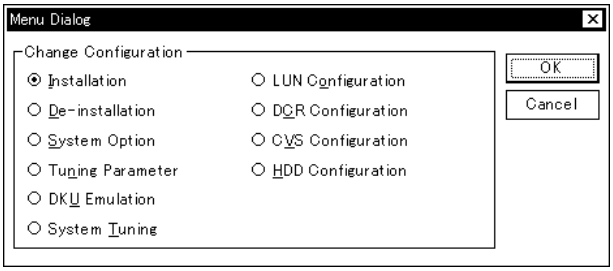
1. Setting up the New Device Structure Information

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

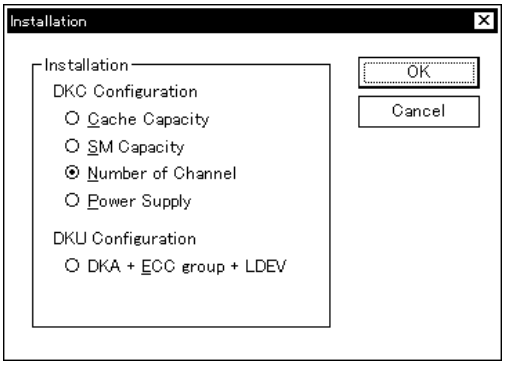
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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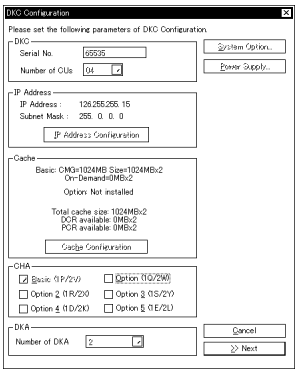
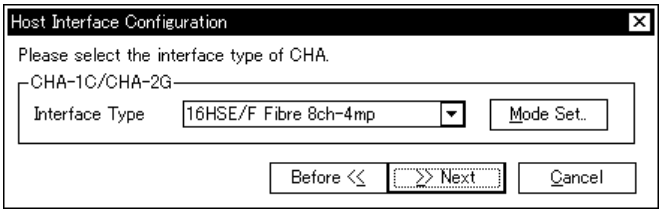
2. SVP pre procedure

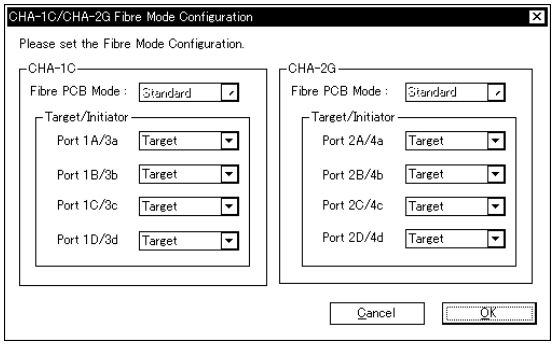
1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Make sure that the entered item is correct and select (CL) [>>Next].



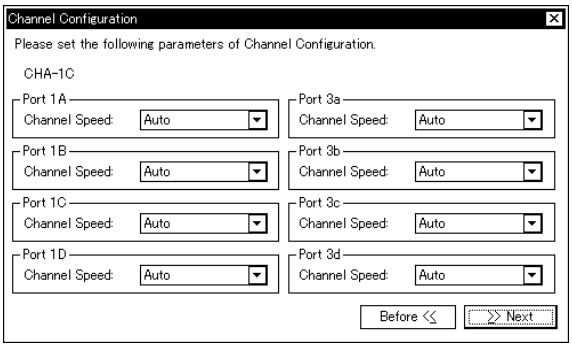
2-1. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [Fibre *]. When setting the HRC/HORC, select (CL) [Mode Set...] and go to step 2-2.
   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.



2-2. <Defining Fibre Mode>
   Select (CL) the item defined as a Fibre Mode (set the 'Target/Initiator' only when setting the HRC/HORC) and select (CL) [OK].
   The routine returns to step 2-1.
   When [Cancel] is selected (CL), the routine returns to step 2-1.
   Note1: 'Target/Initiator' setup is changed every 2 port.
   Note2: Refer to OPEN14-20 for the Port name.



3. <Setting Channel>
   Set the 'Channel Speed'.
   After setting up, select (CL) [>>Next].



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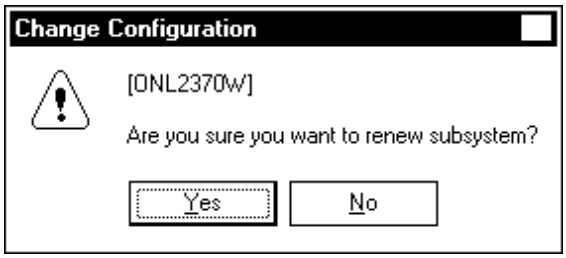
4. <Start installation>
   Select (CL) [Yes] in response to “Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST03-16F-20 step 3.

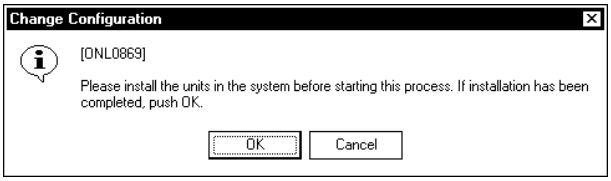


5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   “Upgrading of the CHA...”

7. <Check that hardware components are installed>
   “Please install the units in the system before starting this process. If installation has been completed, push OK.” is displayed.

   Caution: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of Fibre 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 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.6.4-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.6.4-2.
c. Fasten the two screws referring to Fig. 3.6.4-2.

Table 3.6.4-1 Inserting Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 3 Fibre 16-port adapters can be installed in the subsystem.

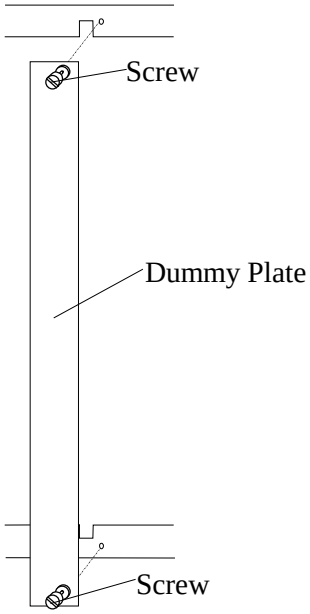

Fig. 3.6.4-1 Removal of Dummy Plate

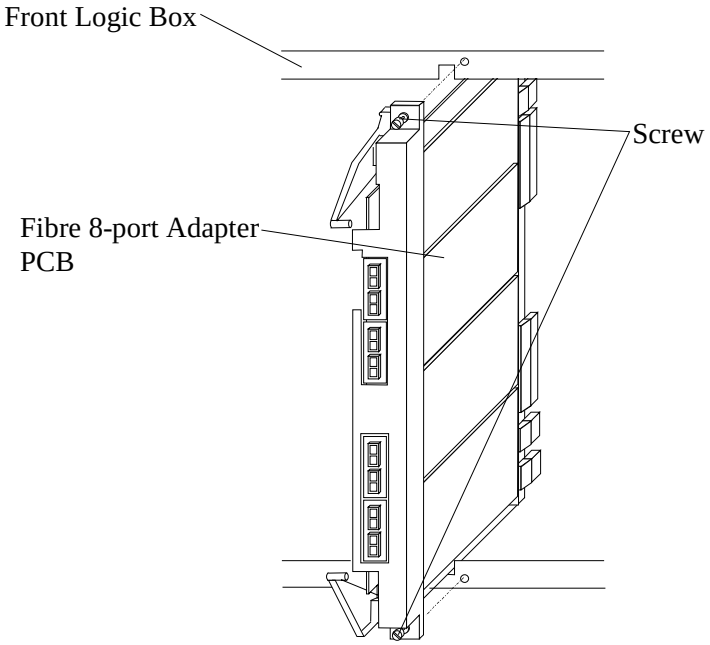

Fig. 3.6.4-2 Insertion of PCB

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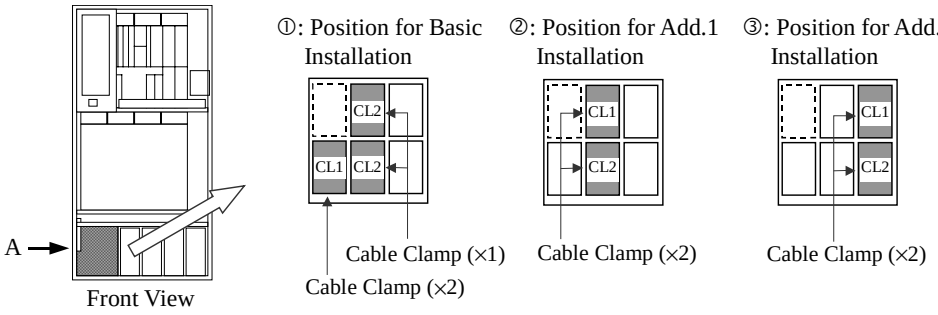
3-2 Remove the bracket and fibre cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.6.4-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

① Position for Basic Installation

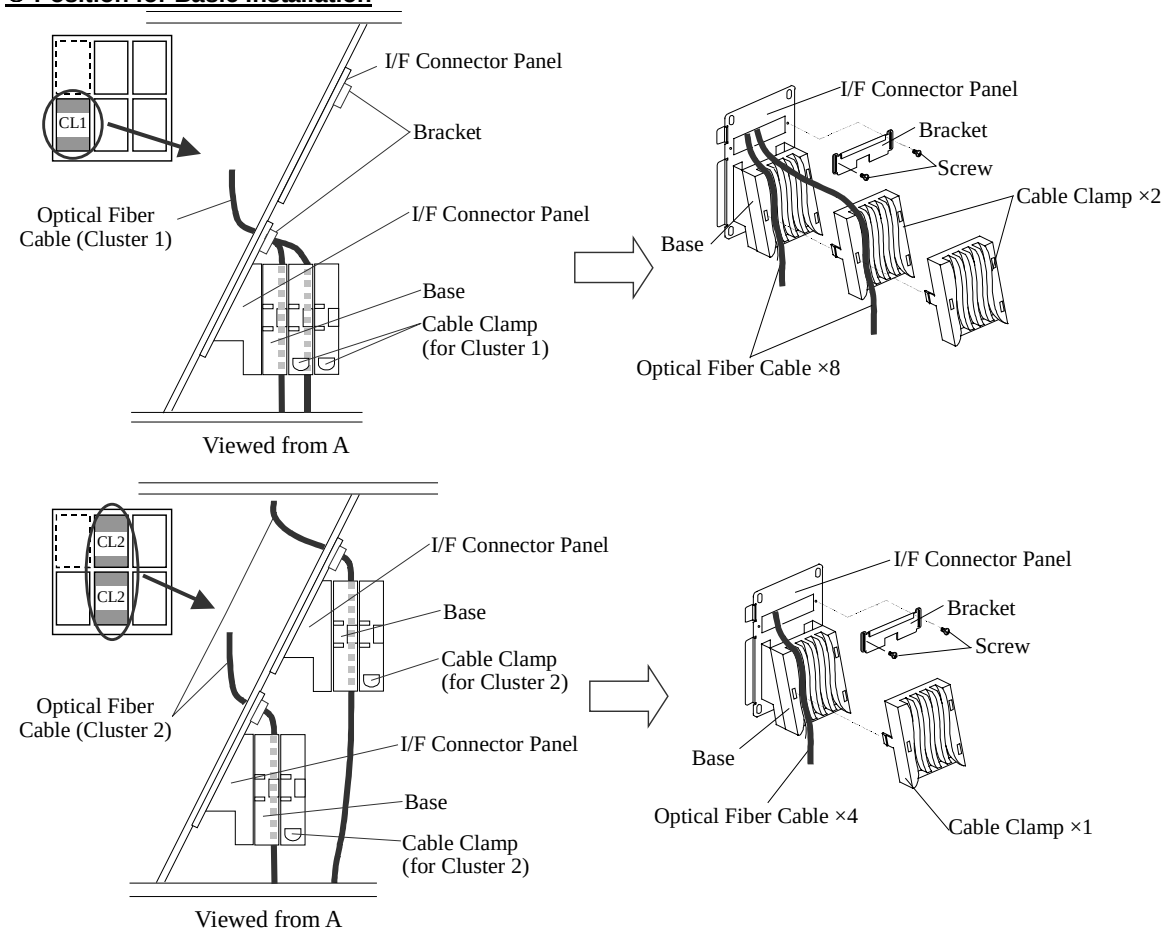


Fig. 3.6.4-3 Installation of Optical Fiber Cable(1/2)

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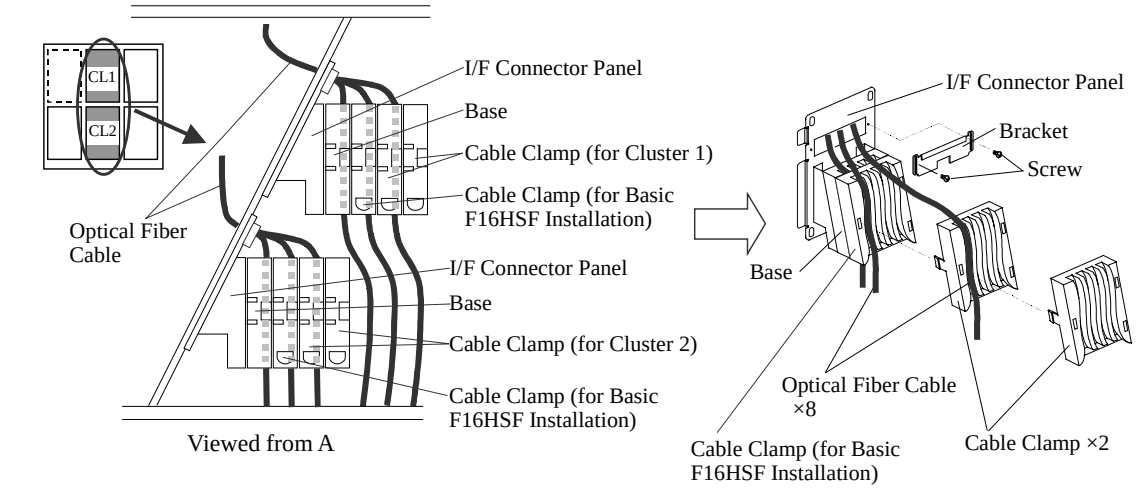
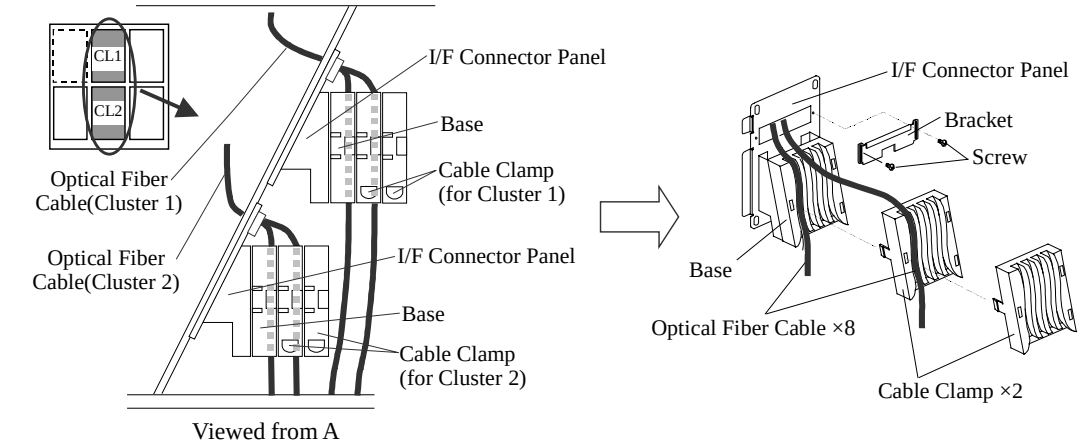
② Position for Add.1 Installation

When the basic DKC-F460I-16HSF is installed



When the basic DKC-F460I-16HSF is not installed



③ Position for Add.2 Installation

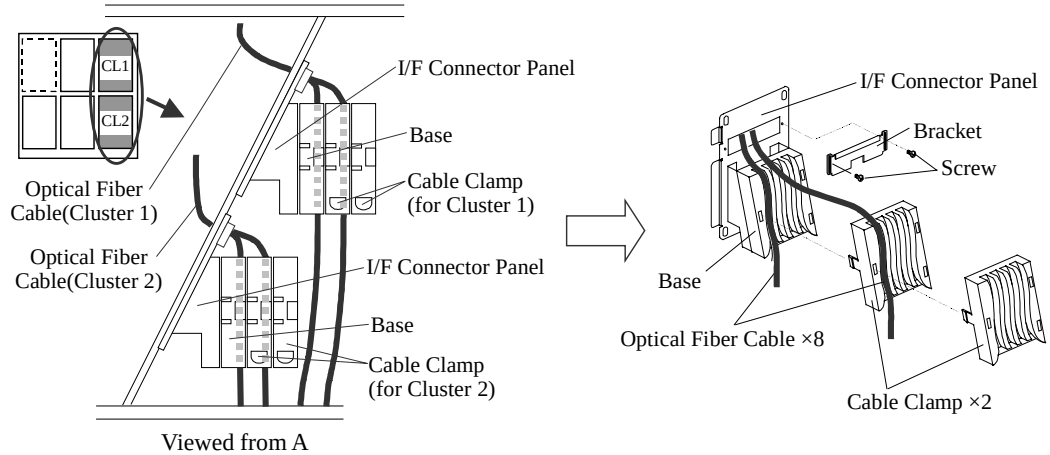


Fig. 3.6.4-3 Installation of Optical Fiber Cable(2/2)

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3-3 Cleaning the fiber cable connectors.

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

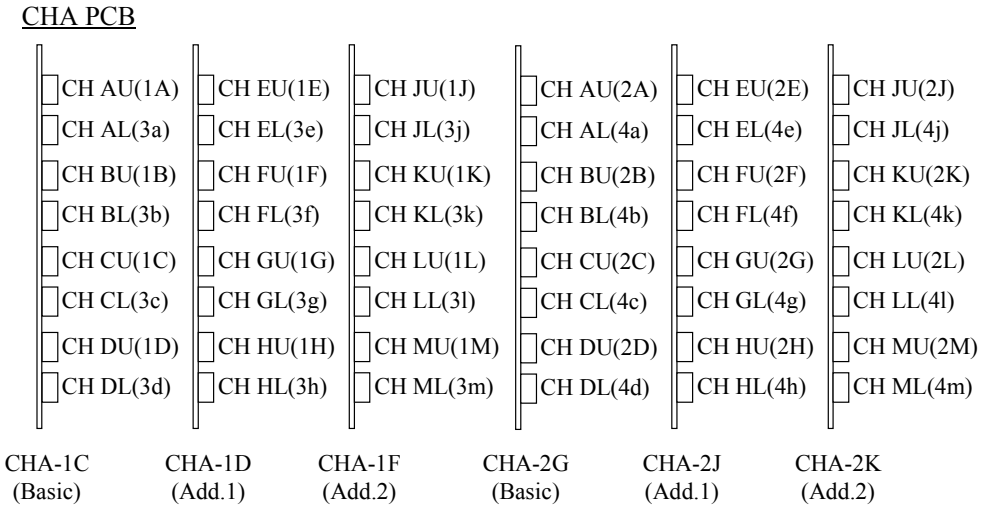
a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.6.4-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.6.4-3.



Note: The numbers in the parentheses in the above figure are port numbers displayed on the SVP screen.

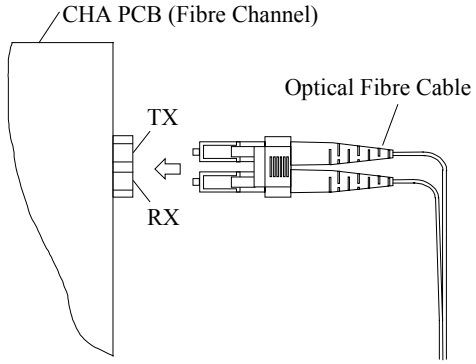


Fig. 3.6.4-4 Connection of Optical Fiber Cable

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3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.6.4-5.

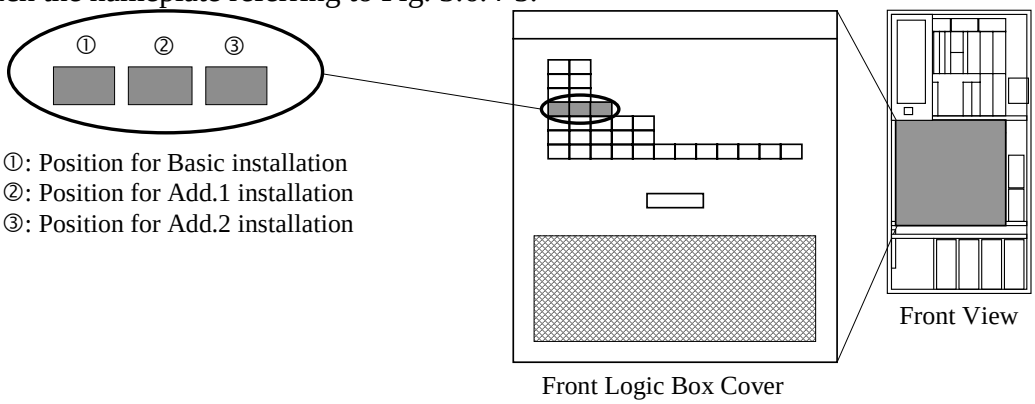

Fig. 3.6.4-5 Attachment of Nameplate

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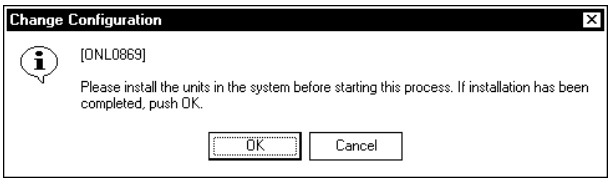
4. SVP post procedure

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, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-16F-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. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

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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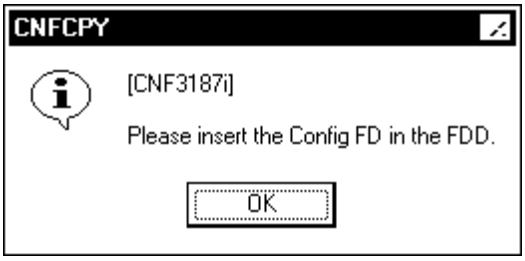
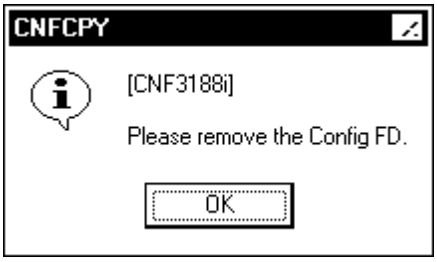
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



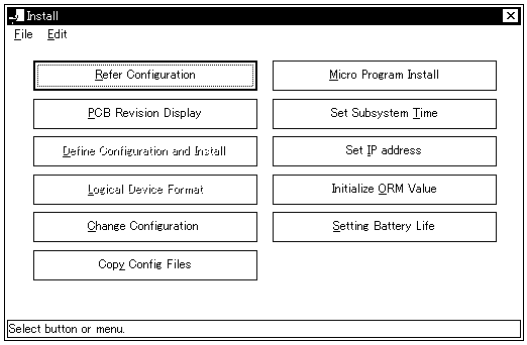
6.

When this procedure is completed, the message "Please remove the Config FD." 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 (INST02-30) and perform rest of the works.

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3.6.5 Installation of NAS 4-port Adapter for SX (DKC-F460I-4NS)

Note: In the SC model, only up to the two NAS 4-port Adapters (DKC-F460I-4NS) can be installed. When they are added, however, they can be installed in any of the locations (Basic, Add.1, and Add.2).

Table 3.6.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-4NS	NAS 2-port Adapter PCB	5519714-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-141	1	RSD
			2105903-141		HICAM
			2105903-241		HICEF
		Nameplate (HP)	2105902-241	1	RSD
			2105903-341		HICAM
			2105903-441		HICEF

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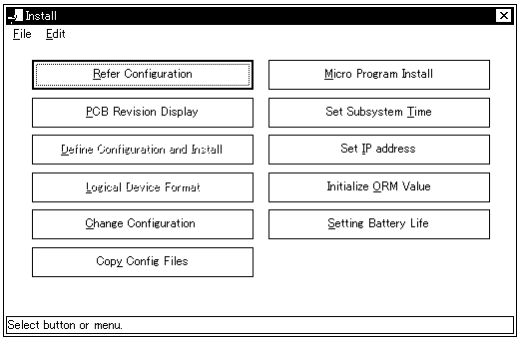
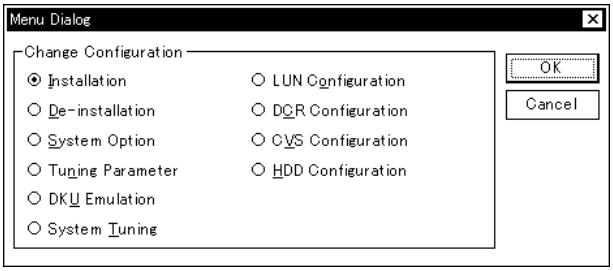
1. Setting up the New Device Structure Information

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

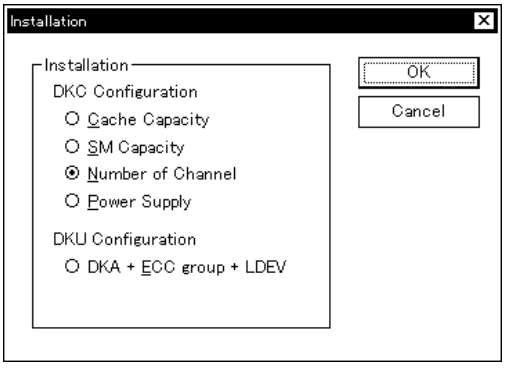
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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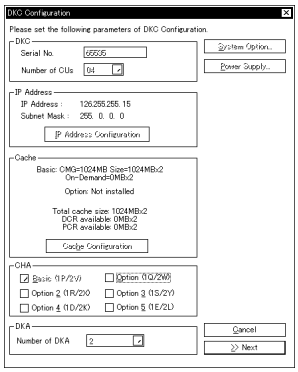
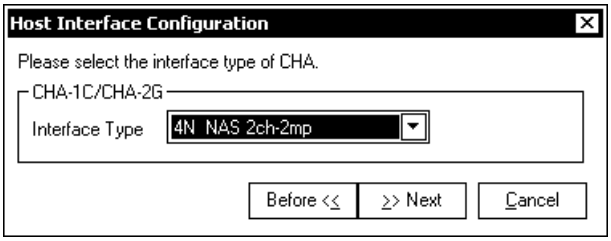
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Make sure that the entered item is correct and select (CL) [>>Next].



2. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Verify that the inputted item is correct and select (CL) [>>Next].



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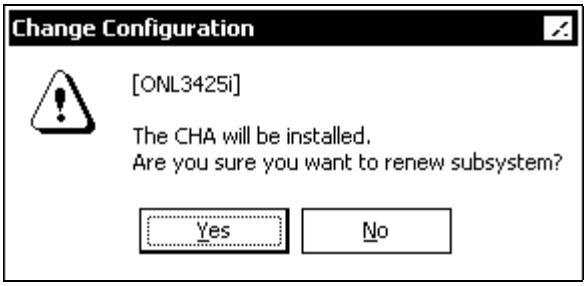
4. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

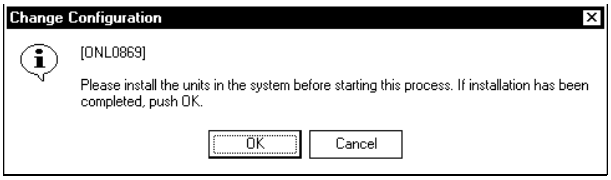
   When [No] is selected (CL), returns to INST03-4NS-20 step 3.



5. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

6. <Install CHA >
   "Upgrading of the CHA..."

7. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.
   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. Installation Procedure of NAS 4-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 Insertion of the PCBs

Note: (1) Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.
(2) When installing the CHA PCB for the NAS, be sure to connect the cable after installing the PCB.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.6.5-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.6.5-2.
c. Fasten the two screws referring to Fig. 3.6.5-2.
d. Connect the 12V power cable to the PCB. Connect the 12V power cables (xF-NAS-1 and xF-NAS-2) to the connectors not according to the slot number but in order of addition.

Table 3.6.5-2 Inserting Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Note: Up to 2 NAS 4-port adapters can be installed in the subsystem.

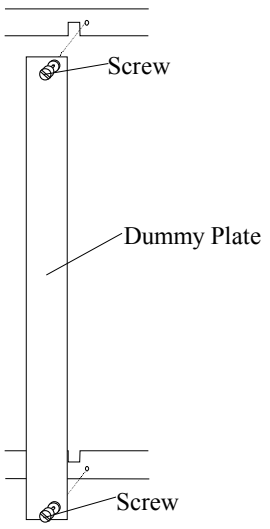

Fig. 3.6.5-1 Removal of Dummy Plate

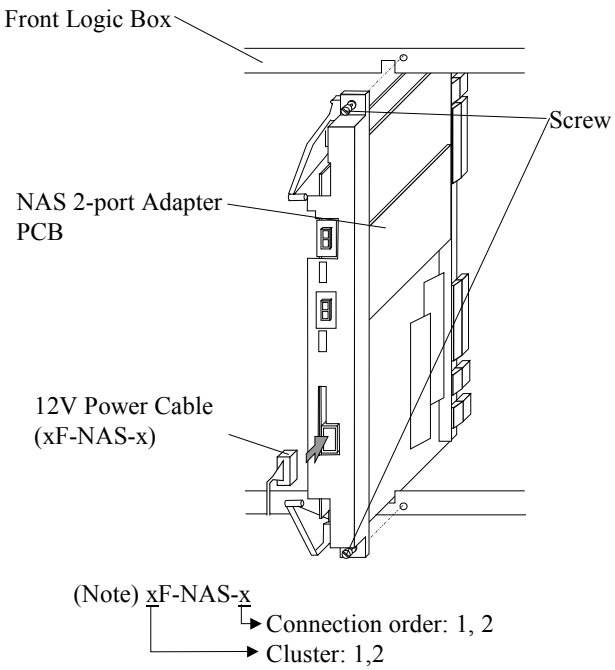

Fig. 3.6.5-2 Insertion of PCB

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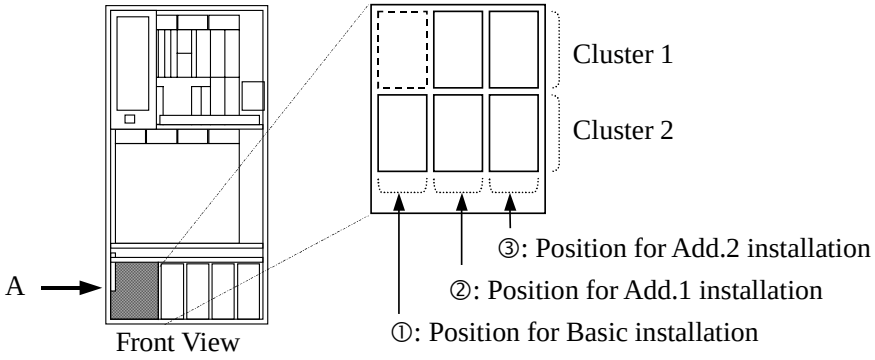
3-2 Remove the bracket and fibre cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.6.5-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

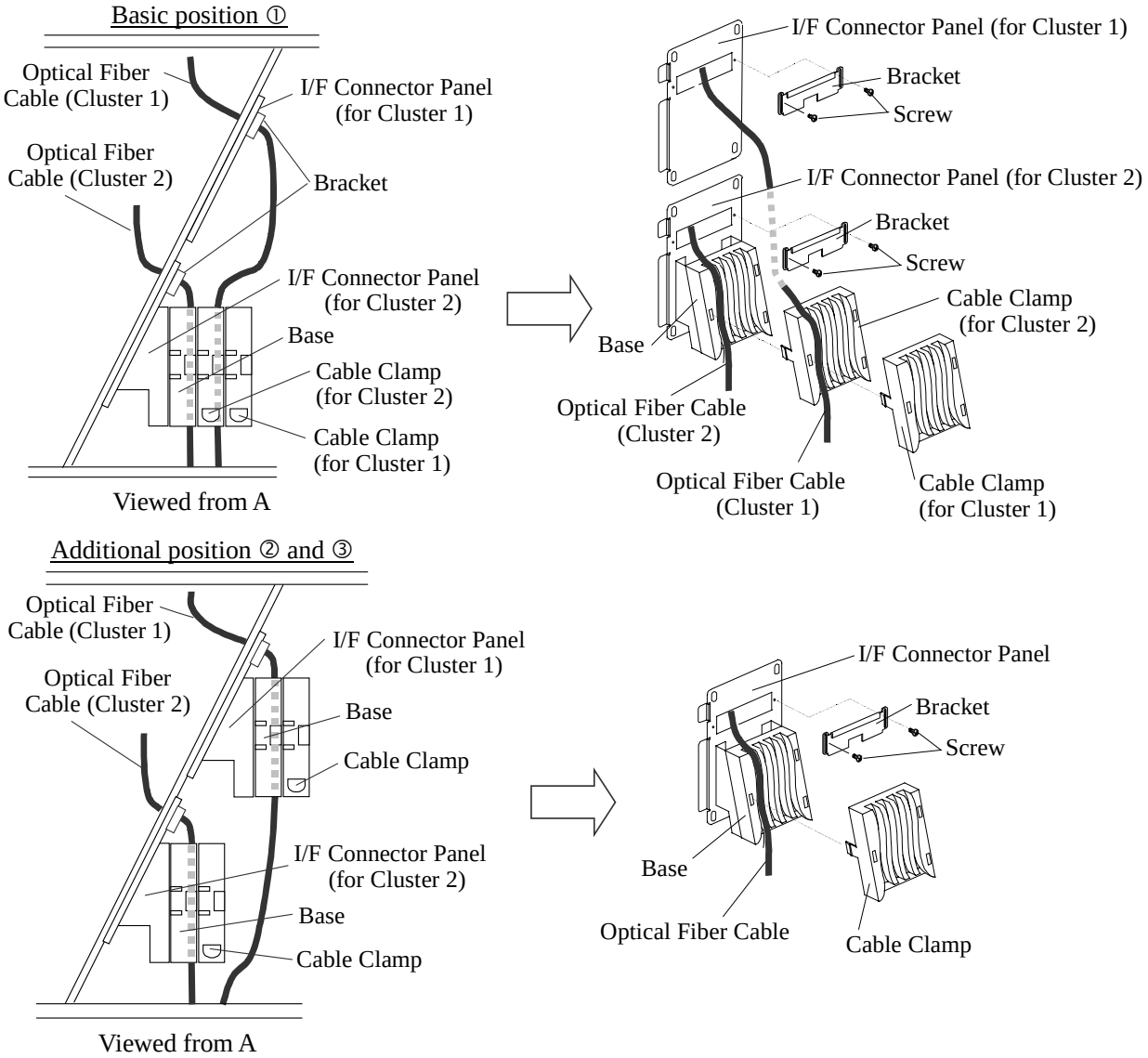


Fig. 3.6.5-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber 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.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.6.5-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.6.5-3.

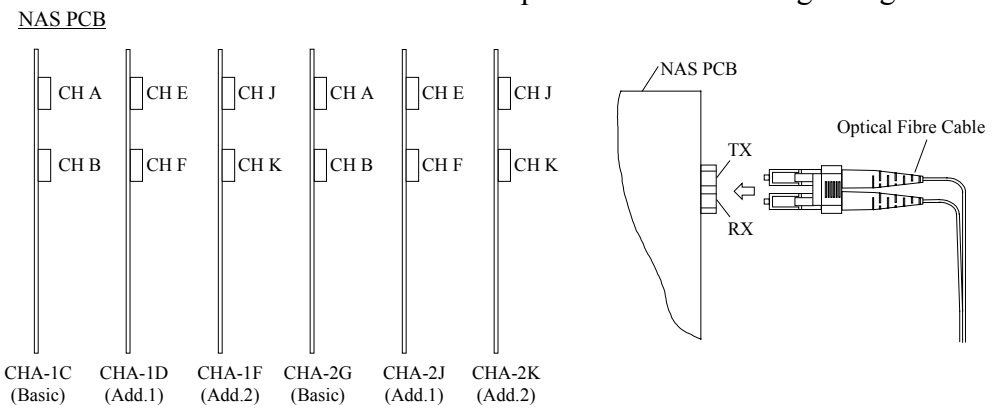

Fig. 3.6.5-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.6.5-5.

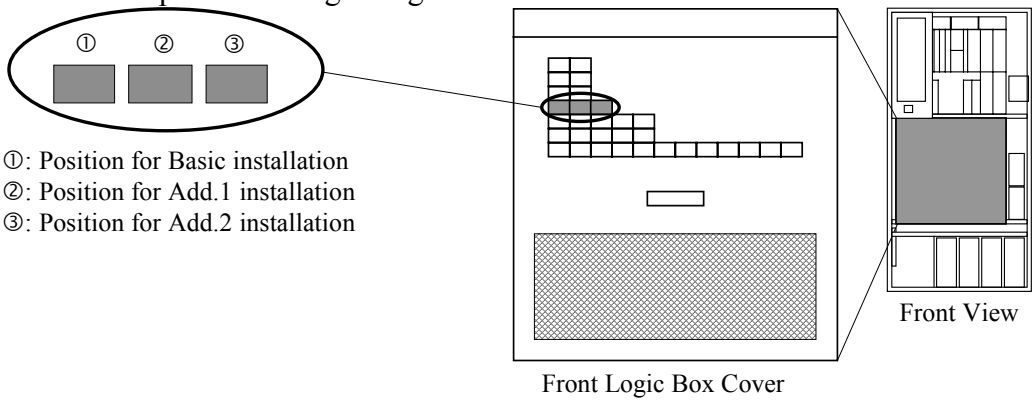

Fig. 3.6.5-5 Attachment of Nameplate

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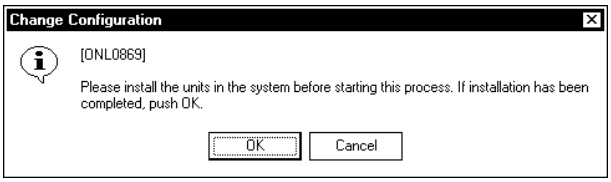
4. SVP post procedure

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, push OK.”.



   When [Cancel] is selected (CL), returns to INST03-4NS-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. (INST02-630)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

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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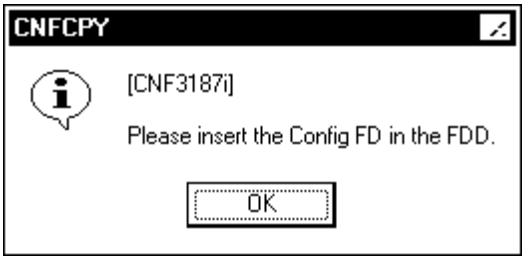
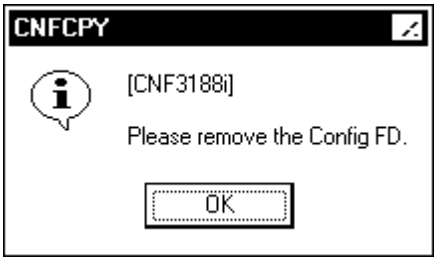
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



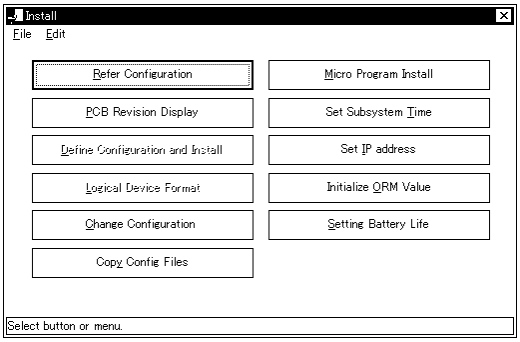
6.

When this procedure is completed, the message "Please remove the Config FD." 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.

When the CHA PCB for the NAS was newly installed, make sure that the [NAS Setup] button is not displayed in the window of he SVP launcher, and then go to Step 9.
If the [NAS Setup] button is displayed, go to Step 10 because Setup on SVP has already been installed.

When the CHA PCB for the NAS was installed in (added to) a system in which the same PCB has already been installed, make sure that the [NAS Setup] button is displayed in the window of the SVP launcher, and then go to Step 10.
If the [NAS Setup] button is not displayed, go to Step 9 because Setup on SVP is not installed.

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9. <Check the installation status of CHA PCB for the NAS>
   When the subsystem already has the CHA PCBs for the NAS and you are installing additional set(s) of them, go to Step14.
   When the subsystem does not have any CHA BCB for the NAS yet and you are installing first set of them into the subsystem, go to step 10.

10. <Installing Setup on SVP>
    Install the Setup on SVP into Master SVP. (NAS03-110)

11. <Checking the installation status of SVP reliability enhancement kit>
    Check if SVP reliability enhancement kit has been already installed of not.
    If the SVP reliability enhancement kit has been installed, go to Step11.
    If the SVP reliability enhancement kit has not been installed, go to Step13.

12. <Installing Setup on SVP into Standby SVP>
    After switching the SVP (Switch SVP (REP02-525), install the Setup on SVP into the Standby SVP. (NAS03-110)

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13. <Switching the SVP>
    After switching the SVP (Switch SVP (REP02-525)), go back to Master SVP.

14. <Installing the NAS OS>
    Install the NAS OS. (NAS03-290)
    Perform the installation in each of the CHA PCBs for the NAS.

15. <Installing the NAS PP>
    Install the NAS PP (NAS03-290).

    Return to the working table and do the rest of the work. (INST02-40)

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3.6.6 Installation of iSCSI 8-port Adapter (DKC-F460I-8IS)

Table 3.6.6-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8IS	iSCSI 4-port Adapter PCB	5522913-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-147	1	RSD
			2105903-147		HICAM
			2105903-247		HICEF
		Nameplate (HP)	2105902-247	1	RSD
			2105903-347		HICAM
			2105903-447		HICEF

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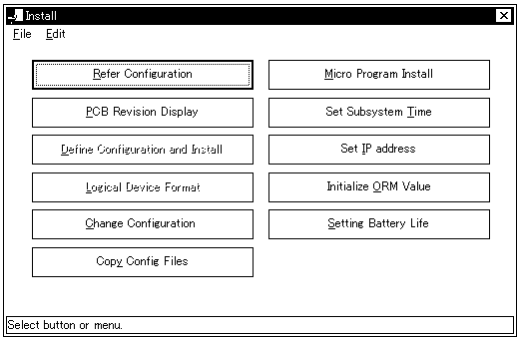
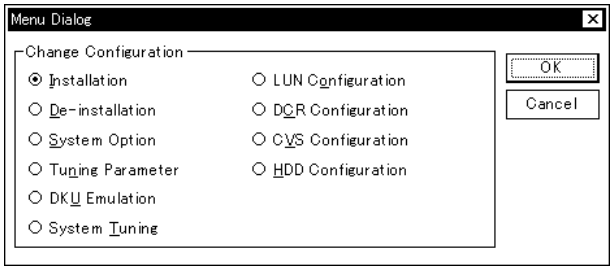
1. Setting up the New Device Structure Information

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

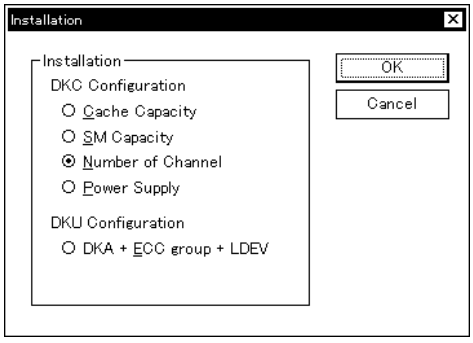
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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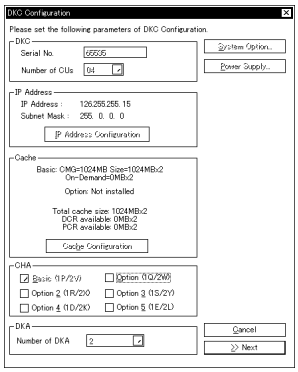
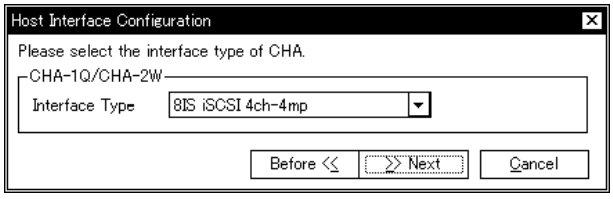
2. SVP pre procedure

1. <Update Configuration Information>
   Enter the item to CHA in the 'DKC Configuration' window.
   Put the mark on the corresponding check box.
   Make sure that the entered item is correct and select (CL) [>>Next].



2. <Defining channel type>
   Input each item in the "Host Interface Configuration" window.
   Repeat the operation above as many times as the number of channels installed.
   Select (CL) [iSCSI *].
   Verify that the inputted item is correct and select (CL) [>>Next].
   Go to step 3.



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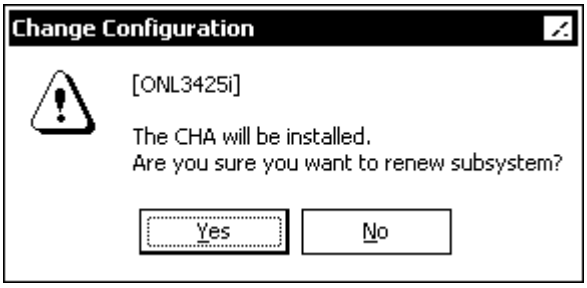
3. <Start installation>
   Select (CL) [Yes] in response to "The CHA will be installed. Are you sure you want to renew subsystem?".

   When [No] is selected (CL), returns to INST03-8IS-20 step 3.

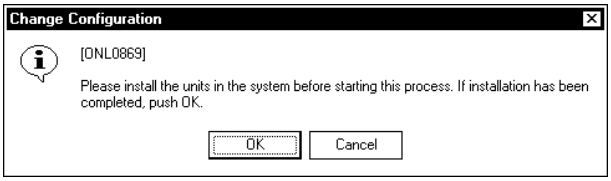


4. <Download microprogram>
   Microprograms are automatically downloaded for shared memory.

5. <Install CHA >
   "Upgrading of the CHA..."

6. <Check that hardware components are installed>
   "Please install the units in the system before starting this process. If installation has been completed, push OK." is displayed.

   Note: Do not press [OK] before installing additional hardware into the subsystem.



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3. 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 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.6.6-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.6.6-2.
c. Fasten the two screws referring to Fig. 3.6.6-2.

Table 3.6.6-1 Inserting Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 3 iSCSI 8-port adapters can be installed in the subsystem.

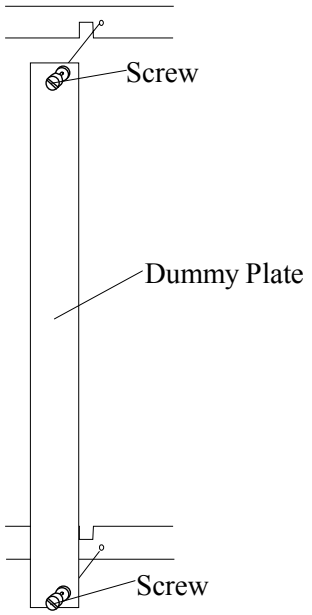

Fig. 3.6.6-1 Removal of Dummy Plate

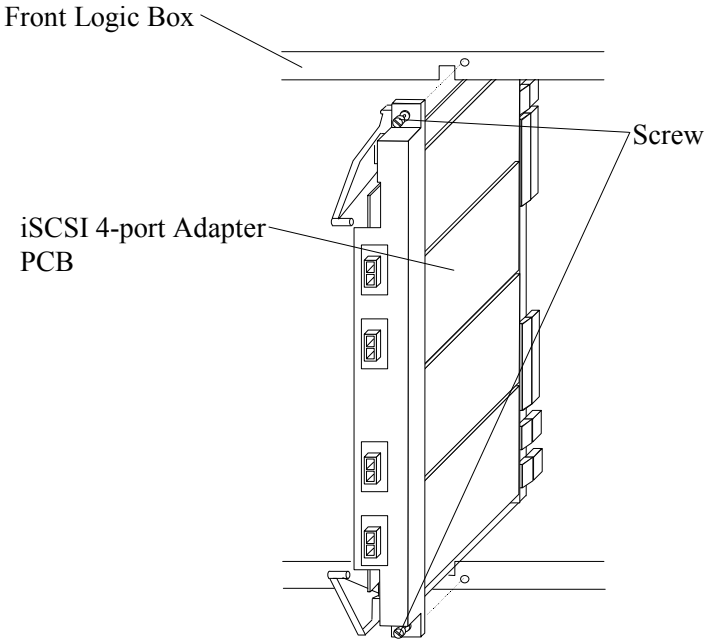

Fig. 3.6.6-2 Insertion of PCB

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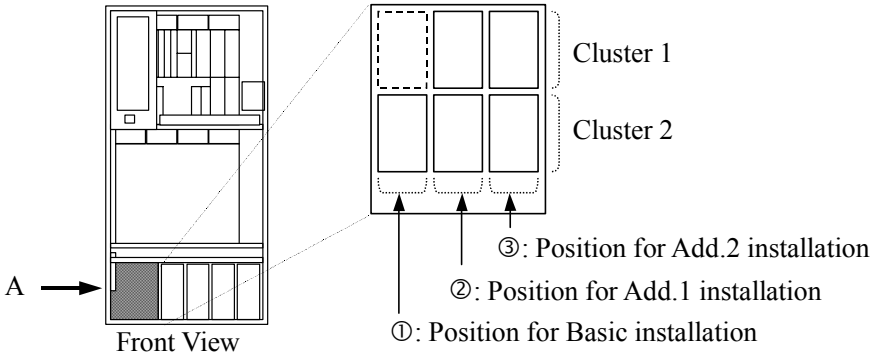
3-2 Remove the bracket and fibre cable routing.

a. Loosen the four screws and remove the two brackets. Refer to Fig. 3.6.6-3.

b. Pull the optical fiber cable into the DKC through the I/F connector panel.



Refer to the following figure for how to attach the cable clamp and cable routing.

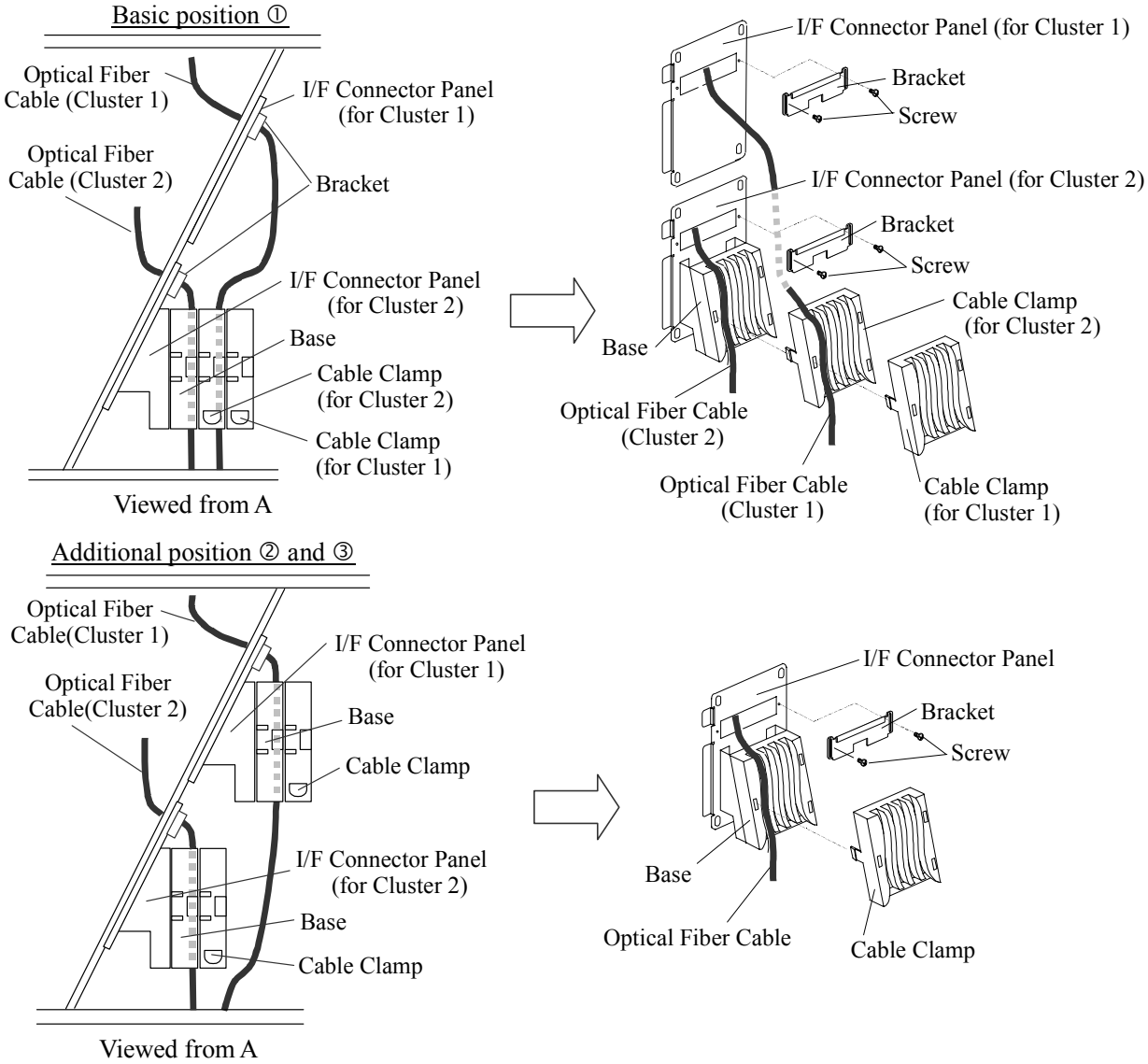


Fig. 3.6.6-3 Installation of Optical Fiber Cable

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3-3 Cleaning the fiber 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.)

⚠ CAUTION

When Installation of PCB in HIGH PERFORMANCE MODE, some LOOP ID (FC-AL) volumes of the parts on the PCB may conflict. So you must operate LUN Management (INST05-610) to change the values, and then insert Optical Fibre cable.
If you operate in the reverse order, SIM=2190XY (ALPA conflict) will be logged on SVP.

3-4 Connection of the optical fibre cable

a. Connect the optical fiber cable to the PCB referring to Fig. 3.6.6-4.
b. Fix the cable to base and attach the cable clamp and bracket referring to Fig. 3.6.6-3.

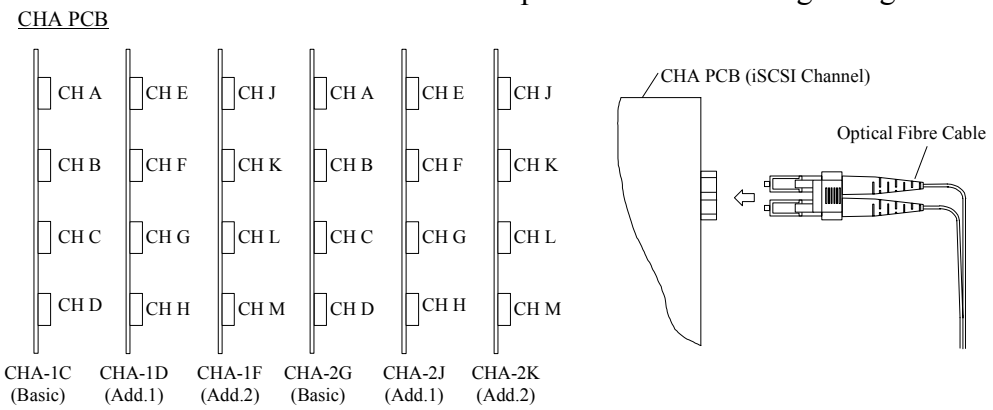

Fig. 3.6.6-4 Connection of Optical Fiber Cable

3-5 Attachment of the nameplate

a. Attach the nameplate referring to Fig. 3.6.6-5.

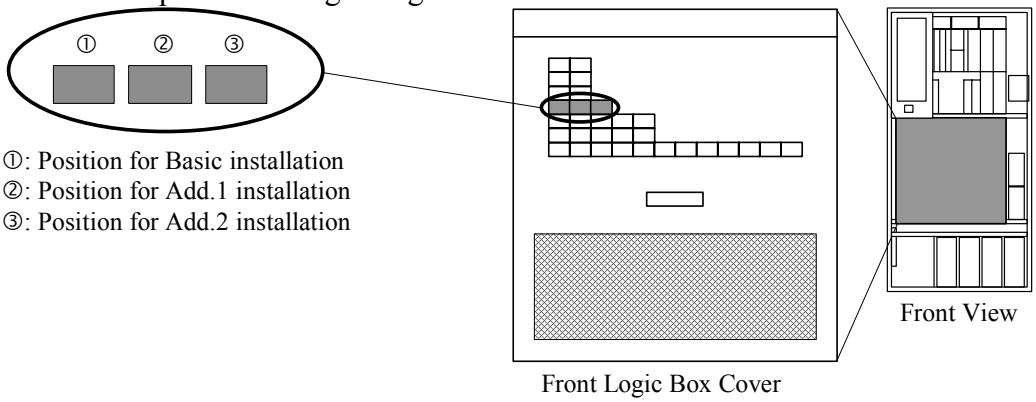

Fig. 3.6.6-5 Attachment of Nameplate

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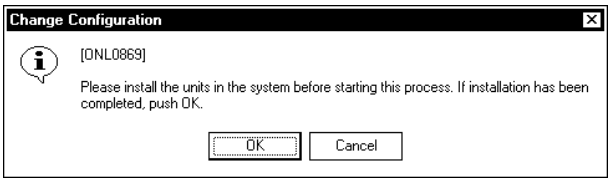
4. SVP post procedure

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, push OK.”.



When [Cancel] is selected (CL), returns to INST03-8IS-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. (INST02-630)

---

3. <DKU PATH INLINE>
When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

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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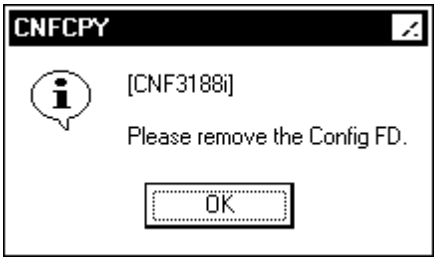
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

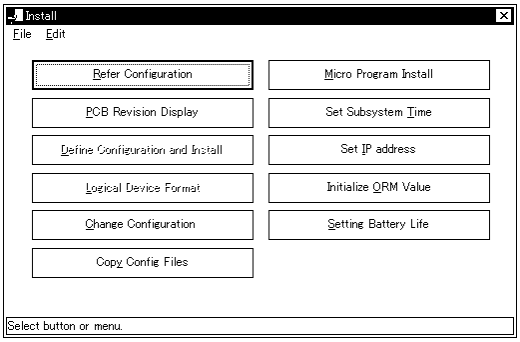
6.

When this procedure is completed, the message "Please remove the Config FD." 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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3.7 Installation of Shared Memory and Cache Memory

3.7.1 Installation of Additional Shared Memory (DKC-F460I-S512/S1024)

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

(1) Refer to the Table 1.1.2.3-2 or Table 1.1.2.3-7 in these functions use.
(Note1) When you use these functions, you need to install more Shared Memory.
(Note2) When cache memory capacity is 64GB or less, refer to the Table 1.1.2.3-1.
(2) When using the ShadowImage-FlashCopy® version2 function, refer to Table 1.1.2.3-3 or Table 1.1.2.3-8.
(3) Refer to the Table 1.1.2.3-1 or Table1.1.2.3-6 in these functions non-use.

Table 3.7.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-S512	SH287-B	5513978-B	2	Shared Memory Module (256MB)
2	DKC-F460I-S1024	SH287-C	5513978-C	2	Shared Memory Module (512MB)

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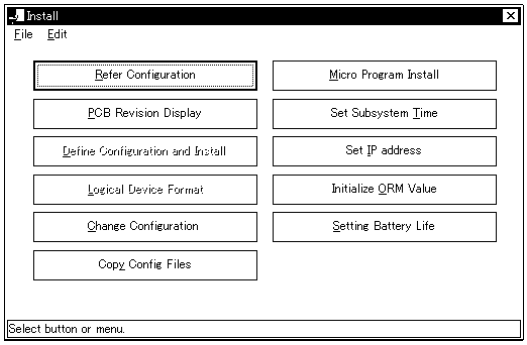
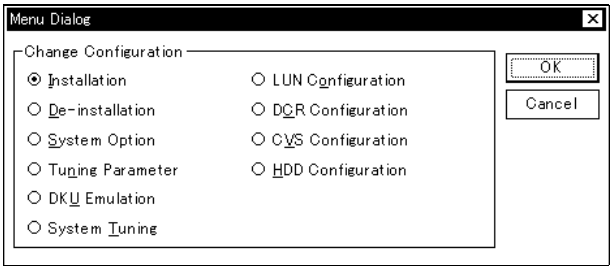
1. Setting up the New Device Structure Information

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

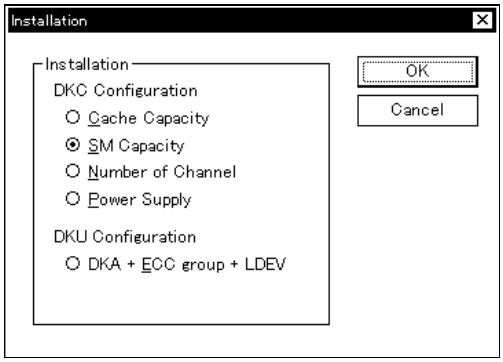
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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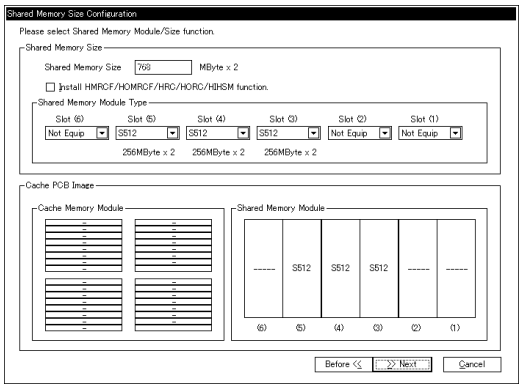
2. SVP pre procedure on the Cluster 1.

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

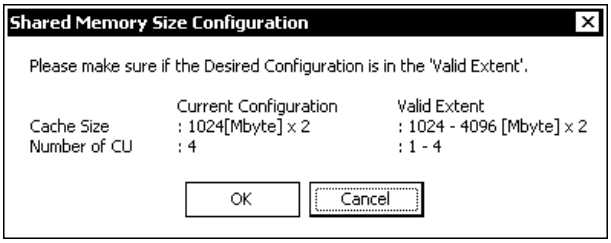


When you want to add the SM for the HMRCF/ HOMRCF/HRC/HORC/HIMSM function, check the "Install HMRCF/HOMRCF/HRC/HORC/HIMSM Function.". (There may be no change in SM capacity.)

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

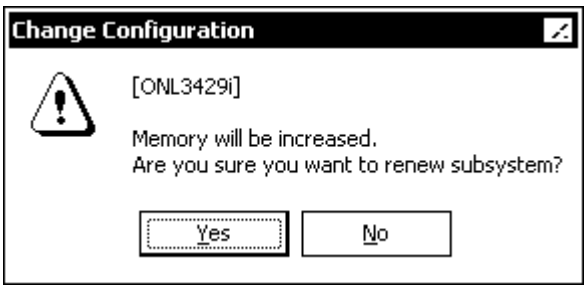
If the installed SM after the addition conforms to that shown in the "Cache PCB Image", select (CL) the [>>Next] button.

(1-1)
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].



---

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



If there is change in SM capacity, go to INST03-SM-30 step 3.
If there is no change in SM capacity, go to INST03-SM-150 step 3.

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

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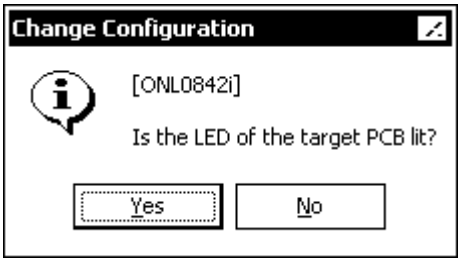
(3)

"The Shared Memory PCB is being blocked..." is displayed.
"Lighting LED of the PCB..." is displayed.

(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 lit?".

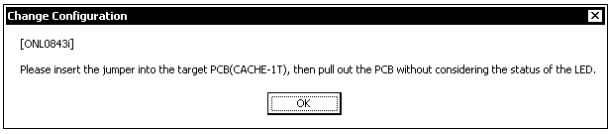


<Forcing shut down LED on>

CAUTION

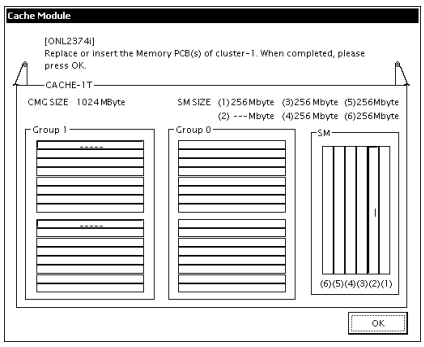
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to "Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED".
(Refer INST03-SM-40)



(5) <Perform cache hardware installation>
At this point refrain from pressing the [OK] button.
When "Replace or insert the Memory PCB(s) of cluster-1. 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.
(Uninstalled module is displayed as looks depressed.)



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3-1 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.

3-1. Remove the PCB.

a. While referring to Fig. 3.7.1-1 and Table 3.7.1-2, check the Shut Down LED on the Cache Memory PCB in the Front Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [2-1. 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.

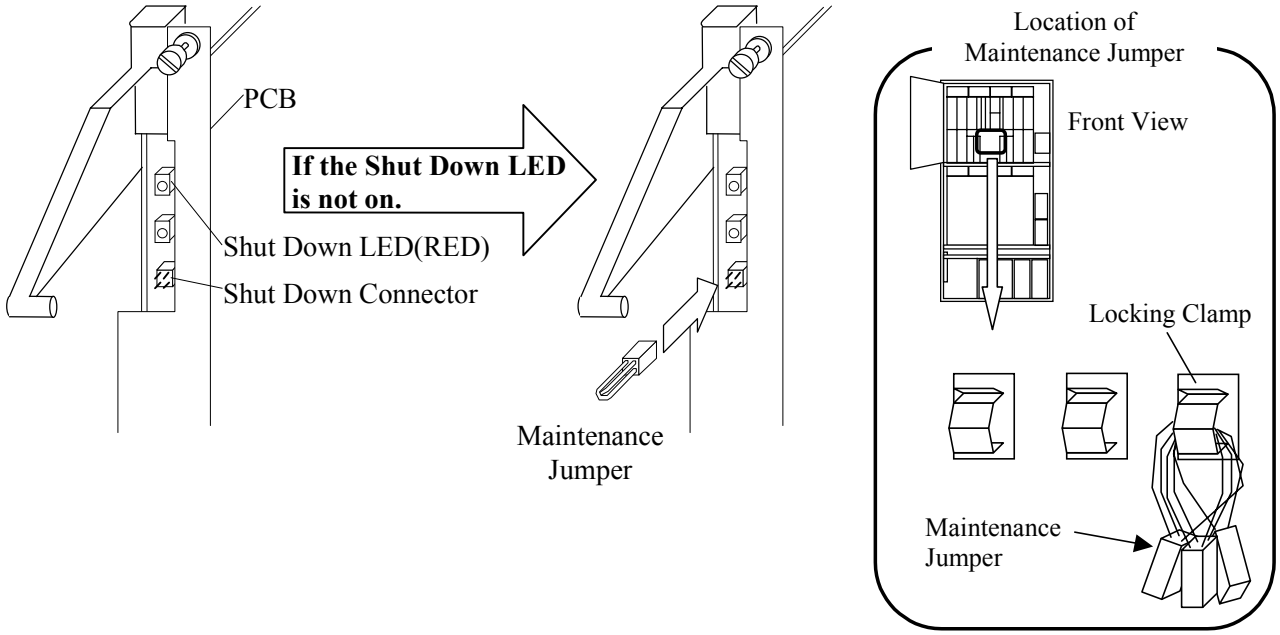

Fig. 3.7.1-1 Location of the Shut Down LED

Table 3.7.1-2 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

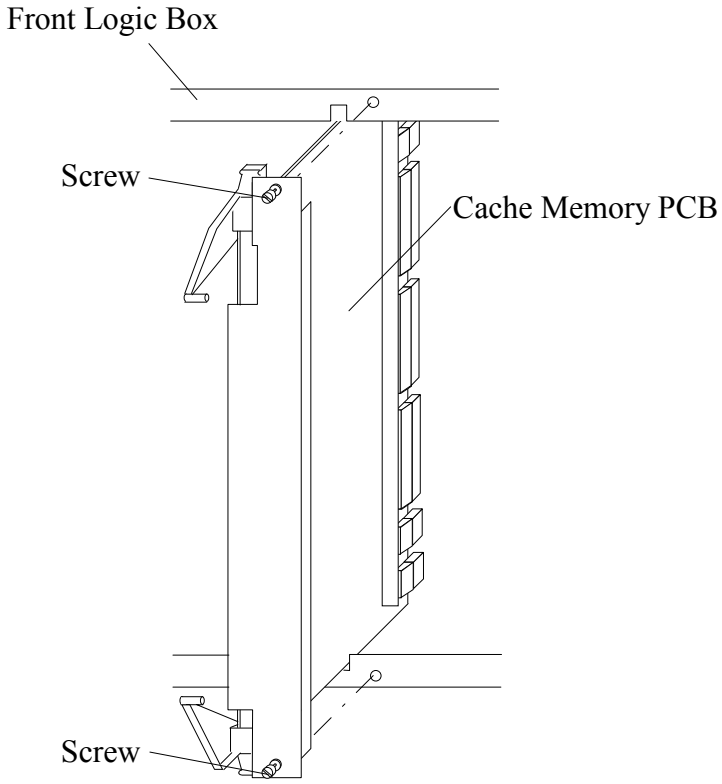

Fig. 3.7.1-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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3-2. Insert the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not. Calculate the required shared memory capacity referring to Table 3.7.1-31 or Table 3.7.1-41 when none of the functions is supported (in the case of basic configuration) or Table 3.7.1-32 or Table 3.7.1-42 when at least one of the functions is supported. When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 3.7.1-33 or 3.7.1-43.

a. Remove the dust covers that match the required Shared Memory capacity referring to Fig. 3.7.1-3 and Fig. 3.7.1-3A, Table 3.7.1-31, Table 3.7.1-32, Table 3.7.1-33, Table 3.7.1-41, Table 3.7.1-42 and Table 3.7.1-43.
b. Insert the Shared Memory Modules that match the required Shared Memory capacity.

(1) Composition of only DKC-F460I-S512

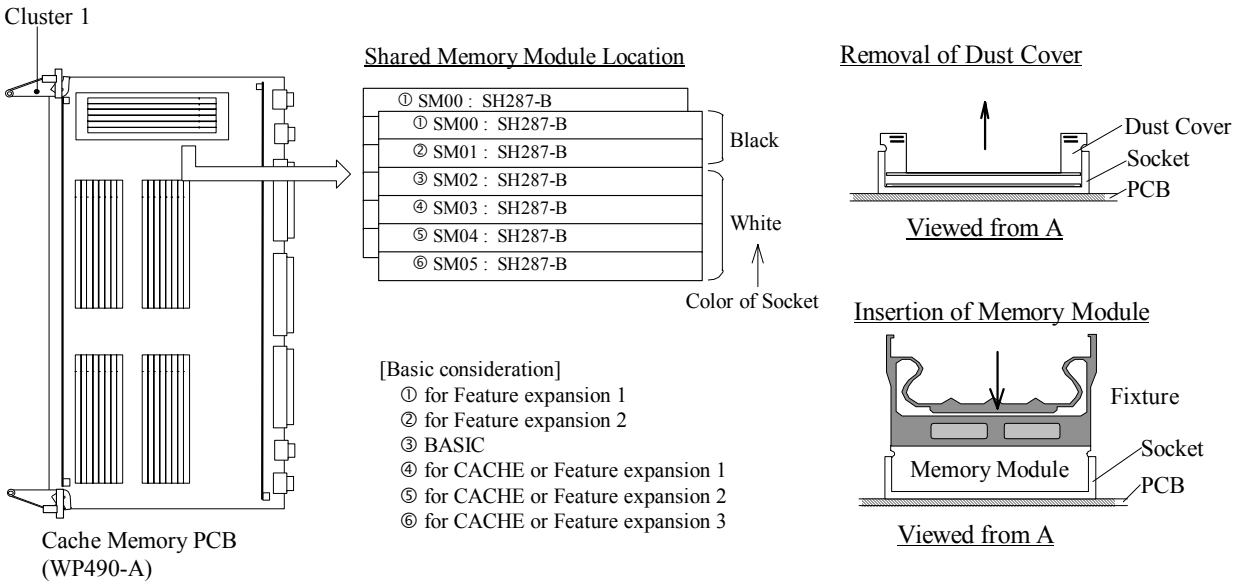

Fig. 3.7.1-3 Inserting Location of the Shared Memory Module

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Table 3.7.1-31 Number of SMs and Corresponding Shared Memory Capacity (BASIC)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

Table 3.7.1-32 Number of SMs and Corresponding Shared Memory Capacity (HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

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Table 3.7.1-33 Number of SMs and Corresponding Shared Memory Capacity
(ShadowImage-FlashCopy® version2 supported)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

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(2) Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024
The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 3.7.1-41, 3.7.1-42 and 3.7.1-43 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460 I-S512 or DKC-F460 I-S1024 independent one. (Refer to Table 3.7.1-33A and 3.7.1-33B)

Table 3.7.1-33A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

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

Table 3.7.1-33B Shared Memory Module Mixture Pattern (Mixture composition)

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

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 3.7.1-3A)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

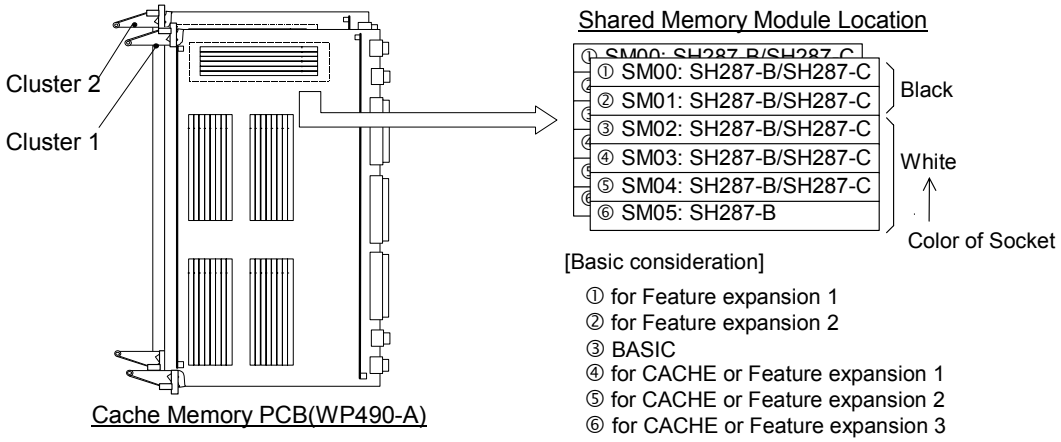

Fig. 3.7.1-3A Actual location of shared memory module

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Table 3.7.1-41 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

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

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

*2: 'A' to 'L' should refer a Table 3.7.1-33A, and refer to the Table 3.7.1-33B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 3.7.1-42 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

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

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

*2: 'A' to 'L' should refer a Table 3.7.1-33A, and refer to the Table 3.7.1-33B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 3.7.1-43 Size of Cache Memory and Shared Memory
(ShadowImage-FlashCopy® version2 supported)

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

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

*2: 'A' to 'L' should refer a Table 3.7.1-33A, and refer to the Table 3.7.1-33B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

3-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Front Logic Box referring to Table 3.7.1-5.

b. Fasten the two screws.

Table 3.7.1-5 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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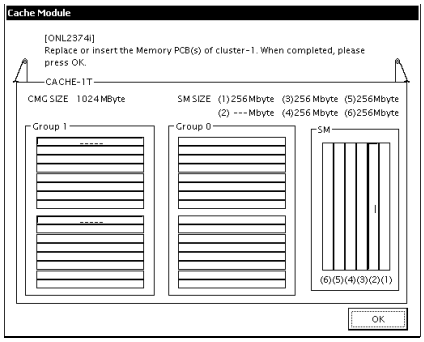
4. SVP post procedure on the Cluster 1.

(1)

After installation of shared memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCBs 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 Cache Memory PCB...” is displayed.
“Restoring the Shared Memory PCB...” is displayed.

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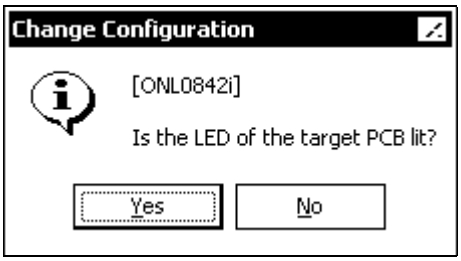
5. SVP pre procedure on the Cluster 2.

(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 lit?”.

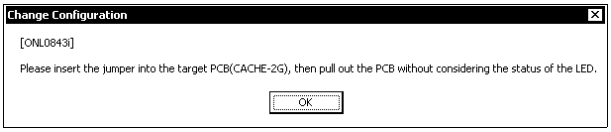


<Forcing shut down LED on>

CAUTION

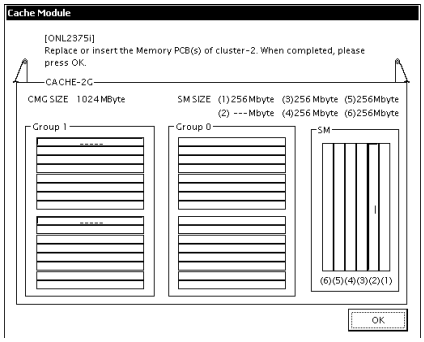
If the jumper is inserted in the wrong PCB, a system down may be caused.

If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST03-SM-100)



(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.
(Uninstalled module is displayed as looks depressed.)



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6 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.

6-1. Remove the PCB.

a. While referring to Fig. 3.7.1-4 and Table 3.7.1-6, check the Shut Down LED on the Cache Memory PCB in the Front Logic Box. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [4-1. 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.

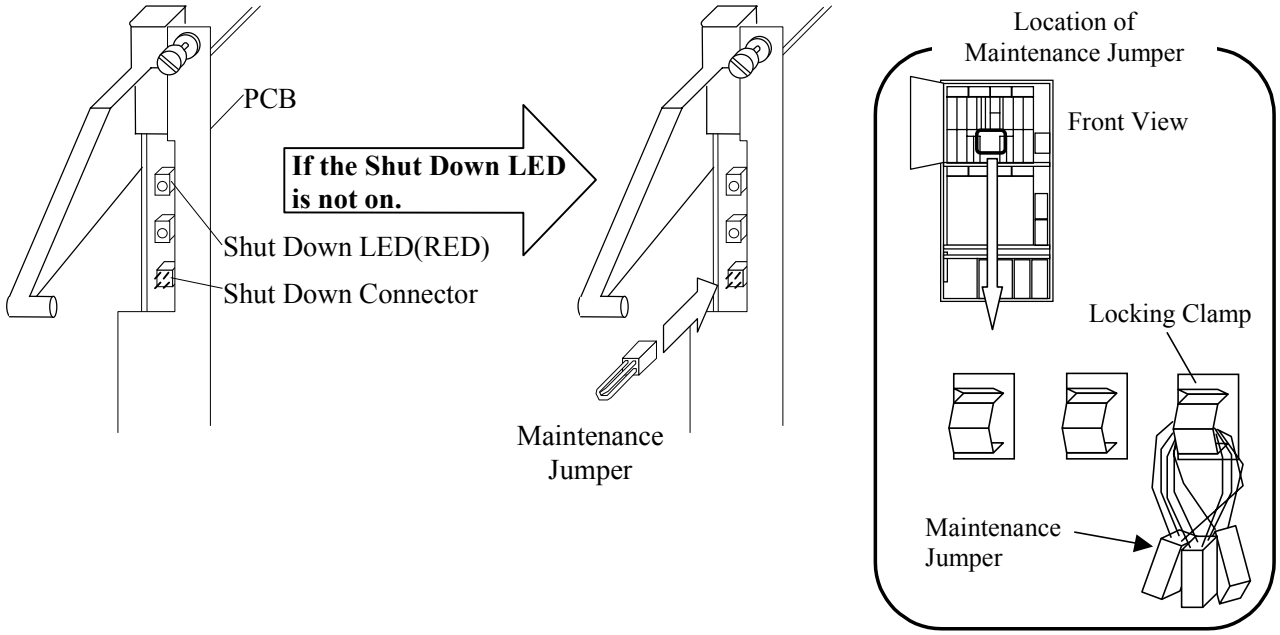

Fig. 3.7.1-4 Location of the Shut Down LED

Table 3.7.1-6 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

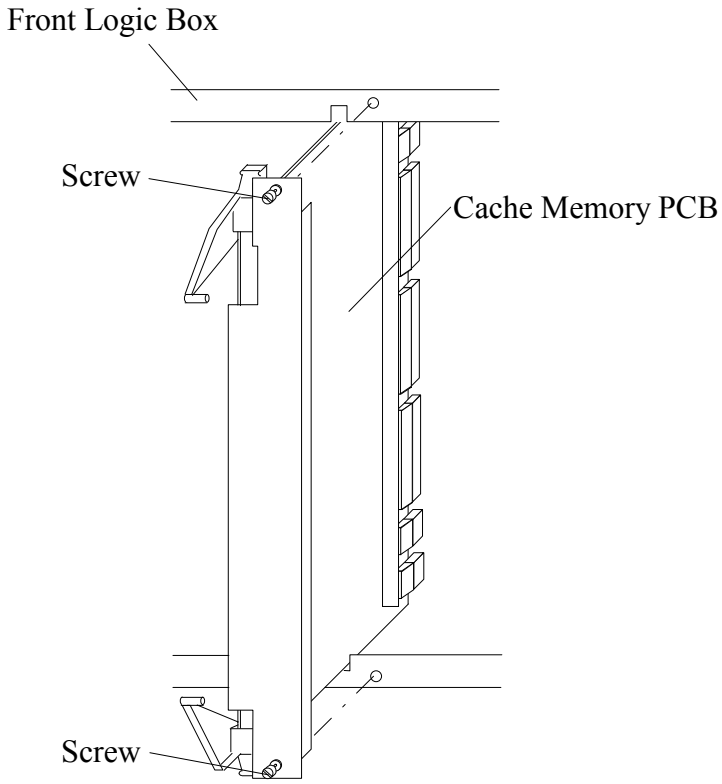

Fig. 3.7.1-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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6-2. Insert the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not. Calculate the required shared memory capacity referring to Table 3.7.1-71 or Table 3.7.1-81 when none of the functions is supported (in the case of basic configuration) or Table 3.7.1-72 or Table 3.7.1-82 when at least one of the functions is supported. When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 3.7.1-73 or 3.7.1-83.

a. Remove the dust covers that match the required Shared Memory capacity referring to Fig. 3.7.1-6 and Fig. 3.7.1-6A, Table 3.7.1-71, Table 3.7.1-72, Table 3.7.1-73, Table 3.7.1-81, Table 3.7.1-82 and Table 3.7.1-83.
b. Insert the Shared Memory Modules that match the required Shared Memory capacity.

(1) Composition of only DKC-F460I-S512

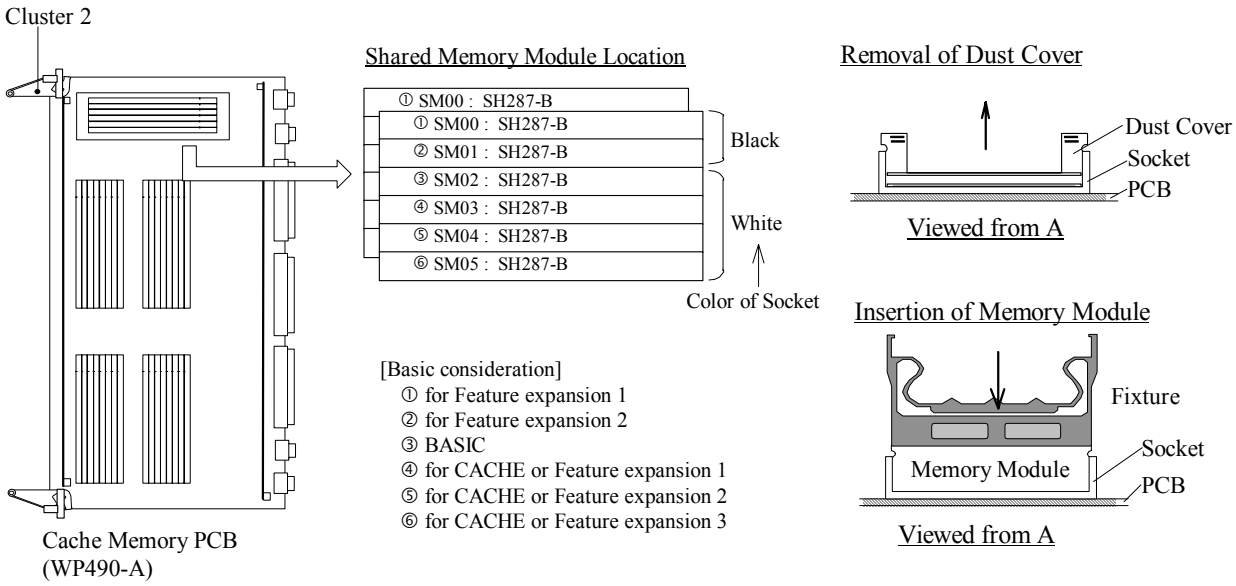

Fig. 3.7.1-6 Inserting Location of the Shared Memory Module

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Table 3.7.1-71 Number of SMs and Corresponding Shared Memory Capacity (BASIC)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

Table 3.7.1-72 Number of SMs and Corresponding Shared Memory Capacity (HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

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

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

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Table 3.7.1-73 Number of SMs and Corresponding Shared Memory Capacity (ShadowImage-FlashCopy® version2 supported)

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

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

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(2) Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024
The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 3.7.1-81, Table 3.7.1-82 and 3.7.1-83 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460 I-S512 or DKC-F460 I-S1024 independent one. (Refer to Table 3.7.1-73A and 3.7.1-73B)

Table 3.7.1-73A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

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

Table 3.7.1-73B Shared Memory Module Mixture Pattern (Mixture composition)

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

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 3.7.1-6A)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

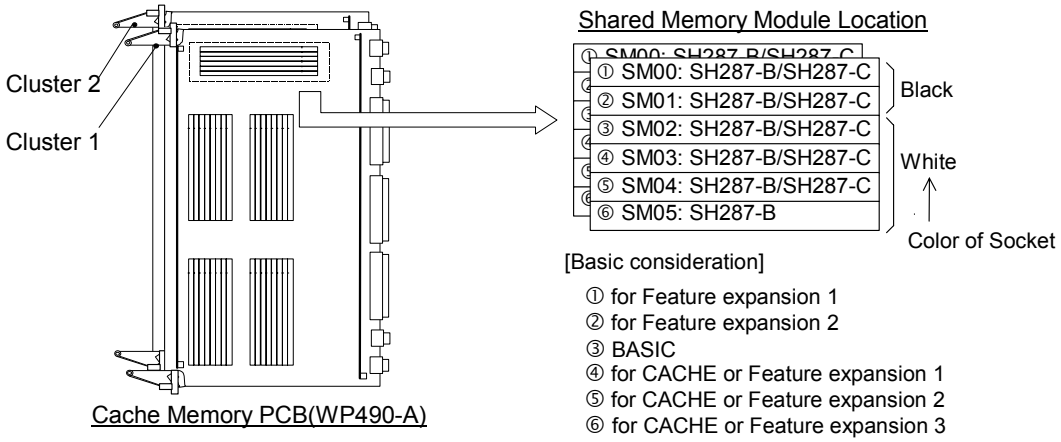

Fig. 3.7.1-6A Actual location of shared memory module

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Table 3.7.1-81 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

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

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

*2: 'A' to 'L' should refer a Table 3.7.1-73A, and refer to The table 3.7.1-73B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 3.7.1-82 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

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

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

*2: 'A' to 'L' should refer a Table 3.7.1-73A, and refer to the Table 3.7.1-73B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 3.7.1-83 Size of Cache Memory and Shared Memory
(ShadowImage-FlashCopy® version2supported)

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

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

*2: 'A' to 'L' should refer a Table 3.7.1-73A, and refer to the Table 3.7.1-73B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

6-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Front Logic Box referring to Table 3.7.1-9.

b. Fasten the two screws.

Table 3.7.1-9 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

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6-4 Change the nameplate.

a. Refer to Fig. 3.7.1-7 and Table 3.7.1-10 to paint out unnecessary numbers on the nameplate.

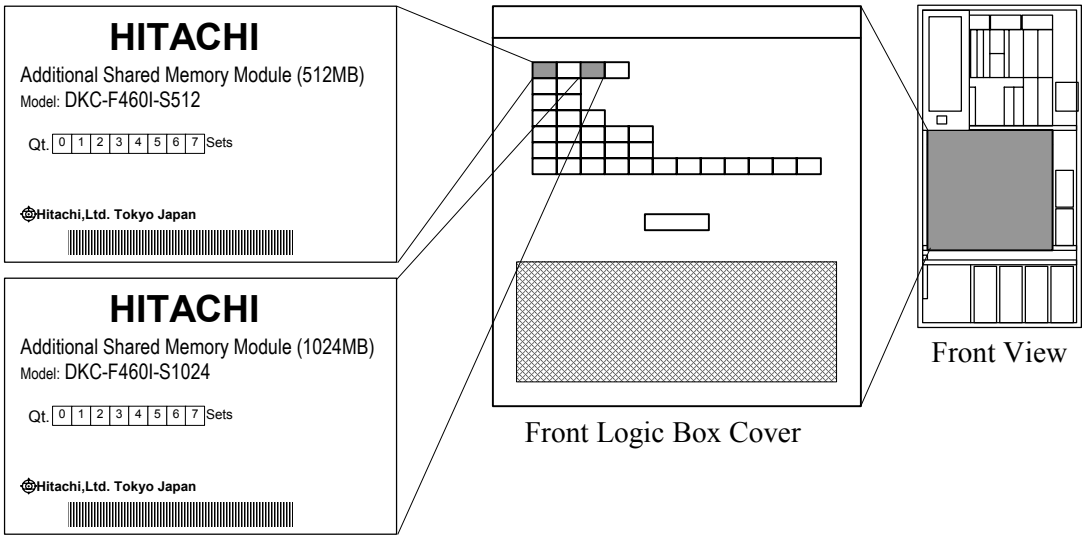

Fig. 3.7.1-7 Location of the Nameplate

Table 3.7.1-10 Quantity Marking

No.	Quantity Marking	
	Number of DKC-F460I-S512 sets	Qt.
1	1 set	2 3 4 5 6 7
2	2 sets	3 4 5 6 7
3	3 sets	4 5 6 7
4	4 sets	5 6 7
5	5 sets	6 7
6	6 sets	7

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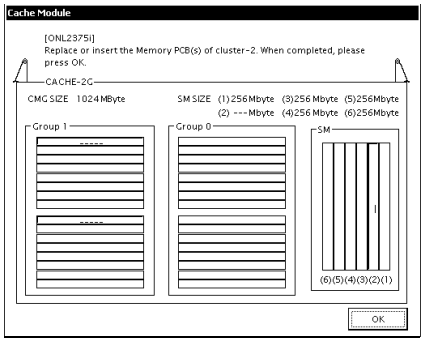
7. SVP post procedure on the Cluster 2.

(1)

After installation of shared memory on one side is completed, select (CL) [OK] in response to “Replace or insert the Memory PCBs of cluster-x. 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 Cache Memory PCB...” is displayed.
“Restoring the Shared Memory PCB...” is displayed.

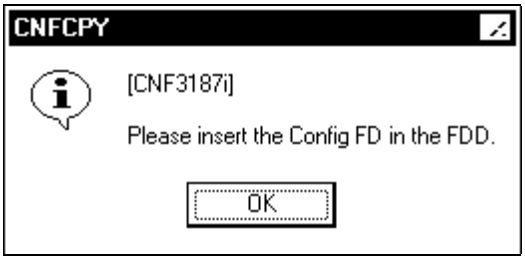
---

(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.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].



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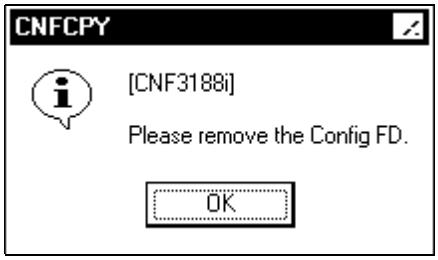
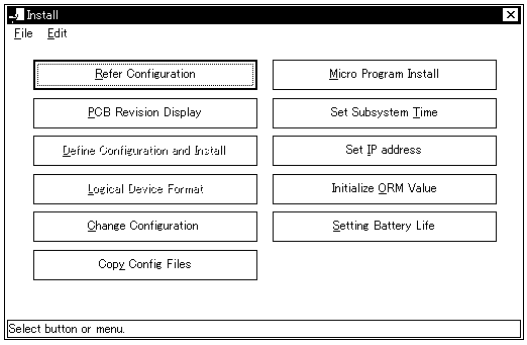
(5)

When this procedure is completed, the message “Please remove the Config FD.” 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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3.7.2 Installation of Additional Cache Memory (DKC-F460I-2048/4096)

NOTICE:
The installed Shared Memory capacity with using HMRCF/HOMRCF/HRC/HORC/HIHSM/ShadowImage-FlashCopy® version2 functions is different from ones without using these functions.
(1) Refer to the Table 1.1.2.3-2 or Table 1.1.2.3-7 in these functions use.
When using the ShadowImage-FlashCopy® version2 function, refer to Table 1.1.2.3-3 or Table 1.1.2.3-8.
(Note1) When you use these functions, you need to install more Shared Memory.
(Note2) When cache memory capacity is 64GB or less, refer to the Table 1.1.2-3-1.
(2) Refer to the Table 1.1.2.3-1 or Table 1.1.2.3-6 in these functions non-use.

When changing to DKC-F460I-4096 from DKC-F460I-2048, Changing CM Modulegroup Size is required. (Refer to SVP02-1230)

Table 3.7.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-2048	SH288-B	5513977-B	4	Cache Memory Module (512 MB)
2	DKC-F460I-4096	SH288-C	5513977-C	4	Cache Memory Module (1024 MB)

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 INST01-60 to INST01-75.
When the shared memory or memories must be added, perform the addition of it (them) beforehand referring to “Installation of Additional Shared Memory (DKC-F460I-S512/S1024/2048/4096)” on page INST03-SM-10.

CAUTION

In case the addition fails, please make sure to perform the recovery by referring to INST02-431 or TRBL05-550 (if DCR & PCR upper limits are changed simultaneously).

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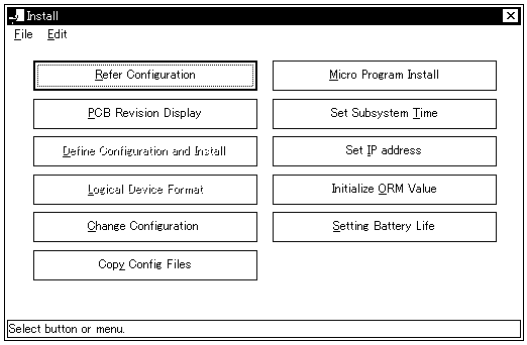
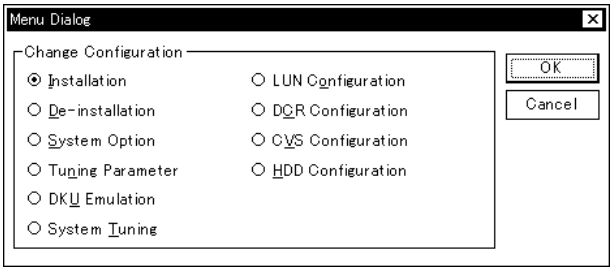
1. Setting up the New Device Structure Information

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

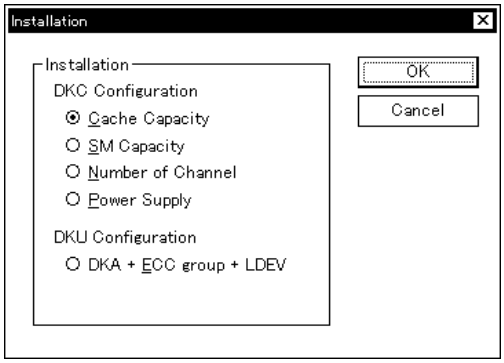
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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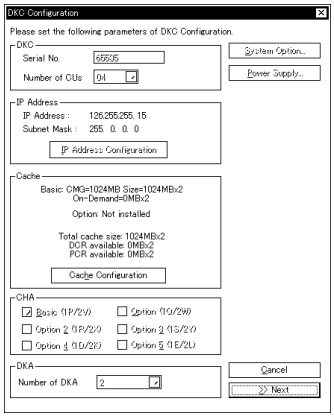
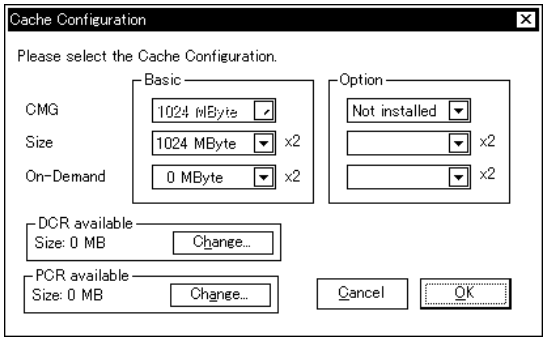
5. <Update Configuration Information>
Select (CL) [Cache Configuration] in the 'DKC Configuration' window. (Go to step 5-1.)



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.

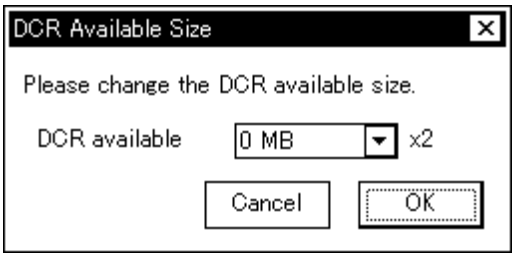
5-1 <Define Cache>
Define each item in the 'Cache Configuration' windows.
When a change in the DCR setting is necessary, select (CL) [Change...] of DCR available.
(Go to step 5-2.)
(See SSD Optional Function Section)
When a change in the PCR setting is necessary, select (CL) [Change...] of PCR available.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



Note: For Single Cabinet Model, Option is not displayed.

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

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.



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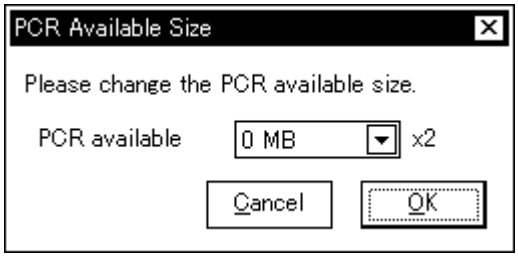
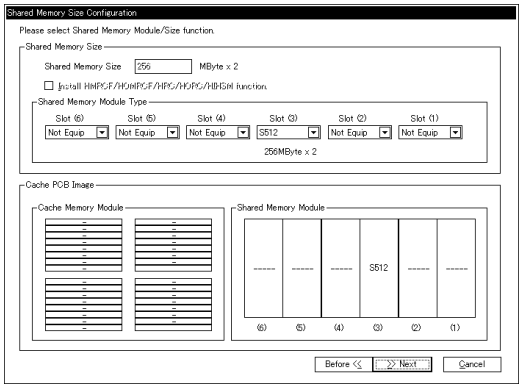
5-3 <Setting PCR size>
Set the PCR Available size in the 'PCR Available Size' dialog box and select (CL) the [OK] button.
Return to Step 5-1.



6. <Display SM size>
The 'Shared Memory size Configuration' dialog box is displayed.

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

Select (CL) [>>Next].



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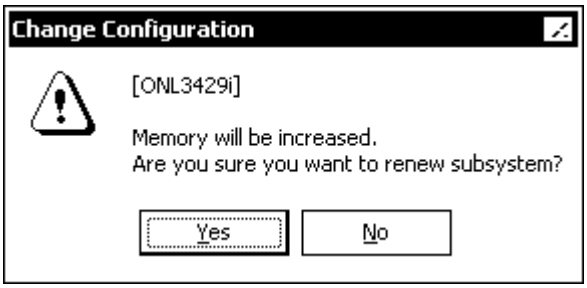
2. SVP pre procedure on the Cluster 1.

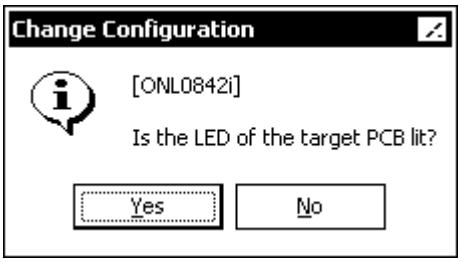
1. <Start installation>
   Select (CL) [Yes] in response to “Memory will be increased. Are you sure you want to renew subsystem?”.

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

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 lit?”.

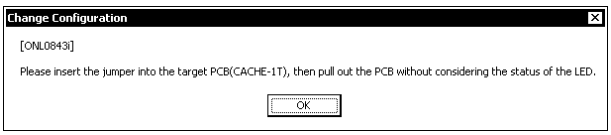
   

   <Forcing shut down LED on>

CAUTION

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

   If [No] is selected:
   Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
   (Refer INST03-CM-50)

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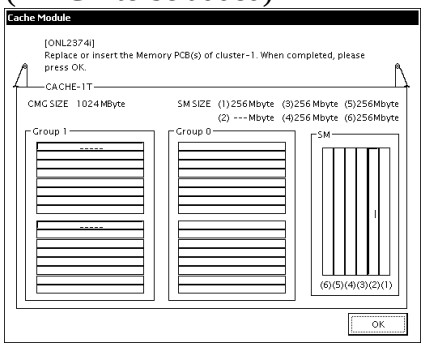
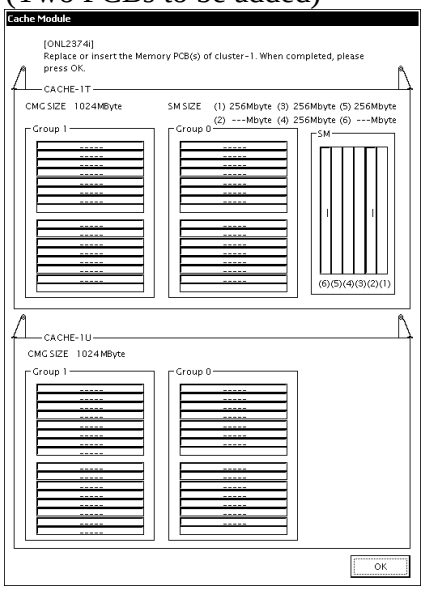
4. <Perform cache hardware installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or insert the Memory PCB(s) of cluster-x. When completed, please press OK.” is displayed, install hardware components according to the cache hardware installation procedure.

   Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
   (Uninstalled module is displayed as looks depressed.)

(A PCB to be added)



(Two PCBs to be added)



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3. 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.

3-1. Remove the PCB.

a. While referring to Fig. 3.7.2-1 and Table 3.7.2-2, check the Shut Down LED on the Cache Memory PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [3-1 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.

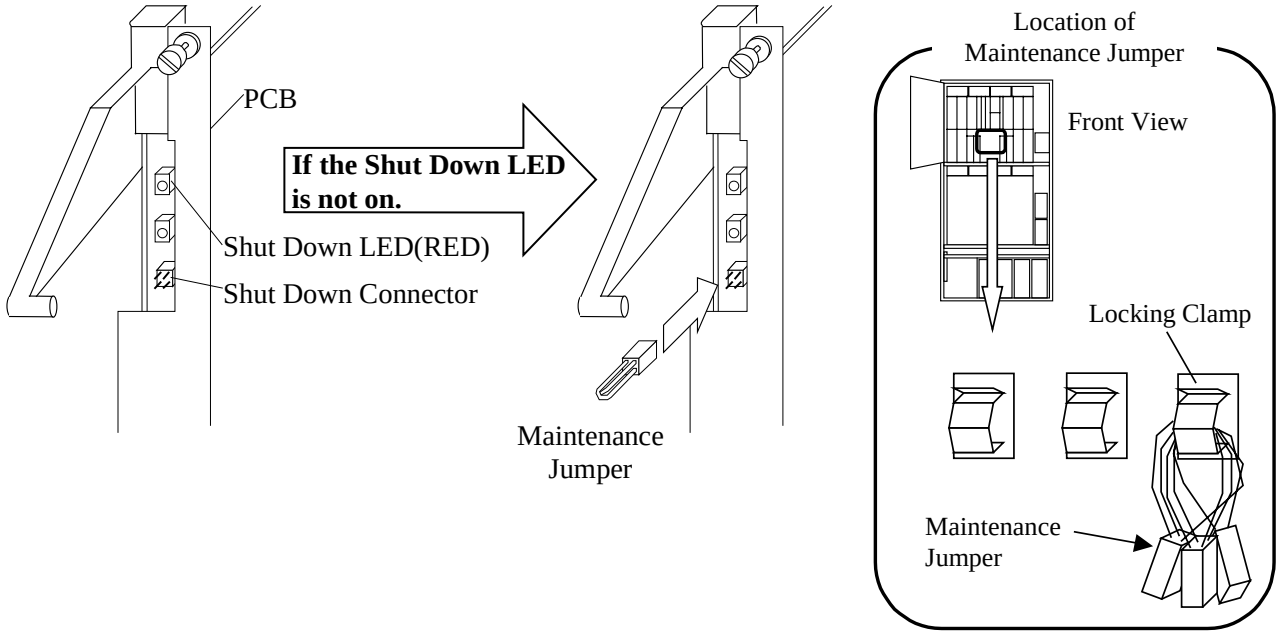

Fig. 3.7.2-1 Location of the Shut Down LED

Table 3.7.2-2 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

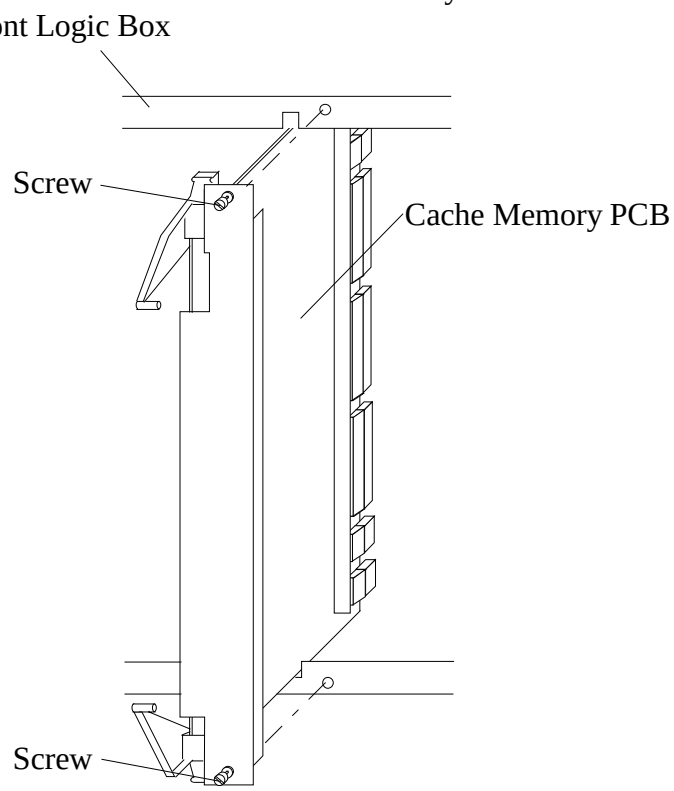

Fig. 3.7.2-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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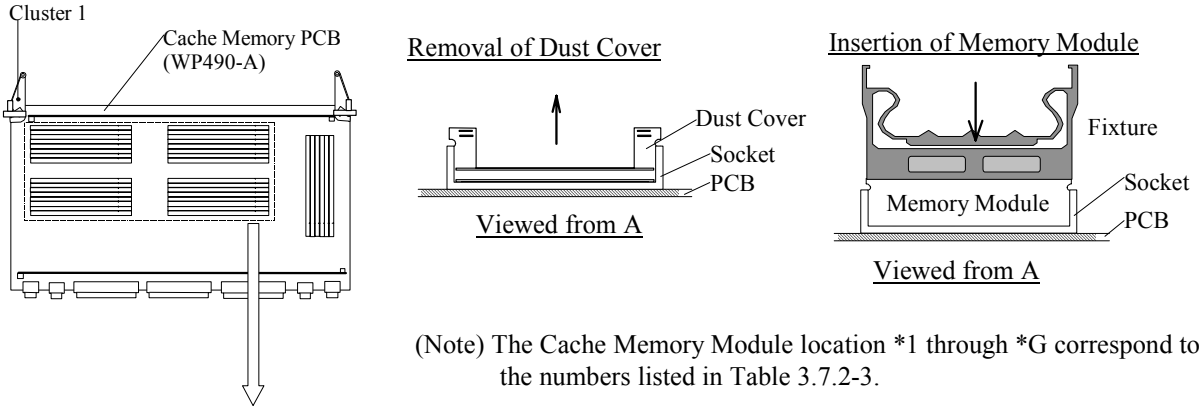
3-2. Insert the Cache Memory Modules.

a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.7.2-3, Table 3.7.2-3 and Table 3.7.2-3A.

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



(Note) The Cache Memory Module location *1 through *G correspond to the numbers listed in Table 3.7.2-3.

Cache Memory Module Location

BCM007 (MG#15) : SH288-B/C	*G	ACM007 (MG#14) : SH288-B/C	*F
BCM006 (MG#13) : SH288-B/C	*E	ACM006 (MG#12) : SH288-B/C	*D
BCM005 (MG#11) : SH288-B/C	*C	ACM005 (MG#10) : SH288-B/C	*B
BCM004 (MG#9) : SH288-B/C	*A	ACM004 (MG#8) : SH288-B/C	*9
BCM003 (MG#7) : SH288-B/C	*8	ACM003 (MG#6) : SH288-B/C	*7
BCM002 (MG#5) : SH288-B/C	*6	ACM002 (MG#4) : SH288-B/C	*5
BCM001 (MG#3) : SH288-B/C	*4	ACM001 (MG#2) : SH288-B/C	*3
BCM000 (MG#1) : SH288-B/C	*2	ACM000 (MG#0) : SH288-B/C	*1

BCM107 (MG#15) : SH288-B/C	*G	ACM107 (MG#14) : SH288-B/C	*F
BCM106 (MG#13) : SH288-B/C	*E	ACM106 (MG#12) : SH288-B/C	*D
BCM105 (MG#11) : SH288-B/C	*C	ACM105 (MG#10) : SH288-B/C	*B
BCM104 (MG#9) : SH288-B/C	*A	ACM104 (MG#8) : SH288-B/C	*9
BCM103 (MG#7) : SH288-B/C	*8	ACM103 (MG#6) : SH288-B/C	*7
BCM102 (MG#5) : SH288-B/C	*6	ACM102 (MG#4) : SH288-B/C	*5
BCM101 (MG#3) : SH288-B/C	*4	ACM101 (MG#2) : SH288-B/C	*3
BCM100 (MG#1) : SH288-B/C	*2	ACM100 (MG#0) : SH288-B/C	*1

Fig. 3.7.2-3 Inserting Location of the Cache Memory Module

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(1) Composition of only DKC-F460I-2048

Table 3.7.2-3 Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-2048)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 1	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	1 GB	DKC-F460I-2048 1 set	SH288-B	2
2	1 GB	2 GB	DKC-F460I-2048 2 sets	SH288-B	2
3	2 GB	3 GB	DKC-F460I-2048 3 sets	SH288-B	2
4	3 GB	4 GB	DKC-F460I-2048 4 sets	SH288-B	2
5	4 GB	5 GB	DKC-F460I-2048 5 sets	SH288-B	2
6	5 GB	6 GB	DKC-F460I-2048 6 sets	SH288-B	2
7	6 GB	7 GB	DKC-F460I-2048 7 sets	SH288-B	2
8	7 GB	8 GB	DKC-F460I-2048 8 sets	SH288-B	2
9	8 GB	9 GB	DKC-F460I-2048 9 sets	SH288-B	2
A	9 GB	10 GB	DKC-F460I-2048 10 sets	SH288-B	2
B	10 GB	11 GB	DKC-F460I-2048 11 sets	SH288-B	2
C	11 GB	12 GB	DKC-F460I-2048 12 sets	SH288-B	2
D	12 GB	13 GB	DKC-F460I-2048 13 sets	SH288-B	2
E	13 GB	14 GB	DKC-F460I-2048 14 sets	SH288-B	2
F	14 GB	15 GB	DKC-F460I-2048 15 sets	SH288-B	2
G	15 GB	16 GB	DKC-F460I-2048 16 sets	SH288-B	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 3.7.2-3.

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(2) Composition of only DKC-F460I-4096

Table 3.7.2-3A Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-4096)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 1	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	2 GB	DKC-F460I-4096 1 set	SH288-C	2
2	2 GB	4 GB	DKC-F460I-4096 2 sets	SH288-C	2
3	4 GB	6 GB	DKC-F460I-4096 3 sets	SH288-C	2
4	6 GB	8 GB	DKC-F460I-4096 4 sets	SH288-C	2
5	8 GB	10 GB	DKC-F460I-4096 5 sets	SH288-C	2
6	10 GB	12 GB	DKC-F460I-4096 6 sets	SH288-C	2
7	12 GB	14 GB	DKC-F460I-4096 7 sets	SH288-C	2
8	14 GB	16 GB	DKC-F460I-4096 8 sets	SH288-C	2
9	16 GB	18 GB	DKC-F460I-4096 9 sets	SH288-C	2
A	18 GB	20 GB	DKC-F460I-4096 10 sets	SH288-C	2
B	20 GB	22 GB	DKC-F460I-4096 11 sets	SH288-C	2
C	22 GB	24 GB	DKC-F460I-4096 12 sets	SH288-C	2
D	24 GB	26 GB	DKC-F460I-4096 13 sets	SH288-C	2
E	26 GB	28 GB	DKC-F460I-4096 14 sets	SH288-C	2
F	28 GB	30 GB	DKC-F460I-4096 15 sets	SH288-C	2
G	30 GB	32 GB	DKC-F460I-4096 16 sets	SH288-C	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 3.7.2-3.

3-3. Insert the PCB.

a. Insert the Cache Memory PCB referring to Table 3.7.2-4.

b. Fasten the two screws.

Table 3.7.2-4 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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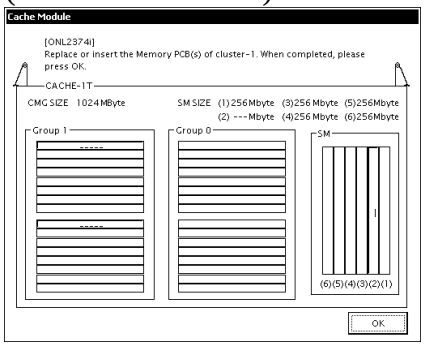
4. SVP post procedure on the Cluster 1.

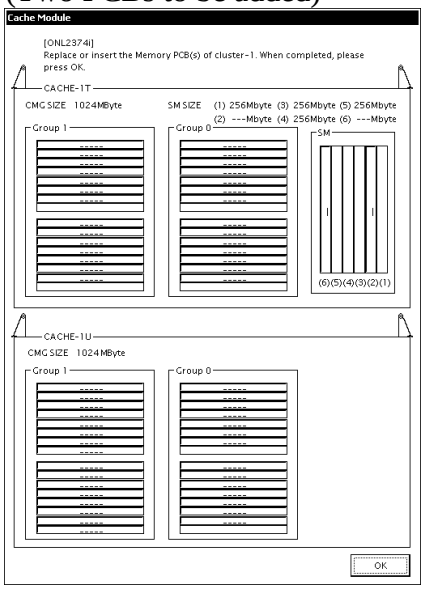
1.

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].”.

(A PCB to be added)



(Two PCBs to be added)



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.

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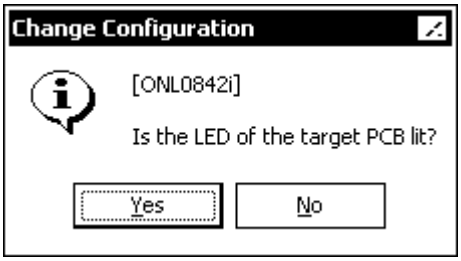
5. SVP pre procedure on the Cluster 2.

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 lit?”.

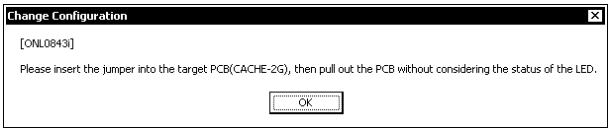


<Forcing shut down LED on>

CAUTION

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

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



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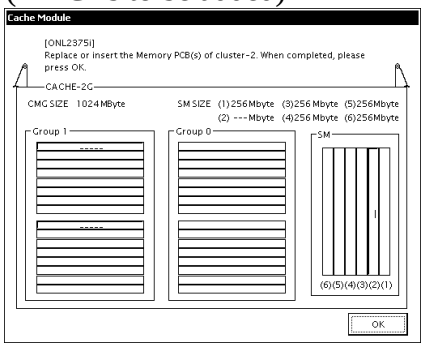
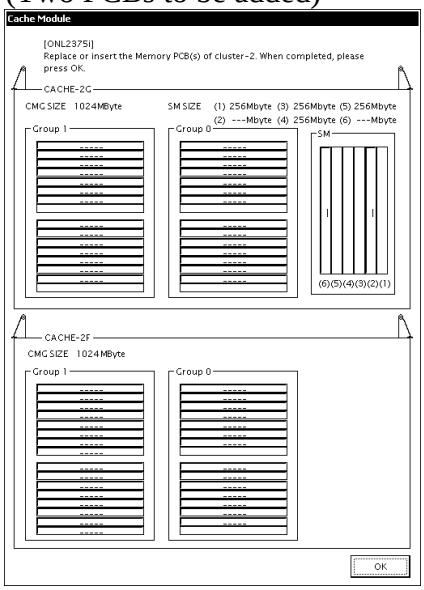
3. <Perform cache hardware installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or insert the Memory PCB(s) of cluster-2. When completed, please press OK.” is displayed, install hardware components according to the cache hardware installation procedure.

   Make sure of the installation location and size of the module to be added and insert the correct module in the correct location.
   (Uninstalled module is displayed as looks depressed.)

(A PCBs to be added)



(Two PCBs to be added)



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6. Install the Cache Memory and 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.

6-1. Remove the PCB.

a. While referring to Fig. 3.7.2-4 and Table 3.7.2-5, check the Shut Down LED on the Cache Memory PCB. Connect the Maintenance Jumper to the Shut Down Connector if the Shut Down LED is not on. (This procedure [6-1. 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.

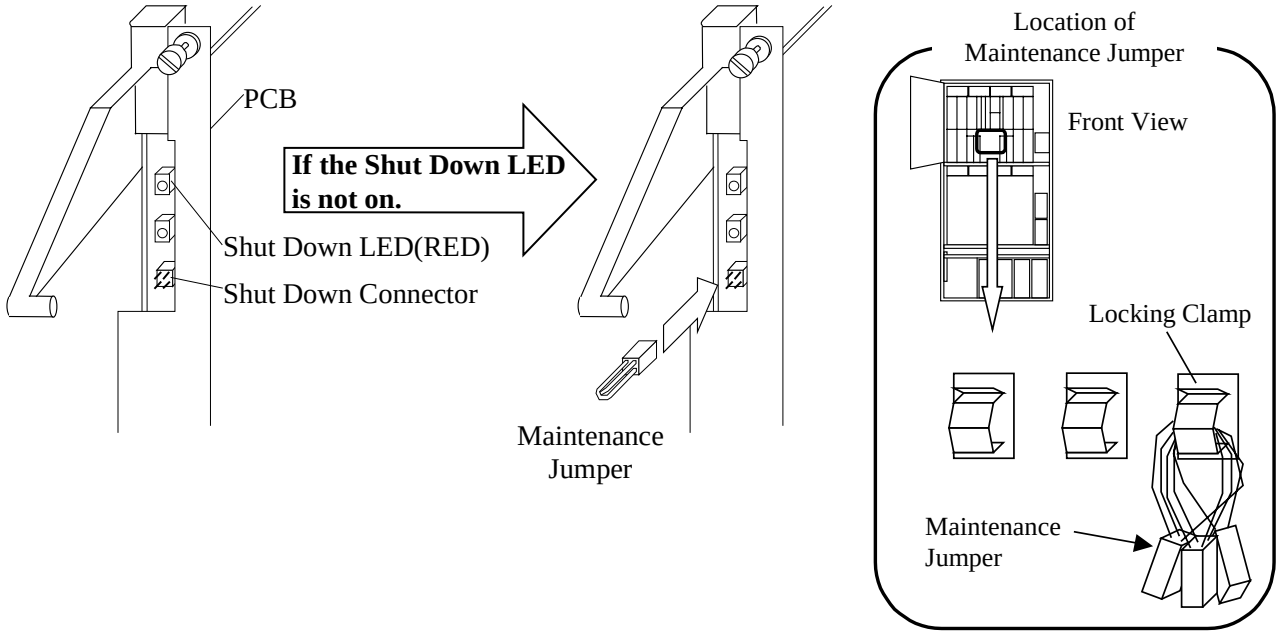

Fig. 3.7.2-4 Location of the Shut Down LED

Table 3.7.2-5 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB.

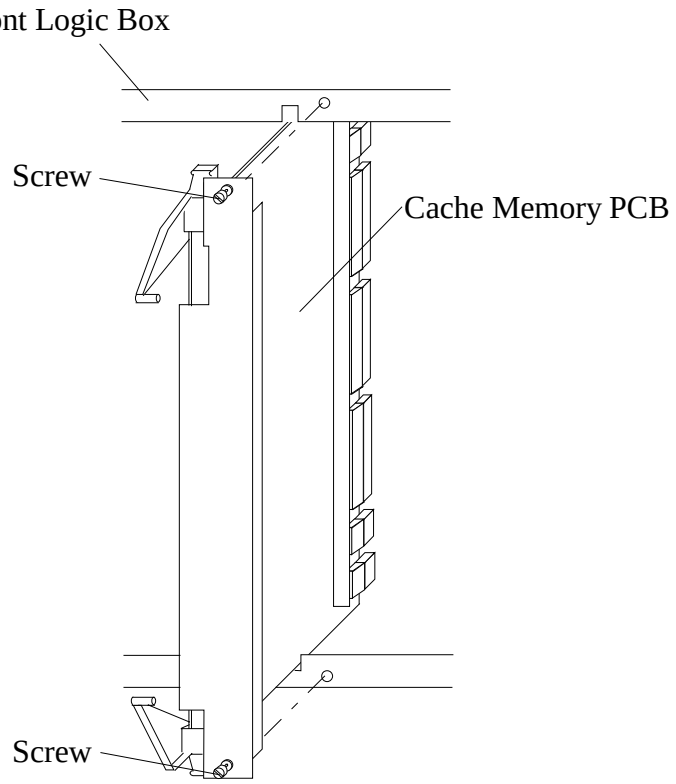

Fig. 3.7.2-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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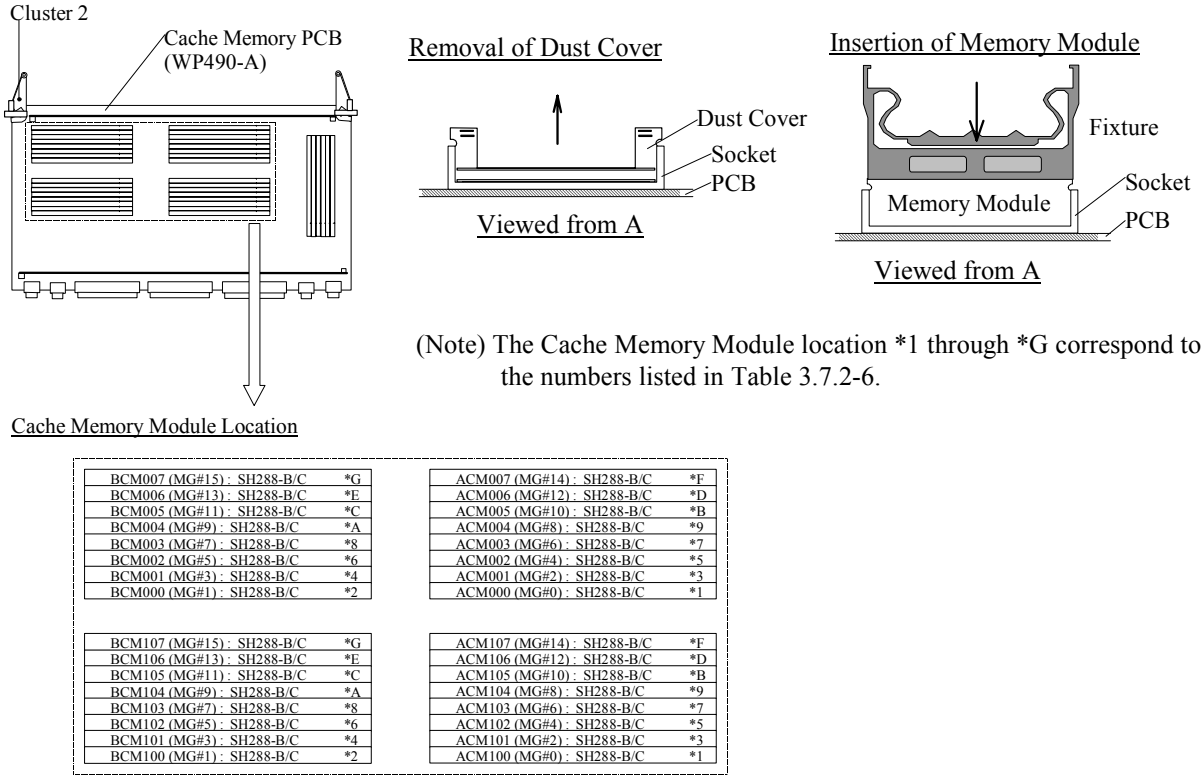
6-2. Insert the Cache Memory Modules.

a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.7.2-6, Table 3.7.2-6 and Table 3.7.2-6A.

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



(Note) The Cache Memory Module location *1 through *G correspond to the numbers listed in Table 3.7.2-6.

Fig. 3.7.2-6 Inserting Location of the Cache Memory Module

(1) Composition of only DKC-F460I-2048

Table 3.7.2-6 Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-2048)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 2	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	1 GB	DKC-F460I-2048 1 set	SH288-B	2
2	1 GB	2 GB	DKC-F460I-2048 2 sets	SH288-B	2
3	2 GB	3 GB	DKC-F460I-2048 3 sets	SH288-B	2
4	3 GB	4 GB	DKC-F460I-2048 4 sets	SH288-B	2
5	4 GB	5 GB	DKC-F460I-2048 5 sets	SH288-B	2
6	5 GB	6 GB	DKC-F460I-2048 6 sets	SH288-B	2
7	6 GB	7 GB	DKC-F460I-2048 7 sets	SH288-B	2
8	7 GB	8 GB	DKC-F460I-2048 8 sets	SH288-B	2
9	8 GB	9 GB	DKC-F460I-2048 9 sets	SH288-B	2
A	9 GB	10 GB	DKC-F460I-2048 10 sets	SH288-B	2

(To be continued.)

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(Continued from preceding sheet.)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 2	
	From (Note 1)	To (Note 1)		Part name	Quantity
B	10 GB	11 GB	DKC-F460I-2048 11 sets	SH288-B	2
C	11 GB	12 GB	DKC-F460I-2048 12 sets	SH288-B	2
D	12 GB	13 GB	DKC-F460I-2048 13 sets	SH288-B	2
E	13 GB	14 GB	DKC-F460I-2048 14 sets	SH288-B	2
F	14 GB	15 GB	DKC-F460I-2048 15 sets	SH288-B	2
G	15 GB	16 GB	DKC-F460I-2048 16 sets	SH288-B	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 3.7.2-6.

(2) Composition of only DKC-F460I-4096

Table 3.7.2-6A Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-4096)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 1	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	2 GB	DKC-F460I-4096 1 set	SH288-C	2
2	2 GB	4 GB	DKC-F460I-4096 2 sets	SH288-C	2
3	4 GB	6 GB	DKC-F460I-4096 3 sets	SH288-C	2
4	6 GB	8 GB	DKC-F460I-4096 4 sets	SH288-C	2
5	8 GB	10 GB	DKC-F460I-4096 5 sets	SH288-C	2
6	10 GB	12 GB	DKC-F460I-4096 6 sets	SH288-C	2
7	12 GB	14 GB	DKC-F460I-4096 7 sets	SH288-C	2
8	14 GB	16 GB	DKC-F460I-4096 8 sets	SH288-C	2
9	16 GB	18 GB	DKC-F460I-4096 9 sets	SH288-C	2
A	18 GB	20 GB	DKC-F460I-4096 10 sets	SH288-C	2
B	20 GB	22 GB	DKC-F460I-4096 11 sets	SH288-C	2
C	22 GB	24 GB	DKC-F460I-4096 12 sets	SH288-C	2
D	24 GB	26 GB	DKC-F460I-4096 13 sets	SH288-C	2
E	26 GB	28 GB	DKC-F460I-4096 14 sets	SH288-C	2
F	28 GB	30 GB	DKC-F460I-4096 15 sets	SH288-C	2
G	30 GB	32 GB	DKC-F460I-4096 16 sets	SH288-C	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 3.7.2-6.

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6-3. Insert the PCB.

a. Insert the Cache Memory PCB referring to Table 3.7.2-7.

b. Fasten the two screws.

Table 3.7.2-7 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

6-4 Change the nameplate.

a. Refer to Fig. 3.7.2-7 to paint out necessary numbers on the nameplate.

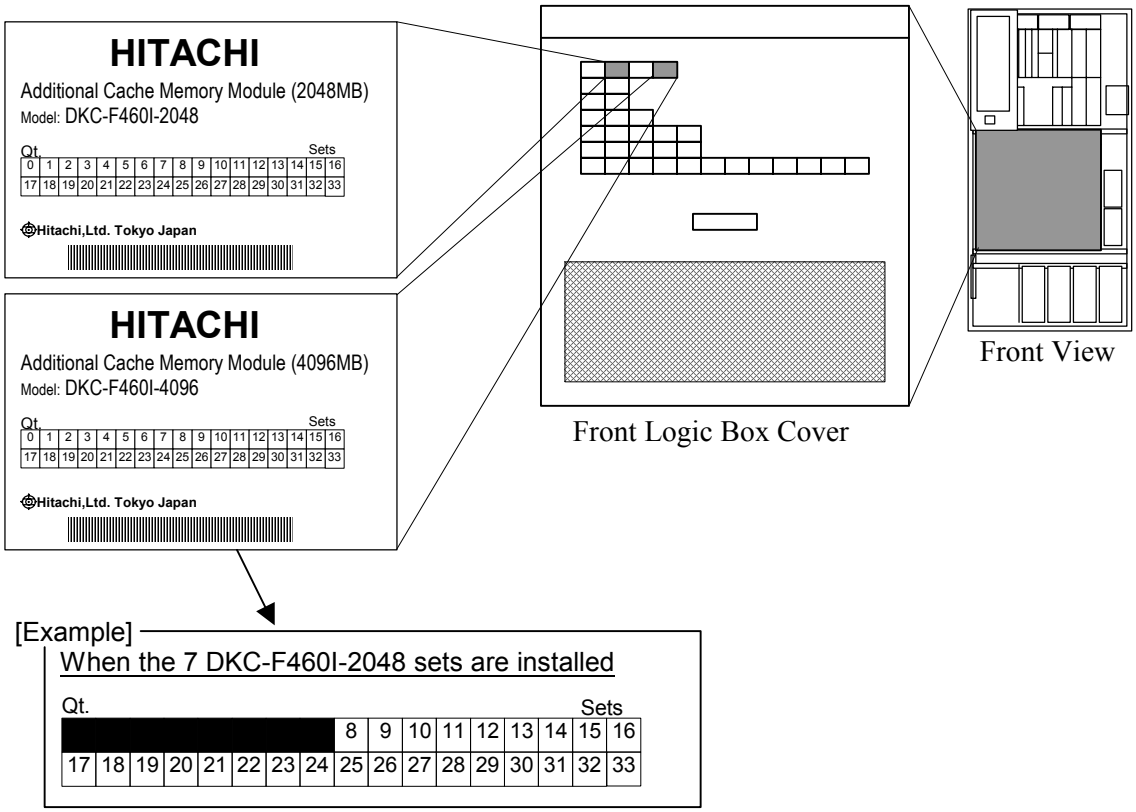

Fig. 3.7.2-7 Location of the Nameplate

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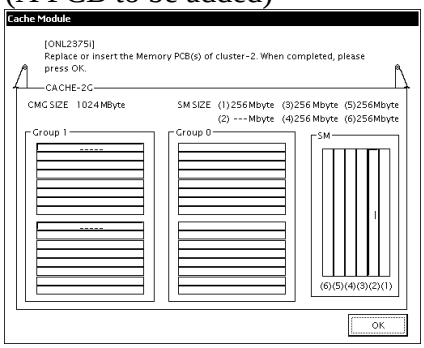
7. SVP post procedure on the Cluster 2.

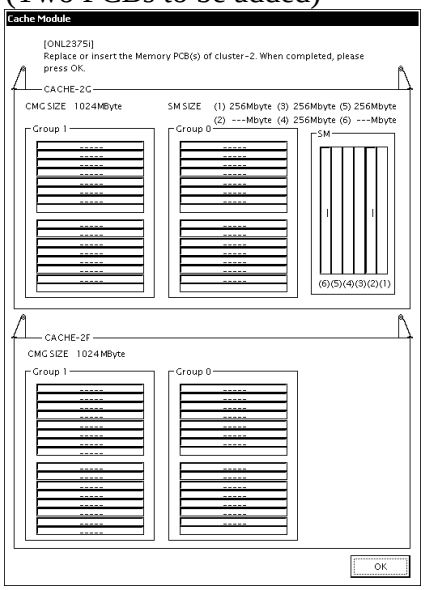
1.

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].”.

(A PCB to be added)



(Two PCBs to be added)



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.

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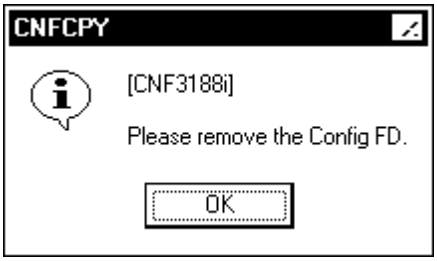
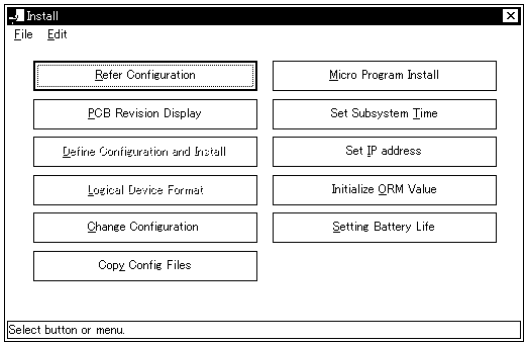
4. <End of system update processing>
"Renewal process has completed. Please check subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

5.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

6.
When this procedure is completed, the message "Please remove the Config FD." 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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3.8 Installation of Additional Disk Adapter, Additional Disk Port Switch, Disk Path Expansion Kit and HDD Canister (DKC-F465I-100/FSW/FSW2, DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

Table 3.8-1 Parts List

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
1	DKC-F465I-100	Disk Adapter PCB	5513979-A	2	Color of PCB Lever: Blue
		Nameplate (HDS)	2105894-7	1	RSD
			2105895-7/207		HICAM/HICEF
2	DKC-F460I-200	Disk Adapter PCB	5513979-B	2	Color of PCB Lever: Blue
		Nameplate (HDS)	2105902-103	1	RSD
			2105903-103/203		HICAM/HICEF
		Nameplate (HP)	2105902-203	1	RSD
			2105903-303/403		HICAM/HICEF
3	DKC-F465I-FSW	FSW PCB	5513854-B	8	
		Nameplate (HDS)	2105894-8	1	RSD
			2105895-8/208		HICAM/HICEF
		Nameplate (HP)	2105894-108	1	RSD
			2105895-108/308		HICAM/HICEF
4	DKC-F465I-FSW2	FSW PCB	5513854-C	8	
		Nameplate (HDS)	2105894-9	1	RSD
			2105895-9/209		HICAM/HICEF
		Nameplate (HP)	2105894-109	1	RSD
			2105895-109/309		HICAM/HICEF
5	DKU-F455I-36K4	HDU450-36K1FC	5515544-A	4	
		Nameplate(HDS)	2105914-6/14/22	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-50/54/58	1	RSD/HICAM/HICEF
6	DKU-F455I-36K1	HDU450-36K1FC	5515544-A	1	
		Nameplate(HDS)	2105914-5/13/21	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-49/53/57	1	RSD/HICAM/HICEF
7	DKU-F455I-72J4	HDU450-72J1FC	5513873-A	4	
		Nameplate(HDS)	2105914-8/16/24	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-52/56/60	1	RSD/HICAM/HICEF
8	DKU-F455I-72J1	HDU450-72J1FC	5513873-A	1	
		Nameplate(HDS)	2105914-7/15/23	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-51/55/59	1	RSD/HICAM/HICEF
9	DKU-F455I-72K4	HDU450-72K1FC	5518492-A	4	
		Nameplate (HDS)	2105914-130/–/–	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-174/–/–	1	RSD/HICAM/HICEF
10	DKU-F455I-72K1	HDU450-72K1FC	5518492-A	1	
		Nameplate (HDS)	2105914-129/–/–	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-173/–/–	1	RSD/HICAM/HICEF

(To be continued.)

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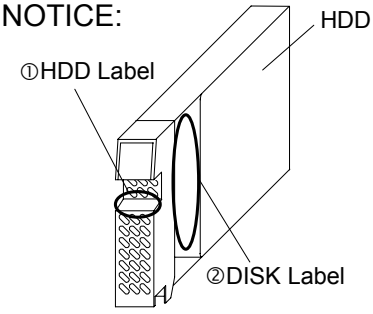
(Continued from preceding sheet.)

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
11	DKU-F455I-146J4	HDU450-146J1FC	5518491-A	4	
		Nameplate (HDS)	2105914-128/166/168	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-160/162/164	1	RSD/HICAM/HICEF
12	DKU-F455I-146J1	HDU450-146J1FC	5518491-A	1	
		Nameplate (HDS)	2105914-127/165/167	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-159/161/163	1	RSD/HICAM/HICEF
13	DKU-F455I-146JF	HDU450-146JSFC	5522731-A	4	
		Nameplate(HDS)	2105914-176/200/202	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-194/196/198	1	RSD/HICAM/HICEF
14	DKU-F455I-146JS	HDU450-146JSFC	5522731-A	1	
		Nameplate(HDS)	2105914-175/199/201	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-193/195/197	1	RSD/HICAM/HICEF
15	DKU-F455I-146JQ	HDU450-146JMFC	5522976-A	4	
		Nameplate(HDS)	2105914-204/222/224	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-226/228/230	1	RSD/HICAM/HICEF
16	DKU-F455I-146JM	HDU450-146JMFC	5522976-A	1	
		Nameplate(HDS)	2105914-203/221/223	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-225/227/229	1	RSD/HICAM/HICEF

NOTICE:



① HDD Label
Refer to the HDD label for the name of HDD canister.

② DISK Label
Although the DISK label may differ from the HDD label in capacity, there is no problem. This label should be disregarded.

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3.8.1 Flowchart

NOTICE:
When the number of CUs is added accompanying the HDD installation, there is a case that expansion of shared memory is required. If necessary, see INST03-SM-10.

There are four cases (① to ④) of these addition works as shown in the following table because two or more options are to be added at the same time. Perform the work referring to the flowchart of each work.

Case	Option Installation Procedure	Page
①	When only HDD Canister is to be installed (DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/ 146J1/146J4/146JS/146JF/146JM/146JQ)	INST03-DKA-30
②	When HDD Canister and FSW are to be installed at the same time (DKC-F465I-FSW, DKU-F455I-36K1/36K4/72J1/72J4/ 72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST03-DKA-30
③	When HDD Canister, DKA and FSW are to be installed at the same time (DKC-F460I-FSW2, DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/ 146JS/146JF/146JM/146JQ)	INST03-DKA-30
④	When HDD Canister DKA and FSW are to be installed at the same time (Only new installation) (DKC-F465I-100/FSW/FSW2, DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/ 146JS/146JF/146JM/146JQ)	INST03-DKA-30

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① When only HDD Canister is to be installed ---------- [INST03-DKA-40 through 170]

1. Setting up the New Device Structure Information
↓
2. Installation Procedure of HDD Canister
↓
3. SVP post procedure

② When HDD Canister and FSW are to be installed at the same time
---------- [INST03-DKA-180 through 330]

1. Setting up the New Device Structure Information
↓
2. Installation Procedure of Additional Disk Port Switch
↓
3. Installation Procedure of HDD Canister
↓
4. SVP post procedure

③ When HDD Canister, DKA and FSW are to be installed at the same time
---------- [INST03-DKA-340 through 520]

1. Setting up the New Device Structure Information
↓
2 Installation Procedure of Additional Disk Adapter
↓
3. Installation Procedure of Disk Path Expansion Kit
↓
4. Installation Procedure of HDD Canister
↓
5. SVP post procedure

④ When HDD Canister, DKA and FSW are to be installed at the same time
---------- [INST03-DKA-530 through 620]

1 Installation Procedure of Additional Disk Adapter
↓
2. Installation Procedure of Additional Disk Port Switch and Disk Path Expansion Kit
↓
3. Installation Procedure of HDD Canister

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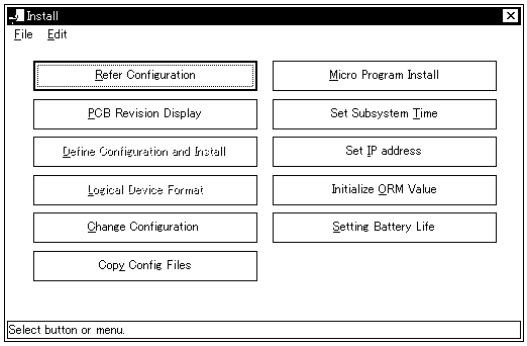
3.8.2 When only HDD Canister is to be installed (DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

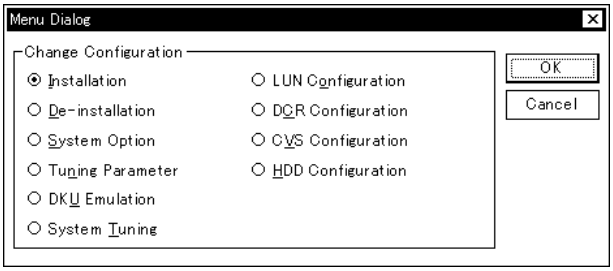
1. Setting up the New Device Structure Information

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

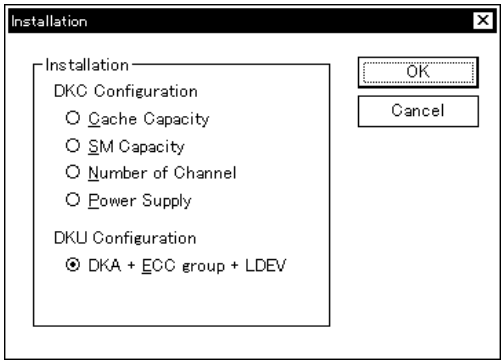
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [DKA + ECC group + LDEV], and select (CL) [OK].



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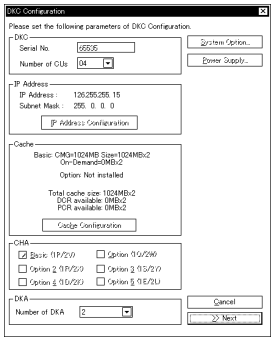
5. <Update Configuration Information>
   Define the number of CU in DKC in the 'DKC Configuration' window.

   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-SM-10.



6.

7.

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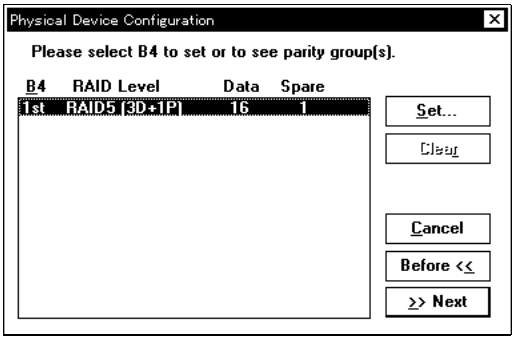
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



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

[Multi Cabinet Model]

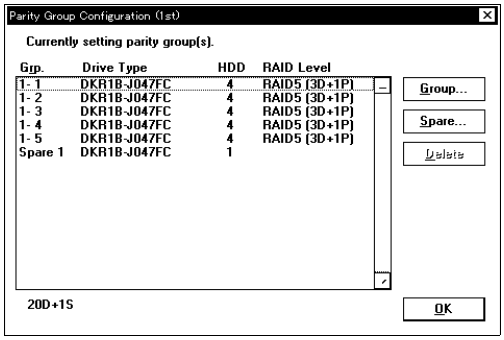
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

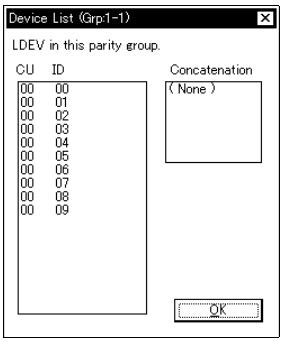
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

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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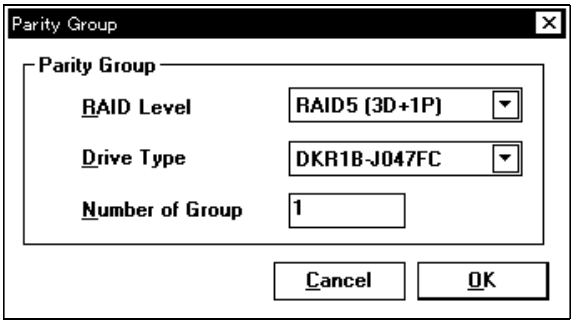
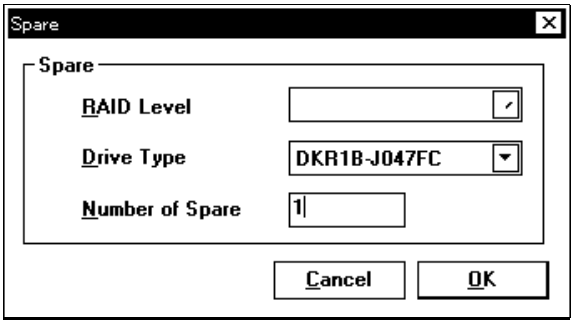
8-1-1.

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.



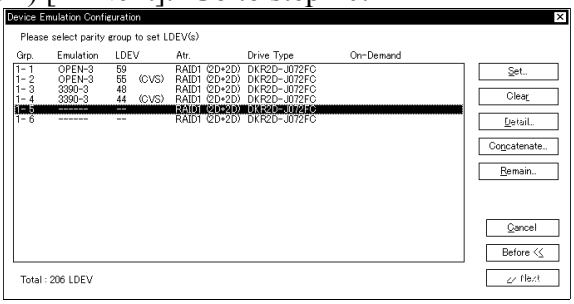
8-1-2.

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 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.



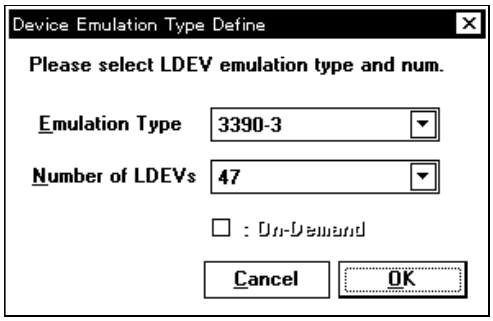
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

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.

9-1.

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

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



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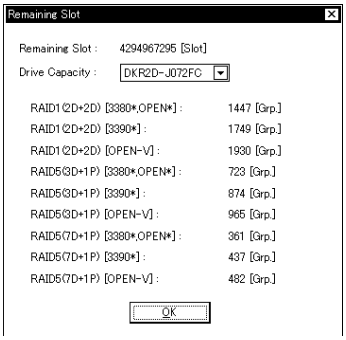
9-2. <Displaying remaining slot(s)>

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



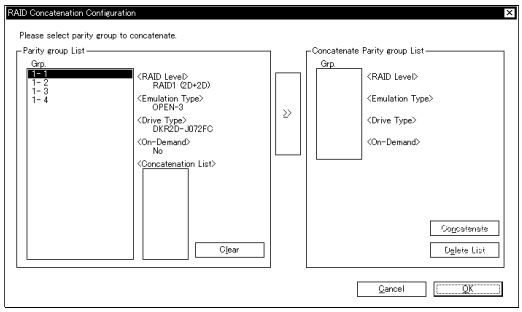
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

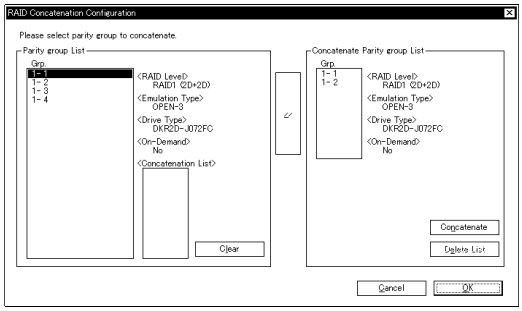
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



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.

9-5.

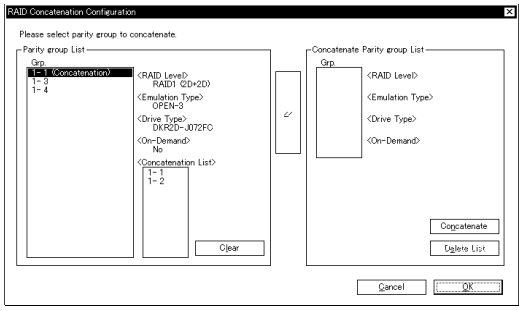
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



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.

9-6.

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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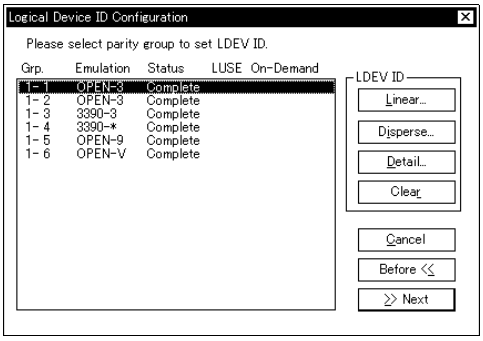
10. <Define LDEV ID>

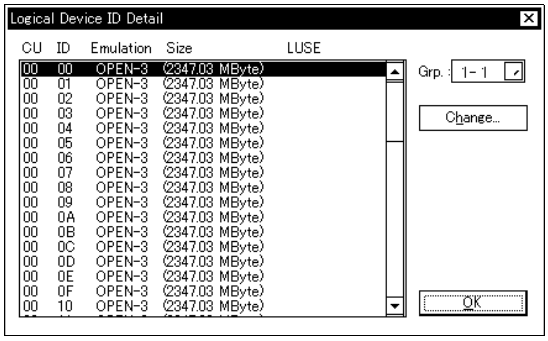


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[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) [>>Next]. Go to Step 11.

10-1. Detailed Definition Screen for LDEV ID

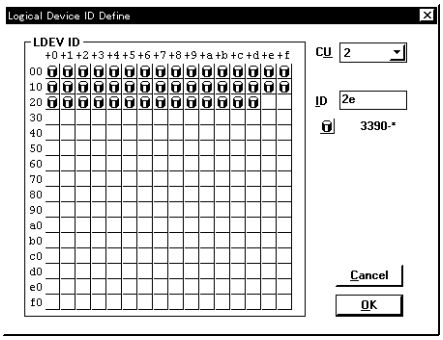


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' 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.

10-2. 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

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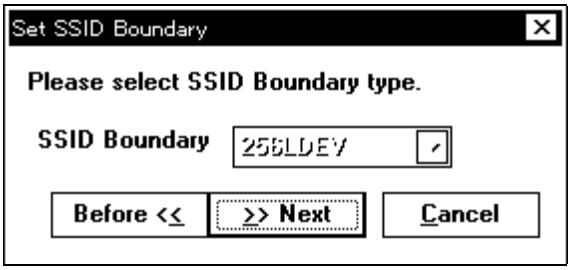
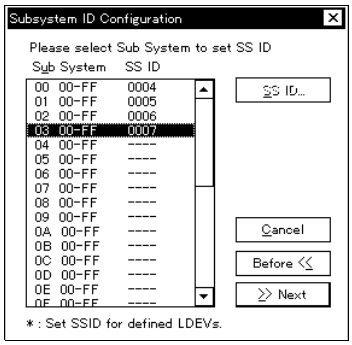
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

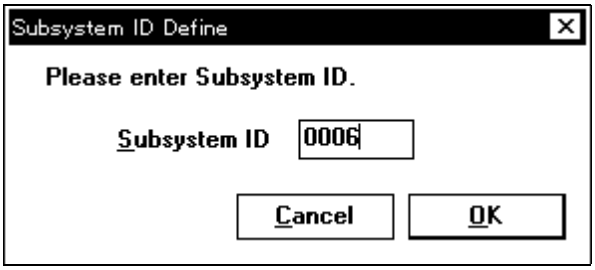


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

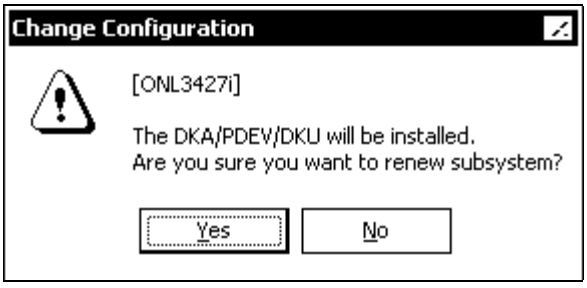


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-40 step 3.



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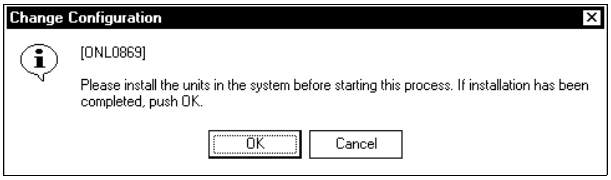
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <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, push OK.” is displayed.



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2. Installation Procedure of HDD Canister

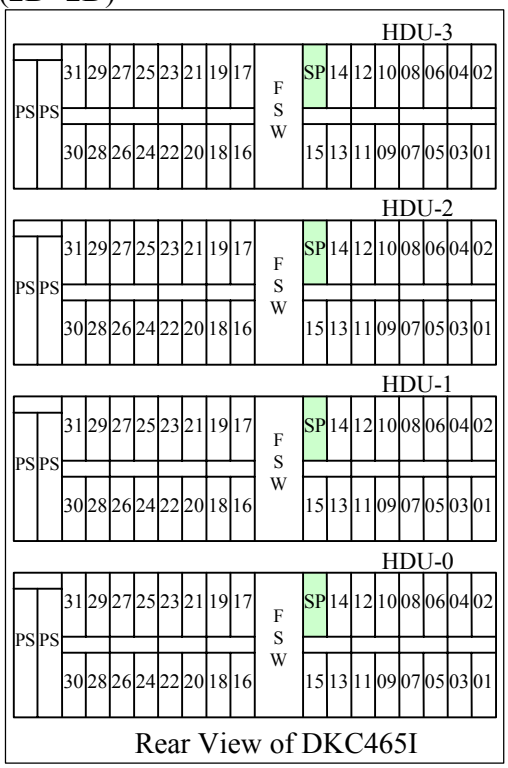
2-1 Confirmation of position to install HDD canister

a. Confirm a position to install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 3.8.2-1 Data Drive/Parity Drive Expansion Sequence (1 DKA Pair Model)

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

Table 3.8.2-1 Relation between HDDs installation order and RAID group number (1 DKA Pair Model)

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

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

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

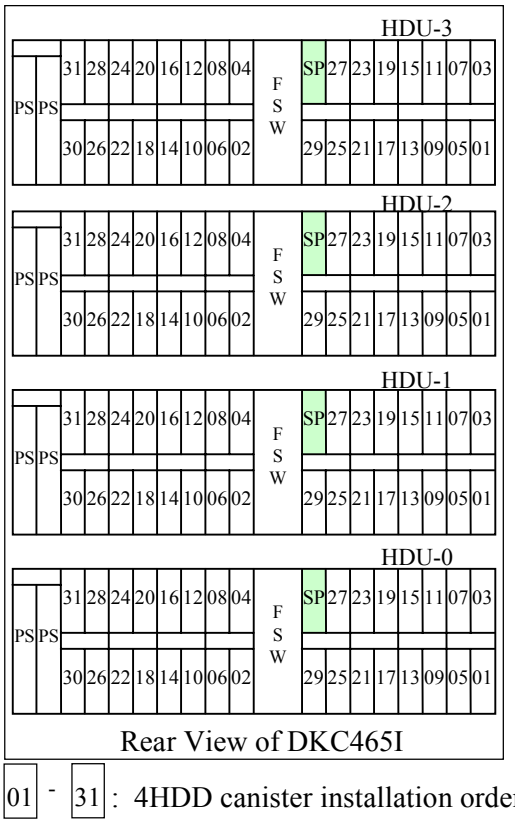

Fig. 3.8.2-2 Data Drive/Parity Drive Expansion Sequence

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

Table 3.8.2-2 Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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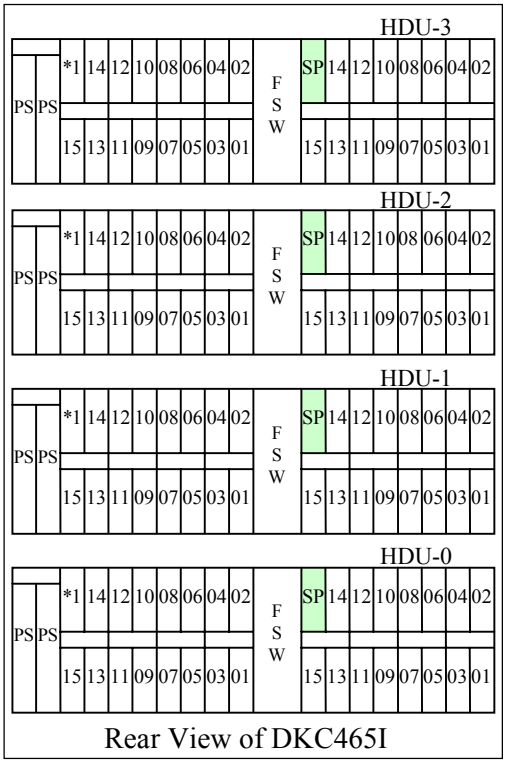
ii. RAID5(7D+1P)



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

Fig. 3.8.2-2A Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

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

Table 3.8.2-2A Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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

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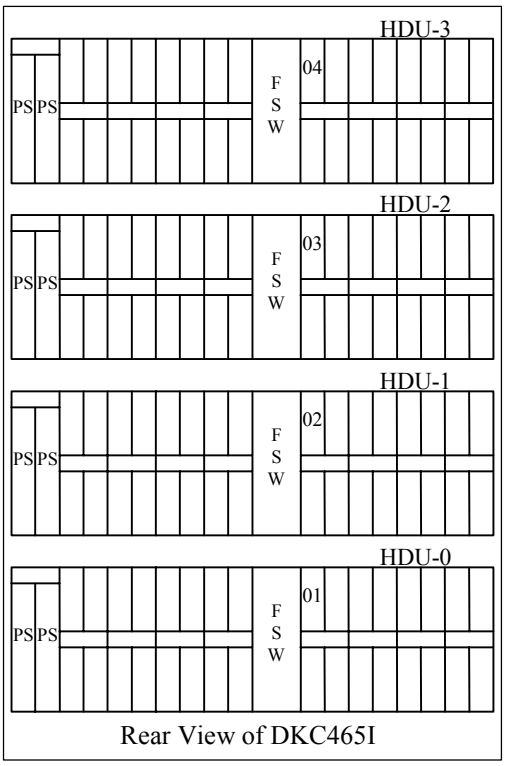
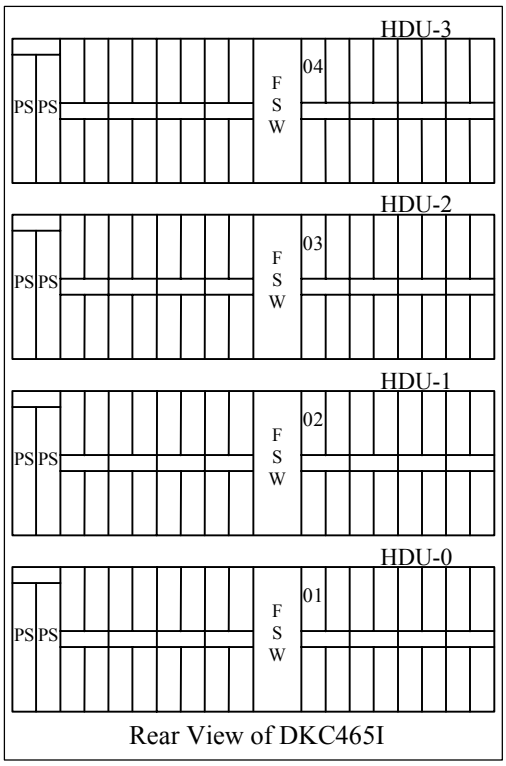
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

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



Full-spec Model (2DKA Pairs Model)



01 - 04 : Spare HDD canister installation order

Fig. 3.8.2-3 Spare Drive Expansion Sequence

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2-2 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-DKA-630.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-640.)

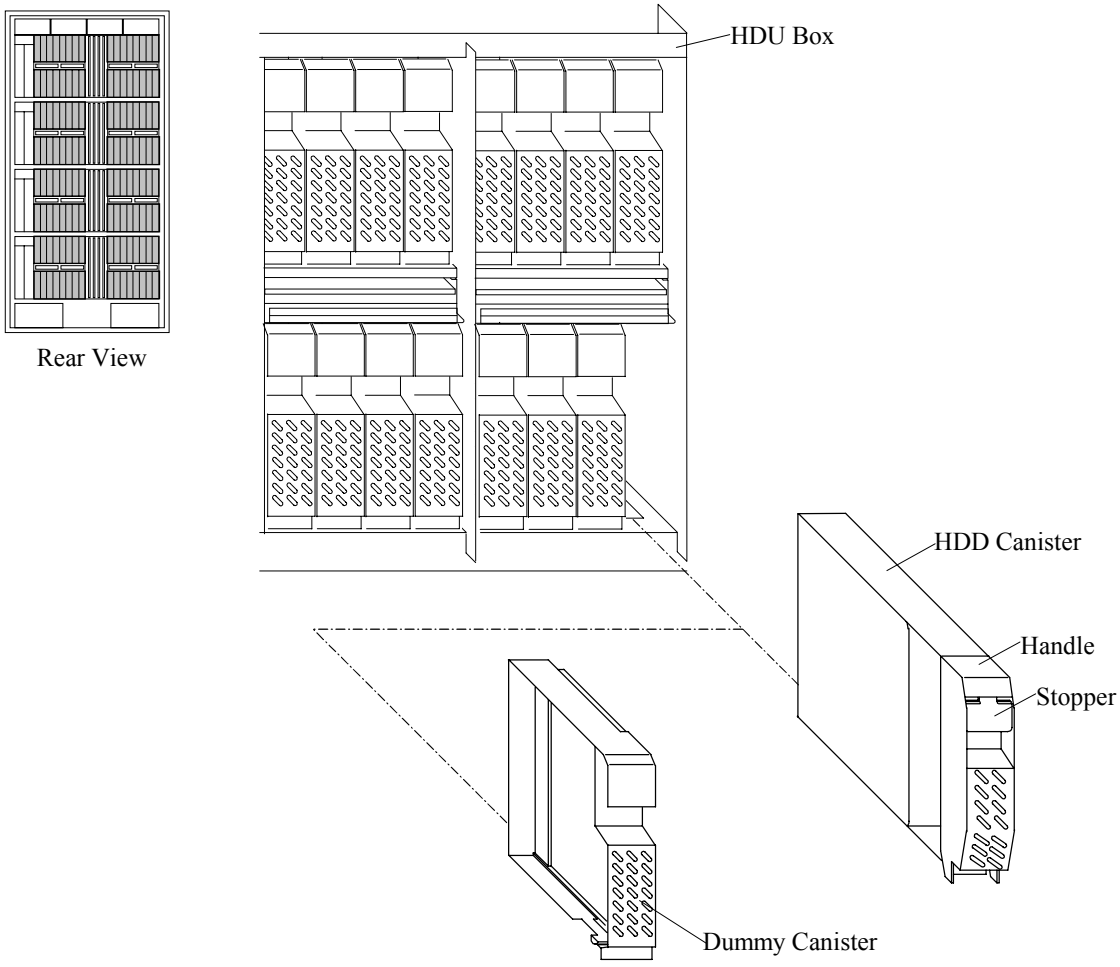

Fig. 3.8.2-4 Installation of HDD Canister

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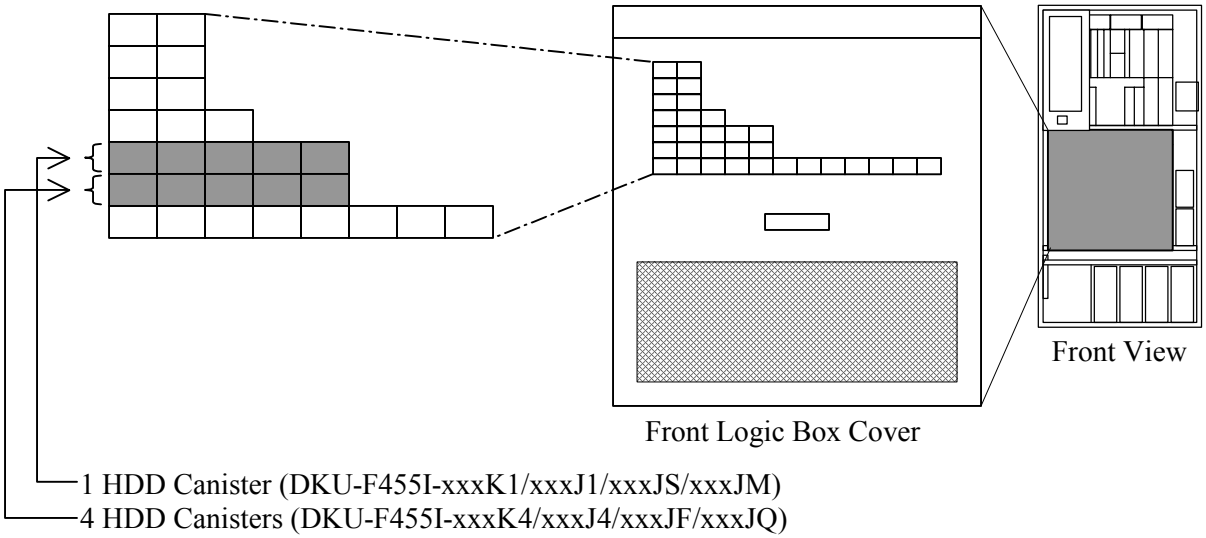
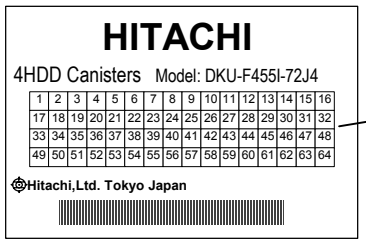
2-3 Attachment of the nameplate.

a. When the corresponding nameplate is not attached, attach the nameplate from the left of cover. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.8.2-5 Attachment of Nameplate

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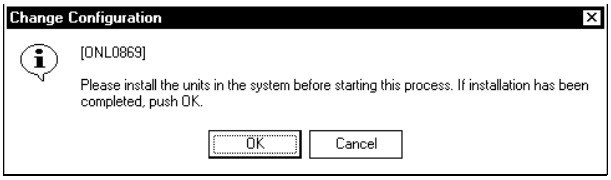
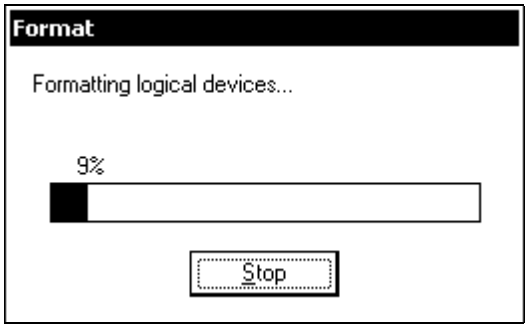
3. SVP post procedure

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, push OK.”.



2. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

3. <LDEV FORMAT>
   “Formatting the logical device...” 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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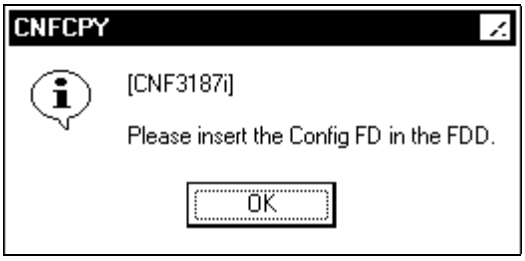
5.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

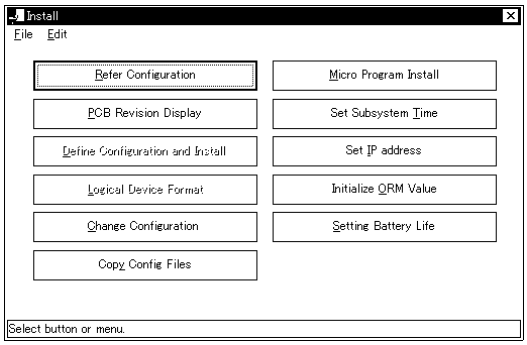


6.

When this procedure is completed, the message "Please remove the Config FD." 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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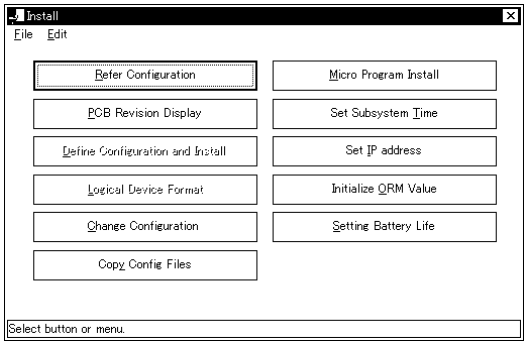
3.8.3 When HDD Canister and FSW are to be installed at the same time (DKC-F465I-FSW, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

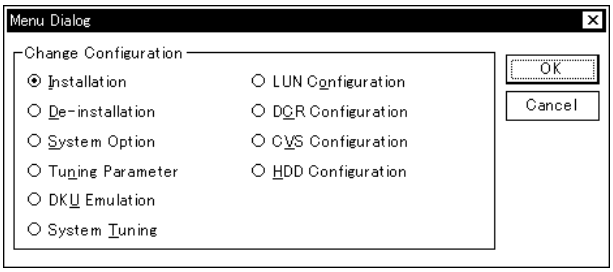
1. Setting up the New Device Structure Information

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

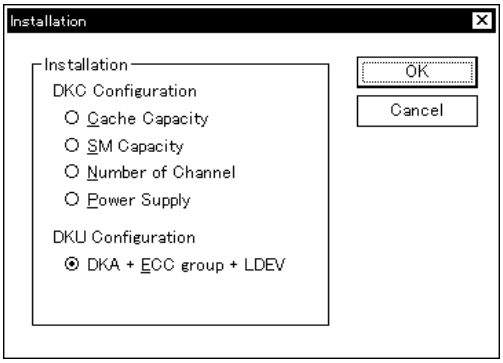
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [DKA + ECC group + LDEV], and select (CL) [OK].



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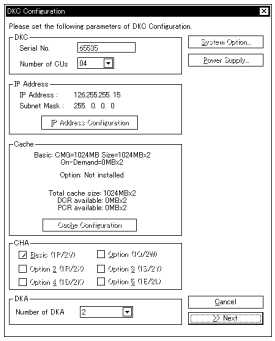
5. <Update Configuration Information>
   Define the number of CU in DKC in the 'DKC Configuration' window.

   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-SM-10.



6.

7.

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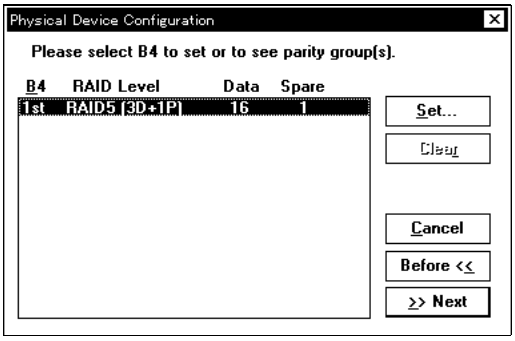
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
In the case of only DKA installation, select (CL) [>>Next]. Go to step 9.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



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

[Multi Cabinet Model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

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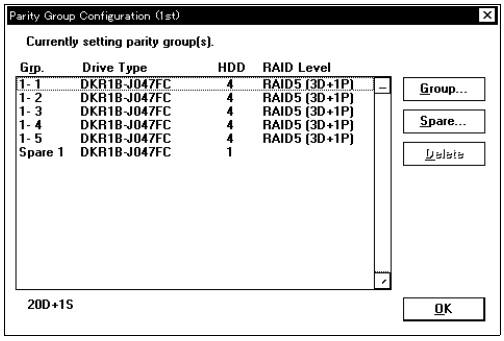
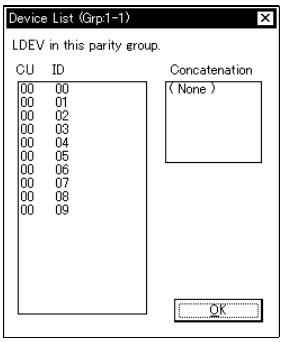
8-1. <Define Parity Group>

[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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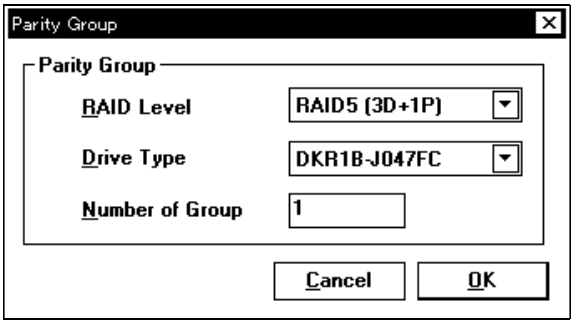
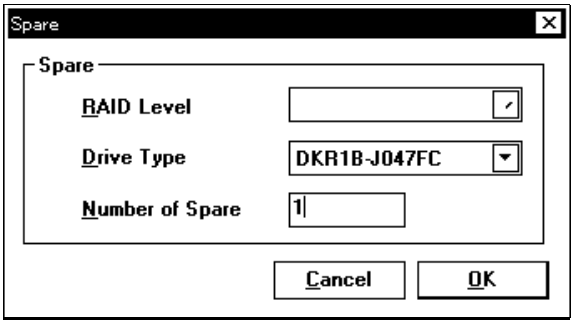
8-1-1.

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.



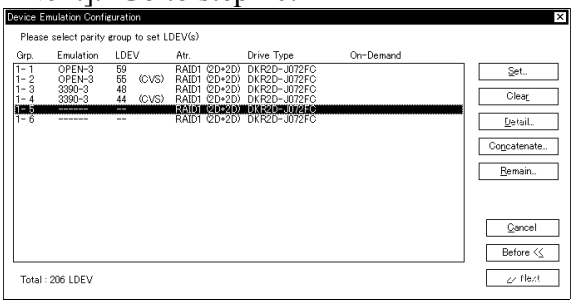
8-1-2.

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 for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.
In the case of only DKA installation, select (CL) [>>Next]. Go to step 10.



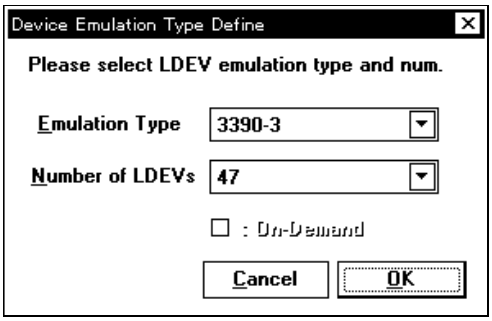
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

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.

9-1.

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

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



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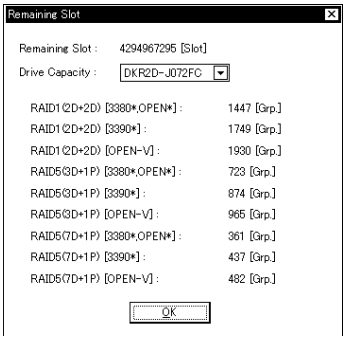
9-2. <Displaying remaining slot(s)>

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



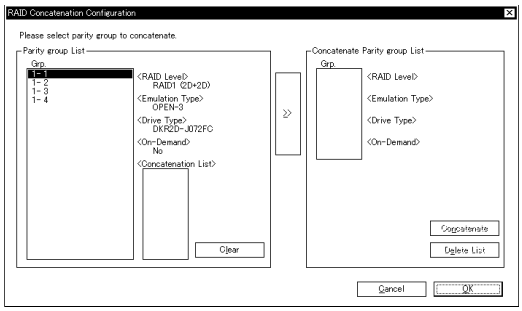
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

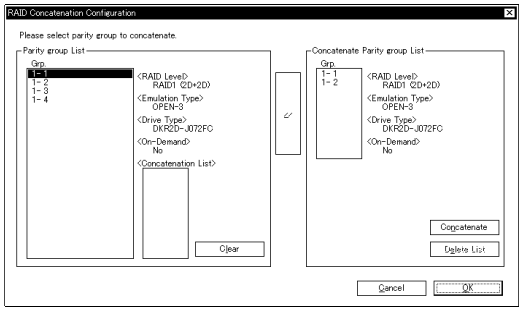
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



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.

9-5.

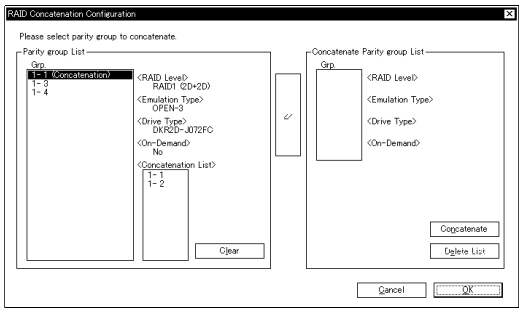
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



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.

9-6.

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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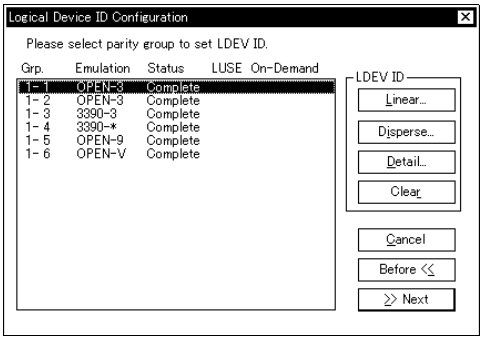
10. <Define LDEV ID>

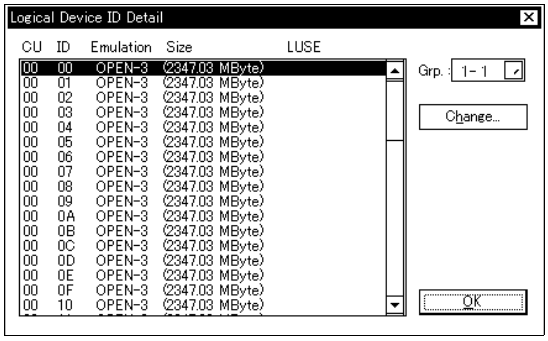


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
In the case of only DKA installation, select (CL) [>>Next]. Go to step 11.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[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) [>>Next].

10-1. Detailed Definition Screen for LDEV ID

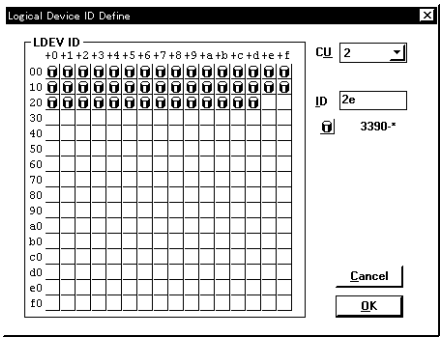


Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' 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.

10-2. 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

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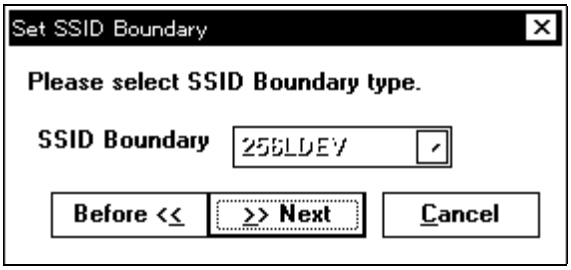
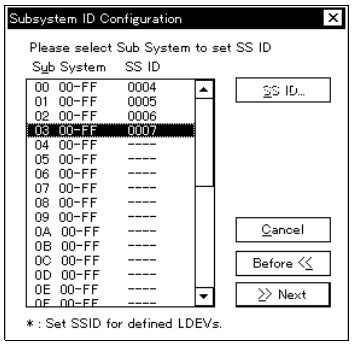
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

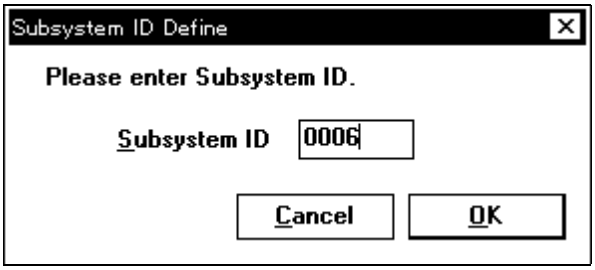


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

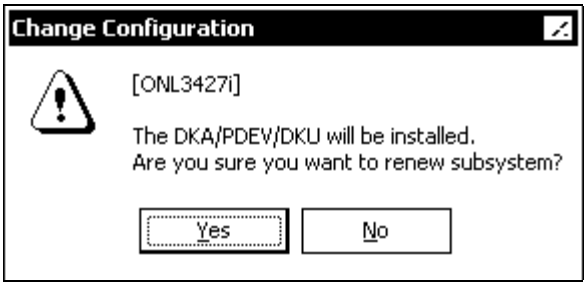


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-180 step 3.



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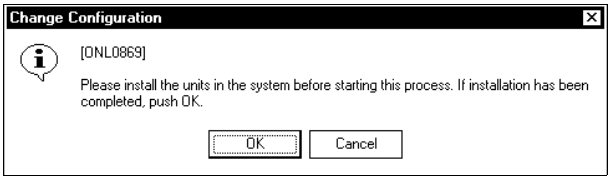
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <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, push OK.” is displayed.



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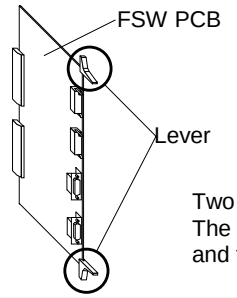
2. Installation Procedure of Additional Disk Port Switch

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.

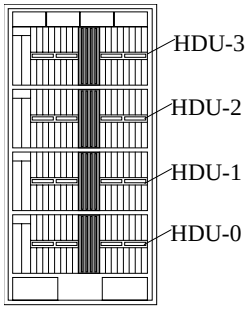
2-1 Insert the PCBs.

NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used. The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

a. Loosen the four screws① and remove the cable covers.
b. Insert the FSW PCBs.
c. Rotate the stoppers and fasten the two screws②.
d. Attach the cable covers① stored the cable covers② and fasten the four screws①.



Rear View

FSW LOCATION

D		C		B	A
SH303-C *2	SH303-B *1	SH303-C *2	SH303-B *1	SH303-A	SH303-A
FSW x-L2		FSW x-R2		FSW x-L1	FSW x-R1

*1 DKC-F465I-FSW
*2 DKC-F465I-FSW2

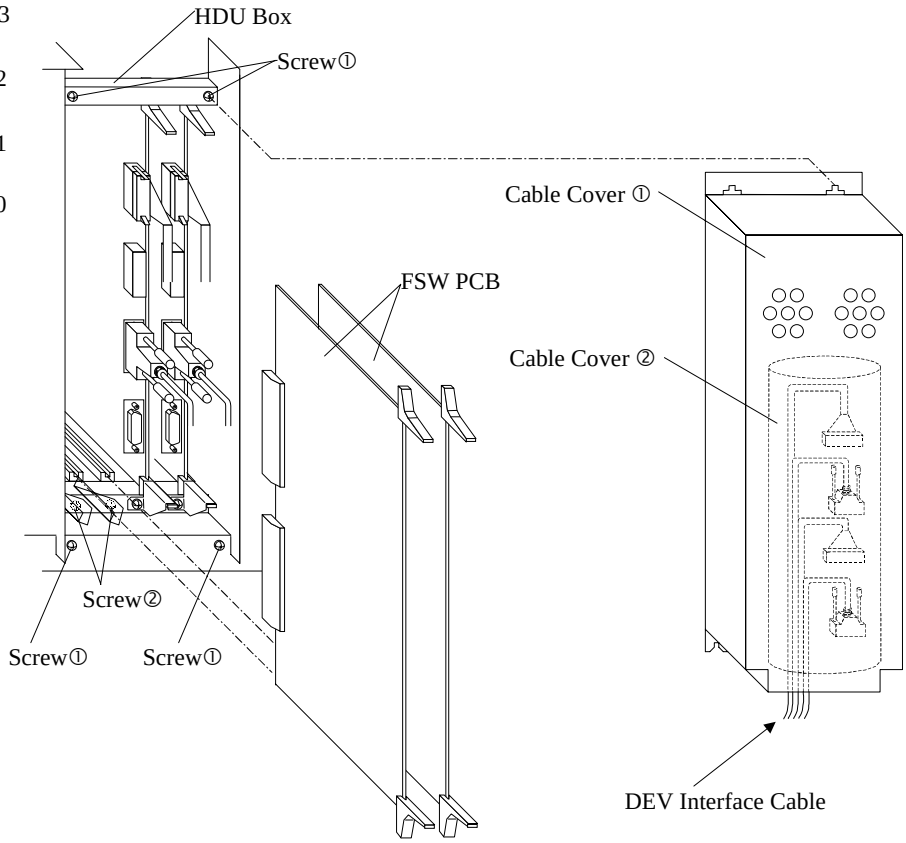


Fig. 3.8.3-1 Insertion of FSW PCBs

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2-2 Attach the nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

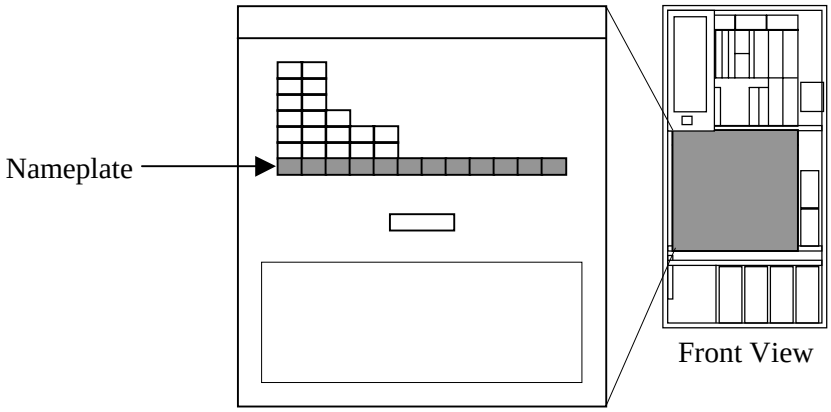

Fig. 3.8.3-2 Attachment of Nameplate

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3. Installation Procedure of HDD Canister

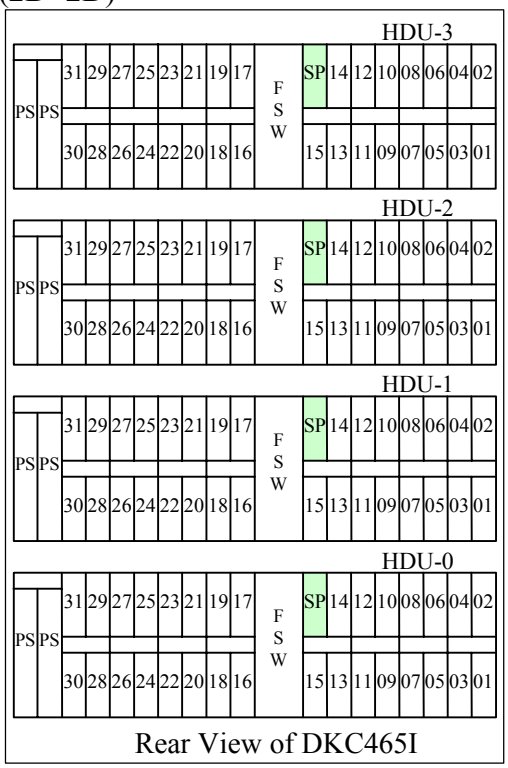
3-1 Confirmation of position to install HDD canister

a. Confirm a position to install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 3.8.3-3 Data Drive/Parity Drive Expansion Sequence (1 DKA Pair Model)

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

Table 3.8.3-1 Relation between HDDs installation order and RAID group number (1 DKA Pair Model)

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

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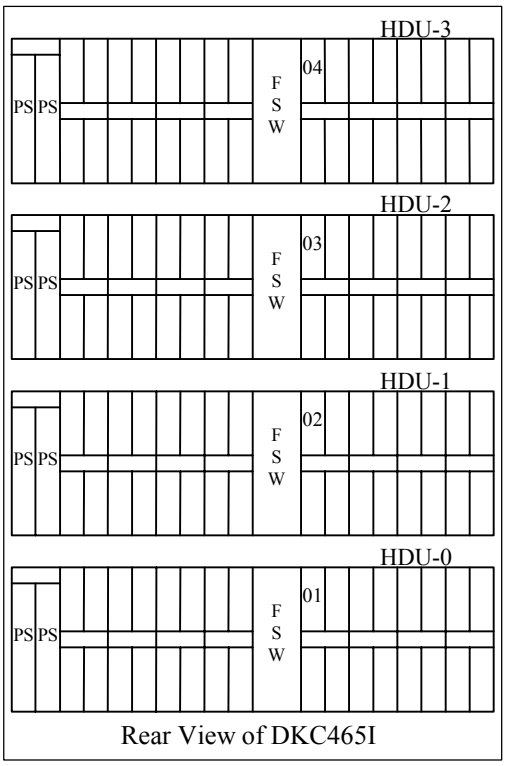
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

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



01 - 04 : Spare HDD canister installation order

Fig. 3.8.3-4 Spare Drive Expansion Sequence

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Blank Sheet

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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-DKA-630.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-640.)

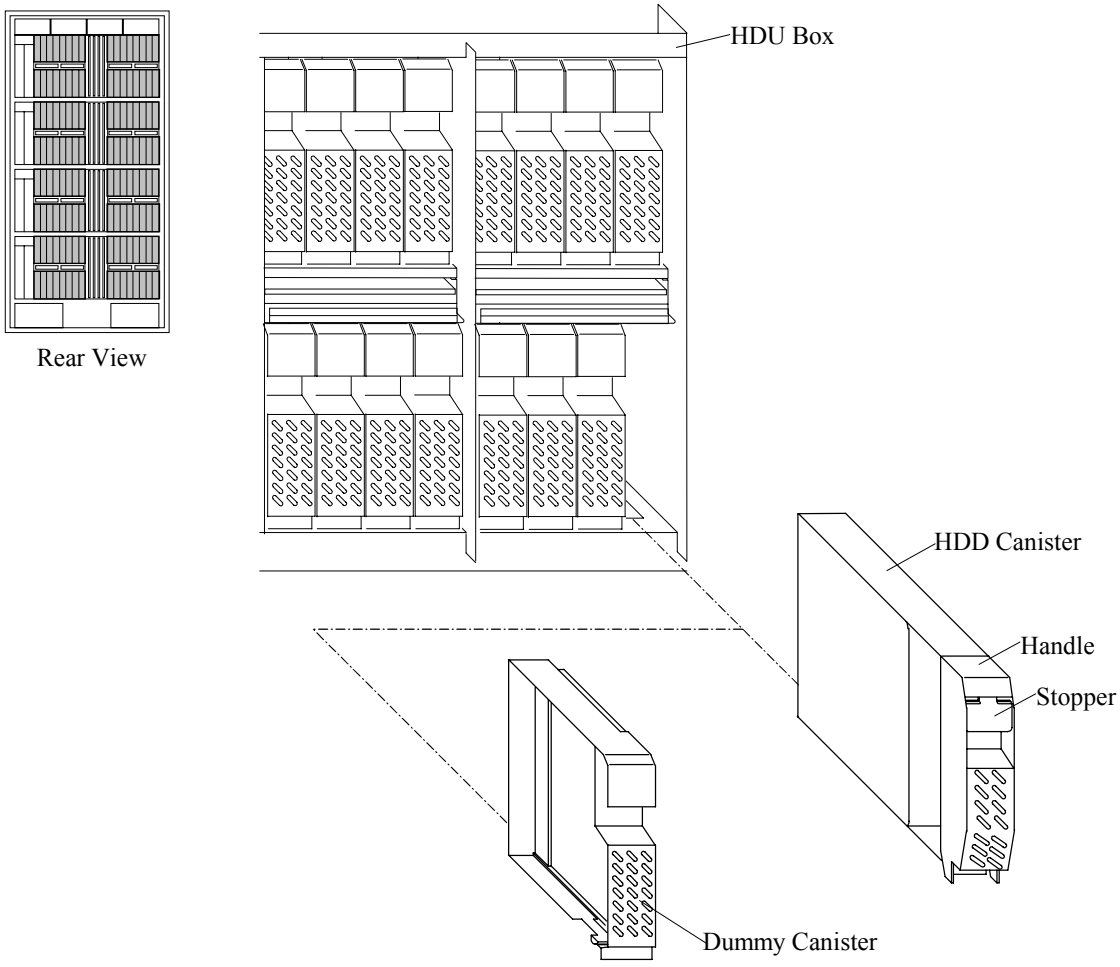

Fig. 3.8.3-5 Installation of HDD Canister

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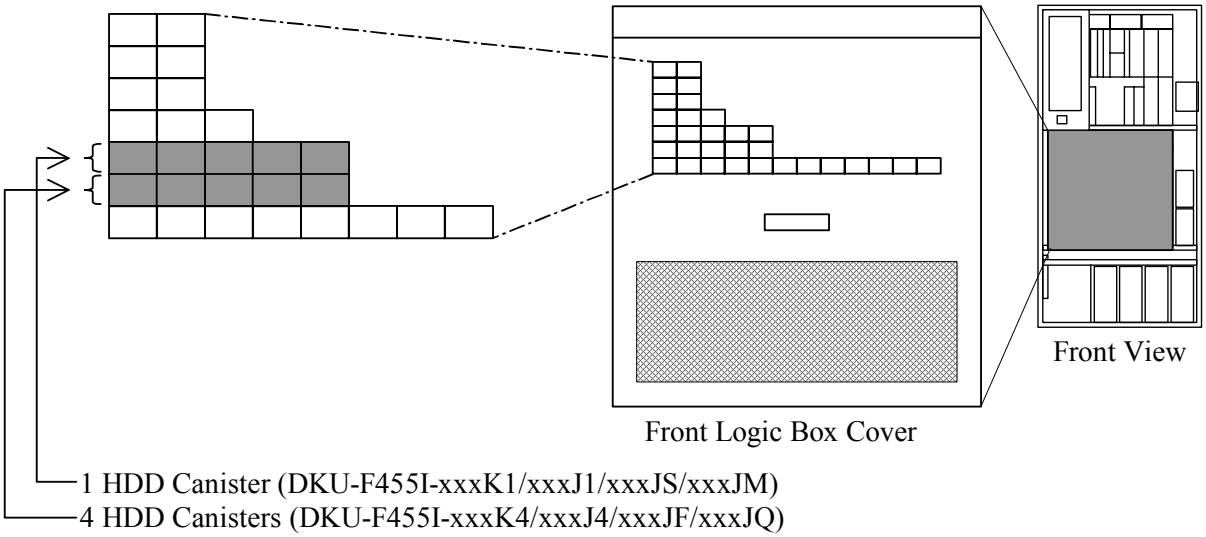
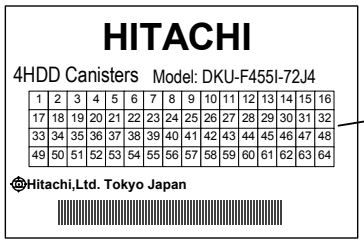
3-3 Attachment of the nameplate.

a. When the corresponding nameplate is not attached, attach the nameplate from the left of cover. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.8.3-6 Attachment of Nameplate

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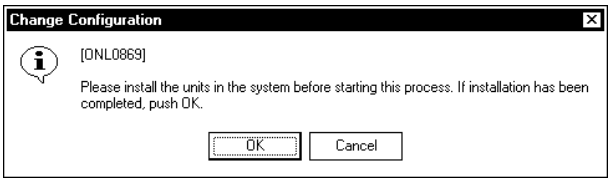
4. SVP post procedure

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, push OK.”.



---

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

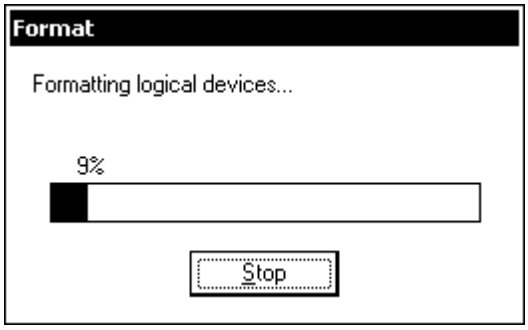
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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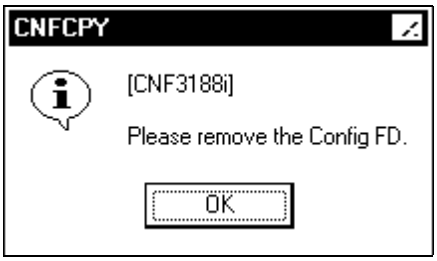
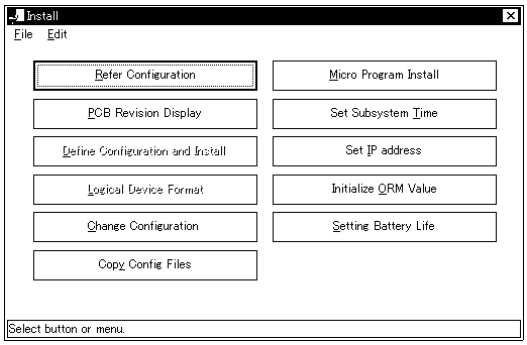
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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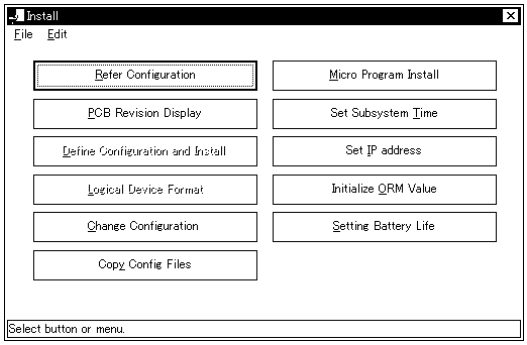
3.8.4 When HDD Canister, DKA and FSW are to be installed at the same time (DKC-F465I-FSW2, DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

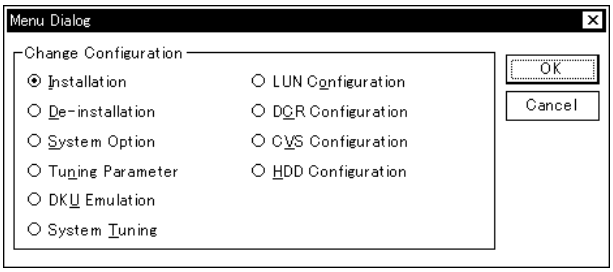
1. Setting up the New Device Structure Information

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

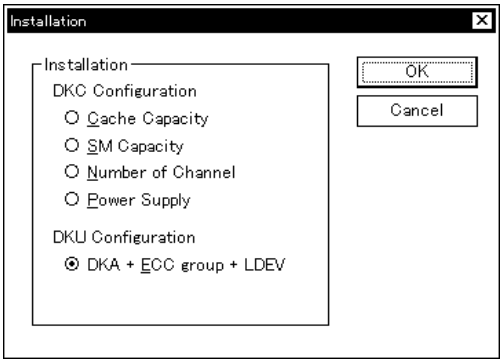
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [DKA + ECC group + LDEV], and select (CL) [OK].



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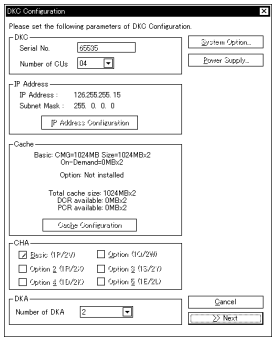
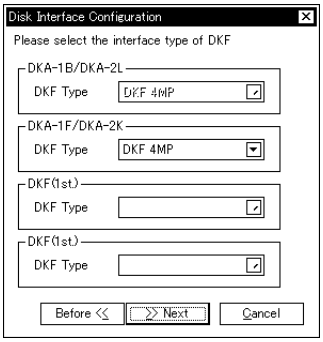
5. <Update Configuration Information>
Define the number of CU in DKC and the number of DKA in the 'DKC Configuration' window.



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-SM-10.

6. <Setting DKA type>
Define the DKA type in the 'Disk Interface Configuration' dialog box. After setting it, select (CL) the [>>Next] button.



7.

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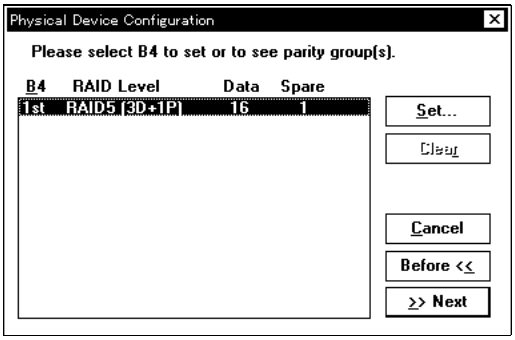
8. <Change Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next]. Go to step 9.



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

[Multi Cabinet Model]

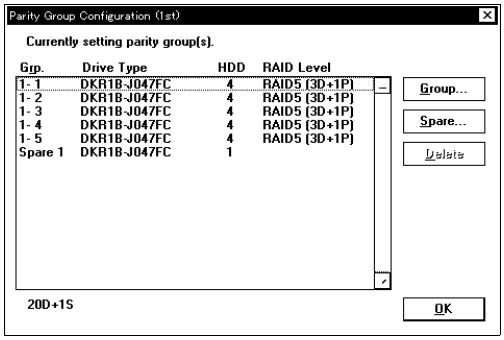
B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

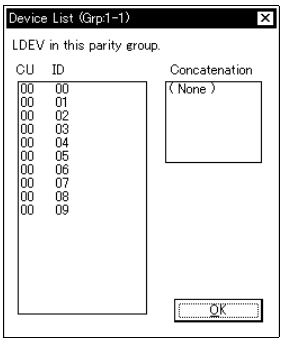
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

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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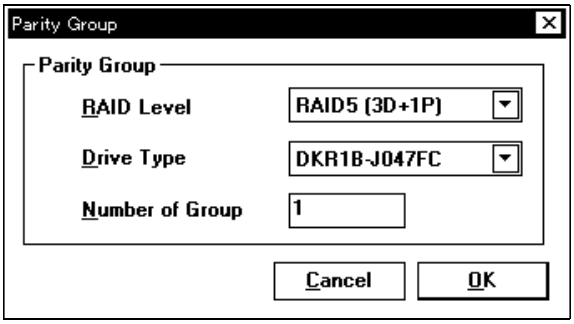
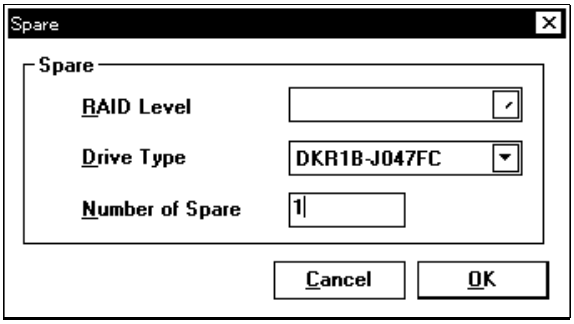
8-1-1.

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.



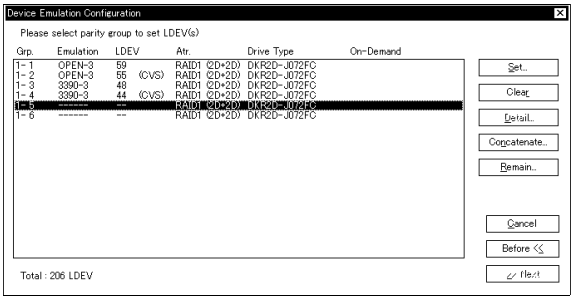
8-1-2.

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 for definition of Device Emulation, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



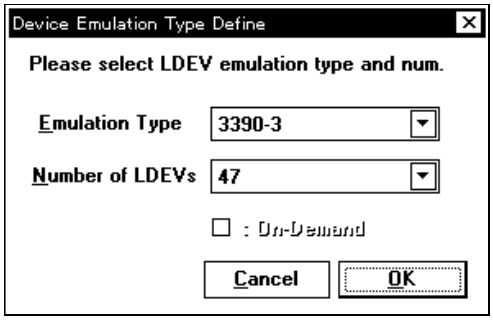
For defining Device Emulation:
Select (CL) parity group and select (CL) [Set...].
Go to step 9-1

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.

9-1.

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

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



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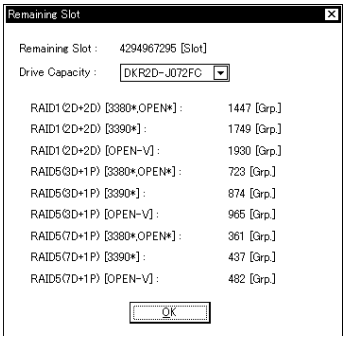
9-2. <Displaying remaining slot(s)>

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



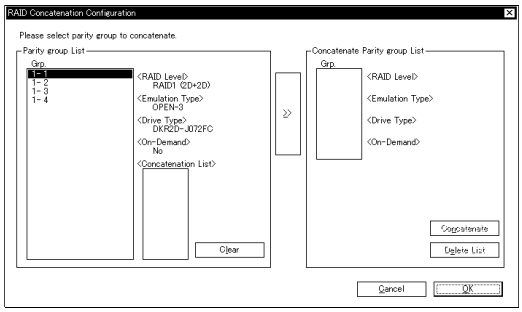
Select (CL) the [OK]. The routine returns to Step 9.

9-3. <Setting RAID concatenation>

Select (CL) [Concatenate...].
When you do not perform the RAID concatenation, return to Step 9.

9-4.

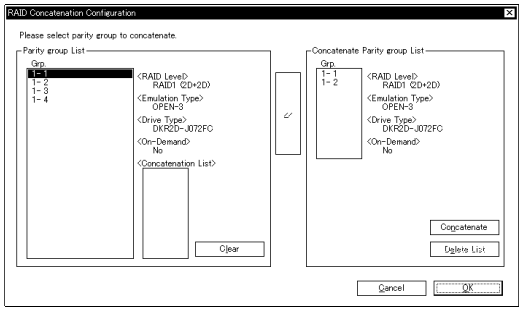
Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List. Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.



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.

9-5.

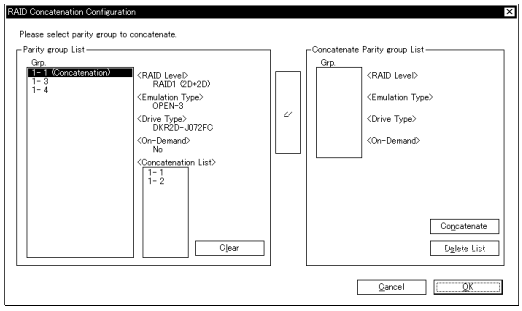
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.



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.

9-6.

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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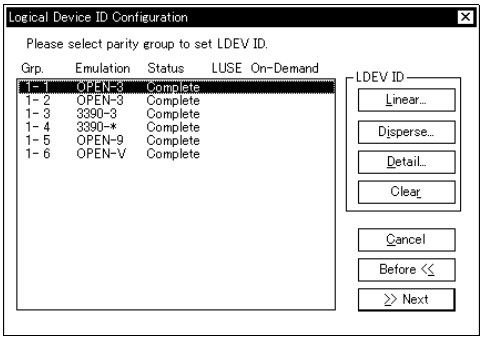
10. <Define LDEV ID>

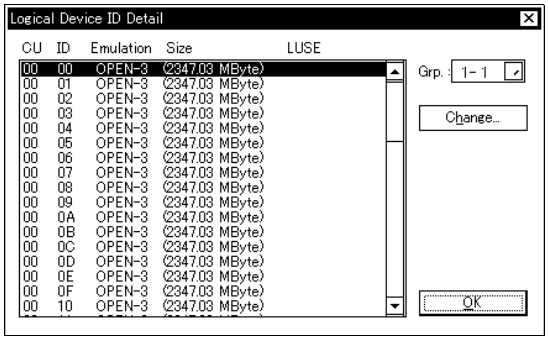


Definition Screen for LDEV ID.
Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity groups. See step 10-1.
[Disperse...]: LDEV is assigned discretely in the order of parity groups. See step 10-1.
[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) [>>Next]. (Go to Step 11)

10-1. Detailed Definition Screen for LDEV ID

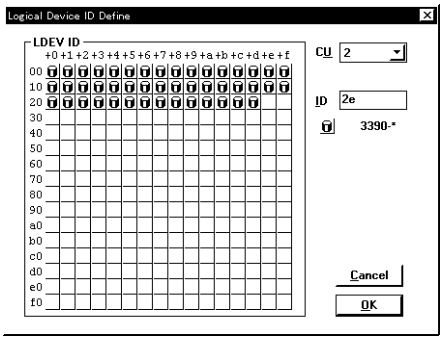


LDEV ID is defined in detail for each LDEV in the parity group.
Select (CL) LDEV from the list box and select (CL) [Change...].
The screen for LDEV ID input is displayed.
After setting, select (CL) [OK]. Return to step 10

- '-----' 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.

10-2. 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

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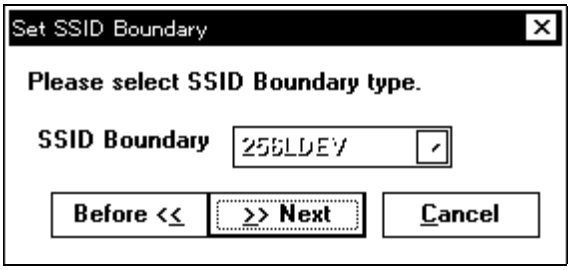
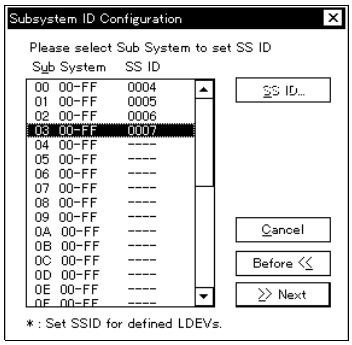
11. <Define Subsystem ID Boundary>
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.

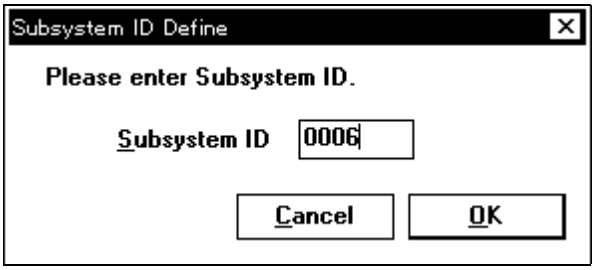


12. <Define Subsystem ID>
To define Subsystem ID, select (CL) the item from the list box and select (CL) [SSID]. See step 12-1.

After setting, select (CL) [>>Next].

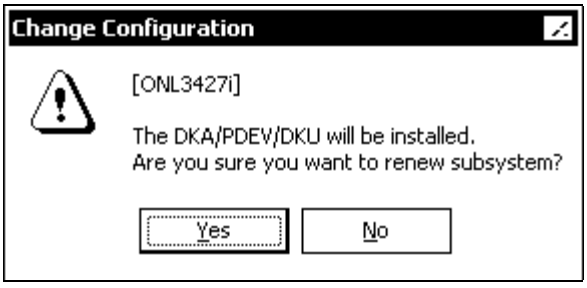


12-1. Define Subsystem ID and select (CL) [OK].
Return to step 12.



13. <Start installation>
Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be installed. Are you sure you want to renew subsystem?”.

When [No] is selected (CL), returns to INST03-DKA-340 step 3.



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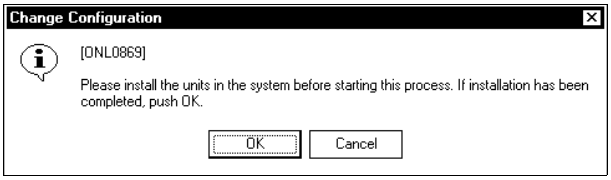
14. <Download microprogram>
    Microprograms are automatically downloaded for each processor.

15. <Install DKA>
    “Upgrading of the DKA...”

16. <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, push OK.” is displayed.



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2. Installation Procedure of Additional Disk 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.

2-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.4-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.4-1.
c. Fasten the two screws referring to Fig. 3.8.4-2.

Table 3.8.4-1 Inserting Location (Rear of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 2 disk adapters can be installed in the subsystem. (Only DKC-F460I-200)

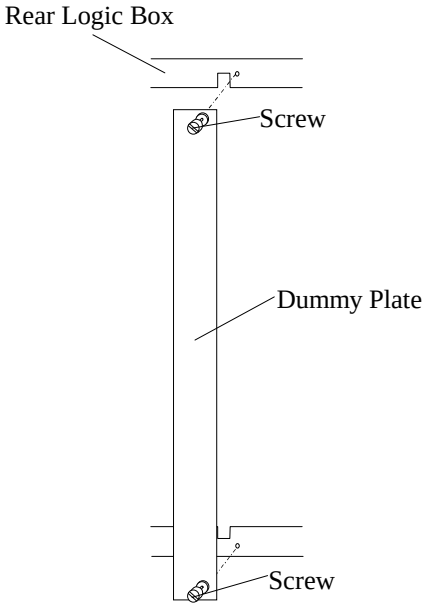

Fig. 3.8.4-1 Removal of Dummy Plate

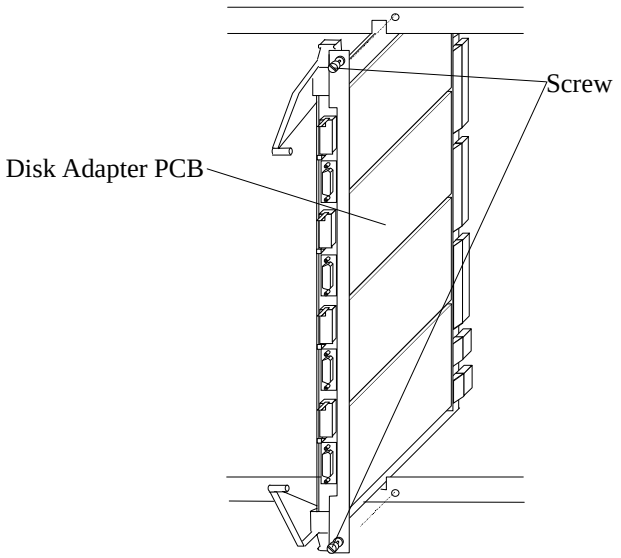

Fig. 3.8.4-2 Insertion of PCB

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2-2 Connection of cables

Note:
Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

In case of Add.1

a. Loosen the six screws and remove the cover(H/S-PS).

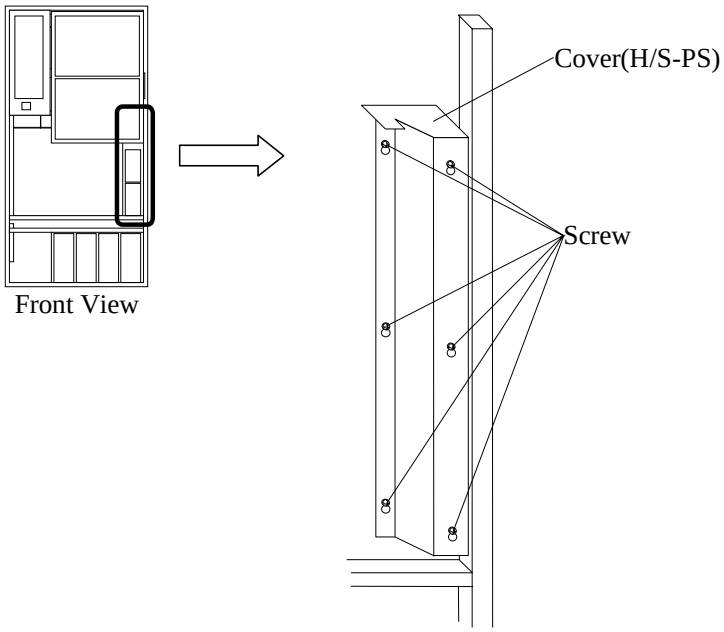

Fig.3.8.4-3 Removal of Cover

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b. Remove the two screws ① and remove the cover ①.
c. Loosen the two screws ② and remove the cover ②.
d. Remove the three screws ③ and remove the cover ③.
e. Remove the four screws ④ and remove the cover ④.
f. Connect the cables stored under the cover ④ to the PCB.
g. Attach the covers ④ through ① with the screws.

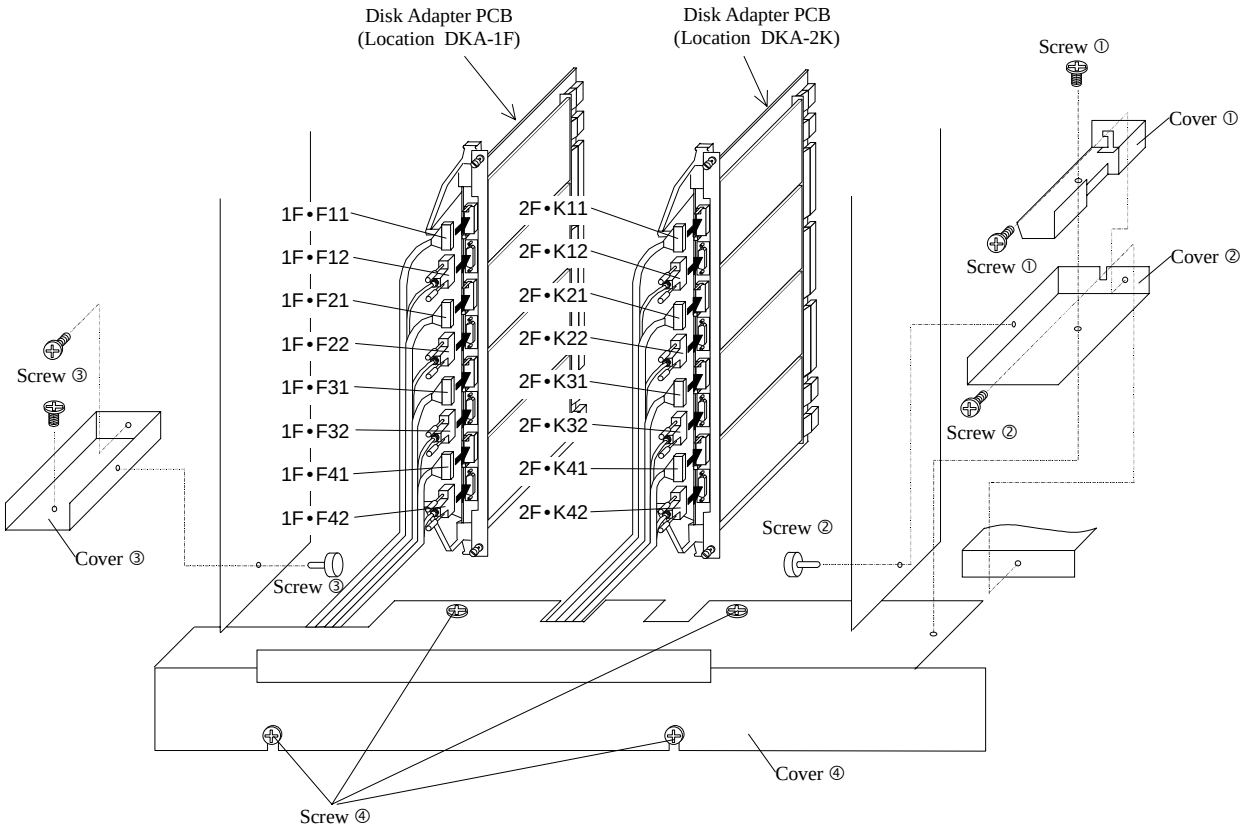

Fig.3.8.4-4 Connection of Cable (Add.1)

2-3 Attachment of the nameplate

a. Attach the nameplate to the Front Logic Box cover.

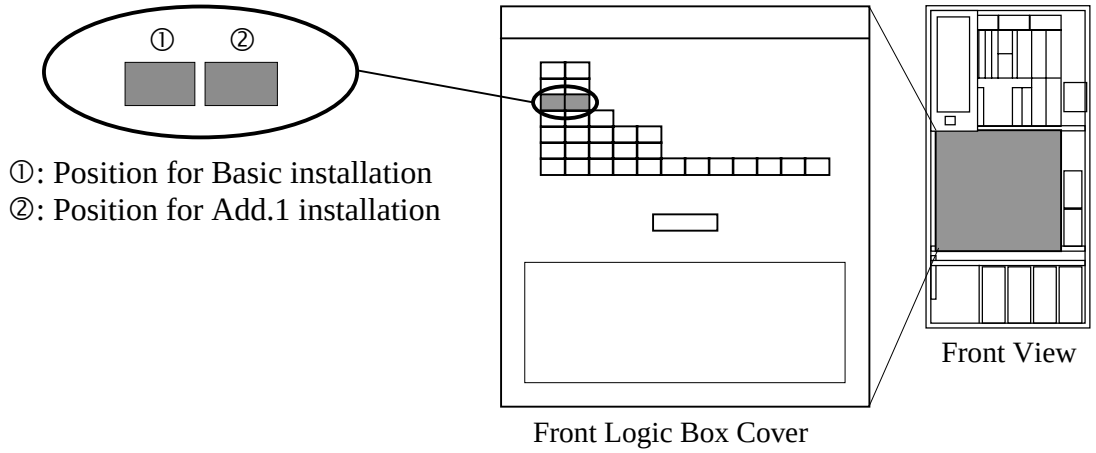

Fig. 3.8.4-5 Attachment of Nameplate

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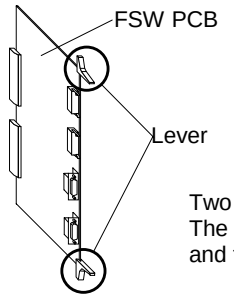
3. Installation Procedure of Disk Path Expansion Kit

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 Insert the PCBs.

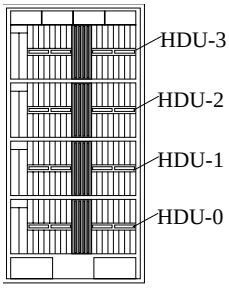
NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used. The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Loosen the four screws① and remove the cable covers.
b. Insert the FSW PCBs.
c. Rotate the stoppers and fasten the two screws②.
d. Remove the cables from the cable covers② and connect the cables to FSW PCBs.
e. Attach the cable covers① stored the cable covers② and fasten the four screws①.

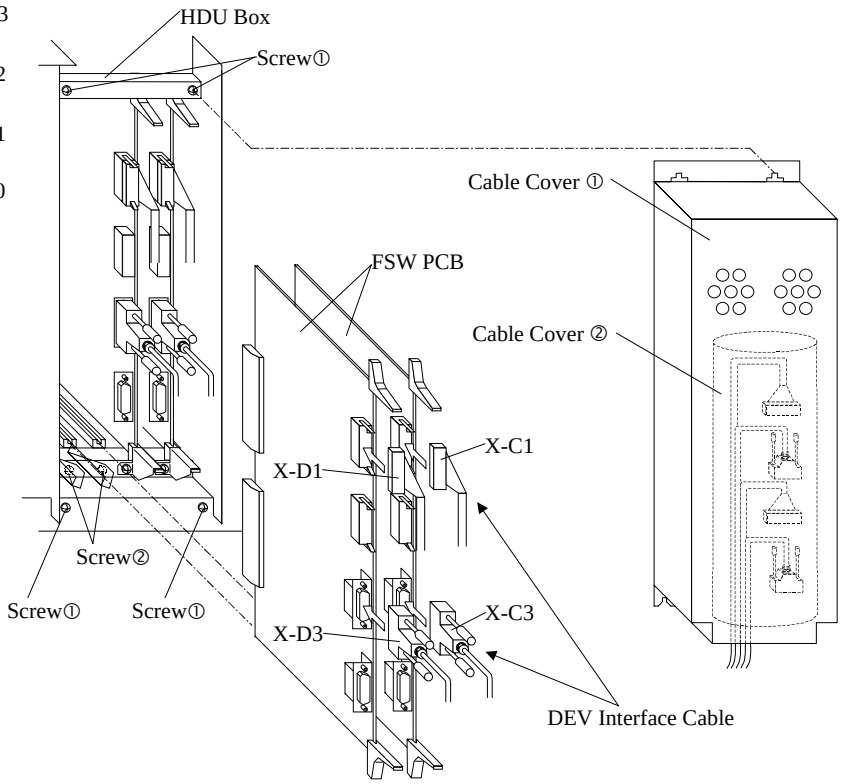


Rear View

FSW LOCATION

D		C		B	A
SH3003-C *2	SH3003-B *1	SH3003-C *2	SH3003-B *1	SH3003-A	SH3003-A
FSW x-L2		FSW x-R2		FSW x-L1	FSW x-R1

*1 DKC-F465I-FSW
*2 DKC-F465I-FSW2



(Note) Label: X-C3
└→ HDU Box No.: 0, 1, 2, 3

Fig. 3.8.4-6 Insertion of FSW PCBs

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3-2 Attach the nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

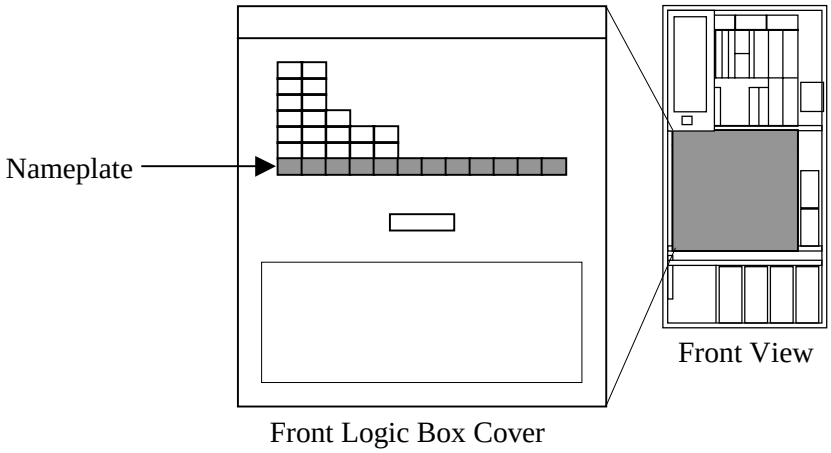

Fig. 3.8.4-7 Attachment of Nameplate

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4. Installation Procedure of HDD Canister

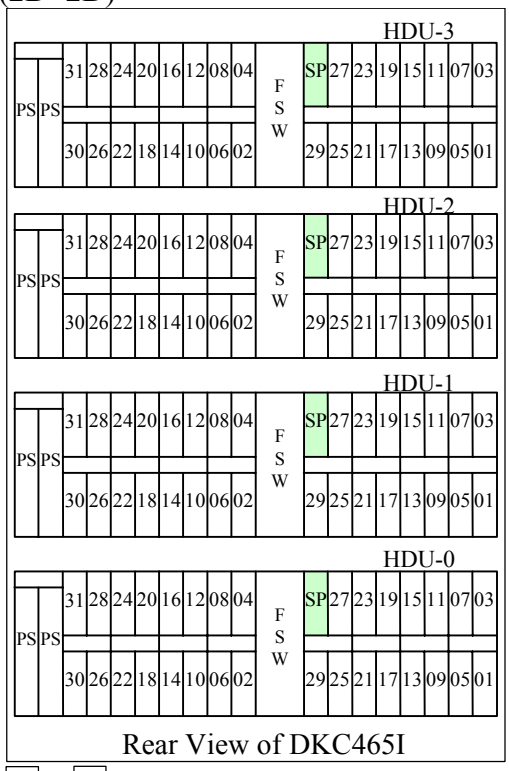
4-1 Confirmation of position to install HDD canister

a. Confirm a position to install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 3.8.4-8 Data Drive/Parity Drive Expansion Sequence

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

Table 3.8.4-2 Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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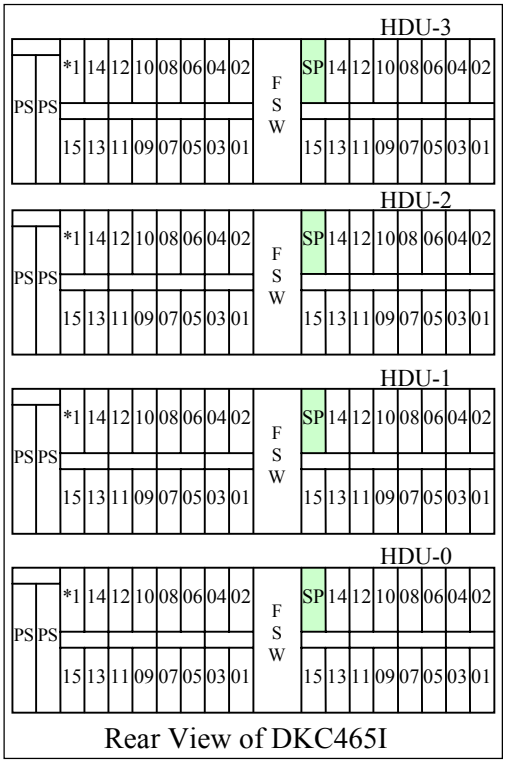
ii. RAID5(7D+1P)



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

Fig. 3.8.4-8A Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

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

Table 3.8.4-2A Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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

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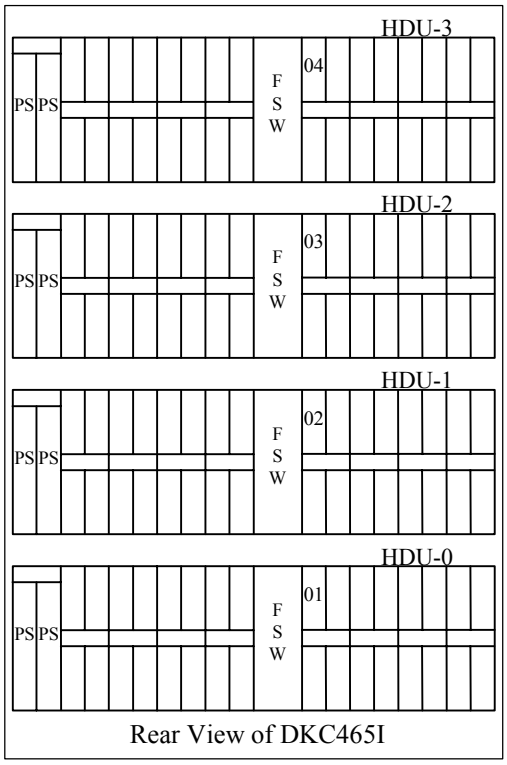
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

Full-spec Model (2DKA Pairs Model)



01 - 04 : Spare HDD canister installation order

Fig. 3.8.4-9 Spare Drive Expansion Sequence

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4-2 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-DKA-630.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-640.)

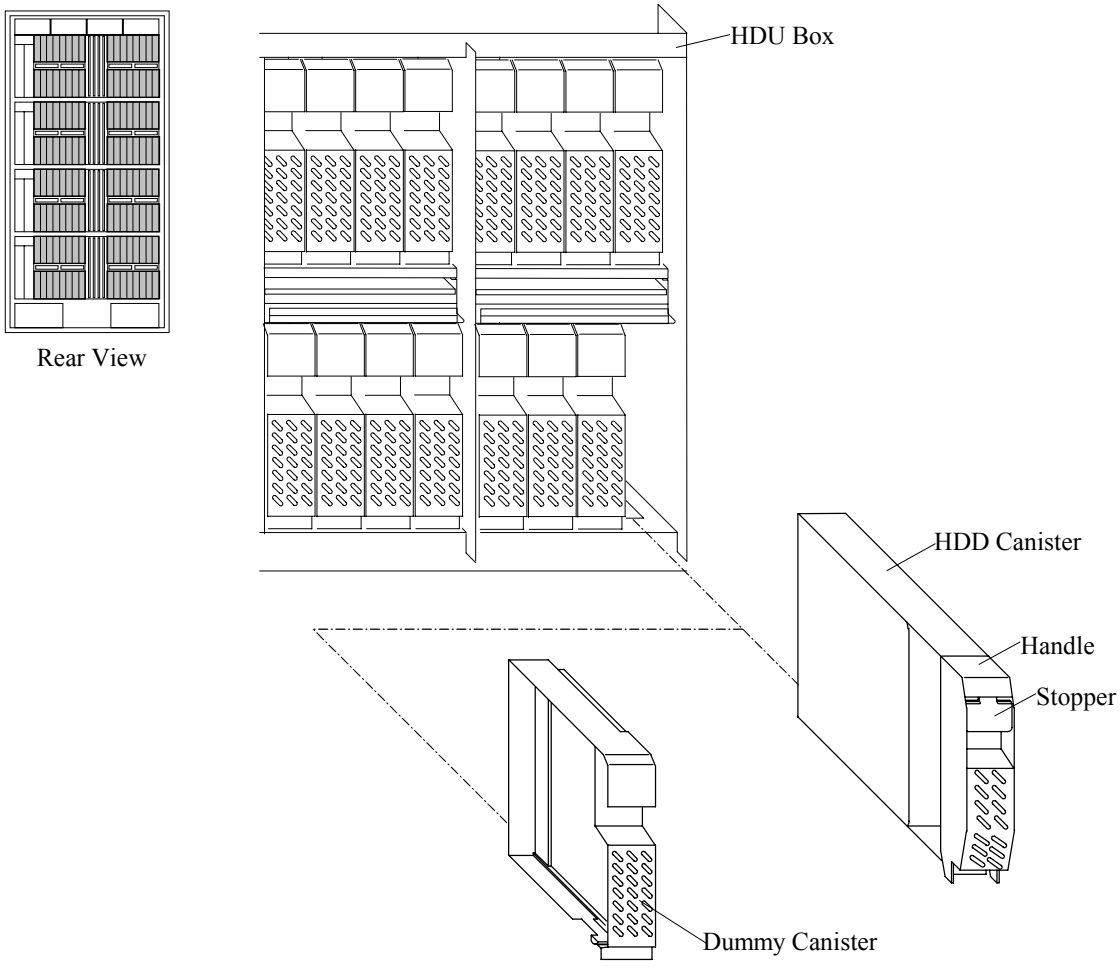

Fig. 3.8.4-10 Installation of HDD Canister

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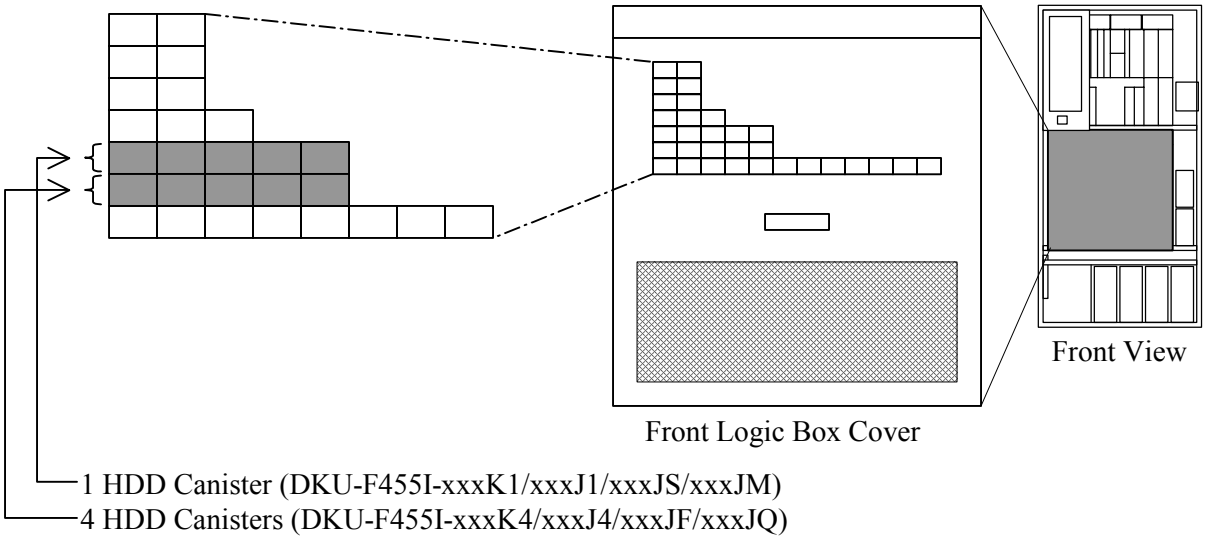
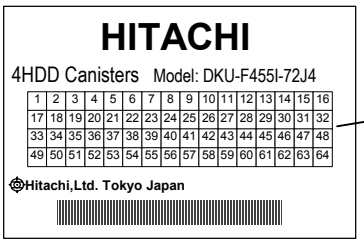
4-3 Attachment of the nameplate.

a. When the corresponding nameplate is not attached, attach the nameplate from the left of cover. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.8.4-11 Attachment of Nameplate

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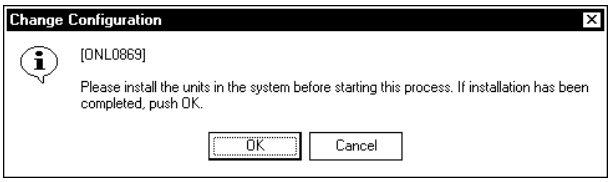
5. SVP post procedure

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, push OK.”.



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

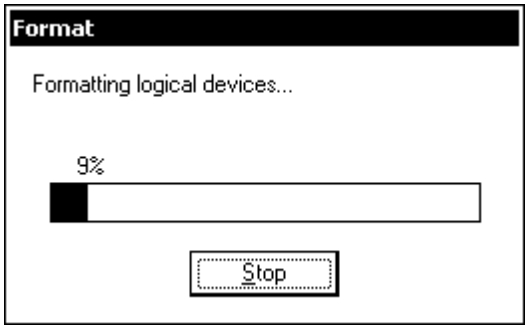
   If [ONL3437E] or [ONL3438E] is displayed, please refer 2.11.1. (INST02-630)
   If [ONL3441E] or [ONL2841W] is displayed, please refer 2.11.2. (INST02-640)

---

3. <DKU PATH INLINE>
   When DKA is installed, “DKU PATH INLINE is now running...” is displayed.

---

4. <LDEV FORMAT>
   “Formatting the logical device...” is displayed when Parity Group is defined.



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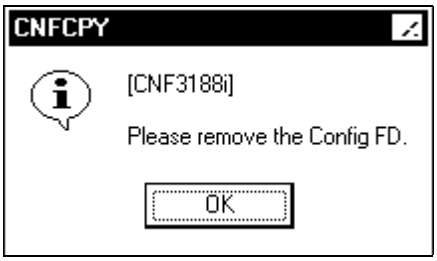
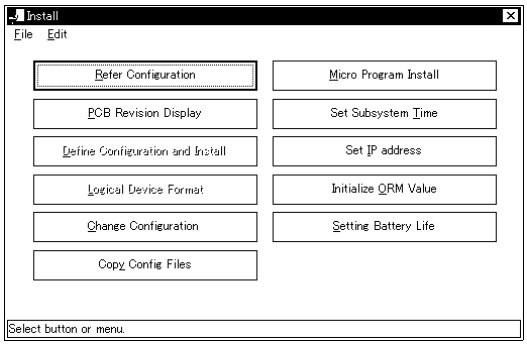
5. <End of system update processing>
"Renewal process has completed. Please check the subsystem status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.

6.
"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

7.
When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, select (CL) [OK].



8.
After the procedure is completed, return to 'Install'.
Select (CL) [File]-[Exit].



9. <Mode Change>
Change the mode to View Mode.

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3.8.5 When HDD Canister, DKA and FSW are to be installed at the same time (Only new installation) (DKC-F465I-100/FSW/FSW2, DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

1. Installation Procedure of Additional Disk 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.

1-1 Insertion of the PCBs

Note: Make sure that a color of the levers of the PCB to be installed is blue. Never insert a PCB whose lever is not blue.

a. Remove the dummy plate installed in the installation location referring to the Fig. 3.8.5-1. (Note) Dummy plates should be stored for future use in De-installation.
b. Insert the PCBs to the correct locations in the Logic Box. Refer to Table 3.8.5-1.
c. Fasten the two screws referring to Fig. 3.8.5-2.

Table 3.8.5-1 Inserting Location (Rear of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

Up to 2 disk adapters can be installed in the subsystem. (Only DKC-F460I-200)

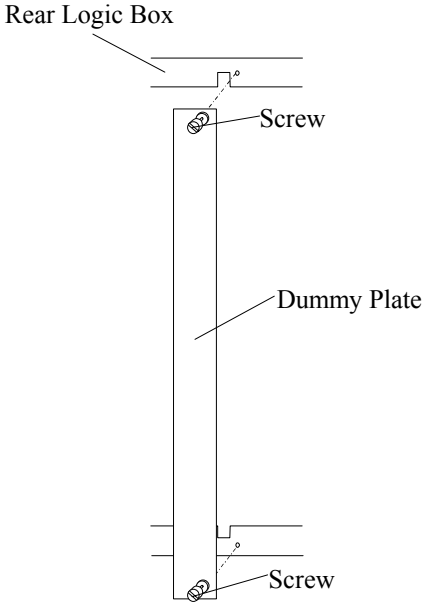

Fig. 3.8.5-1 Removal of Dummy Plate

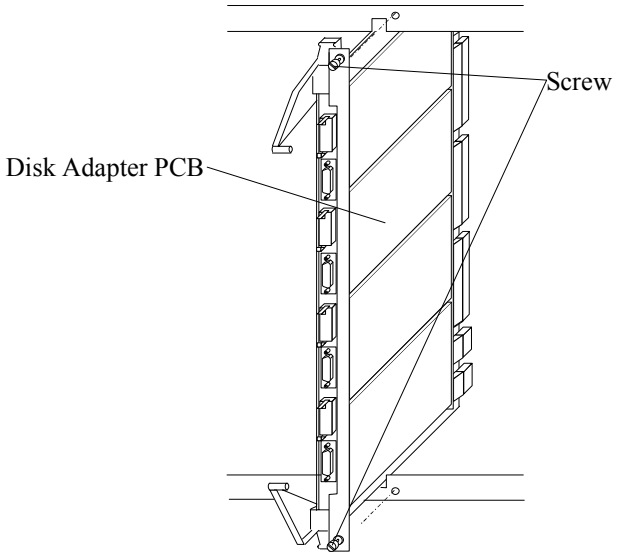

Fig. 3.8.5-2 Insertion of PCB

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1-2 Connection of cables

Note:
Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

In case of Basic

a. Connect the cable to the sub-edge of PCB.

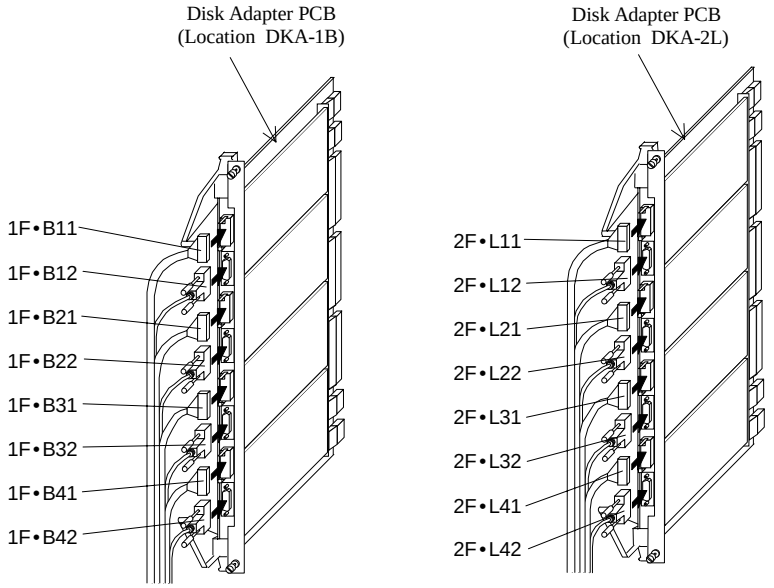

Fig.3.8.5-3 Connection of cable (Basic)

In case of Add.1

a. Loosen the six screws and remove the cover(H/S-PS).

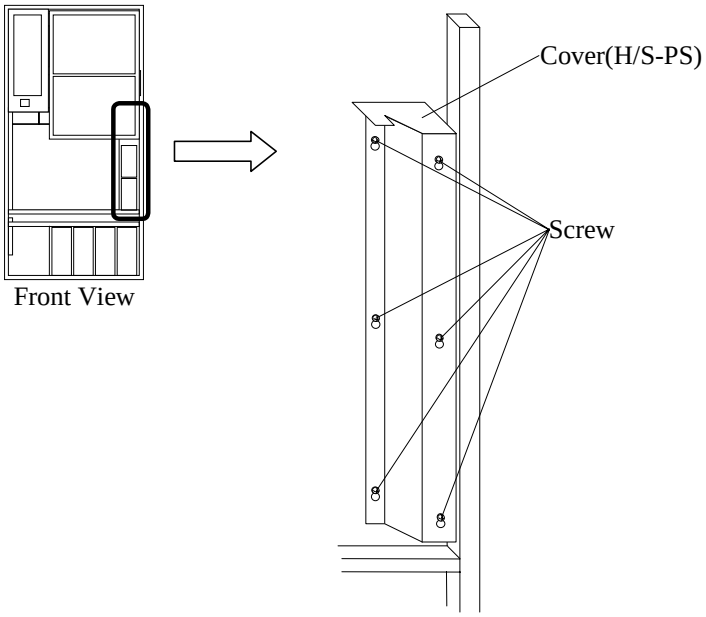

Fig.3.8.5-4 Removal of Cover

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b. Remove the two screws ① and remove the cover ①.
c. Loosen the two screws ② and remove the cover ②.
d. Remove the three screws ③ and remove the cover ③.
e. Remove the four screws ④ and remove the cover ④.
f. Connect the cables stored under the cover ④ to the PCB.
g. Attach the covers ④ through ① with the screws.

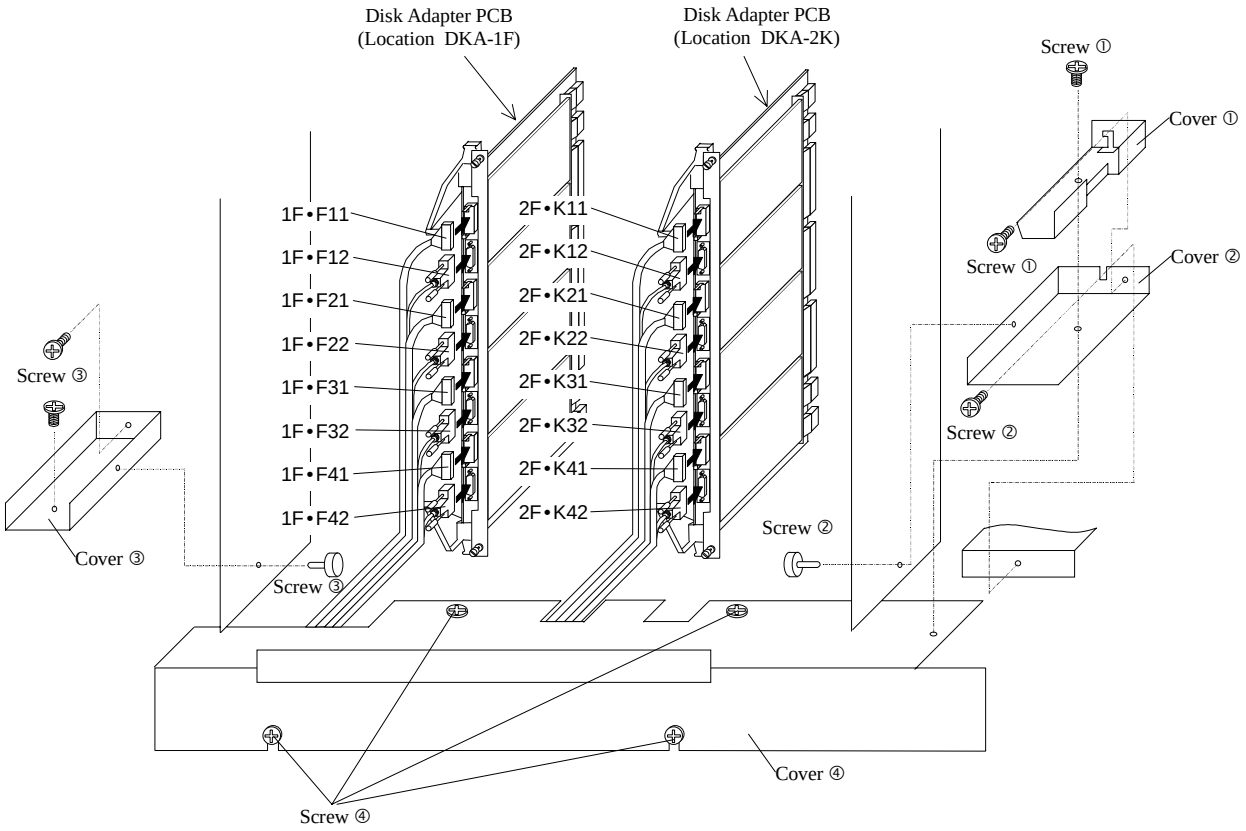

Fig.3.8.5-5 Connection of Cable (Add.1)

1-3 Attachment of the nameplate

a. Attach the nameplate to the Front Logic Box cover.

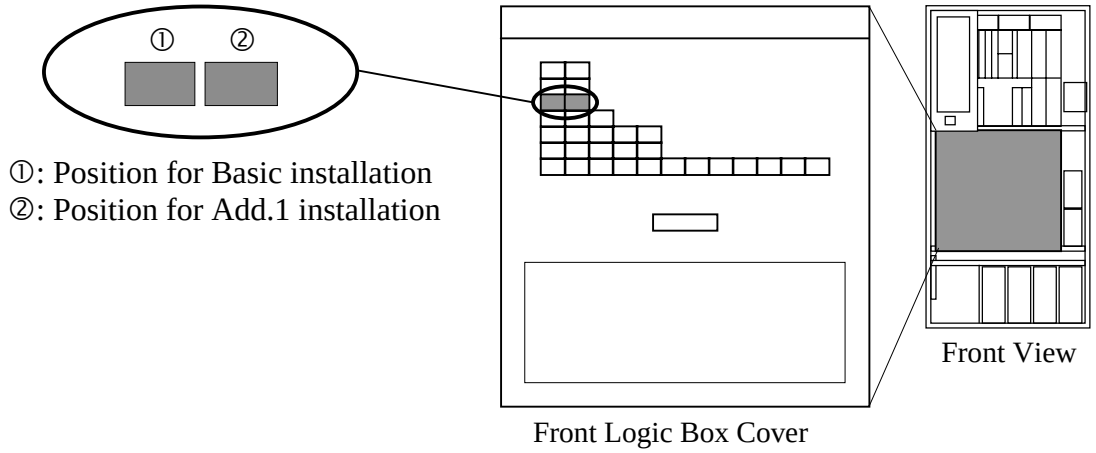

Fig. 3.8.5-6 Attachment of Nameplate

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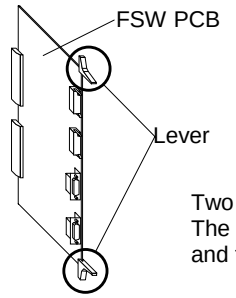
2. Installation Procedure of Additional Disk Port Switch and Disk Path Expansion Kit

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 Insert the PCBs.

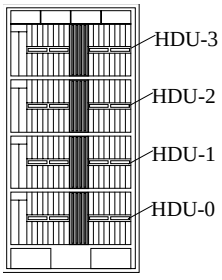
NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used. The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

Colors of the labels of the subsystem shipped from the factory from June of 2002 and on are as follows. Labels on the cluster1 (CL1) side and the cluster2 (CL2) side are white and yellow respectively.

a. Loosen the four screws① and remove the cable covers.
b. Insert the FSW PCBs.
c. Rotate the stoppers and fasten the two screws②.
d. Remove the cables from the cable covers② and connect the cables to FSW PCBs. (only DKC-F465I-FSW2)
e. Attach the cable covers① stored the cable covers② and fasten the four screws①.

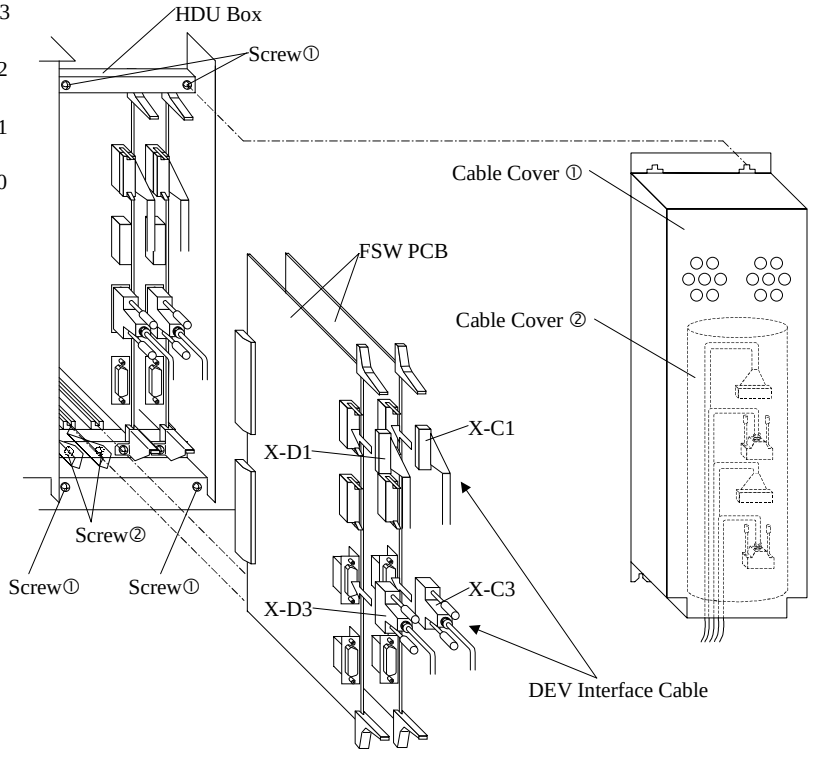


Rear View

FSW LOCATION

D	C	B	A
SH303-C *2	SH303-B *1	SH303-C *2	SH303-B *1	SH303-A	SH303-A
FSW x-L2	FSW x-R2	FSW x-L1	FSW x-R1

*1 DKC-F465I-FSW
*2 DKC-F465I-FSW2



(Note) Label: X-C3
→ HDU Box No.: 0, 1, 2, 3

Fig. 3.8.5-7 Insertion of FSW PCBs

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2-2 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

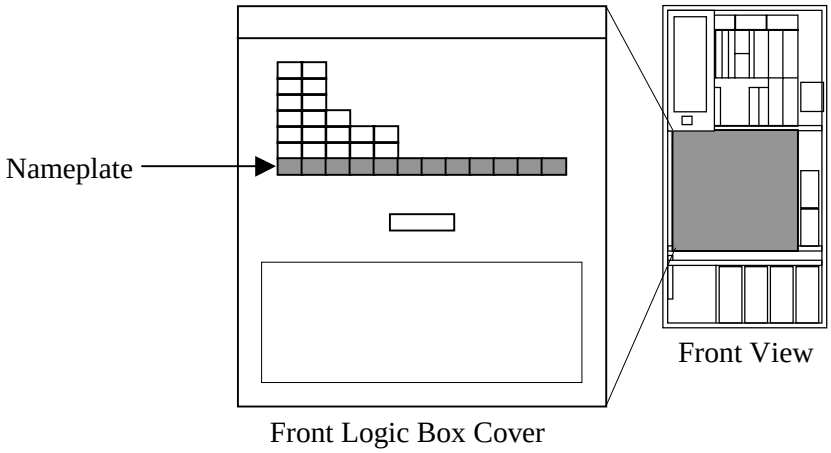

Fig. 3.8.5-8 Attachment of Nameplate

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3. Installation Procedure of HDD Canister

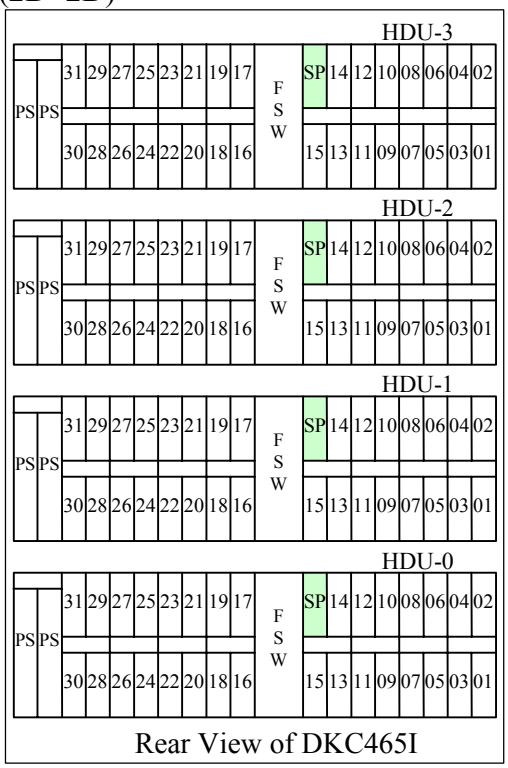
3-1 Confirmation of position to install HDD canister

a. Confirm a position to install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 3.8.5-9 Data Drive/Parity Drive Expansion Sequence (1 DKA Pair Model)

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

Table 3.8.5-2 Relation between HDDs installation order and RAID group number (1 DKA Pair Model)

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

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

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

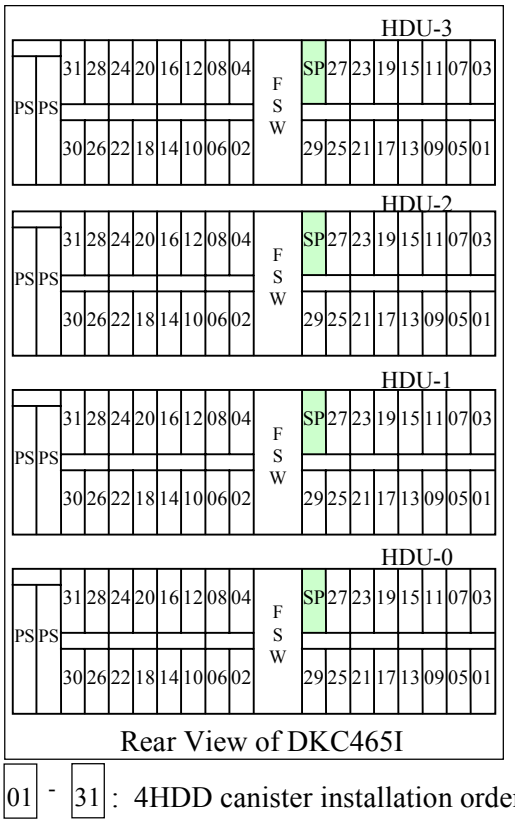

Fig. 3.8.5-10 Data Drive/Parity Drive Expansion Sequence

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

Table 3.8.5-3 Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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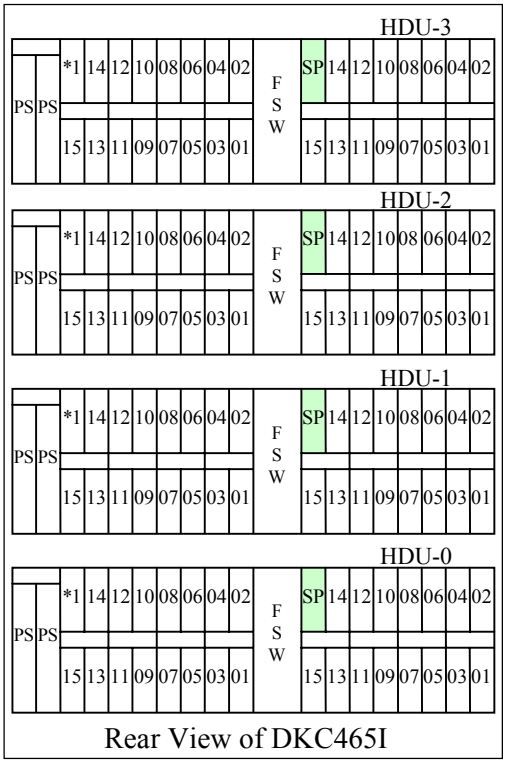
ii. RAID5(7D+1P)



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

Fig. 3.8.5-10A Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

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

Table 3.8.5-3A Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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

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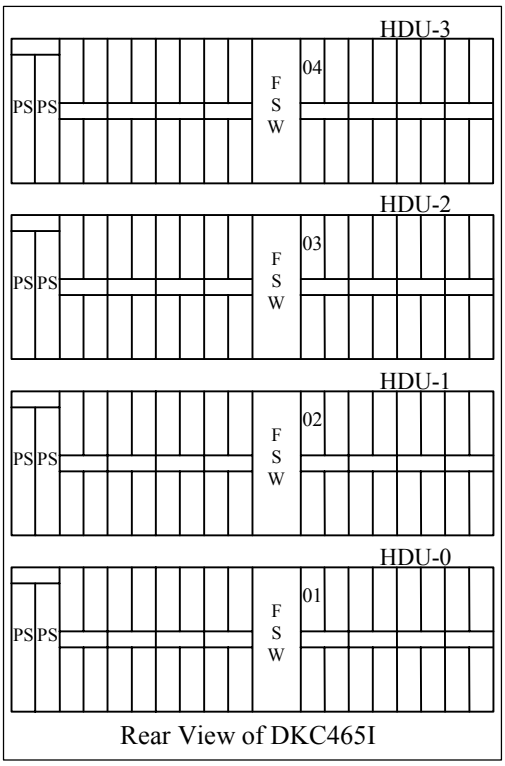
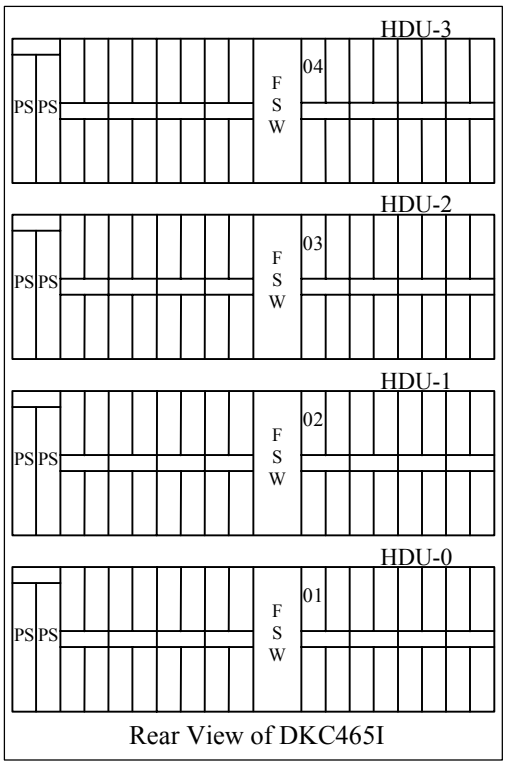
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

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



Full-spec Model (2DKA Pairs Model)



01 - 04 : Spare HDD canister installation order

Fig. 3.8.5-11 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-DKA-630.
b. Install the HDD canister. (For the detailed procedure for installation, refer to the procedure for installing HDD canister on page INST03-DKA-640.)

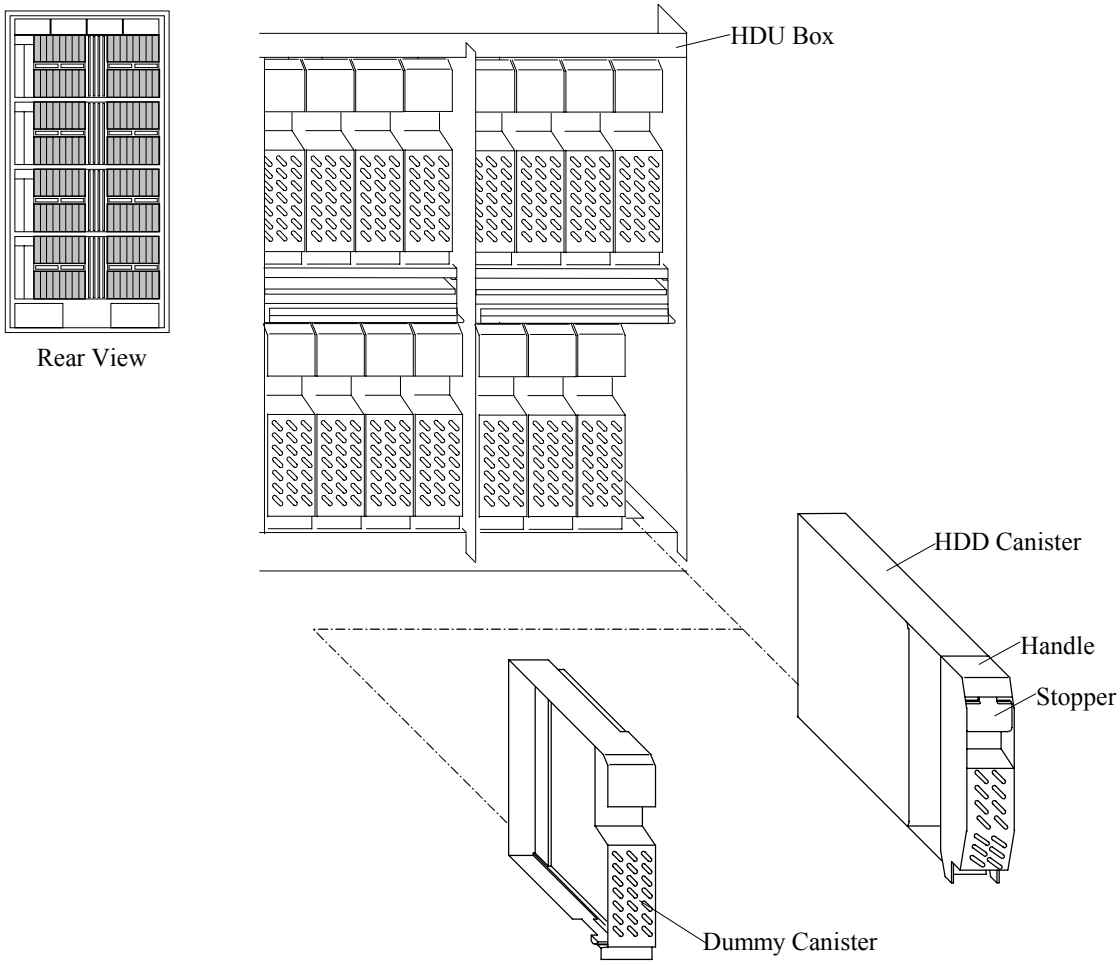

Fig. 3.8.5-12 Installation of HDD Canister

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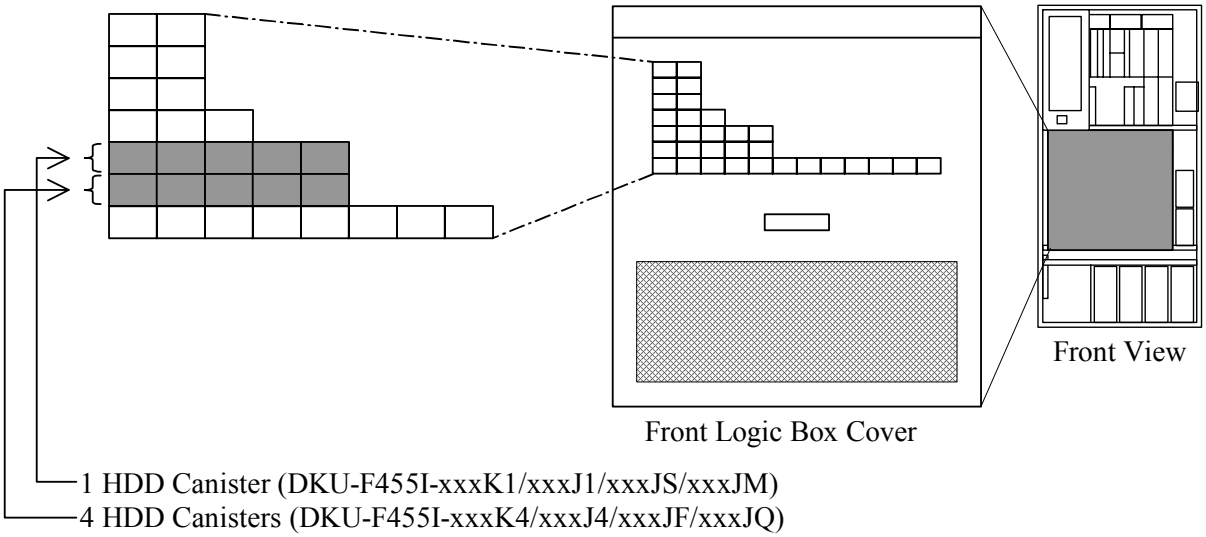
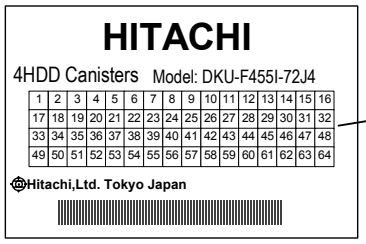
3-3 Attachment of the nameplate.

a. When the corresponding nameplate is not attached, attach the nameplate from the left of cover. Paint out mounting numbers on the nameplate.



[Example]

When the 7 DKU-F455I-72J4 sets are installed



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 3.8.5-13 Attachment of Nameplate

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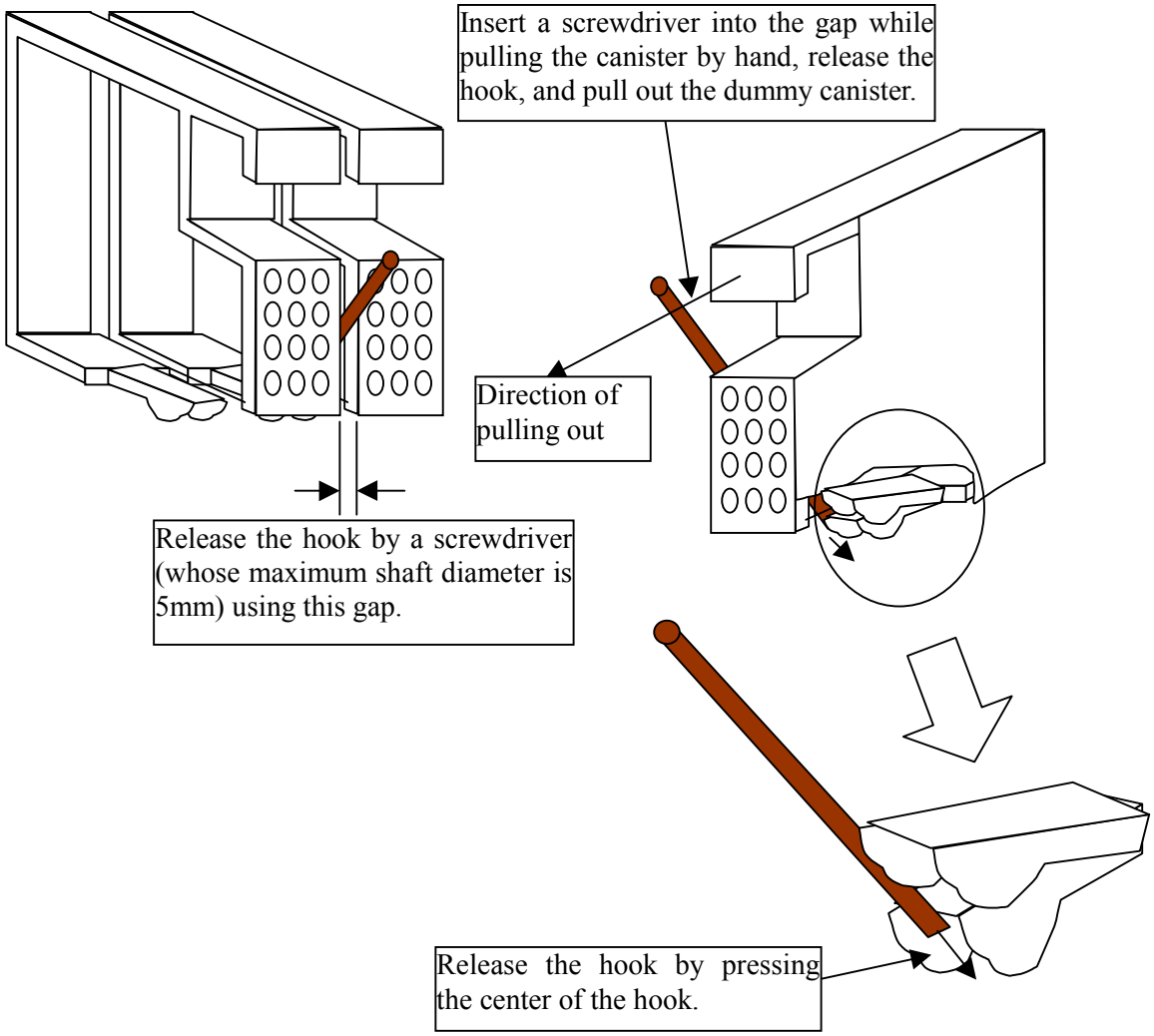
Procedure for removing the dummy canisters when they cannot be removed by pulling only.

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.



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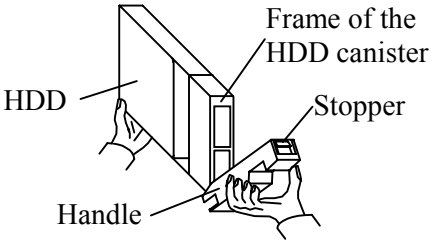
HDD canister install procedure

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

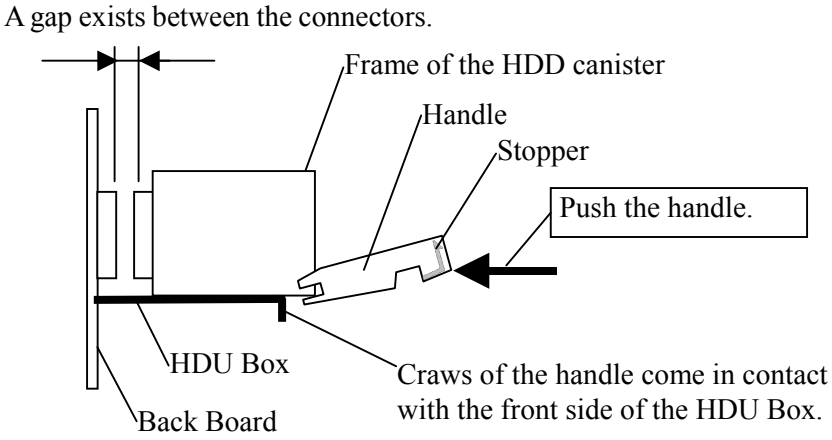
(1) Insert the HDD canister into the HDU Box holding its handle.
(Insert the canister until the claws that are located at the bottom of the handle come in contact with the front side of the HDU Box.)

(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.)

Handling of the canister



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



(2) Turn the handle at a stroke by pushing its top with your thumb.
(Do not stop the lever on its way of turning.)

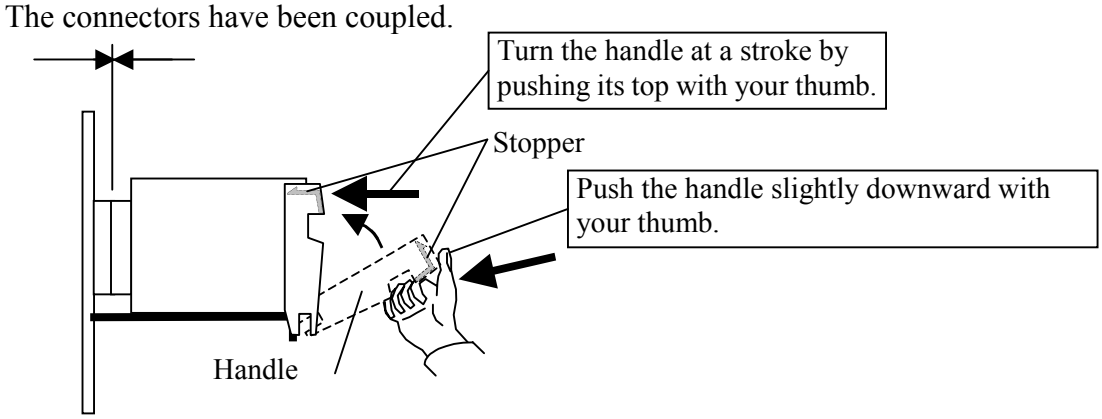


Fig. 3.8.5-14 Method of Installing HDD Canister

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3.9 Installation of SVP High Reliability Kit (DKC-F460I-SVP)

⚠ CAUTION

This work takes about three hours. During the work, the Web Console cannot be used for some time because of a rebooting of the SVP PC and verification.
Inform the customer of the following before starting the addition.

① During this installation, customer can not use Web Console/Storage Navigator via a customer PC.
② When SNMP is being used:
- 'cold start' trap is reported several times.
- The obstacle trap which occurred during work may not be notified.
- SNMP command may not answer normally.

Table 3.9-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-SVP	SVP ASSY	5513995-A	1	
		SVPPS BOX	5513997-A	1	
		Stopper (SVP-WR)	5515587-1	1	
		Rubber (SVP-WR)	5515588-1	1	
		Stopper (SVP-WF)	5515586-1	1	
		Screw	BS306N	4	
		Screw	SB408N	3	
		Screw (Stopper)	5513661-412	2	
		Hinge (SVP)	3254970-1	2	
		Nameplate (HDS)	2105902-105	1	RSD
			2105903-105		HICAM
			2105903-205		HICEF
		Nameplate (HP)	2105902-205	1	RSD
			2105903-305		HICAM
			2105903-405		HICEF

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1. Operating the Basic SVP

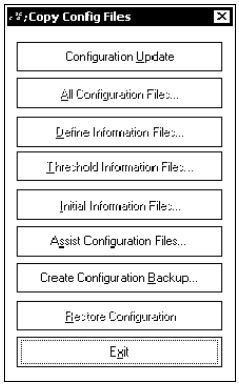
Operate the basic SVP PC as follows.

1-1 Config Back up

(1) <Mode change>
Change the mode to “Modify”.

(2) Select (CL) [Install] in the ‘SVP’ window and select (CL) [Copy Config Files] in the ‘Install’.

(3) Select (CL) [Create Configuration Backup...] in the ‘Copy Config Files’.



(4) Select (CL) [OK] after the Config FD insertion for backup.

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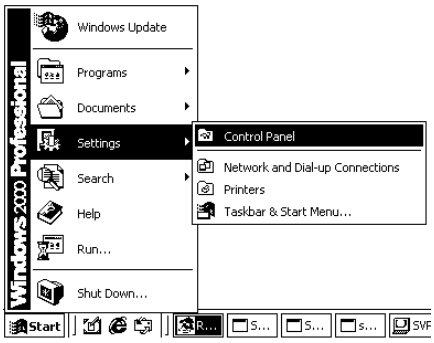
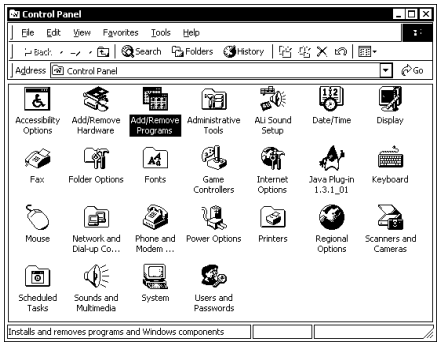
1-2 Checking OpenSA(Apache supporting SSL) Installation

Use the following procedure to check whether OpenSA is installed in the basic SVP.
If OpenSA is installed in the basic SVP, it needs to be installed in the additional SVP as well.

(1) Select (DR) [Start]-[Settings]-[Control Panel].

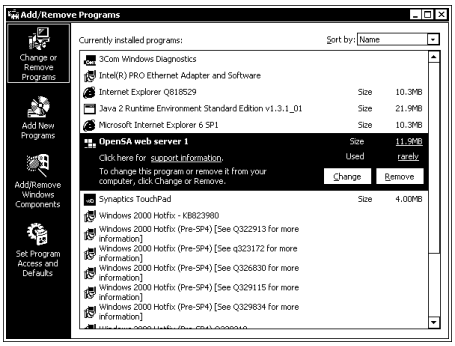


(2) Select (DC) [Add/Remove Programs].



(3) Check the content of [Currently installed programs] in the [Add/Remove Programs] panel.
If [OpenSA web server 1] exists, OpenSA is installed.
In this case, it is necessary to install OpenSA also in the additional SVP with procedure 3-6.

If [Apache Web Server] or [Apache HTTP Server 1.3.27] exists, Apache is installed.
In this case, it is not necessary to perform procedure 3-6.



When the OpenSA installation check is completed, select (CL) [X] button and close the window.

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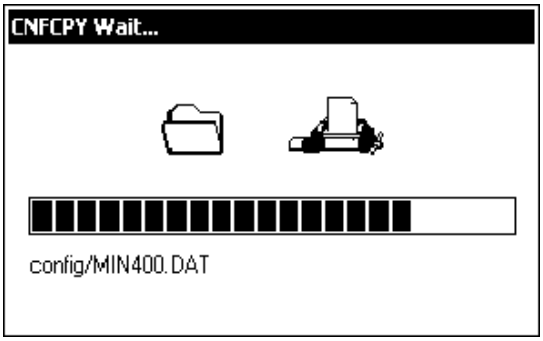
(5) The ‘CNFCPY Wait...’ window is displayed.



(6) Select (CL) [OK] in response to ‘Please remove the Config FD’.

(7) Select (CL) [Exit] of the 'Copy Config Files' to finish this operation.

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2. Installation Procedure of SVP High Reliability Kit

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 Attach the stopper.

a. Attach the Hinges (SVP) with the four screws.

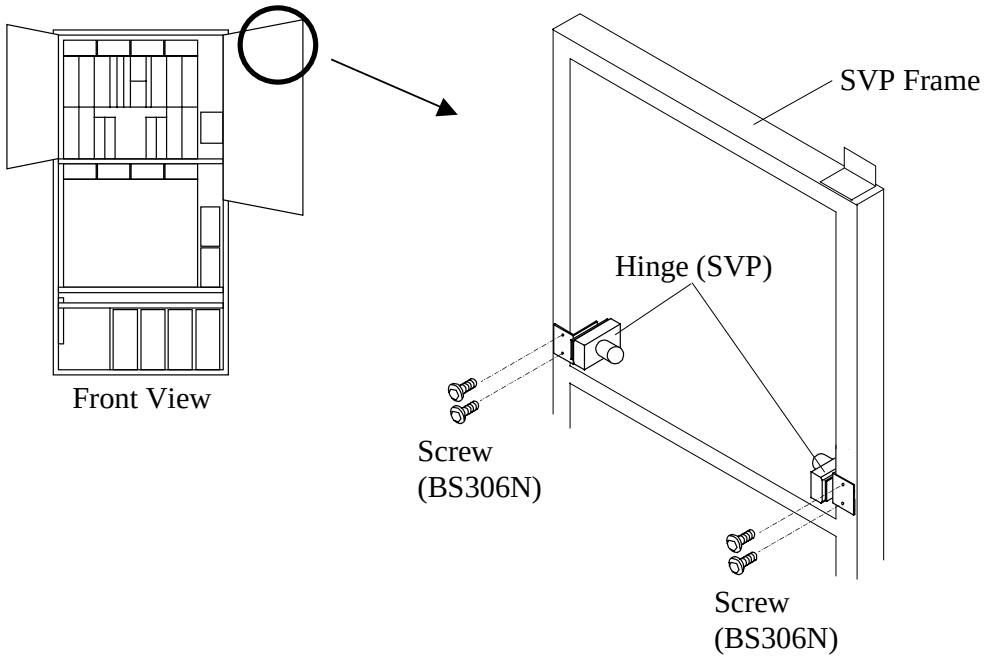

Fig. 3.9-1 Attachment of Hinges

b. Stick the Rubber (SVP-WR) to the Stopper (SVP-WR).

c. Attach the Stopper (SVP-WR) with the two screws.

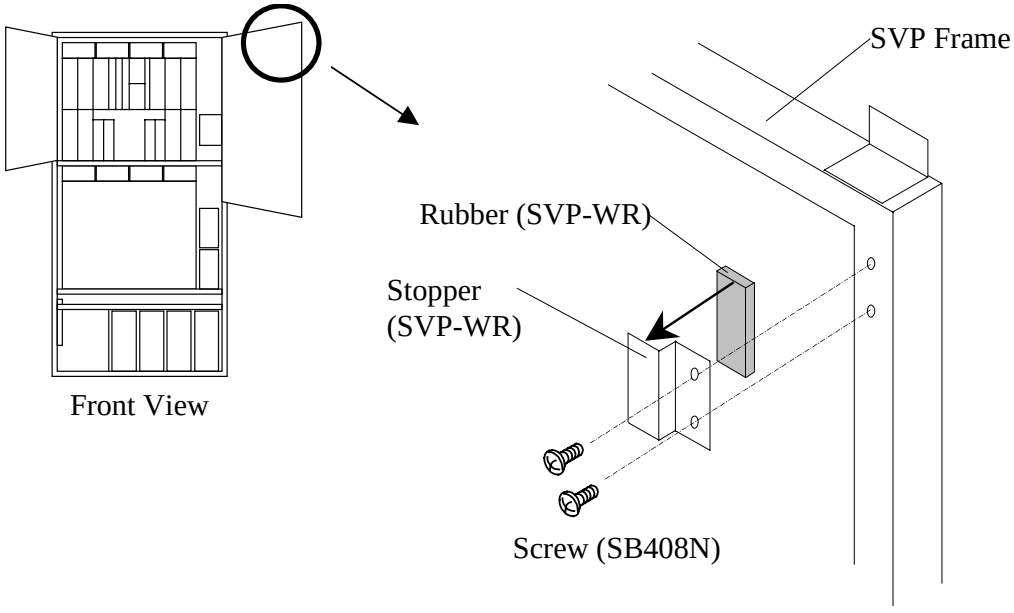

Fig. 3.9-2 Attachment of Stopper

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d. Attach the stopper (SVP-WF) placing it to the utmost left by fastening it with two screw (stopper)'s.

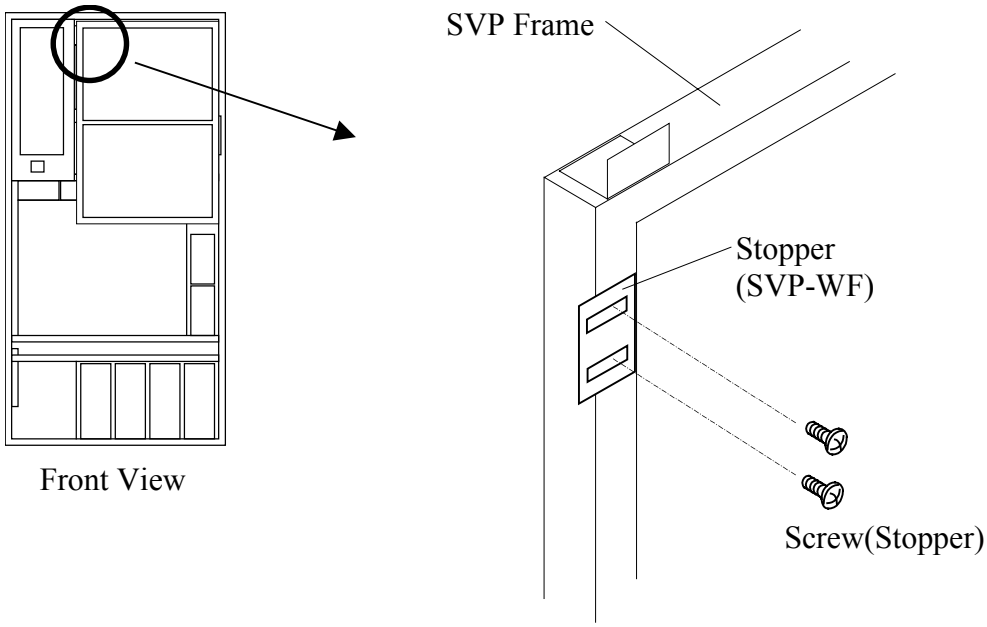

Fig. 3.9-3 Attachment of Stopper

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2-2 Attach the SVP Assy.

a. Loosen the two screws and remove the SVP cover.

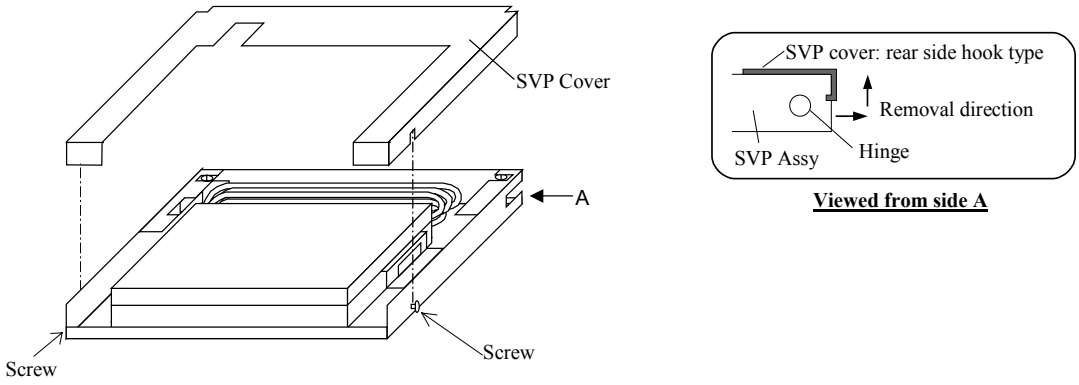

Fig. 3.9-4 Removal of SVP Cover

b. Attach the SVP Assy to the cabinet and attach the stoppers with screws.

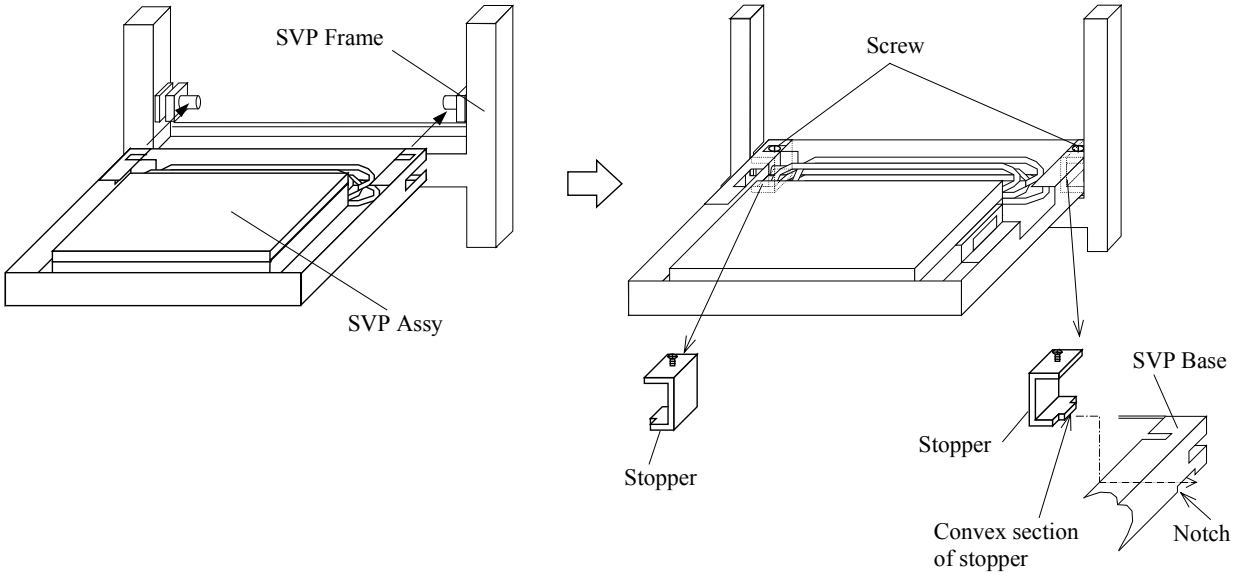

Fig. 3.9-5 Attachment of SVP ASSY

c. Route the cable that comes from the SVP Assy making it pass inside the SVP cover. Attach the SVP cover with the screws.

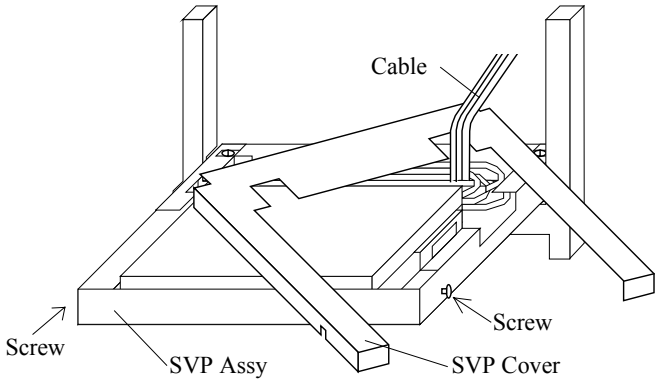

Fig. 3.9-5A Attachment of SVP Cover

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2-3 Attach the SVPPS BOX.

a. Attach the SVPPS BOX with the screw.

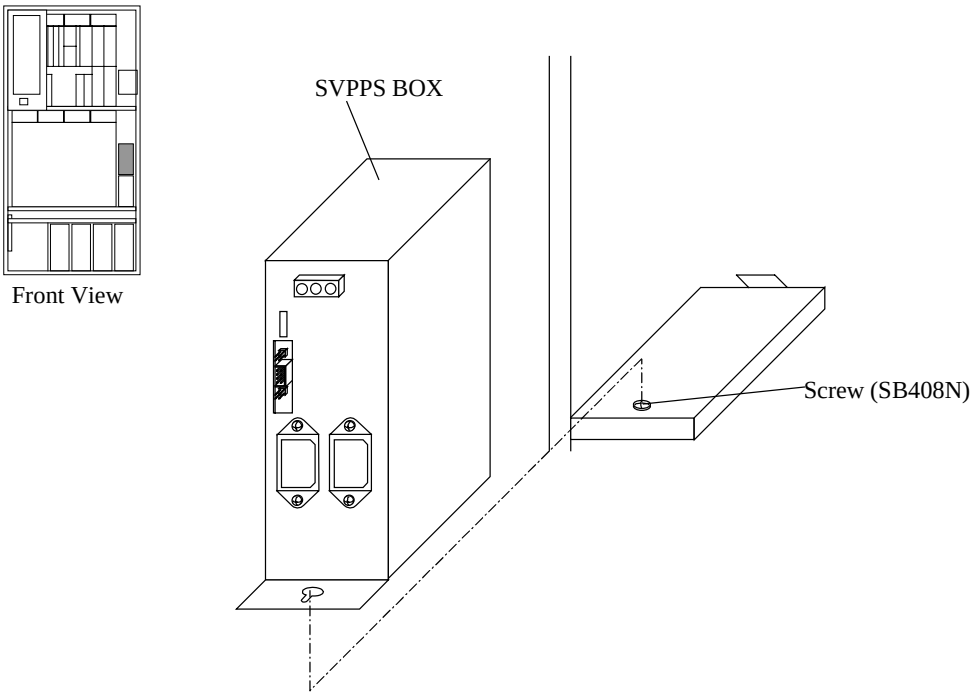

Fig. 3.9-6 Attachment of SVPPS BOX

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2-4 Fix the cables.

a. Fix the cables with the locking clamps.

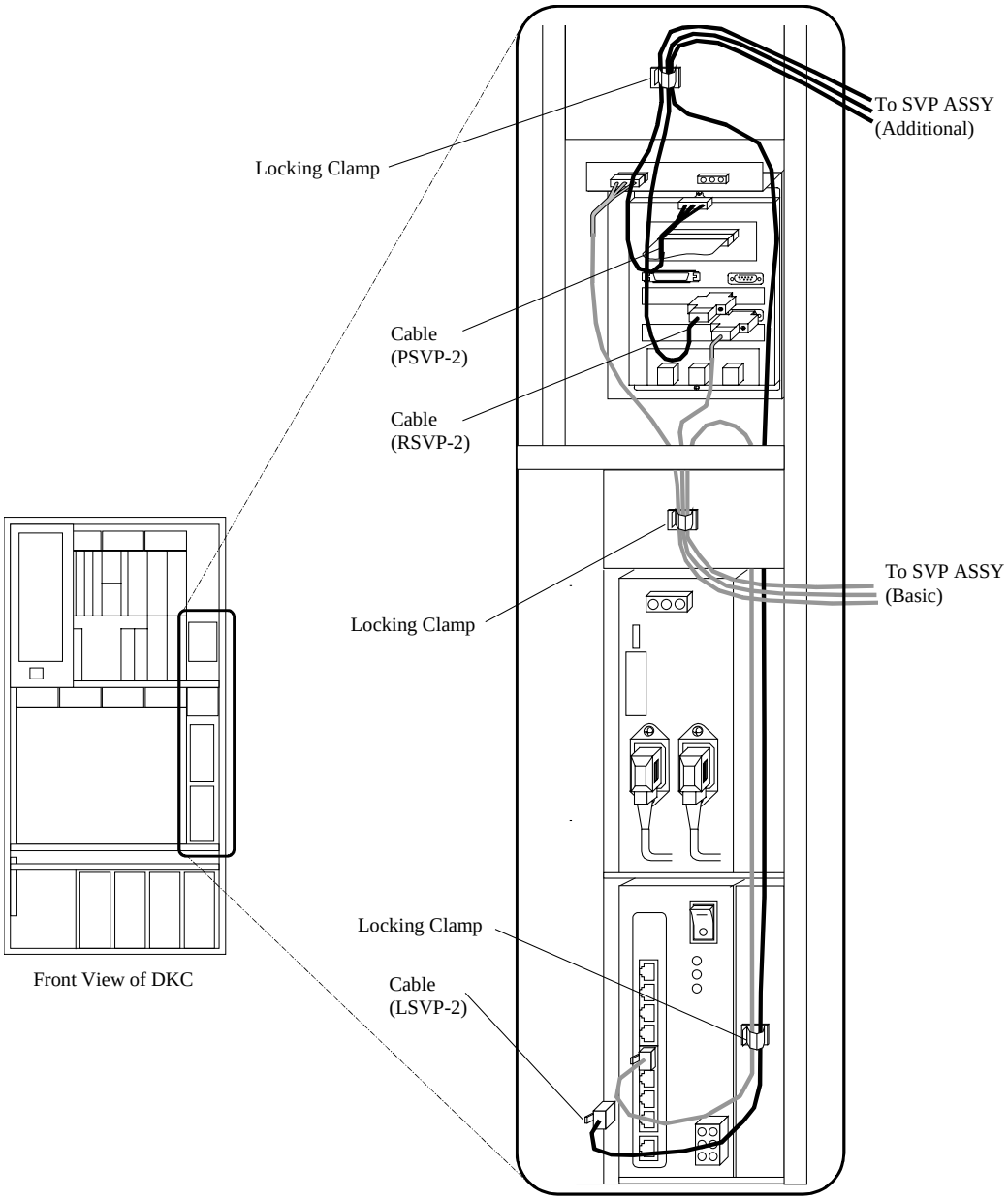

Fig. 3.9-7 Fixation of Cables

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2-5 Connect the cables (1).

a. Connect the cables (P40, PS-BOX-1, PS-BOX-2) to the SVPPS BOX.
The cable (P41) is not to be connected at this time, however.

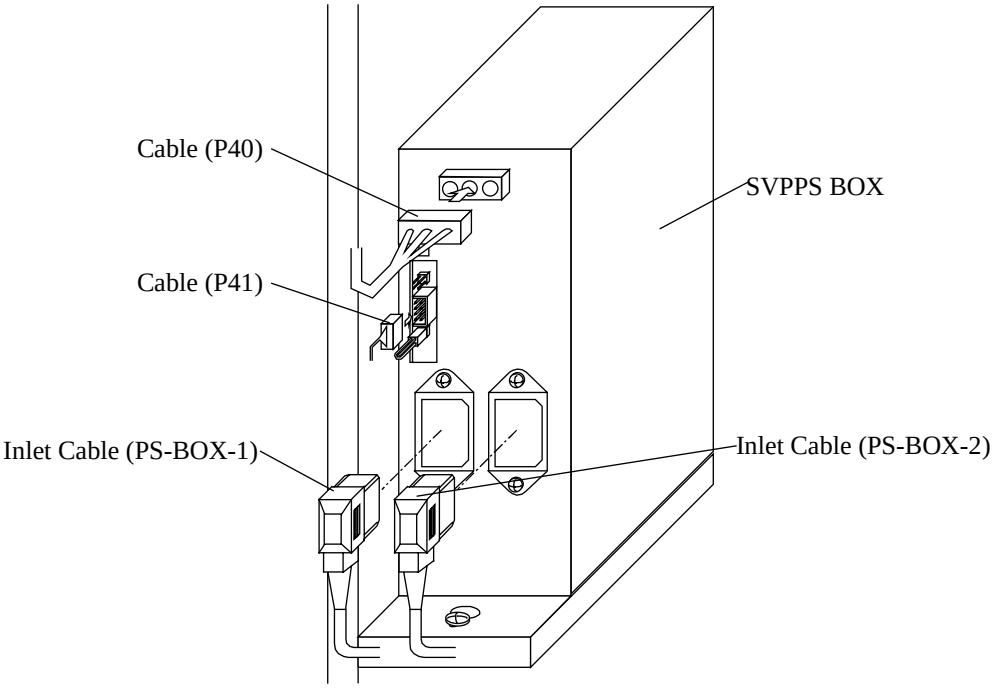

Fig. 3.9-8 Connection of Cables

b. Connect the cables (PSVP-2, RSVP-2) to the RS CON.

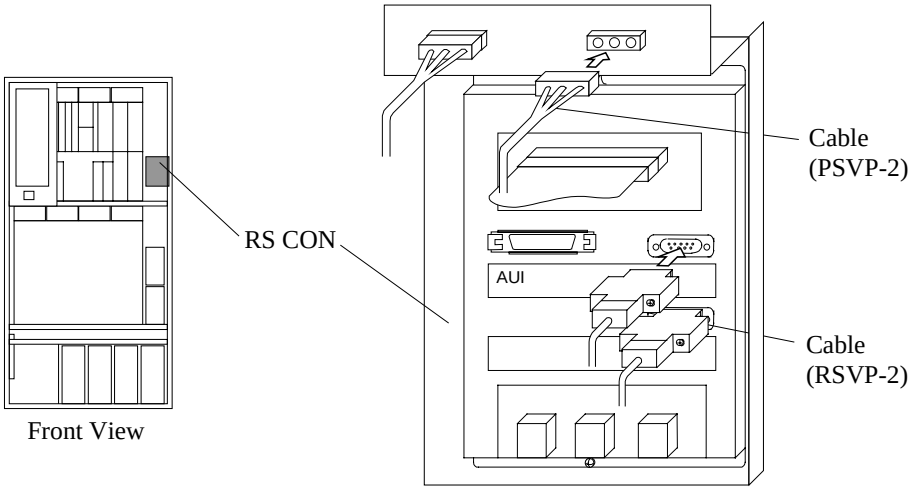

Fig. 3.9-9 Connection of Cables

Note: The LAN cable to the HUB BOX is not to be connected.

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2-6 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

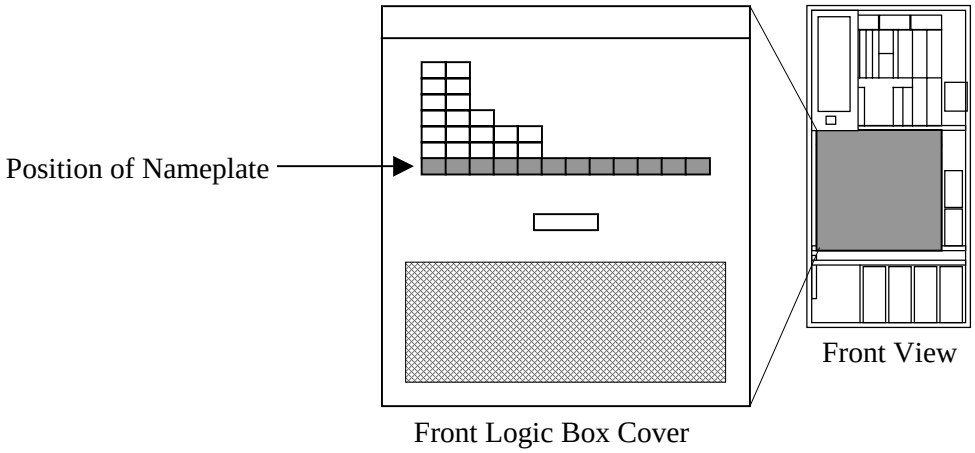

Fig. 3.9-10 Location of the Nameplate

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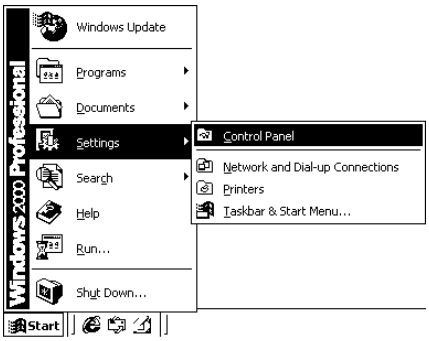
3. Operating Additional SVP

Operate the additional SVP as shown below.

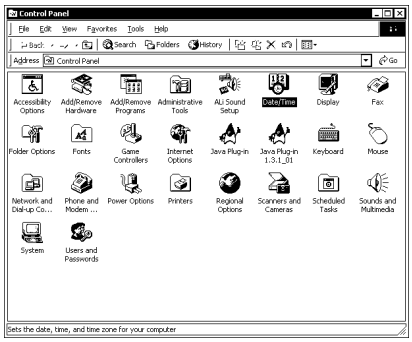
> **⚠ CAUTION**
>
> The SIMRC = 7410ff/7ff200/7ff201 may occur during this operation. But that is not a problem.

3-1 Set Date/Time

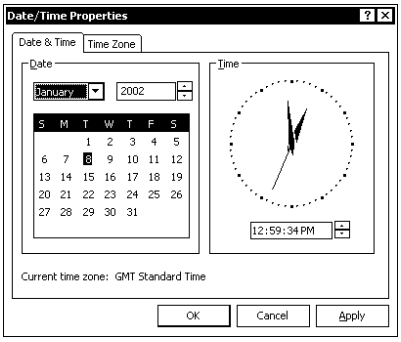
(1) <Open [Control Panel]>
Select (DR) [Settings] and then [Control Panel] from [Start].



(2) <Open [Date/Time]>
Select (DC) [Date/Time] from [Control Panel].



(3) <Select [Time Zone]>
Select (CL) [Time Zone].



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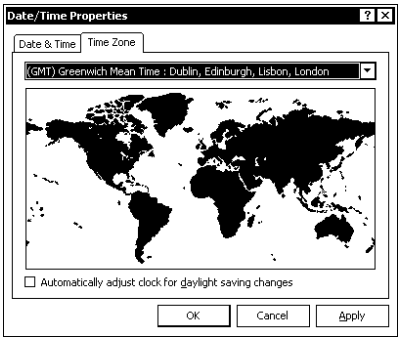
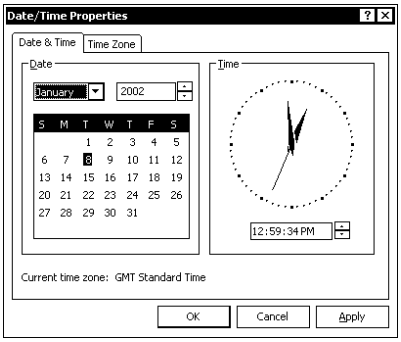
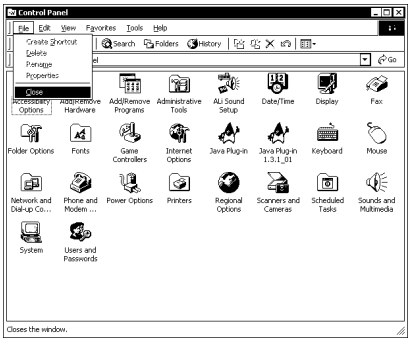
(4) <Check the setting of [Time Zone]>
Make sure that the setting of [Time Zone] is without the relation of a subsystem position "[GMT] Greenwich Mean Time; Dublin, Edinburgh, Lisbon, London". If it is not set as the (GMT), reset it as the (GMT). Also, make sure that a check box on the left of "Automatically adjust clock for daylight saving changes" is ☐ (without a check mark). Then, select (CL) [Date/Time].



(5) <Set the [Date/Time]>
Check if the [Date/Time] is set to the current time and date. If not, reset it correctly. Then, select (CL) [OK].



(6) <Close "Control Panel">
Select (CL) [File] on "Control Panel".
Select (CL) [Close].



3-2 Installation of Micro-program
① Insert the CD-ROM disk into the CD-ROM drive and then wait one minute.
② Select (CL) [Run...] from the [Start]. Enter "e:/setup.exe" and press the [Enter] key.

If a message "An old version of Apache has been detected. Please uninstall this version and then perform Setup.exe again." is displayed, perform again after uninstalling Apache 1.3.14.
The procedure of uninstallation of Apache 1.3.14 is shown 5.2 of WEB CONSOLE SECTION.

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3-3 Installation of Configuration

(1) Inserting the Config FD

① A message “Please insert the Config FD in the FDD.” is displayed.

② Insert the Config FD into the FDD and select (CL) [OK].

(2) Removing the Config FD

① When the copying of the Config is completed, a message “Please remove the Config FD.” is displayed.

② Remove the Config FD from the FDD and select (CL) [OK].

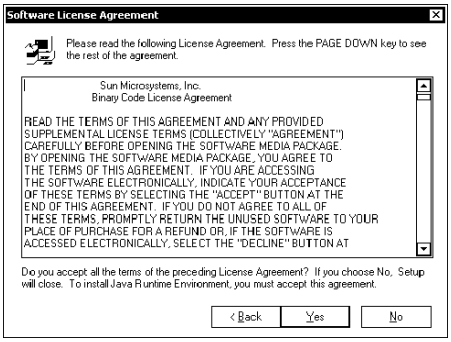
3-4 JAVA Setup

3-4-1 JAVA Setup

When the following window is not displayed, go to Step 3-4-2 because APACHE has already been installed.

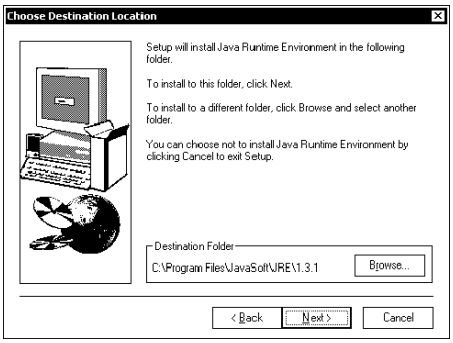
(1)

Select (CL) [Yes].



(2)

Select (CL) [Next].



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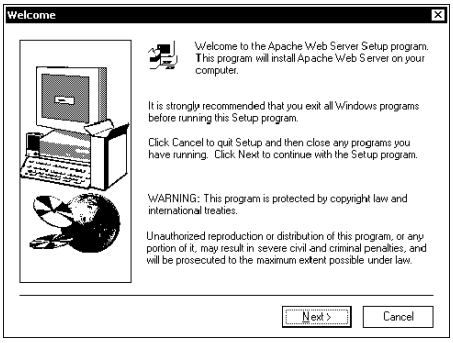
3-4-2 Setup Process of Apache

Execute Setup of Apache.

If the following panel is not displayed, Apache is already installed. Go to 3-5. If the SVP version is earlier than 21-06-20/00, Apache 1.3.14 will be installed. Use the following procedure to install it. If the SVP version is 21-06-20/00 or later, Apache 1.3.27 will be installed. Go to 3-4-3.

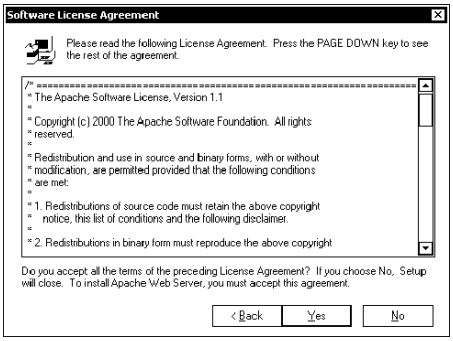
(1)

Select (CL) [Next].



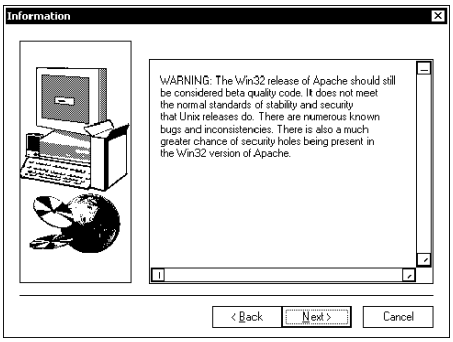
(2)

Select (CL) [Yes].



(3)

Select (CL) [Next].



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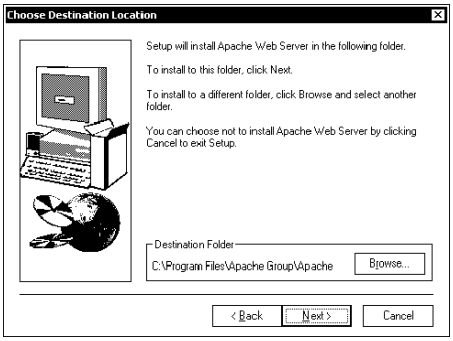
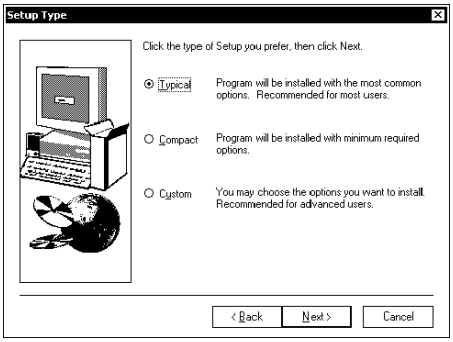
(4)

Select (CL) [Next].



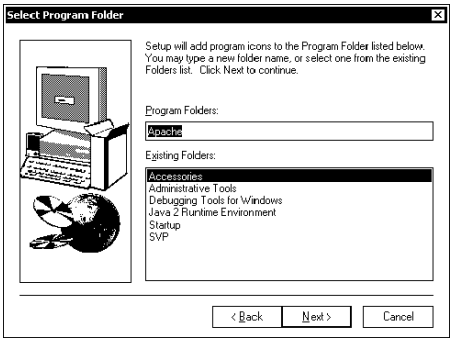
(5)

Select (CL) [Next].



(6)

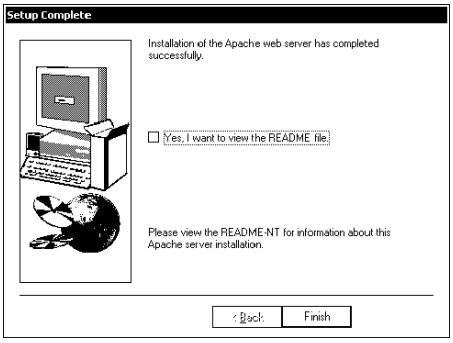
Select (CL) [Next].



(7)

Remove the check box of "Yes and I want to view the README file.", and select (CL) [Finish].

Go to Step 3-5.



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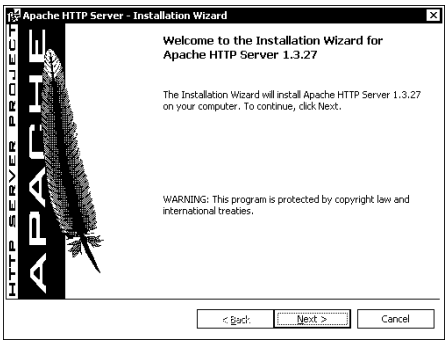
3-4-3 Setup Process of Apache 1.3.27

(1)

Select (CL) the [Next>] button.

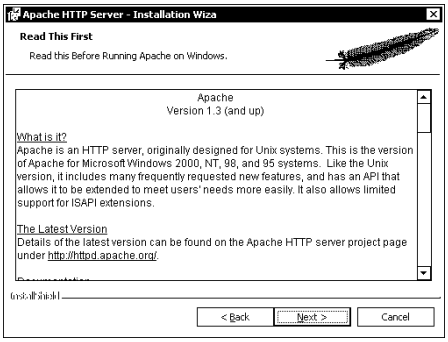


(2)

After selecting (CL) ”I accept the terms in the license agreement“, select (CL) the [Next>] button.

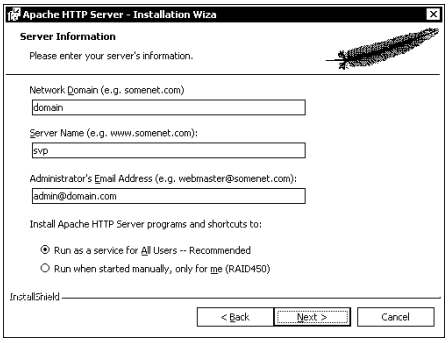
(3)

Select (CL) the [Next>] button.



(4)

Enter “domain” to the Network Domain field, “svp” to the Server Name field, and “admin@domain.com” to the Administrator’s Email Address field.
After selecting (CL) “Run as a service for All Users – Recommended”, select (CL) the [Next>] button.



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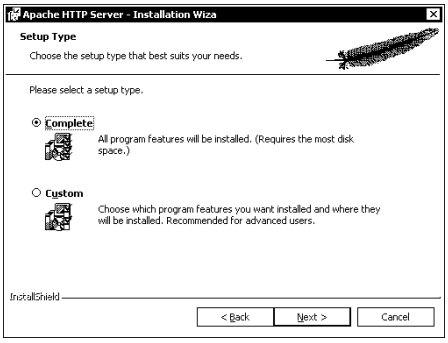
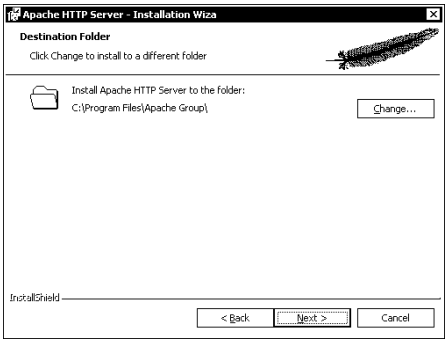
(5)

Select (CL) “Complete,” and then select (CL) the [Next>] button.



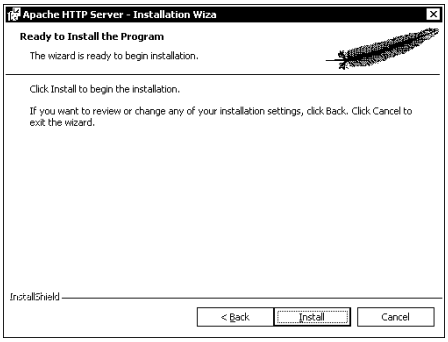
(6)

Select (CL) the [Next>] button.



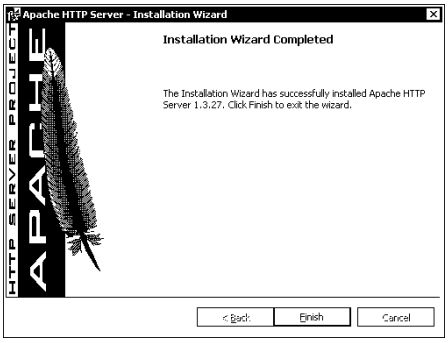
(7)

Select (CL) the [Install] button. Copying of the file will start.



(8)

When copying of the file is completed, this panel is displayed. Select (CL) the [Finish] button.



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3-5 Restarting the SVP

When the setup is completed, the SVP restarts automatically.
Remove the CD-ROM after the SVP restarts.

'DKC' of the 'Raid Information' window becomes an error because an IP Address is not setting.
Ignore it and continue the operation.

3-6 <Installation of OpenSA>

If OpenSA is installed in the basic SVP, it needs to be installed in the additional SVP as well. (WEB06-10)
If OpenSA is not installed in the basic SVP, go to 3-7.

3-7 <Setting an IP Address and Duplication of Optional SVP>

(1) <Changing the mode>

Change the mode by selecting [Modify Mode].

(2) <Opening the Install window>

Select (CL) [Install] from the [SVP] menu.

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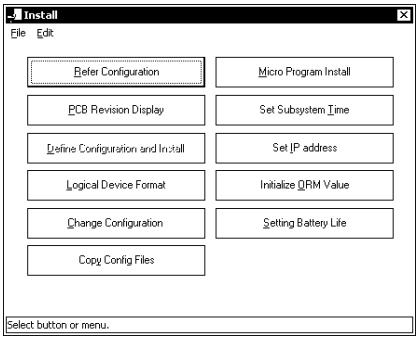
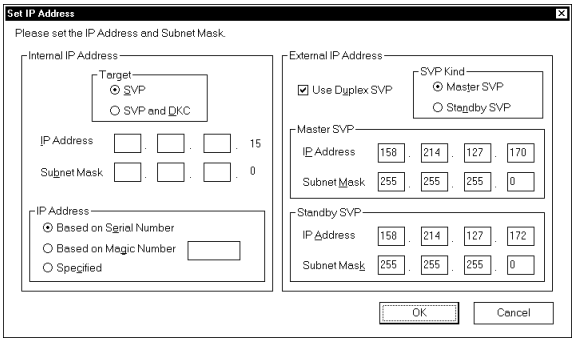
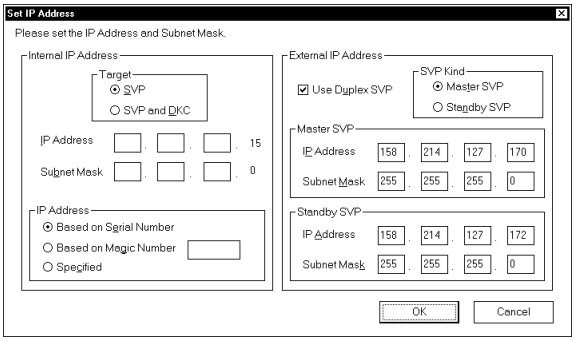
(3) <Selecting [Set SVP IP Address]>
Select (CL) [Set IP Address] in the [Install] window.



(4) <Setting an IP address>
Select (CL) [SVP] in the Internal IP Address box and enter an IP address and subnet mask of the internal IP address.

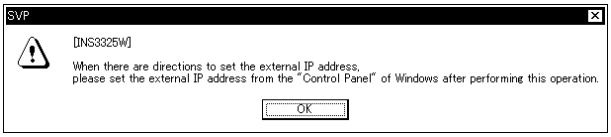


(5) <Setting the SVP duplication>
(a) Select (CL) [Use Duplex SVP] in the External IP address box.
(b) Select (CL) [Standby SVP] in the SVP Kind box.
(c) Enter the IP addresses and subnet masks of the Master and Standby SVPs, and then select (CL) [OK].



* You do not have to enter the information of Item (c) above when the setting of the external IP address is not required.

(6) <Confirming the external IP address setting>
When a message, "When there are directions to set the external IP address, please set the external IP address from the "Control Panel" of Windows after performing this operation." is displayed, select (CL) the [OK] button.



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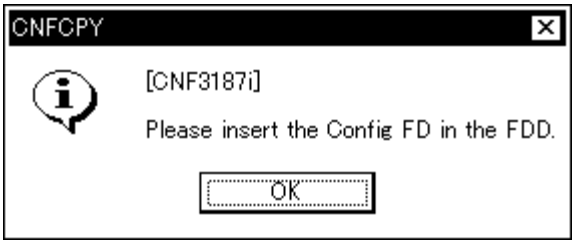
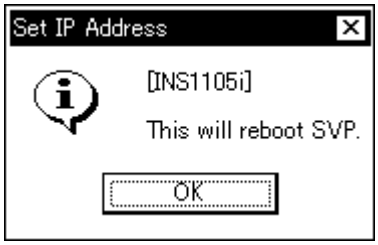
(7) <Inserting the Config FD>
Insert the Config FD in the FDD and select (CL) [OK].



(8) <Removing the Config FD>
When the copying of the Config is completed, a message, “Please remove the Config FD.” is displayed. Remove the FD and select (CL) [OK].

(9) <Confirming rebooting of the SVP>
Select (CL) [OK] in response to a message, “This will reboot SVP.”.



3-8 <Initial screen>

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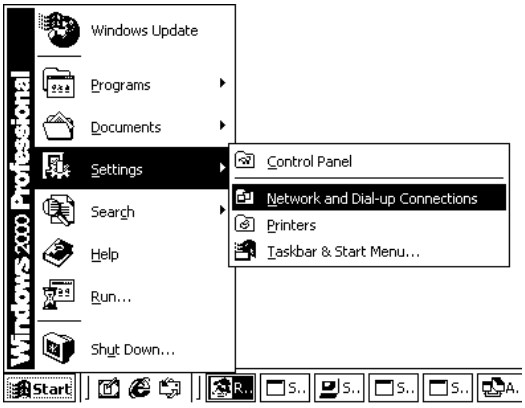
3-9 <Operation mode change>
Change the mode to [Modify Mode].

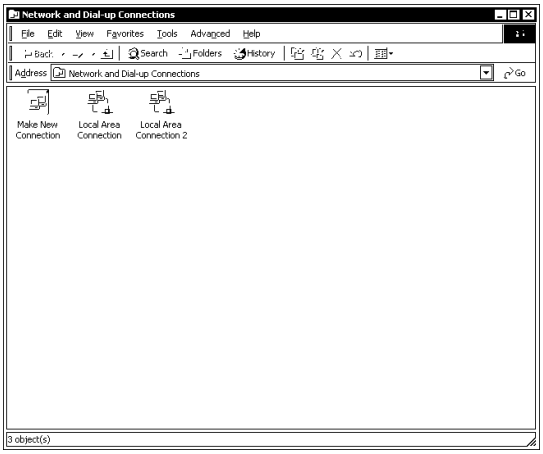
3-10 <Setting an external IP address>
When the setting of the external IP address is not required, go to Step 3-11.

(1) <Opening the Network and Dial-up Connections window>
Select (CL) [Settings] and [Network and Dial-up Connections] in this order from the [Start].



(2) <Opening the Local Area Connection 2 window>
Select (DC) [Local Area Connection 2] in the Network and Dial-up Connections window.

* [Local Area Connection 2] may be displayed [Local Area Connection 3].



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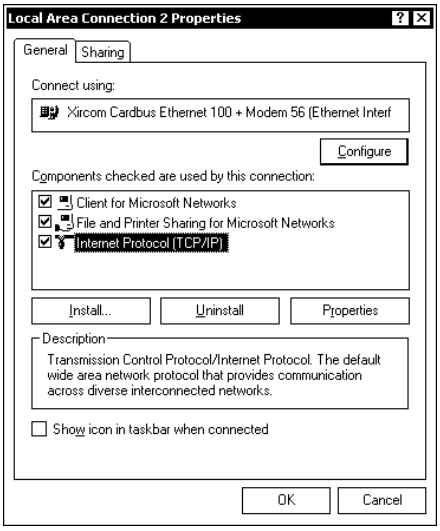
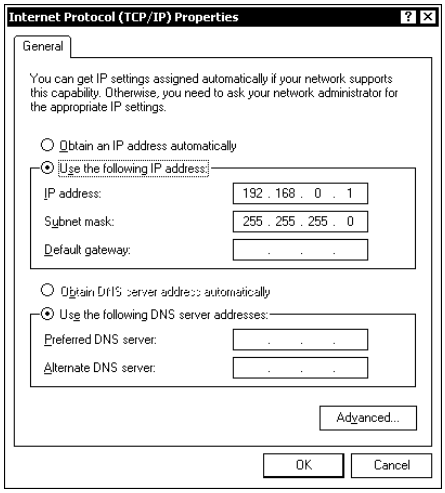
(3) <Opening the Local Area Connection 2 Properties window>
Select (CL) [Internet Protocol (TCP/IP)] in the Local Area Connection 2 Properties window, and then select the [Properties] button.

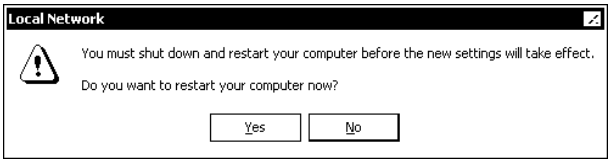


(4) <Setting an external IP address>
Set the IP address and subnet mask, and then select (CL) the [OK] button.

When the setting of the network must be changed after the setting operation is completed, go to Step (5). In the other cases, select (CL) the [OK] button in the 'Local Area Connection 2 Properties' window.
Close the 'Network and Dial-up Connection' window.



When the SVP is not connected to the LAN, the following window is displayed. Select (CL) the [No].



(5) <Opening bus information on the card being used>
Select (CL) the [Configure] button in the 'Local Area Connection 2 Properties' window.
When the Xircom card is used, go to Step (6).
When the 3com card is used, go to Step (9).

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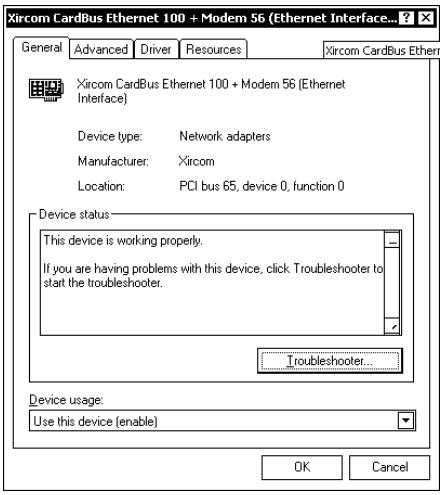
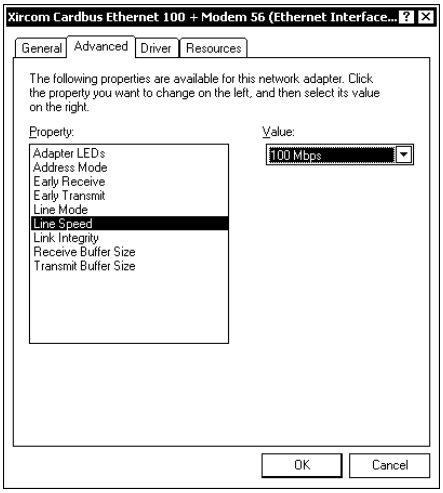
[In the case of the Xircom card bus]

(6) <Opening the 'Xircom Cardbus …' window>
Select (CL) the 'Advanced' tab in the 'Xircom Cardbus …' window.

The next step must be selected from two kinds of steps depending on the driver. Make a setting instructed in Step (7) or (8).

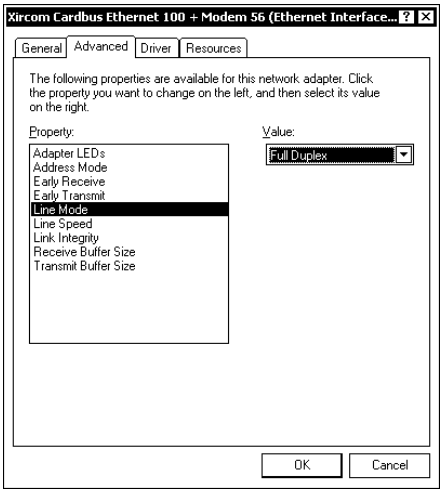


(7)-1 <Setting the speed mode>
Select the 'Line Speed' and change the setting of the 'Value' from 'Auto Detect' to '100 Mbps'.



(7)-2 <Setting the line mode>
Select the 'Line Mode' and change the setting of the 'Value' from 'Auto Detect' to 'Full Duplex'.

Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



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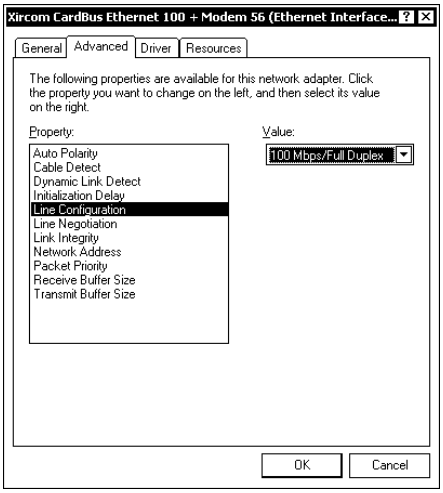
(8)-1 <Setting the Line Configuration>

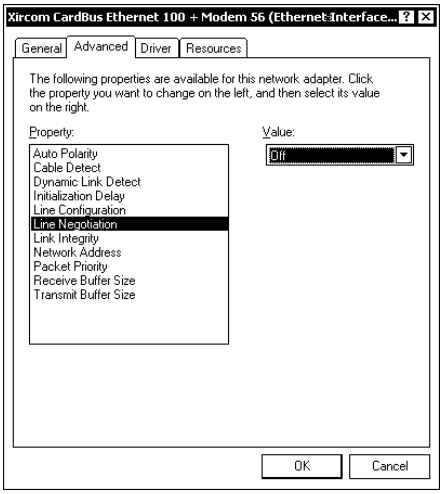
Select [Line Configuration] and change the setting of the 'Value' to '100Mbps/Full Duplex'.



(8)-2 <Setting the Line Negotiation>

Select [Line Negotiation] and change the setting of the 'Value' to 'Off'.

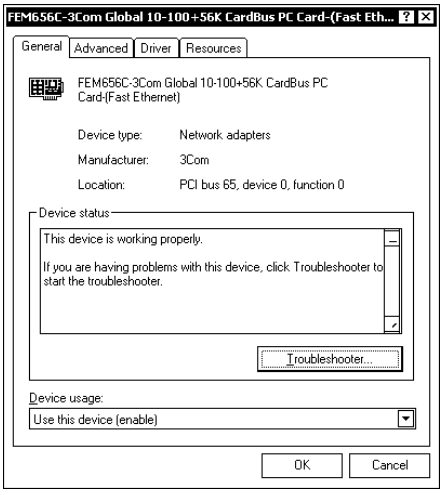
Return the window to the 'Local Area Connection 2 Properties' by selecting (CL) the [OK] button. Then close the window by selecting the [OK] button.



[In the Case of the 3com card bus]

(9) <Opening the 'FEM656C-3Com …' window>

Select (CL) the 'Advanced' tab in the 'FEM656C-3Com…' window.



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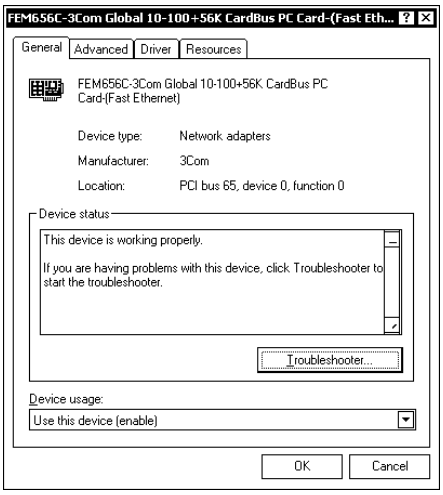
(10) <Setting the network link selection>

Select the 'Network Link Selection' and change the setting of the 'Value' from 'Auto Negotiation' to '100BTX Full Duplex'.

Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



3-11 <Setting Web Console>

Make a setting of the Internet Explorer according to '1-1 Setting Internet Explorer' in [WEB CONSOLE] section. (WEB01-10)

3-12 <Setting for the E-NAS>

When the E-NAS has already been installed, install Setup on SVP in the added SVP. (NAS03-110)

When the E-NAS is not installed in the system, perform the operation instructed in 3-13.

3-13 <Erasing logs>

Erase all logs that were made during operation of the SVP. (SVP02-170)

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3-14 <Shutting down the Additional SVP>

(1) <Quitting Windows>
Select (CL) [Shut Down...] from the [Start] menu.

(2) <Shutting down the SVP>
Select (CL) “Shut down” in the Closing window of Windows. When a message, “What do you want the computer to do?” is displayed, select (CL) the [OK] button.

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4. Connect the cables (2).

4-1 Connect the cable (P41) to the SVPPS BOX.

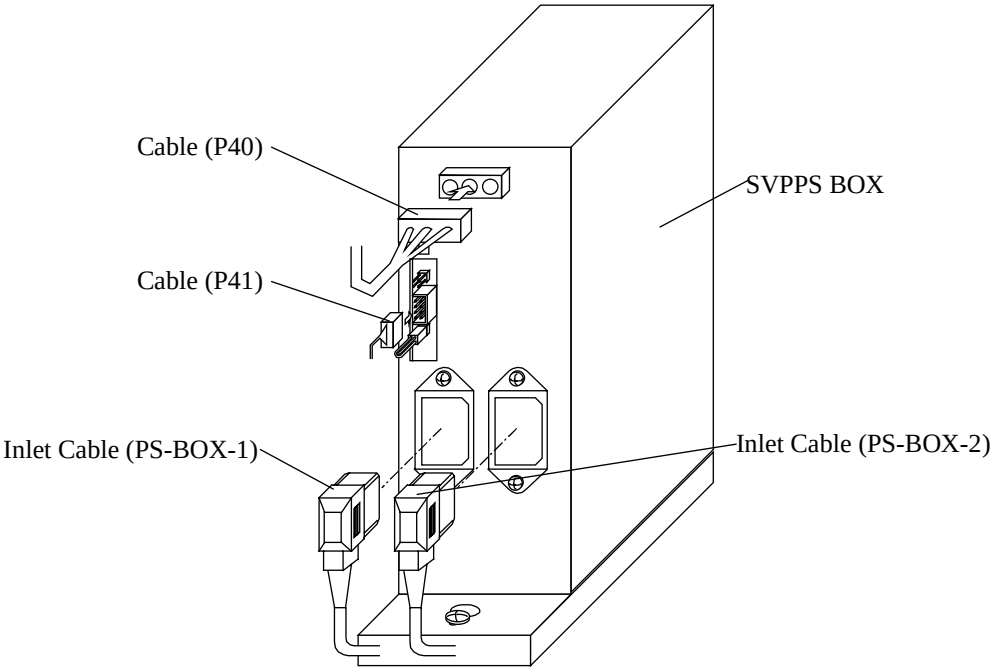

Fig. 3.9-11 Connection of Cables

4-2 Connect the LAN cable to the HUB BOX.

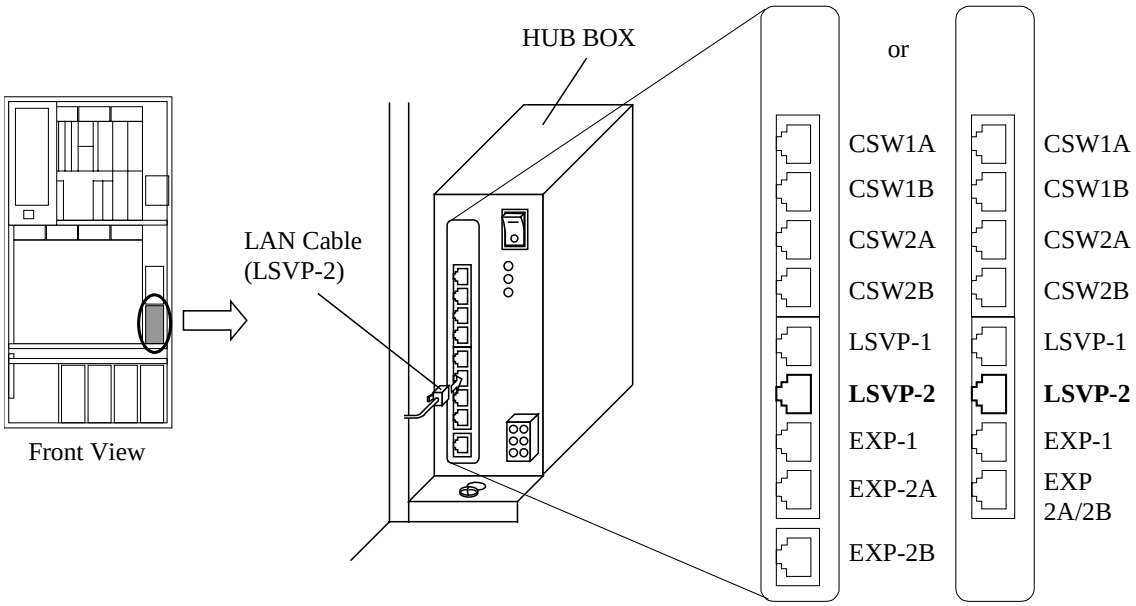

Fig. 3.9-12 Connection of Cables

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5. Operating the Basic SVP

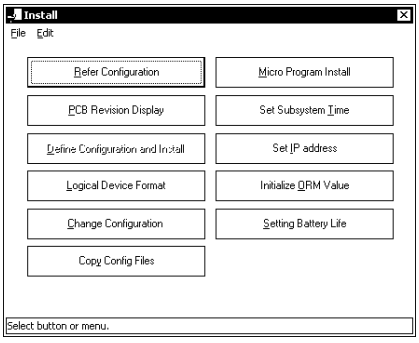
Operate the basic SVP as follows.

5-1 Setting duplication of the Basic SVP
Operate the basic SVP as follows.

(1) <Changing the mode>
Change the mode by selecting [Modify Mode].

(2) <Opening the Install window>
Select (CL) [Install] from the [SVP] menu.

(3) <Selecting [Set SVP IP Address]>
Select (CL) [Set IP Address] in the Install window.



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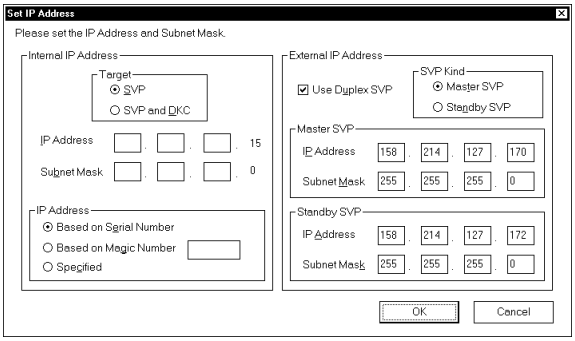
(4) <Setting the SVP duplication>

(a) Select (CL) [Use Duplex SVP] in the External IP Address box.

(b) Select (CL) [Master SVP] in the SVP Kind box.

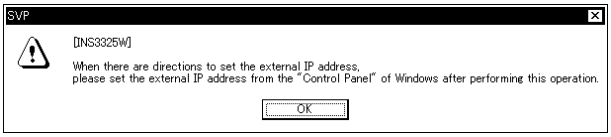
(c) Enter the IP addresses and subnet masks of the Master and Standby SVPs, and then select (CL) [OK].



* You do not have to enter the information of Item (c) above when the setting of the external IP address is not required.

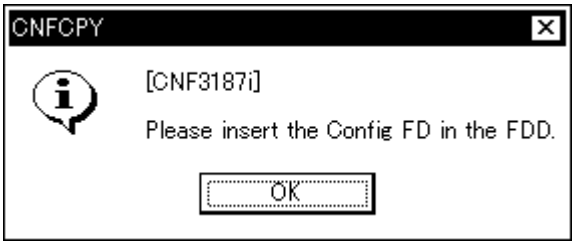
(5) <Confirming the external IP address setting>

When a message, “When there are directions to set the external IP address, please set the external IP address from the “Control Panel” of Windows after performing this operation.” is displayed, select (CL) the [OK] button.



(6) <Inserting the Config FD>

Insert the Config FD into the FDD and select (CL) [OK].



(7) <Removing the Config FD>

When the copying of the Config is completed, a message, "Please remove the Config FD." is displayed. Remove the FD and select (CL) [OK].

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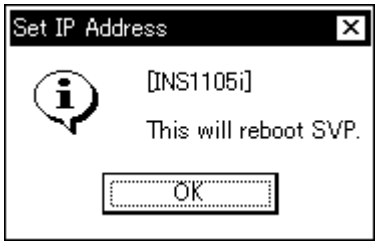
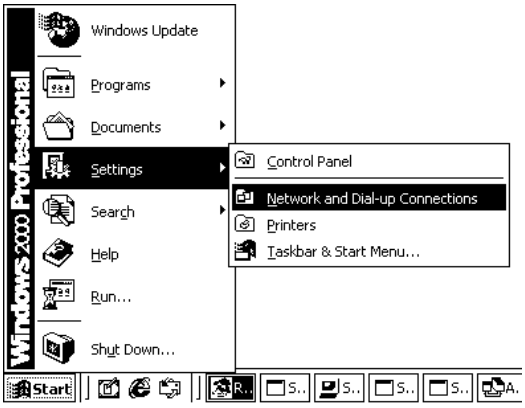
(8) <Confirming rebooting of the SVP>
Select (CL) [OK].



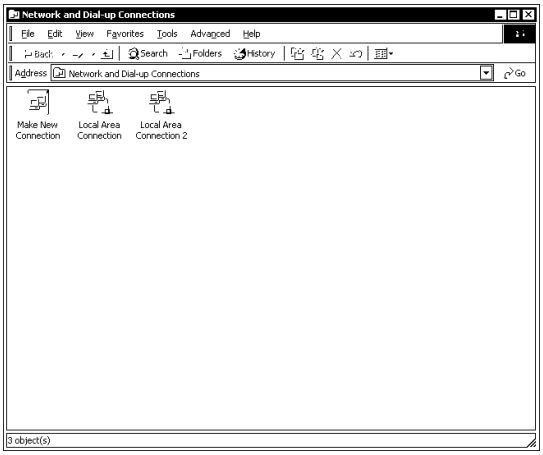
5-2 <Setting an external IP address>
When the setting of the external IP address is not required, go to Step 6.

(1) <Opening the Network and Dial-up Connections window>
Select (CL) [Settings] and [Network and Dial-up Connections] in this order from the [Start] menu.



(2) <Opening the Local Area Connection 2 window>
Select (DC) [Local Area Connection 2] in the Network and Dial-up Connections window.

* [Local Area Connection 2] may be displayed [Local Area Connection 3].



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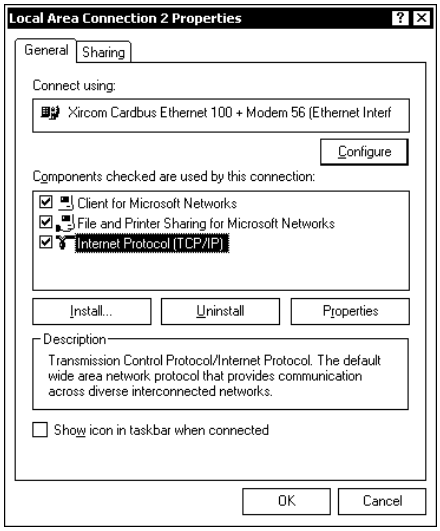
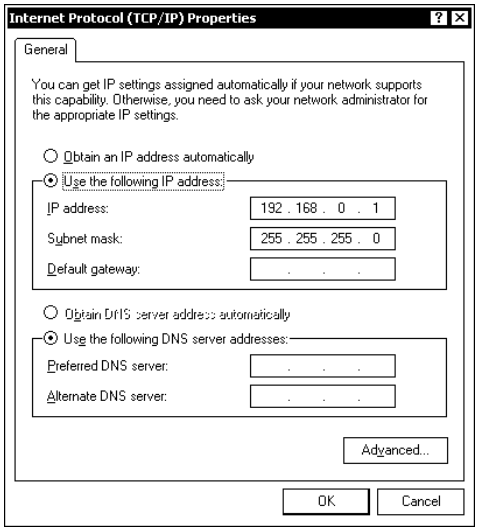
(3) <Opening the Local Area Connection 2 Properties window>
Select (CL) [Internal Protocol (TCP/IP)] in the [Local Area Connection 2 Properties window, and then select (CL) the [Properties] button.



(4) <Setting an external IP address>
Set the IP address and subnet mask, and then select (CL) the [OK] button.

When the setting of the network must be changed after the setting operation is completed, go to Step (5). In the other cases, select (CL) the [OK] button in the 'Local Area Connection 2 Properties' window.
Close the 'Network and Dial-up Connection' window.



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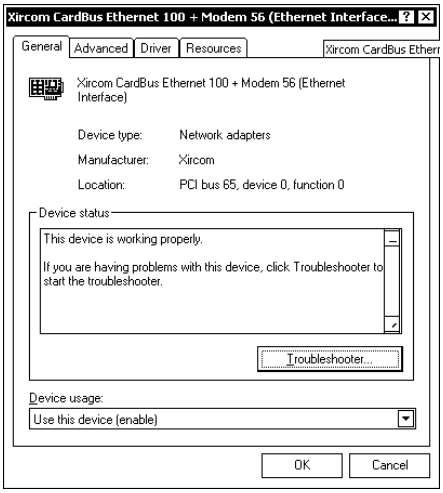
(5) <Opening bus information on the card being used>
Select (CL) the [Configure] button in the 'Local Area Connection 2 Properties' window.
When the Xircom card is used, go to Step (6).
When the 3com card is used, go to Step (9).

[In the case of the Xircom card bus]

(6) <Opening the 'Xircom Cardbus …' window>
Select (CL) the 'Advanced' tab in the 'Xircom Cardbus …' window.

The next step must be selected from two kinds of steps depending on the driver. Make a setting instructed in Step (7) or (8).



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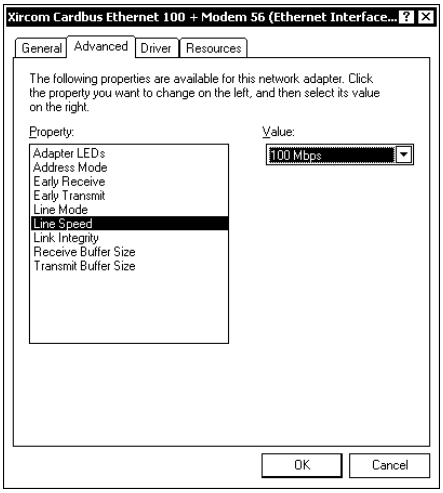
(7)-1 <Setting the speed mode>
Select the 'Line Speed' and change the setting of the 'Value' from 'Auto Detect' to '100 Mbps'.



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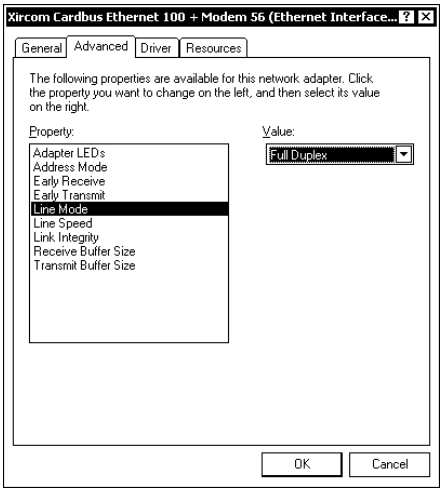
(7)-2 <Setting the line mode>

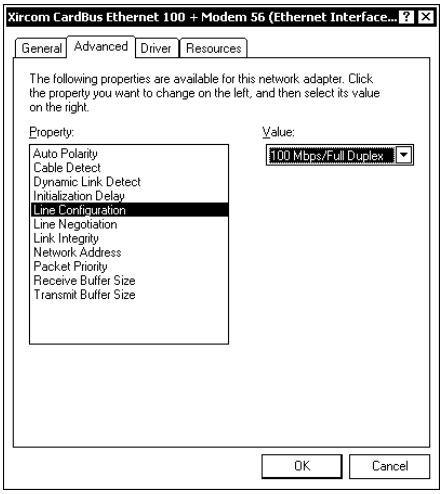
Select the 'Line Mode' and change the setting of the 'Value' from 'Auto Detect' to 'Full Duplex'.

Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



(8)-1 <Setting the Line Configuration>

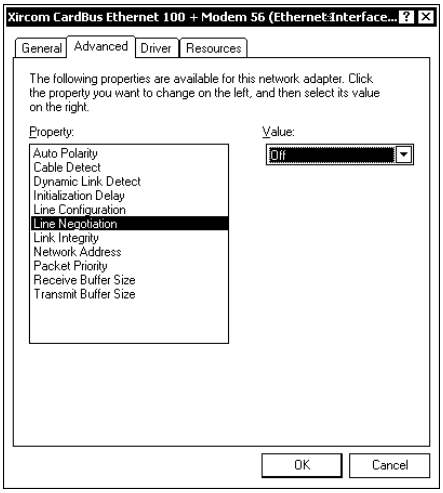
Select [Line Configuration] and change the setting of the 'Value' to '100Mbps/Full Duplex'.



(8)-2 <Setting the Line Negotiation>

Select [Line Negotiation] and change the setting of the 'Value' to 'Off'.

Return the window to the 'Local Area Connection 2 Properties' by selecting (CL) the [OK] button. Then close the window by selecting the [OK] button.



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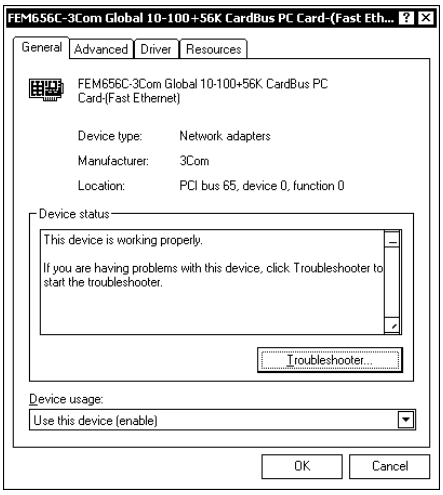
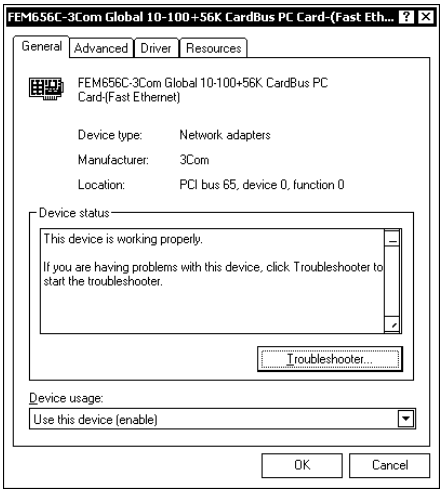
[In the Case of the 3com card bus]

(9) <Opening the 'FEM656C-3Com …' window>
Select (CL) the 'Advanced' tab in the 'FEM656C-3Com…' window.



(10) <Setting the network link selection>
Select the 'Network Link Selection' and change the setting of the 'Value' from 'Auto Negotiation' to '100BTX Full Duplex'.
Return the window to 'Local Area Connection 2 Properties' by pressing (CL) the [OK] button, and close the window by pressing the [OK] button.



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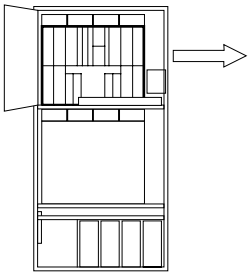
6. Executing SSVP Reset

6-1 Execute the SSVP reset by pressing the SSVP ALARM RESET switch.



Front View

–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP	DKC MN 2	SVP PS 1 SVP PS 2 EU	SUB PS 2	5/3V PS 2B	5/3V PS 2A
3V PS 1A	3V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B	3V PS 2A
–	–	AL	BL			CL	DL	–	–

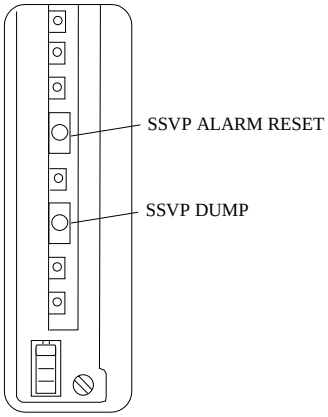


Fig. 3.9-13 SSVP Reset

6-2 Make sure that the Additional SVP is powered on about 8 minutes after the SSVP reset. Further, make sure that the SVP initial screen is displayed about 5 minutes later. Wait under condition for 1 minute.

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7. Confirmation procedure

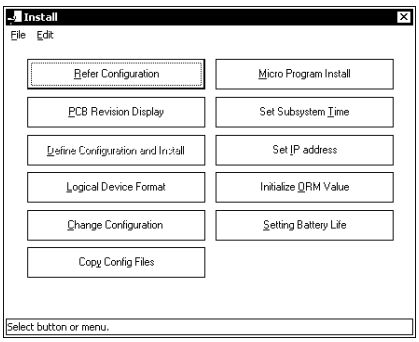
7.1 <Operating the Additional SVP>

(1) <Initial screen>

(2) <Operation mode change>
Change the mode to [Modify Mode].

(3) <Opening the Install window>
Select (CL) [Install].

(4) <Selecting [Set IP Address]>
Select (CL) [Set IP Address] in the [Install] window.



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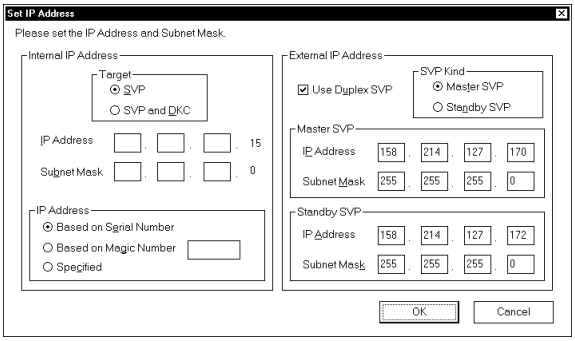
(5) <Confirmation of SVP duplication>
(a) Confirm IP Address and Subnet Mask.
(b) Confirm that “Use Duplex SVP” is selected.
(c) Confirm that “Standby SVP” is selected.

Select (CL) [Cancel] after the confirmation.



(6) <Closing the Install window>
Close ‘Install’ window.

(7) <Shutting down the Additional SVP>
Select (CL) [Shut Down...] from the [Start] menu.

(8) <Quitting Windows>
Select (CL) “Shut down” in the Closing window of Windows. And select (CL) [OK] button.

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7.2 Operating the Basic SVP.

(1) <Initial screen>

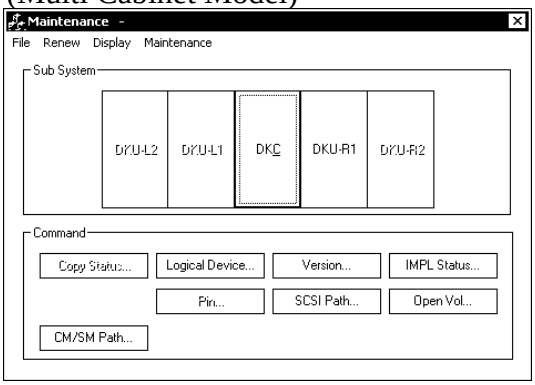
(2) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

(3) <Maintenance window>
The 'Maintenance' window is displayed.

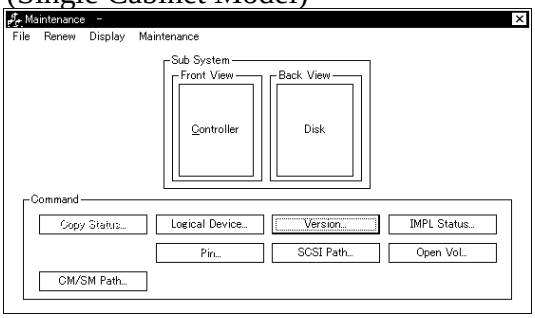
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)



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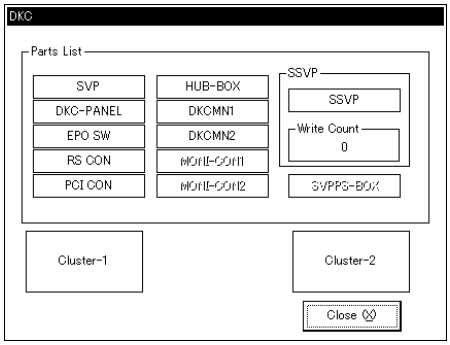
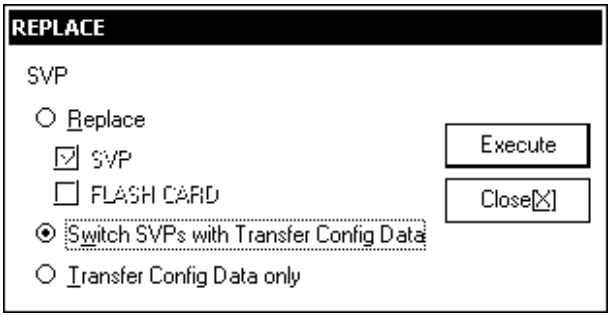
(4)

(Multi Cabinet Model)
<DKC window>
Select (CL) [SVP] in the 'DKC'.

(Single Cabinet Model)
<Controller window>
Select (CL) [SVP] in the 'Controller'.

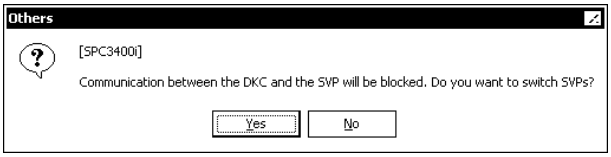


(5) <Replace window>
Select (CL) "Switch SVPs with Transfer Config Data" in the 'Replace' window.
And select (CL) [Execute].

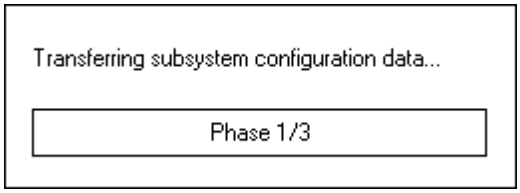


(6) <Execute>
Select (CL) [Yes].

* The switching takes about 30 minutes.



(7) <Transfer status>
"Transferring subsystem configuration data…" in displayed.



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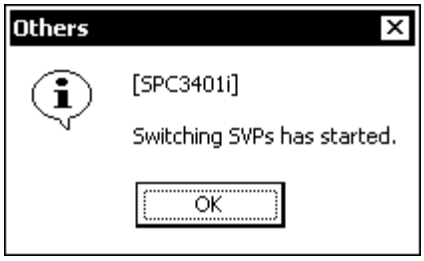
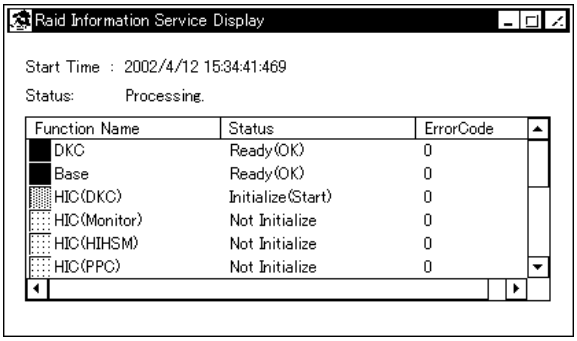
(8) <Checking beginning of the SVP switching>
The message “Switching SVPs has started.” is displayed.
The SVP is powered off automatically owing to the SVP switching. Make sure that the Additional SVP has started up.



7.3 Operating Additional SVP.

(1)
The Additional SVP restarts automatically again after the Additional SVP is powered on.
Wait until restart is end.

(2) <Initial screen>
When the RAID Information window is displayed, the switching has been completed.



(3) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

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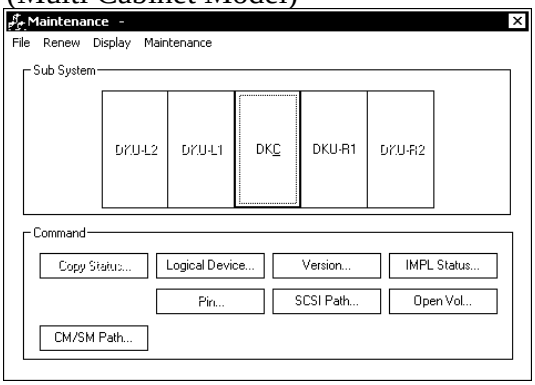
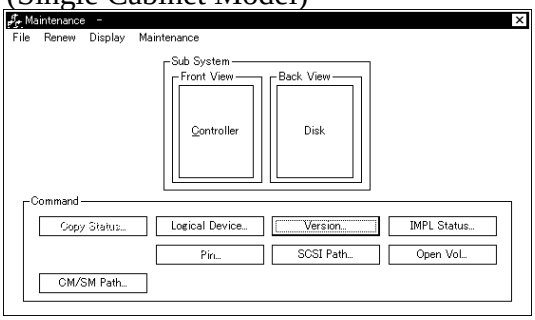
(4) <Maintenance window>
Make sure that the 'Maintenance' window is open normally.
Close 'Maintenance' window.

(Multi Cabinet Model)



(Single Cabinet Model)



(5) <Web Console>
If Customer doesn't use Web Console/Storage Navigator via a customer PC, don't need to do the following confirmation work.
Please run Web Console/Storage Navigator from customer PC, and check whether you can login using by Customer user-id and password. (The user-id and password are defined by customer. Therefore, entrust a customer with a login test.)
If you can see the main screen of Web Console/Storage Navigator, the confirmation work is done.

(6) <Select Maintenance>
Select (CL) [Maintenance].

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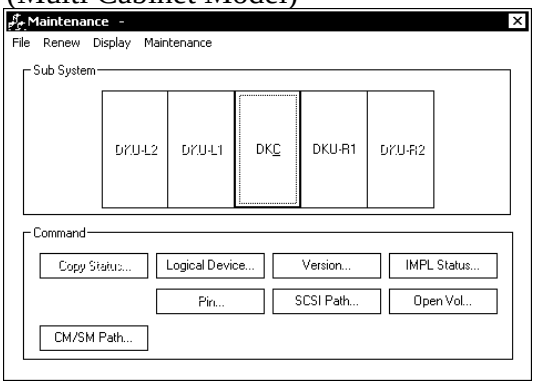
(7) <Maintenance window>
The ‘Maintenance’ window is displayed.

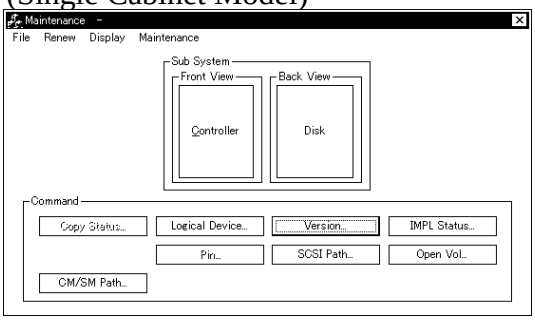
(Multi Cabinet Model)
In the ‘Maintenance’ window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the ‘Maintenance’ window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



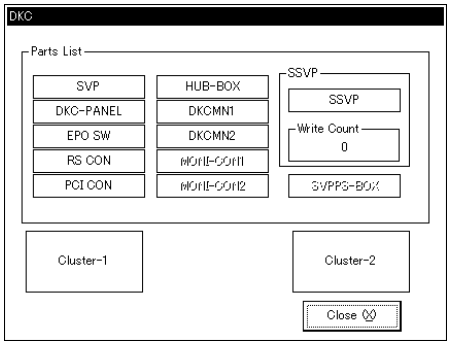
(Single Cabinet Model)



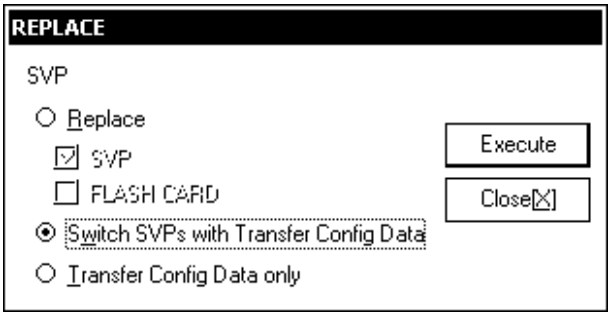
(8)

(Multi Cabinet Model)
<DKC window>
Select (CL) [SVP] in the ‘DKC’.

(Single Cabinet Model)
<Controller window>
Select (CL) [SVP] in the ‘Controller’.



(9) <Replace window>
Select (CL) “Switch SVPs with Transfer Config Data” in the ‘Replace’ window.
And select (CL) [Execute].



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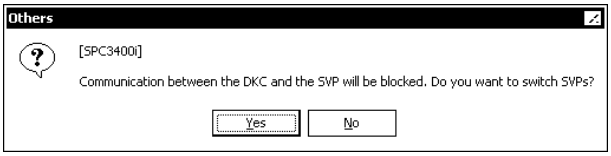
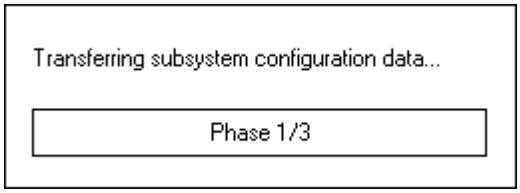
(10) <Execution>
Select (CL) [Yes].

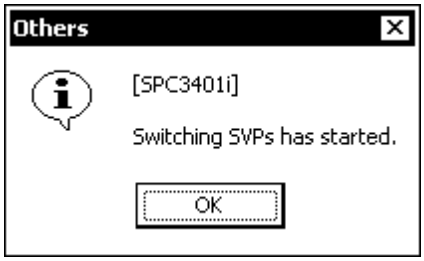


(11) <Transfer status>
"Transferring subsystem configuration data…" in displayed.



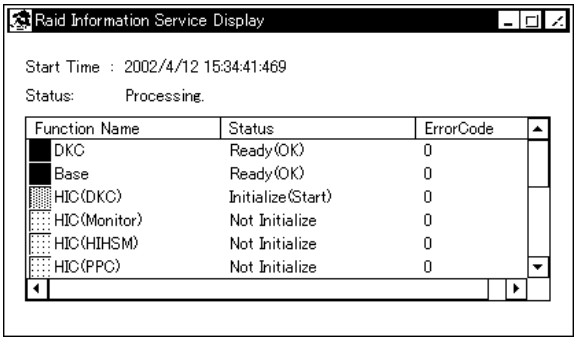
(12) <Checking beginning of the SVP switching>
The message "Switching SVPs has started." is displayed. The SVP is powered off automatically owing to the SVP switching. Make sure that the Basic SVP has started up.

The Basic SVP restarts automatically again after the Basic SVP is powered on.
Wait until restart is end.



(13) <Initial screen>
When the RAID Information window is displayed, the switching has been completed.

Operation is end.



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3.10 Installation of PCI I/F Connector (DKC-F460I-18)

Table 3.10-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-18	PCI CON	3257397-A	1	
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-104	1	RSD
			2105903-104		HICAM
			2105903-204		HICEF

Notes:
1. The subsystem is powered on when it is given an powering on instruction by any one of the host devices connected to it.
   The subsystem performs the EPO or powering off when all the EPO or powering off instructions from all the host devices connected to it are given.

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1. Installation Procedure of PCI I/F Connector

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.

1-1 Confirm that the REMOTE/LOCAL Switch of DKC Panel is set to LOCAL. If not, set the REMOTE/LOCAL Switch to LOCAL.

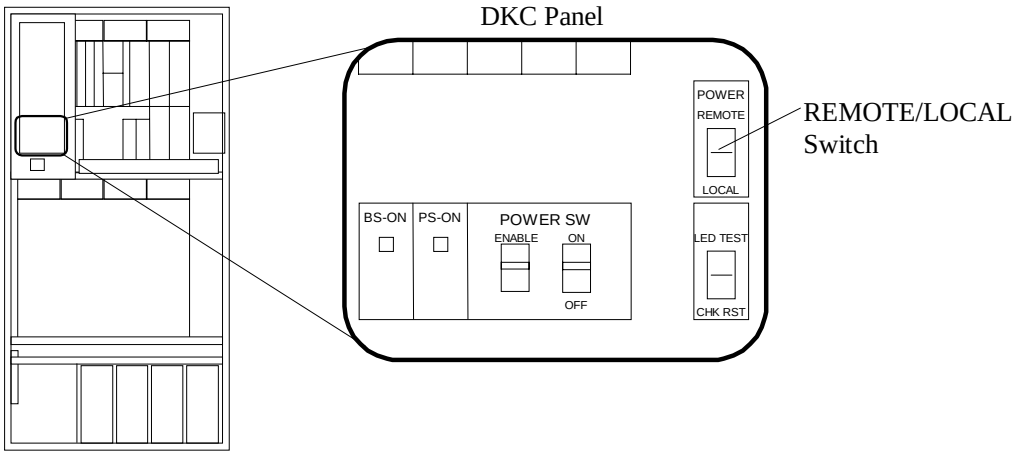

Fig. 3.10-1 Setting of REMOTE/LOCAL Switch

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1-2 Setting Suppression of DKC Panel Function.

a. Suppress the DKC panel function by inserting the maintenance jumpers into the jumper pins on the DKCMN PCBs as shown in Figure 3.10-2.

⚠ 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.

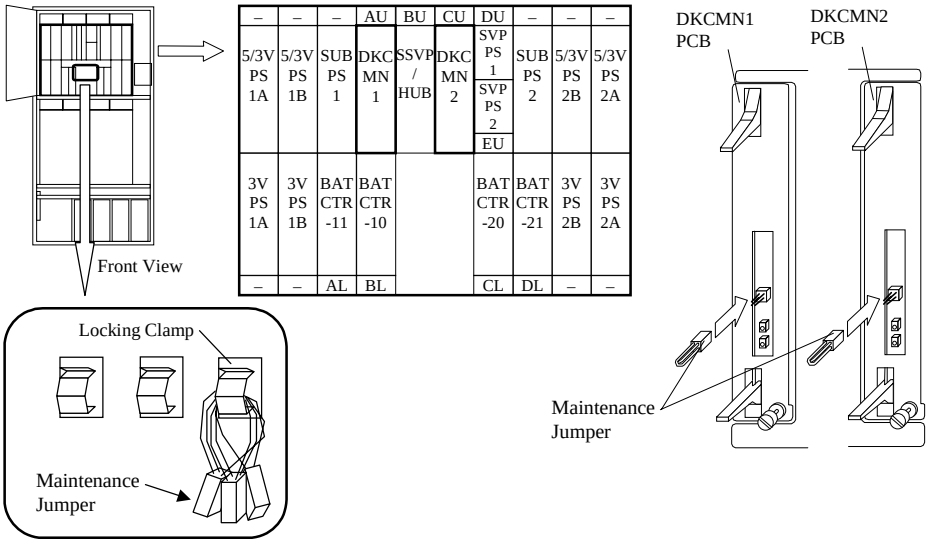
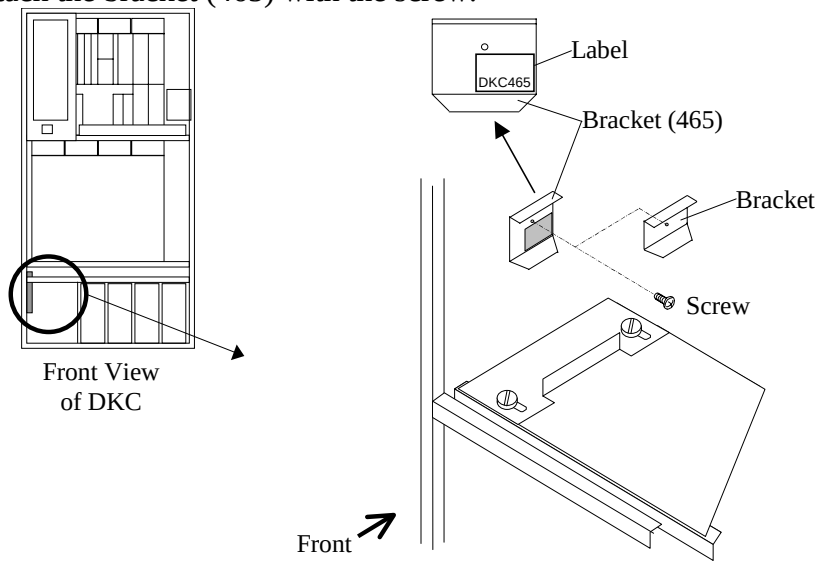


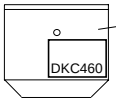
Fig. 3.10-2 Insertion of Jumper Plug

1-3 Installing PCI CON Panel.

a. Remove the screw and remove the bracket.

b. Attach the bracket (465) with the screw.





Note: Keep the bracket (460) supplied with the option in custody with caution because it will be necessary when transferring the option from the DKC465I to the DKC460I.

Fig. 3.10-2A Attachment of Bracket

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c. Loosen the screw ① and remove the screw ② from the base plate.
d. Slide the plate and turn it using the screw ① as an axis.
e. Install the PCI CON panel in the lower left position of the DKC by fastening it with the screw ③.
f. Return the plate as it was and tighten the screws ① and ②.
g. Connect the cable to the PCI CON panel which has been installed.

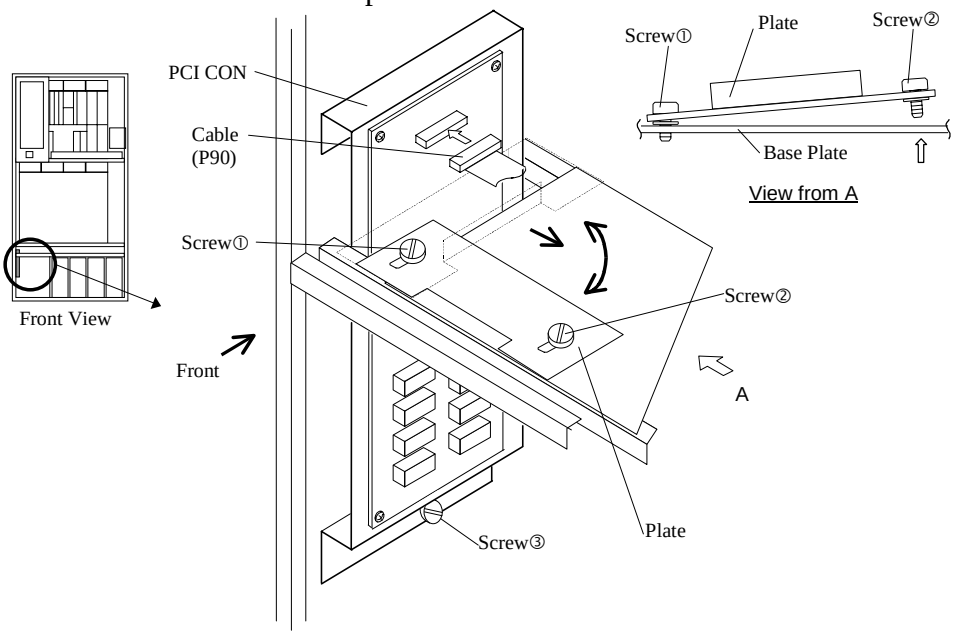

Fig. 3.10-3 Attachment of PCI CON PCB

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1-4 Set the REMOTE/LOCAL switch and jumper plugs (JP1 and JP2).

a. Set the REMOTE/LOCAL switch to REMOTE when the upper PCI is already operating. Set the REMOTE/LOCAL switch to LOCAL when the upper PCI does not operate yet. However, reset it to REMOTE when the upper PCI starts its operation.

b. Set the jumper plugs (JP1 and JP2) of the PCI CON referring to Fig. 3.10-4 and Table 3.10-2.

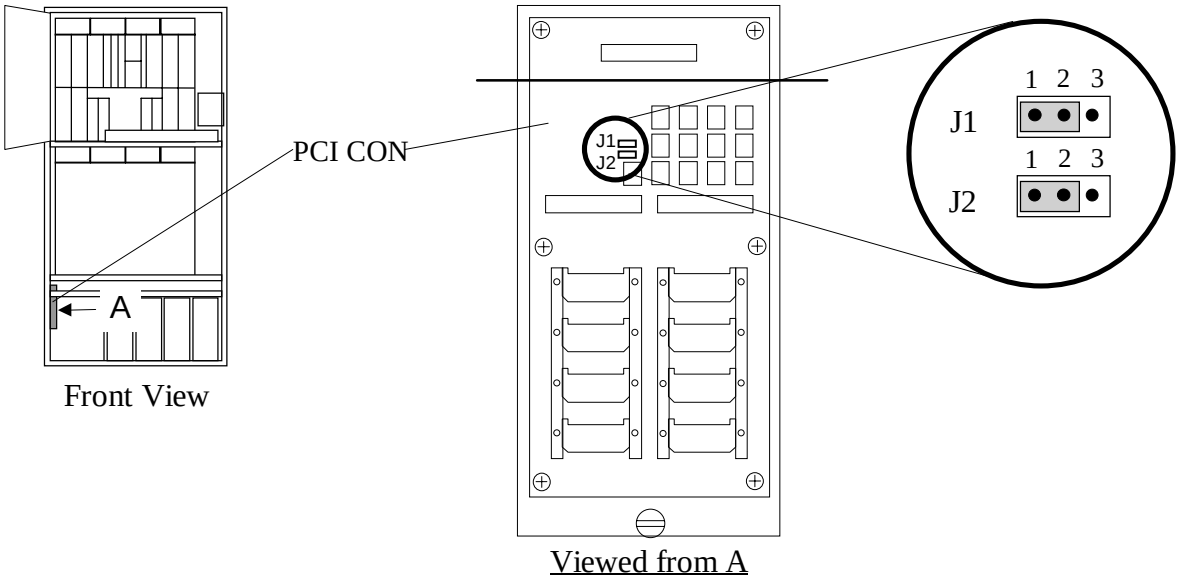
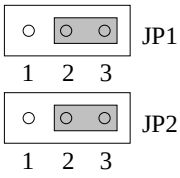
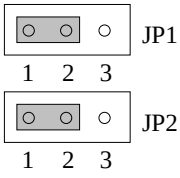


Fig. 3.10-4 Setting of Jumper Plugs

Table 3.10-2 Jumper setting of PCI CON

No.	Description	JP1 and JP2 Setting
1	When power is controlled from the host (at least one PCI cable attached to JP1-JP8 on PCI CON PCB and the upper PCI is operating), set the jumpers as shown.	
2	When power is not controlled from the host, no PCI Cable attached to JP1-JP8 PCI CON PCB, to disable the EPO of host, set the jumpers as shown.	

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1-5 Disconnect the "DKC Panel INH" jumper plug from the socket on the DKCMN.

1-6 Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

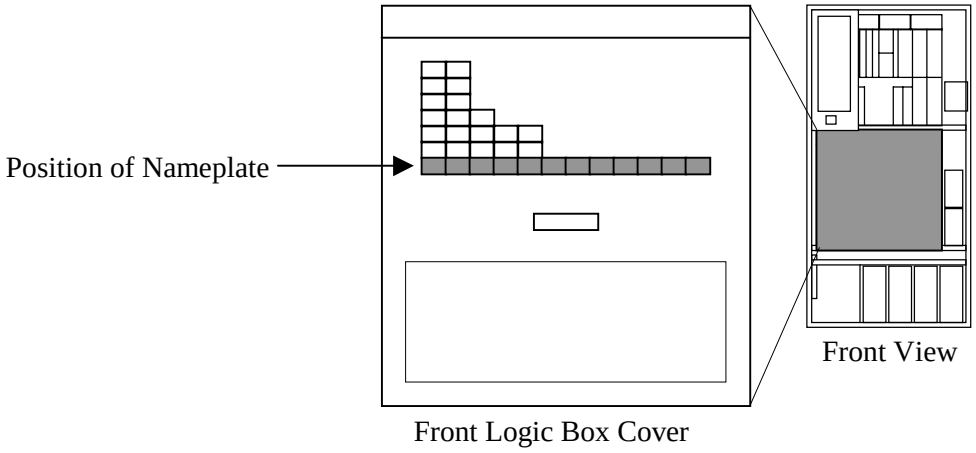

Fig. 3.10-5 Location of the Nameplate

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3.11 Installation of UPS Connection Kit (DKC-F460I-UPS)

Table 3.11-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-UPS	SH307-B	5513986-B	2	DKCMN
		SH298-A	5513547-A	1	UPS CON
		SH302-C	5513988-C	1	DKC Panel
		DSUB Cable	5485510-15	4	
		Cable	3261826-D	1	Label: PA-1 – P5
		Repeat Binder	5409042-2	2	
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-114	1	RSD
			2105903-114		HICAM
			2105903-214		HICEF
		Nameplate (HP)	2105902-214	1	RSD
			2105903-314		HICAM
			2105903-414		HICEF

UPS Parameter settings

SYMMETRA SINGLE PHASE UPS parameter setting for UPS connection KIT

Parameter	Value	Remark
Shutdown delay	20 sec.	Factory setting
Return delay	0 sec.	Factory setting

SILCON THREE PHASE UPS parameter setting for UPS connection KIT

Parameter	Value	Remark
Autostart	YES	Not Factory setting
Remote shutdown active	YES	Not Factory setting
Remote shutdown	HIGH	Factory setting
Remote shutdown time	0 min.	Not Factory setting

Note: Output of UPS must connect only the DISK SUB-SYSTEM.

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1. Installation Procedure of UPS Connection Kit

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.

1-1 Replace the DKC Panel.

a. Loosen the screw. Pull the plate forward, then lift up remove it.

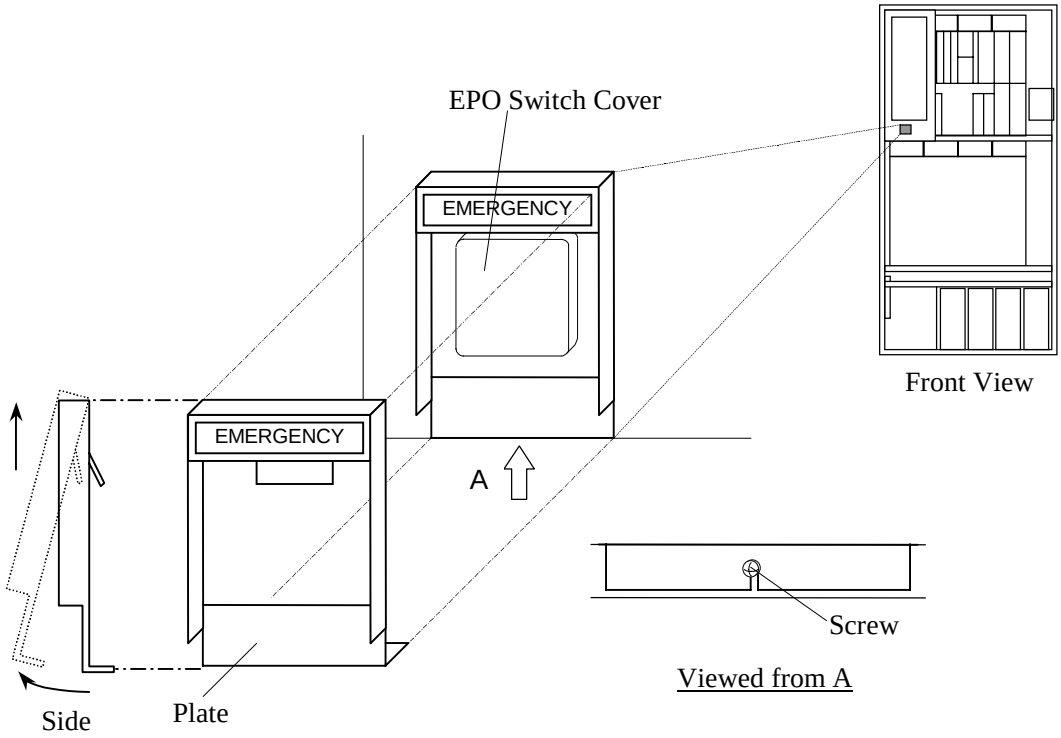

Fig. 3.11-1 Removal of Plate

b. Remove the EPO Switch cover.

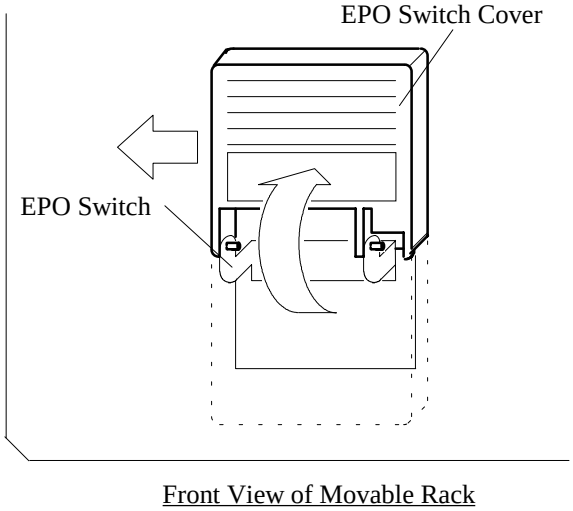

Fig. 3.11-2 Removal of EPO Switch Cover

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c. Loosen the three screws and remove the plate.

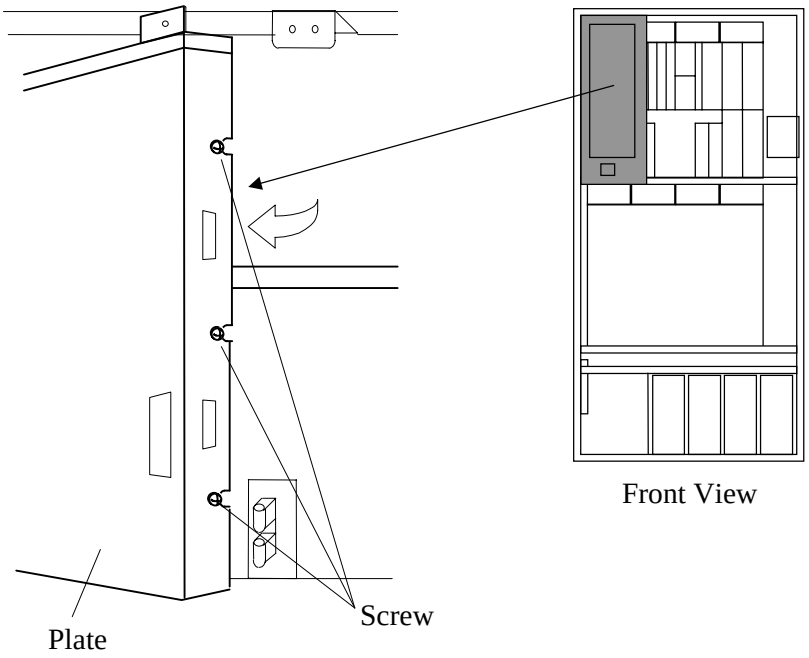

Fig. 3.11-3 Removal of Plate

d. Disconnect the cables from the DKC Panel PCB.
e. Loosen the six screws and remove the DKC Panel PCB from the Movable rack.
f. Install the DKC Panel PCB for UPS by fastening it with the screws.
g. Connect the cables to the new PCB.

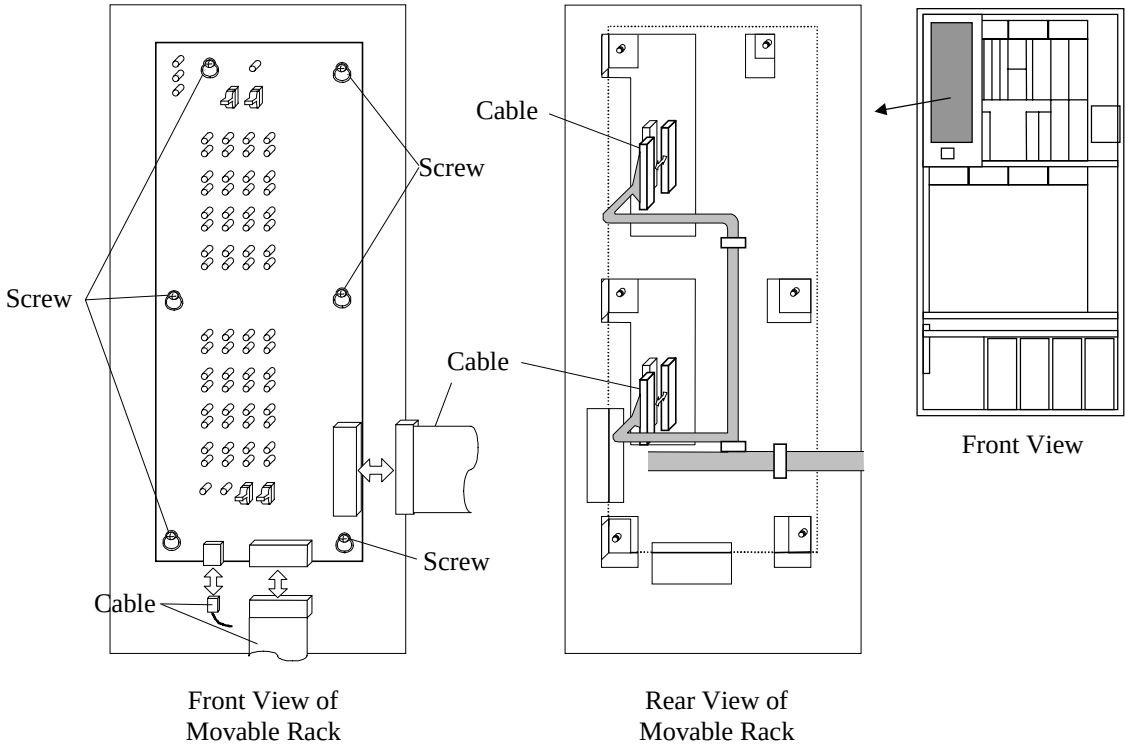

Fig. 3.11-4 Removal of PCB

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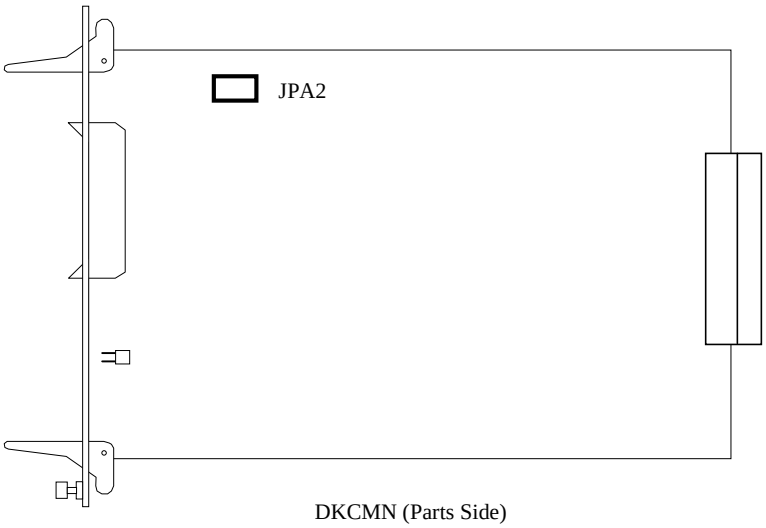
h. Attach the plate to the Movable rack and fasten the three screws. Refer to Fig. 3.11-3.
i. Attach the EPO Switch cover. Refer to Fig. 3.11-2.
j. Attach the plate and fasten the screw. Refer to Fig. 3.11-1.

1-2 Replace the DKCMN.

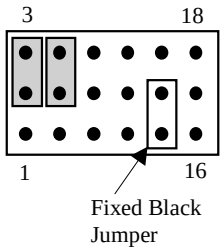
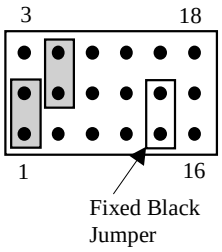
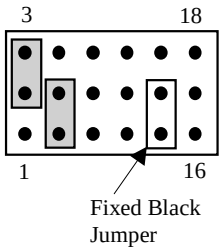
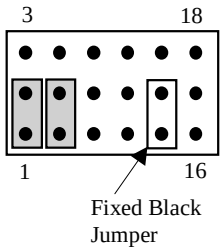
a. Set the jumper plugs in the DKCMN PCBs referring to Fig. 3.11-5, Table 3.11-2. (Both DKCMN1 and DKCMN2)



DKCMN (Parts Side)

Fig. 3.11-5 Location of Jumper Plugs

Table 3.11-2 Setting of Server Shutdown Setup Jumper

	Setting of Server Shutdown Setup Jumper			
	2.5 minutes	5 minutes	10 minutes	20 minutes
JPA2				

Select the necessary time from four kinds of Jumper setting and set it up to shutdown a server.

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b. Loosen the screw and remove the DKCMN PCB (SH307-A).

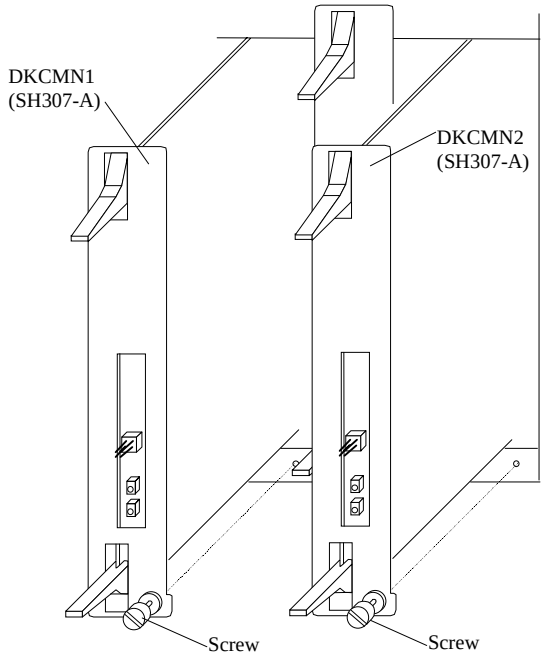

Fig. 3.11-6 Removal of DKCMN PCBs

c. Install the DKCMN PCB (SH307-B) for UPS by fastening it with the screws.
d. Connect the cable to the new DKCMN PCB.

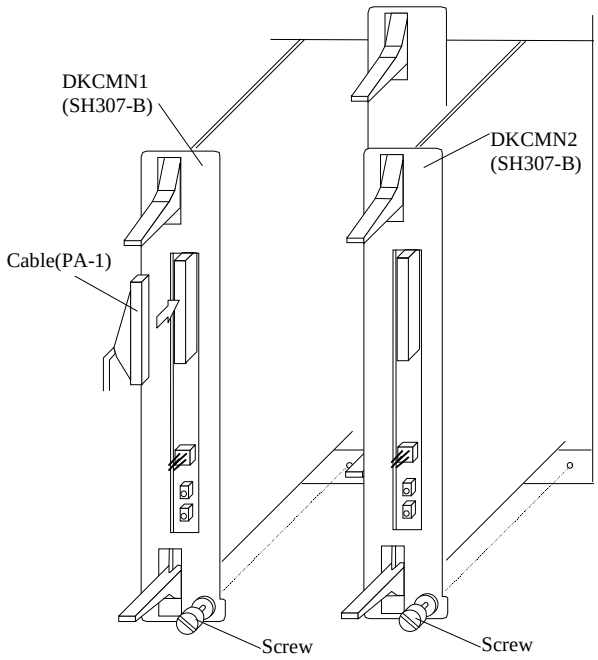

Fig. 3.11-7 Insertion of DKCMN PCBs

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1-3 Attach the Cable.

a. Loosen the six screws③ and remove the Cover (HUB/SVP-PS) ASSY.
b. Loosen the two screws② and remove the cable cover②.
c. Loosen the two screws① and remove the cable cover①.
d. Install the cable in the DKC frame.
e. Fasten the cable with two Repeat Binders.
f. Install the cable covers① and ② by fastening them with the screws. When installing the covers, make the installed cable pass through their cuts.
g. Install the Cover (HUB/SVP-PS) ASSY by fastening it with the screws.

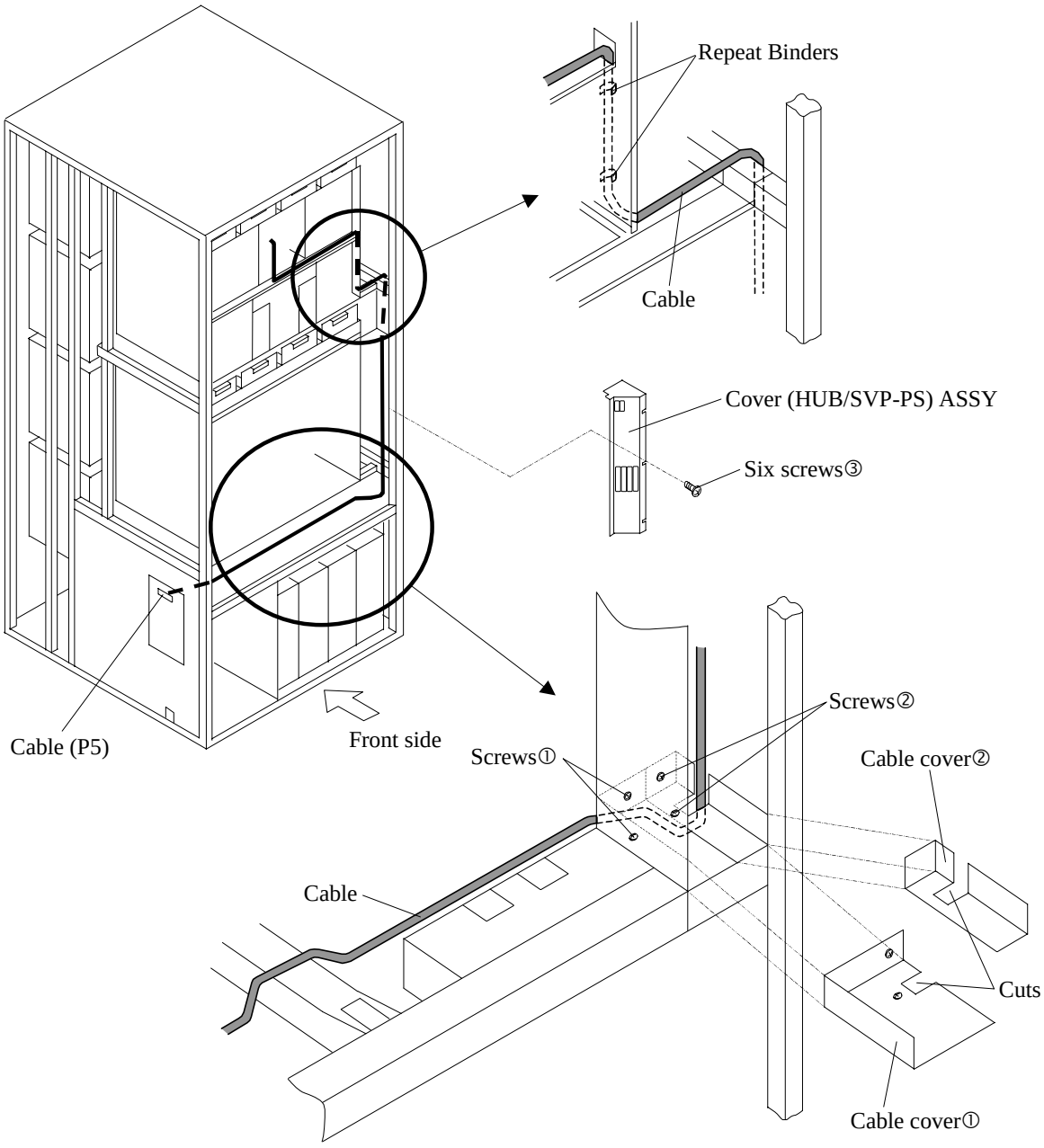

Fig. 3.11-8 Fixing of Cable

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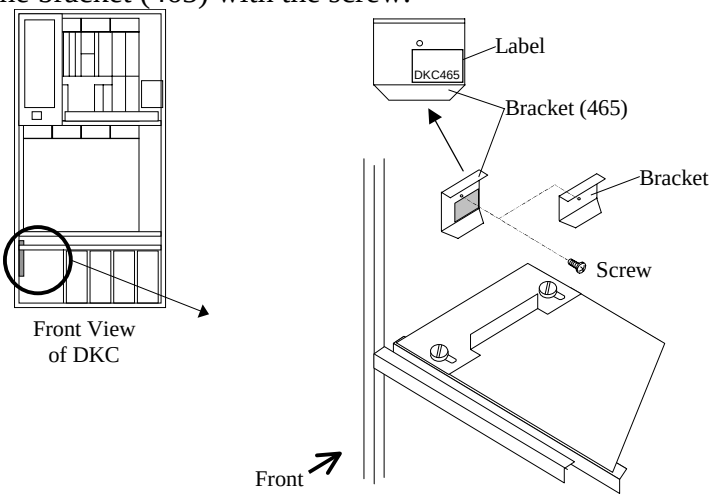
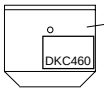
1-4 Attach the UPS CON.

a. Remove the screw and remove the bracket.

b. Attach the bracket (465) with the screw.





Note: Keep the bracket (460) supplied with the option in custody with caution because it will be necessary when transferring the option from the DKC465I to the DKC460I.

Fig. 3.11-8A Attachment of Bracket

c. Loosen the screw① and remove the screw② from the base plate.

d. Slide the plate and turn it using the screw① as an axis.

e. Install the UPS CON by fastening it with the screw③.

f. Return the plate as it was and tighten the screws① and ②.

g. Connect the cable(P5) to the UPS CON.

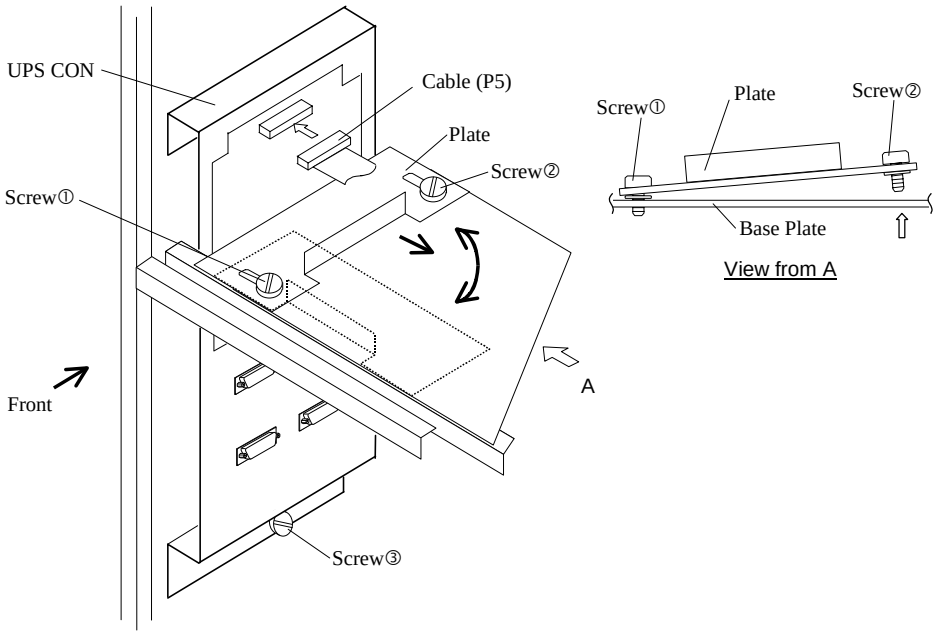


Fig. 3.11-9 Attachment of UPS CON

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1-5 Connect the DSUB Cables.

a. Connect the DSUB cables to the UPS CON.

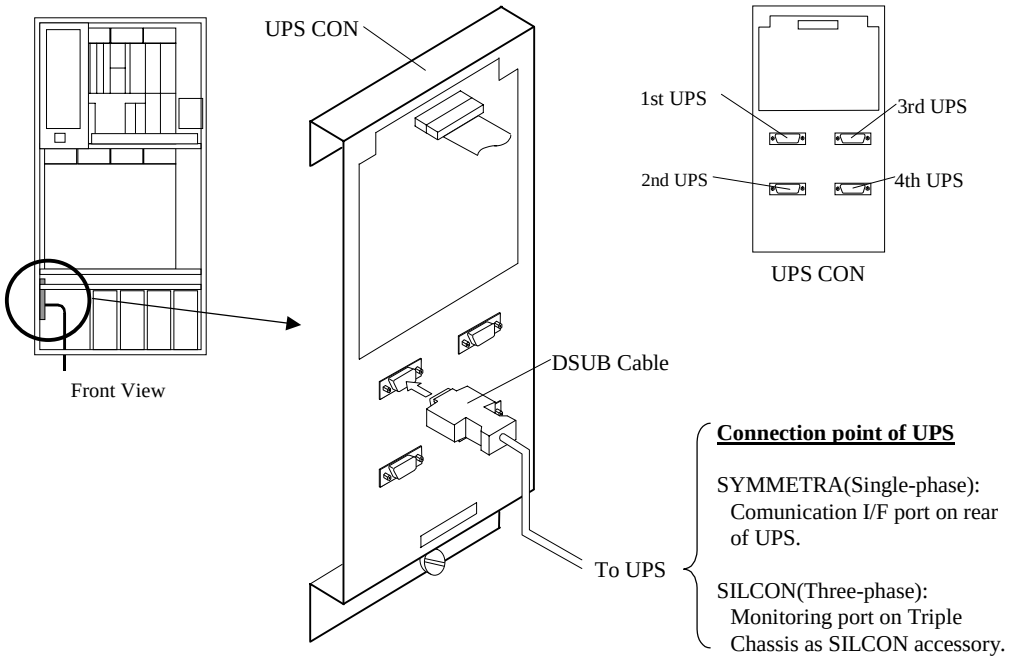

Fig. 3.11-10 Connection of DSUB Cables

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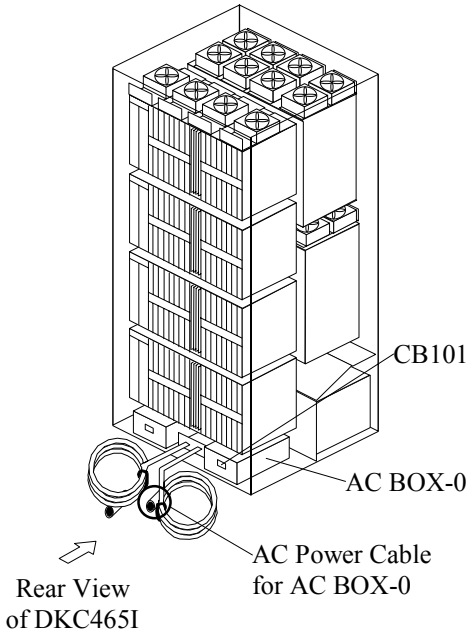
1-6 Connect the AC Power Cables.

⚠ CAUTION

Perform the UPS Connection Kit with care
Perform this procedure before connecting the AC Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breakers (CB101) located in the AC Boxes.

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

a. Disconnect the AC power cables from the distribution board
b. Connect the ac power cables to the branch distribution box.



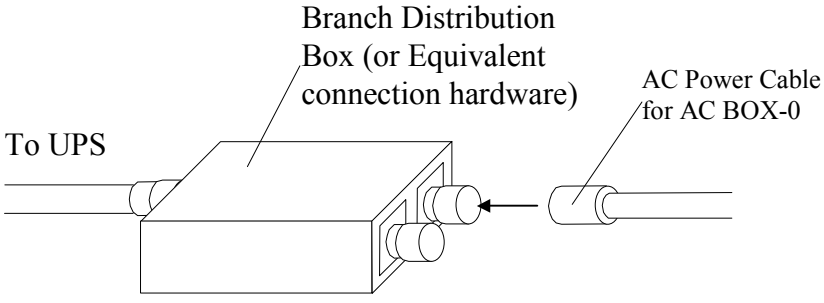


Fig. 3.11-11 Connection of AC Power Cables

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1-7 Attach the Nameplate

a. Attach the nameplate regardless of the model number from the left of the cover.

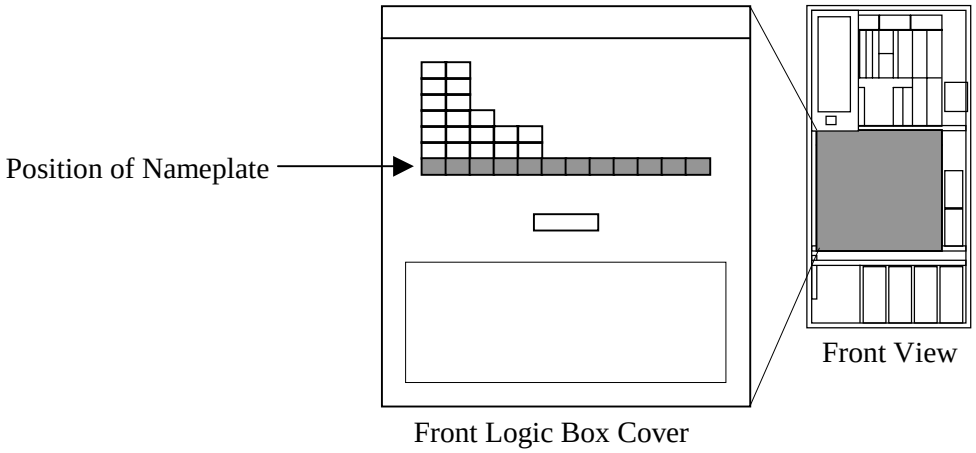

Fig. 3.11-12 Attachment of Nameplate

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1-8 Overview

Change the following system option when the system operates.

<1> PS Off Timer ---------- Enters the Destage time. (25 [min])
- OFF : The Destage time is effectively.
- ON : The Destage time is ineffectively, and change the Destage time.

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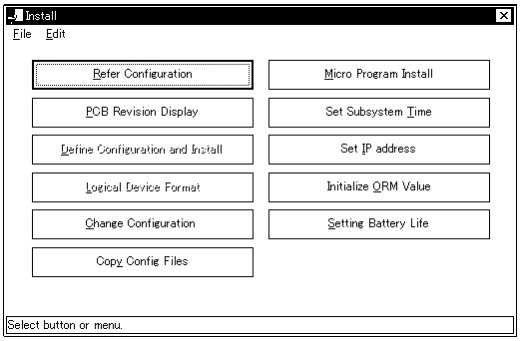
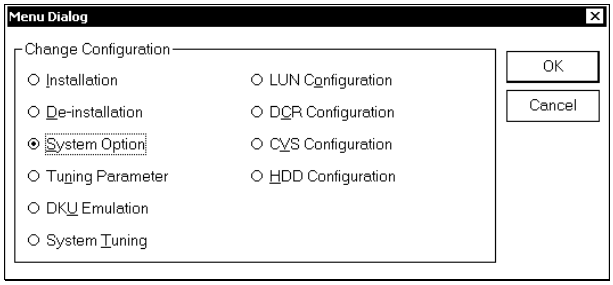
1-9 SVP procedure

(1) Select (CL) [Install].

(2) Select (CL) the [Change Configuration] menu in the 'Install' window.



(3) Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



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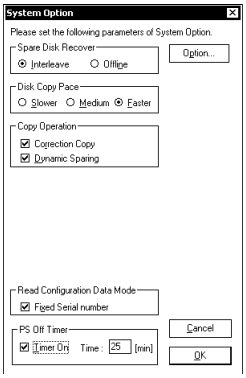
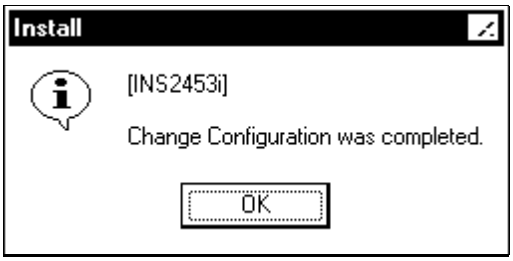
(4) Select (CL) [Timer On] check box, and then enters the destage time (25 [min]) in the 'System Option' dialog box.
And select (CL) [OK].

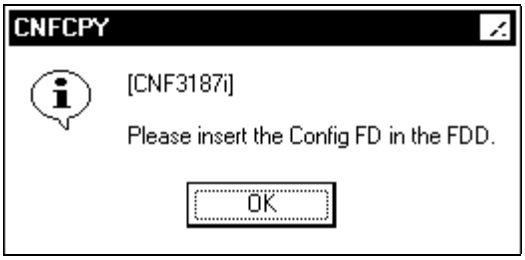


(5) "Loading configuration..." is displayed.

(6) "Change configuration was completed." is displayed.
Select (CL) [OK].



(7) "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



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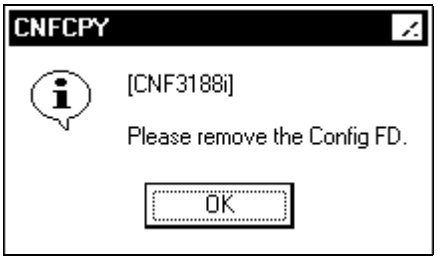
(8) When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, select (CL) [OK].



(9) Close the 'Install' window.

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3.12 Check and Testing

NOTICE:
Install all of the remaining optional parts.

3.12.1 Checking Input Voltage

WARNING

Do not touch the internal parts of the AC power cable the AC Box.
Line voltage is present even if the circuit breaker is off.

1. Check the AC input voltage using a voltmeter at the customer's AC power source (at the distribution board or receptacle for R & S connectors).

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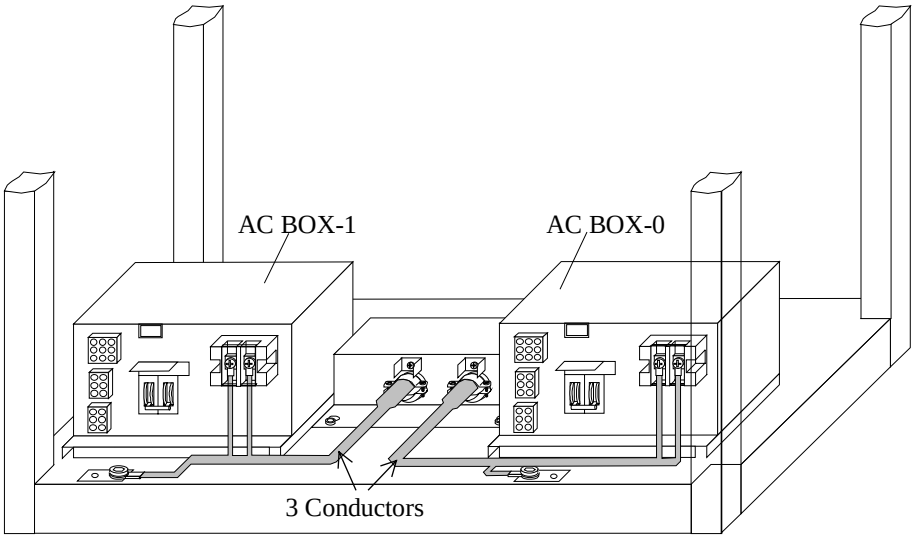
3.12.2 Checking Input Power Cable and Voltage Select Jumper Cable

Single Phase/50A Model

Check the input power cable at the AC Boxes in the DKC. See table 3.12.2-1 and Fig. 3.12.2-1 for check items.

Table 3.12.2-1 AC Input Cable Conductors

UNIT	AC BOX	Input Voltage	AC Input Cable Conductors	Remarks
DKC	AC BOX (AC BOX-0, 1)	200-240Vac	3 conductors (U/L1, V/L2, FG)	



Rear View

Fig. 3.12.2-1 AC Input Cable Conductors

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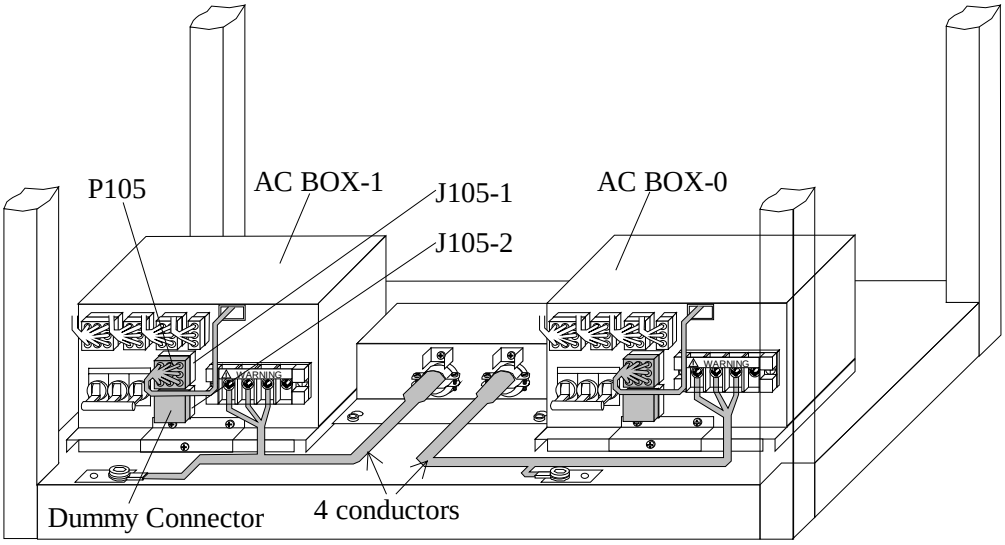
3 Phase/30A Model

Check the input power cable at the AC Boxes in the DKC. See table 3.12.2-2, Fig. 3.12.2-2 and Fig. 3.12.2-3 for check items.

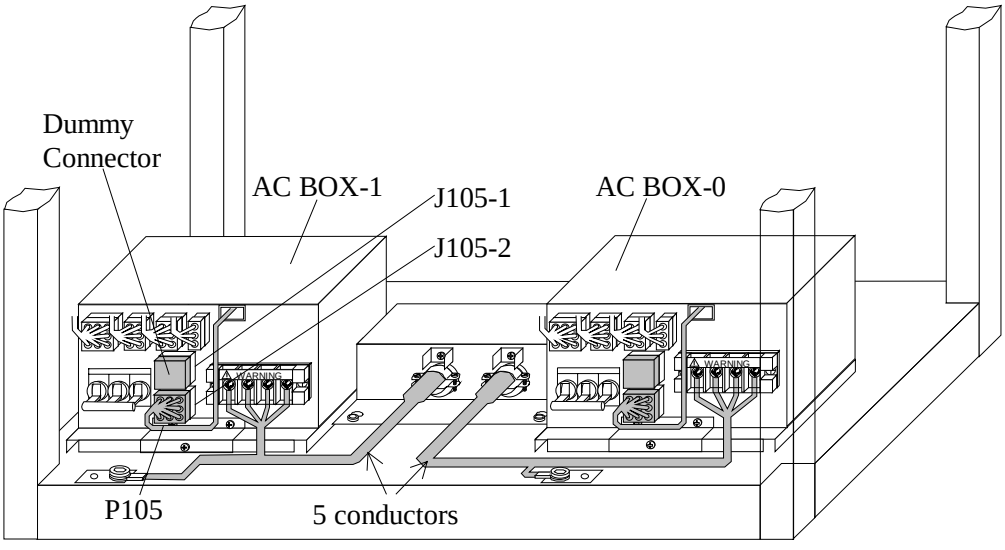
Table 3.12.2-2 AC Input Cable Conductors

AC BOX	Input Voltage	AC Input Cable Conductors	Jumper Cable(P105) Position	Remarks
AC BOX (AC BOX-0, 1)	200-240Vac	4 conductors (L1, L2, ,L3, FG)	J105-1	J105-2 dummy connector
AC BOX (AC BOX-0, 1)	380-415Vac	5 conductors (L1, L2, ,L3, N, FG)	J105-2	J105-1 dummy connector



Rear View

Fig. 3.12.2-2 AC Input Cable Conductors and Jumper Cable (P105) Positions 200–240V



Rear View

Fig. 3.12.2-3 AC Input Cable Conductors and Jumper Cable (P105) Positions 380–415V

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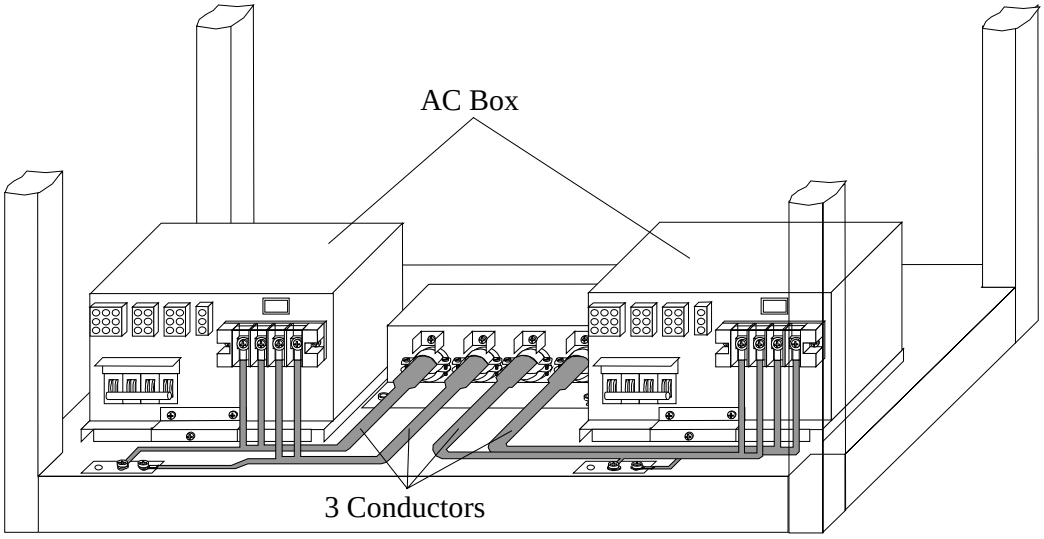
Single Phase/30A Model

Check the input power cable at the AC Boxes in the DKC. See table 3.12.2-3 and Fig. 3.12.2-4 for check items.

Table 3.12.2-3 AC Input Cable Conductors

UNIT	AC BOX	Input Voltage	AC Input Cable Conductors	Remarks
DKC	AC BOX (AC BOX-0, 1)	200-240Vac	3 conductors ×2 (U/L1, V/L2, FG)	



Rear View

Fig. 3.12.2-4 AC Input Cable Conductors

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3.12.3 Power On/Off Check

1. Install all the remaining optional parts.

2. Turn on the disk controller according to the procedure shown in SECTION 3.13 POWER ON/OFF PROCEDURE. Refer to INST03-PWR-10 through 40.

3. Check the power supply output voltage to verify that it indicates the required level. Refer to PERIOD.

4. Turn off the Disk Subsystem according to the procedure shown in SECTION 3.13 POWER ON/OFF PROCEDURE. Refer to INST03-PWR-50 through 60.

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3.13 Power ON/OFF Procedure

3.13.1 Power ON Procedure

3.13.1.1 Power ON Procedure of Disk Subsystem

Power on procedures are shown below. Refer to the details and start the operation.

1. Turn on the main circuit breaker (CB101) at the AC Box.

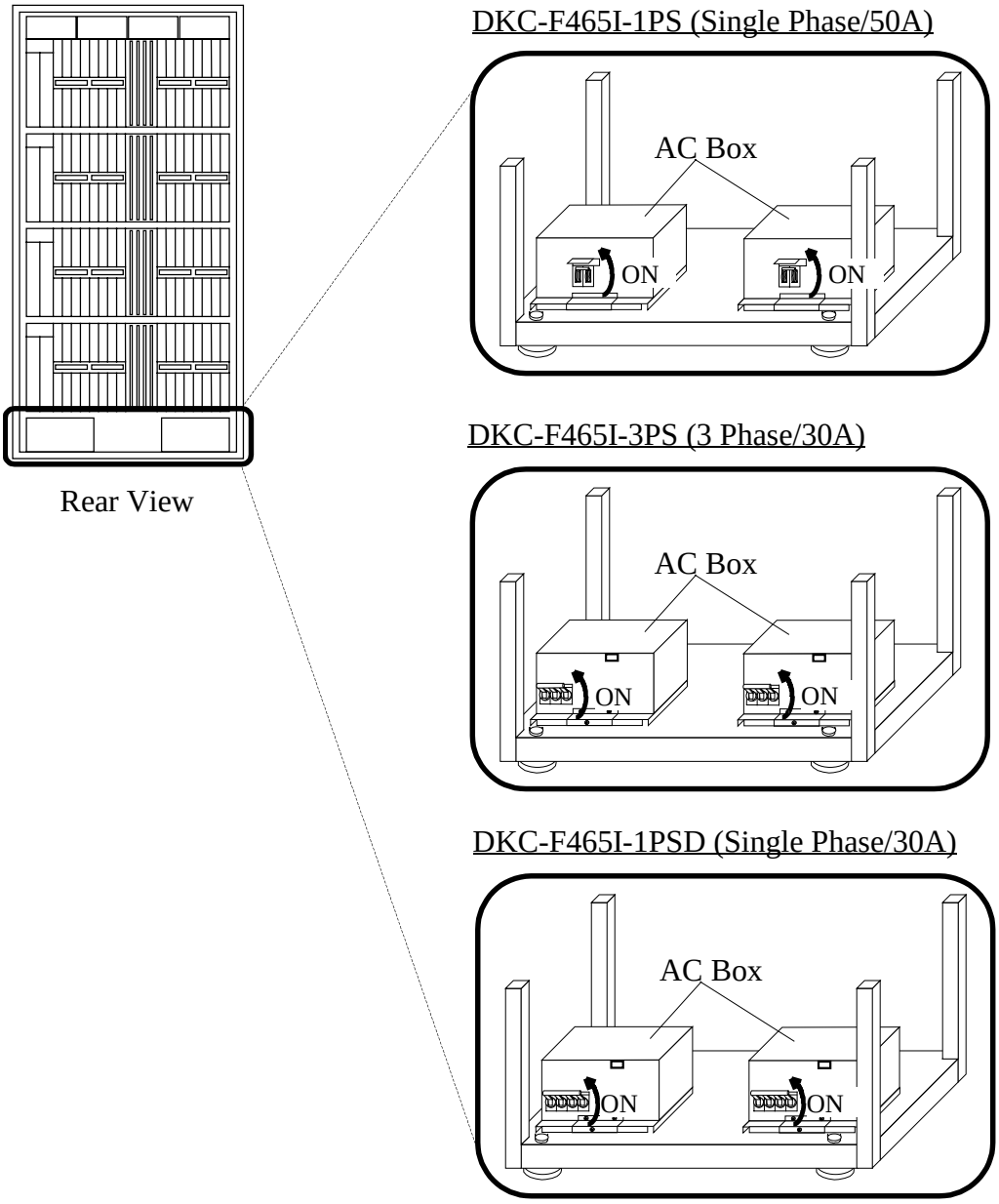

Fig. 3.13.1.1-1 Main Circuit Breaker on AC Box

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2. Check battery charge voltage and fuse blow up on Battery Controller PCBs.
   Check charge voltage on BATTERY 10 through 11 and BATTERY 20 through 21.
   a. Disconnect the cables A and B.
   b. Insert the pins of the digital voltmeter into the cables A and B removed from battery to make sure that battery charge voltage is within the allowable charge voltage.
      If the battery charge voltage is not within the allowable charge voltage, replace the BATCTR PCB.
   c. Connect the cables A and B.

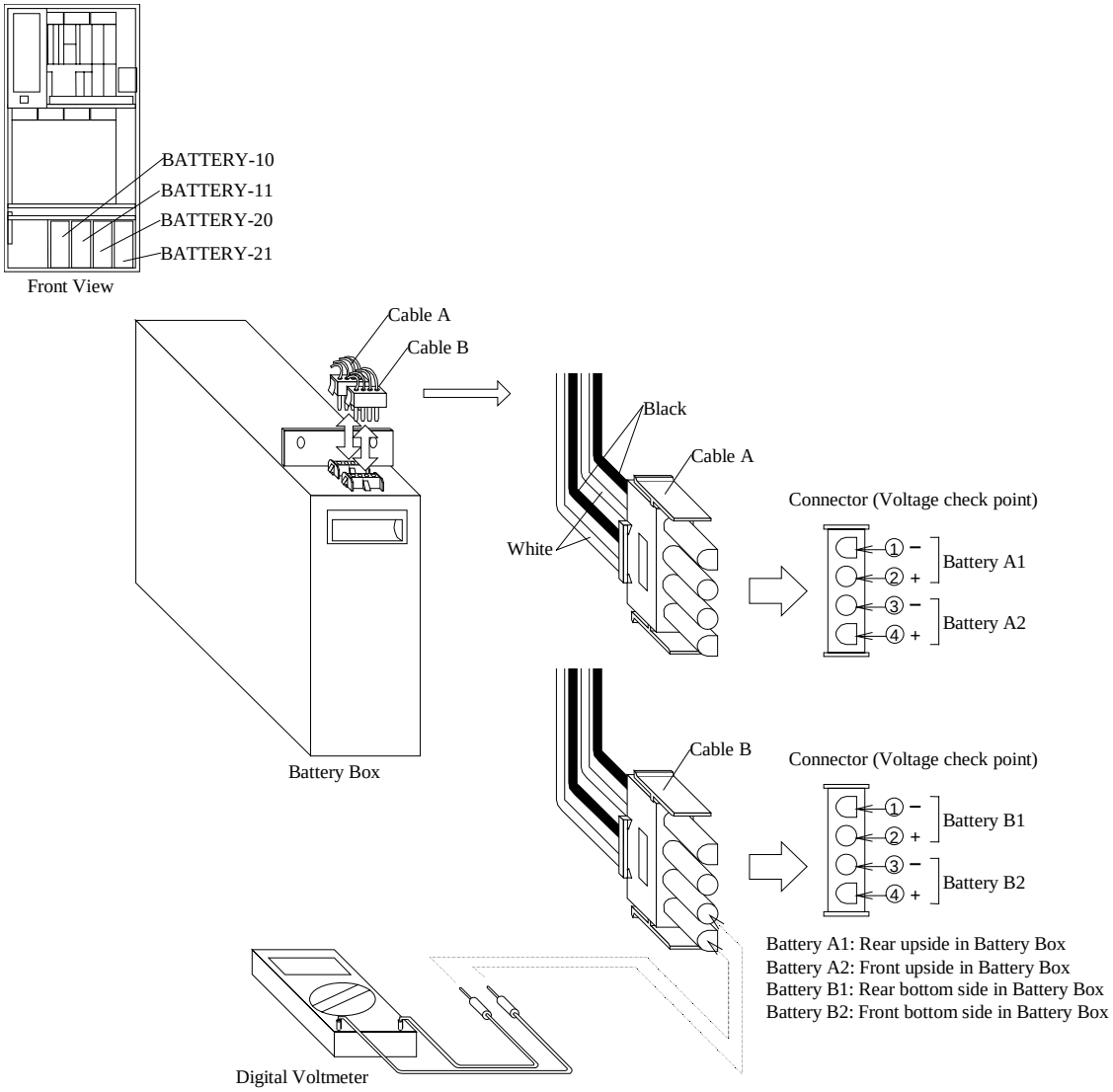

Fig. 3.13.1.1-2 Voltage Checkpoint

Table 3.13.1.1-1 Voltage Checkpoint and Allowable Voltage

No.	Pin No.		Allowable charge voltage
	+	-	
1	②	①	DC13V through DC13.8V
2	④	③	DC13V through DC13.8V

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3. Check battery voltage.
   Check battery voltage of the BATTERY 10 through 11 and BATTERY 20 through 21.
   a. Disconnect the cables.
   b. Insert the pins of the digital voltmeter into the connector on battery box to make sure that battery voltage is within the allowable battery voltage.
   c. If the battery voltage is not within the allowable battery voltage, replace the battery assembly.
   d. Connect the cables.

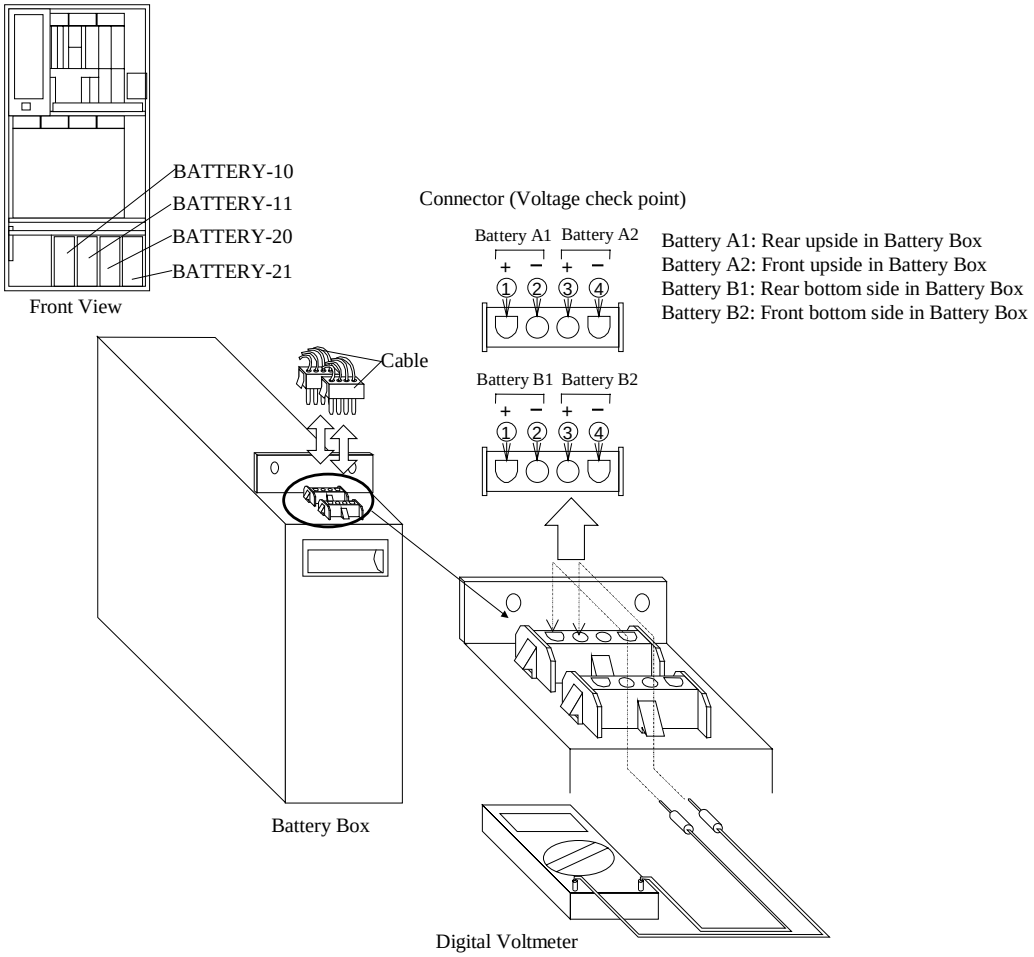

Fig. 3.13.1.1-3 Voltage Checkpoint

Table 3.13.1.1-2 Voltage Checkpoint and Allowable battery Voltage

No.	Pin No.		Allowable battery voltage
	+	-	
1	①	②	DC11.6V through DC13.8V
2	③	④	DC11.6V through DC13.8V

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4. Return to General Flow.
   Disruptive Installation: Go to Step “5”.
   Disruptive De-installation: Go to Step “5”

5. [Case as custom engineer operates]
   Turn the “REMOTE/LOCAL” switch to “LOCAL”.
   When the normal DKC Panel (unlocking type) is installed, turn the “POWER ON/OFF” switch to “ON”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
   When the DKC Panel for UPS (locking type) is installed, turn the POWER ON/OFF ENABLE switch to the ENABLE and turn the “POWER ON/OFF” switch to “ON”.
   [Case as that operate from CPU]
   Turn the “REMOTE/LOCAL” switch to “REMOTE”.
   Turn on the power supply from CPU.

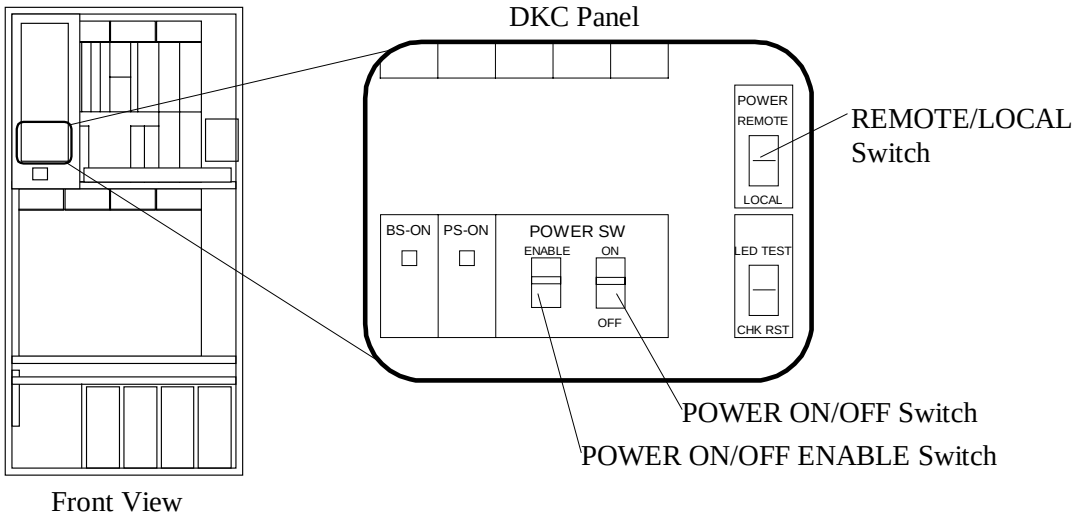

Fig. 3.13.1.1-4 DKC Panel PCB

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3.13.2 Power OFF Procedure

3.13.2.1 Power OFF Procedure of Disk Subsystem

1. Power off procedures are shown below. Refer to the details and start the operation.
   a. [Case as custom engineer operates]
      Turn the “REMOTE/LOCAL” switch to “LOCAL”.
      When the normal DKC Panel (unlocking type) is installed, turn the “POWER ON/OFF” switch to “OFF”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
      When the DKC Panel for UPS (locking type) is installed, turn the POWER ON/OFF ENABLE switch to the ENABLE and turn the “POWER ON/OFF” switch to “OFF”.
      [Case as that operate from CPU]
      Turn the “REMOTE/LOCAL” switch to “REMOTE”.
      Turn off the power supply from CPU.
   b. After checking that the PS-ON LED is off, stop the SVP.

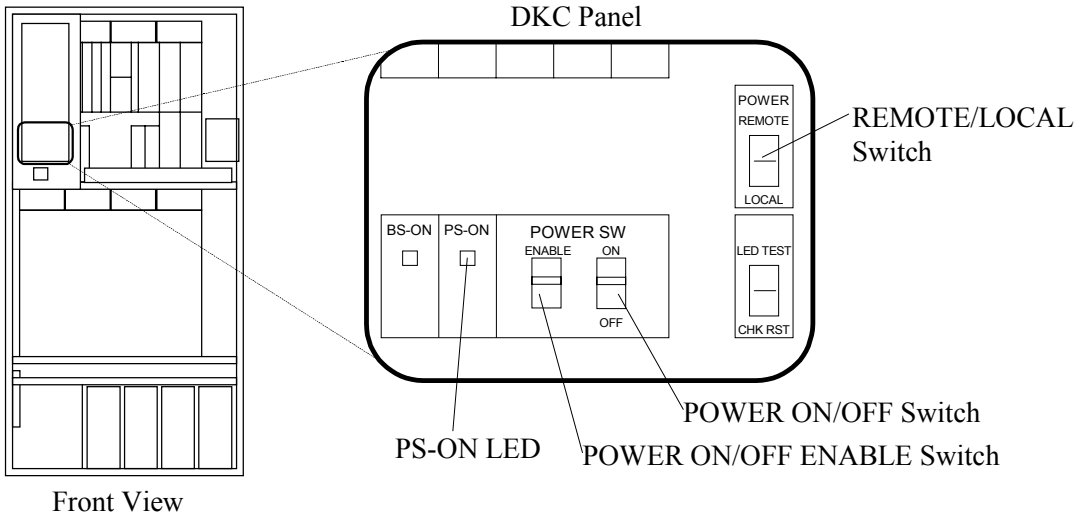

Fig. 3.13.2.1-1 DKC Panel PCB

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c. Turn off the main circuit breaker at the AC Box on the Disk Unit.

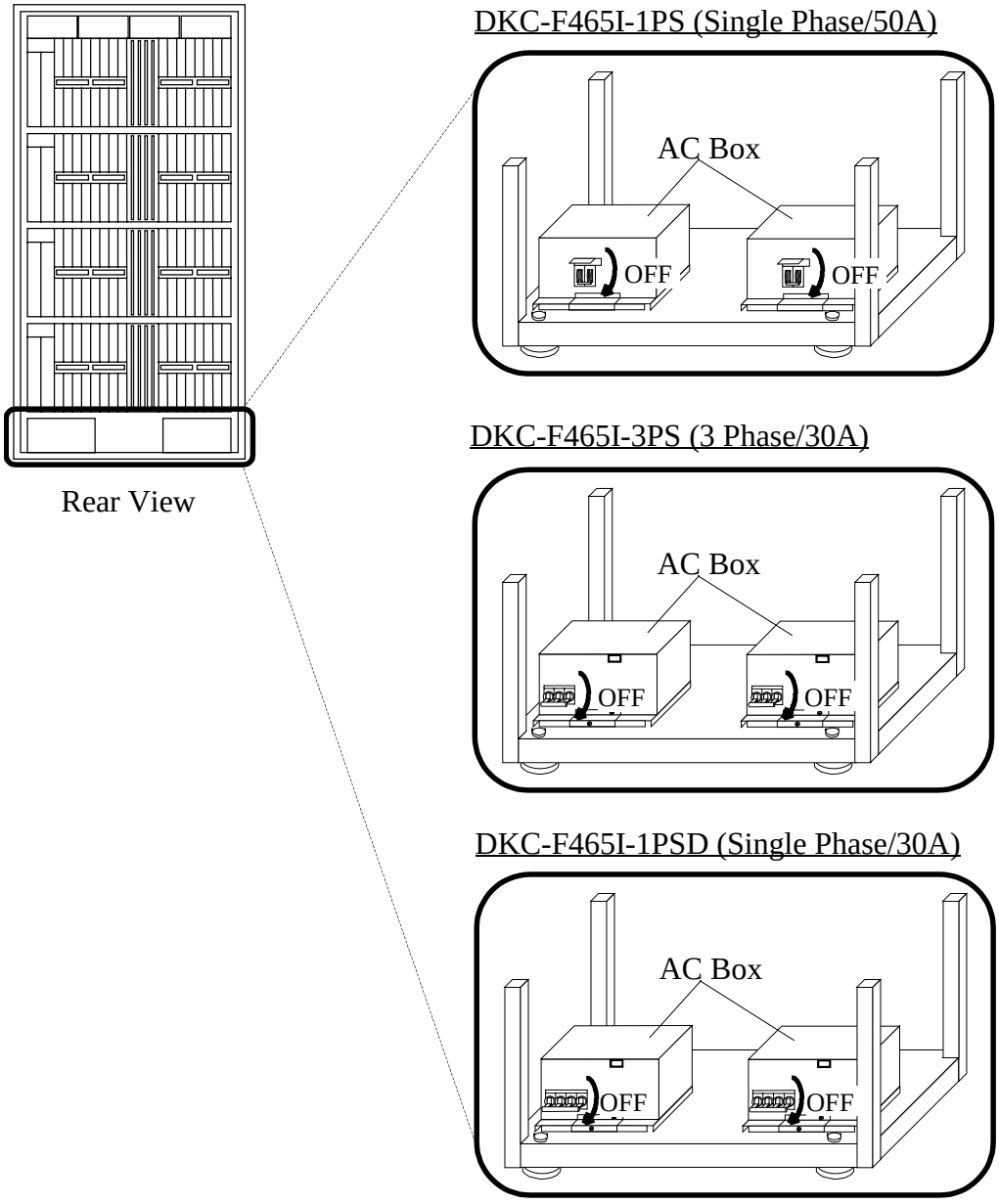

Fig. 3.13.2.1-3 Main Circuit Breaker on AC Box

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3.14 Routing of External Connection Cable

3.14.1 Connection of LAN Cable (Web Console/SNMP) and Modem Cable (Hitrack)

1. Open the front door and then open the DKC panel.
2. Open the SVP frame.

SVP frame type 1

a. Loosen the screw ① and open the SVP frame.

SVP frame type 2

a. Loosen the screw ① and the SVP stopper is slide to the left.
b. Open the SVP ASSY (Basic).
c. Loosen the screw ② and open the SVP frame.

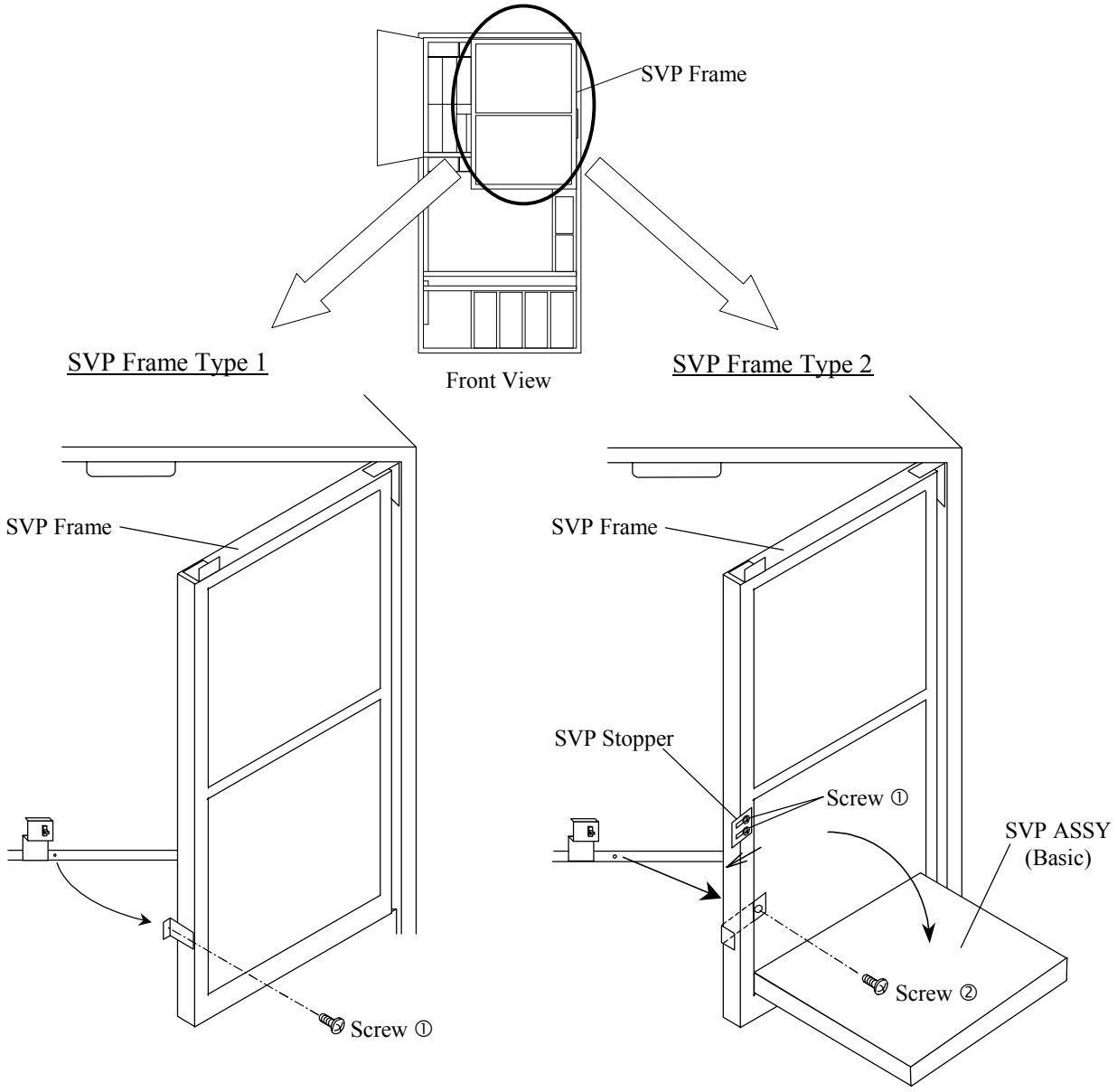

Fig. 3.14.1-1 Open the SVP Frame

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3. Remove the Front Logic Box cover.
4. Loosen the six screws ① and remove the Cover (H/S-PS) ASSY.
5. Loosen the two screws ② and remove the cable cover ①.
6. Loosen the two screws ③ and remove the cable cover ②.
7. Loosen the two screws ④ and slide the plate.
8. Take in the external connection cable, that has been pulled in through the opening on the bottom plate, through the gap of the sheet steel parts.
9. Route the cable along the bottom of the Front Logic Box.

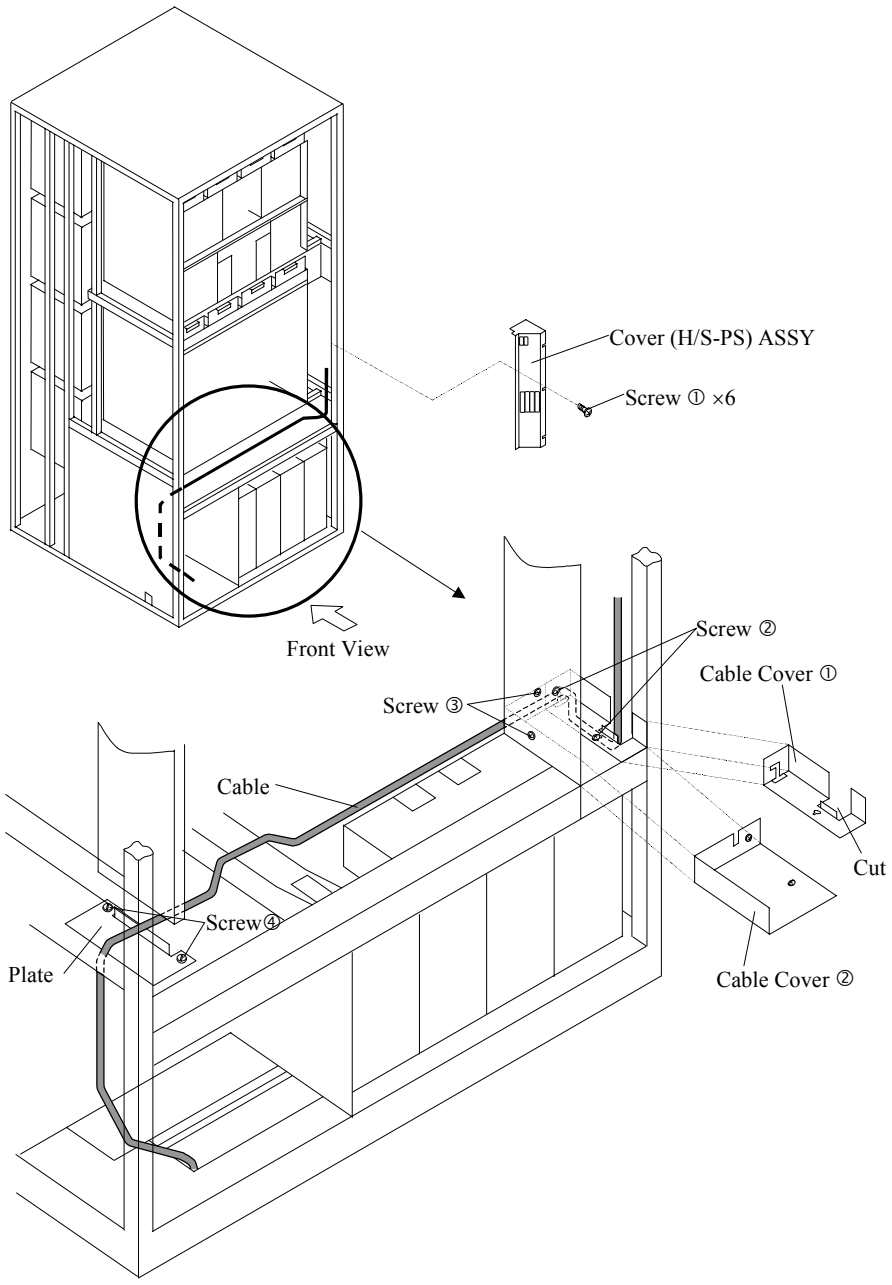

Fig. 3.14.1-2 Routing of Cable

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10. Route the cable in the SVP Assy.
11. Loosen the two torques screws and remove the SVP cover.

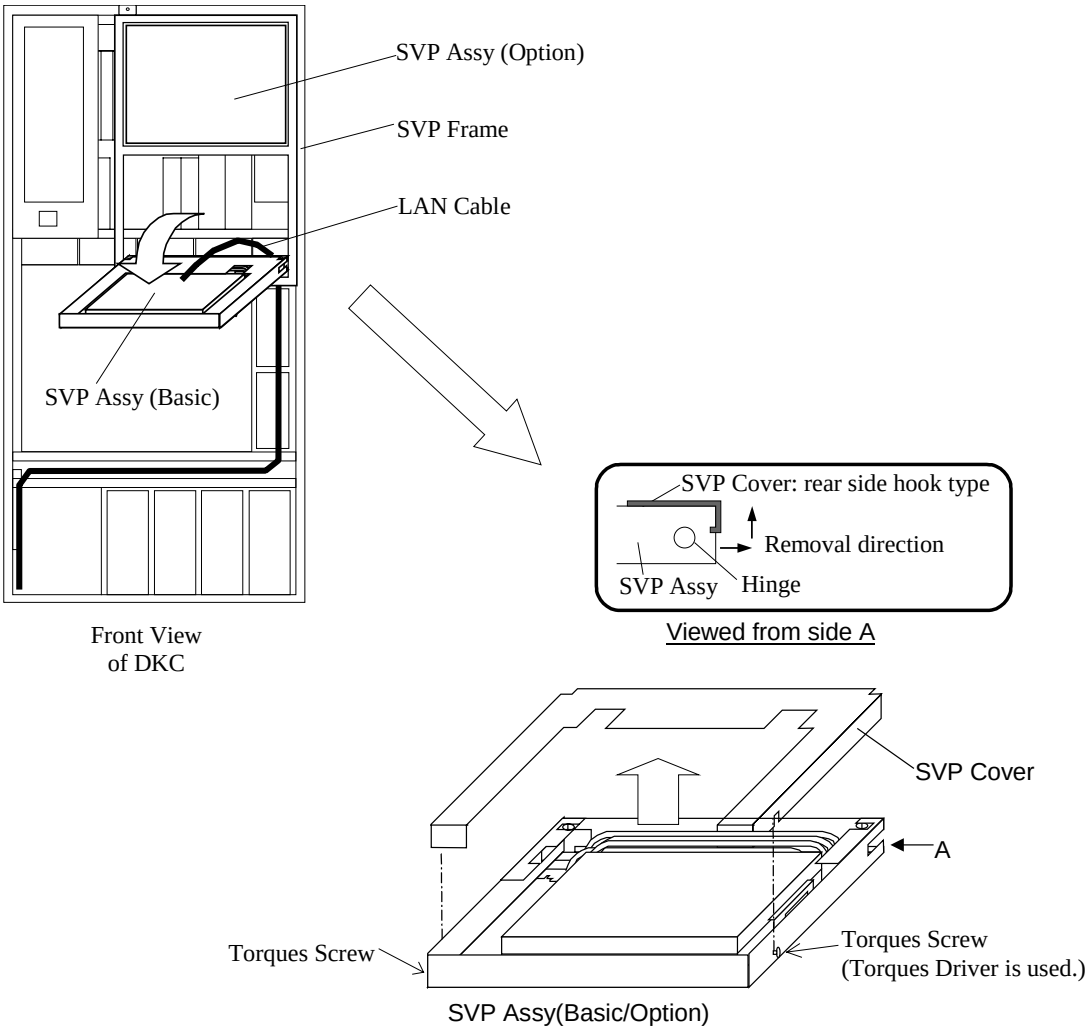

Fig. 3.14.1-3 Removal of SVP Cover

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12. Connection of LAN Cable (When the LAN cable is not connected, go to step 13.)
    a. Draw the LAN cable in the SVP Assy. Doing LAN cable to the core 1 turn, and connect to the LAN adapter.

LAN Cable Routing in SVP Assy

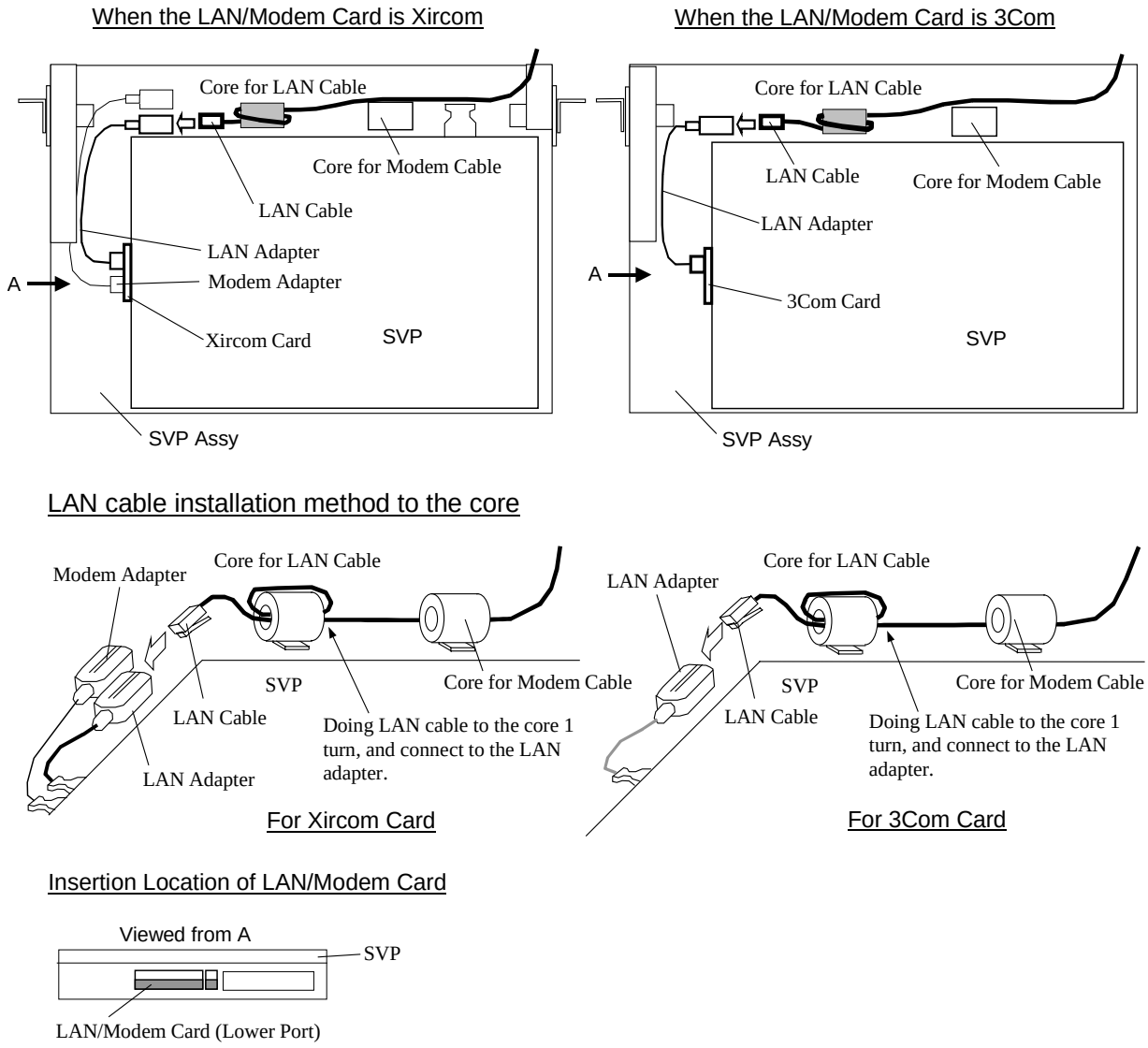

Fig. 3.14.1-4 How to connect LAN Cable

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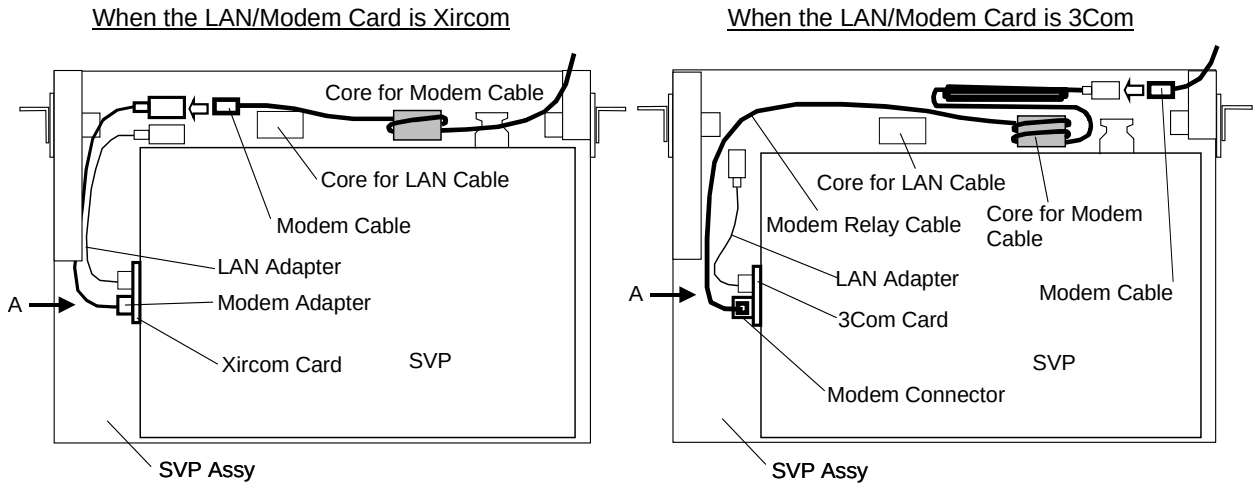
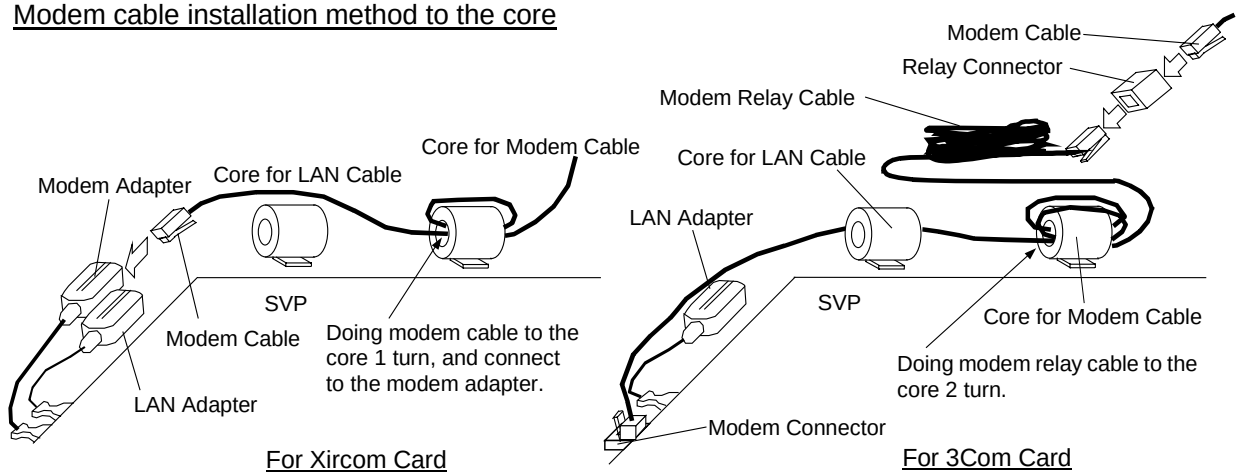
13. Connection of Modem Cable (When the modem cable is not connected, go to step 14.)
    a. Draw the modem cable in the SVP Assy.
    b. When the LAN/Modem card is Xircom, doing modem cable to the core 1 turn, and connect to the modem connector.
    When the LAN/Modem card is 3Com, connect the modem cable and modem relay cable by the relay connector.

Cable routing in SVP Assy



Modem cable installation method to the core



Insertion location of LAN/Modem Card

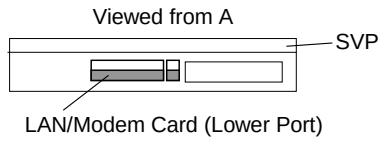


Fig. 3.14.1-5 How to Connect Modem Cable

14. Reinstall the covers by reversing the Steps 1 to 7 and 11 of the removal procedure.

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3.15 Installation of 256MB Additional Memory for SVP (DKC-F460I-256M)

Table 3.15-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-256M	Additional SVP Memory	5518055-A	1	
		LABEL		1	
		Nameplate(HP)	2105902-235	1	RSD
			2105903-335	1	HICAM
			2105903-435	1	HICEF

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3.15.1 Installation Procedure of 256MB Additional Memory for SVP

1. Open the front door and then open the DKC panel.

2. Turn the SVP ASSY and turn off the power for the SVP.

3. Loosen the screw and open the SVP frame, and remove the lower SH box cover.
   (1) Open the SVP frame.
   SVP frame type1
   a. Remove the screw① and open the SVP frame.

   SVP frame type2
   a. Loosen the screw② and the SVP stopper is slide to the left.
   b. Open the SVP ASSY (Basic).
   c. Remove the screw③ and open the SVP frame.

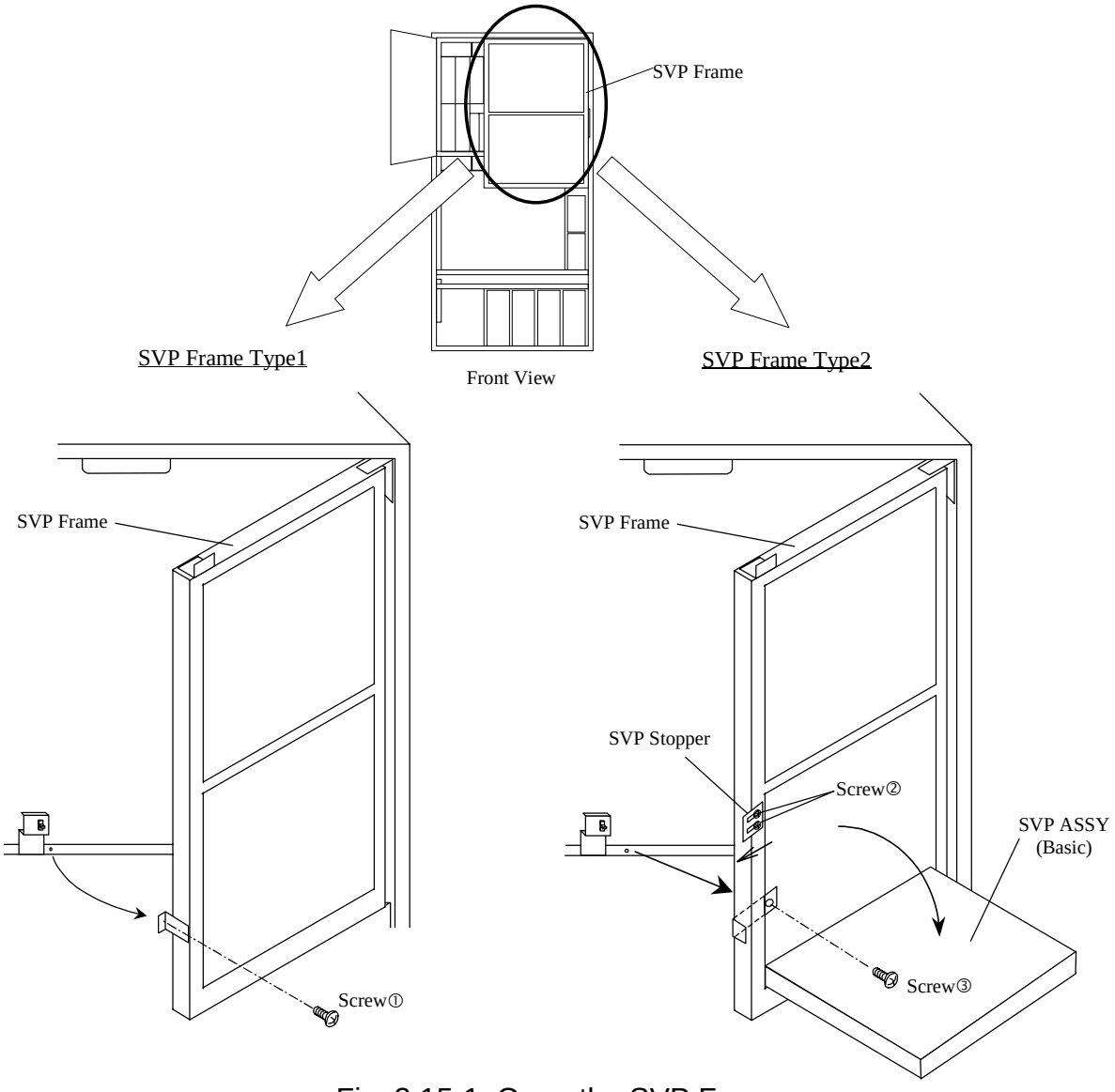

Fig. 3.15-1 Open the SVP Frame

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4. Insert the Jumper.

Replacement of Basic SVP ASSY

a. Insert the maintenance jumper into JP1 on the RS CON PCB.

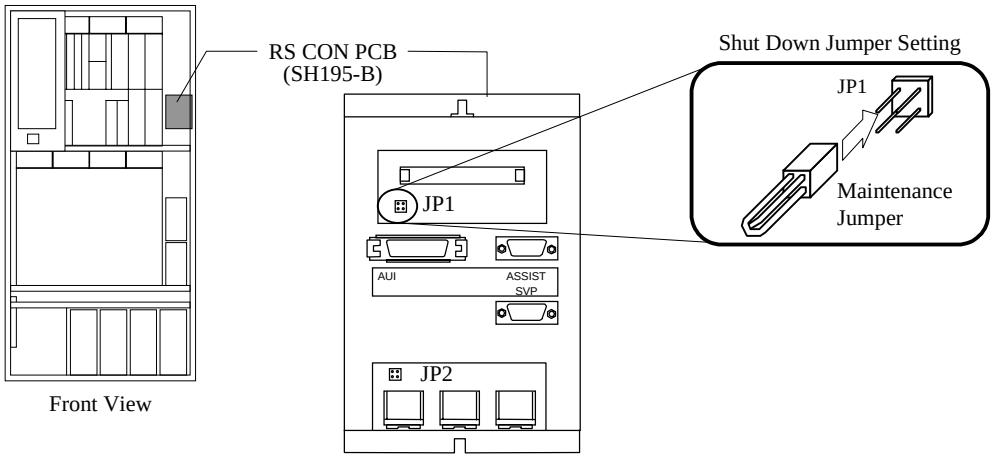

Fig. 3.15-2 Jumper settings of RS CON PCB

Replacement of Option SVP ASSY

a. Insert the maintenance jumper into PS SD on the SVPPS BOX.

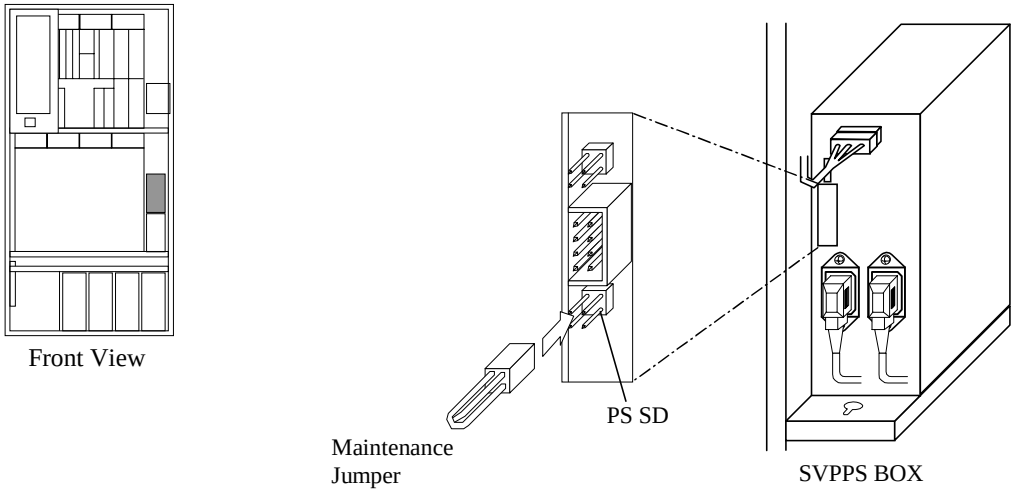

Fig. 3.15-3 Jumper settings of SVPPS BOX

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5. Remove the cables.

Additional Memory of Basic SVP

a. Disconnect the RS232C cable (RSVP-1) from the RS CON PCB.

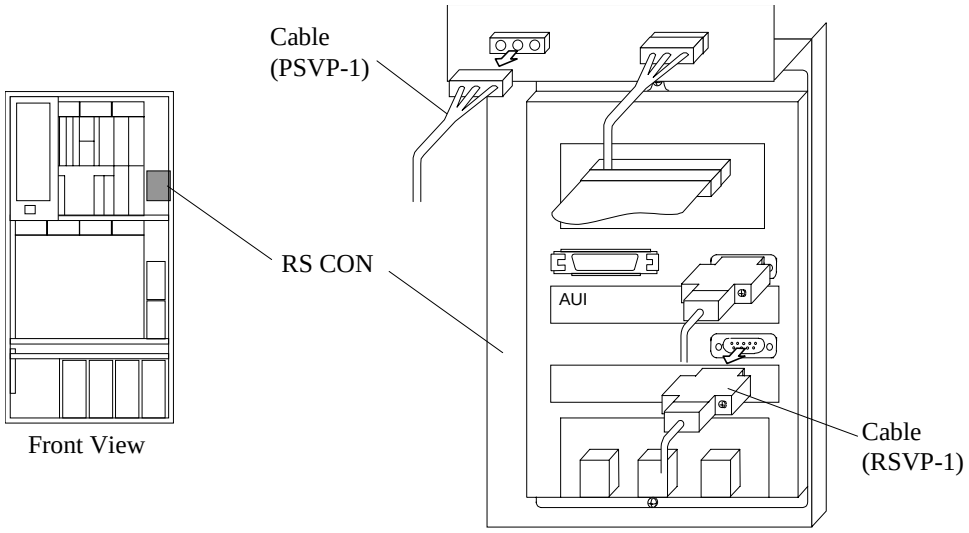

Fig. 3.15-4 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-1) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-1) from the CON PLATE.

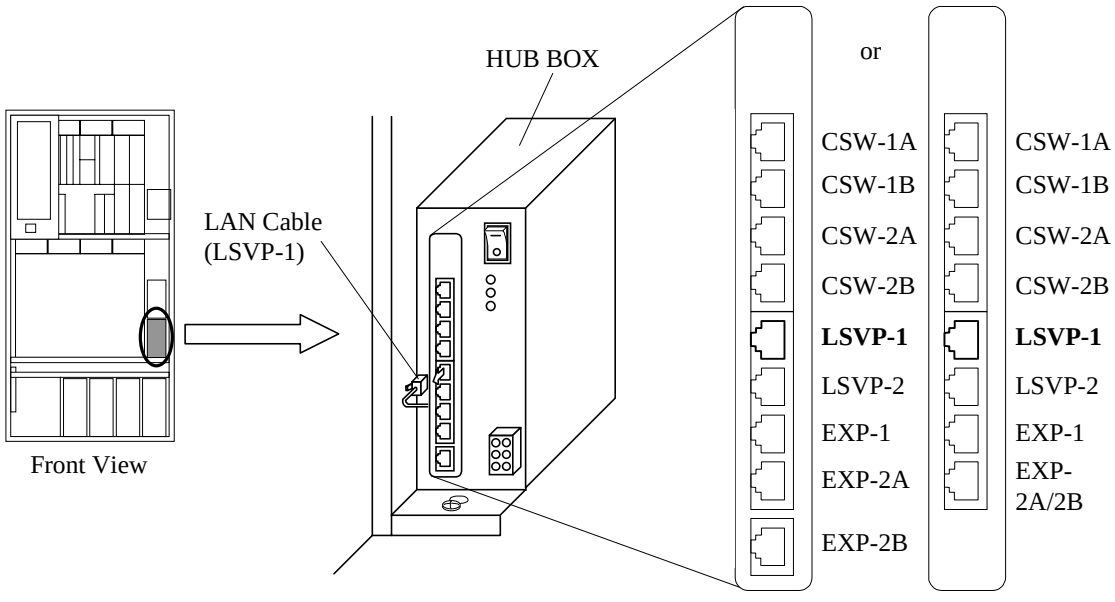

Fig. 3.15-5 Disconnection of LAN Cable and SVP-PS Cable

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c. Open the locking clamps and remove the cables.

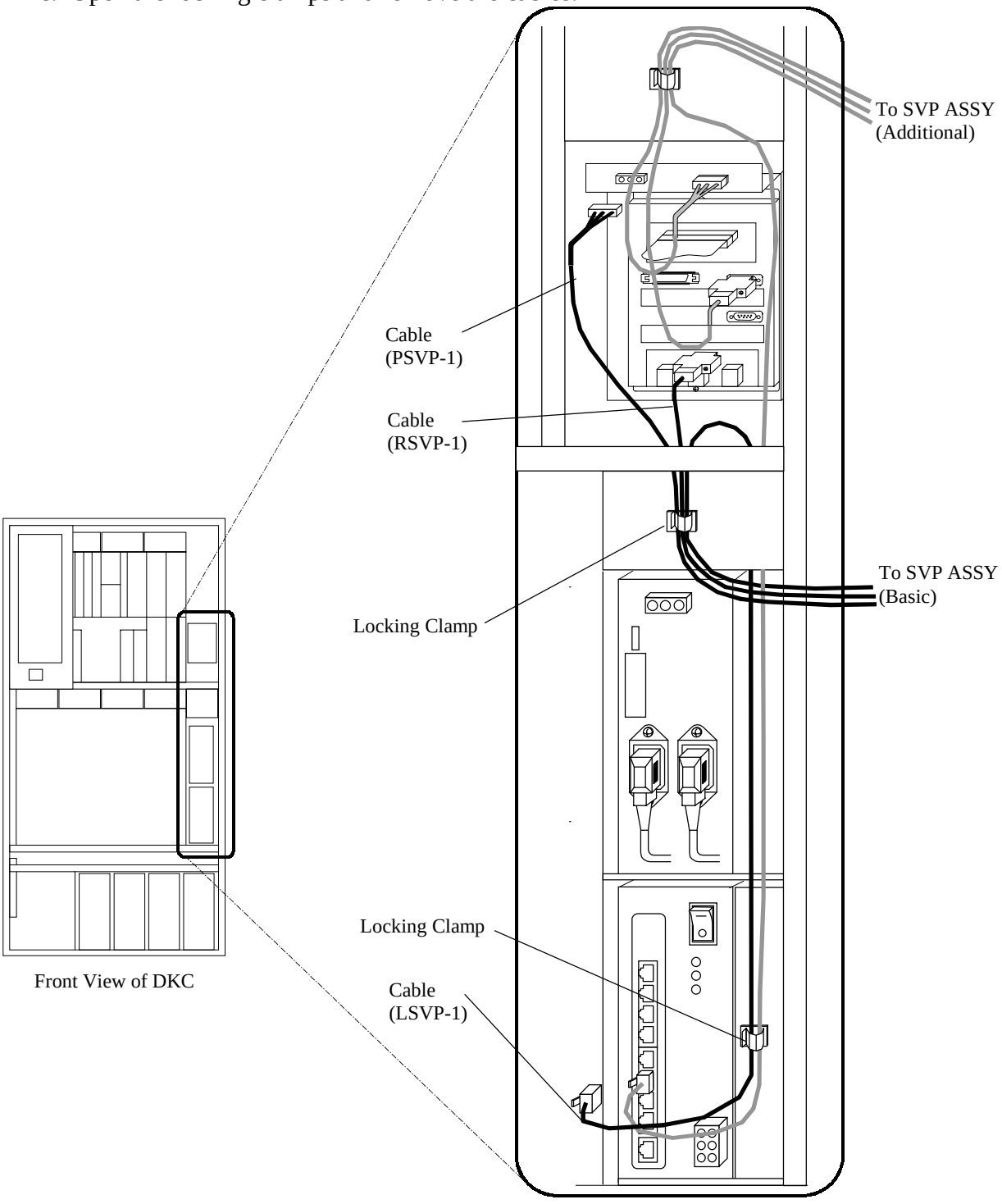

Fig. 3.15-6 Removal of Cables

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Additional Memory of Option SVP ASSY

a. Disconnect the RS232C cable (RSVP-2) from the RS CON PCB.

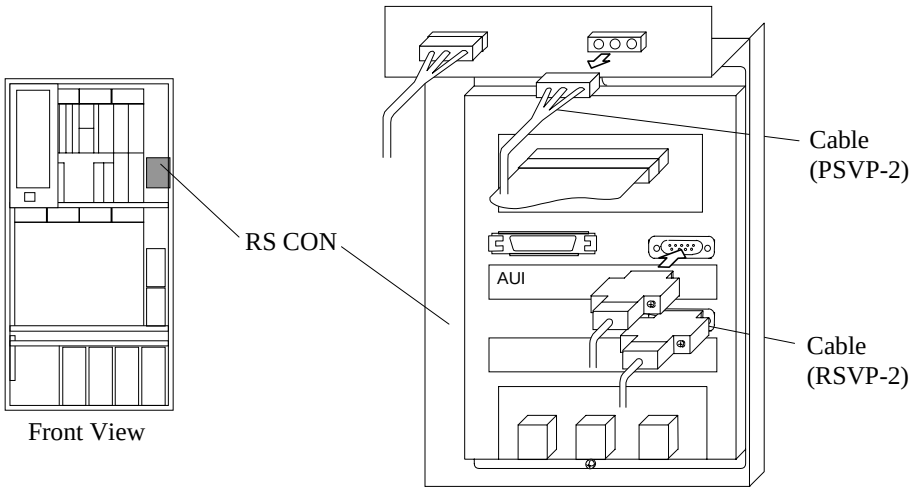

Fig. 3.15-7 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-2) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-2) from the CON PLATE.

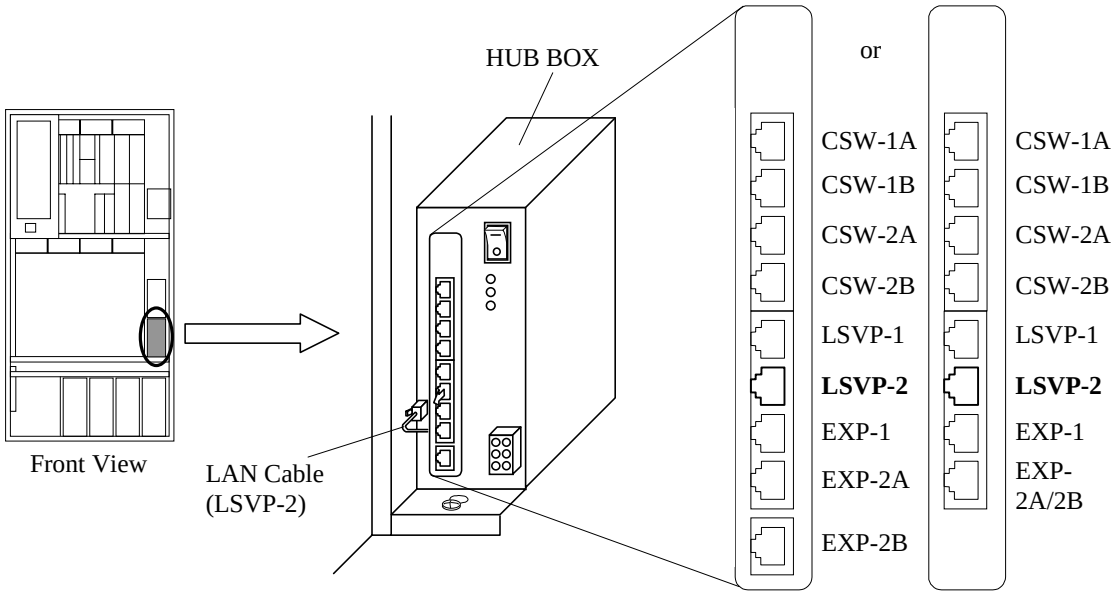

Fig. 3.15-8 Disconnection of LAN Cable and SVP PS Cable

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c. Open the locking clamps and remove the cables.

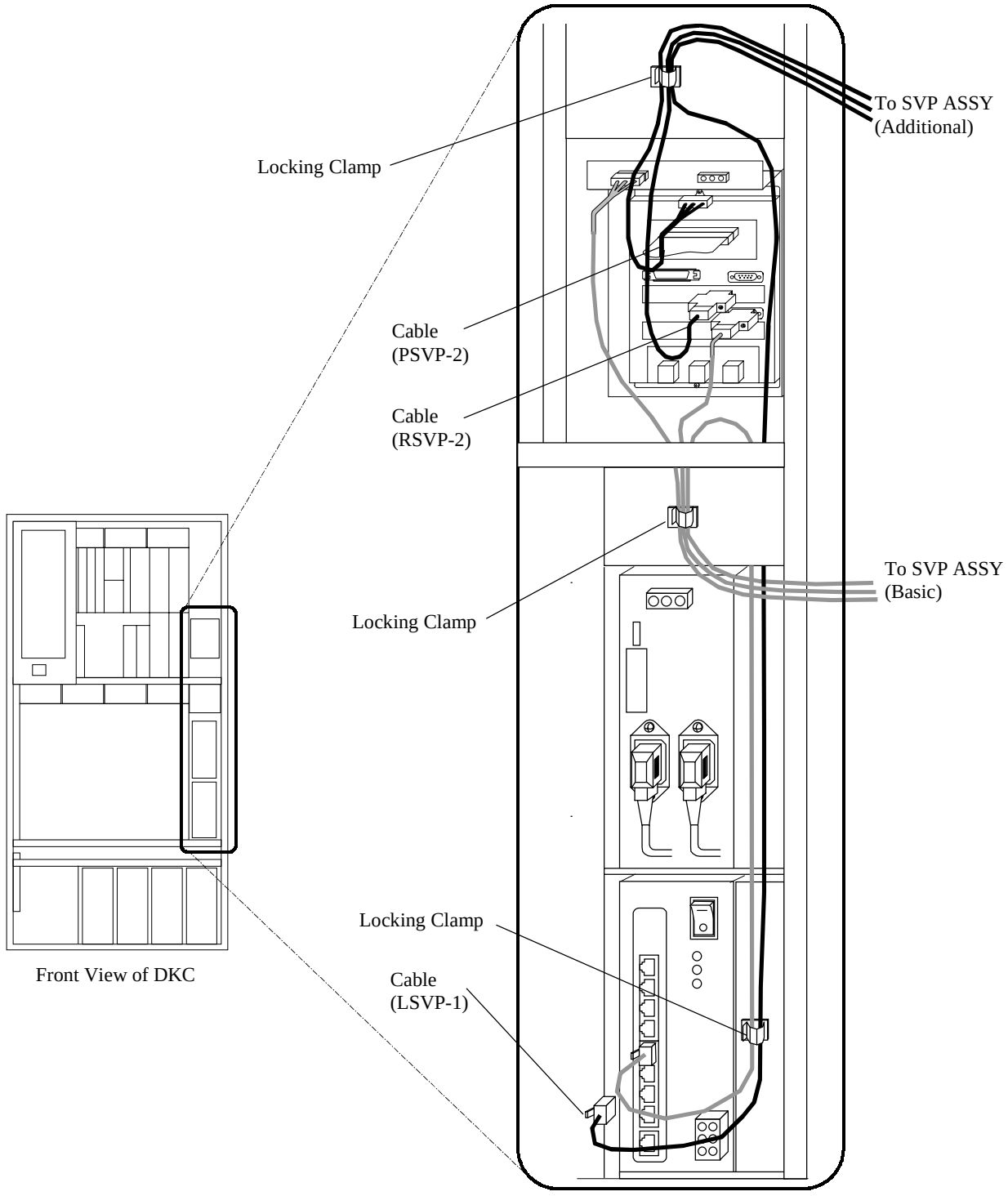

Fig. 3.15-9 Removal of Cables

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6. Remove the SVP cover.
   a. Close the SVP frame.
   b. Loosen the screws and remove the SVP cover.

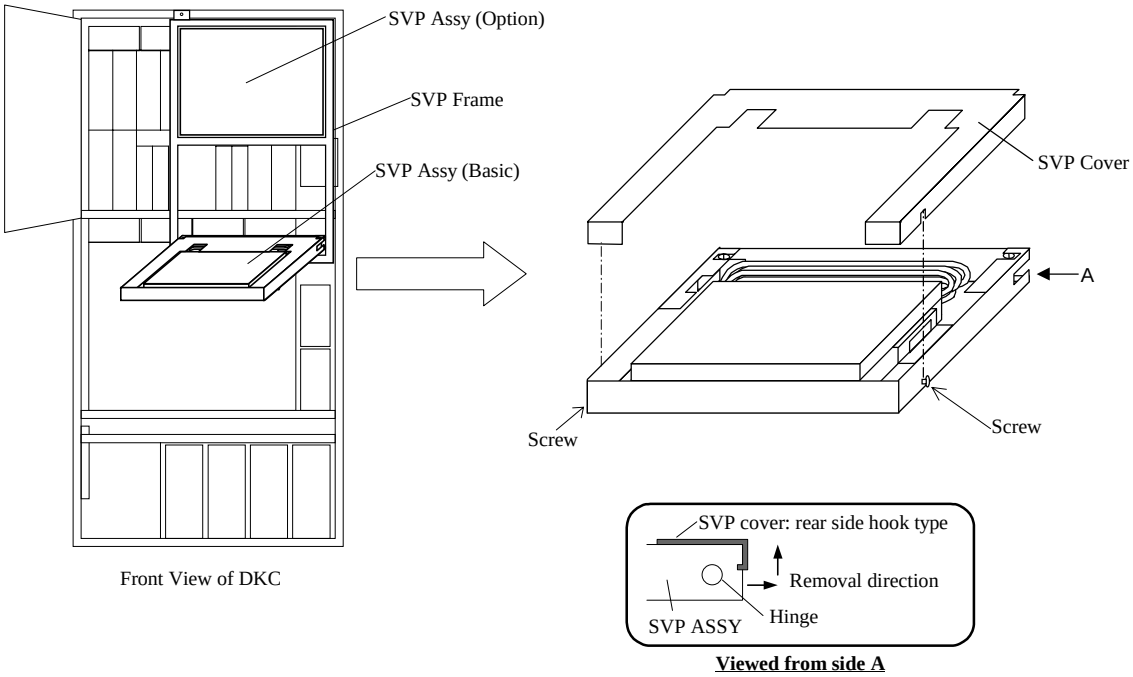

Fig. 3.15-10 Removing SVP cover

7. Loosen the screws and remove the stopper.
8. Pull out the SVP Assy.

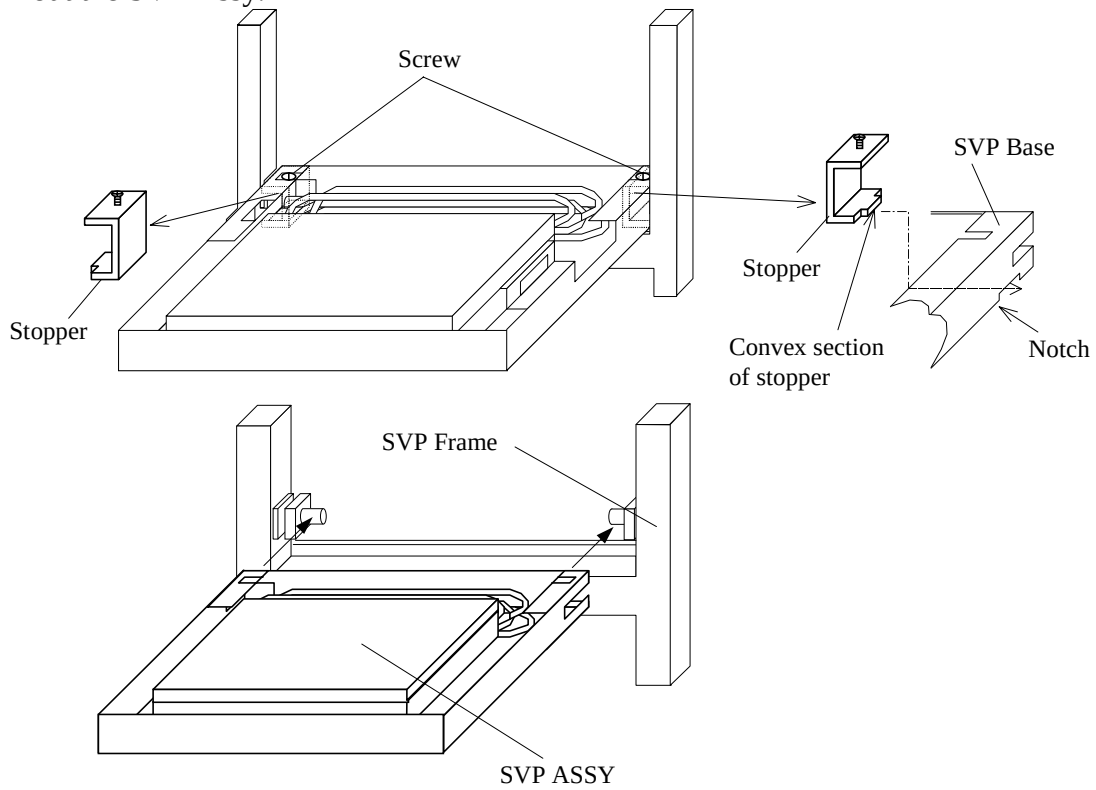

Fig. 3.15-11 Removing and installing the SVP ASSY

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9. Remove the DC Cable and LAN Cable from the SVP.

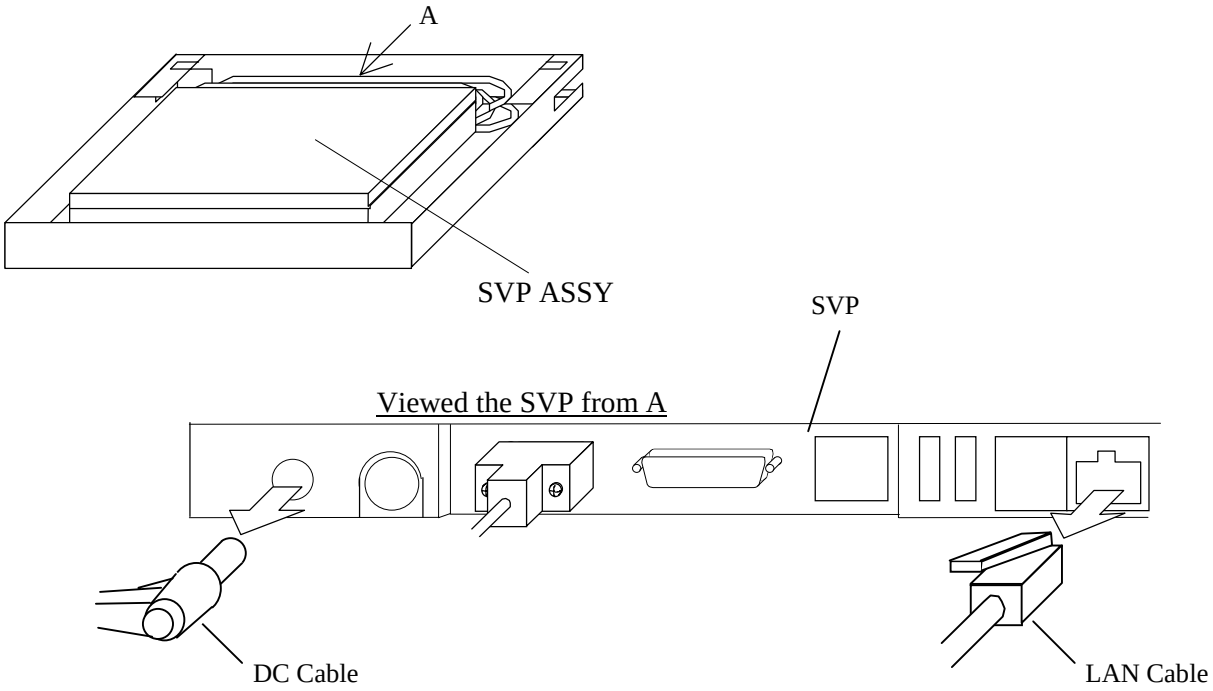

Fig. 3.15-12 Removing and installing Cables

10. Loosen the screws and remove the SVP stoppers.

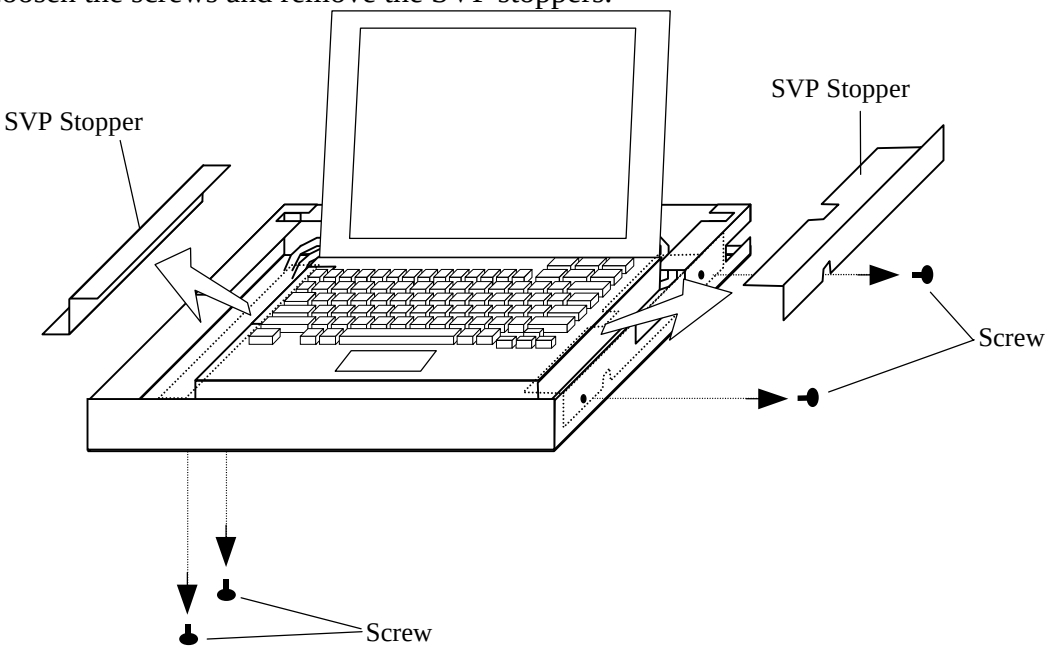

Fig. 3.15-13 Removing and installing the SVP Stoppers

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11. Remove the SVP and RS232C Cable.

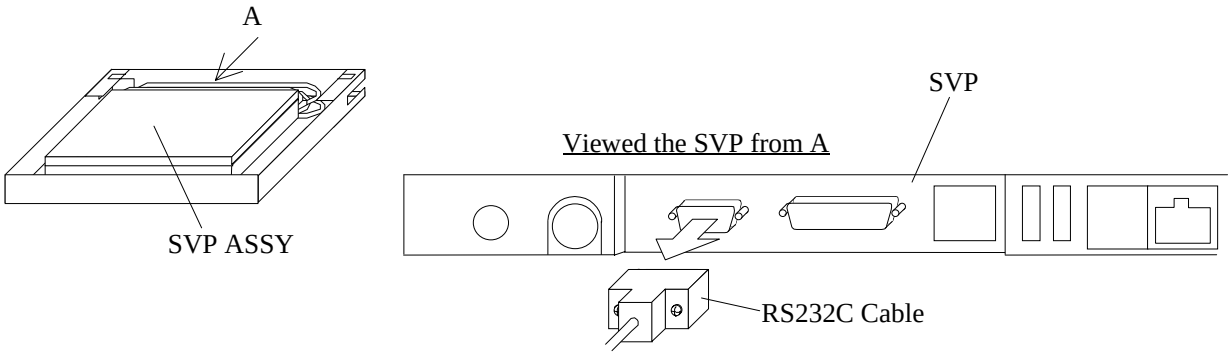

Fig. 3.15-14 Removing and installing RS232C Cable

12. Install the Memory module.
    a. Loosen the screw and remove the Memory cover.
    b. Insert the Memory module to the slot 2.
    c. Attach the Memory cover with screw.

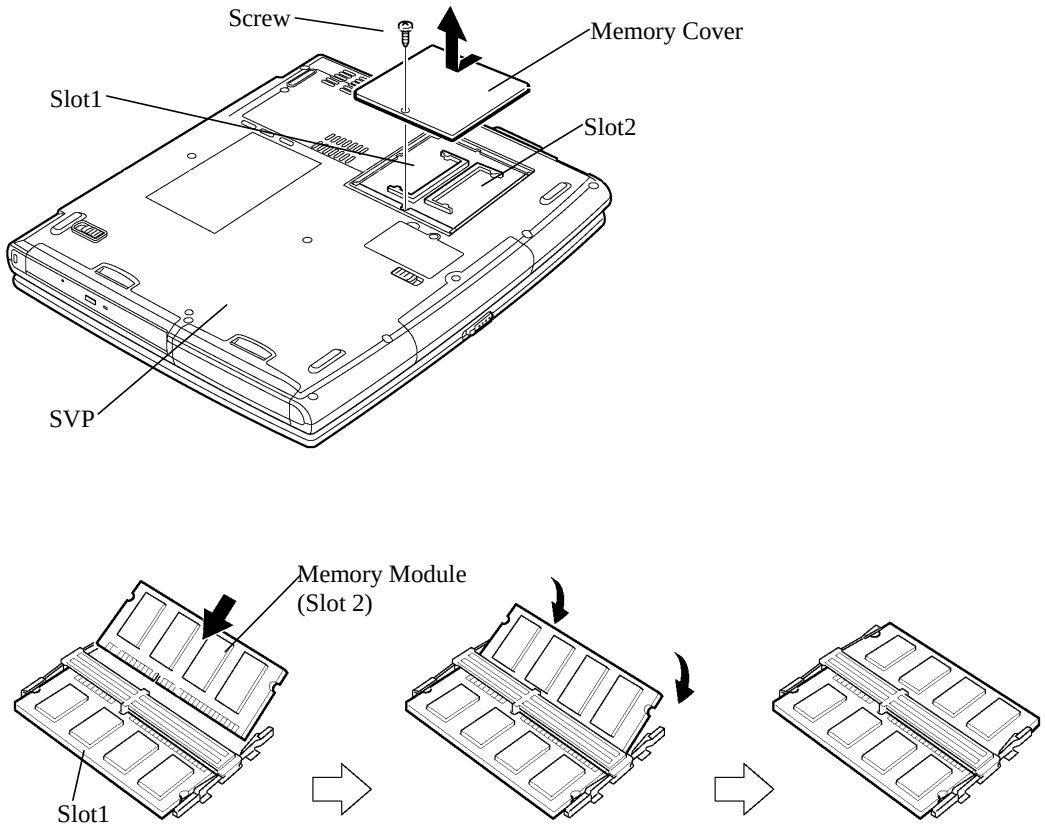

Fig. 3.15-15 Installing Memory Module

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13. Attach the Label.
    a. Attach the Label of “256MB”.

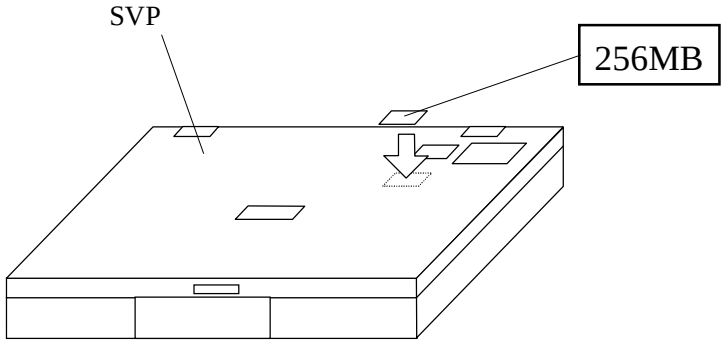

Fig. 3.15-16 Attachment of Label

14. Install a SVP.
    a. Attach the SVP and RS232C Cable. (See Fig. 3.15-14.)
    b. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 3.15-13.)
    c. Connect the LAN cable and DC cable to the SVP. (See Fig. 3.15-12.)

15. Install a SVP Assy.
    a. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 3.15-11.)
    b. Attach the SVP ASSY cables to the RS CON PCB, HUB BOX and CON PLATE. And then close the locking clamps. (See Fig. 3.15-6 and 3.15-9.)
    c. Attach the SVP cover. (See Fig. 3.15-10.)

16. Remove the Jumper.

Replacement of Basic SVP ASSY

a. Remove the maintenance jumper of the JP1 on the RS CON PCB. (See Fig. 3.15-2.)

Replacement of Option SVP ASSY

a. Remove the maintenance jumper of the PS SD on the SVPPS BOX. (See Fig. 3.15-3.)

17. Attach the nameplate.
    a. Attach the nameplate regardless of the model number from the left of the cover.

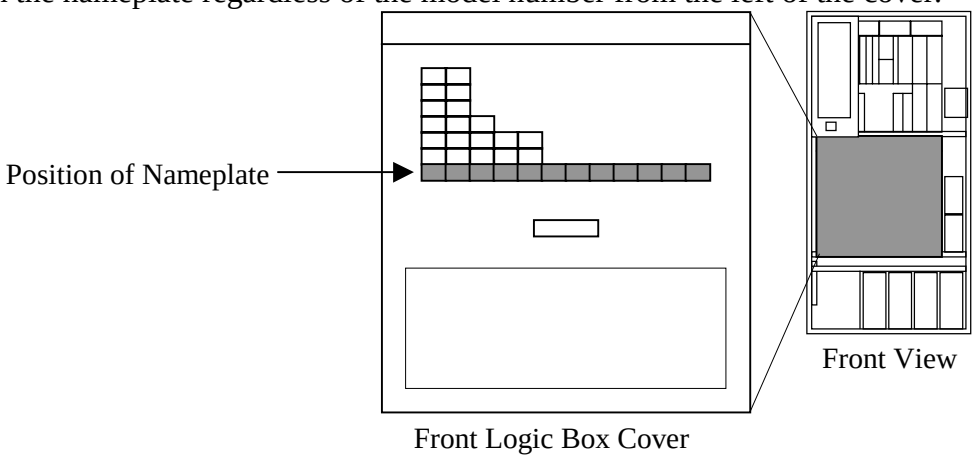

Fig. 3.15-17 Location of Nameplate

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3.16 Installation of NAS Enable Kit for SC model (DKC-F465I-NENB)

Table 3.16-1 Parts List

No.	Model Number	Item No.	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-NENB	①	3/12V Power Supply	5519715-A	4	
		②	FAN Assembly (A)	5519716-A	4	
		③	FAN Assembly (B)	5519716-B	4	
		④	Screw	SB306N	1	
		⑤	Screw	SB308N	3	
		⑥	Plate	5518445-A	1	
		⑦	Cable Duct ASSY	3265898-A	1	
		⑧	Repeat Binder	5409042-2	1	
		⑨	Label (Location (PS-BOX))	3267523-1	1	
		⑩	Label (3/12VPS)	3267522-1	1	
		⑪	Label (V.Hz.PH.A.W)	2106386-1	1	For DKC-F465I-1PS/3PS
		⑫	Label (V.Hz.PH.A.W)	3267521-1	1	For DKC-F465I-1PSD
		⑬	Nameplate (HDS)	2105894-15	1	RSD
				2105895-15		HICAM
				2105895-115		HICEF
		⑭	Nameplate (HP)	2105894-115	1	RSD
				2105895-215		HICAM
				2105895-315		HICEF

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1. Procedure for short circuit check on the power supply

(1) Check the power supply for short circuit by connecting the voltage checking jig to the short circuit check point of the power supply as shown below.

(2) Measure the resistance at the check points on the individual power supply before installation shown below. Confirm that the measured resistance values are over the value shown in the table below. If the resistance values are not over the value, replace it to the new part.

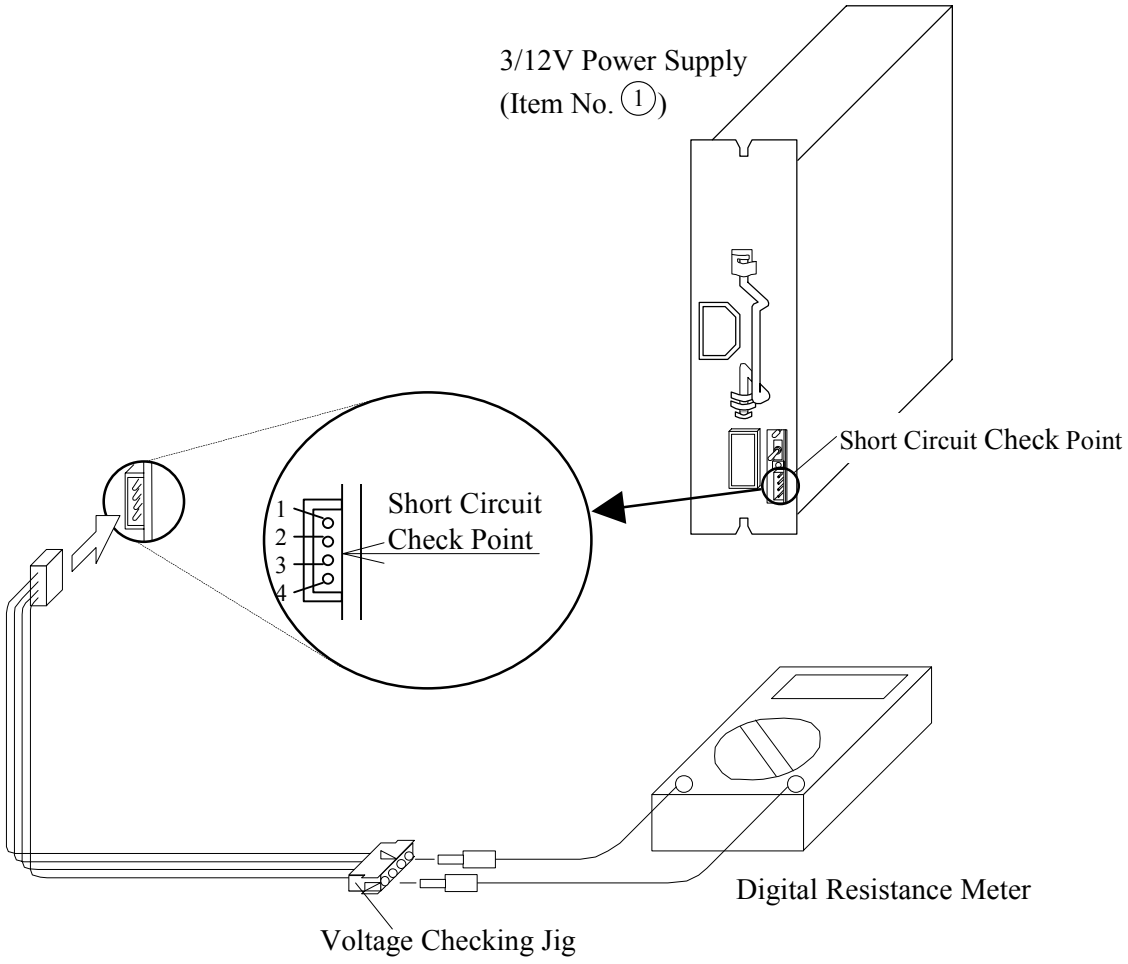

Fig. 3.16-1 Short Circuit Check Point (Item No.① in Parts List)

Table 3.16-2 Short Circuit Check Point

PS	Check pin	Resistance
3/12V PS	Between 1 and 4	≥ 1.7 kΩ
	Between 2 and 4	≥ 1.7 kΩ

Note: Pin number 4 is ground.

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2. Removal of Cable Covers

a. Remove the Front Logic Box cover from the DKC. (Refer to INST03-COM-10.)

b. Remove the three screws ① and install the optional screws ① (SB308N) and screw ②(SB306N) temporarily.

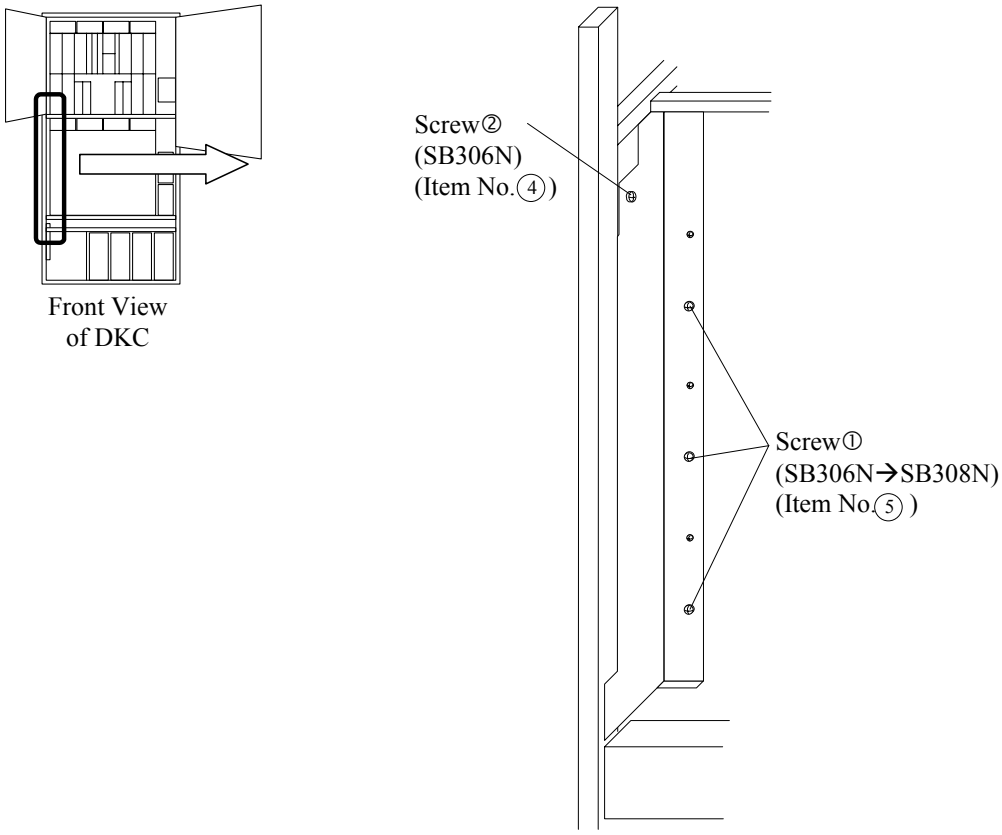

Fig. 3.16-2 Exchange of Screws (Item Nos.④ and ⑤ in Parts List)

c. Remove the three screws and remove the plate.

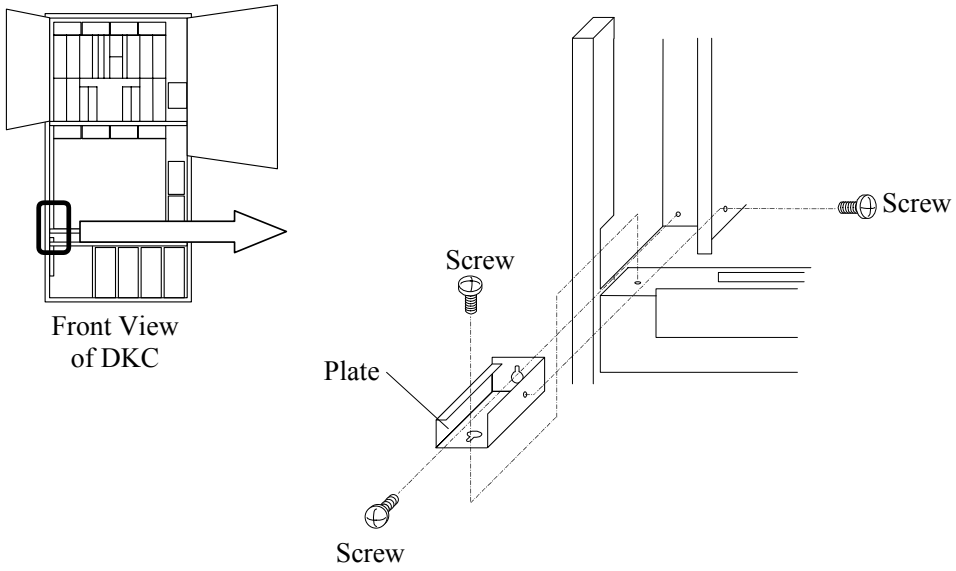

Fig. 3.16-3 Removal of Plate

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d. Fix the cable duct ASSY with the four screws.

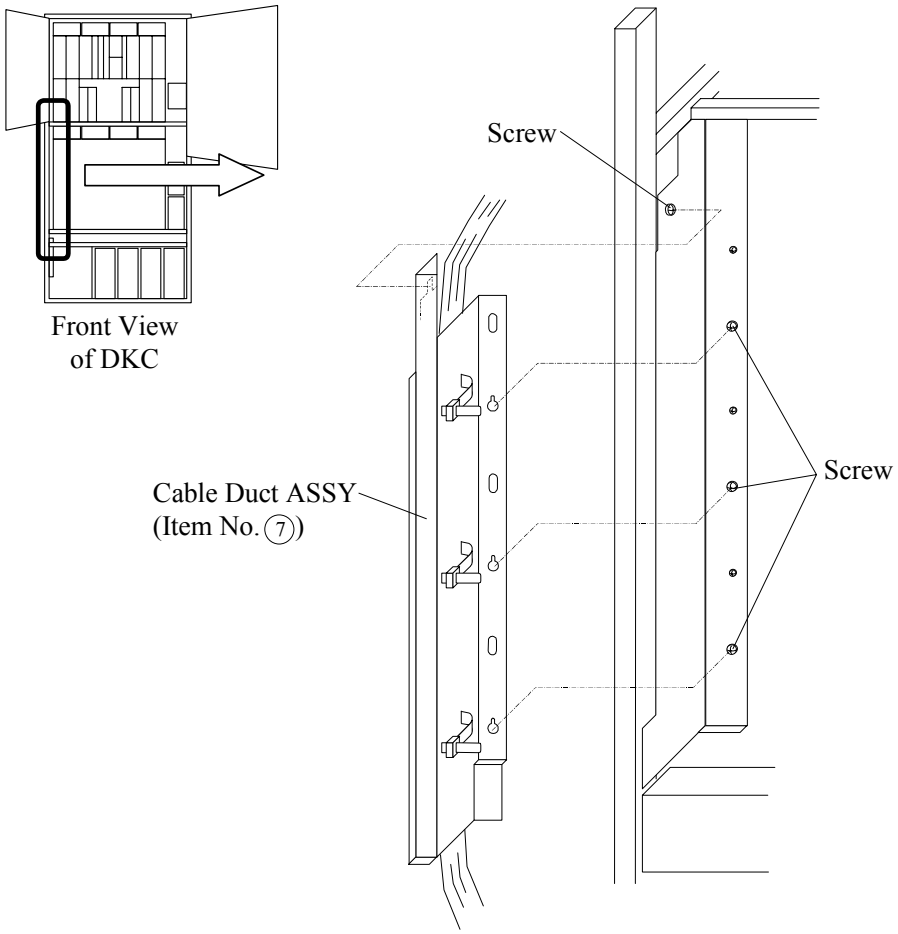

Fig. 3.16-4 Attachment of Cable Duct ASSY (Item No.⑦ in Parts List)

e. Fix the optional plate with the three screws.

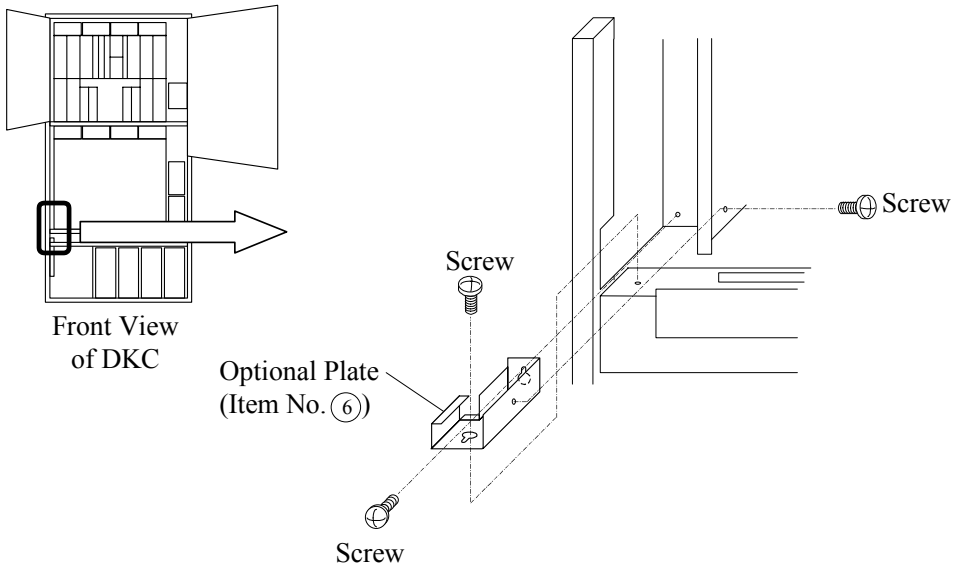

Fig. 3.16-5 Attachment of Plate (Item No.⑥ in Parts List)

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f. Remove the four screws and remove the cover.

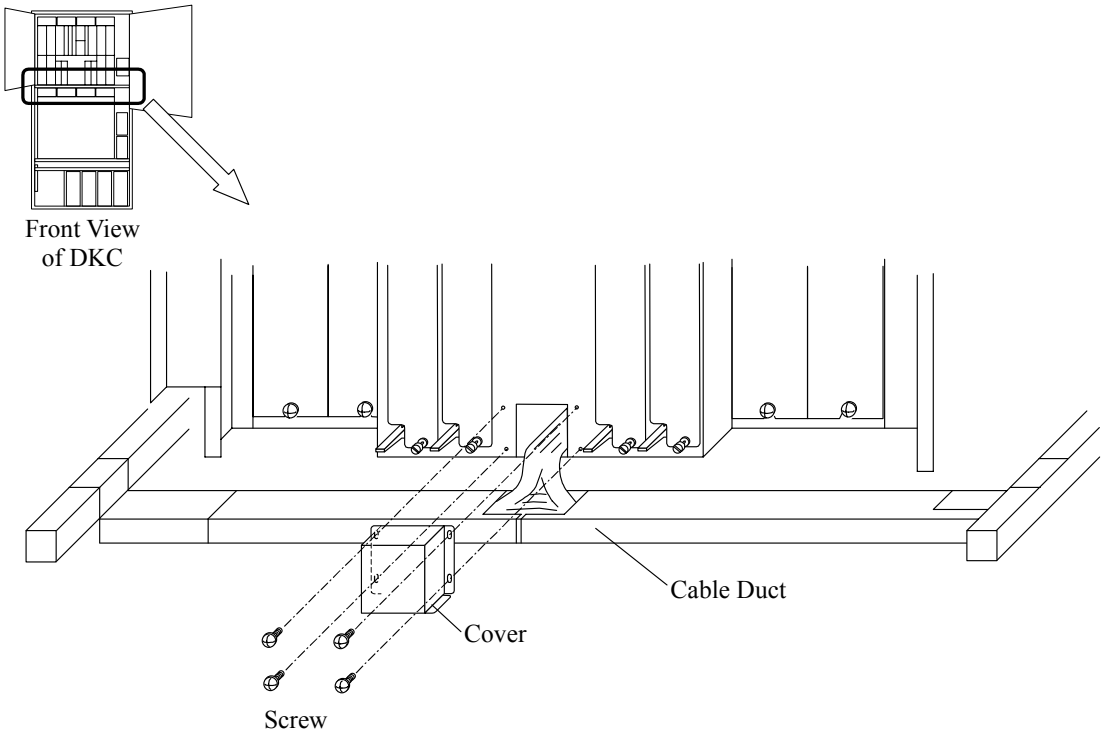

Fig. 3.16-6 Removal of Cover

g. Wire the cable after sticking two cable mounts on the cable duct.
h. Fix the 12V power cable and inlet cables with the repeat binder.
i. Attach the cover with the screws. Refer to Fig. 3.16-6.

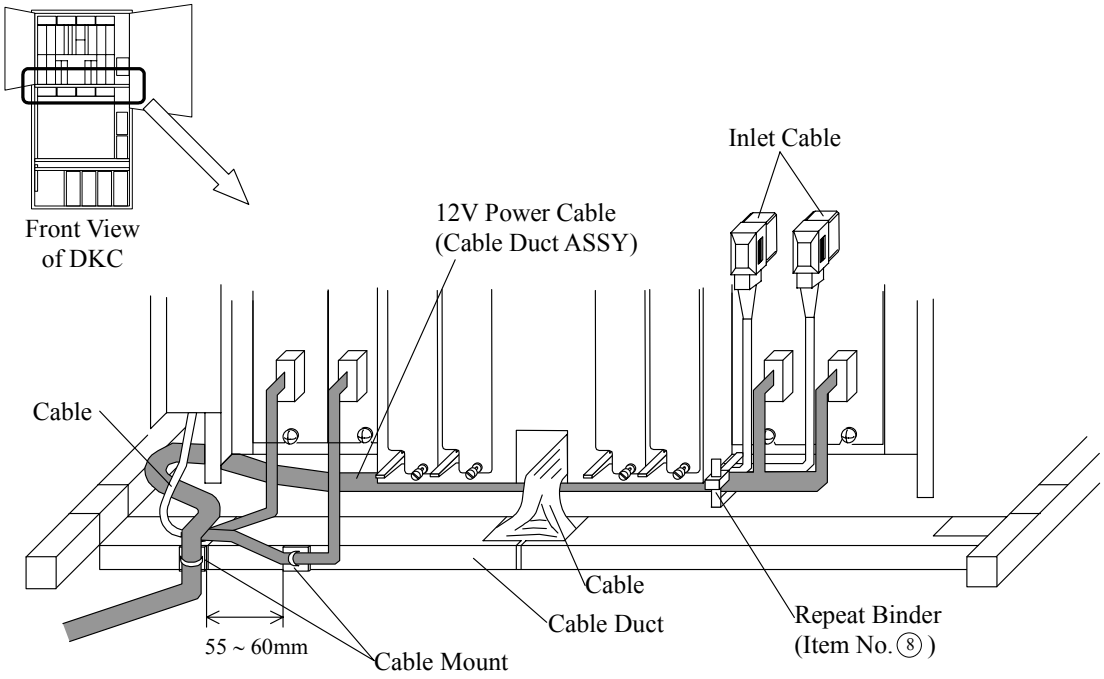

Fig. 3.16-7 Attachment of Cable (Item No.⑧ in Parts List)

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j. Stick the new label (Location (PS-BOX)) on the PS location labels.

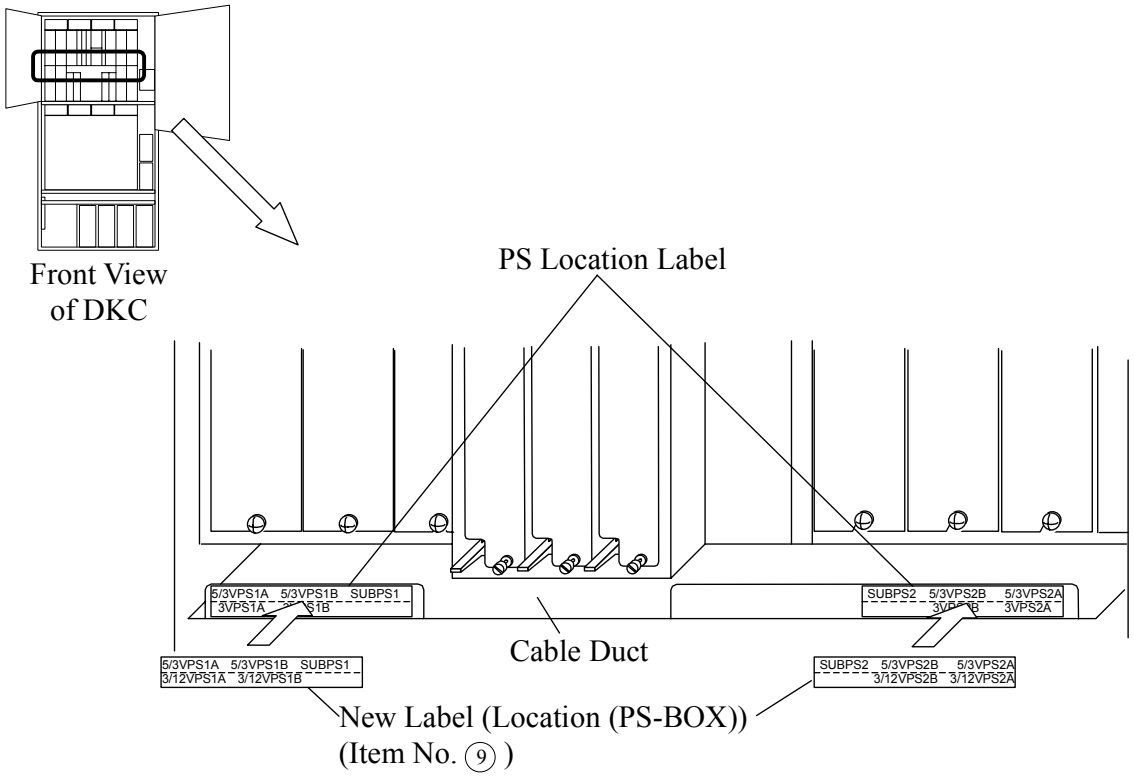

Fig. 3.16-8 Attachment of Labels (Item No.⑨ in Parts List)

k. Stick the new label (3/12VPS) on the label stuck on the inlet cable.

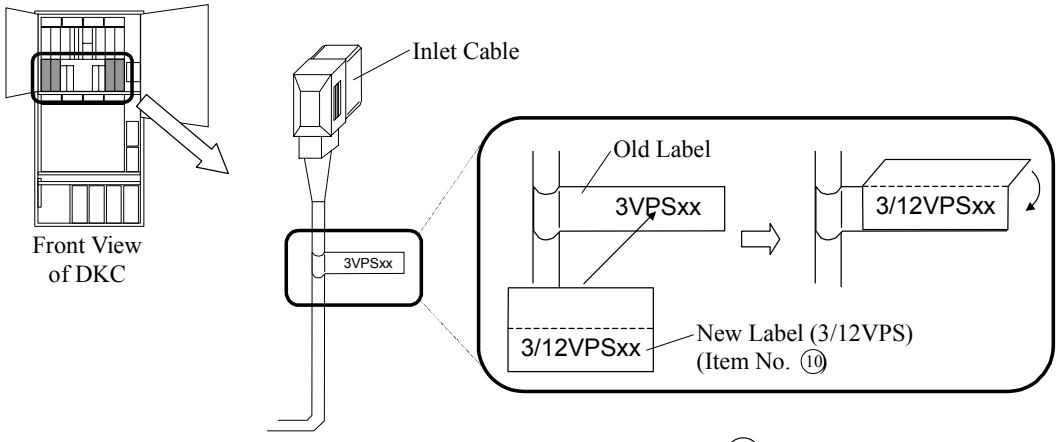

Fig. 3.16-9 Attachment of Labels (Item No.⑩ in Parts List)

Table 3.16-3 Label Name on the Inlet Cable

No.	Old Label	New Label
1	3VPS1A	3/12VPS1A
2	3VPS1B	3/12VPS1B
3	3VPS2A	3/12VPS2A
4	3VPS2B	3/12VPS2B

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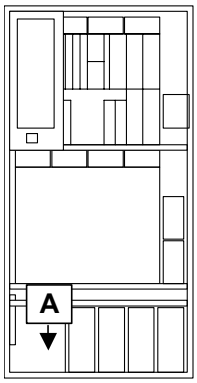
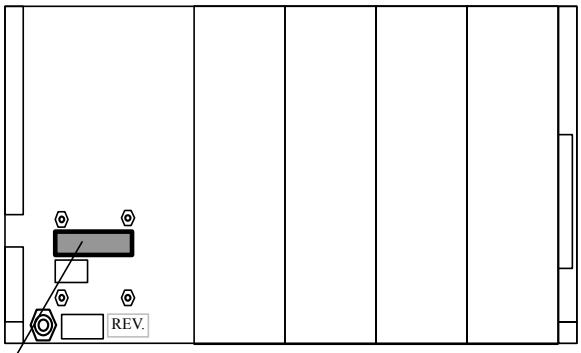
m. Stick the new label (V.Hz.PH.A.W) on the old label.



Front View



Viewed from A

Label (V.Hz.PH.A.W)

When the DKC-F465I-1PS or 3PS is installed Item No. (11)

DKC (SC) See Installation Instructions before connecting to the supply.					
	~INPUT 50Hz	~INPUT 50Hz	~INPUT 60Hz	~INPUT 50Hz	~INPUT 60Hz
Phase	3	3	3	1	1
Volts	380/400/415V	200/220/230/240V	200/208/230V	200/220/230/240V	200/208/230V
Amps	6.2/5.7/5.5A(X2)	11.6/10.4/10.0/9.5A(X2)	11.6/11.1/10.0A(X2)	17.0/15.6/15.0/14.5A(X2)	17.0/15.9/15.0A(X2)
Wires	3+N+G	3+G	3+G	2+G	2+G
Countries	For Europe and Argentina		For North America	For Europe and Argentina	For North America

D#2106386-1 REV.0

When the DKC-F465I-1PSD is installed Item No. (12)

DKC (SC) See Installation Instructions before connecting to the supply.		
	~INPUT 50Hz	~INPUT 60Hz
Phase	1	1
Volts	200/220/230/240V	200/208/230V
Amps	[10.6(X2)/9.8(X2)/9.4(X2)/9.0A(X2)](X2)	[10.6(X2)/9.9(X2)/9.4A(X2)](X2)
Wires	2+G	2+G
Countries	For Europe and Argentina	For North America

D#3267521-1 REV.0

Fig. 3.16-10 Attachment of Label (Item No.(11) or (12) in Parts List)

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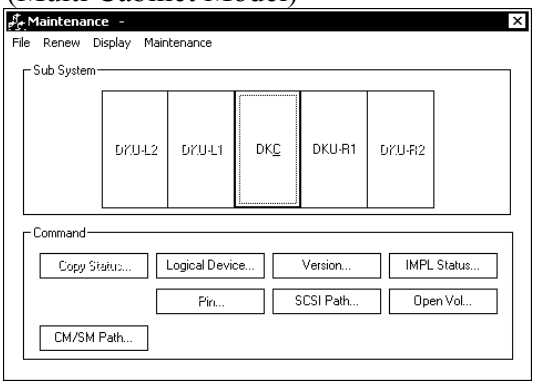
3. SVP MODE CHANGE

(1) <Initial screen>

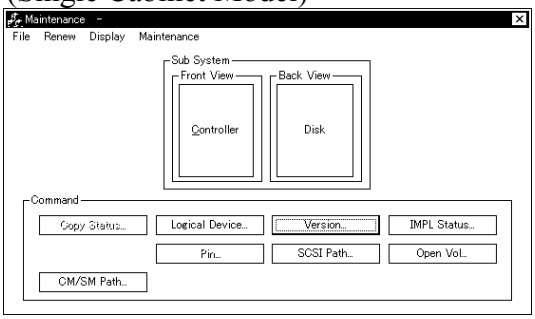
(2) <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

(3) <Maintenance window>
The 'Maintenance' window is displayed.

(Multi Cabinet Model)



(Single Cabinet Model)



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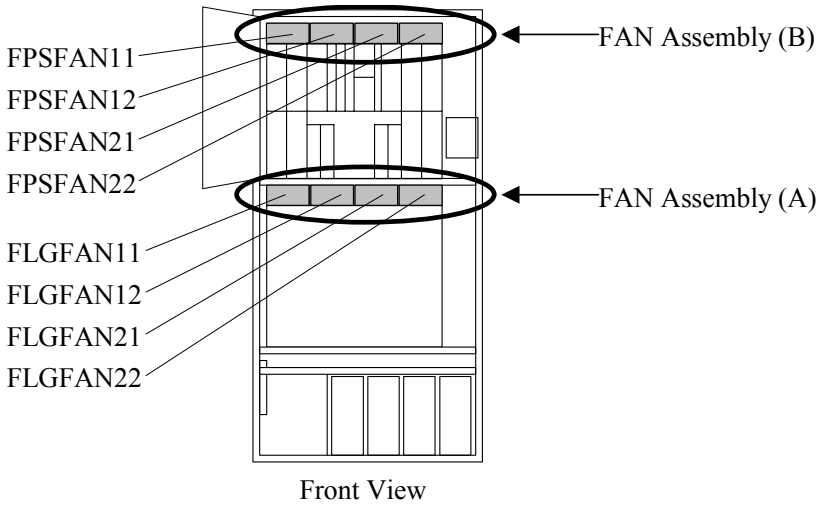
4. FAN Assembly exchange

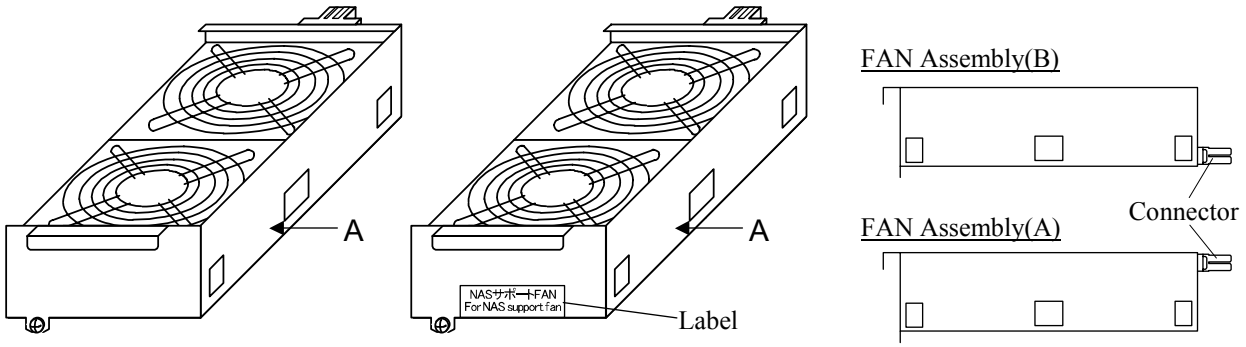
Replace the Fan Assembly (FPSFAN11), which is listed as No.1 in Table 3.16-4, following the replacement procedure (on pages INST03-NEN-100 to INST03-NEN-150). Then, replace the No.2 (FPSFAN12), No.3 (FPSFAN21), and so on in this order one by one.

Table 3.16-4 FAN Assembly exchange order

No.	Location No.	Parts Name	Cluster	Remark
1	FPSFAN11	FAN Assembly (B)	Cluster 1	
2	FPSFAN12			
3	FPSFAN21		Cluster 2	
4	FPSFAN22			
5	FLGFAN11	FAN Assembly (A)	Cluster 1	
6	FLGFAN12			
7	FLGFAN21		Cluster 2	
8	FLGFAN22			



Front View



NAS not Support FAN Assembly NAS Support FAN Assembly Viewed from A

Fig. 3.16-11 Mounting Location of FAN Assembly

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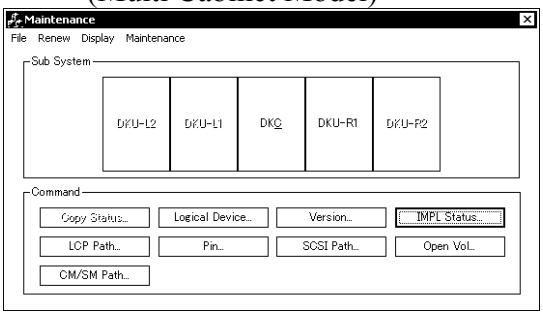
4-1 SVP PRE-PROCEDURE (FAN Assembly)

(1) <Maintenance window>

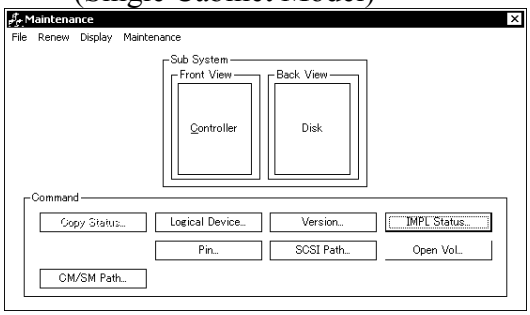
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)

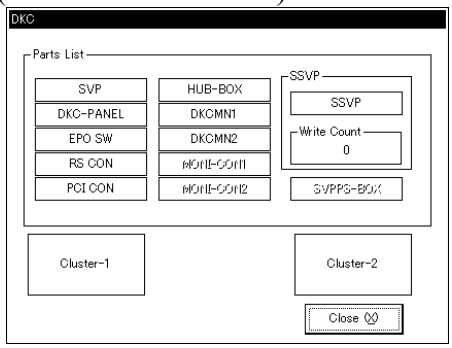


(2) <DKC window>

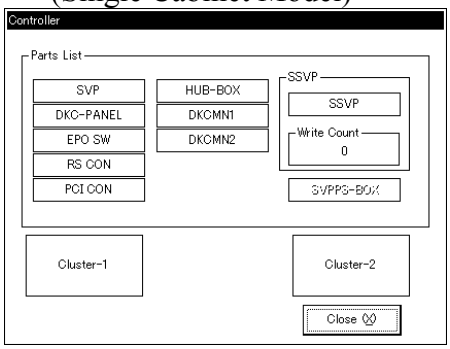
(Multi Cabinet Model)
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
Select (CL) [Cluster-n] in the 'Controller'.

(Multi Cabinet Model)



(Single Cabinet Model)



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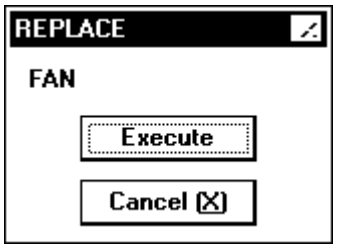
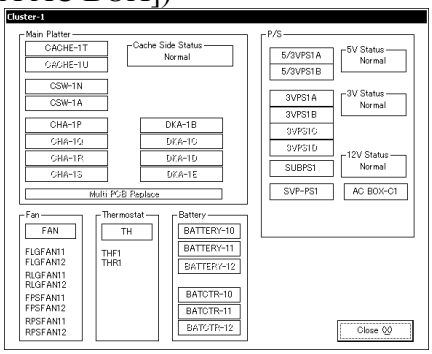
(3) <Select special part>
If any other message than the list is displayed, see the SVP Message Section (SVPMSG00-00).

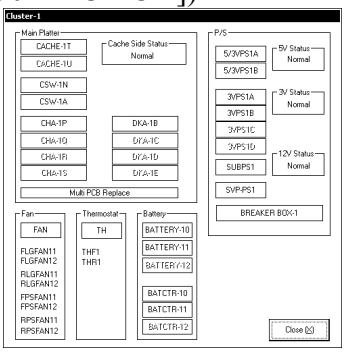
Select (CL) part [FAN] to be replaced from [Cluster-n] window and select (CL) [Execute].



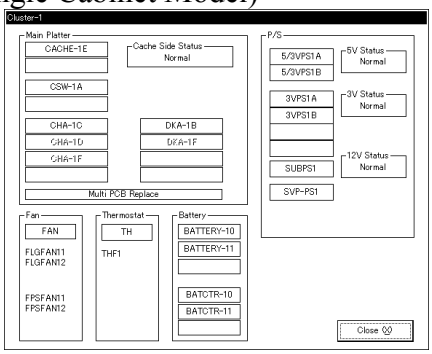
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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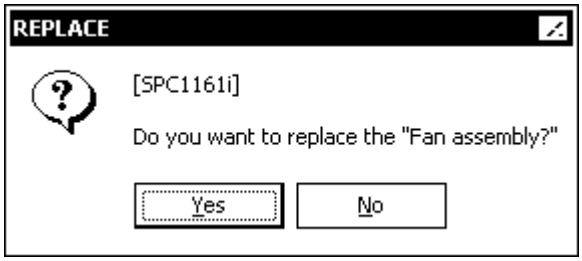
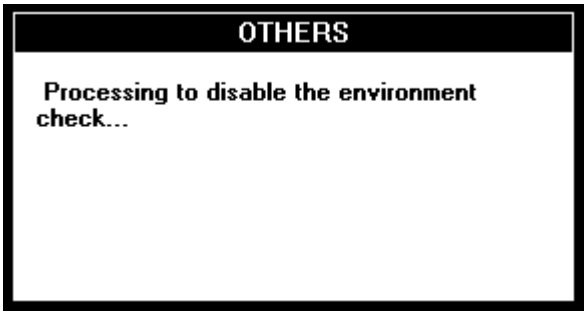
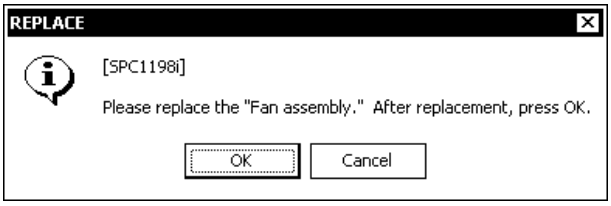
(4) <Check beginning of special part Replacement>
Select (CL) [Yes] in response to “Do you want to replace the "Fan assembly?"”.



(5) <Check environment monitor stopped state>
“Processing to disable the environment check...” is displayed.



(6) <Special part Replacement>
At this point refrain from pressing the [OK] button.
“Please replace the "Fan assembly." After replacement, press OK.” is displayed.
(Reply with [OK] after replacing the special part.)



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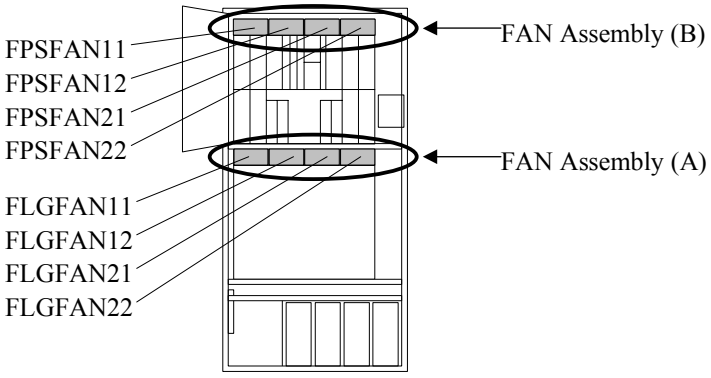
4-2 FAN Assembly Exchange

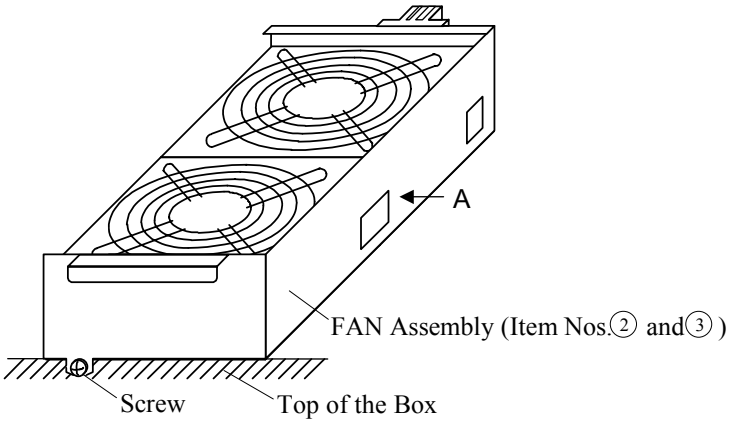
⚠ CAUTION

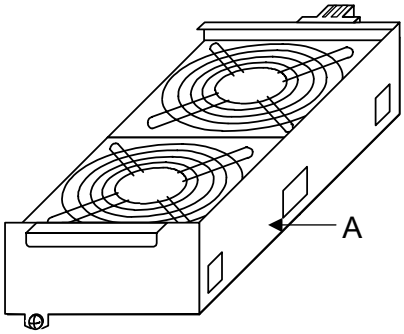
Hazardous rotating mechanism:
Can cause injury if touched. Stay clear of it when machine is running.

a. Loosen the screw and remove one FAN Assembly you intend to remove.
b. Insert the FAN Assembly for NAS and fasten the screw.

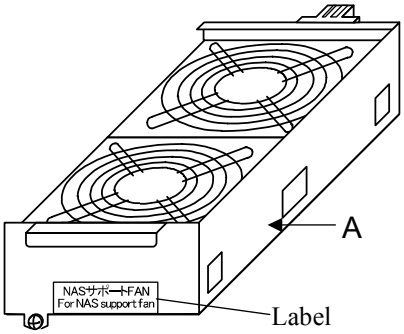


Front View

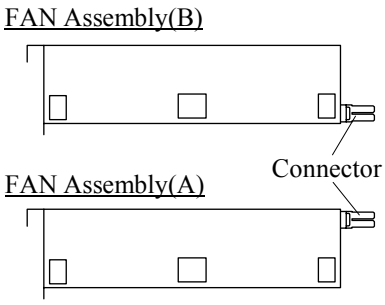




NAS not Support FAN Assembly



NAS Support FAN Assembly



Viewed from A

Fig. 3.16-12 Location of FAN Assembly (Item Nos.② and ③ in Parts List)

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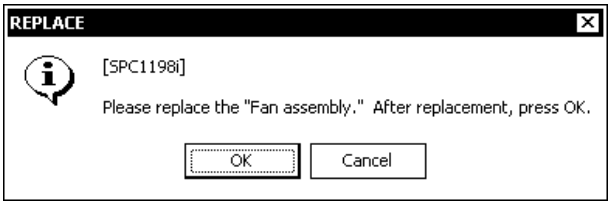
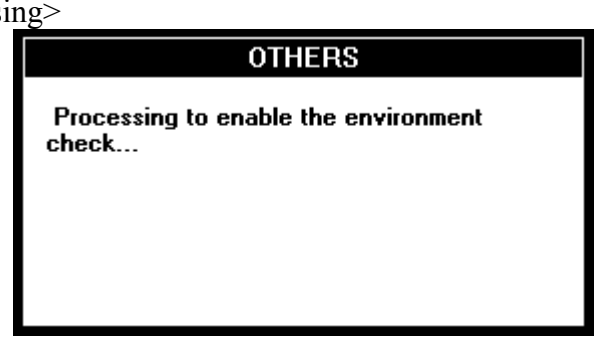
4-3 SVP POST-PROCEDURE (FAN Assembly)

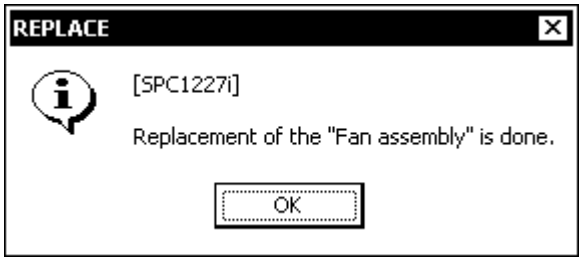
(1) <Check special part replacement>
Select (CL) [OK] in response to “Please replace the "Fan assembly" After replacement, press OK.”.



(2) <Checking the environment monitor start processing>
“Processing to enable the environment check...” is displayed.



(3) <Checking the end of replacement>
Select (CL) [OK] in response to “Replacement of the "Fan assembly" is done.”.



(4) <Confirm status>
Confirm the status display.
If button is normal (The string is normally display), go to step (5).
If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

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(5) <SIM Complete>
See SVP02-580.

(Multi Cabinet Model)
Close 'Cluster-X' window.
Close 'DKC' window.
Close 'Maintenance' window.

(Single Cabinet Model)
Close 'Cluster-X' window.
Close 'Controller' window.
Close 'Maintenance' window.

(6) Repeat the carrying out of the procedure for the next Fan Assembly. When the replacement of all the Fan Assemblies is completed, go to Step 5.

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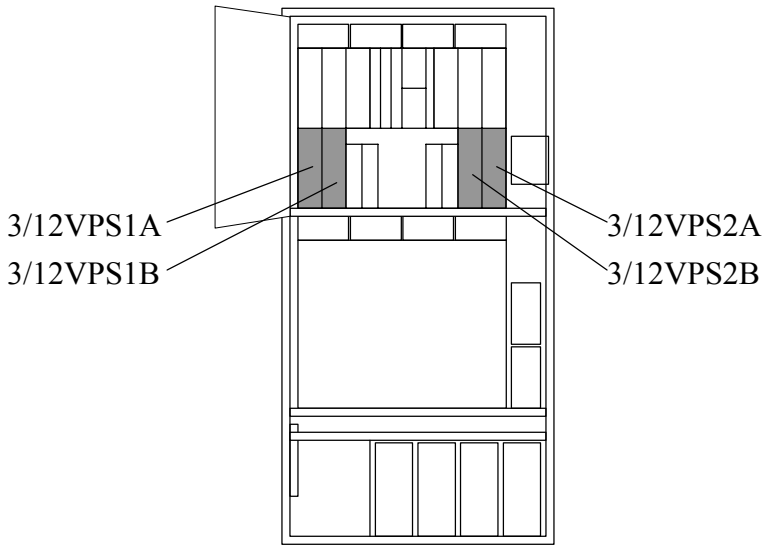
5. Power Supply Exchange

(1) Replace the power supply (3VPS1A), which is listed as No.1 in Table 3.16-5, with the 3/12V power supply (3/12VPS1A) following the replacement procedure (on pages INST03-NEN-170 to INST03-NEN-230). Then, replace the No.2 (3VPS1B), No.3 (3VPS2A), and so on in this order one by one.

Note: When the first power supply is replaced, all the indications of the power supplies on the Maintenance window is changed from 3VPS to 3/12VPS. Although the indications of the power supplies that have not been replaced yet are also changed from 3VPS to 3/12VPS, the power supplies concerned must be replaced actually.

Table 3.16-5 Power Supply Exchange Order

No.	Location No.		Parts Name		Cluster	Remarks
	Old	New	Old	New		
1	3VPS1A	3/12VPS1A	3V PS	3/12V PS	Cluster 1	
2	3VPS1B	3/12VPS1B	3V PS	3/12V PS		
3	3VPS2A	3/12VPS2A	3V PS	3/12V PS	Cluster 2	
4	3VPS2B	3/12VPS2B	3V PS	3/12V PS		



Front View

Fig. 3.16-13 Location of Power Supply

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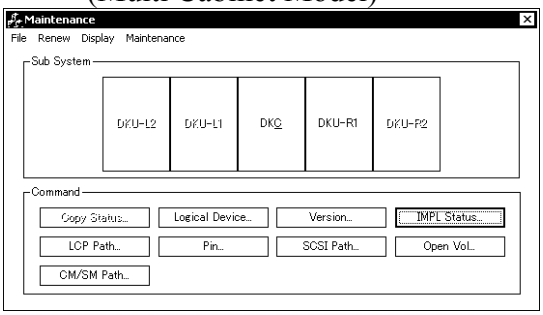
5-1 SVP Pre-Procedure (Power Supply)

(1) <Maintenance window>

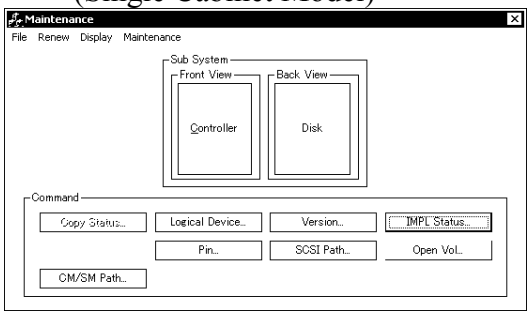
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)

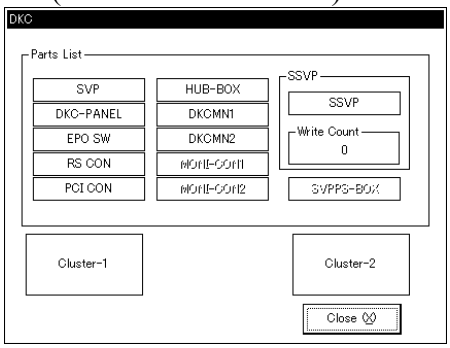


(2) <DKC window>

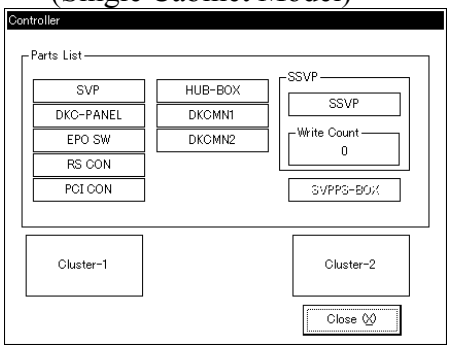
(Multi Cabinet Model)
Select (CL) [Cluster-n] in the 'DKC'.

(Single Cabinet Model)
Select (CL) [Cluster-n] in the 'Controller'.

(Multi Cabinet Model)



(Single Cabinet Model)



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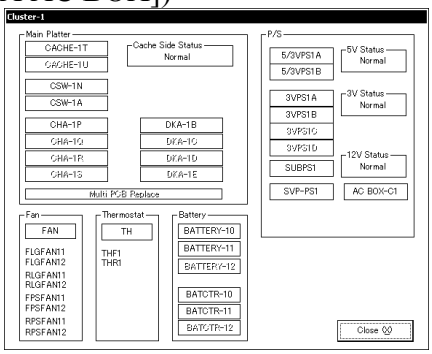
(3) <Select special part>
If any other message than the list is displayed, see the SVP Message Section (SVPMSG00-00).

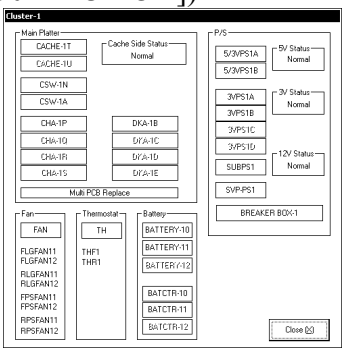
(Multi Cabinet Single Phase Model, Multi Cabinet 3 Phase Model [30A AC BOX])



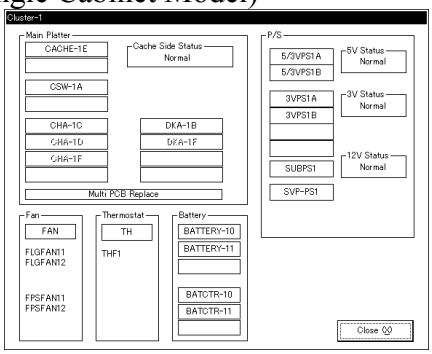
When replacing the first power supply:
Select (CL) the part to be replaced, that is, “3VPSn” in the “Cluster-n” window.
Note: The part name is indicated as “3/12VPSn” in the following explanations of the procedure. Please interpret it as “3VPSn” when refer to the procedure.
Go to Step (4).

When replacing the second or the following power supply:
Select (CL) the part to be replaced, that is, “3/12VPSn” in the “Cluster-n” window.
Go to Step (5).

(Multi Cabinet 3 Phase Model [Without 30A AC BOX])



(Single Cabinet Model)



(ex. Cluster-1)

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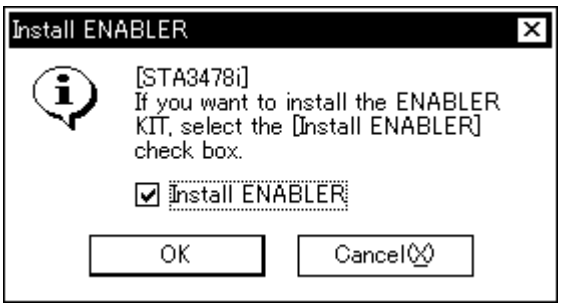
(4)

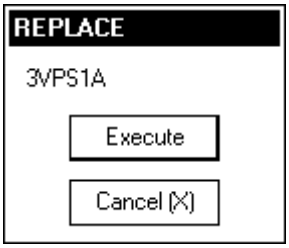
Check the [Install ENABLER] check box, select (CL) [OK] in response to “If you want to install the ENABLER KIT, select the [Install ENABLER] check box.”.



(ex. 3/12VPS1A)

(5)

Confirm windows for replacement is displayed. Select (CL) [Execute].



(ex. 3VPS1A)

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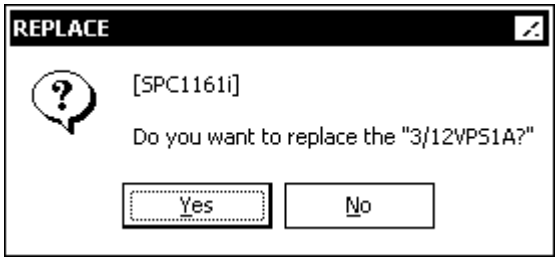
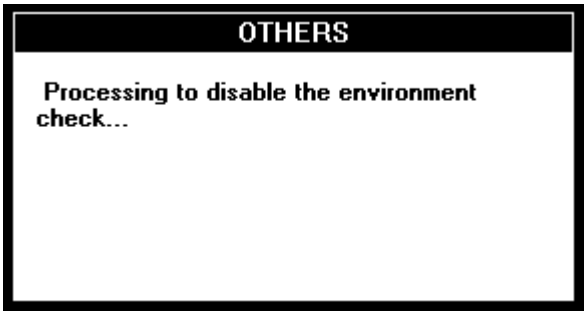
(6) <Check beginning of special part Replacement>
Select (CL) [Yes] in response to “Do you want to replace the "3/12VPSn?"”.



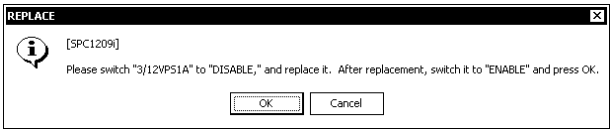
(ex. 3/12VPS1A)

(7) <Check matching power supply>
The SVP automatically checks the power supply to see if it is replaceable.

(8) <Environment monitor state>
“Processing to disable the environment check...” is displayed.



(9) <Special part replacement>
At this point refrain from pressing the [OK] button.
The message shown on the right is displayed.
(Reply with [OK] after replacing the special part.)



(ex. 3/12VPS1A)

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5-2 Power Supply Exchange

a. Set PS Enable/Disable Switch to Disable (DOWN).

> **⚠ CAUTION**
>
> A system down may be caused by setting the PS Enable/Disable switch of the power supply other than that to be replaced to “Disable”. Make sure that it is a power supply to be replaced.

b. Remove the power supply lever and disconnect the inlet cable.
c. Loosen the screw and remove the 3V power supply.
d. Confirm that PS Enable/Disable Switch of 3/12V power supply is set to Disable (DOWN).
e. Insert the 3/12V power supply and fasten the screw.
f. Connect the inlet cable (3/12VPSxx) and secure it with the lever.
g. Disconnect the dummy connector from the 3/12V power supply and connect the 12V power cable (3/12VPSxx-N) to it.

> **⚠ CAUTION**
>
> A system down may be caused if the 12V power cable is not connected to the power supply. Be sure to connect the 12V power cable to the power supply.

h. Set PS Enable/Disable Switch to Enable (UP).

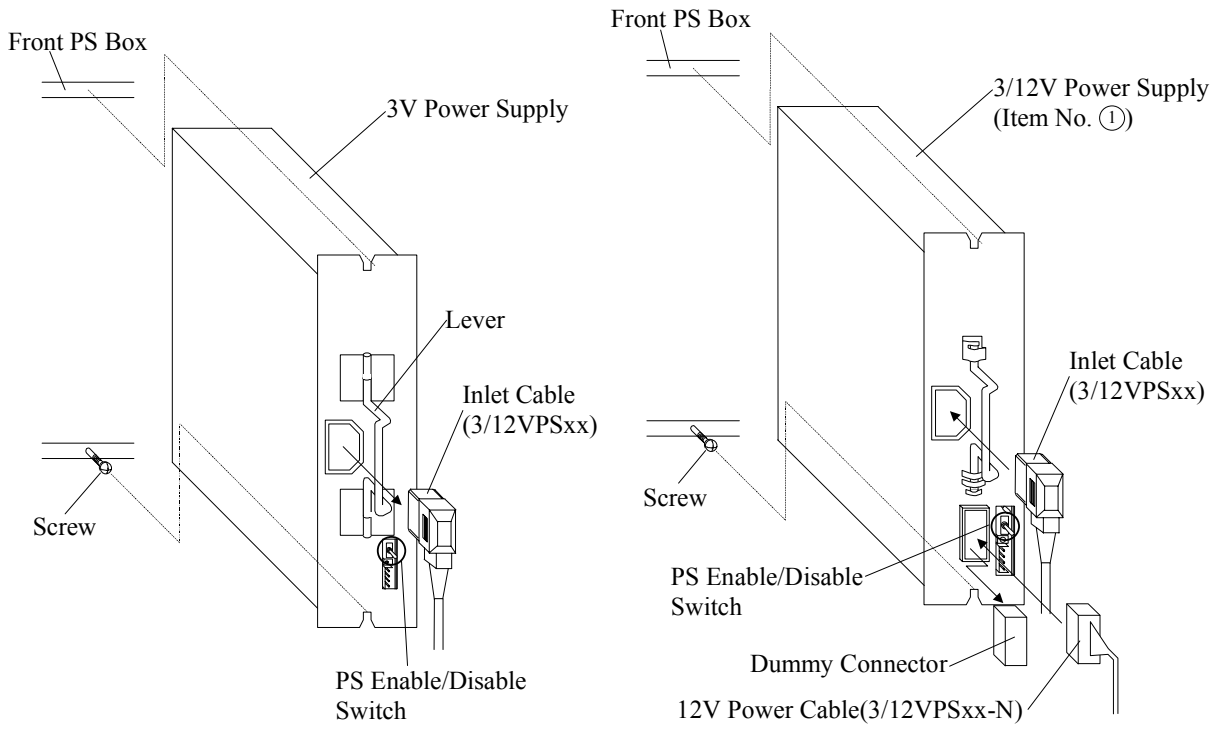

Fig. 3.16-14 Replacement of Power Supply (Item No.① in Parts List)

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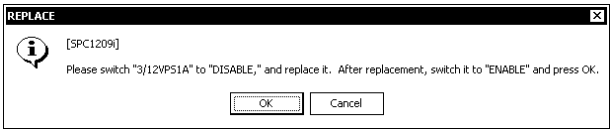
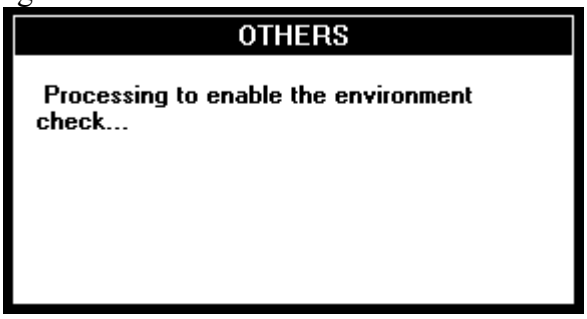
5-3 SVP Post-Procedure (Power Supply)

(1) <Check special part replacement>
Select (CL) [OK] in response to “Please switch "3/12VPSn" to "DISABLE," and replace it. After replacement, switch it to "ENABLE" and press OK.”.

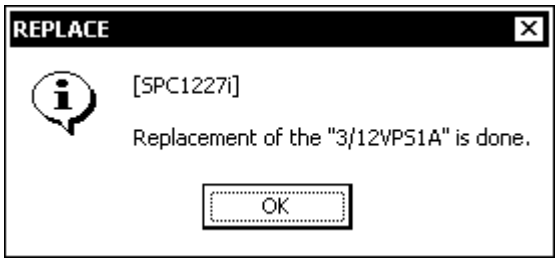


(ex. 3/12VPS1A)

(2) <Checking the environment monitor start processing>
“Processing to enable the environment check...” is displayed.



(3) <Checking the end of replacement>
Select (CL) [OK] in response to “Replacement of the "3/12VPSn" is done.”.



(ex. 3/12VPS1A)

(4) <Confirm status>
Confirm the status display.
If button is normal (The string is normally display), go to step (5).
If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

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(5) <Confirm Cluster>
If Cluster is blocked, recover it.
See SVP02-1110.

(6) <SIM Complete>
See SVP02-580.

(Multi Cabinet Model)
Close 'Cluster-X' window.
Close 'DKC' window.
Close 'Maintenance' window.

(Single Cabinet Model)
Close 'Cluster-X' window.
Close 'Controller' window.
Close 'Maintenance' window.

(7) Repeat carrying out of the procedure for the next switching power supply. When the replacement of all the power supplies is completed, go to Step 6.

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6. SVP Post Procedure

(1) <SVP window>

(2) <Changing the SVP operation mode>
Change the mode to [View Mode].

7. Attach the cover.

a. Attach the Front Logic Box cover.

8. Attach the nameplate.

a. Attach the nameplate regardless of the model number from the left of the cover.

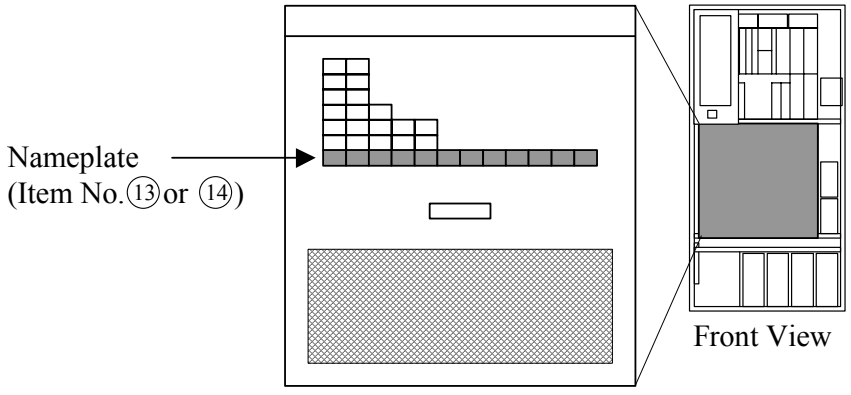

Fig. 3.16-15 Attachment of Nameplate (Item No.⑬ or ⑭ in Parts List)

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4. Hardware De-Installation

4.1 De-Installation of Additional Disk Adapter, Additional Disk Port Switch, Disk Path Expansion Kit and HDD Canister (DKC-F465I-FSW/FSW2, DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

Table 4.1-1 Parts List

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
1	DKC-F460I-200	Disk Adapter PCB	5513979-B	2	Color of PCB Lever: Blue
		Nameplate (HDS)	2105902-103	1	RSD
			2105903-103/203		HICAM/HICEF
		Nameplate (HP)	2105902-203	1	RSD
			2105903-303/403		HICAM/HICEF
2	DKC-F465I-FSW	FSW PCB	5513854-B	8	
		Nameplate (HDS)	2105894-8	1	RSD
			2105895-8/208		HICAM/HICEF
		Nameplate (HP)	2105894-108	1	RSD
			2105895-108/308		HICAM/HICEF
3	DKC-F465I-FSW2	FSW PCB	5513854-C	8	
		Nameplate (HDS)	2105894-9	1	RSD
			2105895-9/209		HICAM/HICEF
		Nameplate (HP)	2105894-109	1	RSD
			2105895-109/309		HICAM/HICEF
4	DKU-F455I-36K4	HDU450-36K1FC	5515544-A	4	
		Nameplate(HDS)	2105914-6/14/22	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-50/54/58	1	RSD/HICAM/HICEF
5	DKU-F455I-36K1	HDU450-36K1FC	5515544-A	1	
		Nameplate(HDS)	2105914-5/13/21	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-49/53/57	1	RSD/HICAM/HICEF
6	DKU-F455I-72J4	HDU450-72J1FC	5513873-A	4	
		Nameplate(HDS)	2105914-8/16/24	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-52/56/60	1	RSD/HICAM/HICEF
7	DKU-F455I-72J1	HDU450-72J1FC	5513873-A	1	
		Nameplate(HDS)	2105914-7/15/23	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-51/55/59	1	RSD/HICAM/HICEF
8	DKU-F455I-72K4	HDU450-72K1FC	5518492-A	4	
		Nameplate (HDS)	2105914-130/–/–	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-174/–/–	1	RSD/HICAM/HICEF
9	DKU-F455I-72K1	HDU450-72K1FC	5518492-A	1	
		Nameplate (HDS)	2105914-129/–/–	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-173/–/–	1	RSD/HICAM/HICEF

(To be continued.)

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(Continued from preceding sheet.)

No.	Model Number	Parts Name	Parts No.	Quantity	Remarks
10	DKU-F455I-146J4	HDU450-146J1FC	5518491-A	4	
		Nameplate (HDS)	2105914-128/166/168	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-160/162/164	1	RSD/HICAM/HICEF
11	DKU-F455I-146J1	HDU450-146J1FC	5518491-A	1	
		Nameplate (HDS)	2105914-127/165/167	1	RSD/HICAM/HICEF
		Nameplate (HP)	2105914-159/161/163	1	RSD/HICAM/HICEF
12	DKU-F455I-146JF	HDU450-146JSFC	5522731-A	4	
		Nameplate(HDS)	2105914-176/200/202	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-194/196/198	1	RSD/HICAM/HICEF
13	DKU-F455I-146JS	HDU450-146JSFC	5522731-A	1	
		Nameplate(HDS)	2105914-175/199/201	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-193/195/197	1	RSD/HICAM/HICEF
14	DKU-F455I-146JQ	HDU450-146JMFC	5522976-A	4	
		Nameplate(HDS)	2105914-204/222/224	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-226/228/230	1	RSD/HICAM/HICEF
15	DKU-F455I-146JM	HDU450-146JMFC	5522976-A	1	
		Nameplate(HDS)	2105914-203/221/223	1	RSD/HICAM/HICEF
		Nameplate(HP)	2105914-225/227/229	1	RSD/HICAM/HICEF

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4.1.1 Flowchart

There are four cases (① to ③) of these removal works as shown in the following table because two or more options are to be removed at the same time. Perform the work referring to the flowchart of each work.

Case	Option De-Installation Procedure	Page
①	When only HDD Canister is to be de-installed (DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/ 146J1/146J4/146JS/146JF/146JM/146JQ)	INST04-DKA-30
②	When HDD Canister and FSW are to be de-installed at the same time (DKC-F465I-FSW, DKU-F455I-36K1/36K4/72J1/72J4/ 72K1/72K4/146J1/146J4/146JS/146JF/146JM/146JQ)	INST04-DKA-30
③	When HDD Canister, DKA and FSW are to be de-installed at the same time (DKC-F460I-FSW2, DKC-F460I-200, DKU-F455I-36K1/36K4/72J1/72J4/72K1/72K4/146J1/146J4/ 146JS/146JF/146JM/146JQ)	INST04-DKA-30

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① When only HDD Canister is to be de-installed---------- [INST04-DKA-40 through 150]

1. Setting up the New Device Structure Information
↓
2. SVP pre procedure
↓
3. De-Installation Procedure of HDD Canister
↓
4. SVP post procedure

② When HDD Canister and FSW are to be de-installed at the same time
---------- [INST04-DKA-160 through 290]

1. Setting up the New Device Structure Information
↓
2. SVP pre procedure
↓
3. De-Installation Procedure of HDD Canister
↓
4. De-Installation Procedure of Disk Port Switch
↓
5. SVP post procedure

③ When HDD Canister, DKA and FSW are to be de-installed at the same time
---------- [INST04-DKA-300 through 470]

1. Setting up the New Device Structure Information
↓
2. SVP pre procedure
↓
3. De-Installation Procedure of HDD Canister
↓
4. De-Installation Procedure of Disk Port Switch and Disk Path Expansion Kit
↓
5. De-Installation Procedure of Disk Adapter
↓
6. SVP post procedure

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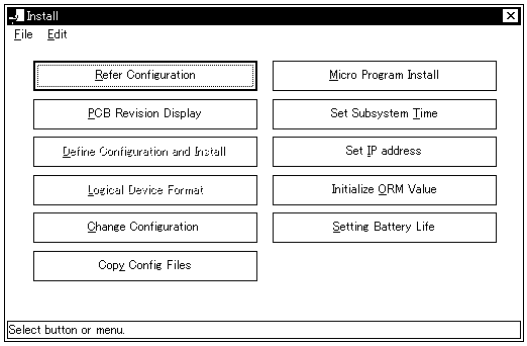
4.1.2 When only HDD Canister is to be de-installed (DKU-F455I-36K4/36K1/72J4/72J1/ 72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

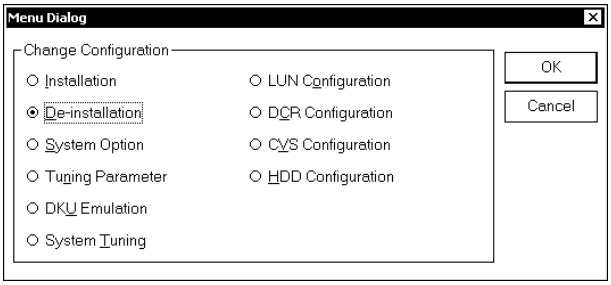
1. Setting up the New Device Structure Information

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

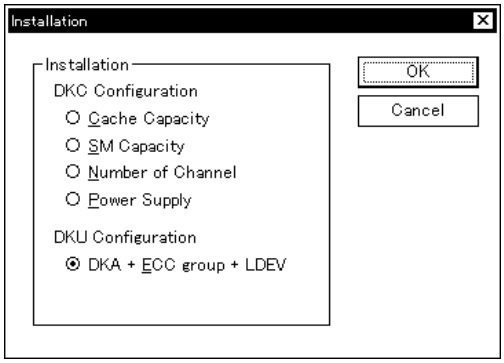
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [DKA + ECC group + LDEV], and select (CL) [OK].



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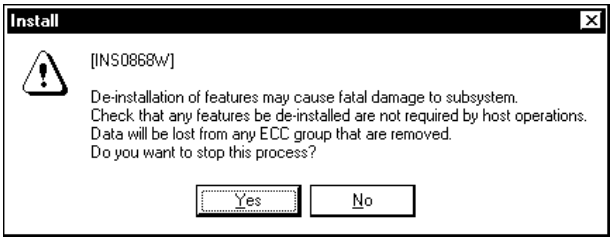
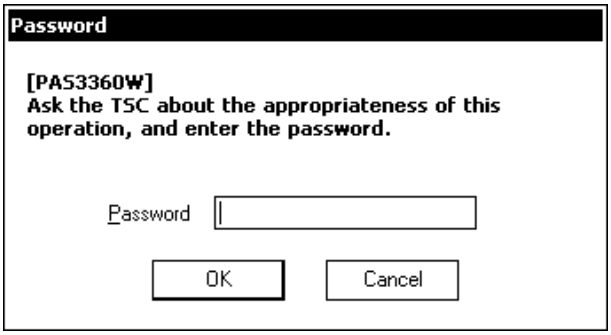
5.

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].



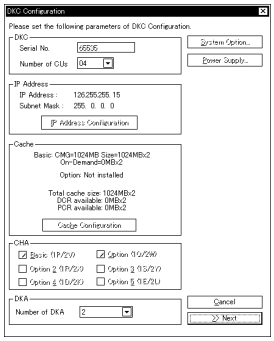
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.

Note: A part other than the CU and DKA cannot be removed at the same time.

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



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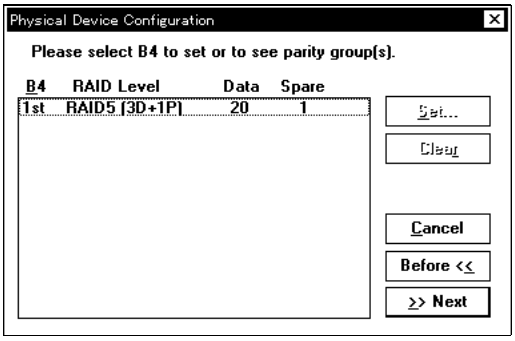
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

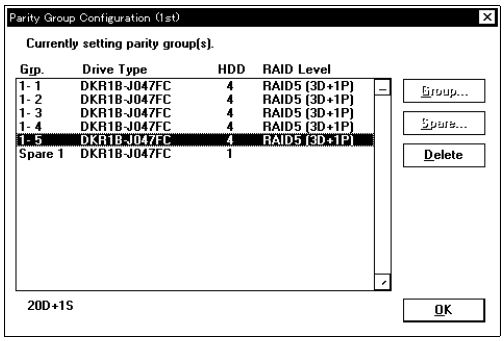
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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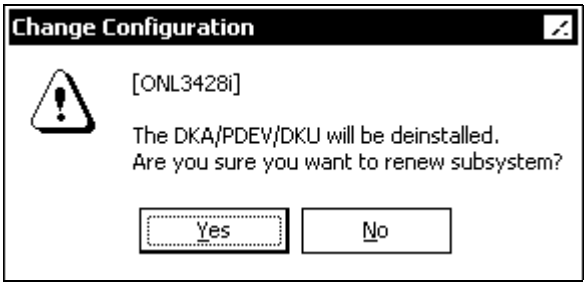
2. SVP pre procedure

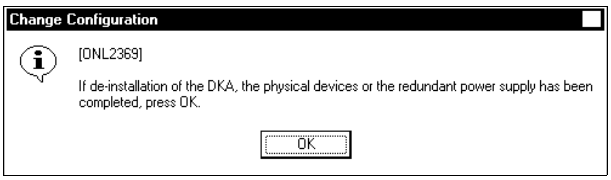
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-40 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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3. De-Installation Procedure of HDD Canister

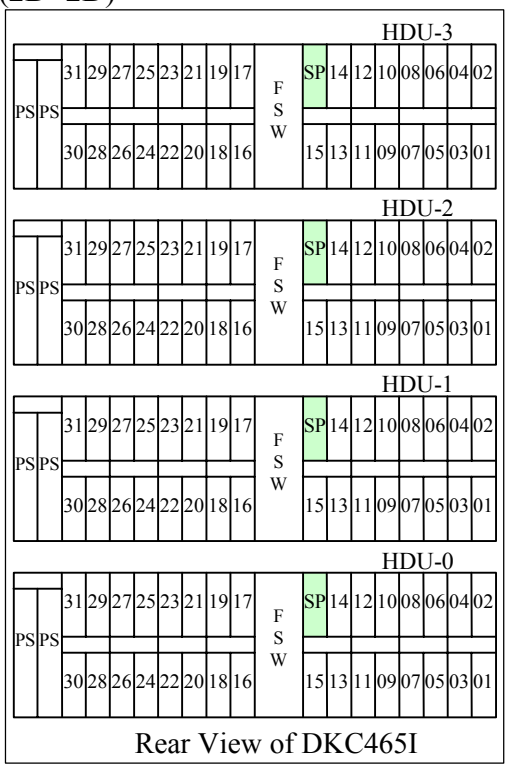
3-1 Confirmation of position to de-install HDD canister

a. Confirm a position to de-install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 4.1.2-1 Data Drive/Parity Drive Expansion Sequence (1 DKA Pair Model)

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

Table 4.1.2-1 Relation between HDDs installation order and RAID group number (1 DKA Pair Model)

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

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

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

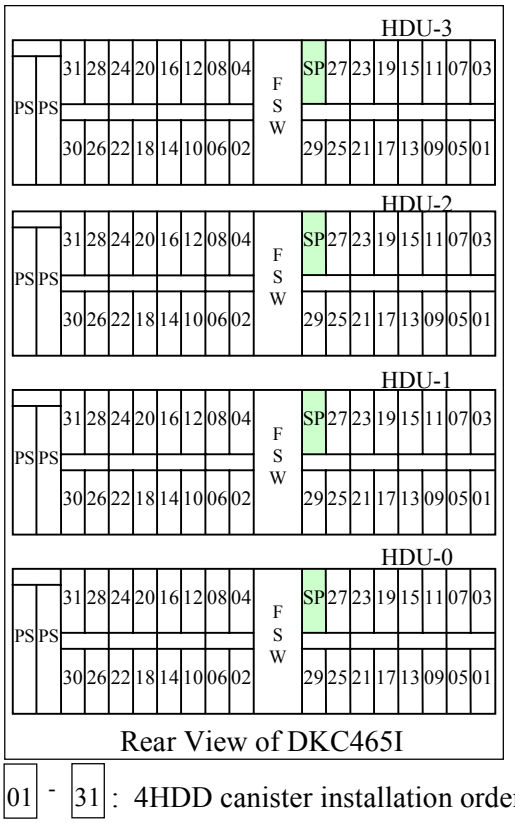

Fig. 4.1.2-2 Data Drive/Parity Drive Expansion Sequence

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

Table 4.1.2-2 Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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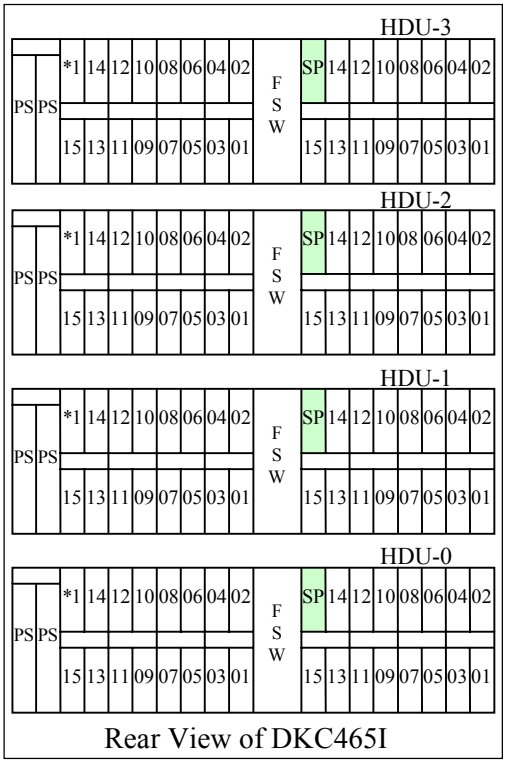
ii. RAID5(7D+1P)



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

Fig. 4.1.2-2A Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

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

Table 4.1.2-2A Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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

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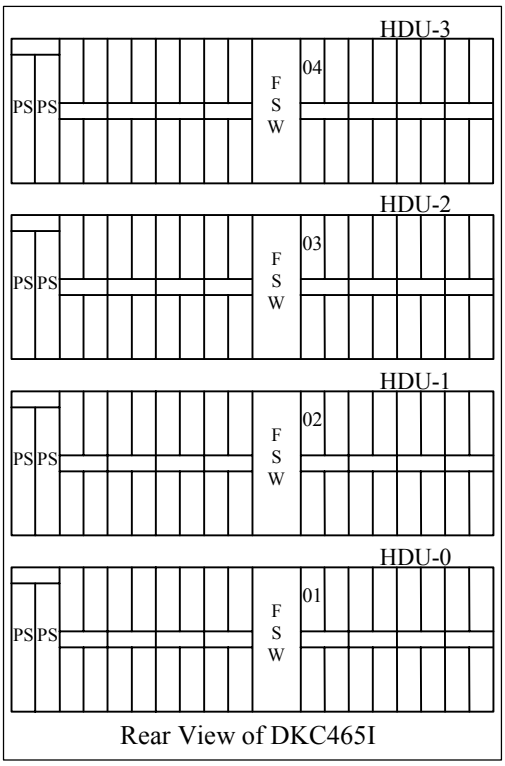
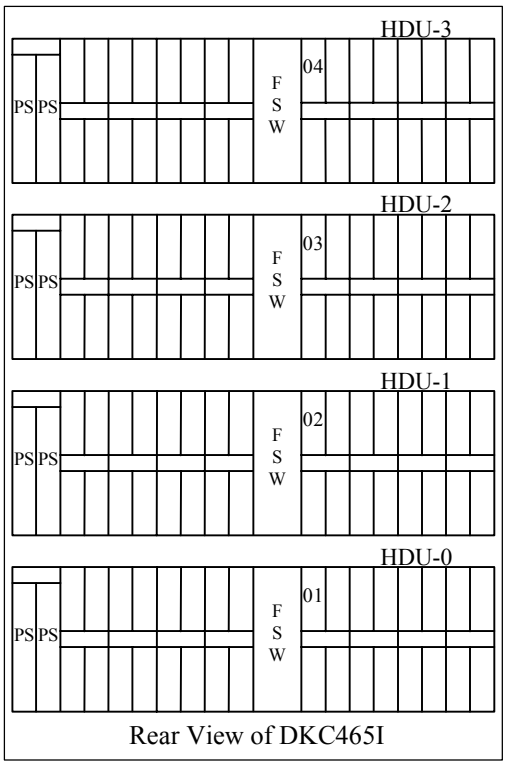
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

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



Full-spec Model (2DKA Pairs Model)



01 - 04 : Spare HDD canister installation order

Fig. 4.1.2-3 Spare Drive Expansion Sequence

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3-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

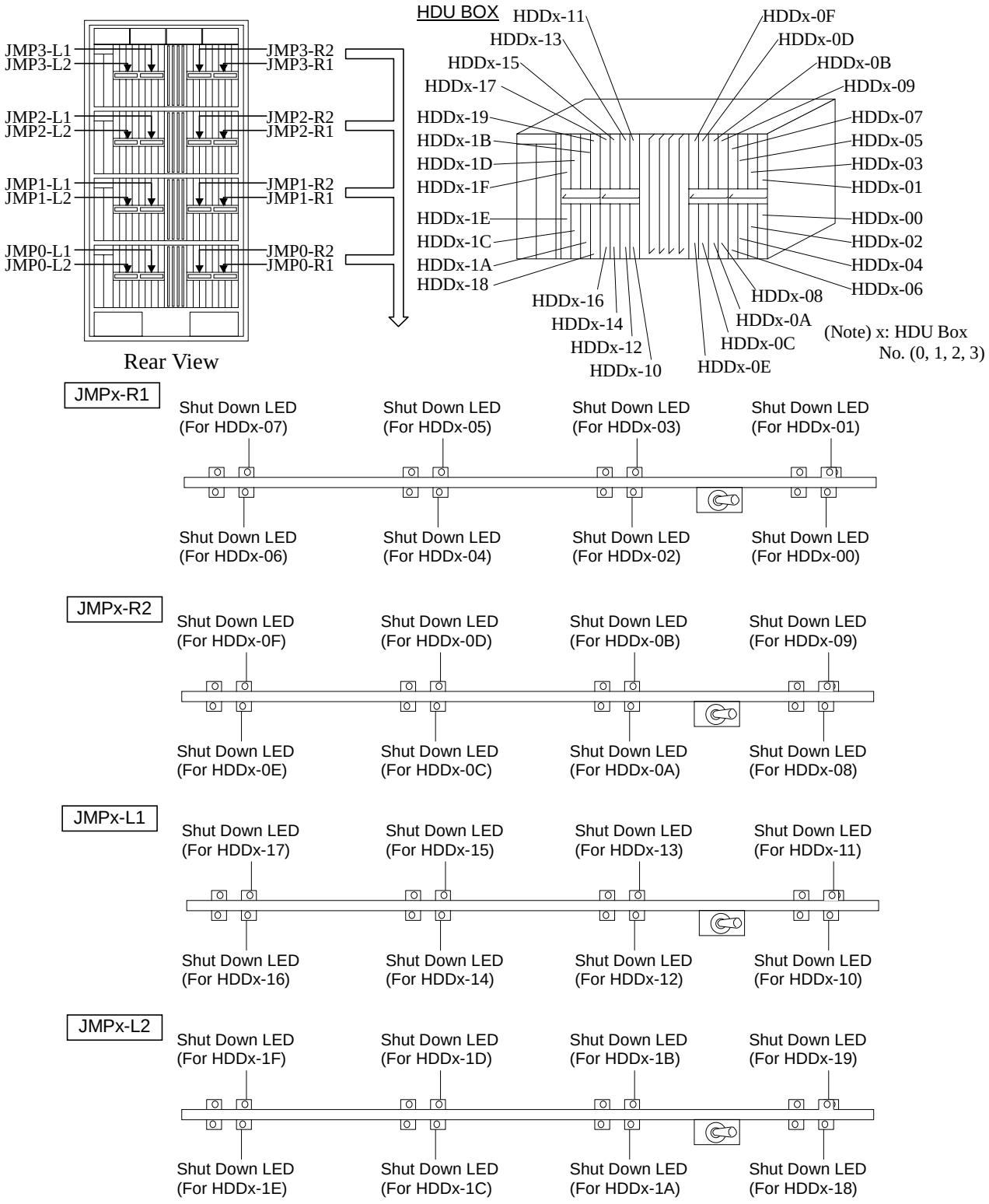

Fig. 4.1.2-4 Location of Shut Down LED

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3-3 De-installation of the HDD canister.

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

⚠ CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

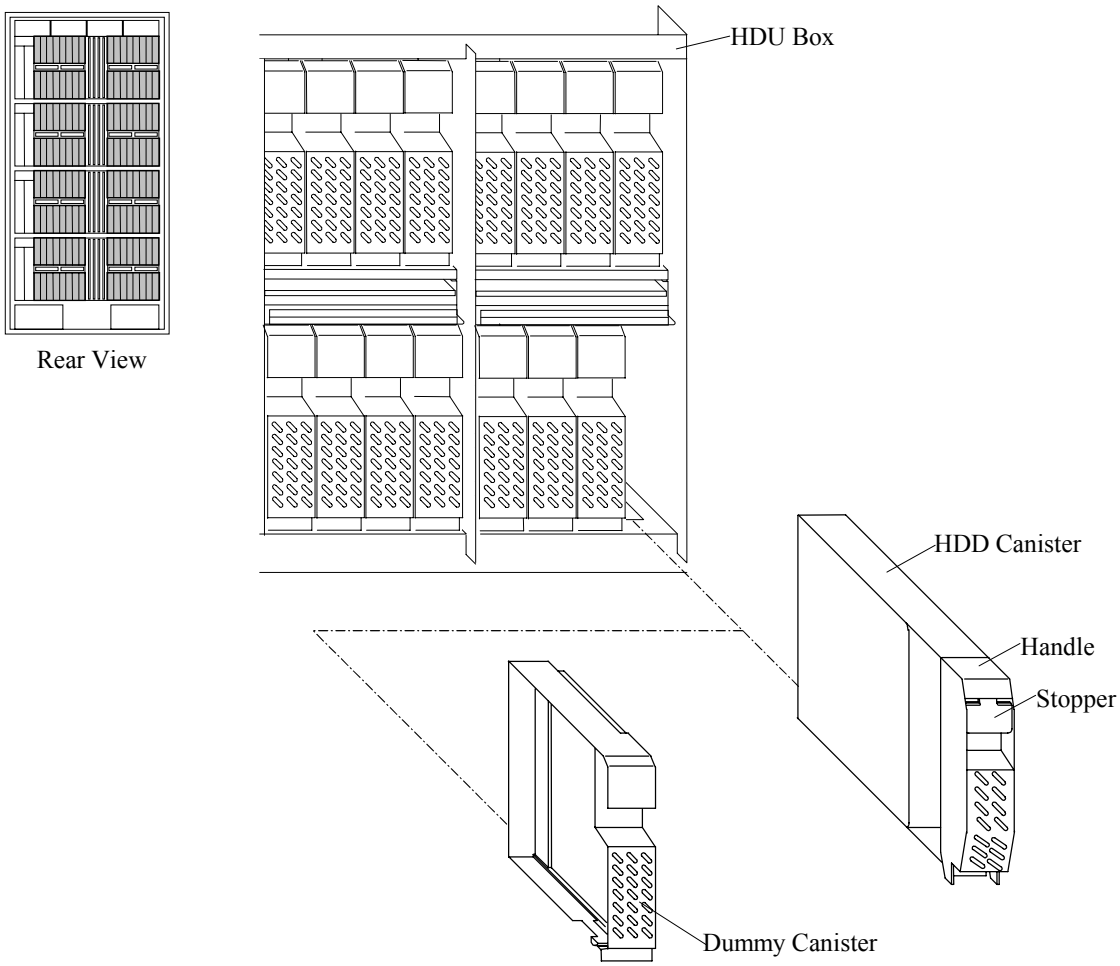

Fig. 4.1.2-5 De-Installation of HDD Canister

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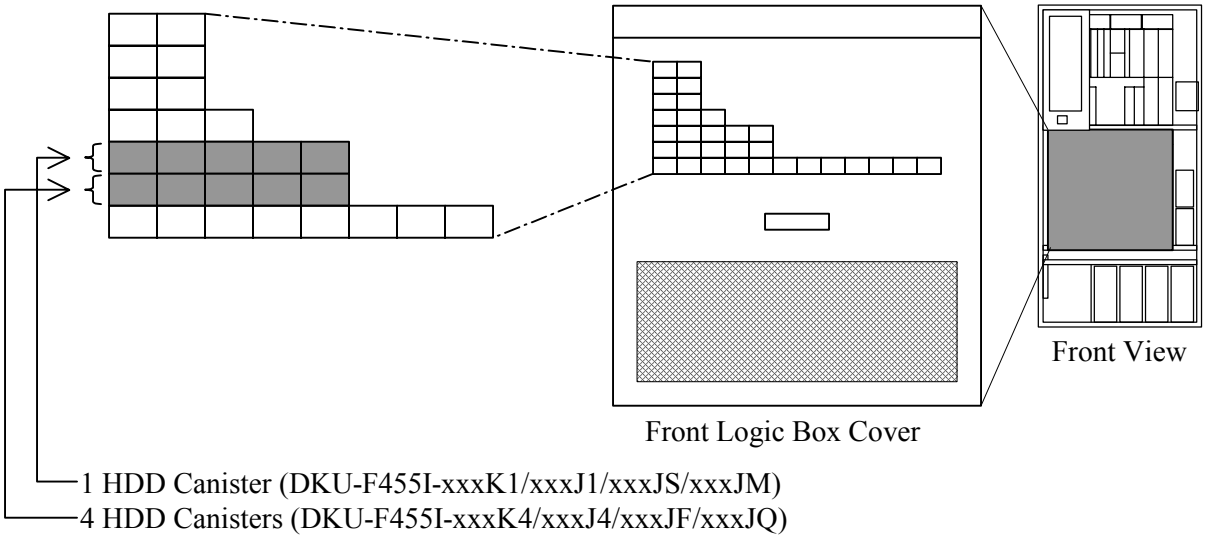
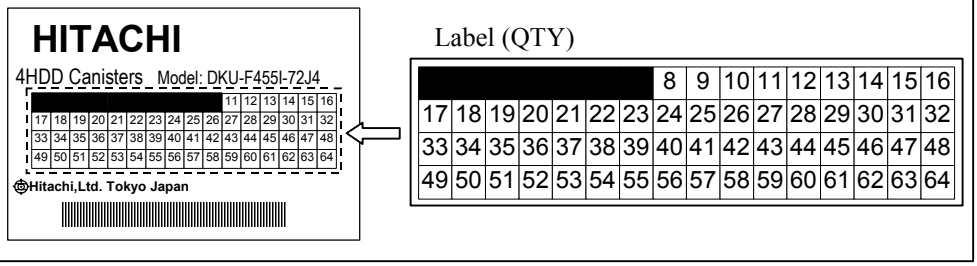
3-4 Change of the Nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.2-6 Change of Nameplate

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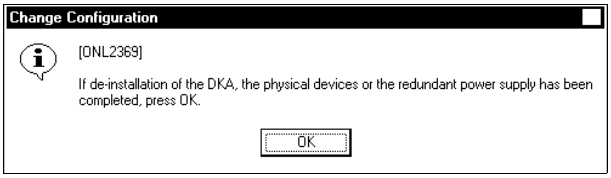
4. SVP post procedure

1.

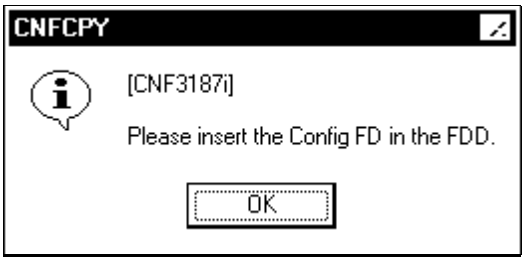
Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



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.

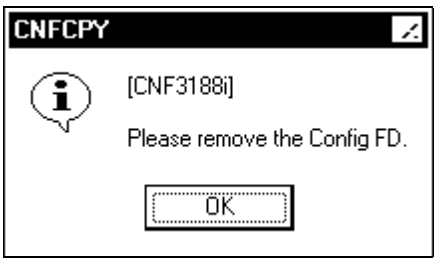
3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].



4.

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



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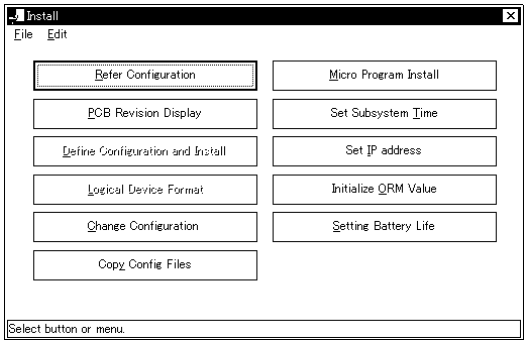
5.

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



6. <Mode Change>
Change the mode to View Mode.

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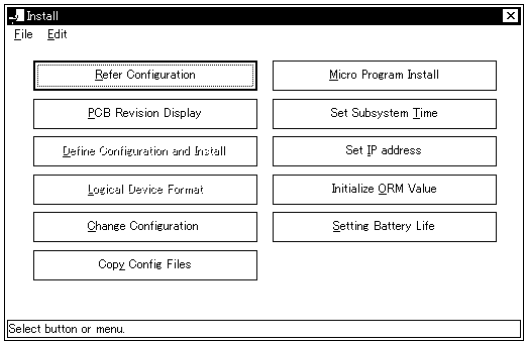
4.1.3 When HDD Canister and FSW are to be de-installed at the same time (DKC-F465I-FSW, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

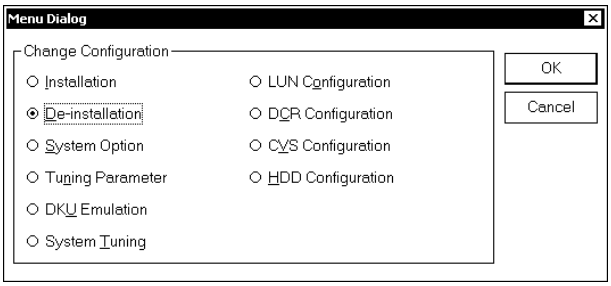
1. Setting up the New Device Structure Information

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

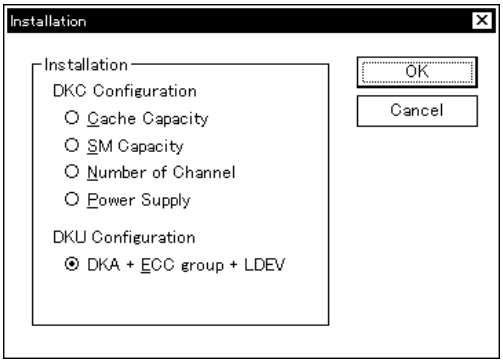
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [DKA + ECC group + LDEV], and select (CL) [OK].



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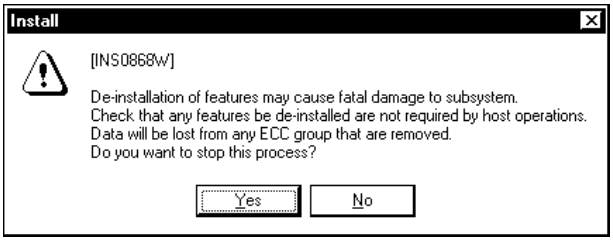
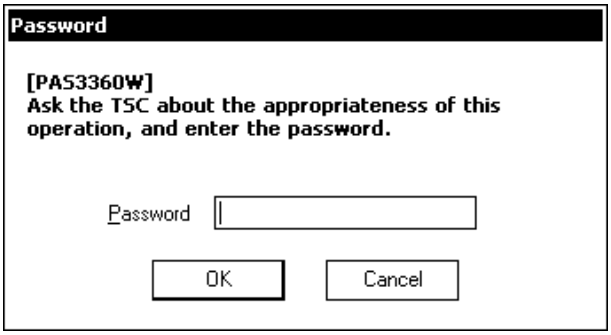
5.

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].



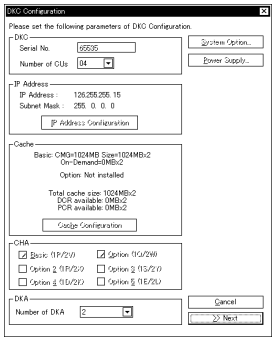
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.

Note: A part other than the CU and DKA cannot be removed at the same time.

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



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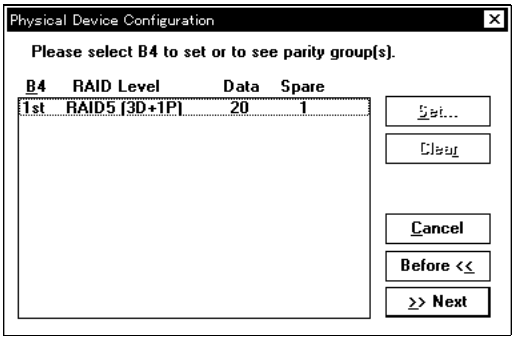
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
In the case of only DKA de-installation, select (CL) [>>Next]. Go to step 2.
Detailed procedure is 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].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

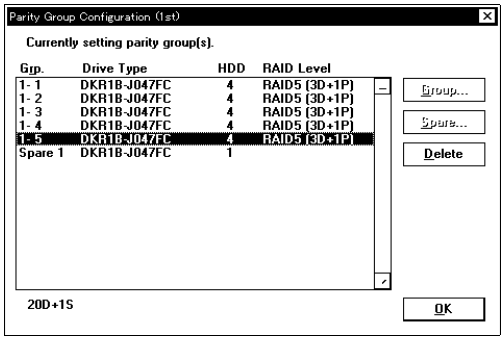
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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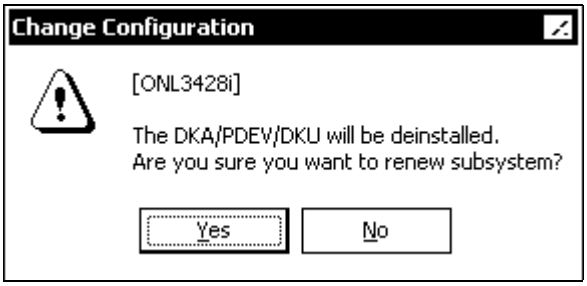
2. SVP pre procedure

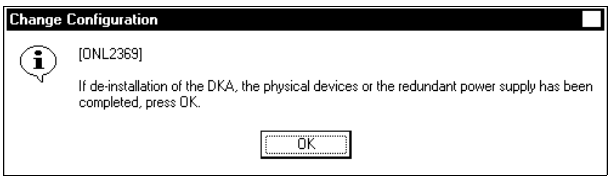
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-160 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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3. De-Installation Procedure of HDD Canister

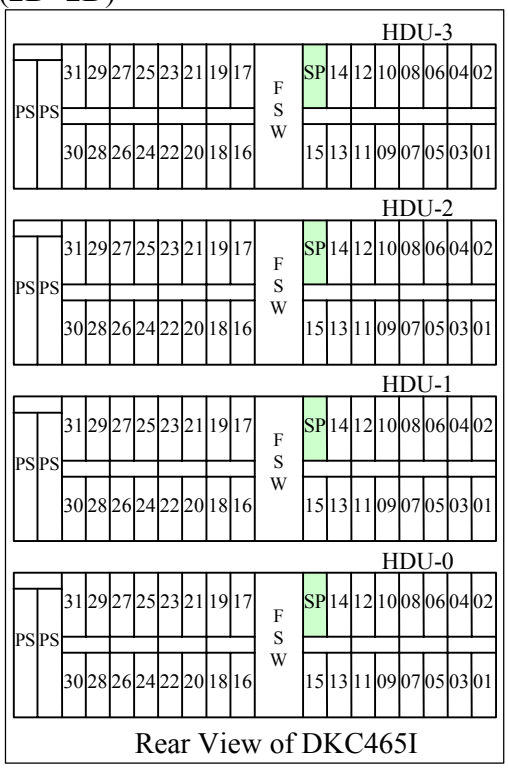
3-1 Confirmation of position to de-install HDD canister

a. Confirm a position to de-install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 4.1.3-1 Data Drive/Parity Drive Expansion Sequence (1 DKA Pair Model)

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

Table 4.1.3-1 Relation between HDDs installation order and RAID group number (1 DKA Pair Model)

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

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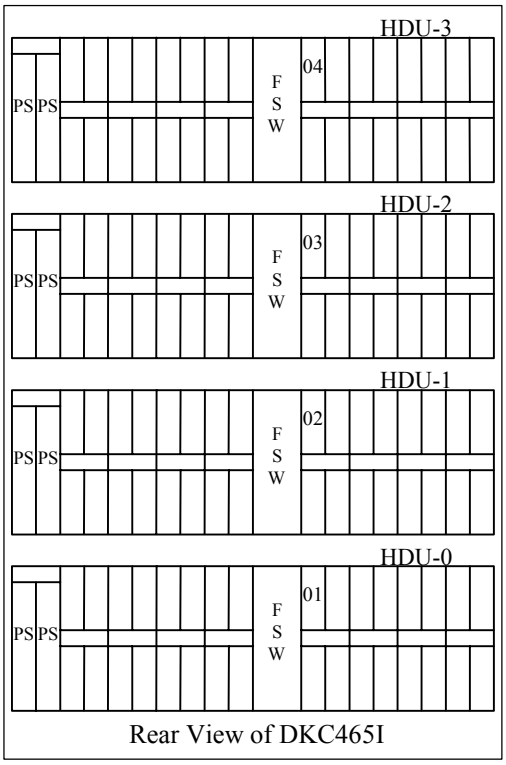
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

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



01 - 04 : Spare HDD canister installation order

Fig. 4.1.3-2 Spare Drive Expansion Sequence

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Blank Sheet

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3-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

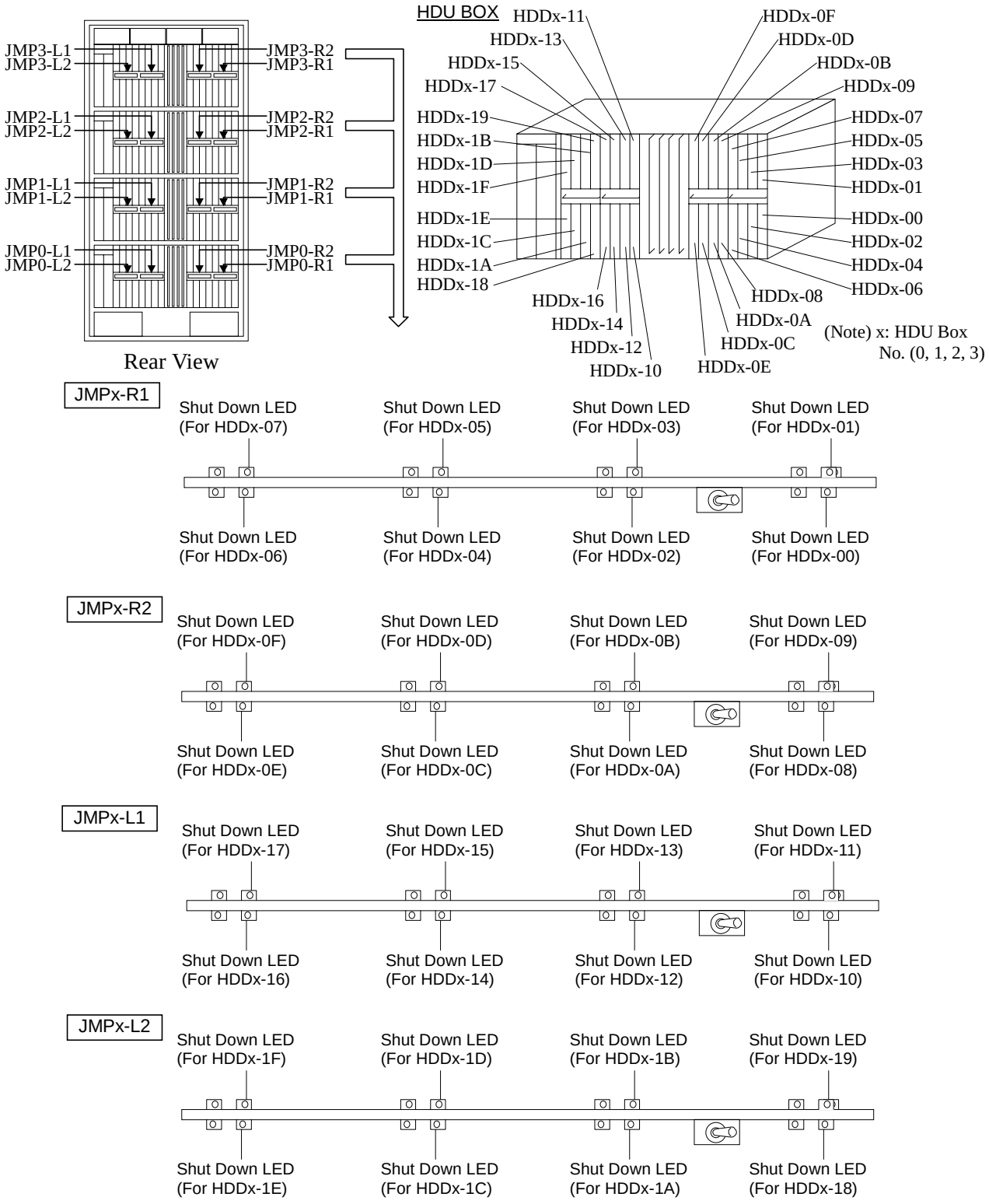

Fig. 4.1.3-3 Location of Shut Down LED

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3-3 De-installation of the HDD canister.

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

⚠ CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

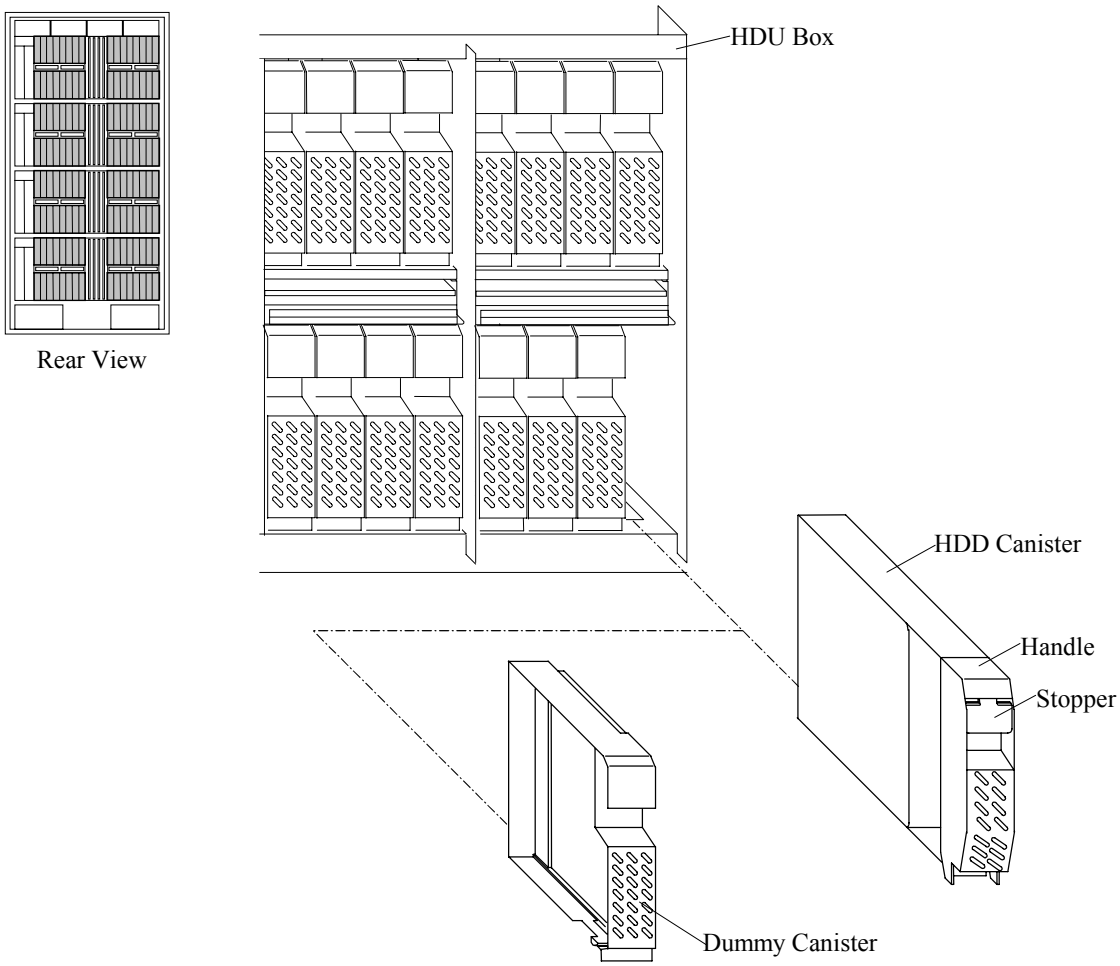

Fig. 4.1.3-4 De-Installation of HDD Canister

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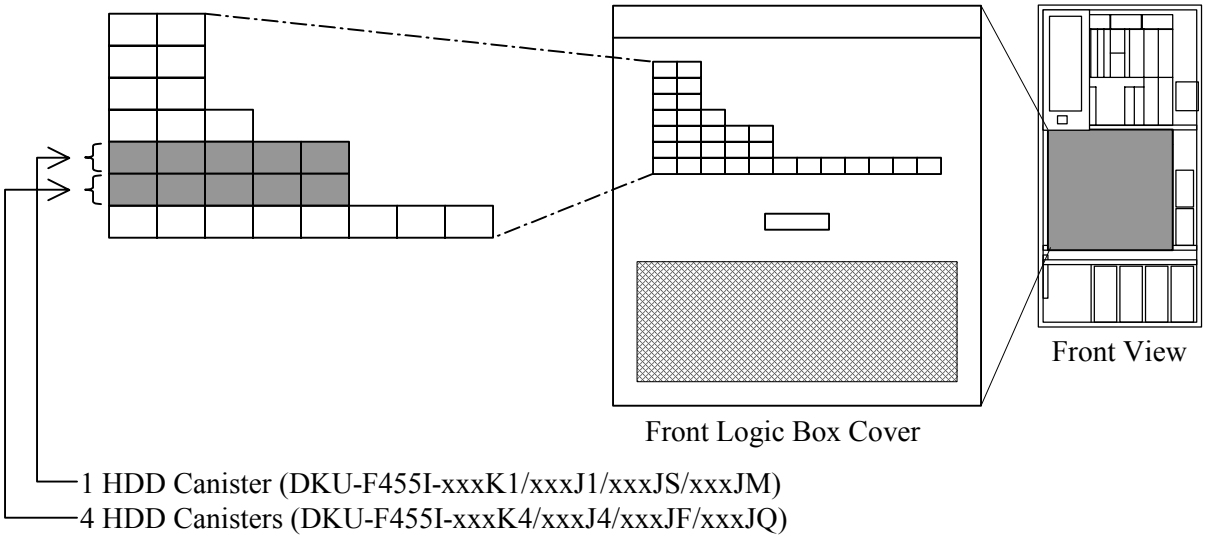
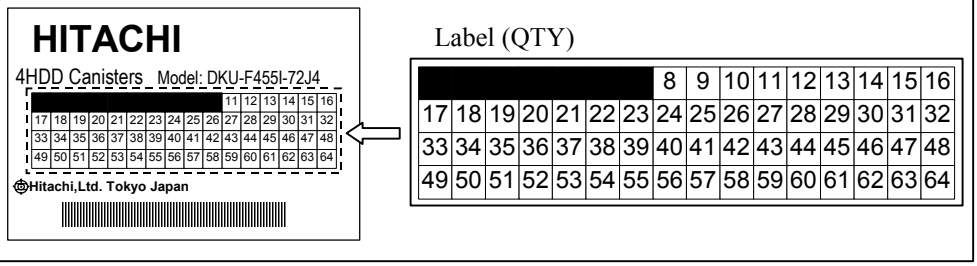
3-4 Change of the Nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.3-5 Change of Nameplate

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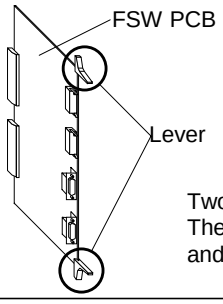
4. De-Installation Procedure of Disk Port Switch

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.

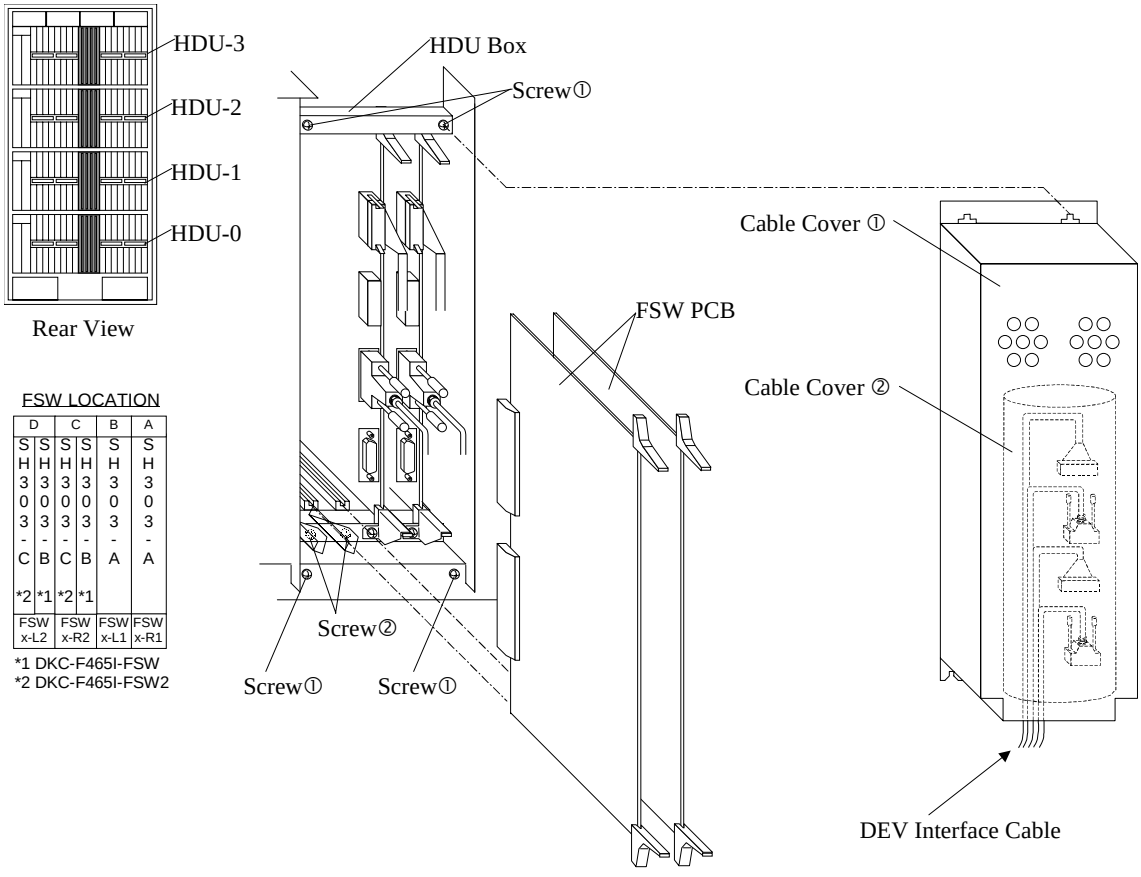
4-1 Remove the PCBs.

NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used. The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

a. Loosen the four screws① and remove the cable covers①.
b. Loosen the two screws② and rotate the stoppers.
c. Remove the FSW PCBs.
d. Attach the cable covers① stored the cable covers② and fasten the four screws①.



FSW LOCATION

D		C		B	A
SH3003-C *2	SH3003-B *1	SH3003-C *2	SH3003-B *1	SH3003-A	SH3003-A
FSW x-L2		FSW x-R2		FSW x-L1	FSW x-R1

*1 DKC-F465I-FSW
*2 DKC-F465I-FSW2

Fig. 4.1.3-6 Removal of FSW PCBs

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4-2 Removal of the nameplate.

a. Remove the nameplate from front Logic Box cover.

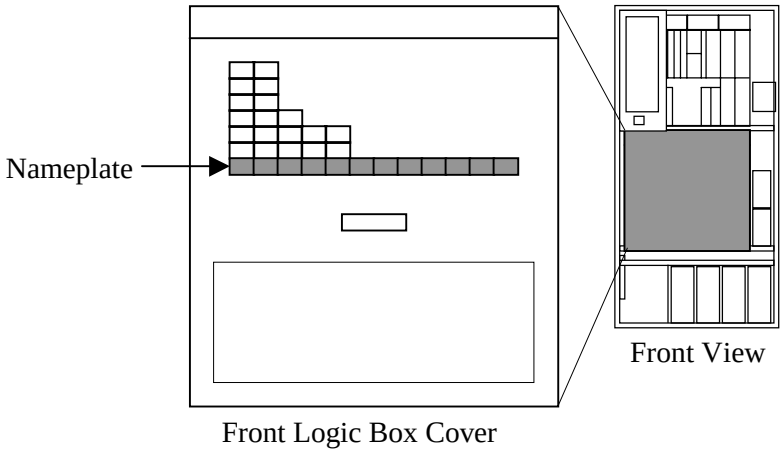

Fig. 4.1.3-7 Removal of Nameplate

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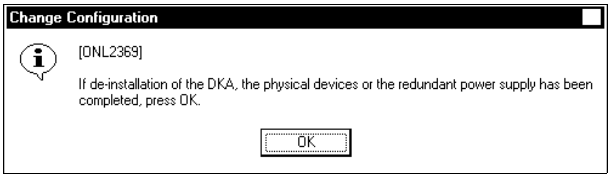
5. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



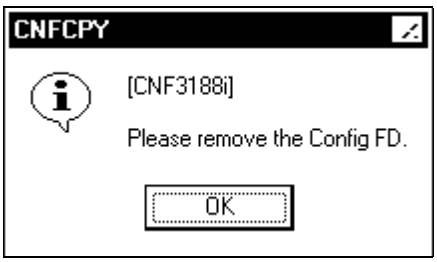
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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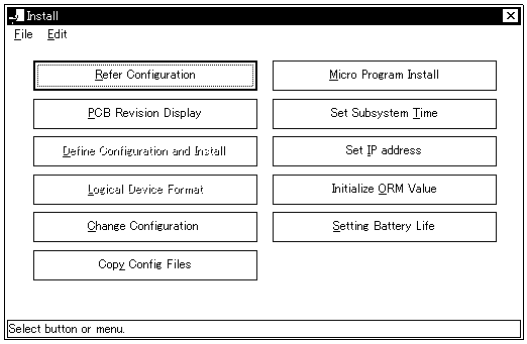
5.

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



6. <Mode Change>
Change the mode to View Mode.

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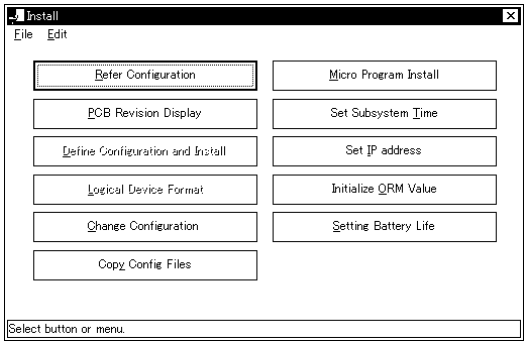
4.1.4 When HDD Canister, DKA and FSW are to be de-installed at the same time (DKC-F465I-FSW2, DKC-F460I-200, DKU-F455I-36K4/36K1/72J4/72J1/72K4/72K1/146J4/146J1/146JF/146JS/146JQ/146JM)

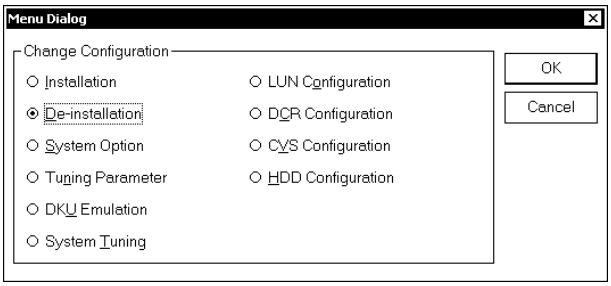
1. Setting up the New Device Structure Information

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

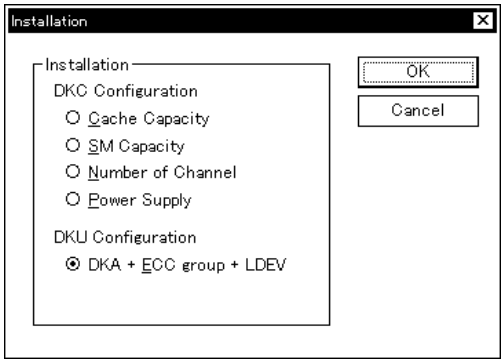
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [DKA + ECC group + LDEV], and select (CL) [OK].



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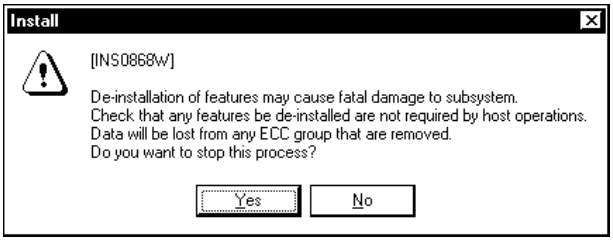
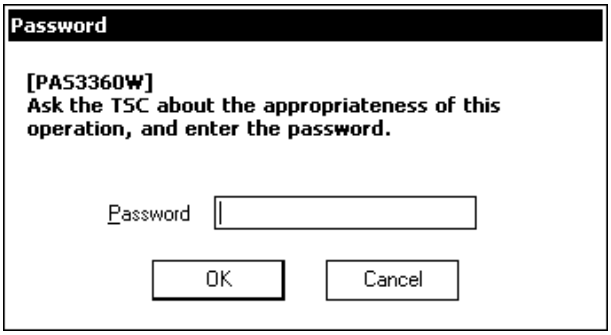
5.

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].



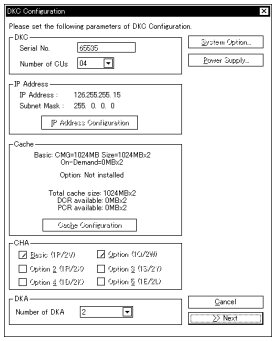
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

7. <Update Configuration Information>
Set the item to be de-installed for DKC and DKA in the ‘DKC Configuration’ window.

When decreasing the CUs, change the “Number of CUs”.
When decreasing the DKAs, change the “Number of DKA”.

Note: A part other than the CU and DKA cannot be removed at the same time.

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



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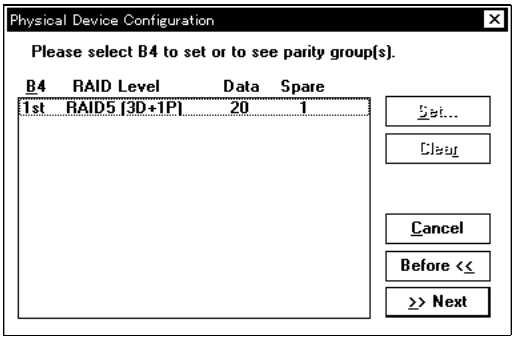
8. Change Drive Configuration Information>
Set drive configuration according to the 'Physical Device Configuration' screen displaying the mounted B4 based on the result of setting of DKU mount pattern.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk. The routine proceeds to Step 8-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].
Selecting (CL) [Before<<] returns you to the previous screen.



[For the case of the multi cabinet model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

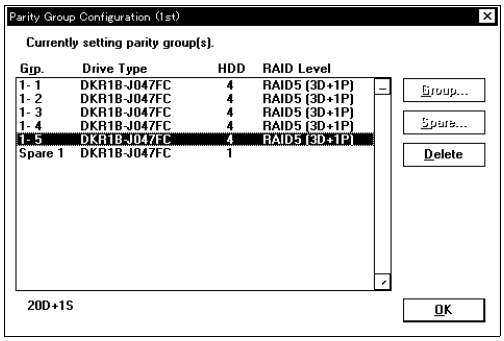
Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[For the case of the single cabinet model]

B4	Location	Remarks
1st	HDU-R0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-R0, 1, 2, 3	HDD-X10 ~ X1F

8-1. <Define Parity Group>
Select (CL) the group to be de-installed and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.
After setting, select (CL) [OK]. Return to step 8.

Grp*: A parity group where RAID Concatenation is installed.



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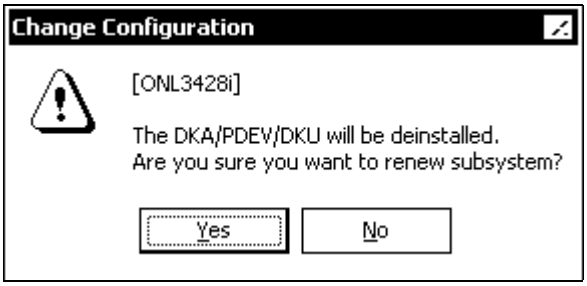
2. SVP pre procedure

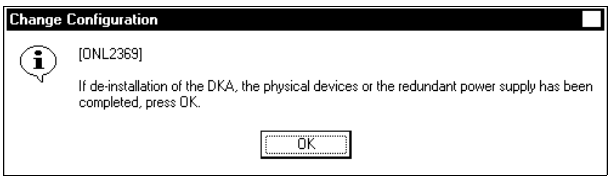
1. <Start de-installation>
   Select (CL) [Yes] in response to “The DKA/PDEV/DKU will be deinstalled. Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-DKA-300 step 2.



2.

   At this point refrain from pressing the [OK] button.
   “If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK.” shown in the right figure.



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3. De-Installation Procedure of HDD Canister

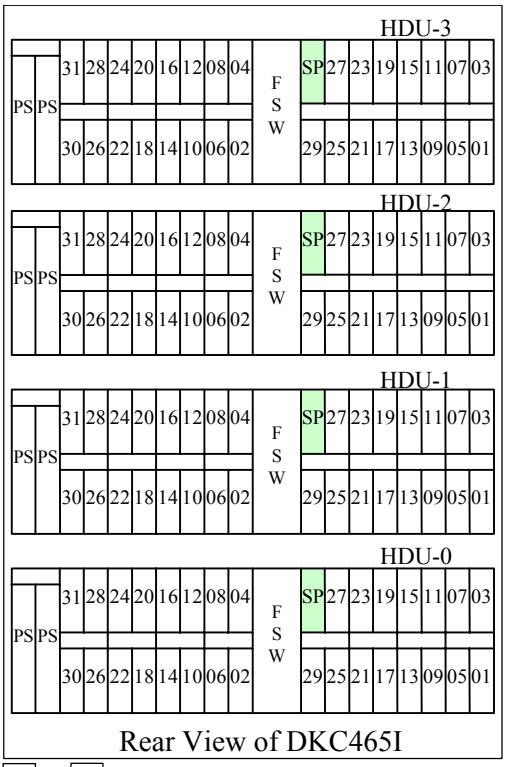
3-1 Confirmation of position to de-install HDD canister

a. Confirm a position to de-install HDD canister.

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

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

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



01 - 31 : 4HDD canister installation order

Fig. 4.1.4-1 Data Drive/Parity Drive Expansion Sequence

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

Table 4.1.4-1 Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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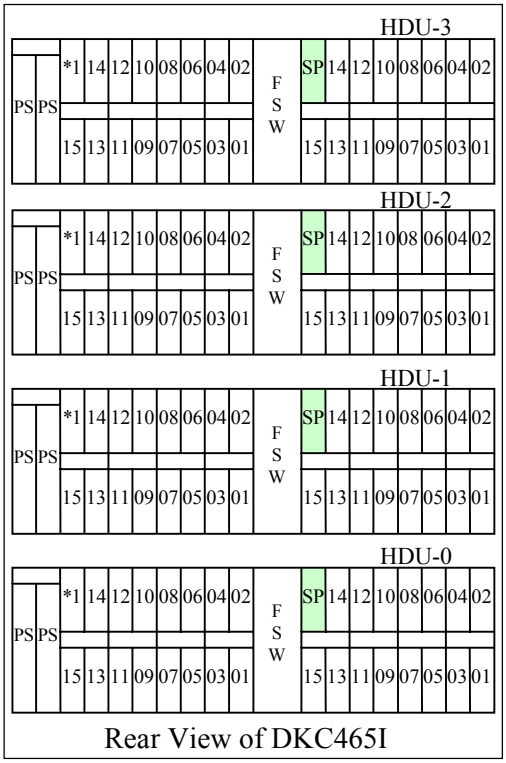
ii. RAID5(7D+1P)



01 - 15 : 8HDD canister installation order

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

Fig. 4.1.4-1A Data Drive/Parity Drive Expansion Sequence (2 DKA Pairs Model)

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

Table 4.1.4-1A Relation between HDDs installation order and RAID group number (2 DKA Pairs Model)

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

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

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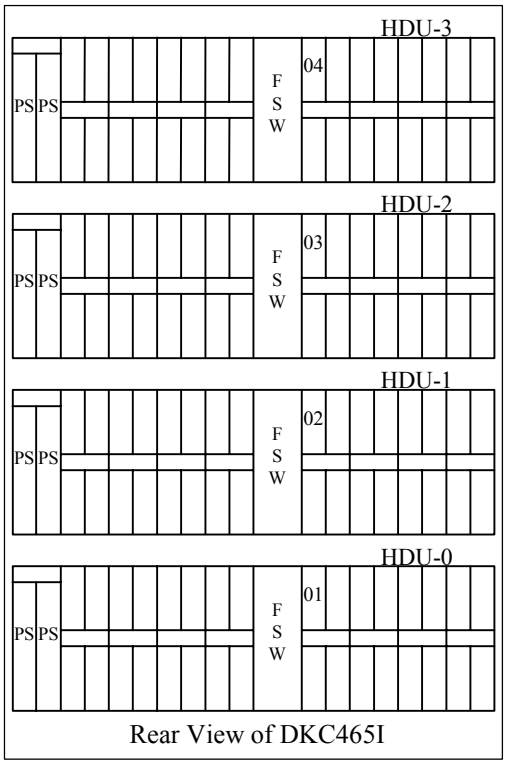
No.	Model Number	Model Name	Data and Parity
1	DKU-F455I-36K1/72J1/72K1/146J1/146JS/146JM	1 HDD Canister	Spare Drive

Full-spec Model (2DKA Pairs Model)



01 - 04 : Spare HDD canister installation order

Fig. 4.1.4-2 Spare Drive Expansion Sequence

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3-2 Confirmation of Shut Down LED.

a. Confirm the Shut Down LED on the JMP PCB. (It should be RED.)

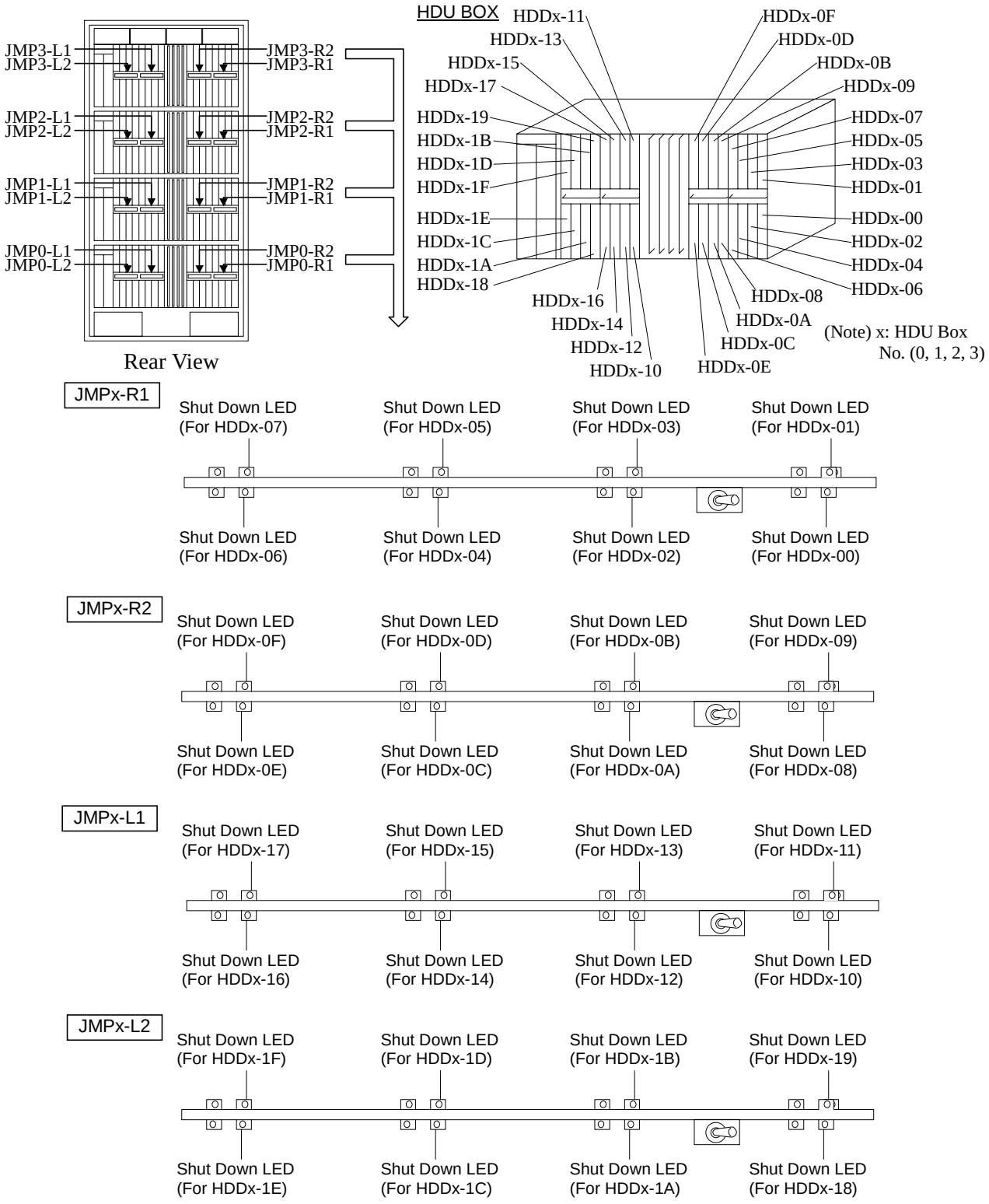

Fig. 4.1.4-3 Location of Shut Down LED

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3-3 De-installation of the HDD canister.

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

⚠ CAUTION

A system down may be caused by a removal of an HDD canister other than that to be removed. Make sure that it is the HDD canister to be removed.

a. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.
b. Insert the dummy canister to the HDU Box.

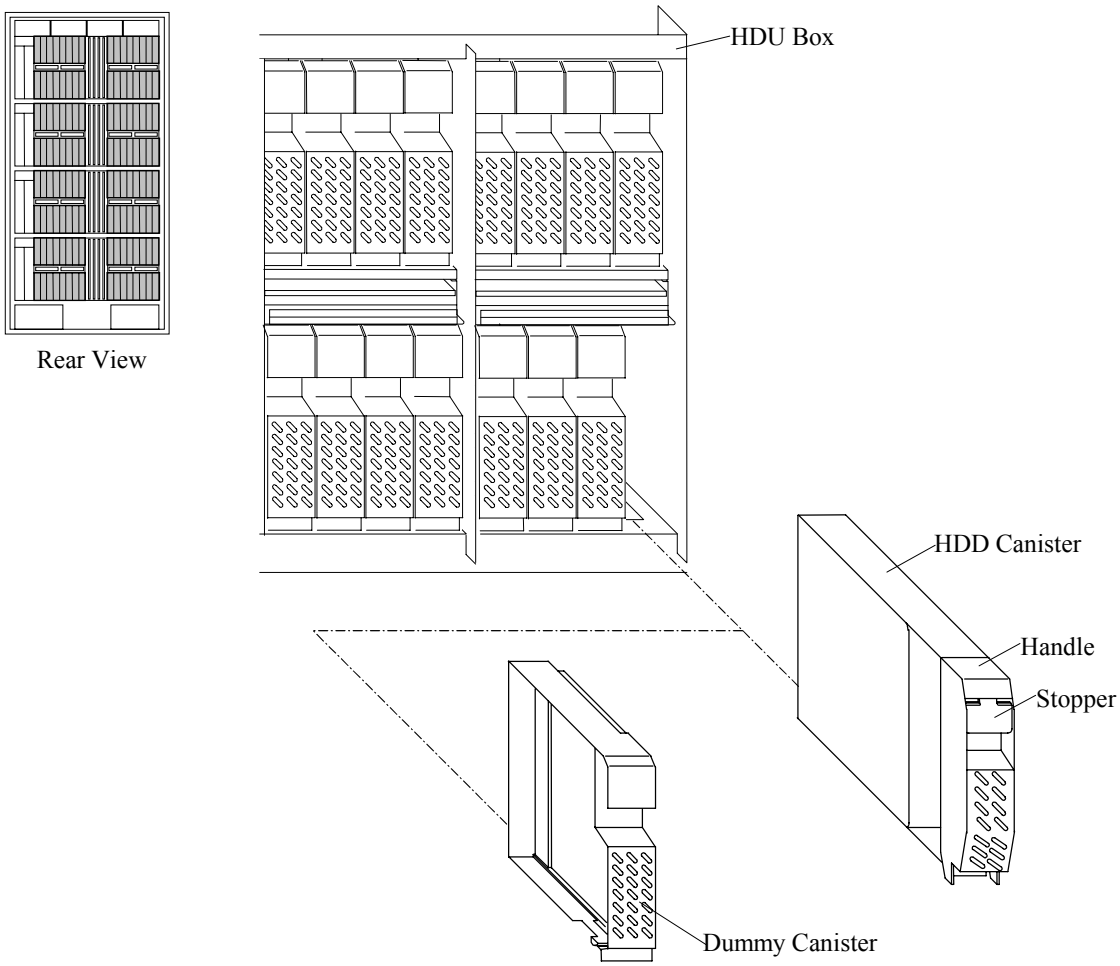

Fig. 4.1.4-4 De-Installation of HDD Canister

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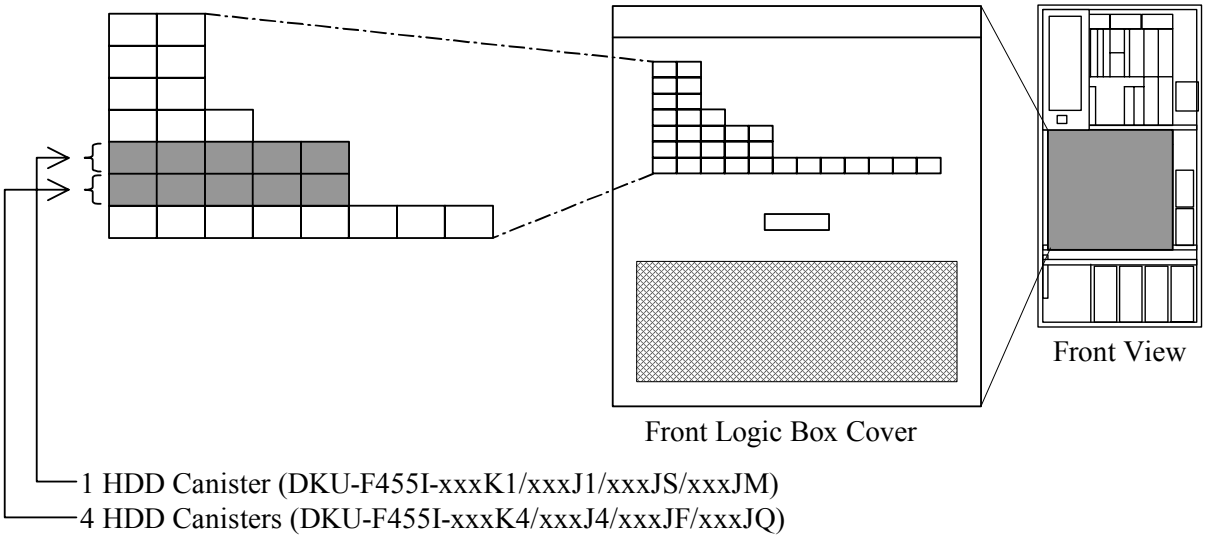
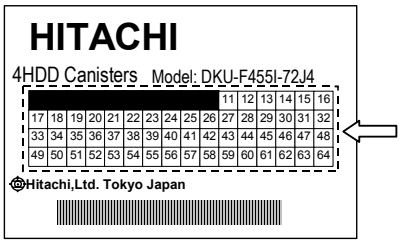
3-4 Change of the Nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.



[Example]

When DKU-F455I-72J4s are removed from 10 sets to 7sets



Label (QTY)

							8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Fig. 4.1.4-5 Change of Nameplate

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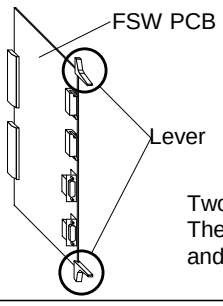
4. De-Installation Procedure of Disk Path Expansion Kit

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.

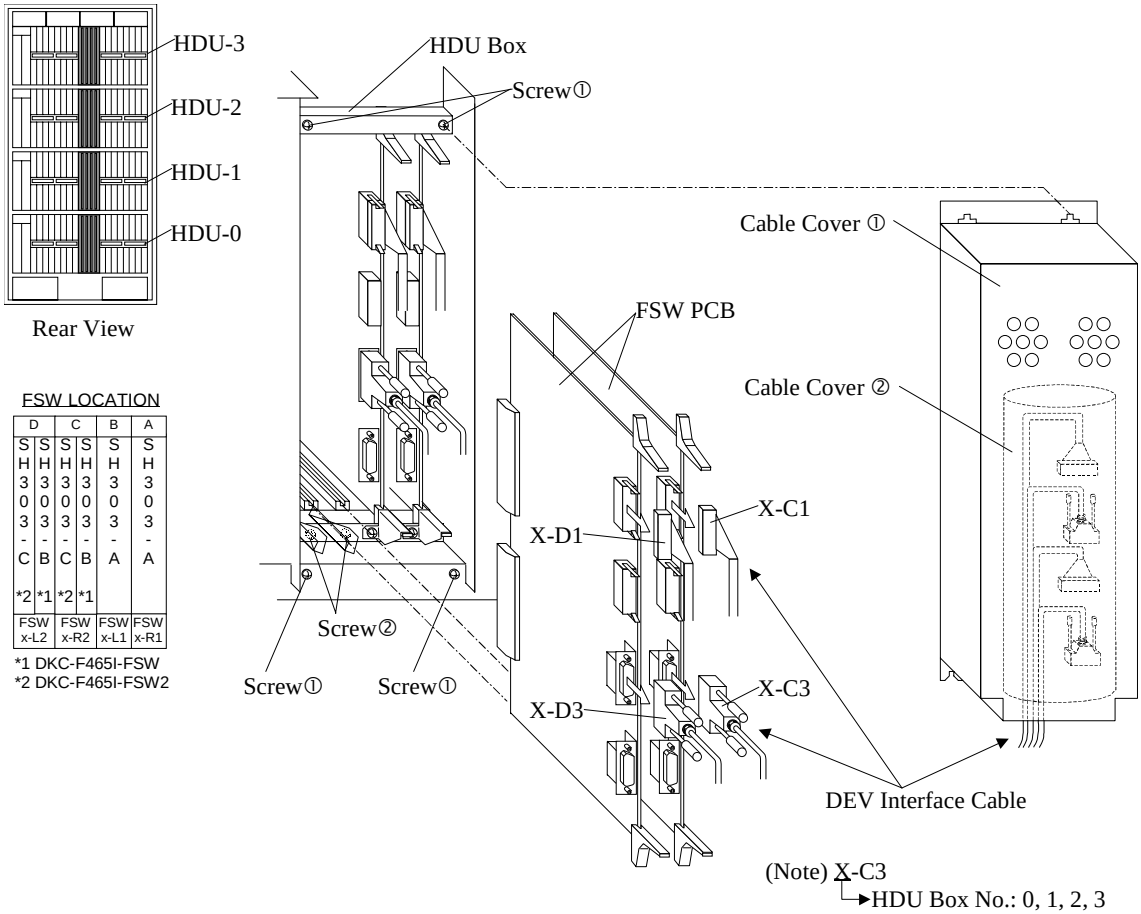
4-1 Remove the PCBs.

NOTICE:



Two types of levers for inserting/ removing the FSW, large and small ones, are used. The levers were enlarged to make the operation easier, accordingly their performance and function are the same.

a. Loosen the four screws① and remove the cable covers①.
b. Disconnect the cables from FSW PCBs and insert the cables to the cable covers②.
c. Loosen the two screws② and rotate the stoppers.
d. Remove the FSW PCBs.
e. Attach the cable covers① stored the cable covers② and fasten the four screws①.



FSW LOCATION

D		C		B	A
SH3003-C *2	SH3003-B *1	SH3003-C *2	SH3003-B *1	SH3003-A	SH3003-A
FSW x-L2		FSW x-R2		FSW x-L1	FSW x-R1

*1 DKC-F465I-FSW
*2 DKC-F465I-FSW2

Fig. 4.1.4-6 Removal of FSW PCBs

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4-2 Removal of the nameplate.

a. Remove the nameplate from front Logic Box cover.

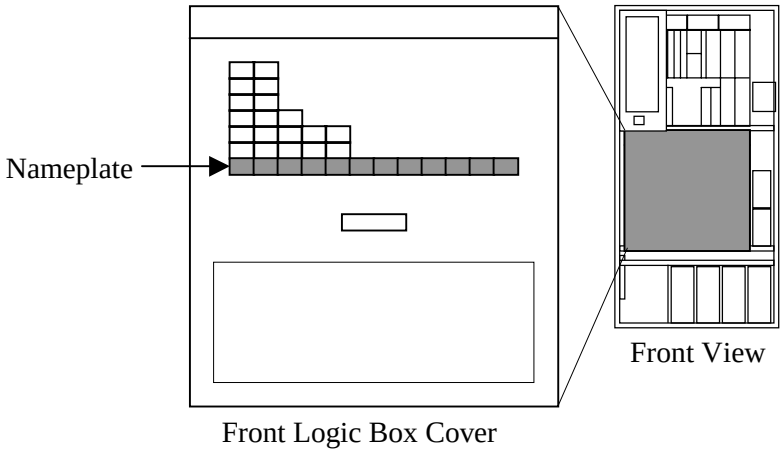

Fig. 4.1.4-7 Removal of Nameplate

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5. De-Installation Procedure of Disk 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.

5-1 Confirmation of the Shut Down LED (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on. (Fig. 4.1.4-8) If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

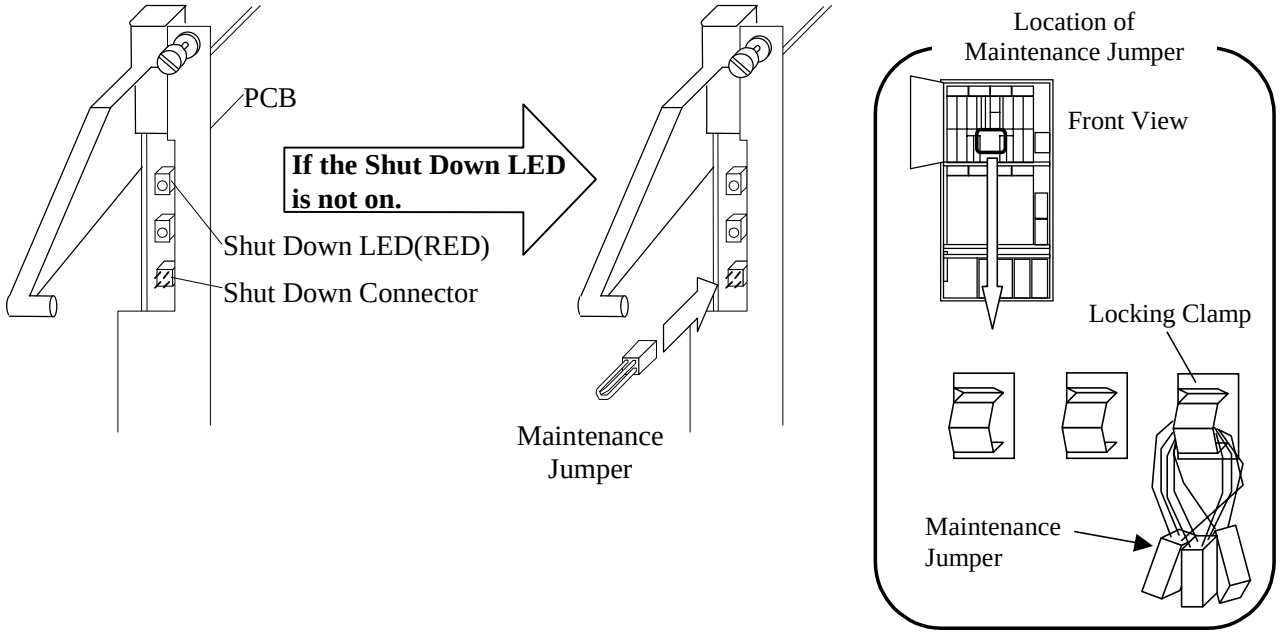

Fig. 4.1.4-8 Shut Down LED

Table 4.1.4-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

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5-2 Disconnection of the DEV Interface cables

In case of Add.1

a. Loosen the six screws and remove the cover(H/S-PS).

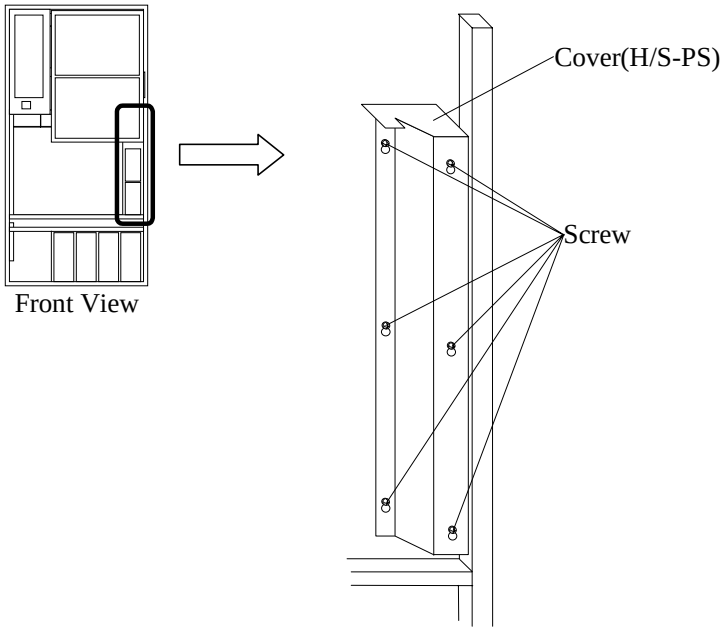

Fig. 4.1.4-9 Removal of Cover (Add.1)

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b. Remove the two screws ① and remove the cover ①.
c. Loosen the two screws ② and remove the cover ②.
d. Remove the three screws ③ and remove the cover ③.
e. Remove the four screws ④ and remove the cover ④.
f. Disconnect the cables from the PCB and store the cables under the cover ④.
g. Attach the covers ④ through ① with the screws.

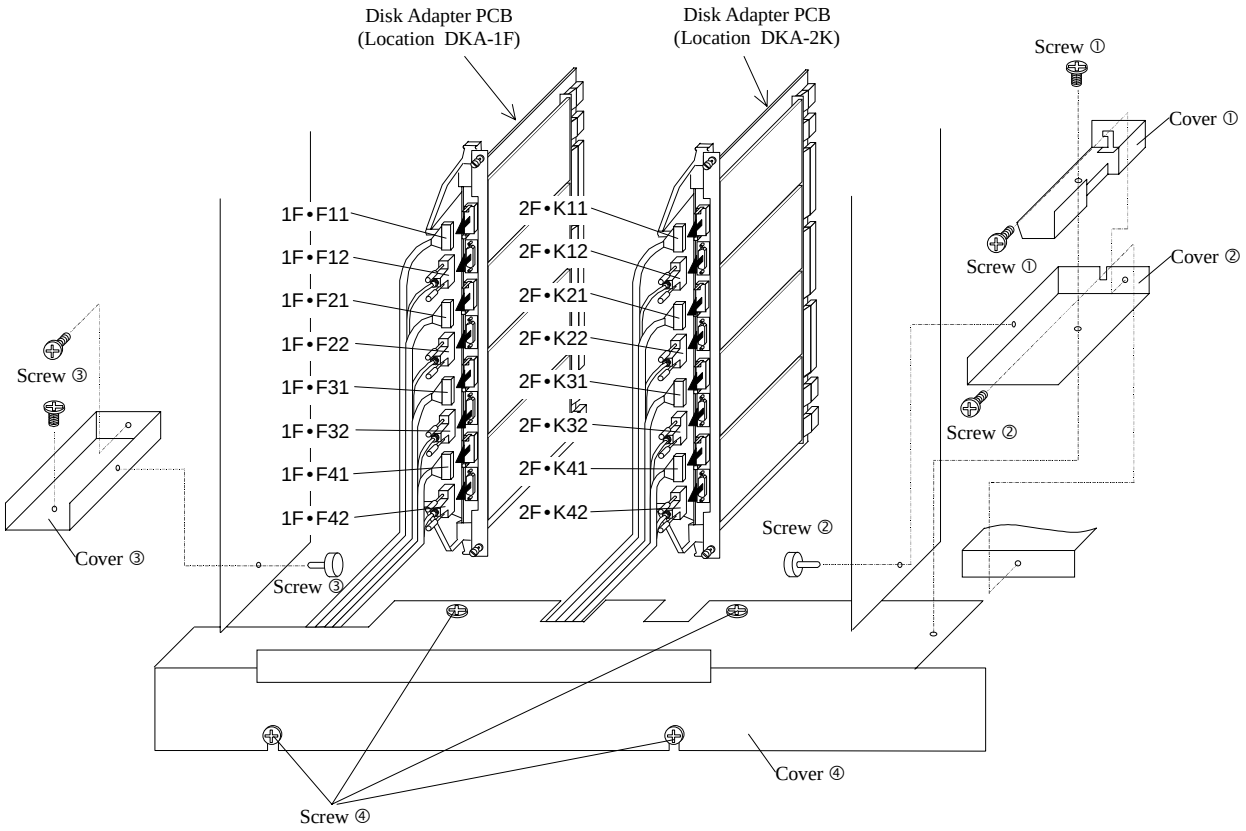

Fig.4.1.4-10 Connection of DEV Interface Cables (Add.1)

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5-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.1.4-11.
b. Attach the dummy plates referring to Fig. 4.1.4-12.

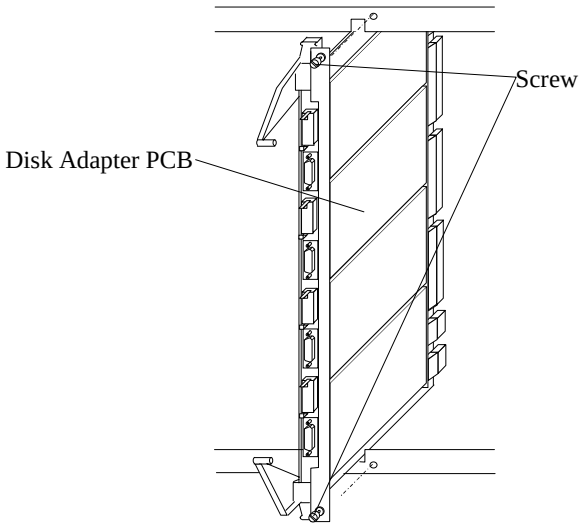

Fig. 4.1.4-11 Removal of PCB

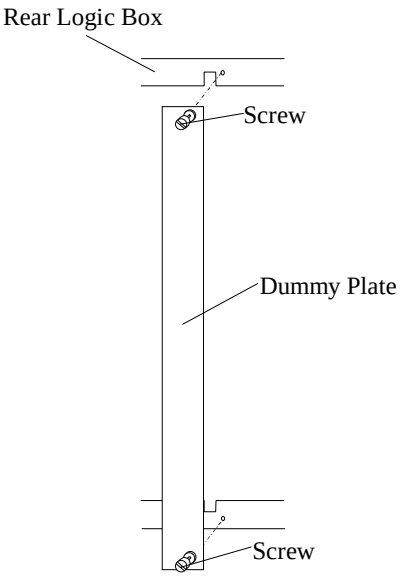

Fig. 4.1.4-12 Attachment of Dummy Plate

5-4 Removal of the Nameplate

a. Remove the nameplate from the Front Logic Box cover.

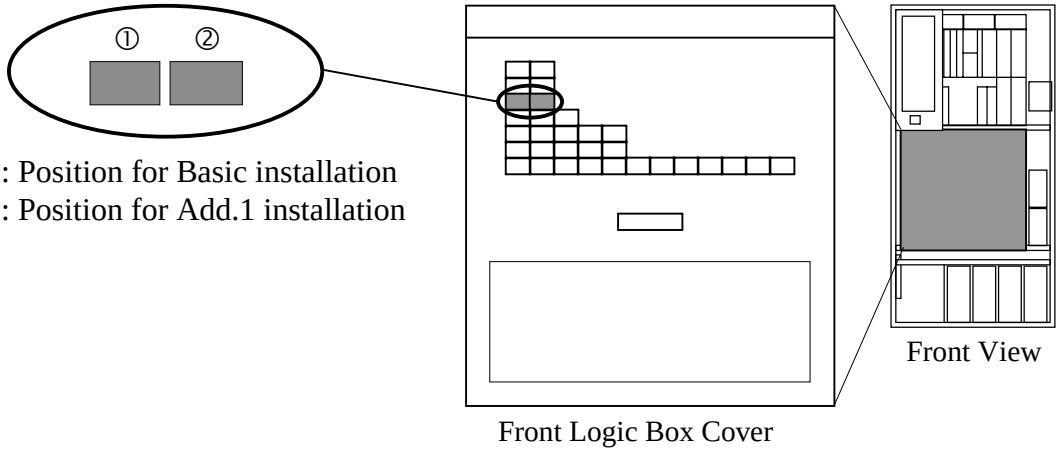

Fig. 4.1.4-13 Removal of Nameplate

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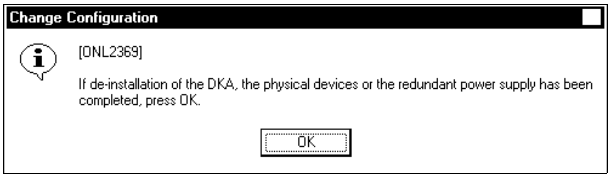
6. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the DKA, the physical devices or the redundant power supply has been completed, press OK." shown in the right figure.



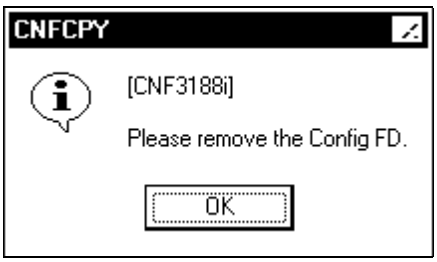
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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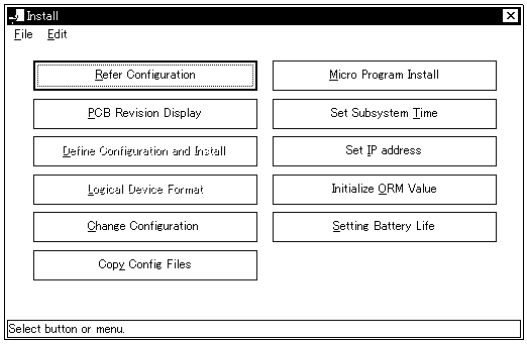
5.

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



6. <Mode Change>
Change the mode to View Mode.

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4.2 De-Installation of Shared Memory and Cache Memory

4.2.1 De-Installation of Additional Shared Memory (DKC-F460I-S512/S1024)

Table 4.2.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-S512	SH287-B	5513978-B	2	Shared Memory Module (256MB)
2	DKC-F460I-S1024	SH287-C	5513978-C	2	Shared Memory Module (512MB)

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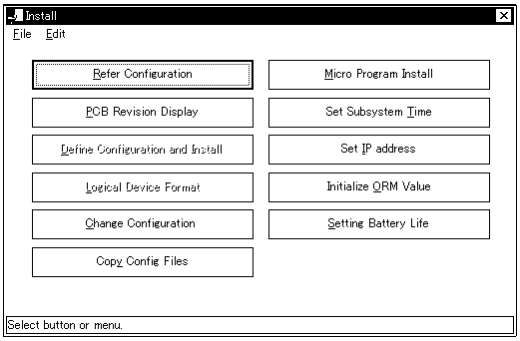
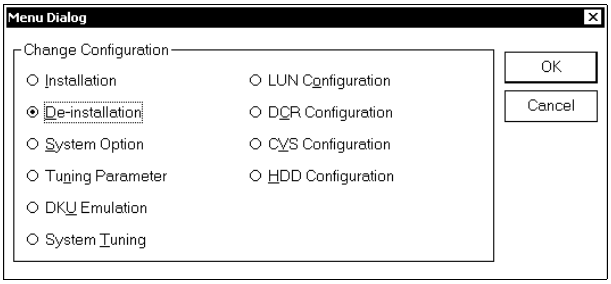
1. Setting up the New Device Structure Information

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

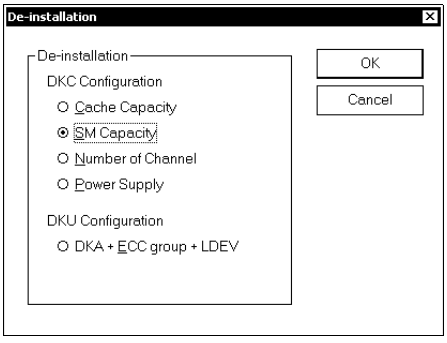
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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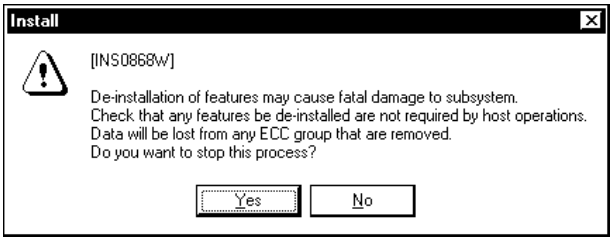
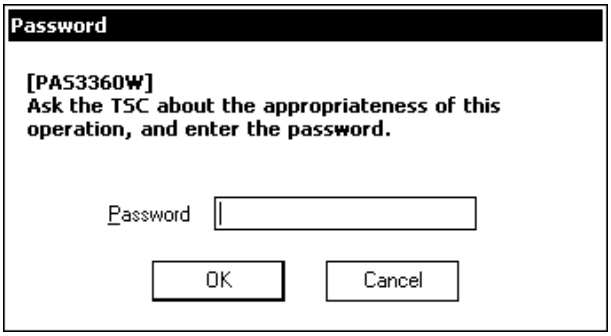
5.

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?".

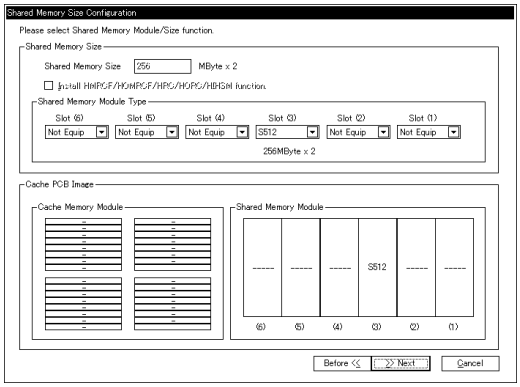


6. <Input password>
Enter the password and select (CL) [OK].



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

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



When you want to reduce the SM for the HMRCF/ HOMRCF/HRC/HORC/HIMSM function, remove the check mark that has been put to the "Install HMRCF/HOMRCF/HRC/HOMRCF/HIMSM Function.". (There may be no change in SM capacity.)

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

If the installed SM after the reduction conforms to that shown in the "Cache PCB Image", select (CL) the [>>Next] button.

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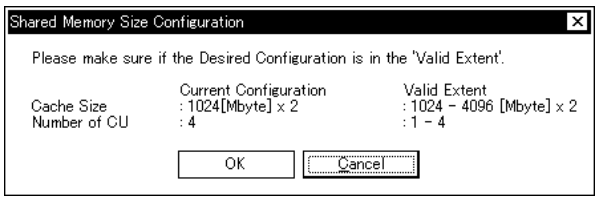
8.

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].



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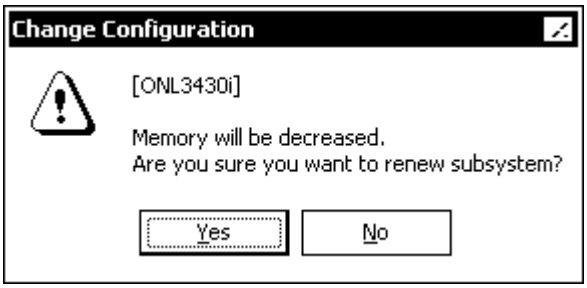
2. SVP pre procedure on the Cluster 1.

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-SM-40 step 2.
   If there is no change in SM capacity, go to INST04-SM-160 step 3.

   When [No] is selected (CL), returns to INST04-SM-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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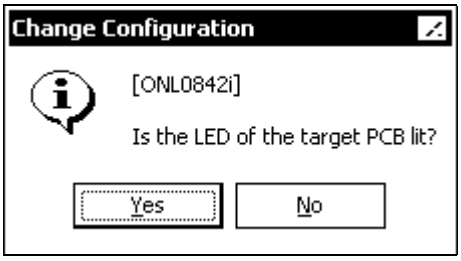
4. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

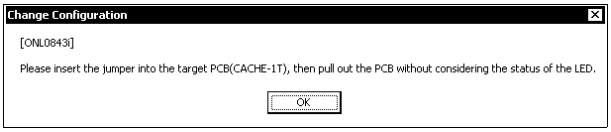


   <Forcing shut down LED on>

CAUTION

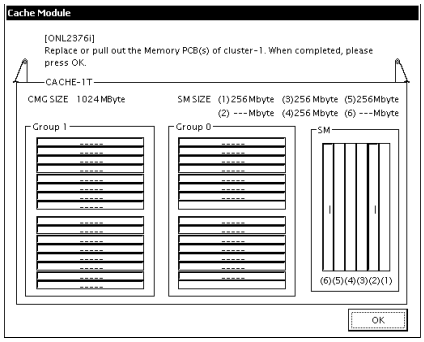
If the jumper is inserted in the wrong PCB, a system down may be caused.

   If [No] is selected:
   Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
   (Refer INST03-SM-50)



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.
   (Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)



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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. 4.2.1-1 and Table 4.2.1-2, check the Shut Down LED on the Cache Memory PCB in the Front 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 the PCB to be removed.

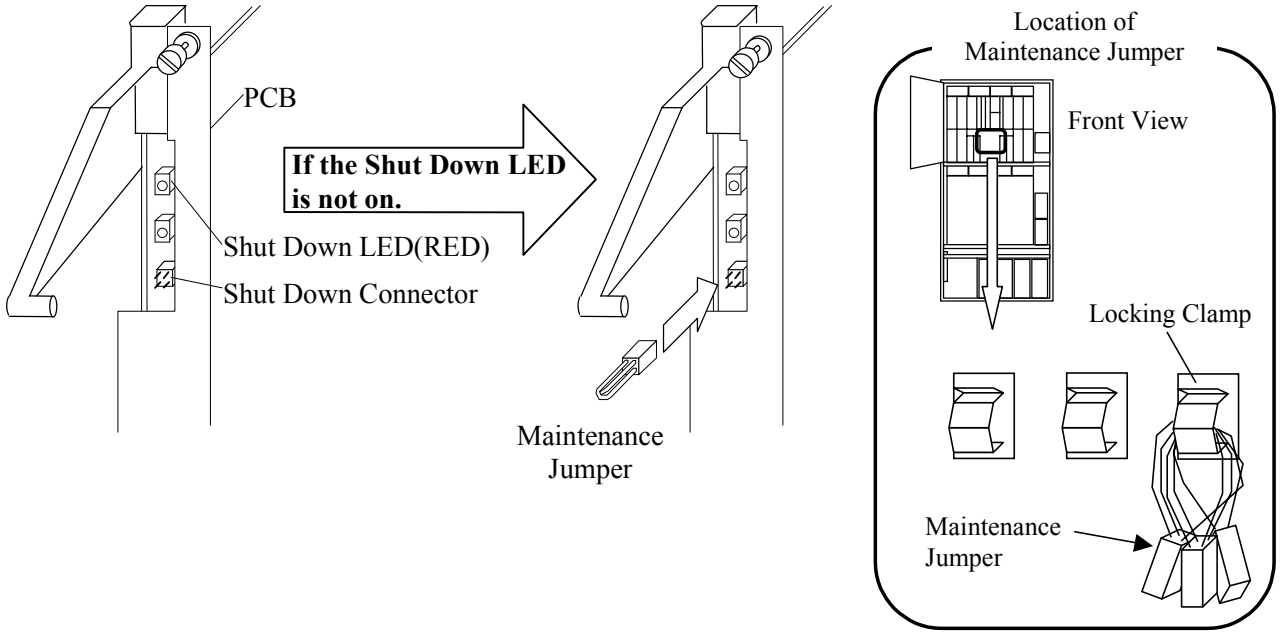

Fig. 4.2.1-1 Location of the Shut Down LED

Table 4.2.1-2 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.2.1-2 and Table 4.2.1-2.

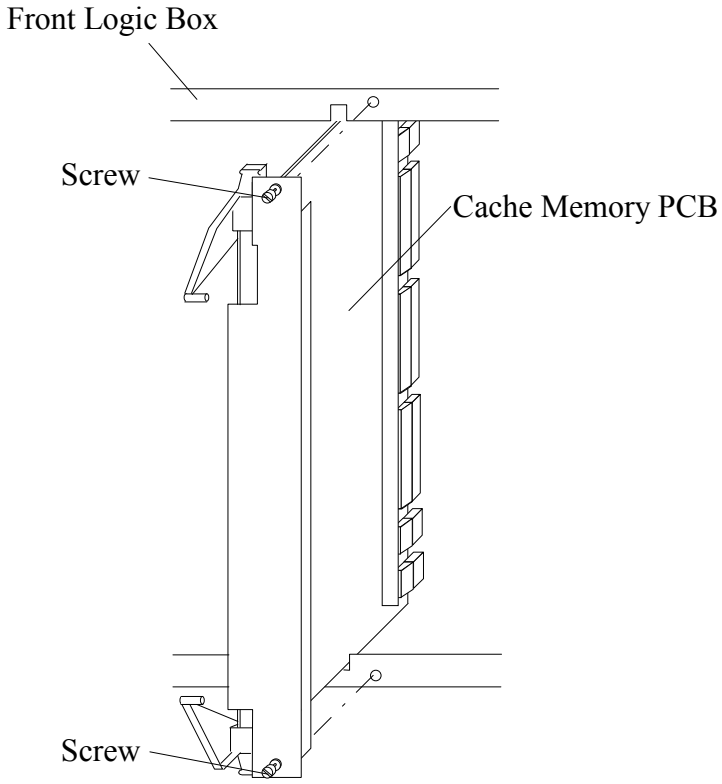

Fig. 4.2.1-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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3-2. Remove the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not. Calculate the required shared memory capacity referring to Table 4.2.1-31 or Table 4.2.1-41 when none of the functions is supported (in the case of basic configuration) or Table 4.2.1-32 or Table 4.2.1-42 when at least one of the functions is supported. When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 4.2.1-33 or 4.2.1-43.

a. Remove the extra Shared Memory Modules according to the required Shared Memory capacity referring to Fig. 4.2.1-3 and Fig. 4.2.1-3A, Table 4.2.1-31, Table 4.2.1-32, Table 4.2.1-33, Table 4.2.1-41, Table 4.2.1-42,and Table 4.2.1-43.
b. Insert the dust covers into the vacant sockets.

(1) Composition of only DKC-F460I-S512

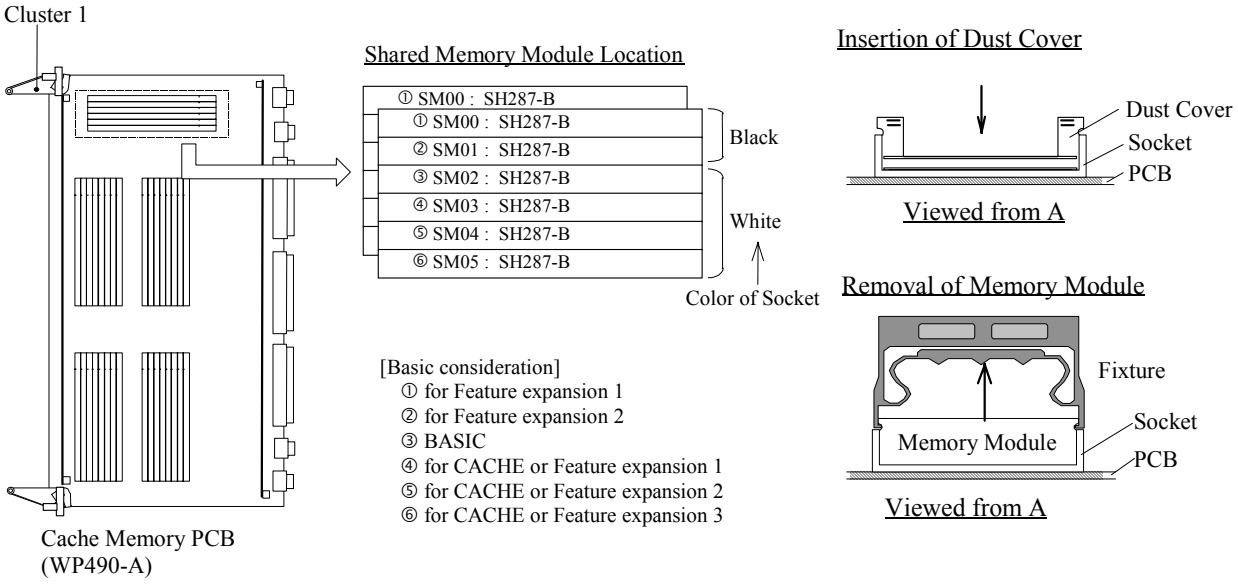

Fig. 4.2.1-3 Inserting Location of the Shared Memory Module

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Table 4.2.1-31 Number of SMs and Corresponding Shared Memory Capacity (BASIC)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

Table 4.2.1-32 Number of SMs and Corresponding Shared Memory Capacity (HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

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Table 4.2.1-33 Number of SMs and Corresponding Shared Memory Capacity (ShadowImage-FlashCopy® version2 supported)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

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(2) Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024
The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 4.2.1-41, Table 4.2.1-42 and 4.2.1-43 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460 I-S512 or DKC-F460 I-S1024 independent one. (Refer to Table 4.2.1-33A and 4.2.1-33B)

Table 4.2.1-33A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

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

Table 4.2.1-33B Shared Memory Module Mixture Pattern (Mixture composition)

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

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 4.2.1-3A)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

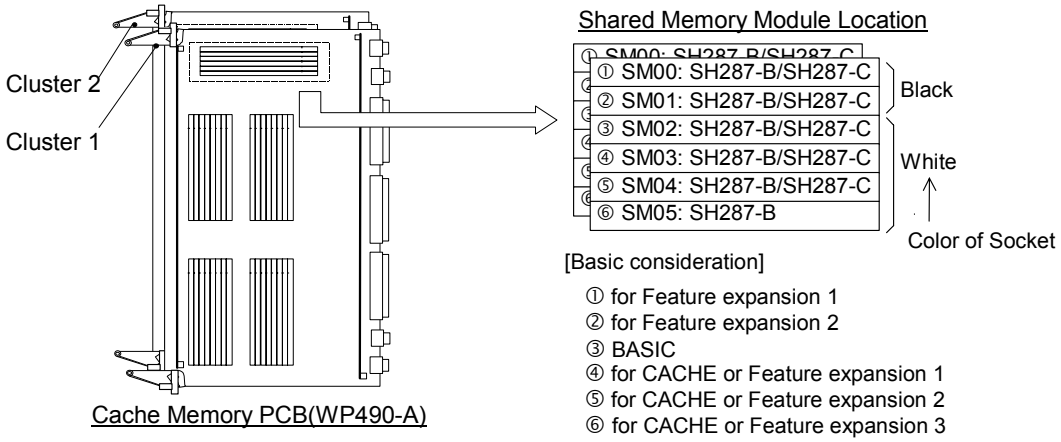

Fig. 4.2.1-3A Actual location of shared memory module

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Table 4.2.1-41 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

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

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

*2: 'A' to 'L' should refer a Table 4.2.1-33A, and refer to the Table 4.2.1-33B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 4.2.1-42 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

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

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

*2: 'A' to 'L' should refer a Table 4.2.1-33A, and refer to the Table 4.2.1-33B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 4.2.1-43 Size of Cache Memory and Shared Memory
(ShadowImage-FlashCopy® version2 supported)

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

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

*2: 'A' to 'L' should refer a Table 4.2.1-33A, and refer to the Table 4.2.1-33B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

3-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Front Logic Box referring to Table 4.2.1-5.

b. Fasten the two screws.

Table 4.2.1-5 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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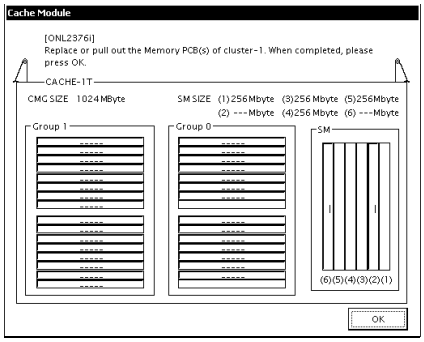
4. SVP post procedure on the Cluster 1 and pre procedure on the Cluster 2.

1.

After the hardware procedure for one side 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].”.

“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.

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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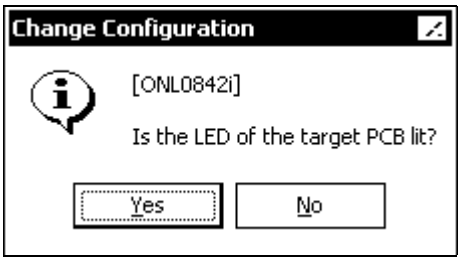
5.

"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 lit?".

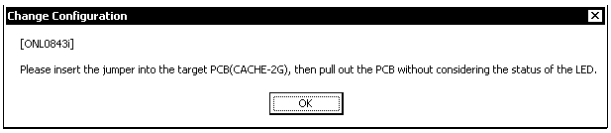


<Forcing shut down LED on>

CAUTION

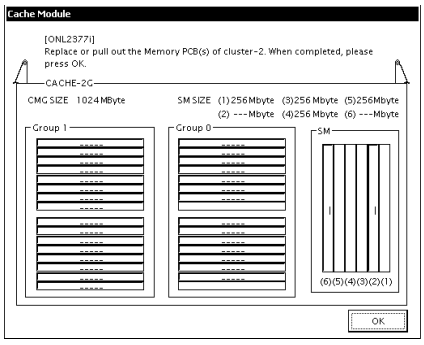
If the jumper is inserted in the wrong PCB, a system down may be caused.

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



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.
(Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)



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5. Remove 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. 4.2.1-4 and Table 4.2.1-6, check the Shut Down LED on the Cache Memory PCB in the Front 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 the PCB to be removed.

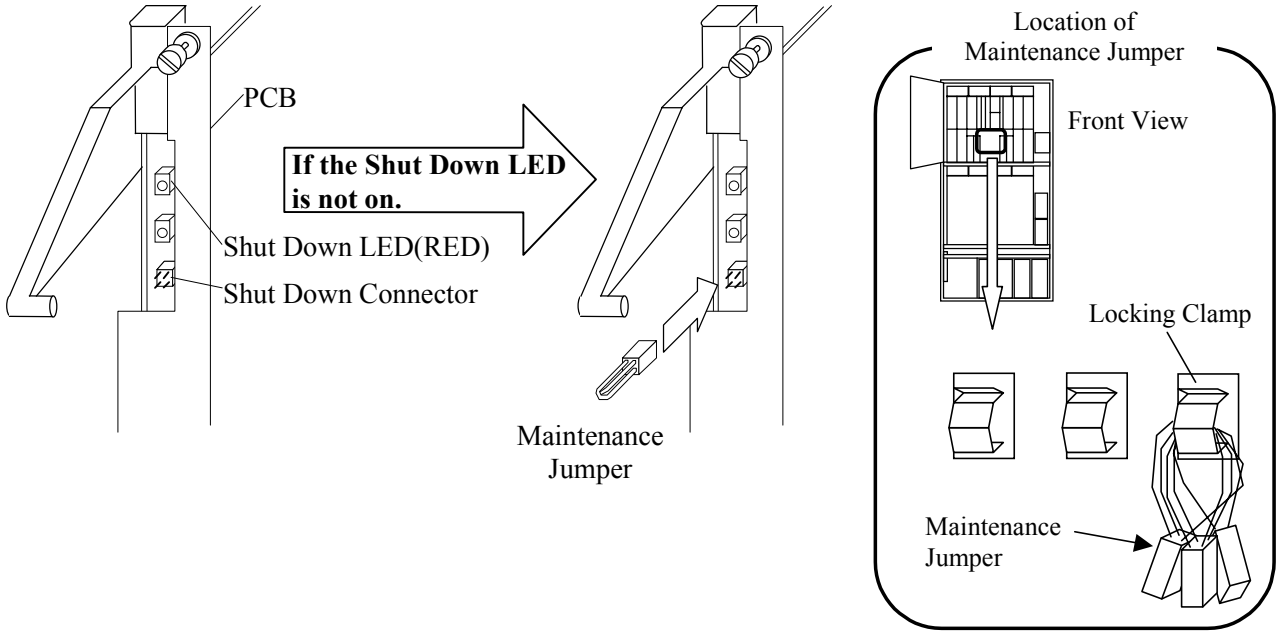

Fig. 4.2.1-4 Location of the Shut Down LED

Table 4.2.1-6 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.2.1-5 and Table 4.2.1-6.

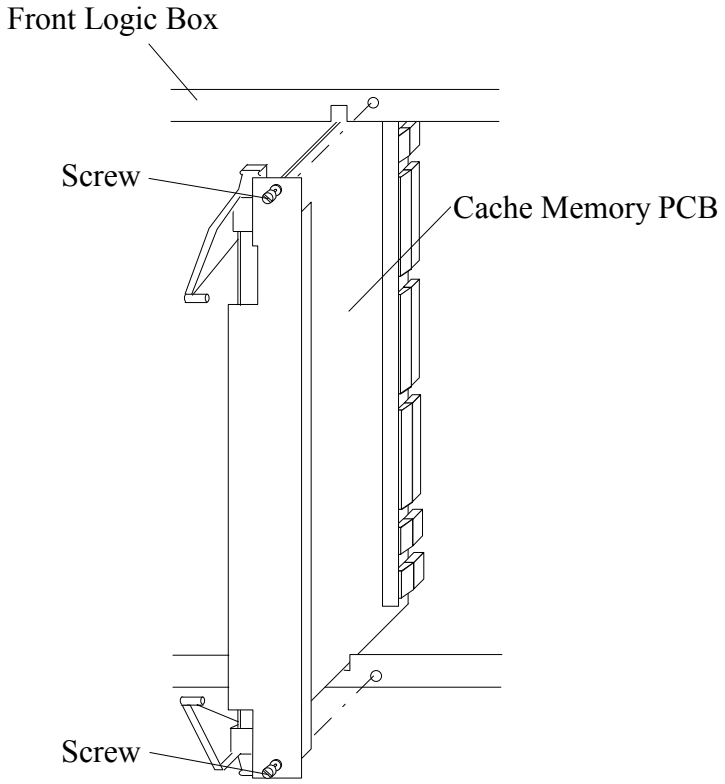

Fig. 4.2.1-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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5-2. Remove the Shared Memory Modules.

Notice
The required capacity of the shared memory varies depending on whether the HRC/HORC/HMRCF/HOMRCF/HIHSM/ShadowImage-FlashCopy® version2 function is supported or not. Calculate the required shared memory capacity referring to Table 4.2.1-71 or Table 4.2.1-81 when none of the functions is supported (in the case of basic configuration) or Table 4.2.1-72 or Table 4.2.1-82 when at least one of the functions is supported. When supporting the ShadowImage-FlashCopy® version2 function, calculate the required capacity of the shared memory referring to Table 4.2.1-73 or 4.2.1-83.

a. Remove the extra Shared Memory Modules according to the required Shared Memory capacity referring to Fig. 4.2.1-6 and Fig. 4.2.1-6A, Table 4.2.1-71, Table 4.2.1-72, Table 4.2.1-73, Table 4.2.1-81, Table 4.2.1-82 and Table 4.2.1-83.
b. Insert the dust covers into the vacant sockets.

(1) Composition of only DKC-F460I-S512

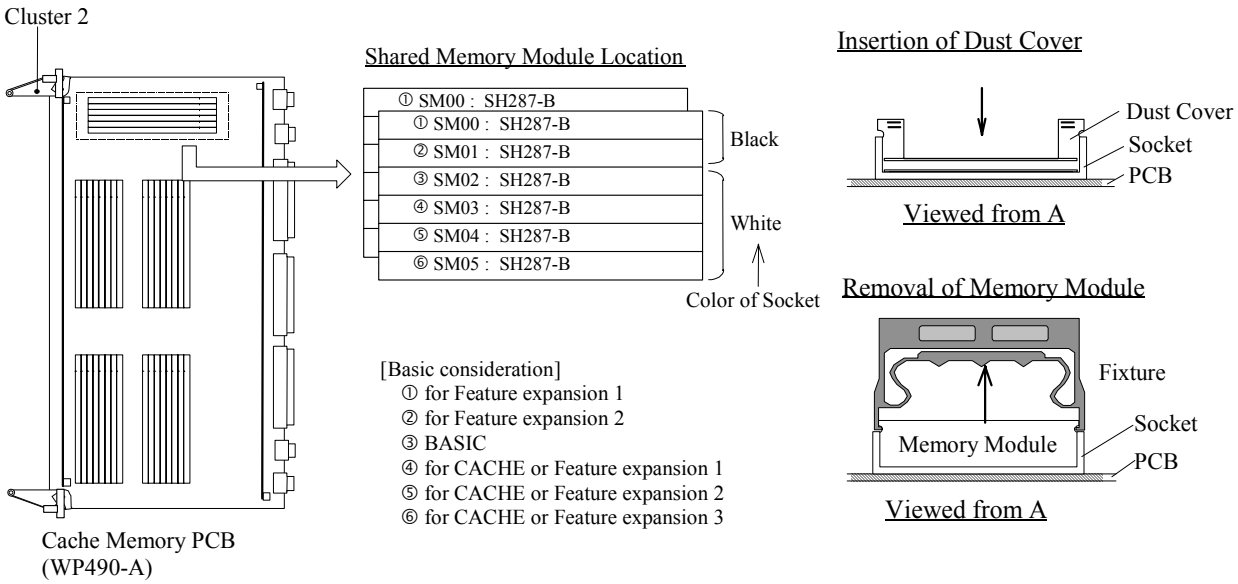

Fig. 4.2.1-6 Inserting Location of the Shared Memory Module

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Table 4.2.1-71 Number of SMs and Corresponding Shared Memory Capacity (BASIC)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

Table 4.2.1-72 Number of SMs and Corresponding Shared Memory Capacity (HRC/HORC/HMRCF/HOMRCF/HIHSM supported)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

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Table 4.2.1-73 Number of SMs and Corresponding Shared Memory Capacity (ShadowImage-FlashCopy® version2 supported)

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

Note. *1 : Location ① through ⑥ shows actual location of Shared Memory on Cache Memory PCB.

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(2) Mixture composition of DKC-F460I-S512 and DKC-F460I-S1024
The mixture composition of DKC-F460I-S512 and DKC-F460I-S1024 is allowed. However, depending on cache capacity, it may have to constitute from DKC-F460I-S512 or DKC-F460I-S1024 independent one. (Refer to Table 4.2.1-81, Table 4.2.1-82 and 4.2.1-83 for details.)
The mixture pattern of DKC-F460I-S512 and DKC-F460 I-S1024 is shown in the following table. Since it is decided for every pattern, it must be careful of the installing location of two shared memory modules.
In order to prevent a maintenance mistake, it recommends constituting from DKC-F460 I-S512 or DKC-F460 I-S1024 independent one. (Refer to Table 4.2.1-73A and 4.2.1-73B)

Table 4.2.1-73A Shared Memory Module Mixture Pattern
(Composition of only DKC-F460I-S512)

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

Table 4.2.1-73B Shared Memory Module Mixture Pattern (Mixture composition)

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

Note. 1: Location ①-⑥ shows actual location of shared memory module on Cache PCB. (Refer to Fig. 4.2.1-6A)
2: S1024 means installing the shared memory module which constitutes DKC-F460I-S1024 option.
3: S512 means installing the shared memory module which constitutes DKC-F460I-S512 option.

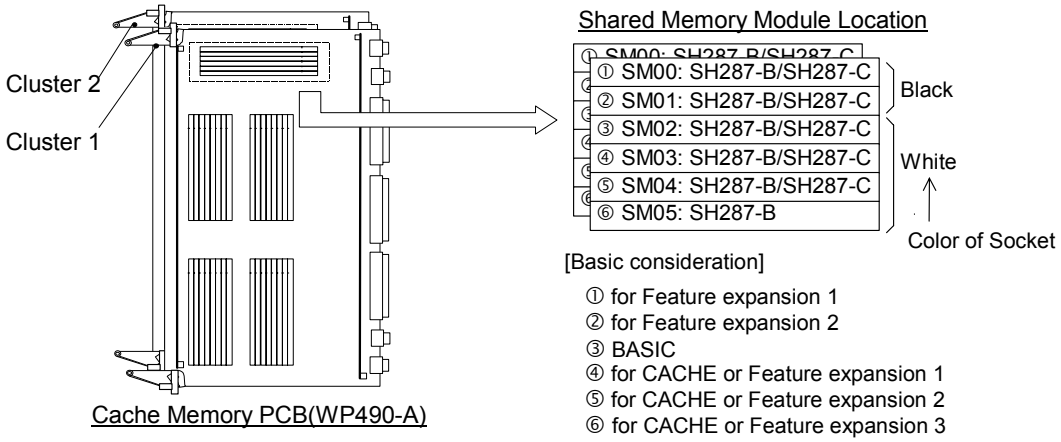

Fig. 4.2.1-6A Actual location of shared memory module

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Table 4.2.1-81 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/ ShadowImage-FlashCopy® version2/Cruise Control function not supported)

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

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

*2: 'A' to 'L' should refer a Table 4.2.1-73A, and refer to the Table 4.2.1-73B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 4.2.1-82 Size of Cache Memory and Shared Memory (TrueCopy/ShadowImage/Cruise Control function supported)

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

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

*2: 'A' to 'L' should refer a Table 4.2.1-73A, and refer to the Table 4.2.1-73B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

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Table 4.2.1-83 Size of Cache Memory and Shared Memory
(ShadowImage-FlashCopy® version2 supported)

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

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

*2: 'A' to 'L' should refer a Table 4.2.1-73A, and refer to the Table 4.2.1-73B for 'o' from 'a'. The memory module corresponding to each mixture pattern is installed in the install locations ①-⑥.

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

5-3. Insert the PCB.

a. Insert the Cache Memory PCB into the Front Logic Box referring to Table 4.2.1-9.

b. Fasten the two screws.

Table 4.2.1-9 Location of the Cache PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

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5-4 Change the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.

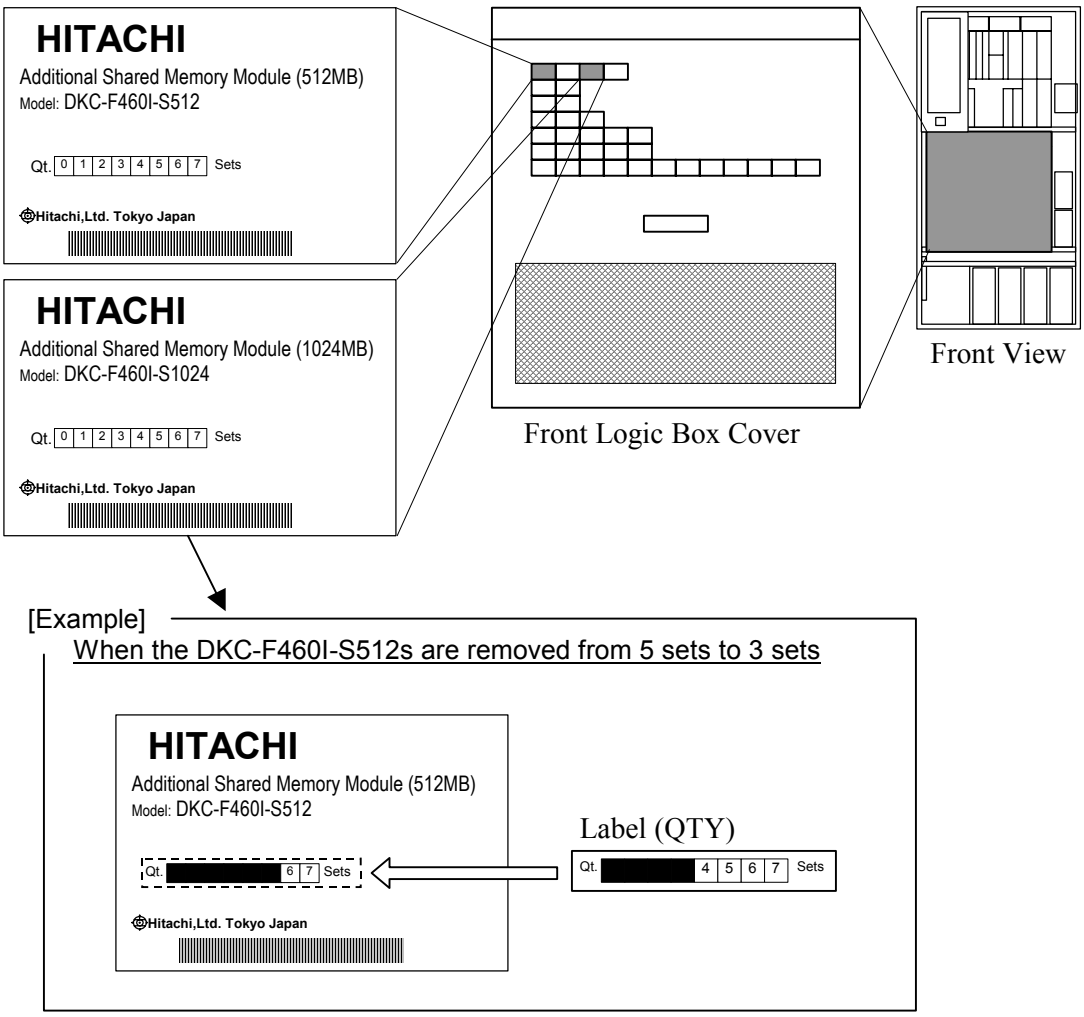

Fig. 4.2.1-7 Location of the Nameplate

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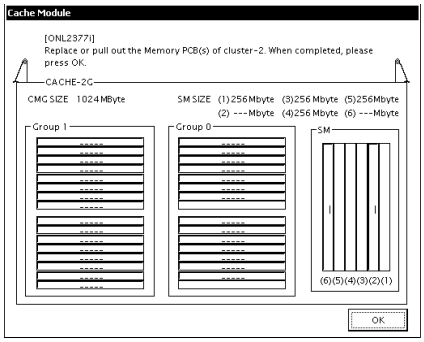
6. SVP post procedure on the Cluster2

1.

After the hardware procedure for cluster 2 of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs 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. <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.

4.

“Reading subsystem configuration data...” is displayed.
“Please insert the Config FD in the FDD.” is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

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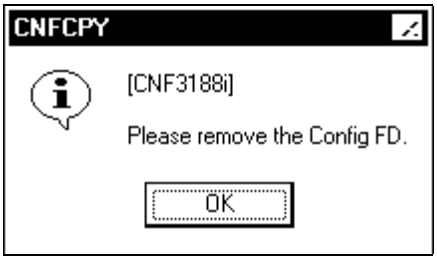
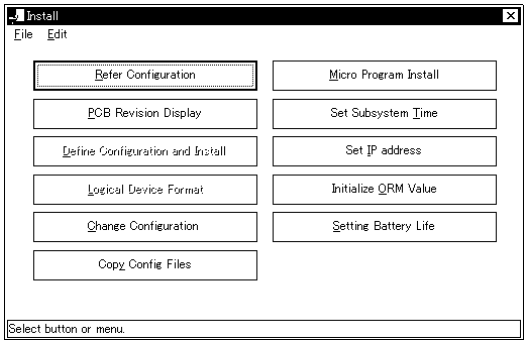
5. When this procedure is completed, the message “Please remove the Config FD.” is displayed. Remove the FD, and select (CL) [OK].



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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4.2.2 De-Installation of Additional Cache Memory (DKC-F460I-2048/4096)

Table 4.2.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-2048	SH288-B	5513977-B	4	Cache Memory Module (512 MB)
2	DKC-F460I-4096	SH288-C	5513977-C	4	Cache Memory Module (1024 MB)

When changing to DKC-F460I-2048 from DKC-F460I-4096, Changing CM Modulegroup Size is required. (Refer to SVP02-1230)

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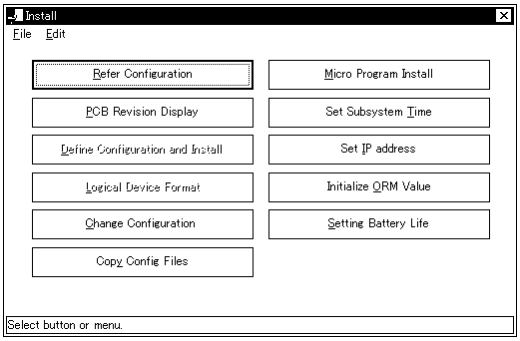
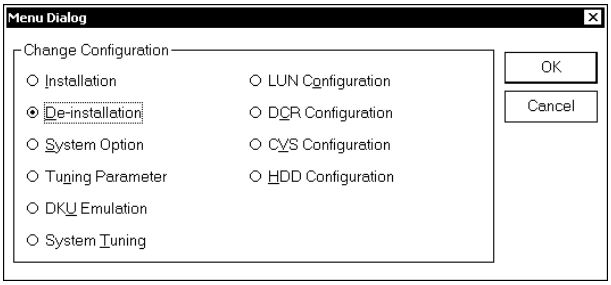
1. Setting up the New Device Structure Information

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

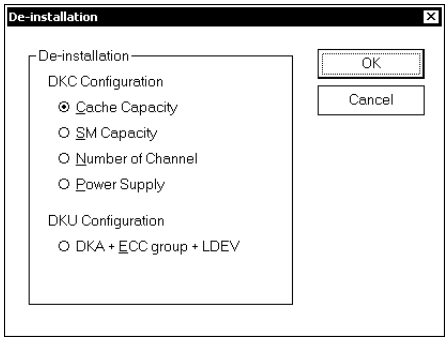
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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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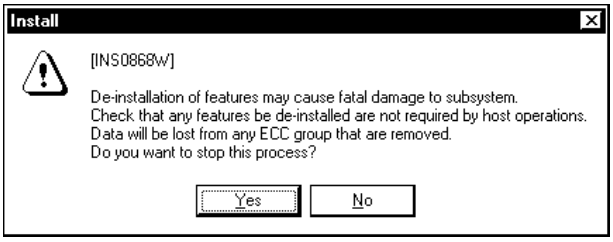
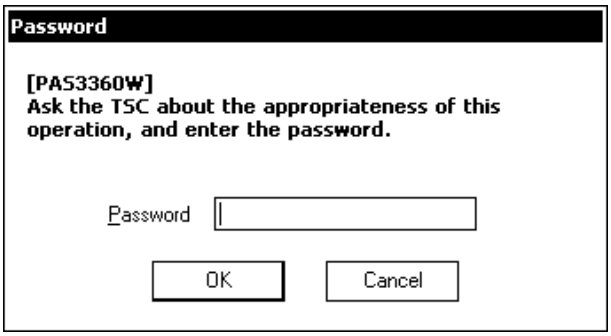
5.

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].



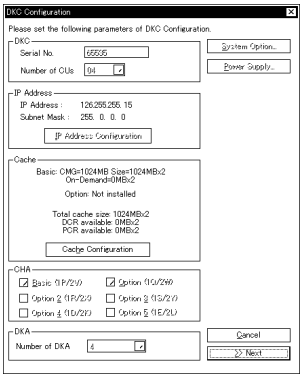
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after 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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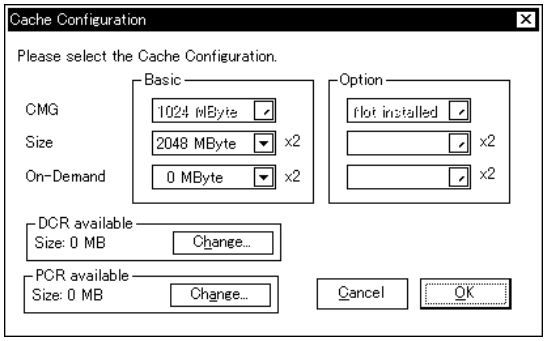
7-1. <Define Cache>

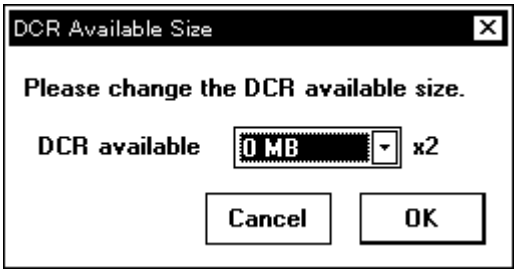
Define each item in the 'Cache Configuration' window.
If you want to change the DCR available size, select (CL) [Change...] of DCR available to change it.
(See SSD Optional Function Section)
If you want to change the PCR available size, select (CL) [Change...] of PCR available to change it.



7-2. <Define DCR Available Size>

Define the DCR available size in the 'DCR Available Size' dialog box.
And select (CL) [OK].

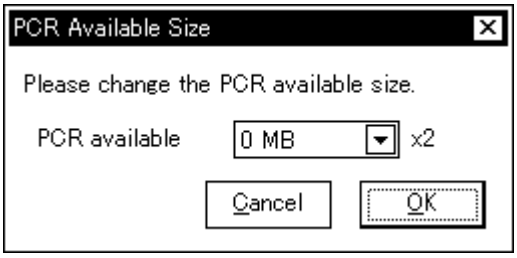
Return to step 7-1.



7-3. <Define PCR Available Size>

Define the PCR available size in the 'PCR Available Size' dialog box.
And select (CL) [OK].

Return to step 7-1.

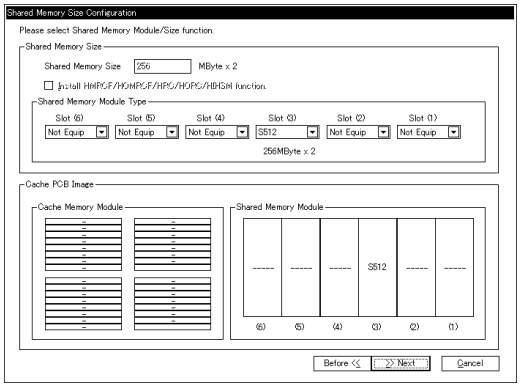


8. <Display SM size>

The 'Shared Memory size Configuration' dialog box is displayed.

Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

Select (CL) [>>Next].



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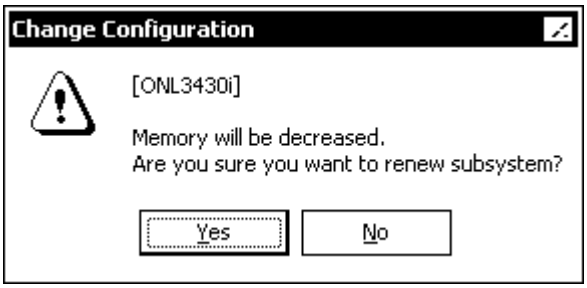
2. SVP pre procedure on the cluster 1.

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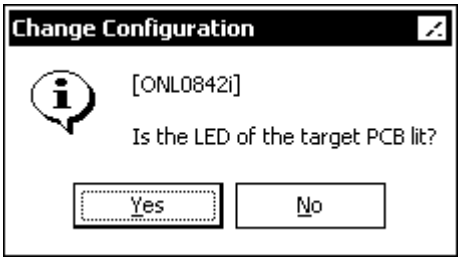
4. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

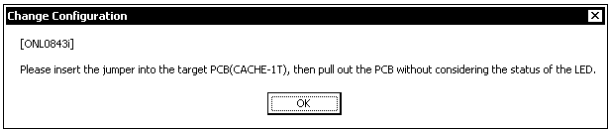


   <Forcing shut down LED on>

CAUTION

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

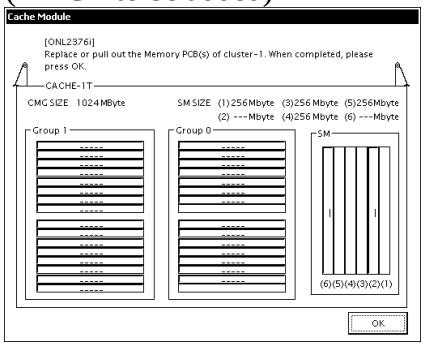
   If [No] is selected:
   Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
   (Refer INST04-CM-60)



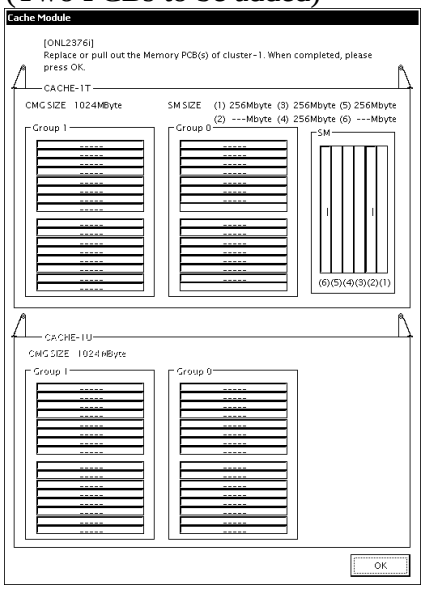
5. <Perform cache hardware de-installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or pull out the Memory PCB(s) of cluster-1. When completed, select OK.” is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

   Make sure of the installation location of the module to be removed and remove the correct module.
   (Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)

(A PCB to be added)



(Two PCBs to be added)



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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. 4.2.2-1 and Table 4.2.2-2, check the Shut Down LED on the Cache Memory 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 the PCB to be removed.

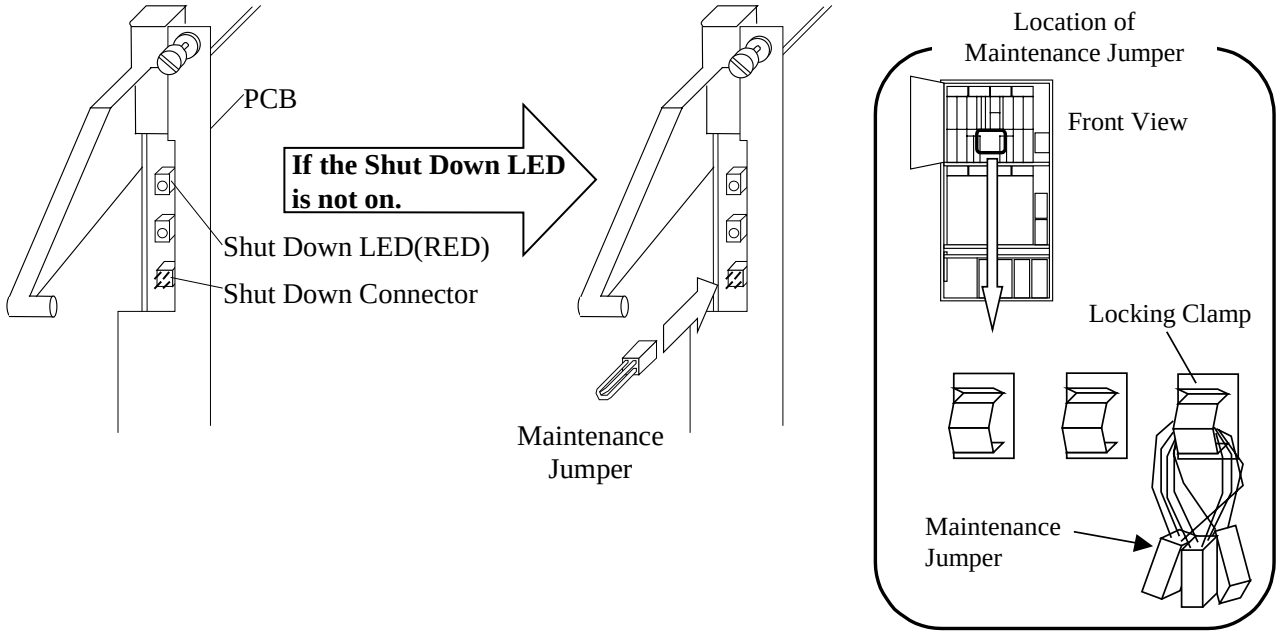

Fig. 4.2.2-1 Location of the Shut Down LED

Table 4.2.2-2 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.2.2-2 and Table 4.2.2-2.

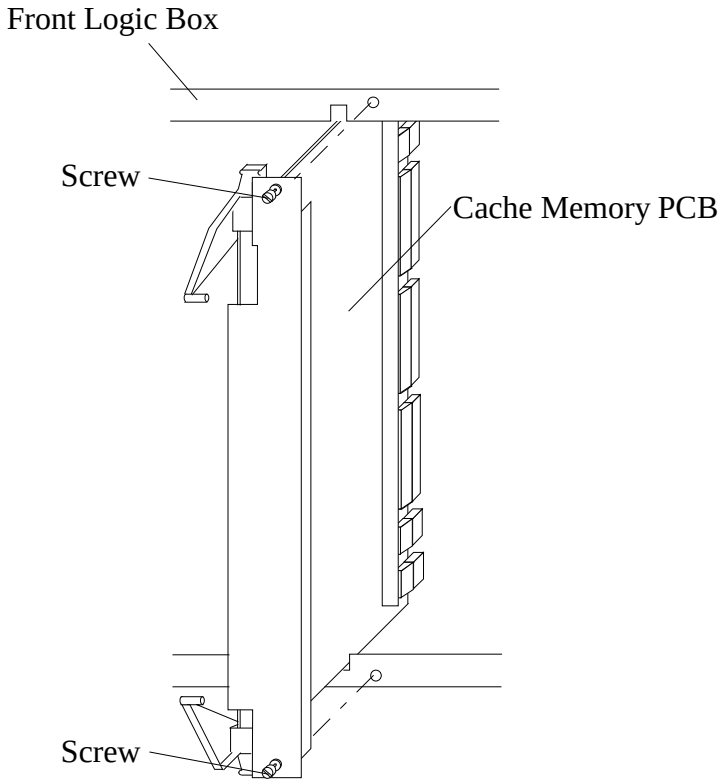

Fig. 4.2.2-2 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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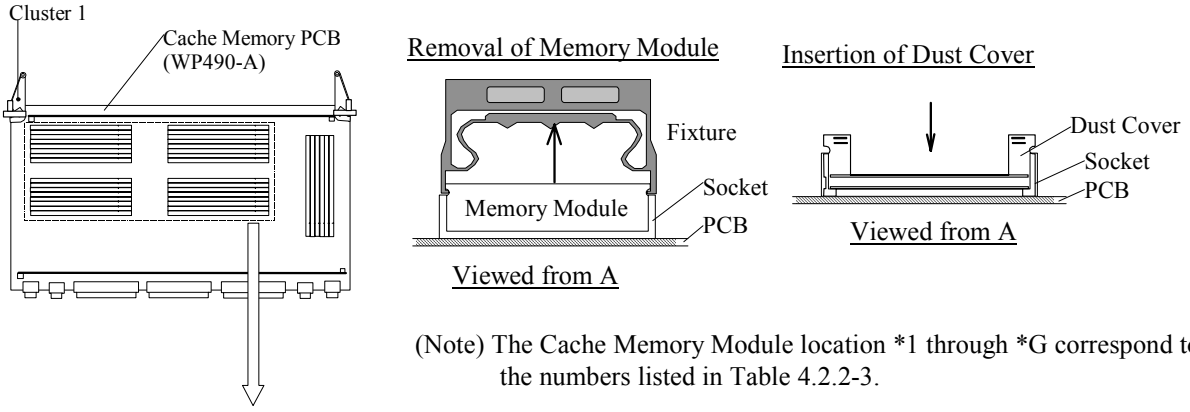
3-2. Remove the Cache Memory Modules.

a. Remove the extra Cache Memory Modules according to the required Cache Memory capacity referring to Fig. 4.2.2-3, Table 4.2.2-3 and Table 4.2.2-3A.

b. Insert the dust covers into the vacant sockets.



(Note) The Cache Memory Module location *1 through *G correspond to the numbers listed in Table 4.2.2-3.

Cache Memory Module Location

BCM007 (MG#15) : SH288-B/C	*G	ACM007 (MG#14) : SH288-B/C	*F
BCM006 (MG#13) : SH288-B/C	*E	ACM006 (MG#12) : SH288-B/C	*D
BCM005 (MG#11) : SH288-B/C	*C	ACM005 (MG#10) : SH288-B/C	*B
BCM004 (MG#9) : SH288-B/C	*A	ACM004 (MG#8) : SH288-B/C	*9
BCM003 (MG#7) : SH288-B/C	*8	ACM003 (MG#6) : SH288-B/C	*7
BCM002 (MG#5) : SH288-B/C	*6	ACM002 (MG#4) : SH288-B/C	*5
BCM001 (MG#3) : SH288-B/C	*4	ACM001 (MG#2) : SH288-B/C	*3
BCM000 (MG#1) : SH288-B/C	*2	ACM000 (MG#0) : SH288-B/C	*1

BCM107 (MG#15) : SH288-B/C	*G	ACM107 (MG#14) : SH288-B/C	*F
BCM106 (MG#13) : SH288-B/C	*E	ACM106 (MG#12) : SH288-B/C	*D
BCM105 (MG#11) : SH288-B/C	*C	ACM105 (MG#10) : SH288-B/C	*B
BCM104 (MG#9) : SH288-B/C	*A	ACM104 (MG#8) : SH288-B/C	*9
BCM103 (MG#7) : SH288-B/C	*8	ACM103 (MG#6) : SH288-B/C	*7
BCM102 (MG#5) : SH288-B/C	*6	ACM102 (MG#4) : SH288-B/C	*5
BCM101 (MG#3) : SH288-B/C	*4	ACM101 (MG#2) : SH288-B/C	*3
BCM100 (MG#1) : SH288-B/C	*2	ACM100 (MG#0) : SH288-B/C	*1

Fig. 4.2.2-3 Inserting Location of the Cache Memory Module

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(1) Composition of only DKC-F460I-2048

Table 4.2.2-3 Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-2048)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 1	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	1 GB	DKC-F460I-2048 1 set	SH288-B	2
2	1 GB	2 GB	DKC-F460I-2048 2 sets	SH288-B	2
3	2 GB	3 GB	DKC-F460I-2048 3 sets	SH288-B	2
4	3 GB	4 GB	DKC-F460I-2048 4 sets	SH288-B	2
5	4 GB	5 GB	DKC-F460I-2048 5 sets	SH288-B	2
6	5 GB	6 GB	DKC-F460I-2048 6 sets	SH288-B	2
7	6 GB	7 GB	DKC-F460I-2048 7 sets	SH288-B	2
8	7 GB	8 GB	DKC-F460I-2048 8 sets	SH288-B	2
9	8 GB	9 GB	DKC-F460I-2048 9 sets	SH288-B	2
A	9 GB	10 GB	DKC-F460I-2048 10 sets	SH288-B	2
B	10 GB	11 GB	DKC-F460I-2048 11 sets	SH288-B	2
C	11 GB	12 GB	DKC-F460I-2048 12 sets	SH288-B	2
D	12 GB	13 GB	DKC-F460I-2048 13 sets	SH288-B	2
E	13 GB	14 GB	DKC-F460I-2048 14 sets	SH288-B	2
F	14 GB	15 GB	DKC-F460I-2048 15 sets	SH288-B	2
G	15 GB	16 GB	DKC-F460I-2048 16 sets	SH288-B	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 4.2.2-3.

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(2) Composition of only DKC-F460I-4096

Table 4.2.2-3A Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-4096)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 1	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	2 GB	DKC-F460I-4096 1 set	SH288-C	2
2	2 GB	4 GB	DKC-F460I-4096 2 sets	SH288-C	2
3	4 GB	6 GB	DKC-F460I-4096 3 sets	SH288-C	2
4	6 GB	8 GB	DKC-F460I-4096 4 sets	SH288-C	2
5	8 GB	10 GB	DKC-F460I-4096 5 sets	SH288-C	2
6	10 GB	12 GB	DKC-F460I-4096 6 sets	SH288-C	2
7	12 GB	14 GB	DKC-F460I-4096 7 sets	SH288-C	2
8	14 GB	16 GB	DKC-F460I-4096 8 sets	SH288-C	2
9	16 GB	18 GB	DKC-F460I-4096 9 sets	SH288-C	2
A	18 GB	20 GB	DKC-F460I-4096 10 sets	SH288-C	2
B	20 GB	22 GB	DKC-F460I-4096 11 sets	SH288-C	2
C	22 GB	24 GB	DKC-F460I-4096 12 sets	SH288-C	2
D	24 GB	26 GB	DKC-F460I-4096 13 sets	SH288-C	2
E	26 GB	28 GB	DKC-F460I-4096 14 sets	SH288-C	2
F	28 GB	30 GB	DKC-F460I-4096 15 sets	SH288-C	2
G	30 GB	32 GB	DKC-F460I-4096 16 sets	SH288-C	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 4.2.2-3.

3-3. Insert the PCB.

a. Insert the Cache Memory PCB referring to Table 4.2.2-4.

b. Fasten the two screws.

Table 4.2.2-4 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
1	WP490-A	Front Logic Box	E	CACHE-1E	Cache Memory PCB

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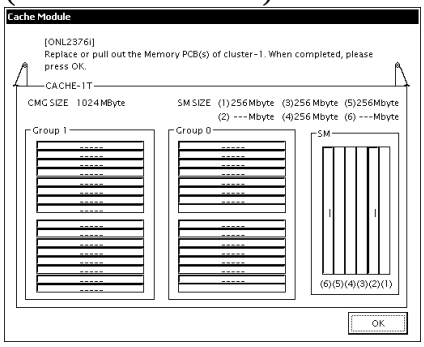
4. SVP post procedure on the cluster 1 and pre procedure on the cluster 2.

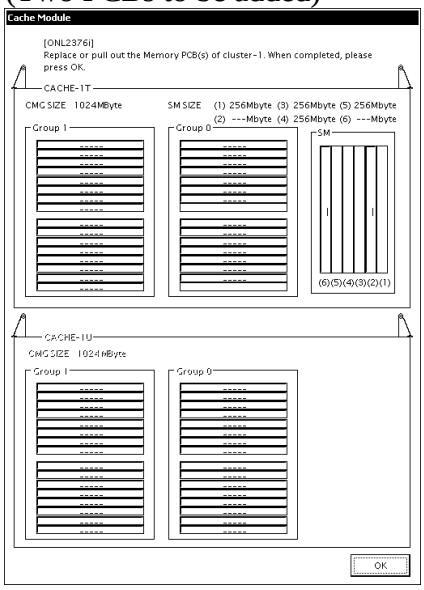
1.

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].”.

(A PCB to be added)



(Two PCBs to be added)



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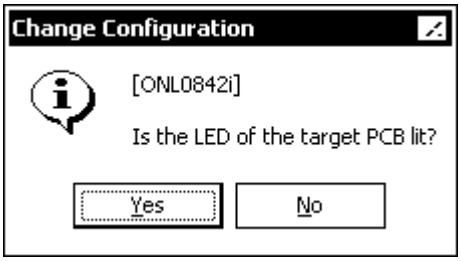
7. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB lit?”.

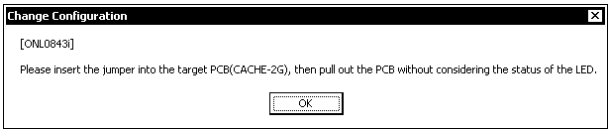


<Forcing shut down LED on>

CAUTION

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

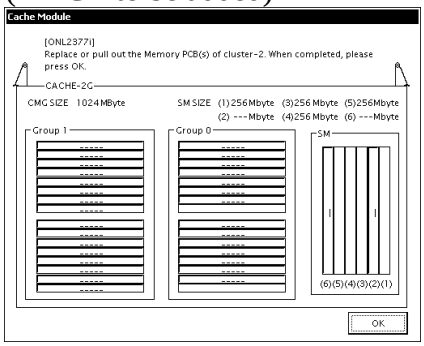
If [No] is selected:
Insert a jumper in response to “Please insert the jumper into the target PCB(CACHE-nn), then pull out the PCB without considering the status of the LED”.
(Refer INST04-CM-120)



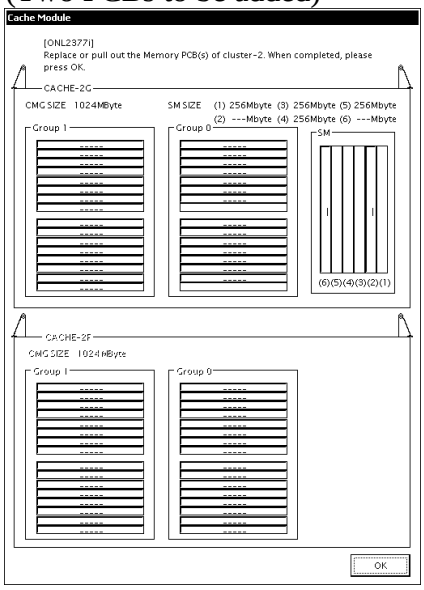
8. <Perform cache hardware de-installation>
   At this point refrain from pressing the [OK] button.
   When “Replace or pull out the Memory PCB(s) of cluster-2. When completed, select OK.” is displayed, perform the hardware de-installation steps according to the cache hardware de-installation procedure.

   Make sure of the installation location of the module to be removed and remove the correct module.
   (Uninstalled module is displayed as looks depressed; the PCB to be removed is displayed in gray.)

(A PCB to be added)



(Two PCBs to be added)



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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. 4.2.2-4 and Table 4.2.2-5, check the Shut Down LED on the Cache Memory 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 the PCB to be removed.

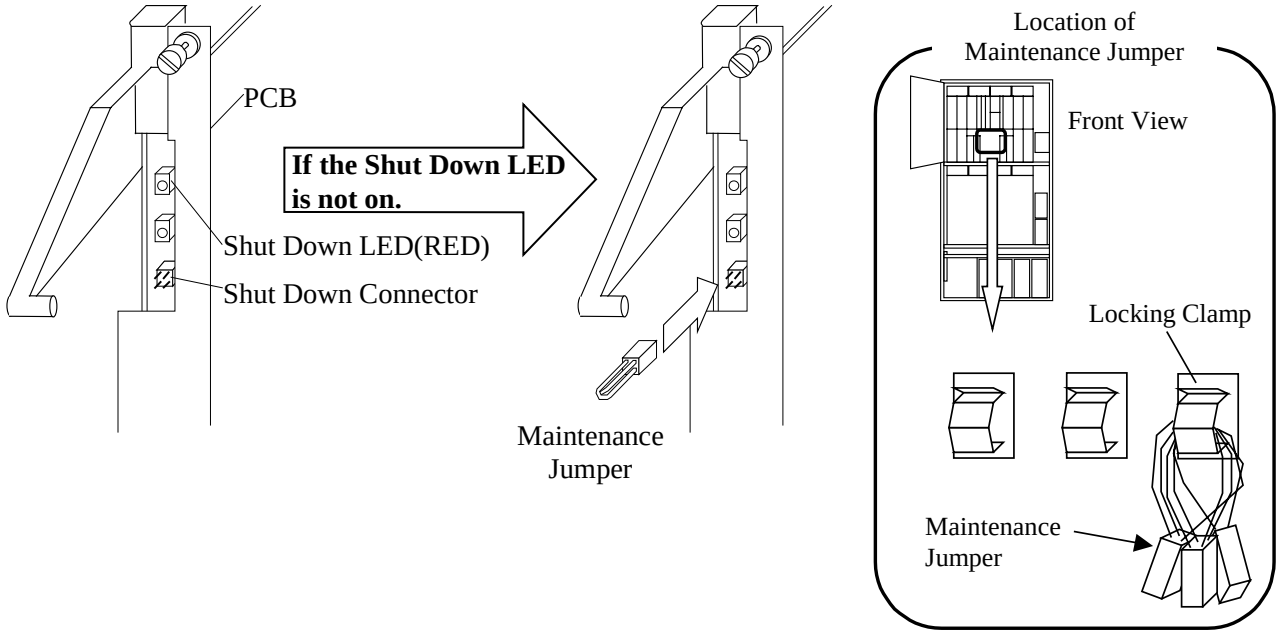

Fig. 4.2.2-4 Location of the Shut Down LED

Table 4.2.2-5 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

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b. Remove the two screws and remove the Cache Memory PCB. Refer to Fig. 4.2.2-5 and Table 4.2.2-5.

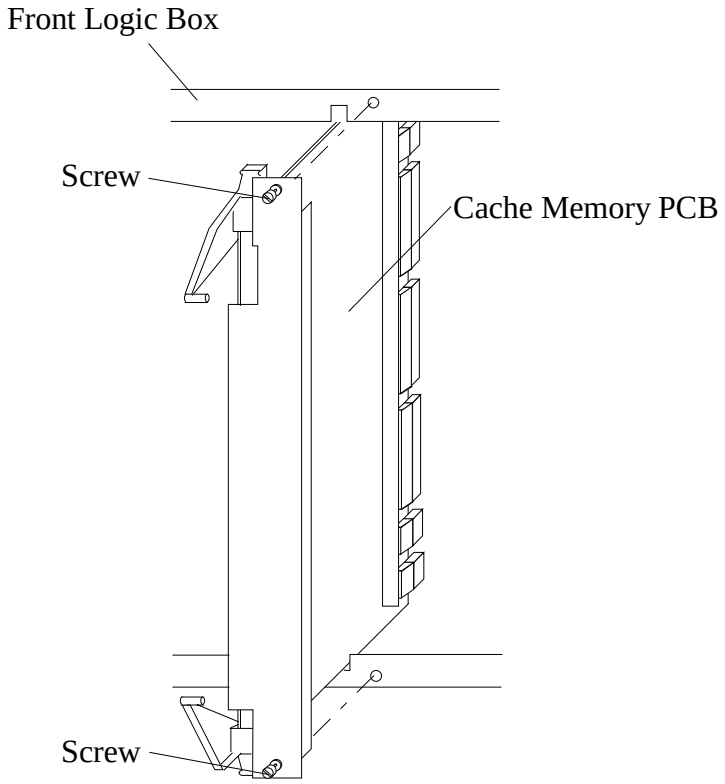

Fig. 4.2.2-5 Removal of the Cache Memory PCB

c. Remove the Maintenance Jumper if it is mounted.

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5-2. Remove the Cache Memory Modules.

a. Remove the Cache Memory Modules according to the required Cache Memory capacity referring to Fig. 4.2.2-6, Table 4.2.2-6 and Table 4.2.2-6A.

b. Insert the dust covers into the vacant sockets.

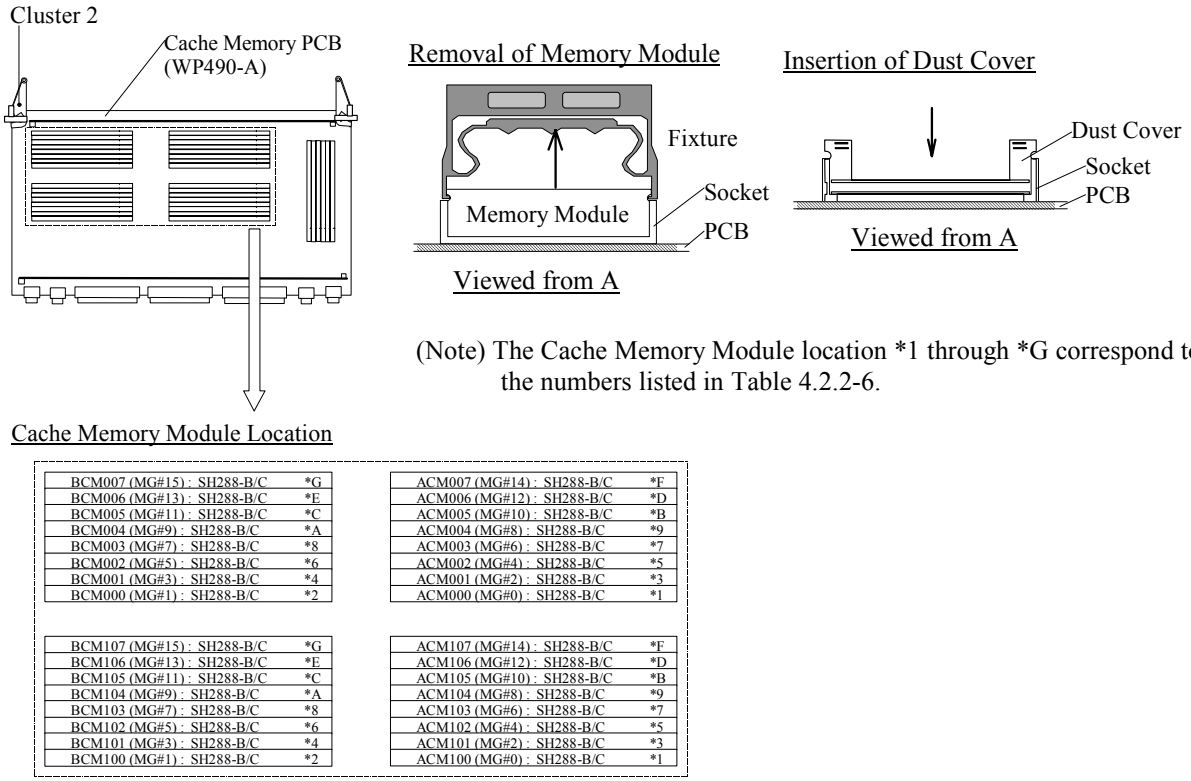

Fig. 4.2.2-6 Inserting Location of the Cache Memory Module

(1) Composition of only DKC-F460I-2048

Table 4.2.2-6 Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-2048)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 2	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	1 GB	DKC-F460I-2048 1 set	SH288-B	2
2	1 GB	2 GB	DKC-F460I-2048 2 sets	SH288-B	2
3	2 GB	3 GB	DKC-F460I-2048 3 sets	SH288-B	2
4	3 GB	4 GB	DKC-F460I-2048 4 sets	SH288-B	2
5	4 GB	5 GB	DKC-F460I-2048 5 sets	SH288-B	2
6	5 GB	6 GB	DKC-F460I-2048 6 sets	SH288-B	2
7	6 GB	7 GB	DKC-F460I-2048 7 sets	SH288-B	2
8	7 GB	8 GB	DKC-F460I-2048 8 sets	SH288-B	2
9	8 GB	9 GB	DKC-F460I-2048 9 sets	SH288-B	2
A	9 GB	10 GB	DKC-F460I-2048 10 sets	SH288-B	2

(To be continued.)

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(Continued from preceding sheet.)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 2	
	From (Note 1)	To (Note 1)		Part name	Quantity
B	10 GB	11 GB	DKC-F460I-2048 11 sets	SH288-B	2
C	11 GB	12 GB	DKC-F460I-2048 12 sets	SH288-B	2
D	12 GB	13 GB	DKC-F460I-2048 13 sets	SH288-B	2
E	13 GB	14 GB	DKC-F460I-2048 14 sets	SH288-B	2
F	14 GB	15 GB	DKC-F460I-2048 15 sets	SH288-B	2
G	15 GB	16 GB	DKC-F460I-2048 16 sets	SH288-B	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 4.2.2-6.

(2) Composition of only DKC-F460I-4096

Table 4.2.2-6A Number of CMs and Corresponding Cache Memory Capacity (When the Cache Memory was composed only of DKC-F460I-4096)

No. (Note 2)	Cache Memory capacity (×2)		Model No.	Cluster 1	
	From (Note 1)	To (Note 1)		Part name	Quantity
1	0 GB	2 GB	DKC-F460I-4096 1 set	SH288-C	2
2	2 GB	4 GB	DKC-F460I-4096 2 sets	SH288-C	2
3	4 GB	6 GB	DKC-F460I-4096 3 sets	SH288-C	2
4	6 GB	8 GB	DKC-F460I-4096 4 sets	SH288-C	2
5	8 GB	10 GB	DKC-F460I-4096 5 sets	SH288-C	2
6	10 GB	12 GB	DKC-F460I-4096 6 sets	SH288-C	2
7	12 GB	14 GB	DKC-F460I-4096 7 sets	SH288-C	2
8	14 GB	16 GB	DKC-F460I-4096 8 sets	SH288-C	2
9	16 GB	18 GB	DKC-F460I-4096 9 sets	SH288-C	2
A	18 GB	20 GB	DKC-F460I-4096 10 sets	SH288-C	2
B	20 GB	22 GB	DKC-F460I-4096 11 sets	SH288-C	2
C	22 GB	24 GB	DKC-F460I-4096 12 sets	SH288-C	2
D	24 GB	26 GB	DKC-F460I-4096 13 sets	SH288-C	2
E	26 GB	28 GB	DKC-F460I-4096 14 sets	SH288-C	2
F	28 GB	30 GB	DKC-F460I-4096 15 sets	SH288-C	2
G	30 GB	32 GB	DKC-F460I-4096 16 sets	SH288-C	2

Note 1: This value is a half value of whole capacity of cache memories. (the capacity of cache memories on the one side)

Note 2: The above numbers represent the Cache Memory Module locations shown in Fig. 4.2.2-6.

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5-3. Insert the PCB.

a. Insert the Cache Memory PCB referring to Table 4.2.2-7.
b. Fasten the two screws.

Table 4.2.2-7 Location of the Cache Memory PCB

Cluster	PCB Name	Box	Slot No.	Location No.	Remarks
2	WP490-A	Front Logic Box	H	CACHE-2H	Cache Memory PCB

5-4 Change the nameplate.

a. Affix a necessary portion of the Label (QTY)(Accessory of DKC; DWG No.3264290-1) in layers on the name plate and paint out numbers less than the number concerned with black oil felt pen.

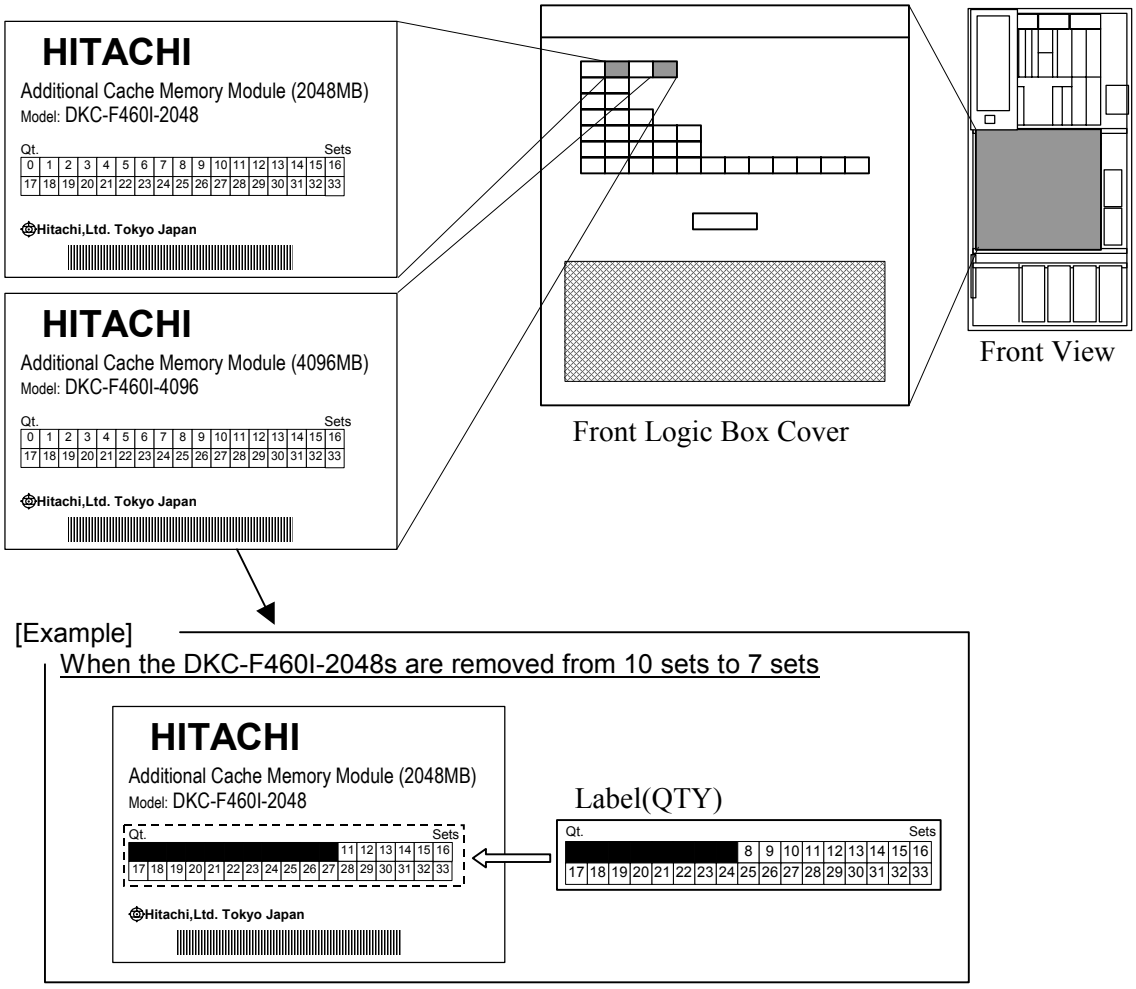

Fig. 4.2.2-7 Location of the Nameplate

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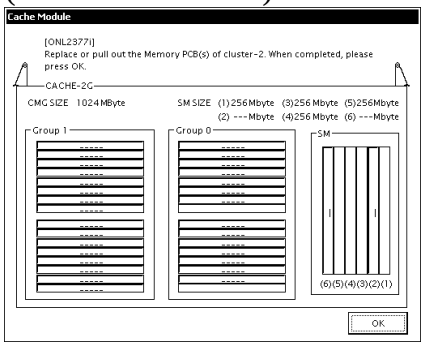
6. SVP post procedure on the Cluster2

1.

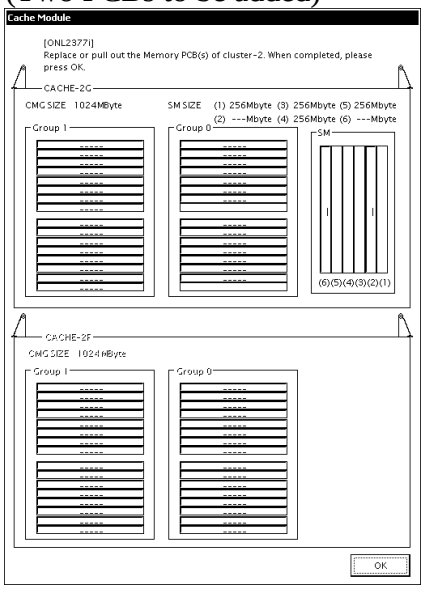
After the hardware procedure for one side of cache memory is completed, select (CL) [OK] in response to “Replace or pull out the Memory PCBs of cluster-2. When completed, please press [OK].”.

“INLINE CUDG is running...” is displayed.

(A PCB to be added)



(Two PCBs to be added)



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. <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.

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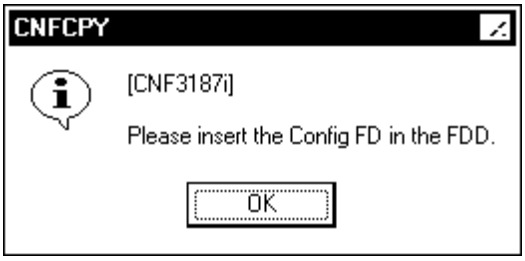
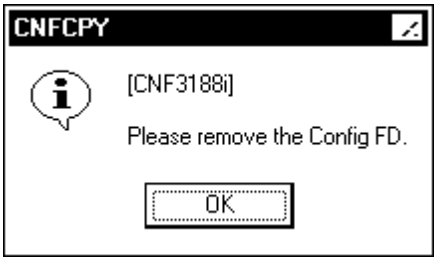
4.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

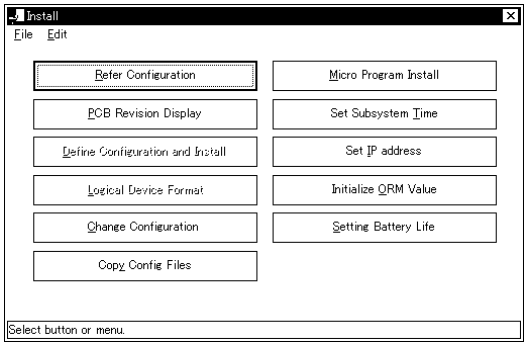


5. When this procedure is completed, the message "Please remove the Config FD." is displayed.
Remove the FD, and select (CL) [OK].



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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4.3 De-installation of Channel Adapter

4.3.1 De-installation of Serial 8-port Adapter (DKC-F460I-8S/8SE)

Table 4.3.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8S	Serial 4-port Adapter PCB	5513983-A	2	
		Cable Clamp	2105506-1	2	
		Holder	2084816-1	8	
		Nameplate (HDS)	2105902-106	1	RSD
			2105903-106		HICAM
			2105903-206		HICEF
		Nameplate (HP)	2105902-206	1	RSD
			2105903-306		HICAM
			2105903-406		HICEF
2	DKC-F460I-8SE	Serial 4-port Adapter PCB	5513983-B	2	
		Holder	2084816-1	8	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-144	1	RSD
			2105903-144		HICAM
			2105903-244		HICEF
		Nameplate (HP)	2105902-244	1	RSD
			2105903-344		HICAM
			2105903-444		HICEF

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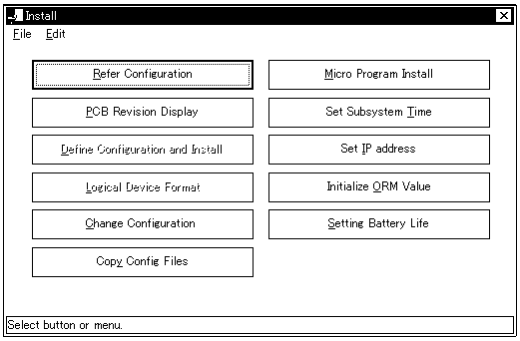
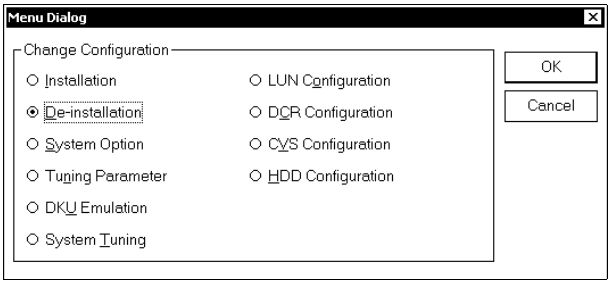
1. Setting up the New Device Structure Information

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

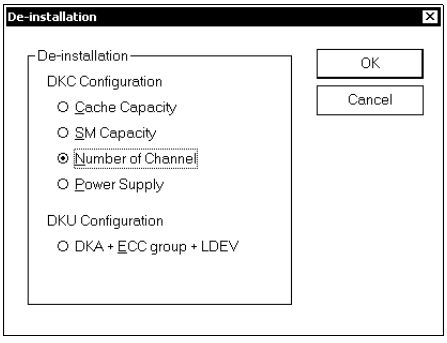
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [Number of Channel], and select (CL) [OK].



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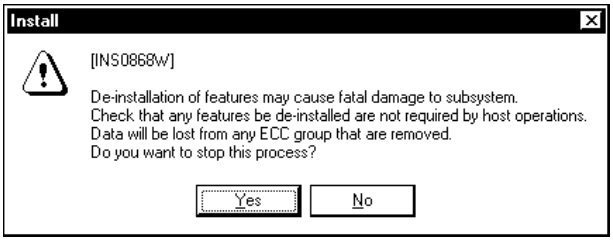
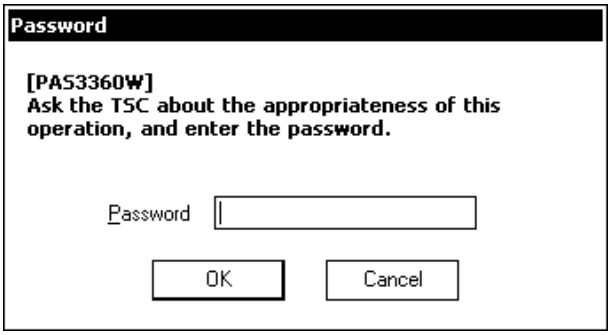
5.

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?”.

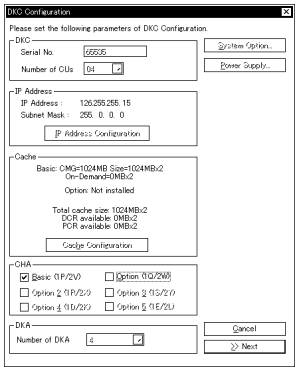


6. <Input password>
Enter the password and select (CL) [OK].



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

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.
Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

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

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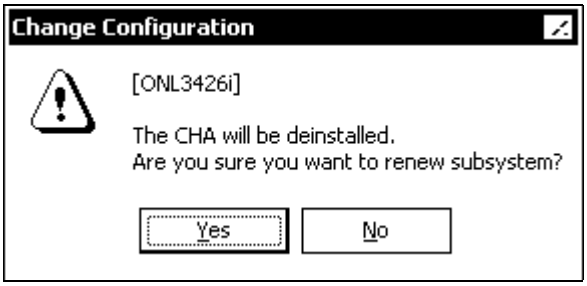
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

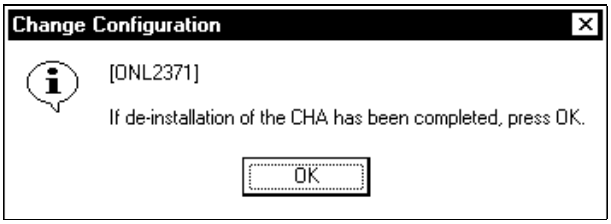
   When [No] is selected (CL), returns to INST04-8S-20 step 3.

2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.

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3 De-Installation Procedure of Serial 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 (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on (Fig. 4.3.1-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

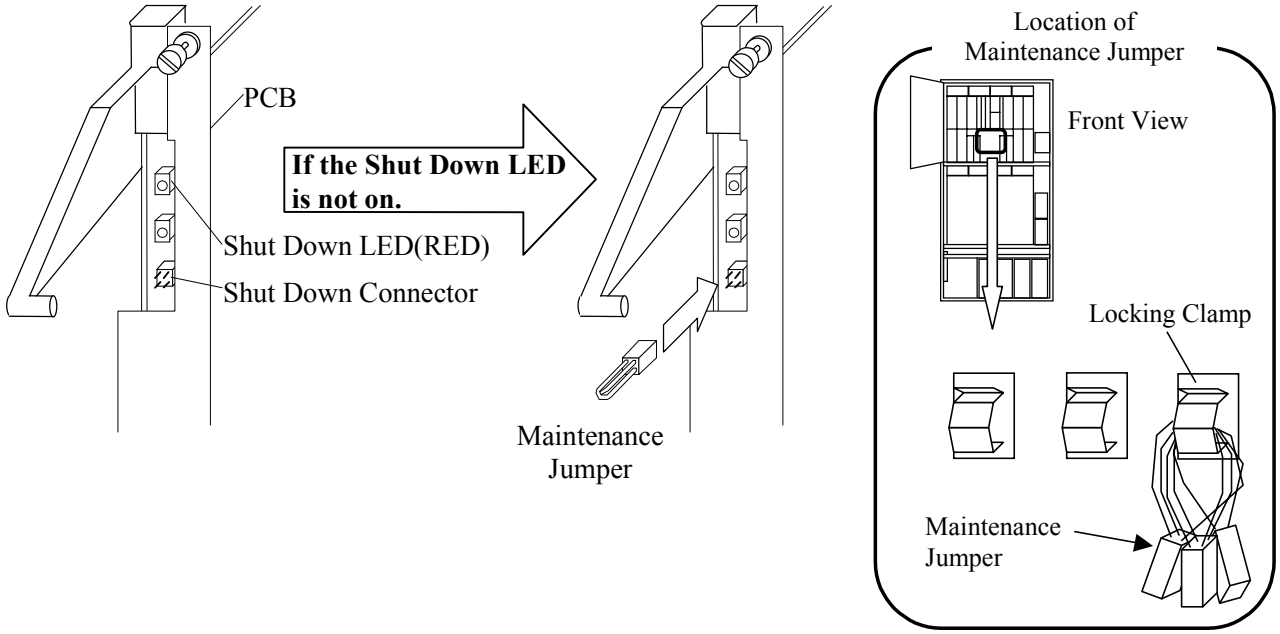

Fig. 4.3.1-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the bracket and cable clamp referring to Fig 4.3.1-2.
b. Disconnect the optical fibre cables and remove the holder referring to Fig 4.3.1-3.
c. Attach the brackets.

Table 4.3.1-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

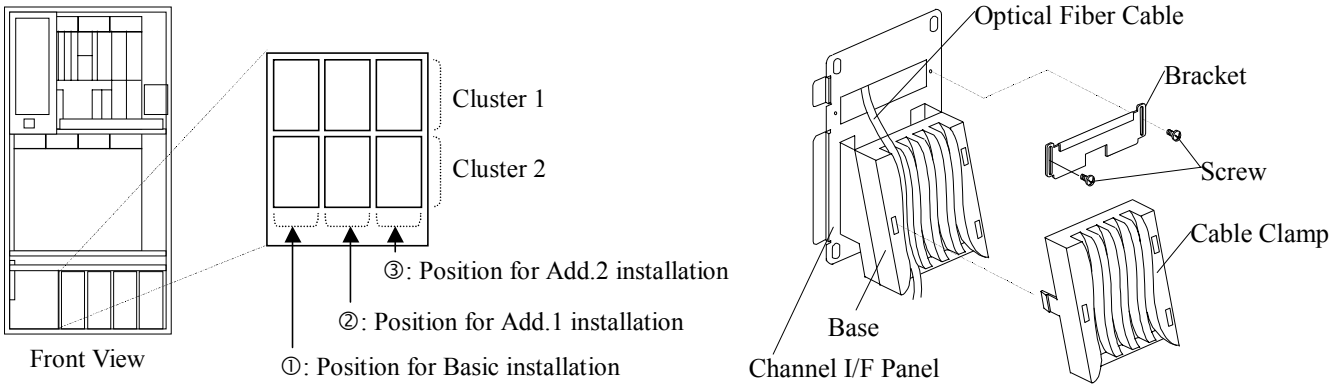

Fig 4.3.1-2 Removal of Bracket

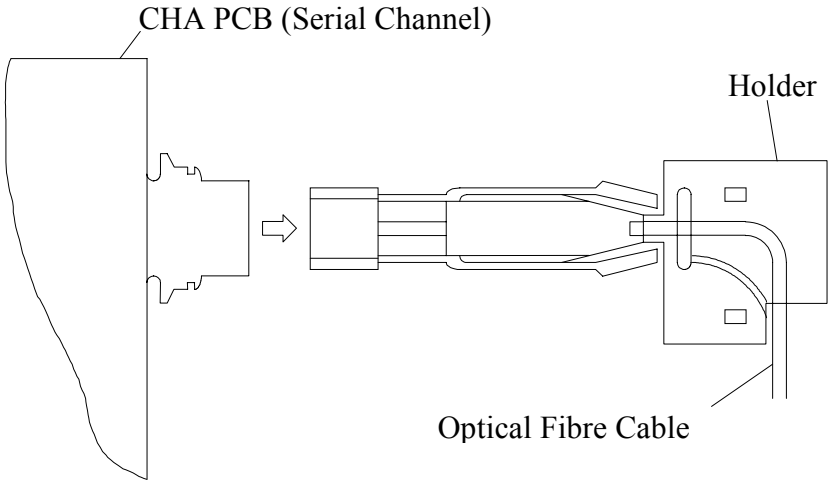

Fig. 4.3.1-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.3.1-4.
b. Attach the dummy plates referring to Fig. 4.3.1-5.

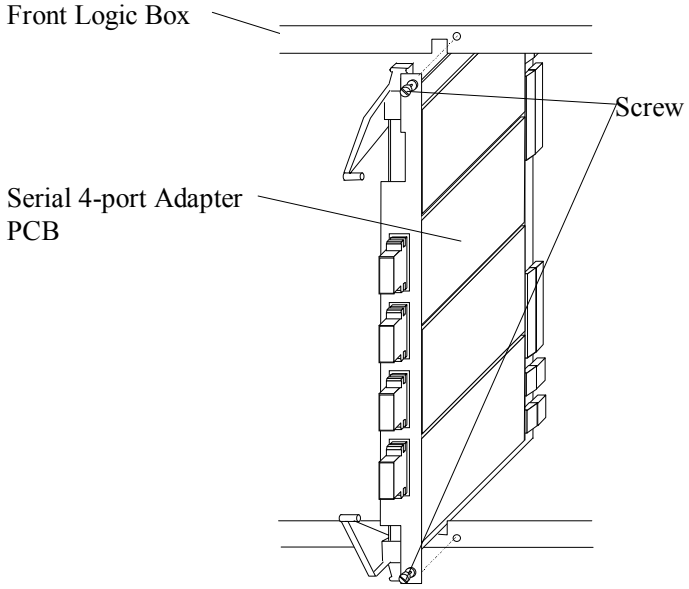

Fig. 4.3.1-4 Removal of PCB

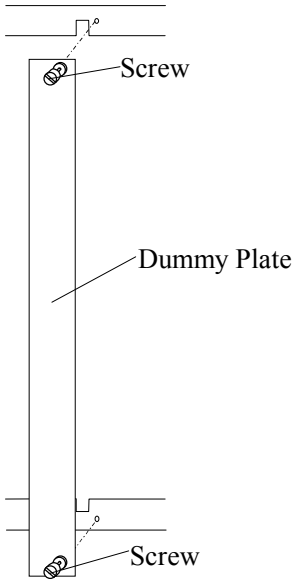

Fig. 4.3.1-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.3.1-6.

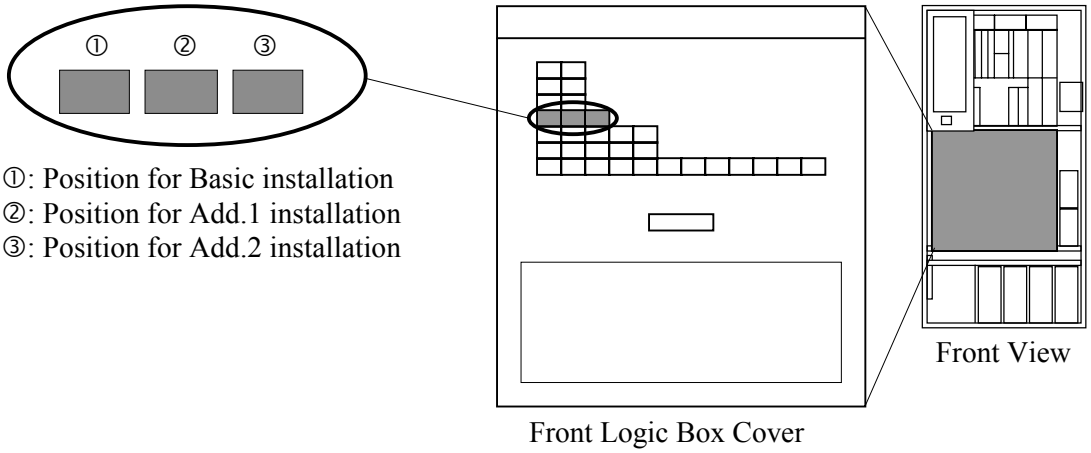

Fig. 4.3.1-6 Removal of Nameplate

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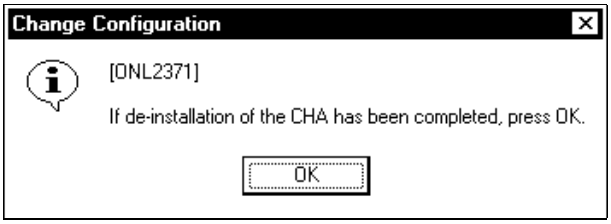
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



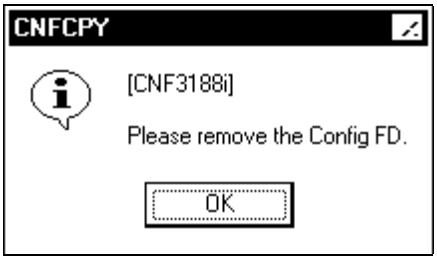
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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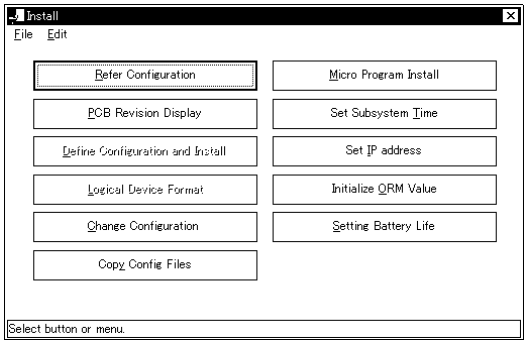
5.

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



6. <Mode Change>
Change the mode to View Mode.

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4.3.2 De-installation of Fibre 4/8-port Adapter (DKC-F460I-8GSE/4HSE/8HSE/8HLE/8GSF/4HSF/8HSF/8HLF)

Table 4.3.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8GSE	Fibre 4-port Adapter PCB	5513980-B	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-107	1	RSD
			2105903-107		HICAM
			2105903-207		HICEF
		Nameplate (HP)	2105902-207	1	RSD
			2105903-307		HICAM
			2105903-407		HICEF
2	DKC-F460I-4HSE (Short Wavelength)	Fibre 2-port Adapter PCB	5513981-C	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-108	1	RSD
			2105903-108		HICAM
			2105903-208		HICEF
		Nameplate (HP)	2105902-208	1	RSD
			2105903-308		HICAM
			2105903-408		HICEF
3	DKC-F460I-8HSE (Short Wavelength)	Fibre 4-port Adapter PCB	5513981-A	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-109	1	RSD
			2105903-109		HICAM
			2105903-209		HICEF
		Nameplate (HP)	2105902-209	1	RSD
			2105903-309		HICAM
			2105903-409		HICEF
4	DKC-F460I-8HLE (Long Wavelength)	Fibre 4-port Adapter PCB	5513981-B	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-110	1	RSD
			2105903-110		HICAM
			2105903-210		HICEF

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
5	DKC-F460I-8GSF (Check data assist support)	Fibre 4-port Adapter PCB	5518079-C	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-136	1	RSD
			2105903-136		HICAM
			2105903-236		HICEF
		Nameplate (HP)	2105902-236	1	RSD
			2105903-336		HICAM
			2105903-436		HICEF
6	DKC-F460I-4HSF (Short Wavelength, Check data assist support)	Fibre 2-port Adapter PCB	5518079-D	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-137	1	RSD
			2105903-137		HICAM
			2105903-237		HICEF
		Nameplate (HP)	2105902-237	1	RSD
			2105903-337		HICAM
			2105903-437		HICEF
7	DKC-F460I-8HSF (Short Wavelength, Check data assist support)	Fibre 4-port Adapter PCB	5518079-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-138	1	RSD
			2105903-138		HICAM
			2105903-238		HICEF
		Nameplate (HP)	2105902-238	1	RSD
			2105903-338		HICAM
			2105903-438		HICEF
8	DKC-F460I-8HLF (Long Wavelength, Check data assist support)	Fibre 4-port Adapter PCB	5518079-B	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-139	1	RSD
			2105903-139		HICAM
			2105903-239		HICEF

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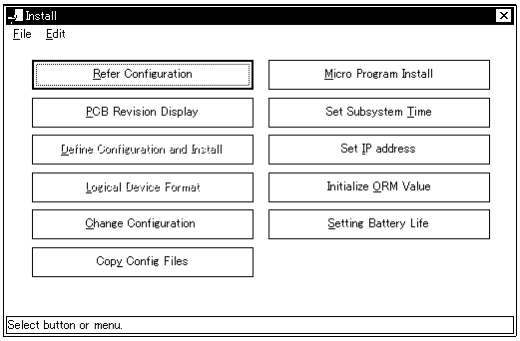
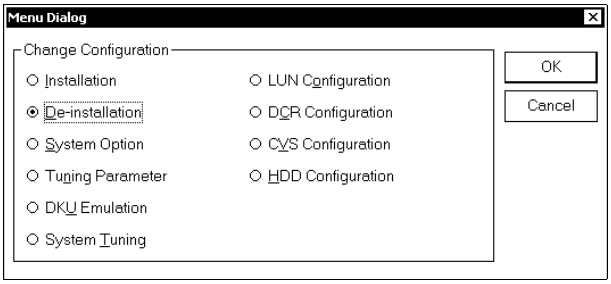
1. Setting up the New Device Structure Information

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

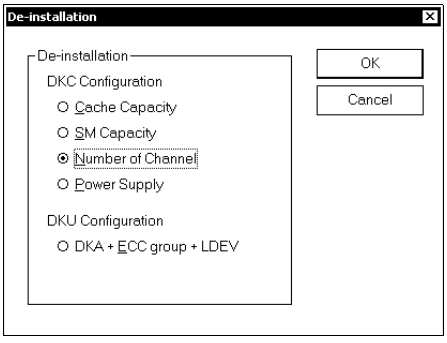
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [Number of Channel], and select (CL) [OK].



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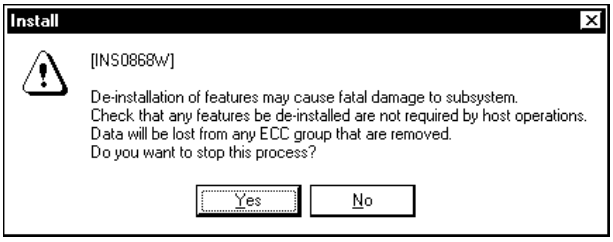
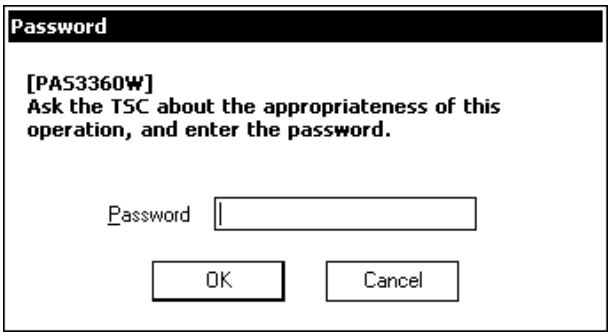
5.

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?”.

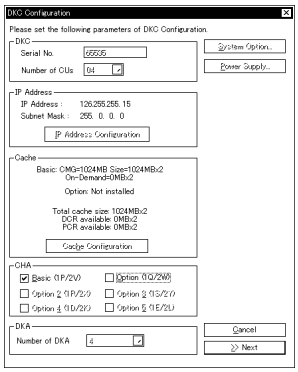


6. <Input password>
Enter the password and select (CL) [OK].



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

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.
Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

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

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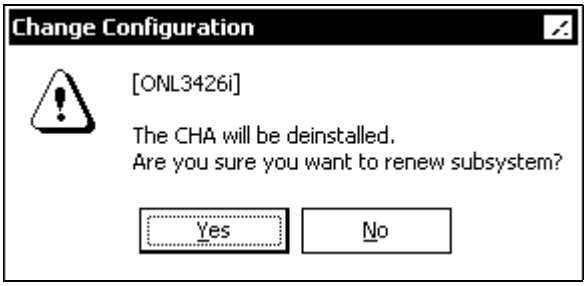
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

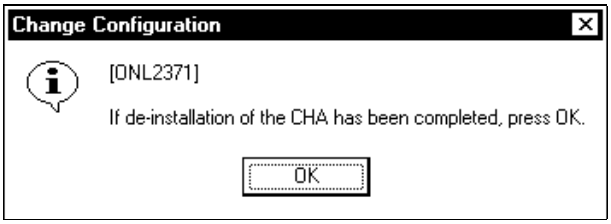
   When [No] is selected (CL), returns to INST04-FIB-20 step 3.

2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.

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3 De-Installation Procedure of Fibre 4/8-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 (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on (Fig. 4.3.2-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

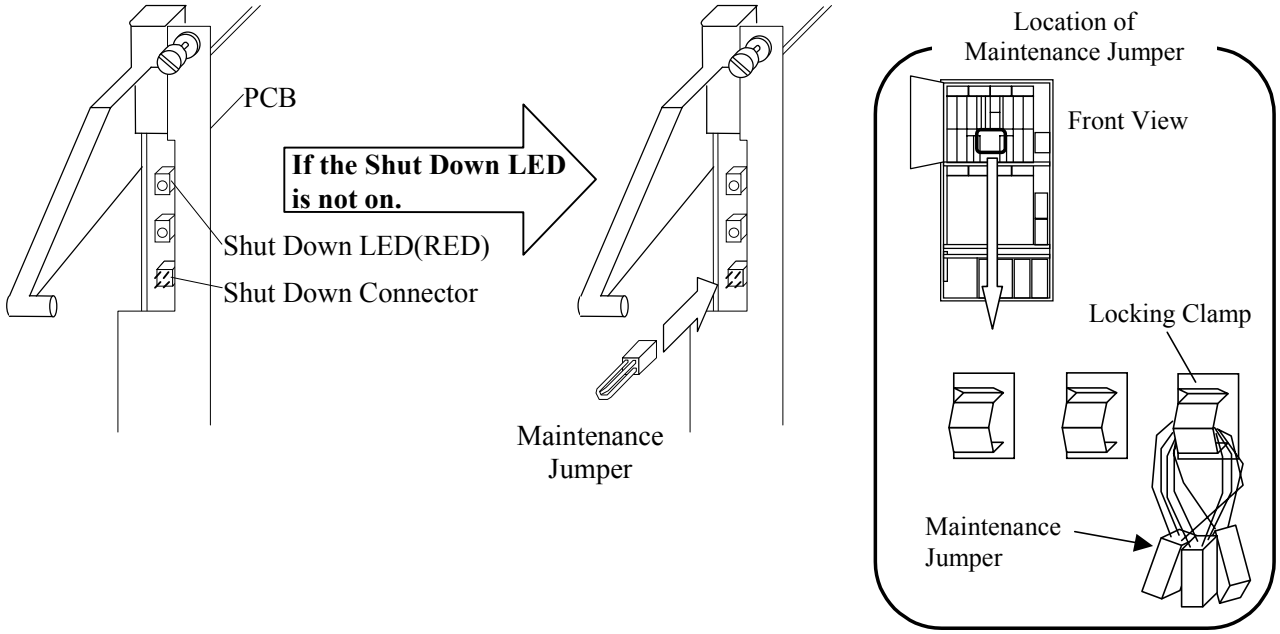

Fig. 4.3.2-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the bracket and cable clamp referring to Fig 4.3.2-2.
b. Disconnect the optical fibre cables referring to Fig 4.3.2-3.
c. Attach the brackets.

Table 4.3.2-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

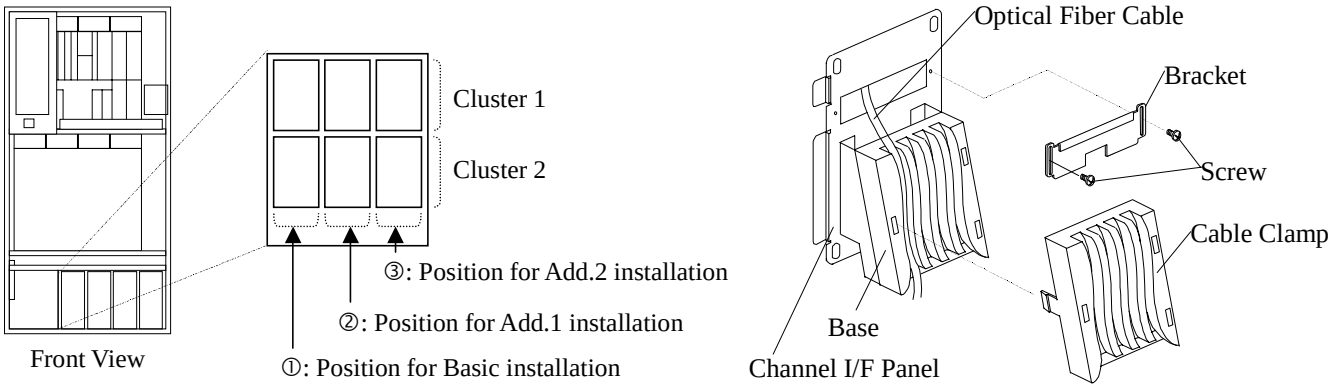

Fig 4.3.2-2 Removal of Bracket

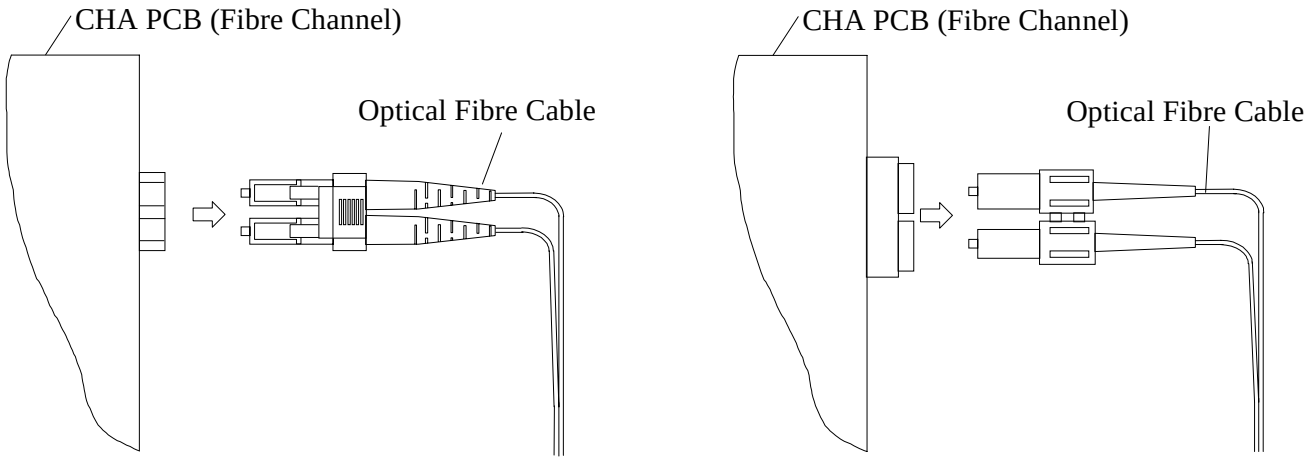

Fig. 4.3.2-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.3.2-4.
b. Attach the dummy plates referring to Fig. 4.3.2-5.

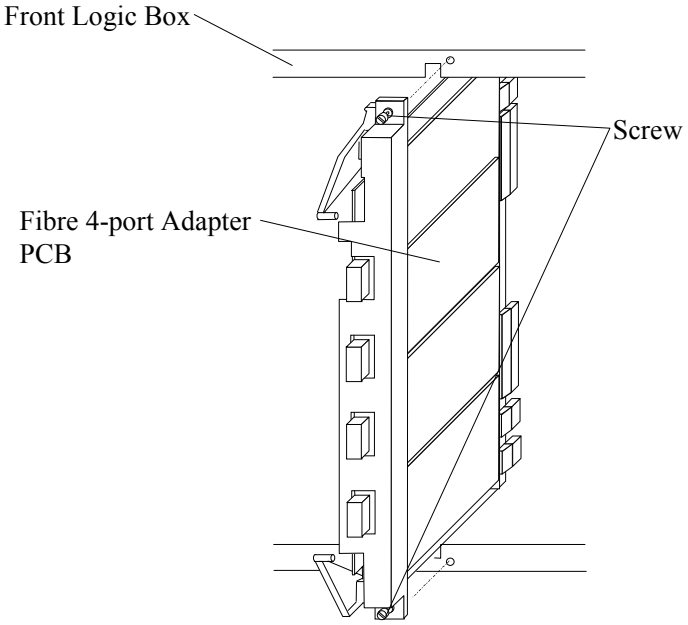

Fig. 4.3.2-4 Removal of PCB

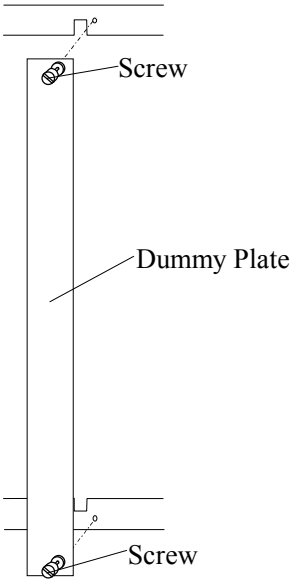

Fig. 4.3.2-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.3.2-6.

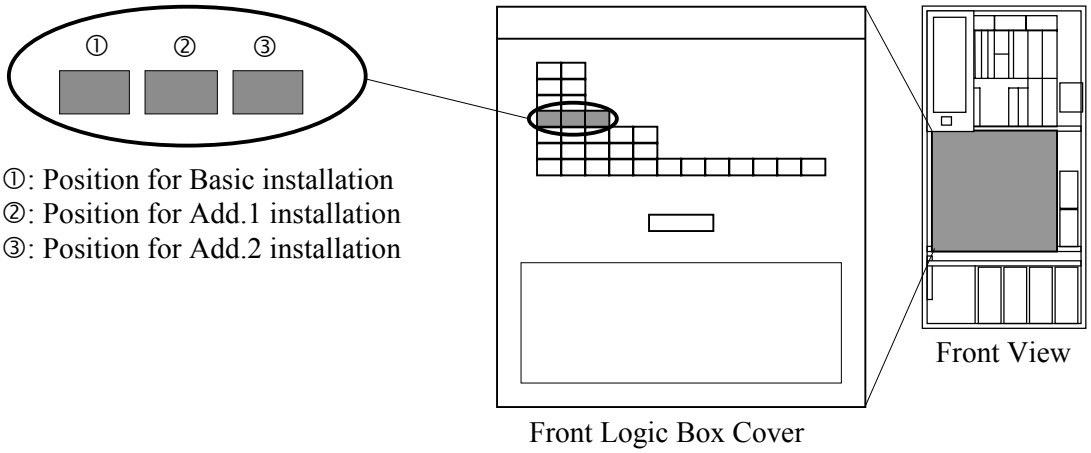

Fig. 4.3.2-6 Removal of Nameplate

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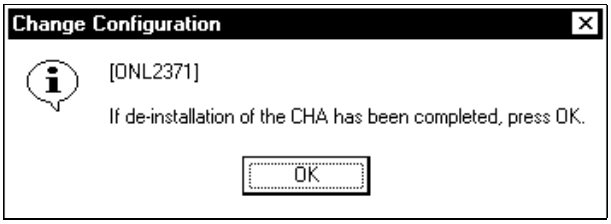
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



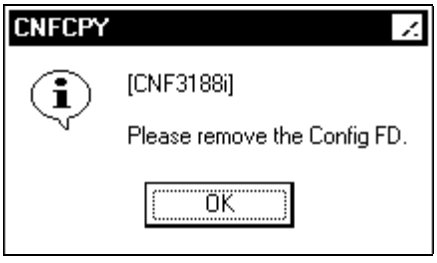
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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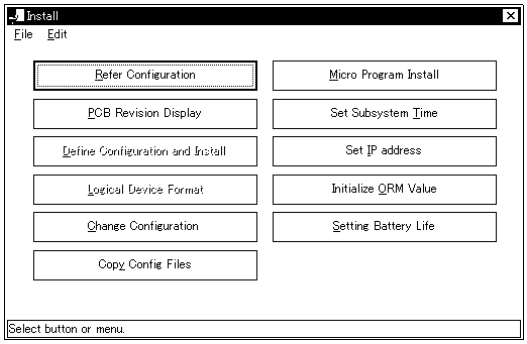
5.

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



6. <Mode Change>
Change the mode to View Mode.

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4.3.3 De-installation of Mainframe Fibre 8-port Adapter (DKC-F460I-8MS/8ML)

Table 4.3.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8MS (Short Wavelength)	Fibre 4-port Adapter PCB	5513984-A	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-112	1	RSD
			2105903-112		HICAM
			2105903-212		HICEF
2	DKC-F460I-8ML (Long Wavelength)	Fibre 4-port Adapter PCB	5513984-B	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-113	1	RSD
			2105903-113		HICAM
			2105903-213		HICEF

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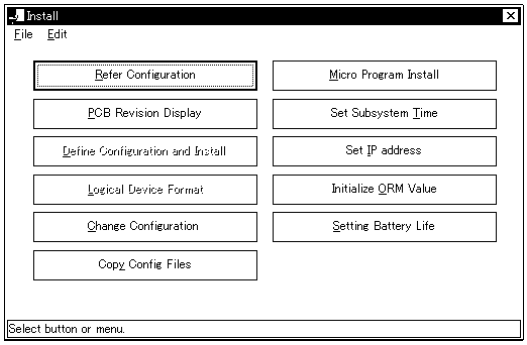
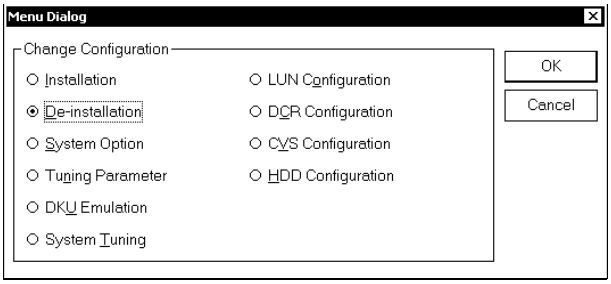
1. Setting up the New Device Structure Information

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

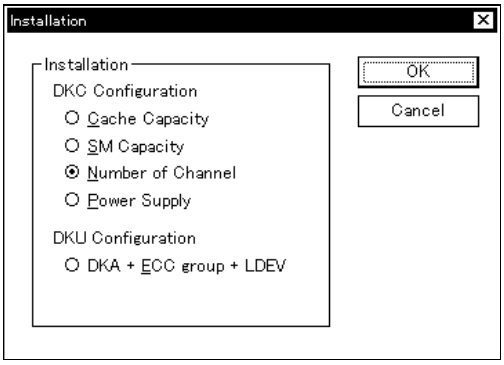
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [Number of Channel], and select (CL) [OK].



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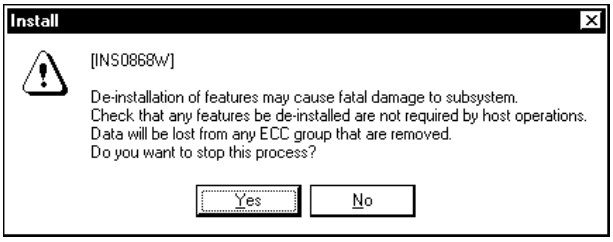
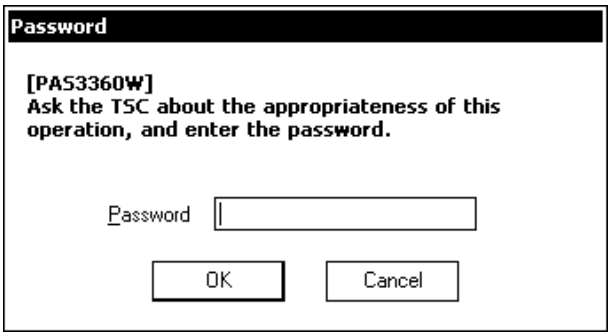
5.

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?”.

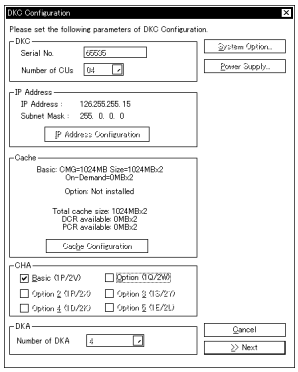


6. <Input password>
Enter the password and select (CL) [OK].



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

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

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

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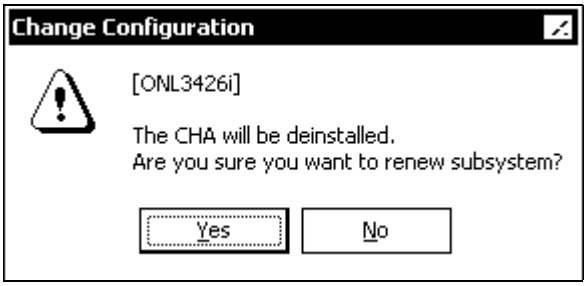
2. SVP pre procedure

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-MF-20 step 3.

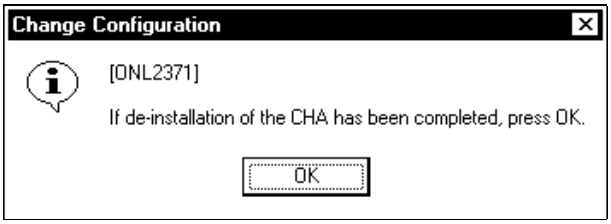


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Mainframe Fibre 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 (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on (Fig. 4.3.3-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

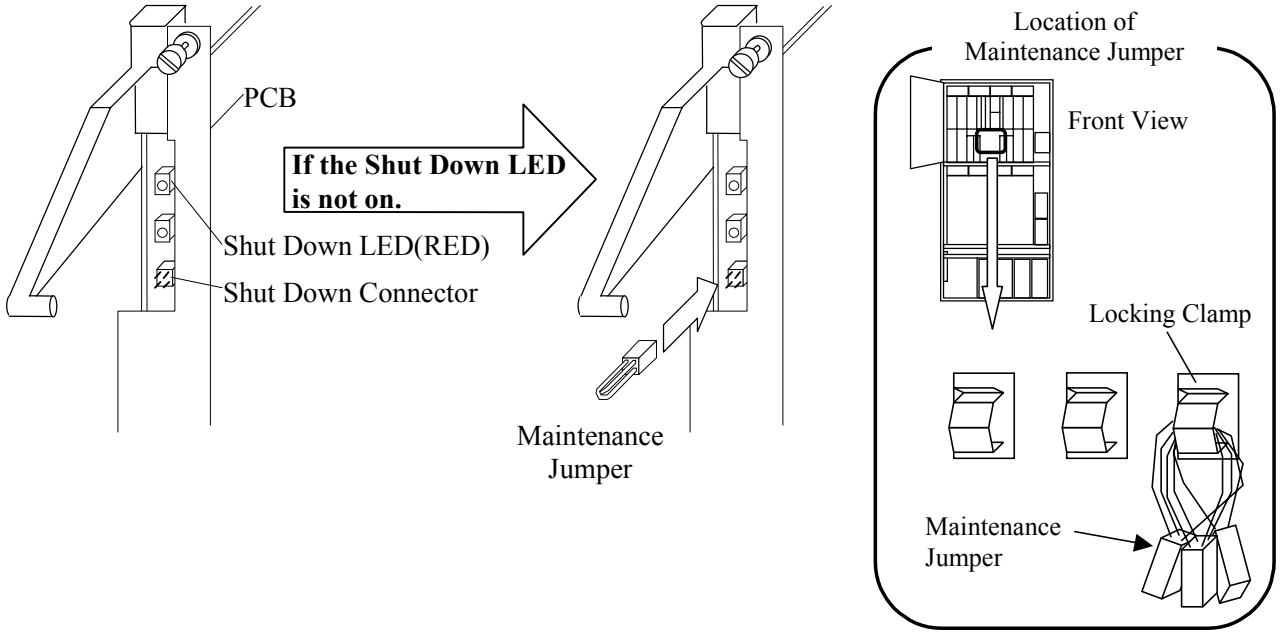

Fig. 4.3.3-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the bracket and cable clamp referring to Fig 4.3.3-2.
b. Disconnect the optical fibre cables referring to Fig 4.3.3-3.
c. Attach the brackets.

Table 4.3.3-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

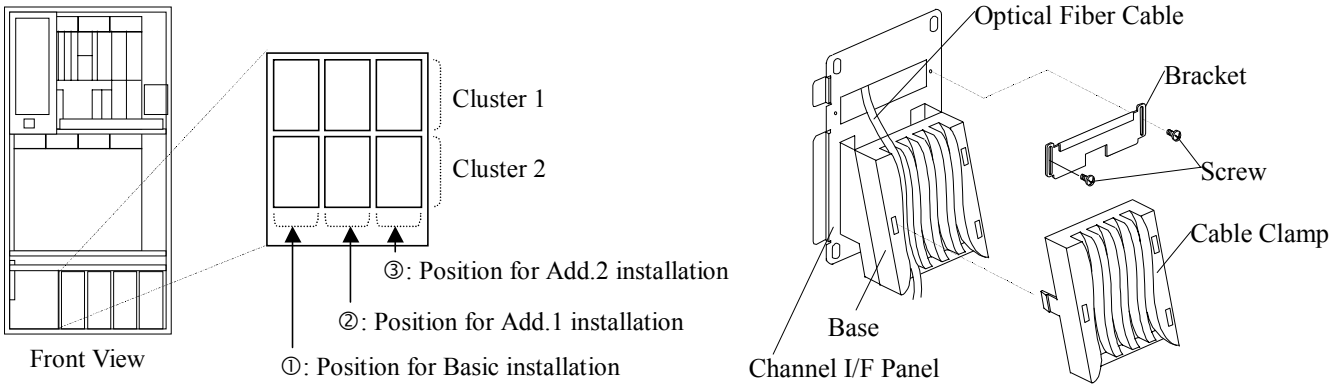

Fig 4.3.3-2 Removal of Bracket

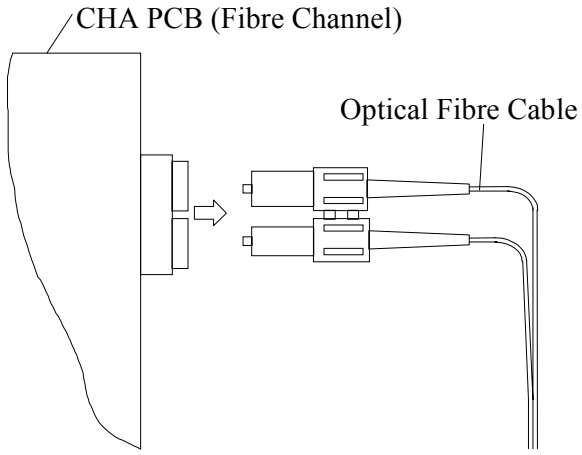

Fig. 4.3.3-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.3.3-4.
b. Attach the dummy plates referring to Fig. 4.3.3-5.

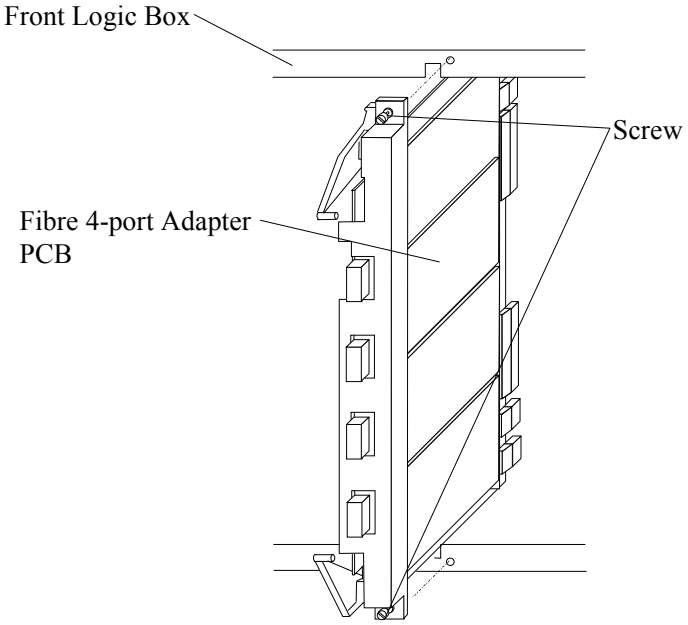

Fig. 4.3.3-4 Removal of PCB

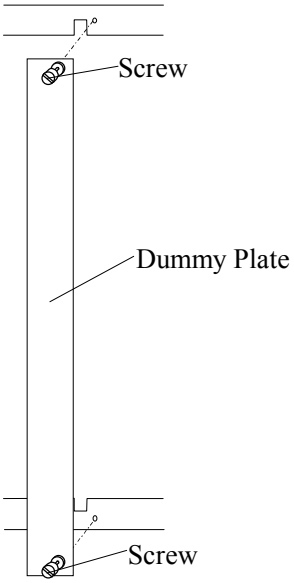

Fig. 4.3.3-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.3.3-6.

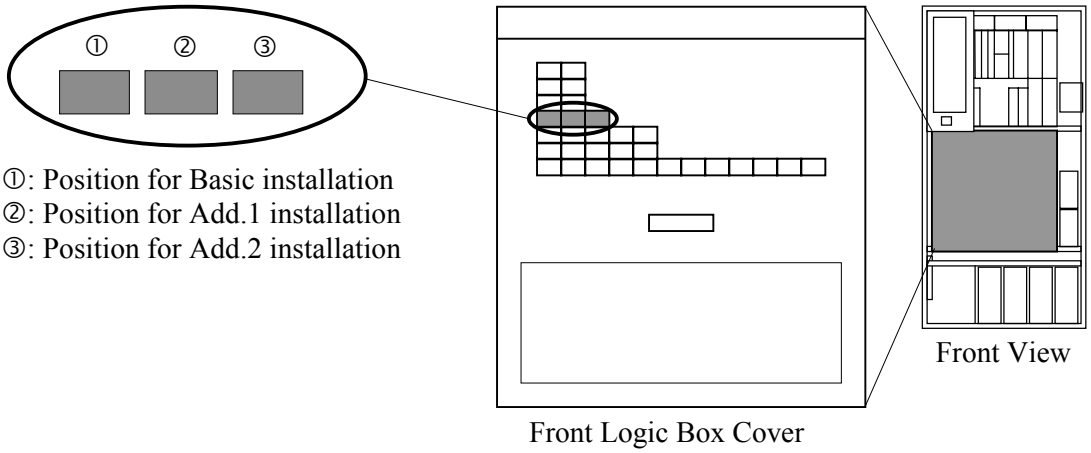

Fig. 4.3.3-6 Removal of Nameplate

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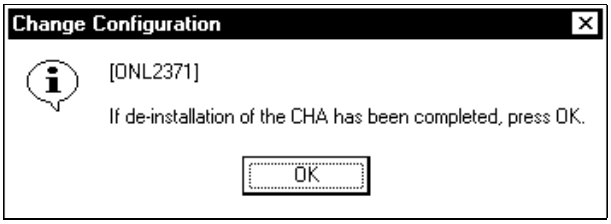
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



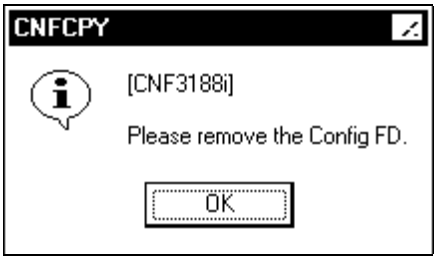
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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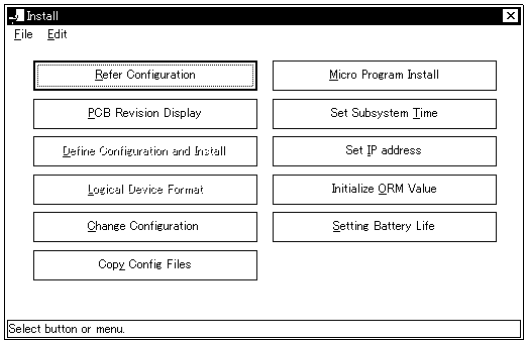
5.

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



6. <Mode Change>
Change the mode to View Mode.

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4.3.4 De-installation of Fibre 16-port Adapter for 1-2Gbps Short Wavelength (DKC-F460I-16HSF)

Table 4.3.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-16HSF (DB Validator support)	Fibre 8-port Adapter PCB	5518079-E	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	4	
		Nameplate (HDS)	2105902-140	1	RSD
			2105903-140		HICAM
			2105903-240		HICEF
		Nameplate (HP)	2105902-240	1	RSD
			2105903-340		HICAM
			2105903-440		HICEF

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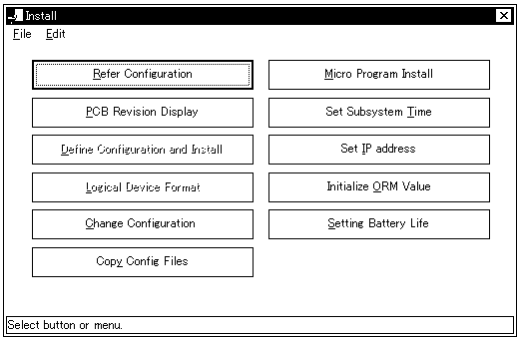
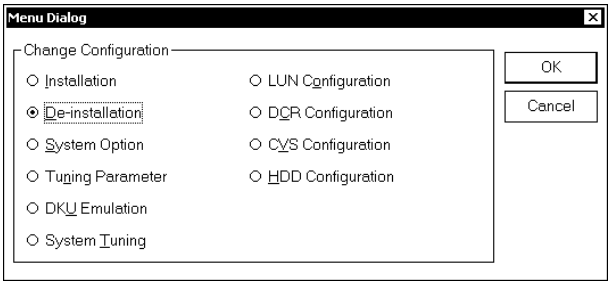
1. Setting up the New Device Structure Information

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

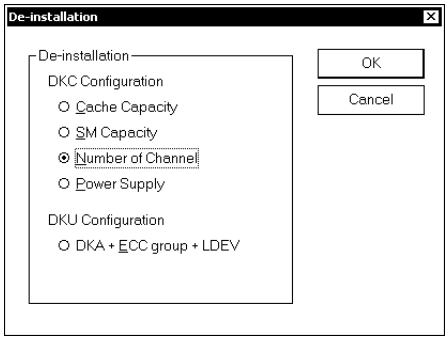
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [Number of Channel], and select (CL) [OK].



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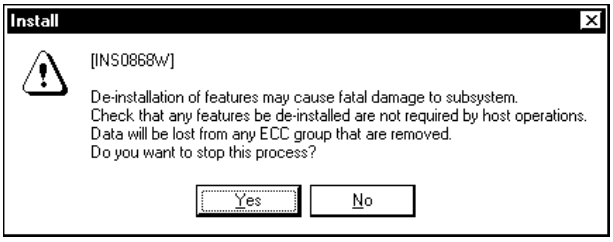
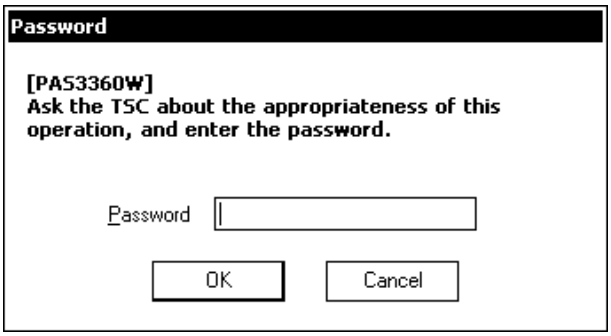
5.

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?”.

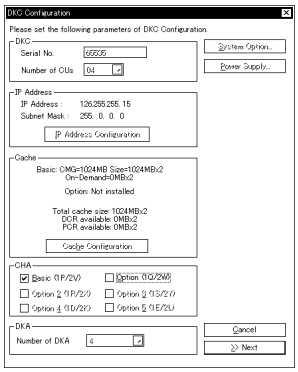


6. <Input password>
Enter the password and select (CL) [OK].



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

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

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

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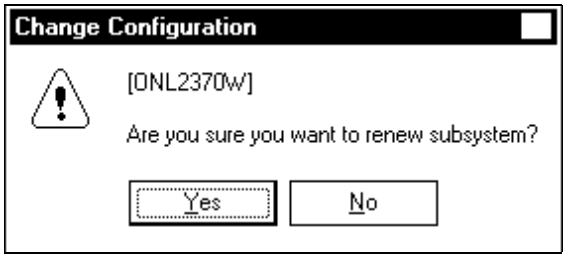
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “Are you sure you want to renew subsystem?”.

   When [No] is selected (CL), returns to INST04-16F-20 step 3.

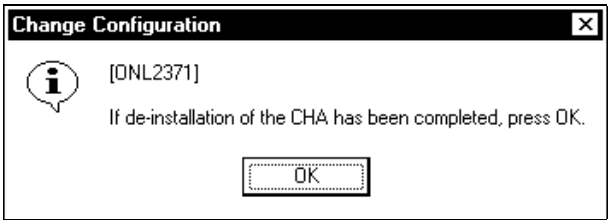


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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3 De-Installation Procedure of Fibre 4/8-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 (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on (Fig. 4.3.4-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

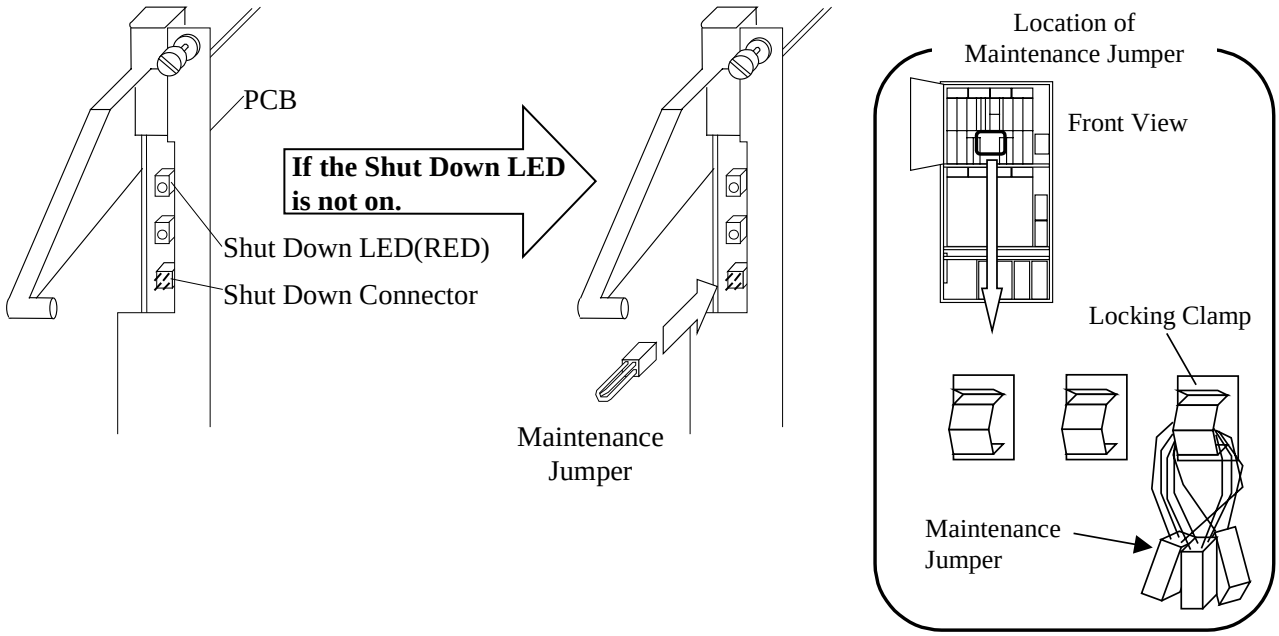

Fig. 4.3.4-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the bracket and cable clamp referring to Fig 4.3.4-2.
b. Disconnect the optical fibre cables referring to Fig 4.3.4-3.
c. Attach the brackets.

Table 4.3.4-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

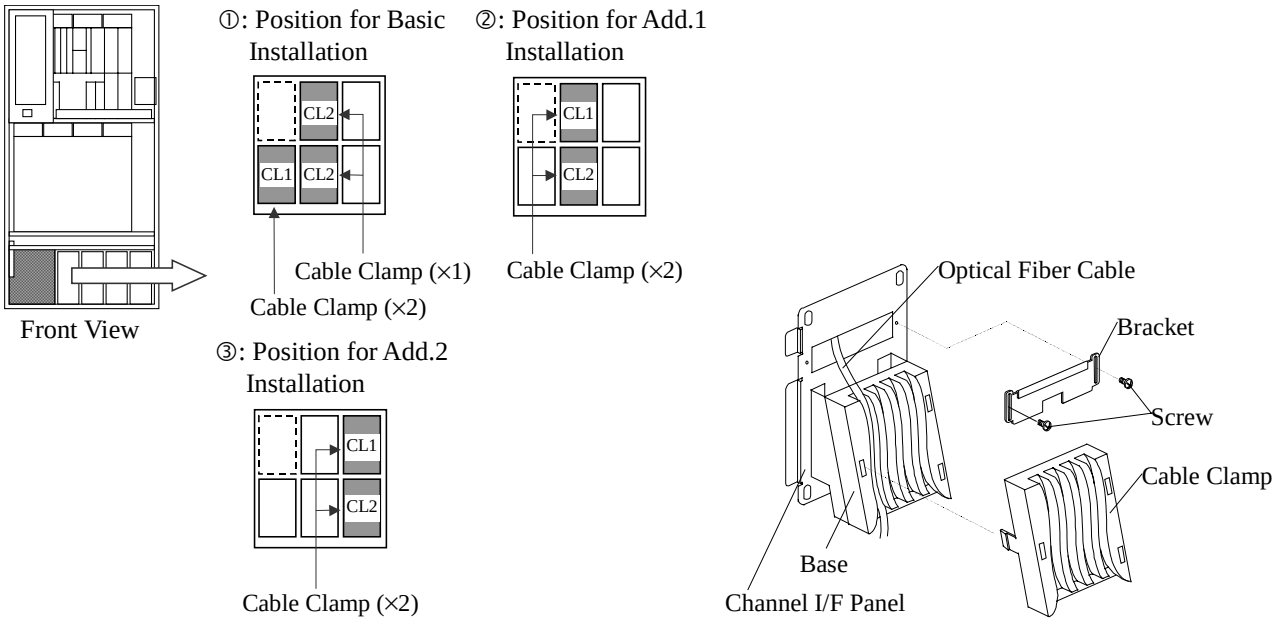

Fig 4.3.4-2 Removal of Bracket

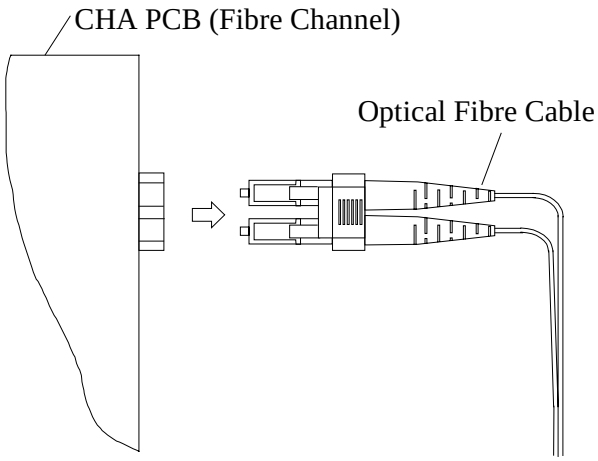

Fig. 4.3.4-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.3.4-4.
b. Attach the dummy plates referring to Fig. 4.3.4-5.

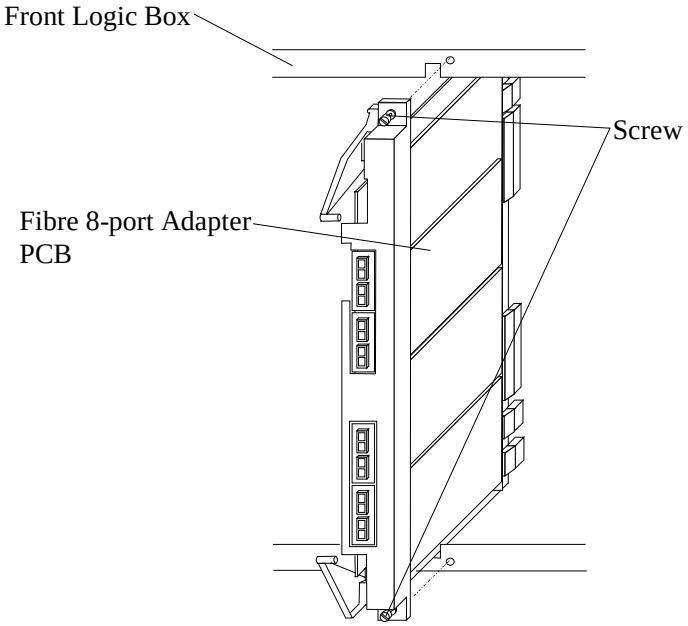

Fig. 4.3.4-4 Removal of PCB

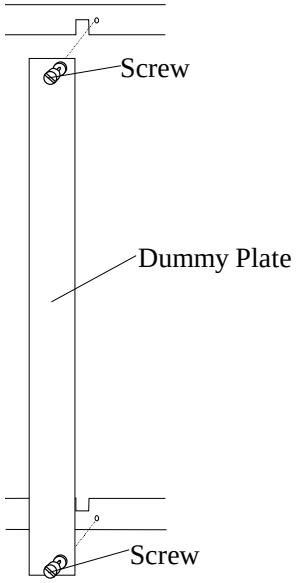

Fig. 4.3.4-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.3.4-6.

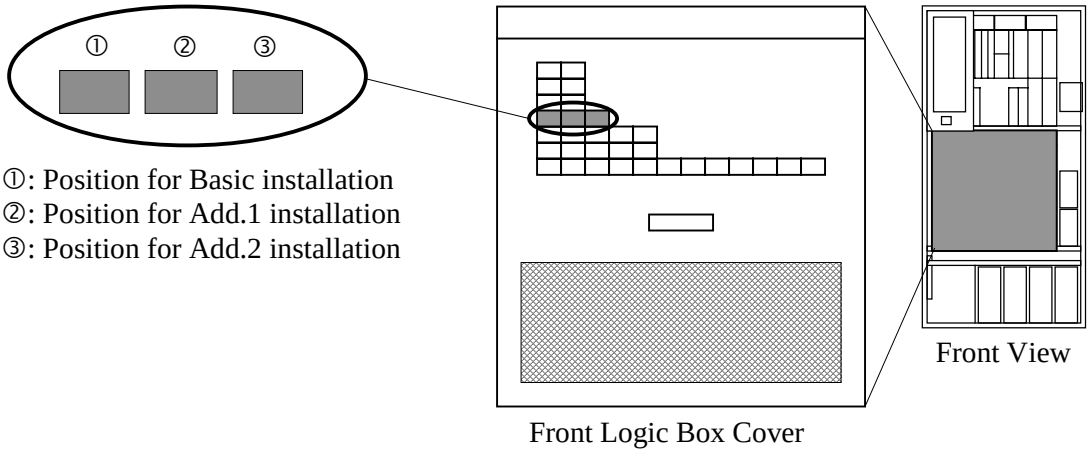

Fig. 4.3.4-6 Removal of Nameplate

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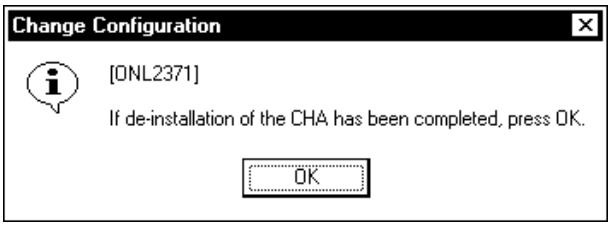
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



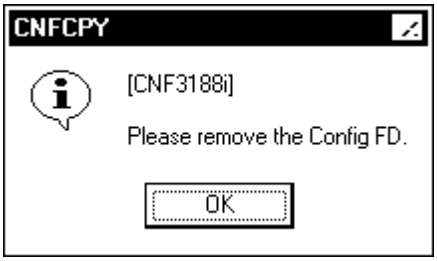
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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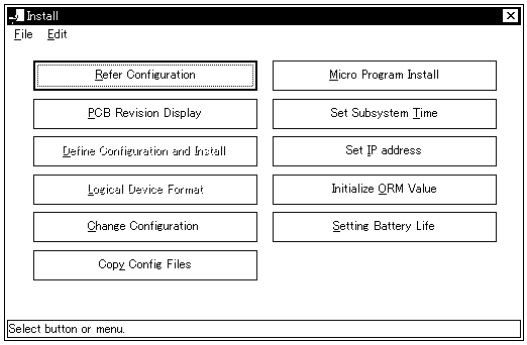
5.

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



6. <Mode Change>
Change the mode to View Mode.

Return to the work table (INST02-40) and perform rest of the works.

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4.3.5 De-installation of NAS 4-port Adapter for SX (DKC-F460I-4NS)

Table 4.3.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-4NS	NAS 2-port Adapter PCB	5519714-A	2	
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-141	1	RSD
			2105903-141		HICAM
			2105903-241		HICEF
		Nameplate (HP)	2105902-241	1	RSD
			2105903-341		HICAM
			2105903-441		HICEF

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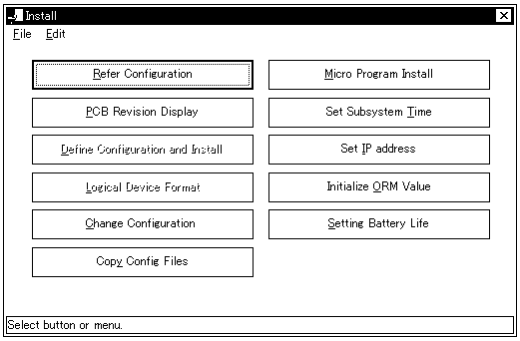
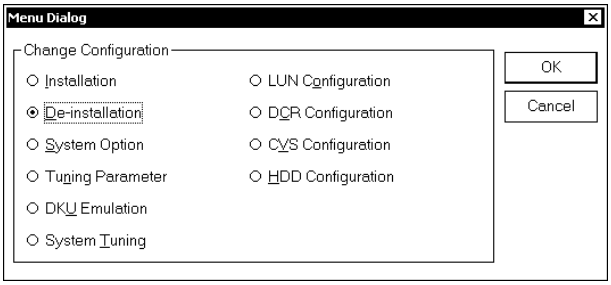
1. Setting up the New Device Structure Information

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

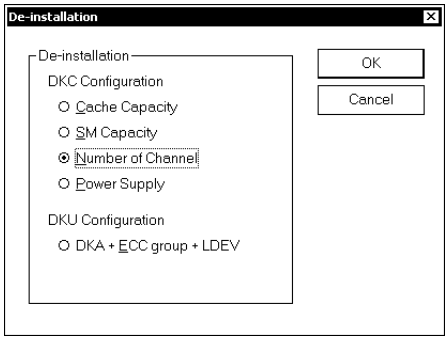
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [Number of Channel], and select (CL) [OK].



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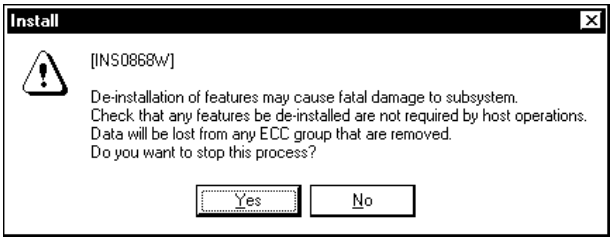
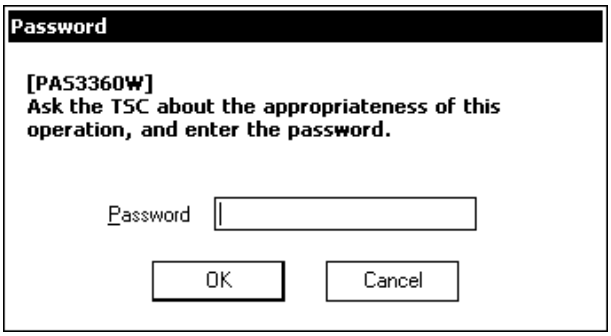
5.

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?”.

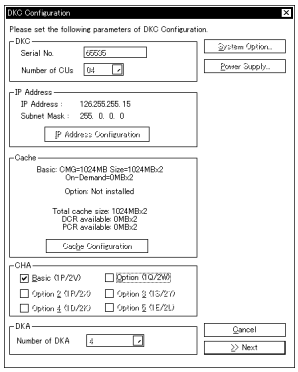


6. <Input password>
Enter the password and select (CL) [OK].



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

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

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

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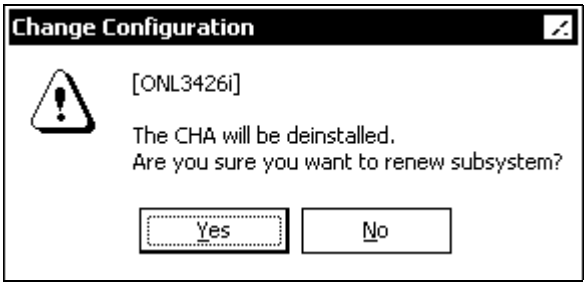
2. SVP pre procedure

1. <Start de-installation>
   Select (CL) [Yes] in response to “The CHA will be deinstalled. Are you sure you want to renew subsystem?”.

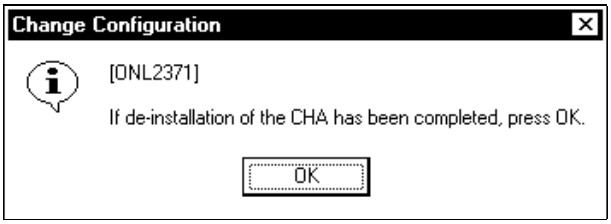
   When [No] is selected (CL), returns to INST04-4NS-20 step 3.

2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.

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3 De-Installation Procedure of NAS 4-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 (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on (Fig. 4.3.5-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

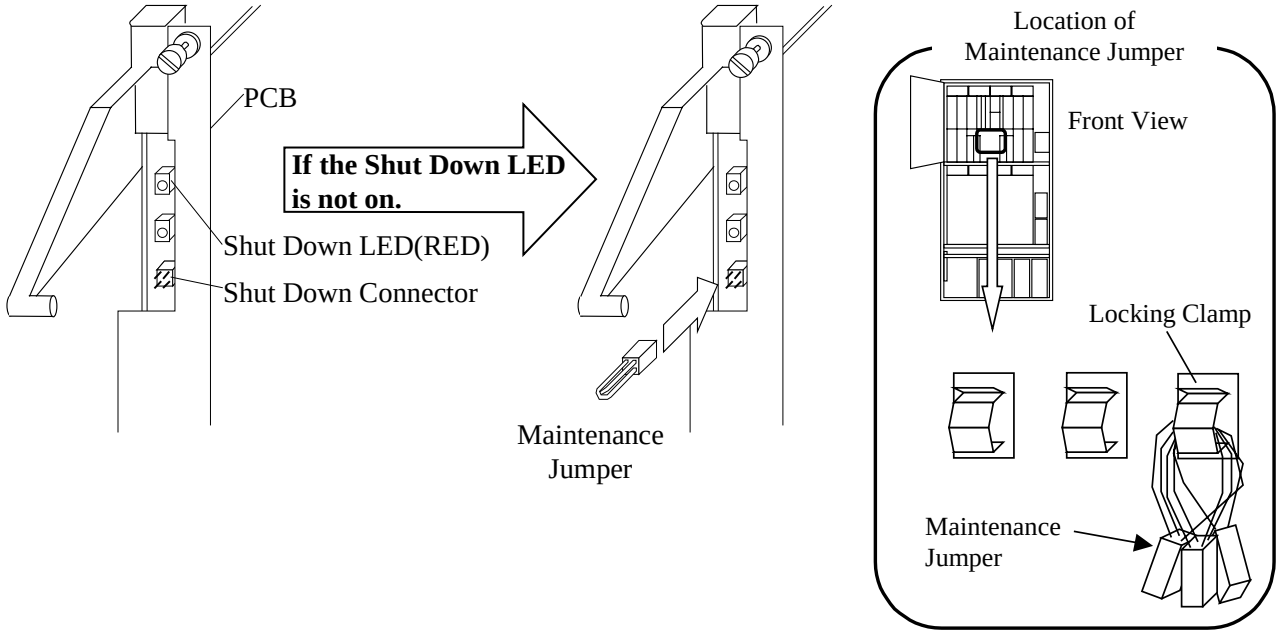

Fig. 4.3.5-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the bracket and cable clamp referring to Fig 4.3.5-2.
b. Disconnect the optical fibre cables referring to Fig 4.3.5-3.
c. Attach the brackets.

Table 4.3.5-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

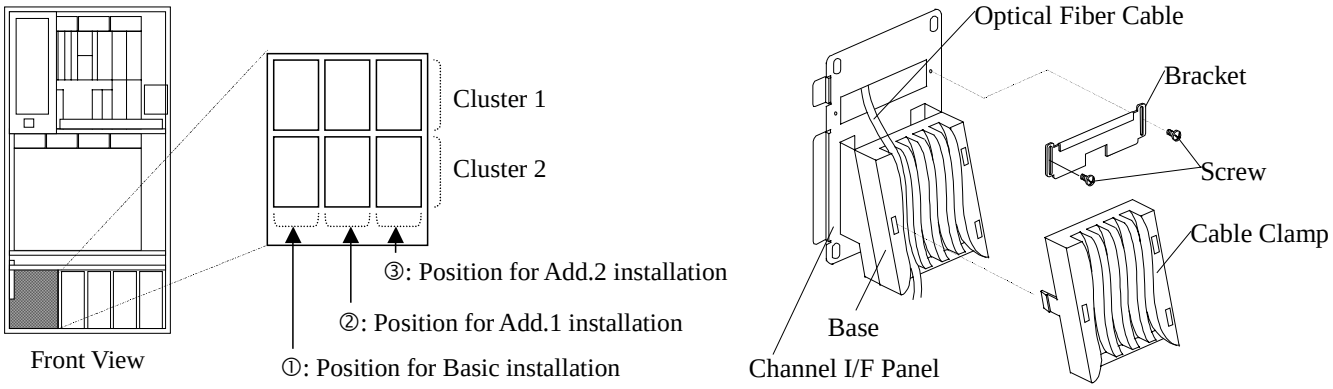

Fig 4.3.5-2 Removal of Bracket

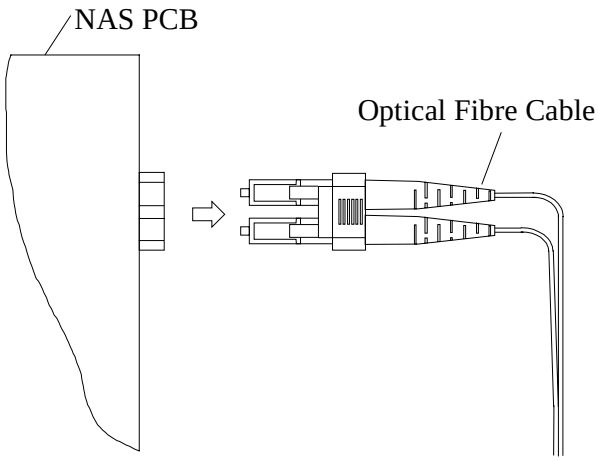

Fig. 4.3.5-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

Note: When removing the CHA PCB for the NAS, be sure to remove the cable before removing the PCB.

a. Disconnect the 12V power cables from the PCBs referring to Fig. 4.3.5-4.
b. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box.
c. Attach the dummy plates referring to Fig. 4.3.5-5.

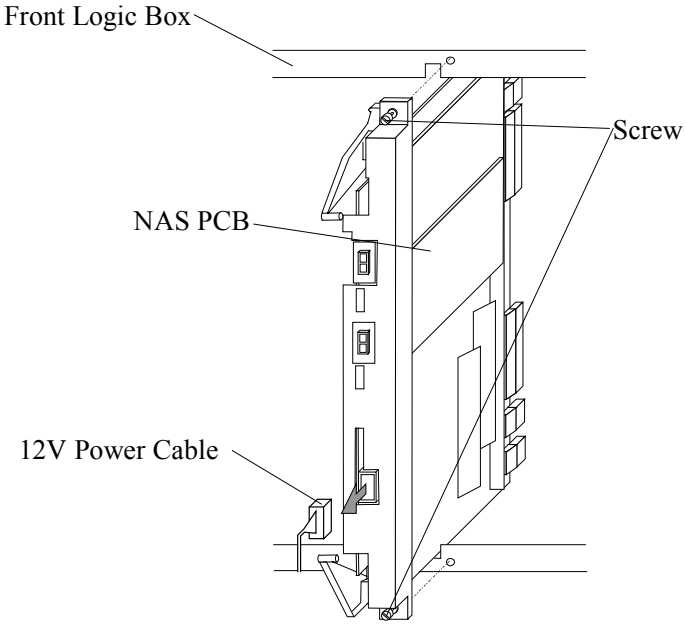

Fig. 4.3.5-4 Removal of PCB

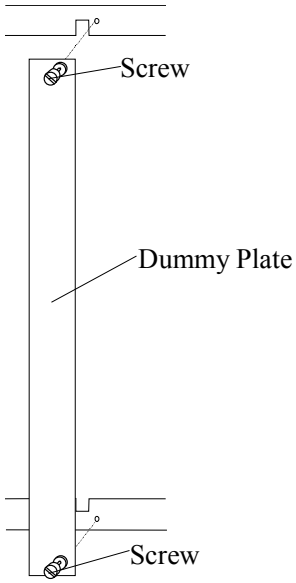

Fig. 4.3.5-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.3.5-6.

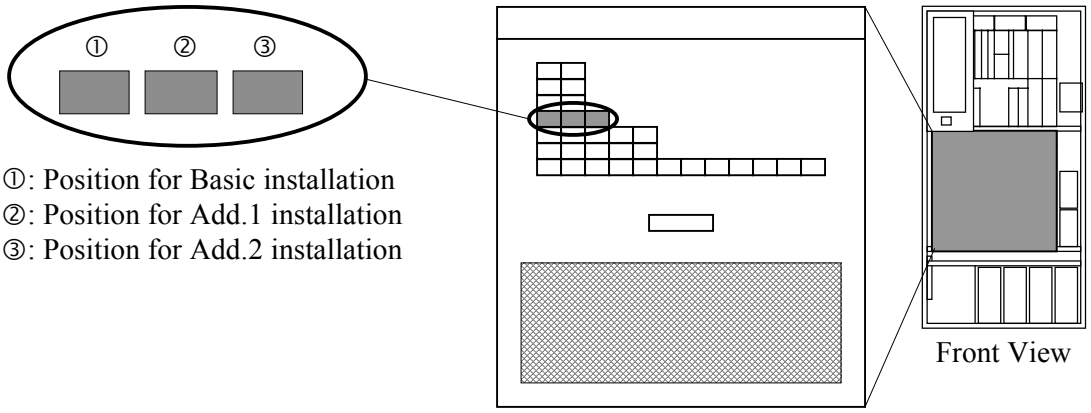

Fig. 4.3.5-6 Removal of Nameplate

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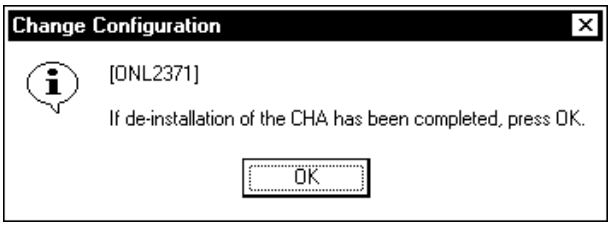
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



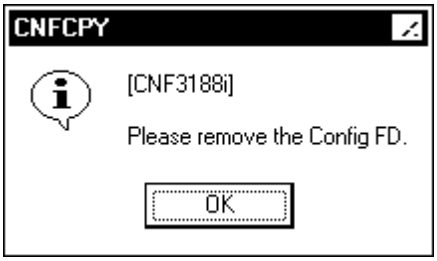
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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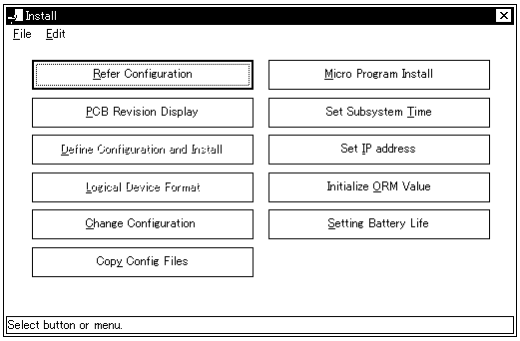
5.

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



---

6. <Mode Change>
Change the mode to View Mode.

When you have removed all the CHA PCBs for the NAS and will not use the NAS function any longer, go to Step 7.

When the CHA PCB for the NAS is still installed unlike the above, return to the working table and do the rest of the work. (INST02-40)

---

7. <De-installing Setup on SVP>
De-install Setup on SVP. (NAS03-200)
When the SVP reliability enhancement kit has been installed, go to Step8.

When the SVP reliability enhancement kit has not been installed, return to the working table and do the rest of the work. (INST02-40)

---

8. <De-installing Setup on SVP from Standby SVP>
After switching the SVP (Switch SVP (REP02-525), de-install the Setup on SVP from the Standby SVP. (NAS03-200)

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9. <Switching the SVP>
   After switching the SVP (Switch SVP (REP02-525)), go back to Master SVP.
   Return to the working table and do the rest of the work. (INST02-40)

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4.3.6 De-installation of iSCSI 8-port Adapter (DKC-F460I-8IS)

Table 4.3.6-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-8IS	iSCSI 4-port Adapter PCB	5522913-A	2	Color of PCB lever : Blue
		Cable Clamp	2105506-1	2	
		Nameplate (HDS)	2105902-147	1	RSD
			2105903-147		HICAM
			2105903-247		HICEF
		Nameplate (HP)	2105902-247	1	RSD
			2105903-347		HICAM
			2105903-447		HICEF

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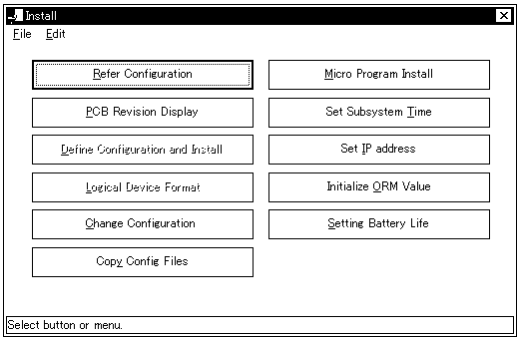
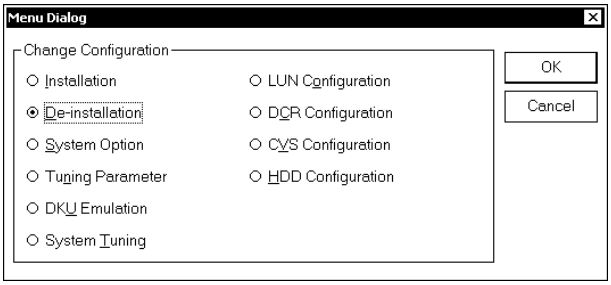
1. Setting up the New Device Structure Information

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

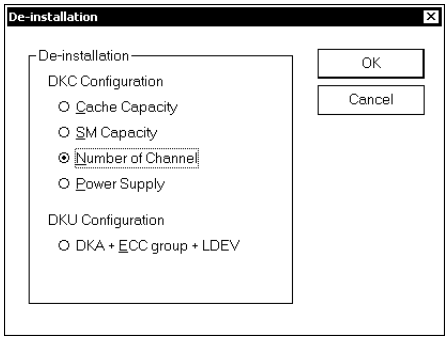
2. <Start the 'Menu Dialog' screen>
   Select (CL) [Change Configuration].



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) [Number of Channel], and select (CL) [OK].



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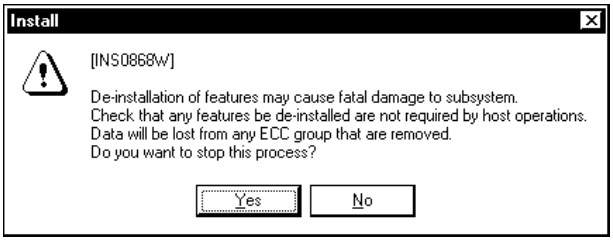
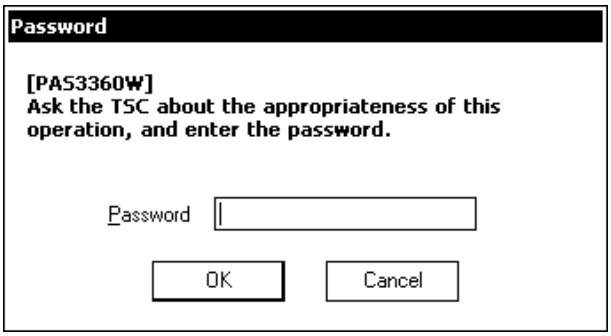
5.

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?”.

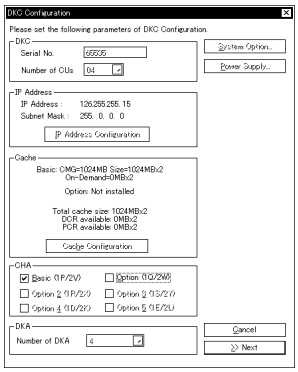


6. <Input password>
Enter the password and select (CL) [OK].



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

7. <Update Configuration Information>
Define the item to CHA in the ‘DKC Configuration’ window.
Remove the mark of the corresponding check box.



Note 1: It is not possible to install or de-install plural parts at the same time.

Note 2: For Multiplatform configuration,
1. If you want to change Multiplatform into ALL SCSI, after de-installing mainframe volumes, then CHA must be de-installed.
2. If you want to change ALL SCSI into Multiplatform, after de-installing open volumes, then CHS/CHF/CHT must be de-installed.

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

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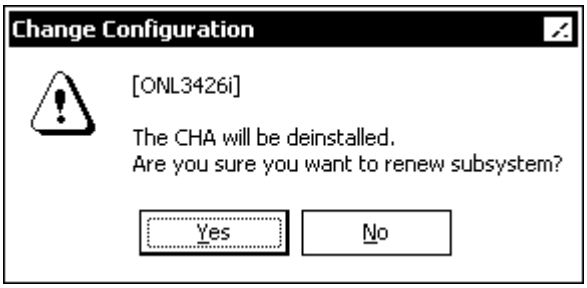
2. SVP pre procedure

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 INST04-8IS-20 step 3.

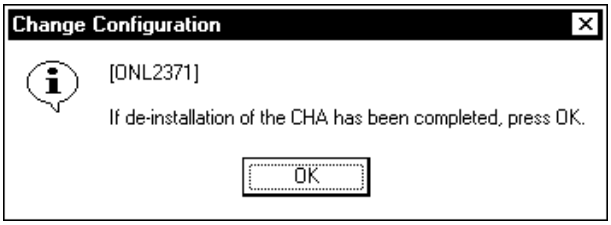


2. <Maintenance-block of PCBs other than cache or shared memory>
   At this moment, maintenance blocking is performed on PCBs other than memory systems with message “The CHA is being blocked...” is displayed.
   This processing is carried out on each component that is subject to de-installation.

3. <Update device structure information about PCBs other than cache or shared memory>
   “The CHA is being blocked...” and “Lighting LED of the PCB...” are displayed and the device structure information update processing is performed on the current component. When the update processing is completed, the device structure information on the current component is set to [EMPTY] and the shut down LED on the PCB is lit.

   When the update of device structure information on all PCBs other than those on the memory systems is completed, automatically one of the two following messages is displayed.

4.
   At this point refrain from pressing the [OK] button.
   “If de-installation of the CHA has been completed, press OK.” shown in the right figure.



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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 (Only Non-Disruptive Procedure)

a. Confirm that Shut Down LED is on (Fig. 4.3.6-1). If the LED is not on, connect the Maintenance Jumper to the Shut Down Connector.

⚠ 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 the PCB to be removed.

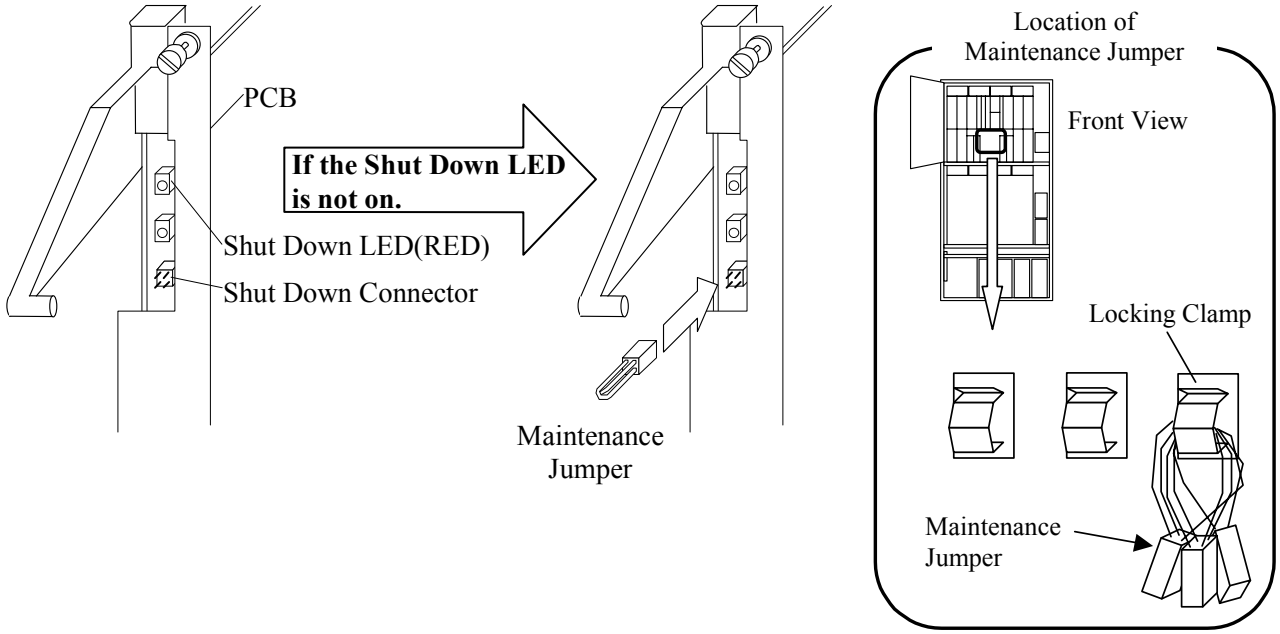

Fig. 4.3.6-1 Shut Down LED

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3-2 Disconnection of the optical fibre cables

a. Remove the bracket and cable clamp referring to Fig 4.3.6-2.
b. Disconnect the optical fibre cables referring to Fig 4.3.6-3.
c. Attach the brackets.

Table 4.3.6-2 Removal Location (Front of the unit)

Cluster	CL1							CL2						
Slot No.	A	B	C	D	E	F		G	H	J	K		L	M
Function	CSW	DKA	CHA	CHA	CACHE	CHA	DKA	CHA	CACHE	CHA	CHA	DKA	DKA	CSW
Location No.	CSW -1A	DKA -1B	CHA -1C	CHA -1D	CACHE -1E	CHA -1F	DKA -1F	CHA -2G	CACHE -2H	CHA -2J	CHA -2K	DKA -2K	DKA -2L	CSW -2M
Order of addition		Basic	Basic	Add.1		Add.2	Add.1	Basic		Add.1	Add.2	Add.1	Basic	

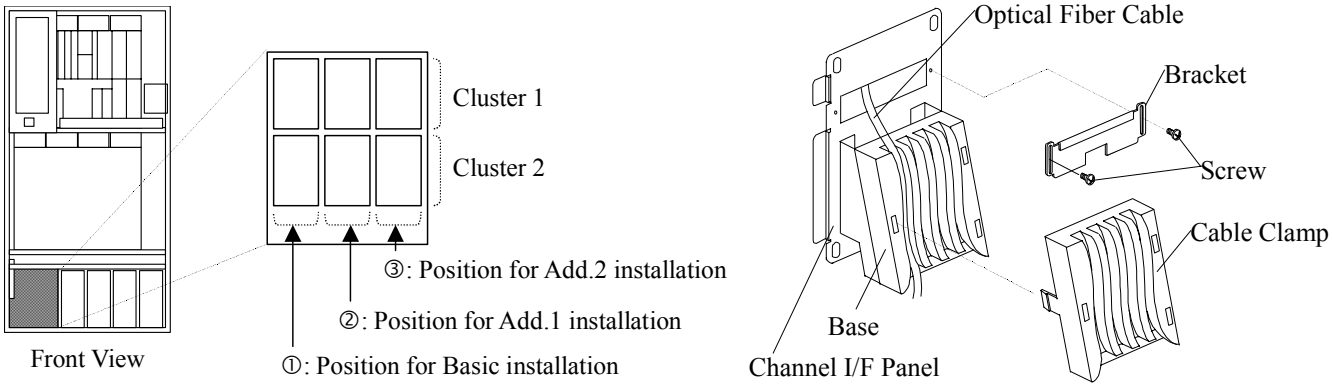

Fig 4.3.6-2 Removal of Bracket

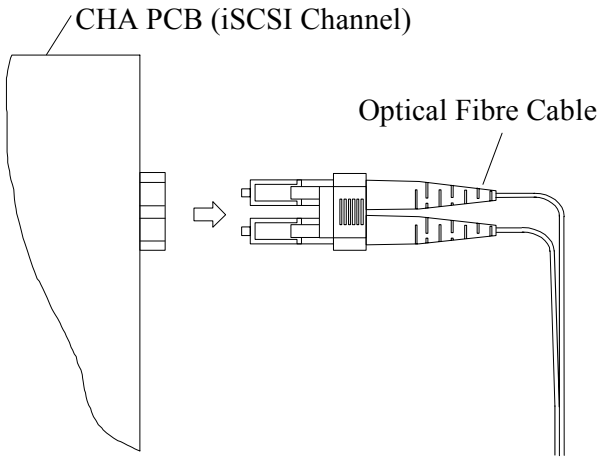

Fig. 4.3.6-3 Disconnection of Optical Fibre Cable

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3-3 Removal of the PCBs

a. Remove the two screws and remove the PCBs from the correct locations in the Front Logic Box referring to Fig. 4.3.6-4.
b. Attach the dummy plates referring to Fig. 4.3.6-5.

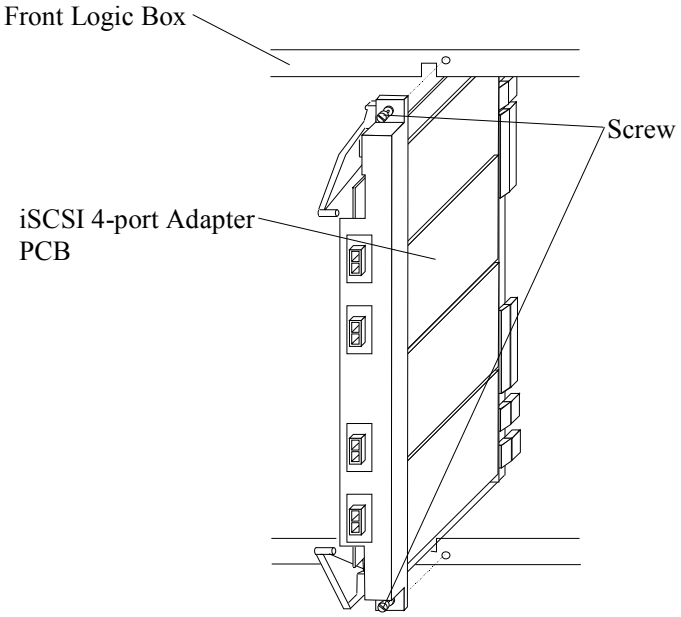

Fig. 4.3.6-4 Removal of PCB

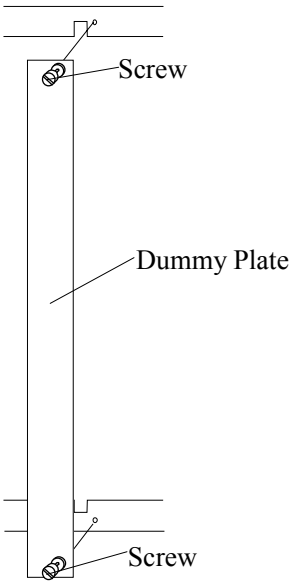

Fig. 4.3.6-5 Attachment of Dummy Plate

3-4 Removal of the Nameplate

a. Remove the nameplate referring to Fig. 4.3.6-6.

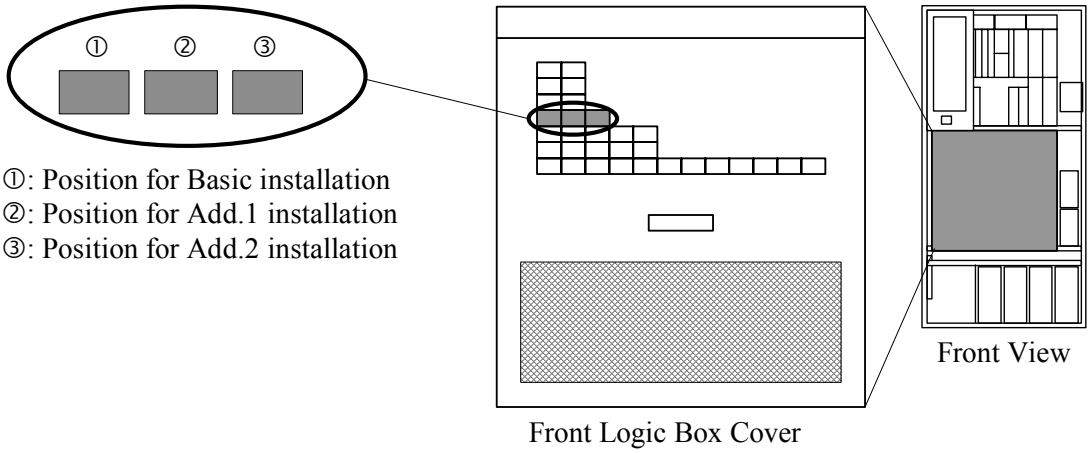

Fig. 4.3.6-6 Removal of Nameplate

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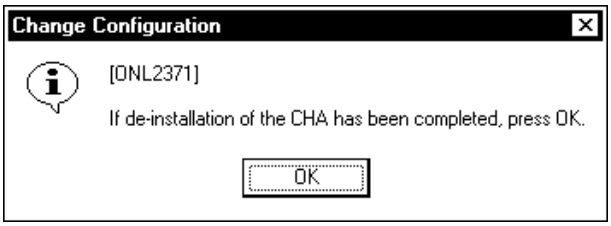
4. SVP post procedure

1.

Select (CL) [OK] in response to "If de-installation of the CHA has been completed, press OK." shown in the right figure.



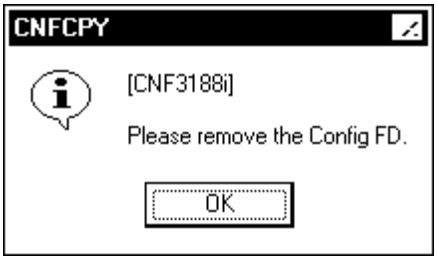
2. <Check the end of de-installation procedure>
"Renewal process has completed. Please check subsystem status." shown in the right figure displayed. Select (CL) [OK] in response to this message.

3.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

4.

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



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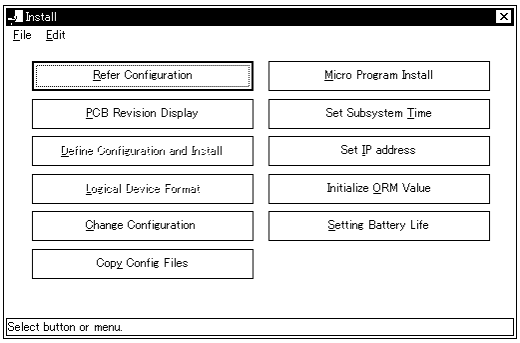
5.

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



6. <Mode Change>
Change the mode to View Mode.

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4.4 De-Installation of SVP High Reliability Kit (DKC-F460I-SVP)

Table 4.4-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-SVP	SVP ASSY	5513995-A	1	
		SVPPS BOX	5513997-A	1	
		Stopper (SVP-WR)	5515587-1	1	
		Rubber (SVP-WR)	5515588-1	1	
		Stopper (SVP-WF)	5515586-1	1	
		Screw	BS306N	4	
		Screw	SB408N	3	
		Screw (Stopper)	5513661-412	2	
		Hinge (SVP)	3254970-1	2	
		Nameplate (HDS)	2105902-105	1	RSD
			2105903-105		HICAM
			2105903-205		HICEF
		Nameplate (HP)	2105902-205	1	RSD
			2105903-305		HICAM
			2105903-405		HICEF

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1. Operating the Additional SVP
   When the basic SVP and Additional SVP are operating as a Master SVP and Standby SVP respectively, it is not required to operate the additional SVP. You may start from Item 2, "Operating the Basic SVP".

> **⚠ CAUTION**
> It is not a problem if a SIM (SIMRC = 7410ff, 7ff200, or 7ff201) occurs during execution of this procedure. Erase the SIM immediately.

1-1 <Procedure of SVP switching>

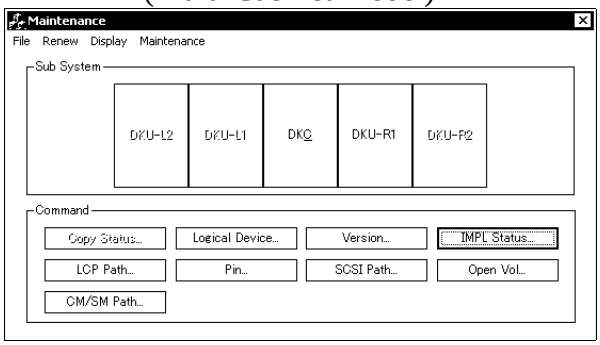
(1) <Change the mode>
Change the [Modify Mode].

(2) <Open the [Maintenance]>

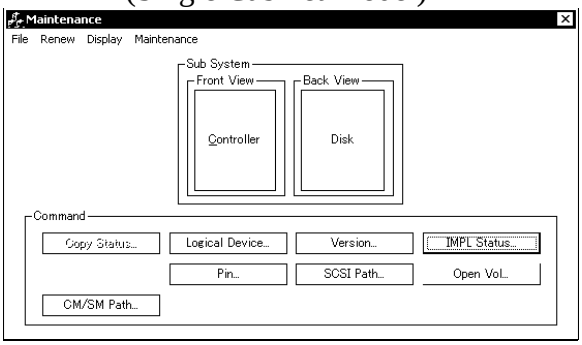
(Multi Cabinet Model)
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

(Single Cabinet Model)
In the 'Maintenance' window, check and select (CL) [Controller] to be replaced.

(Multi Cabinet Model)



(Single Cabinet Model)



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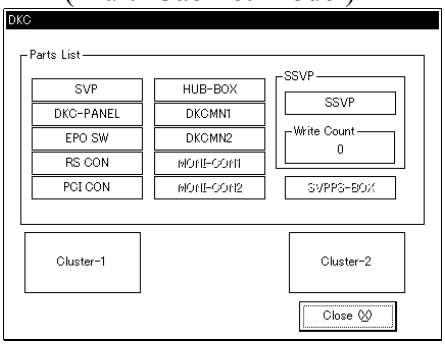
(3) <Open the [SVP] screen>

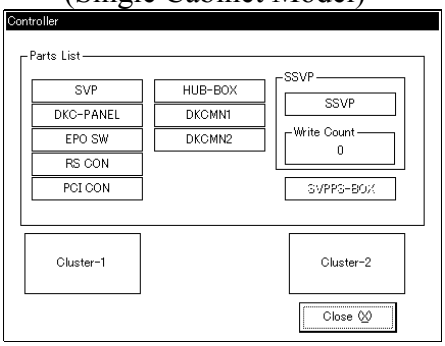
(Multi Cabinet Model)
Select (CL) the [SVP] from 'DKC' screen.

(Single Cabinet Model)
Select (CL) the [SVP] from 'Controller' screen.

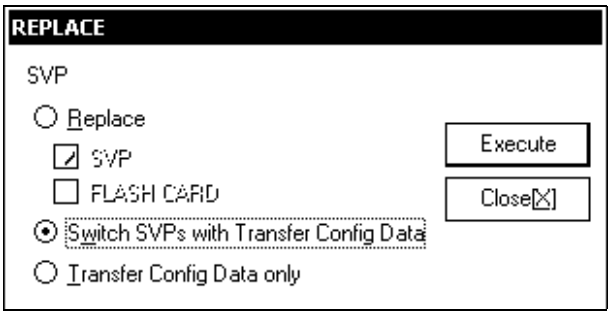
(Multi Cabinet Model)



(Single Cabinet Model)



(4) <Select the [Switch SVP]>
Select (CL) the [Switch SVP], and select (CL) the [Excute].



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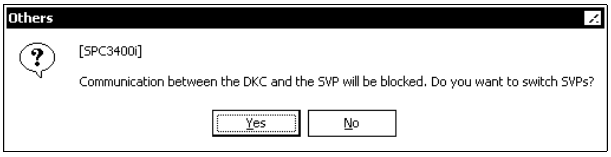
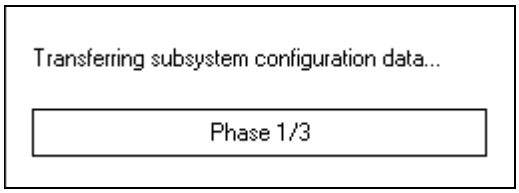
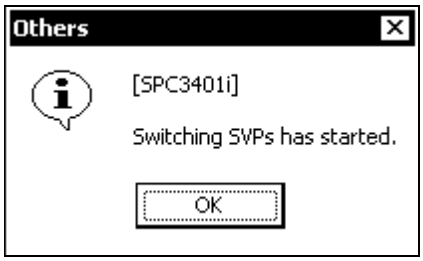
(5) <Execution>
Select (CL) [Yes].



(6) <Transfer status>
"Transferring subsystem configuration data…" in displayed.



(7) <Checking beginning of the SVP switching>
The message "Switching SVPs has started." is displayed. Make sure that the Additional SVP is powered off automatically.



(8) <Checking the SVP switching>
Make sure that the Basic SVP is powered on automatically. Also make sure that the SVP is rebooted automatically after it is powered on.

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2. De-Installation Procedure of SVP High Reliability Kit (1)

2-1 Disconnect the cables.

a. Disconnect the cable (P41) from the SVPPS BOX.
The other cables (P40, PS-BOX-1, PS-BOX-2) are not to be disconnected at this time, however.

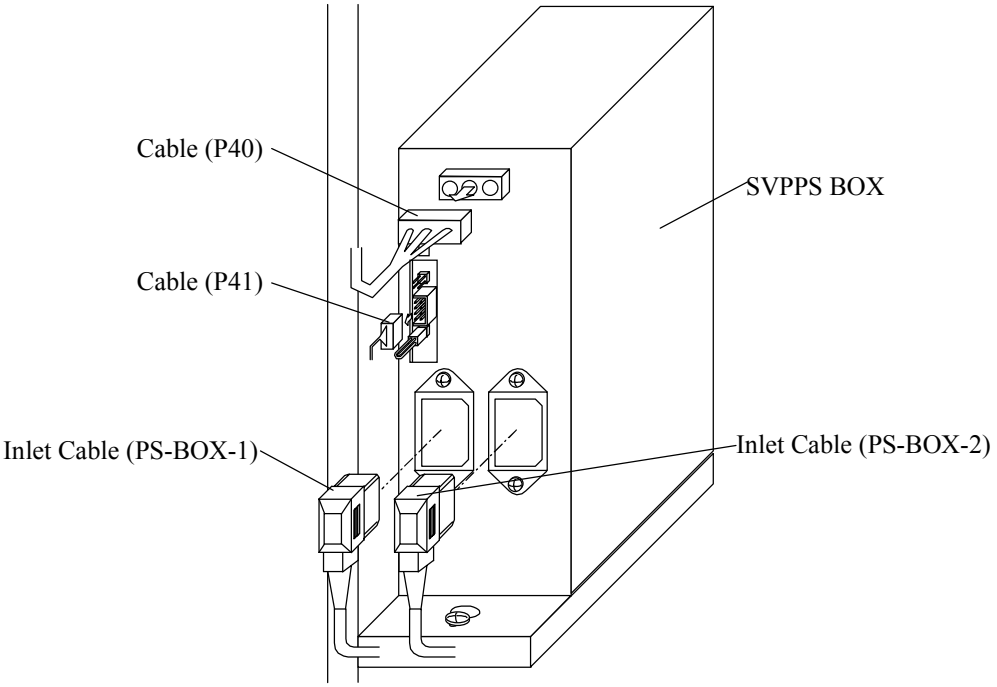

Fig. 4.4-1 Disconnection of Cables

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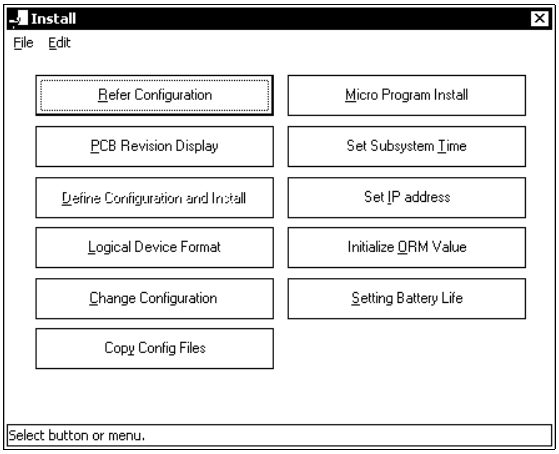
3. Operating the Basic SVP

3-1 Canceling the setting duplication of the Basic SVP

(1) <Changing the mode>
Change the mode by selecting [Modify Mode].

(2) <Opening the Install window>
Select (CL) [Install] from the [SVP] menu.

(3) <Selecting [Set SVP IP Address]>
Select (CL) [Set IP Address] in the Install window.



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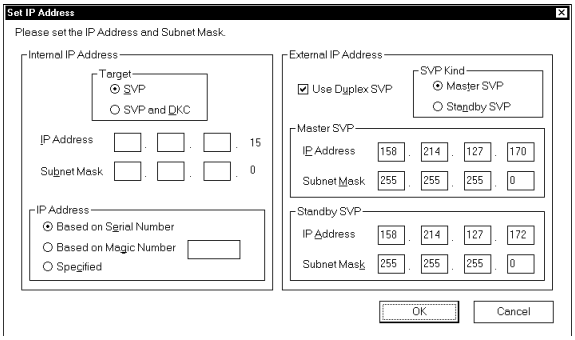
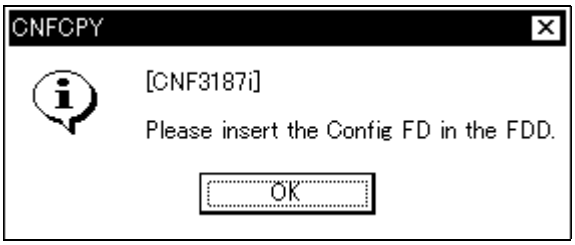
(4) <Canceling the setting of SVP duplication>

(a) Select Cancel (CL) the selection of the [Use Duplex SVP] in the External IP Address box. Select (CL) [OK].



(5) <Inserting the Config FD>

Insert the Config FD into the FDD and select (CL) [OK].

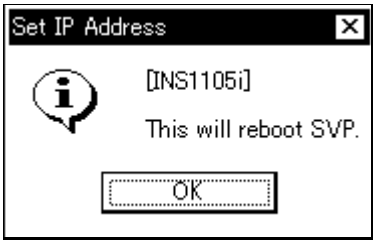


(6) <Removing the Config FD>

When the copying of the Config is completed, a message, “Please remove the Config FD.” is displayed. Remove the FD and select (CL) [OK].

(7) <Confirming rebooting of the SVP>

Select (CL) [OK].



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4. De-Installation Procedure of SVP High Reliability Kit (2)

4-1 Disconnect the cables.

a. Disconnect the cables (P40, PS-BOX-1, PS-BOX-2) from the SVPPS BOX.

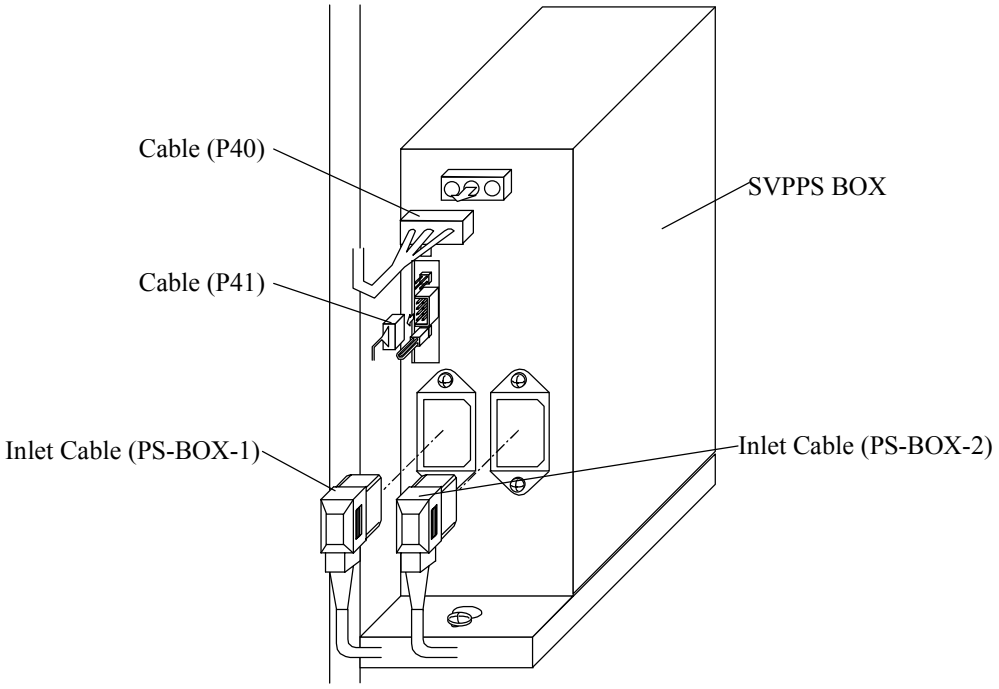

Fig. 4.4-2 Disconnection of Cables

b. Disconnect the cables from the RS CON.

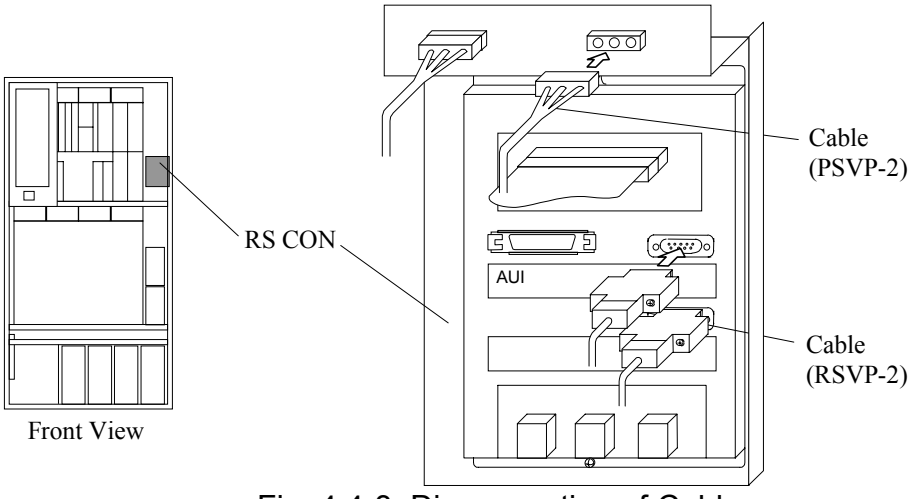

Fig. 4.4-3 Disconnection of Cables

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c. Disconnect the cables from the HUB BOX.

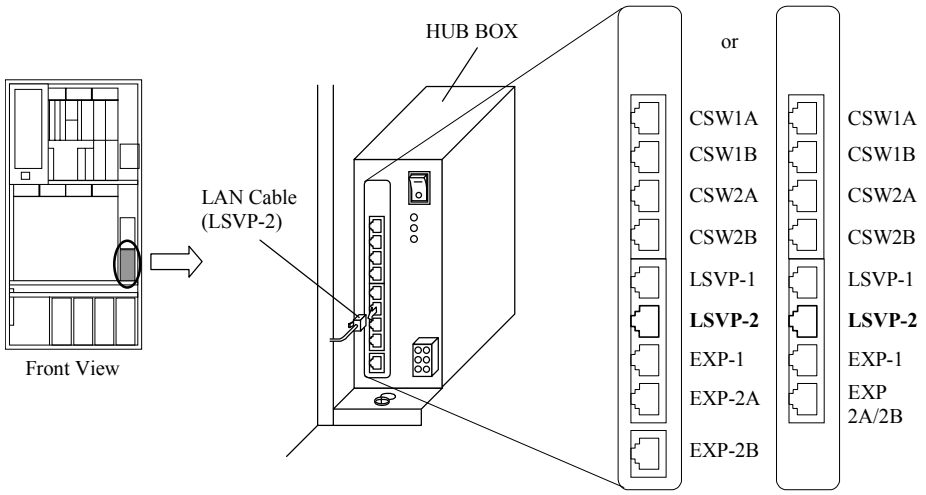

Fig. 4.4-4 Disconnection of Cables

4-2 Remove the cables.

a. Open the locking clamps and remove the cables.

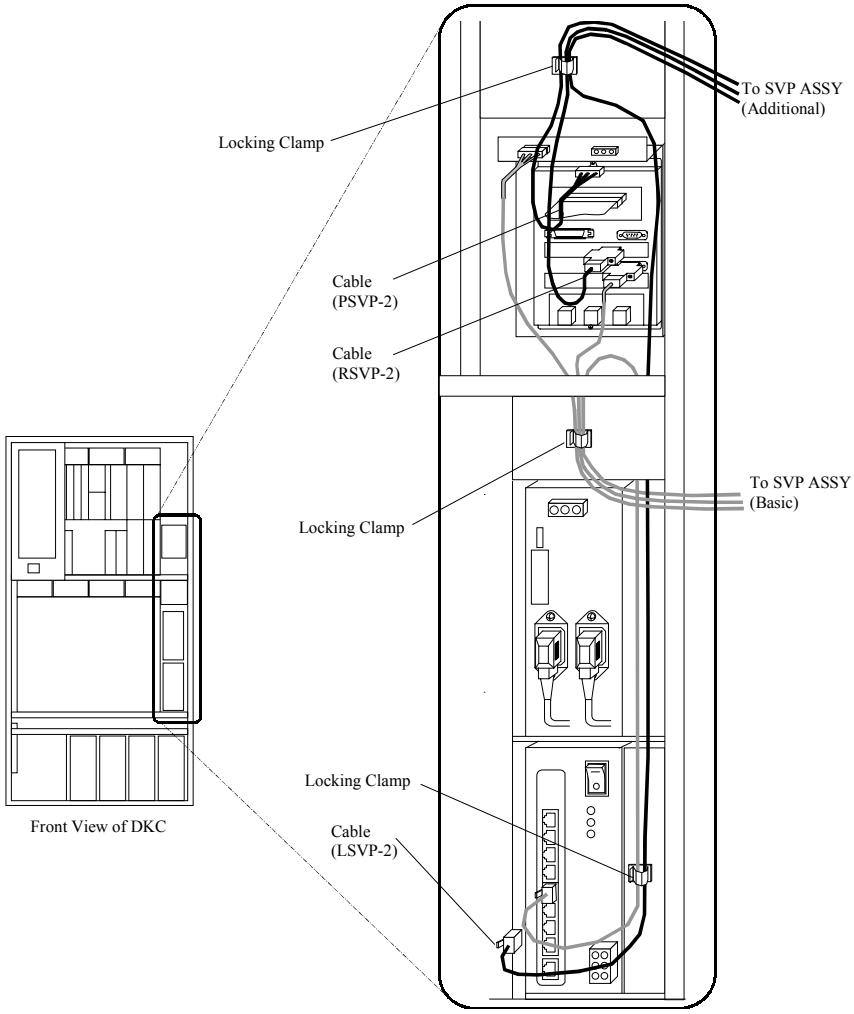

Fig. 4.4-5 Removal of Cables

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4-3 Remove the SVPPS BOX.

a. Loosen the screw and remove the SVPPS BOX.

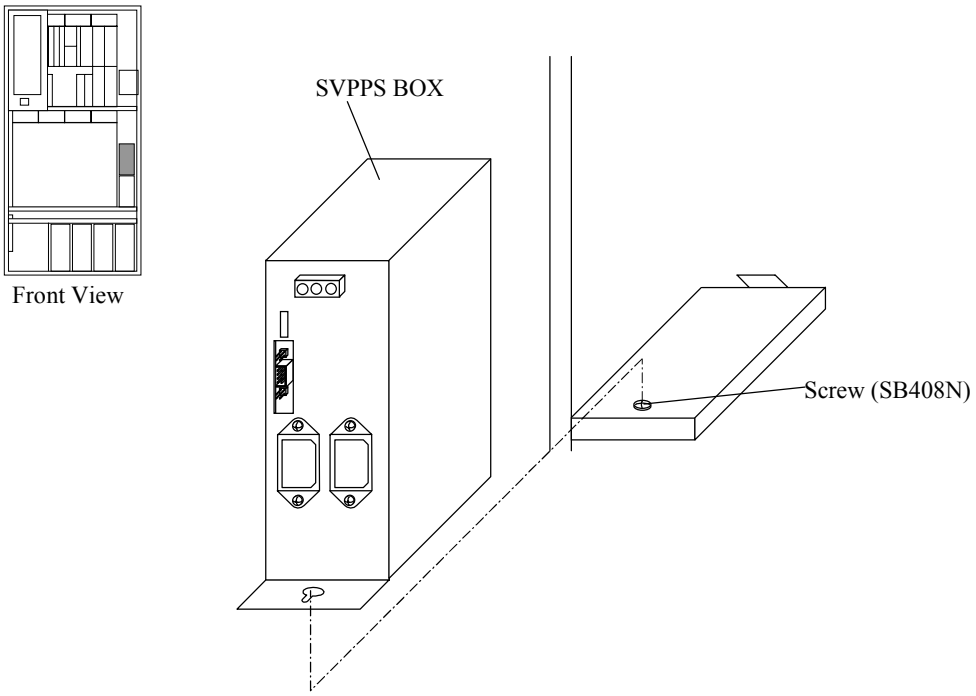

Fig. 4.4-6 Removal of SVPPS BOX

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4-4 Remove the SVP Assy.

a. Loosen the two screws and remove the SVP cover.
b. Loosen the screws and remove the stoppers
c. Pull out the SVP Assy from the cabinet.
d. Attach the SVP cover with the screws.

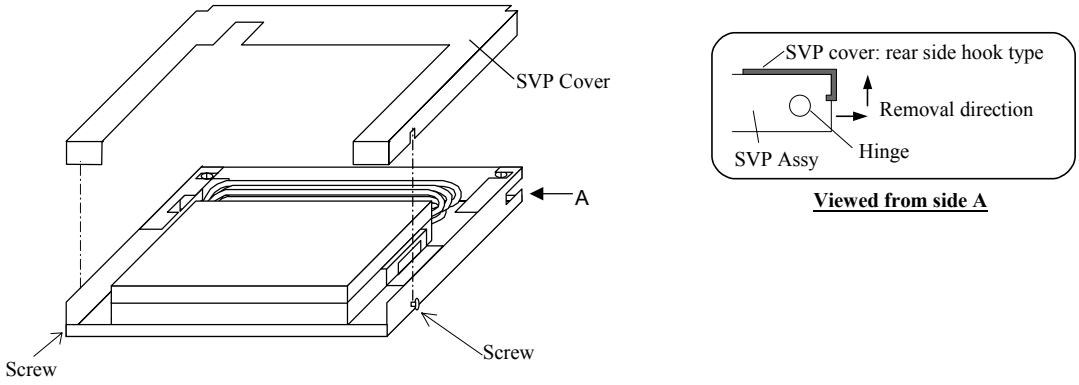

Fig. 4.4-7 Removal of SVP Cover

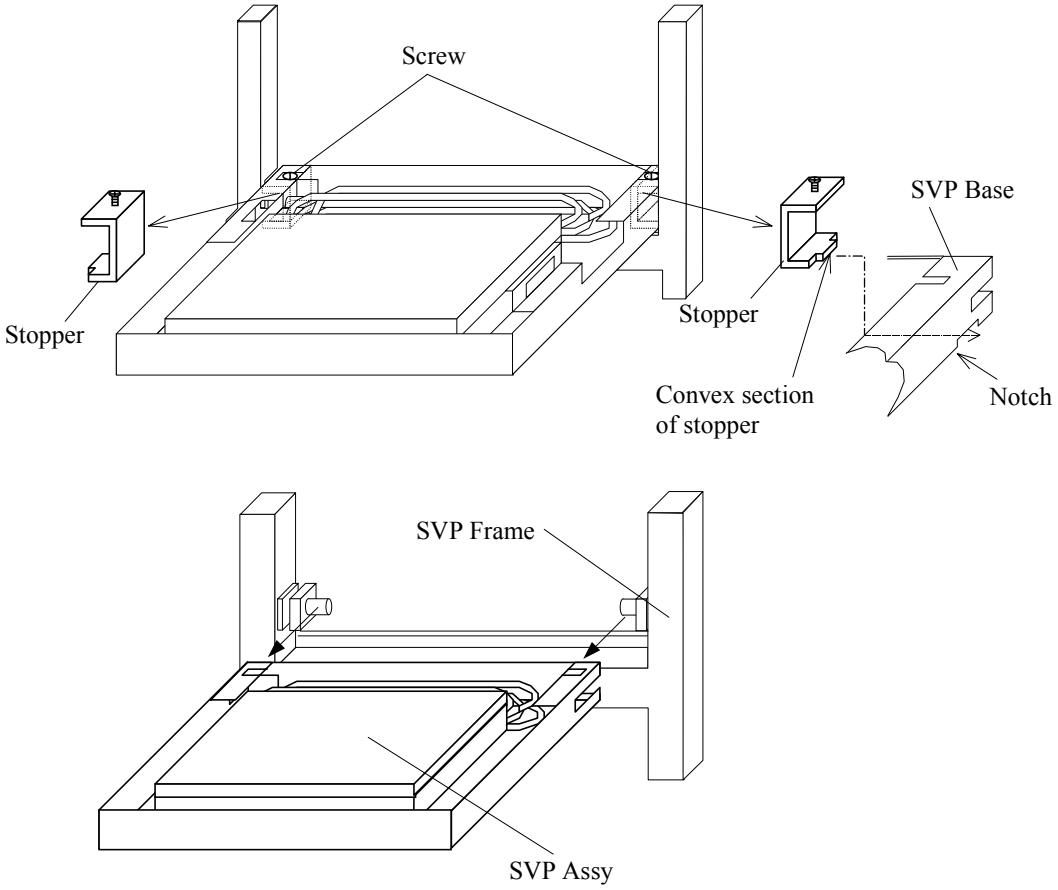

Fig. 4.4-8 Removal of SVP ASSY

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4-5 Remove the stopper.

a. Remove the two screws and remove the Stopper (SVP-WF).

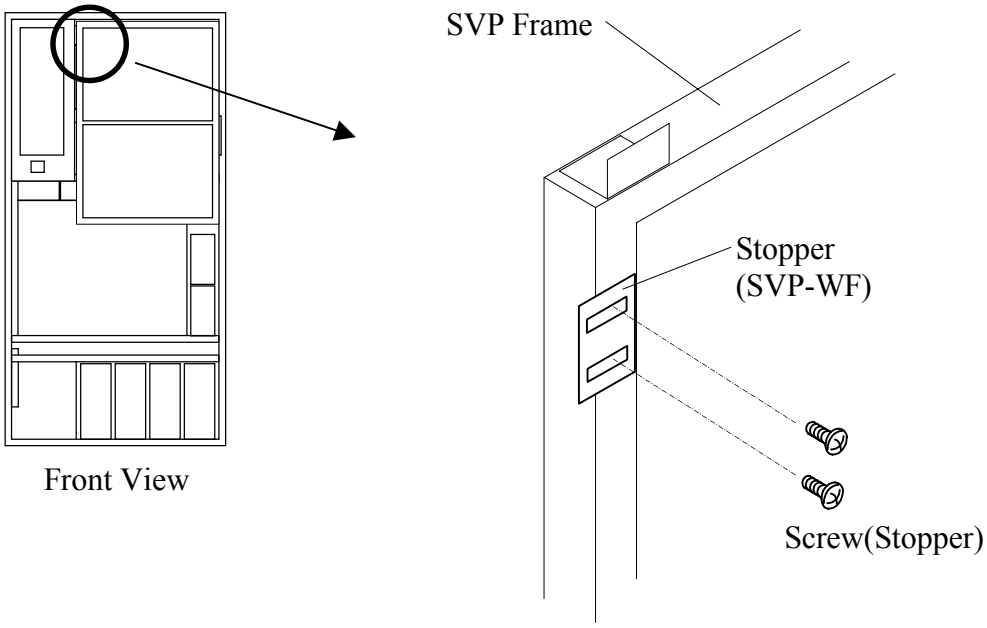

Fig. 4.4-9 Removal of Stopper

b. Remove the two screws and remove the Stopper (SVP-WR).

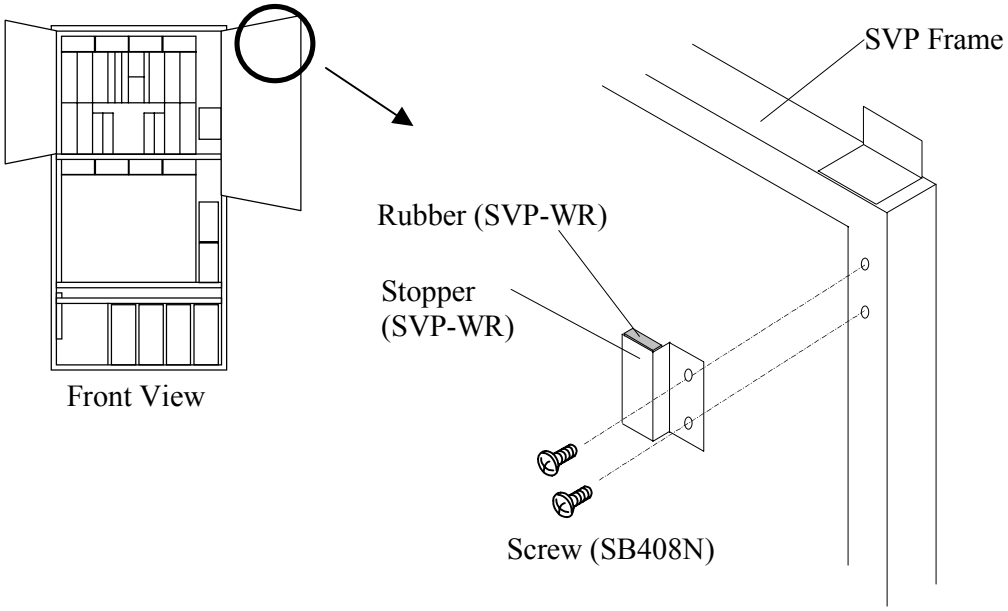

Fig. 4.4-10 Removal of Stopper

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c. Remove the four screws and remove the Hinges (SVP).

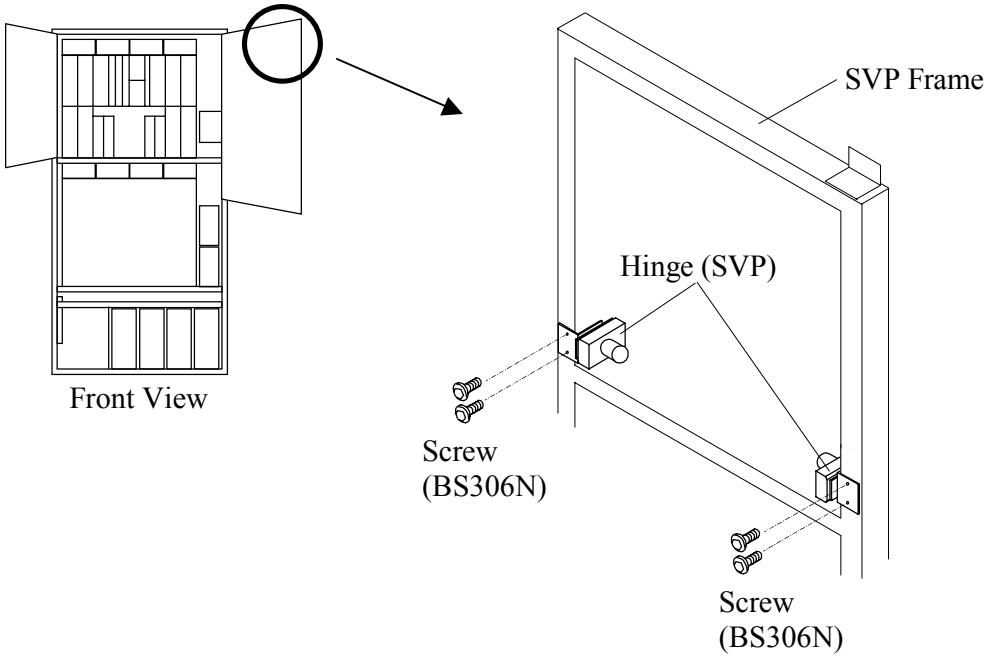

Fig. 4.4-11 Removal of Hinges

4-6 Remove the Nameplate.

a. Remove the nameplate from the Front Logic Box cover.

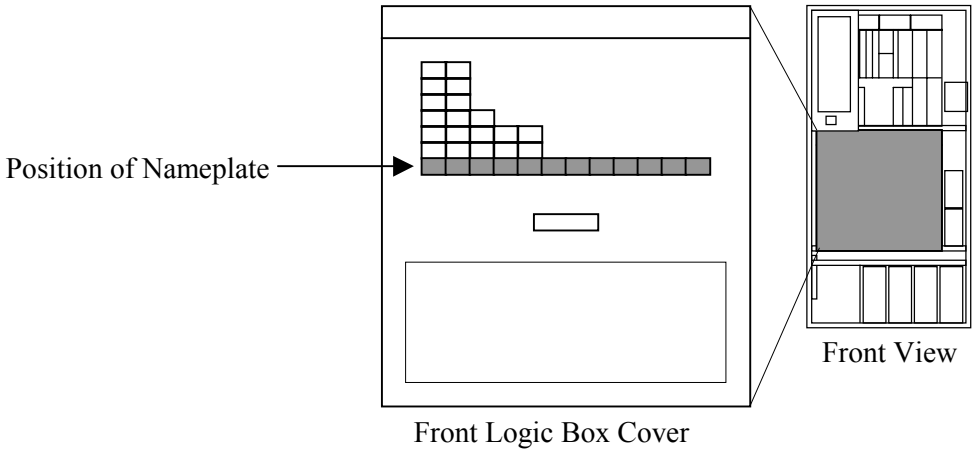

Fig. 4.4-12 Removal of Nameplate

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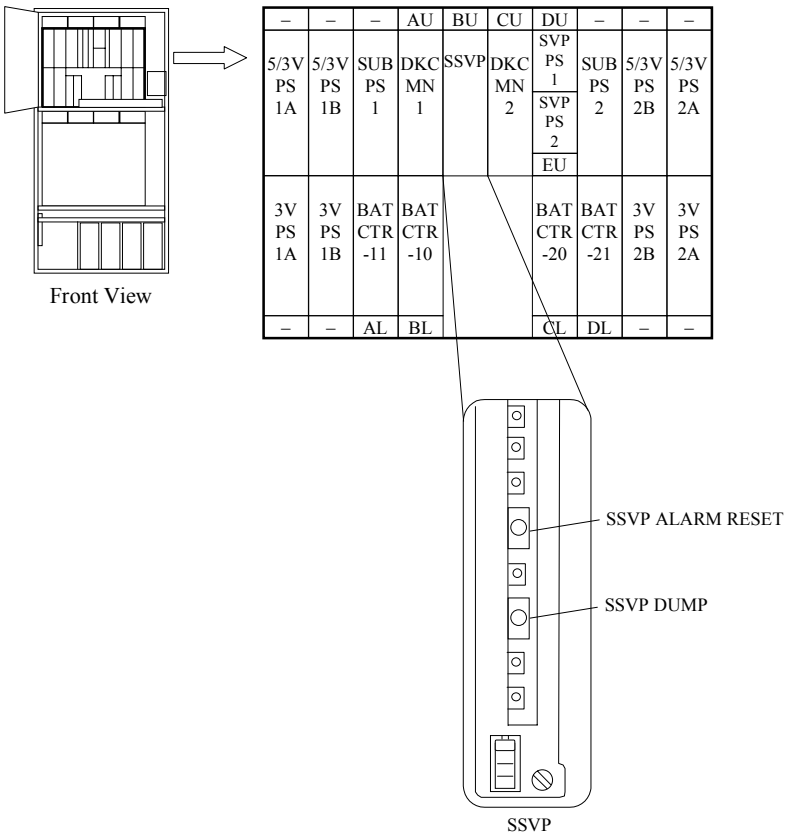
5. Executing SSVP Reset

5-1 Execute the SSVP reset by pressing the SSVP ALARM RESET switch.



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4.5 De-Installation of PCI I/F Connector (DKC-F460I-18)

Table 4.5-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-18	PCI CON	3257397-A	1	
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-104	1	RSD
			2105903-104		HICAM
			2105903-204		HICEF

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1. De-Installation Procedure of PCI I/F Connector

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.

1-1 Confirm that the REMOTE/LOCAL Switch of DKC Panel is set to LOCAL. If not, set the REMOTE/LOCAL Switch to LOCAL.

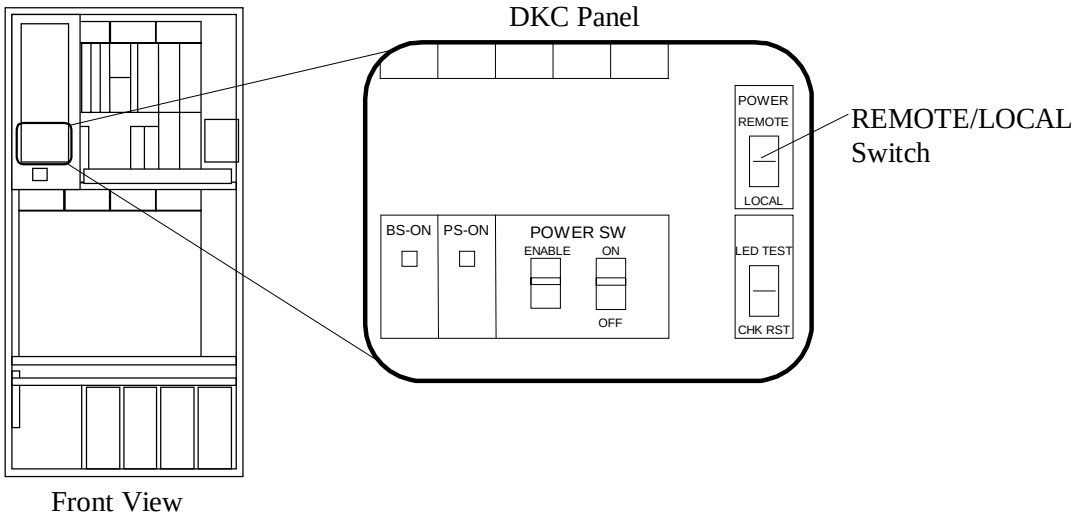

Fig. 4.5-1 Setting of REMOTE/LOCAL Switch

1-2 Connect the Maintenance jumper to the socket on the DKCMN1 and DKCMN2.

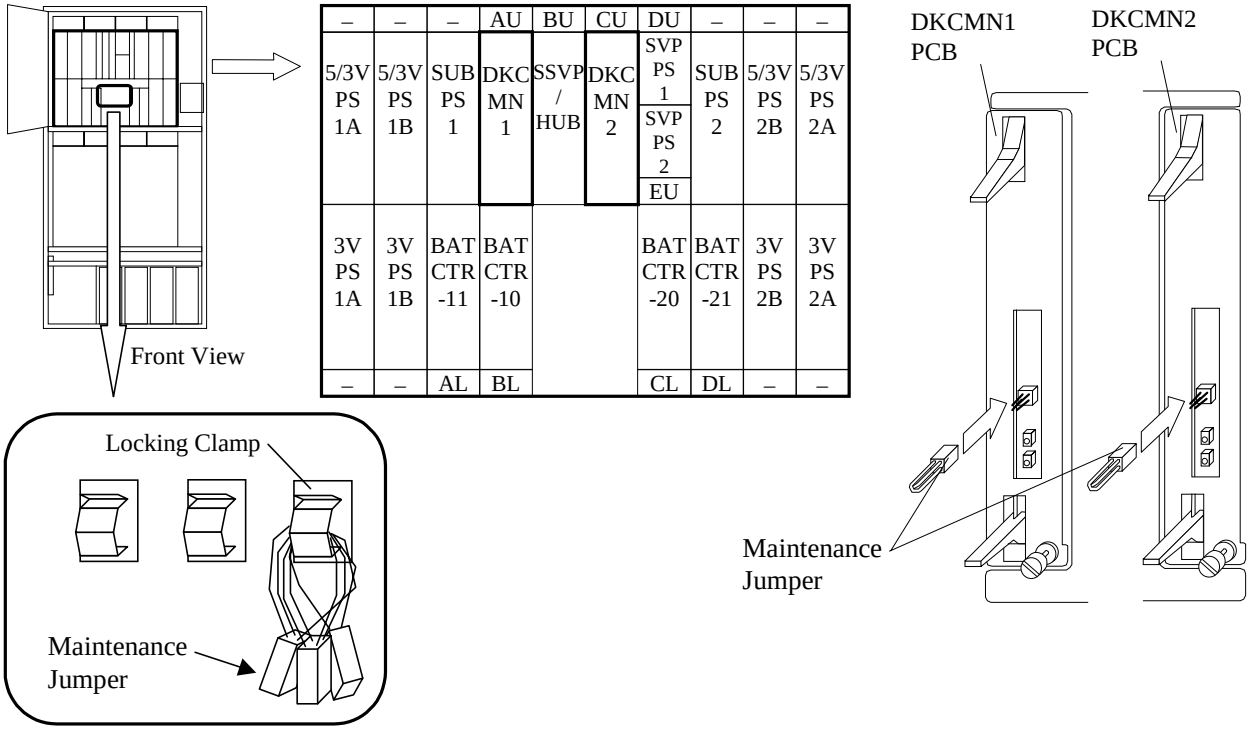

Fig. 4.5-2 Connection of Jumper Plug

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1-3 Set the jumper connectors (JP1 and JP2) of the PCI CON.

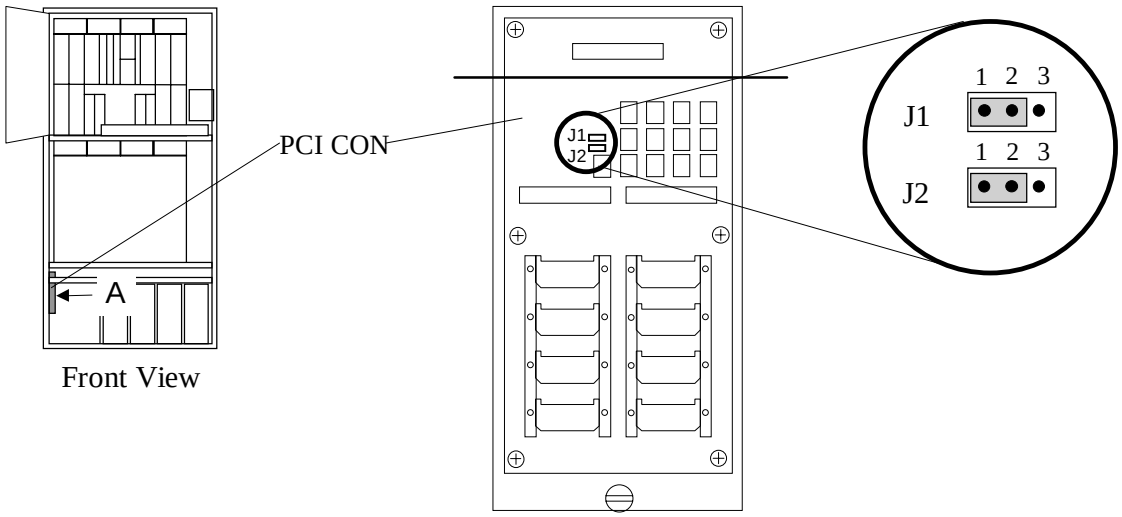

Fig. 4.5-3 Setting of Jumper Plug

1-4 Remove the PCI CON PCB.

a. Loosen the screw ① and remove the screw ② from the base plate.
b. Slide the plate and turn it using the screw ① as an axis.
c. Remove the PCI CON panel from the cable.
d. Loosen the screw ③ and remove the PCI CON panel in the lower left position of the DKC.
e. Return the plate as it was and tighten the screws ① and ②.

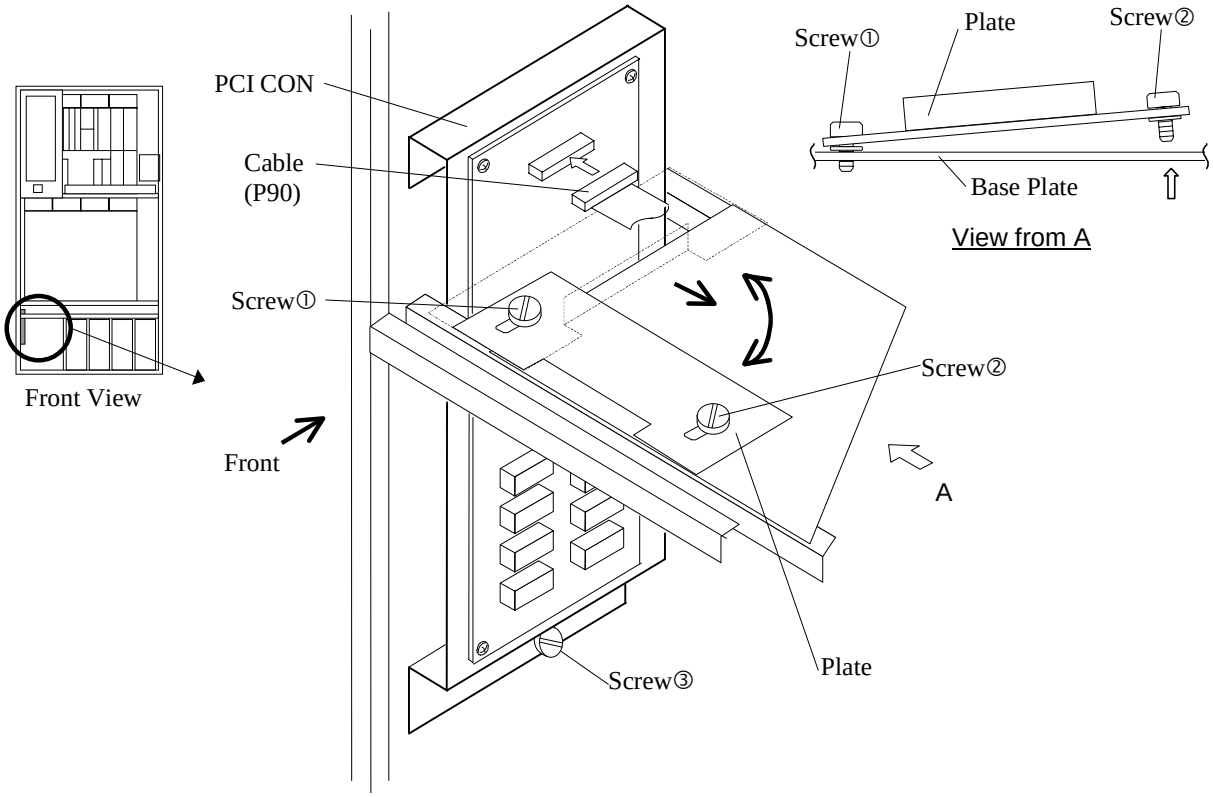

Fig. 4.5-4 Removal of PCI CON PCB

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f. Remove the screw and remove the bracket (465).
g. Attach the screw.

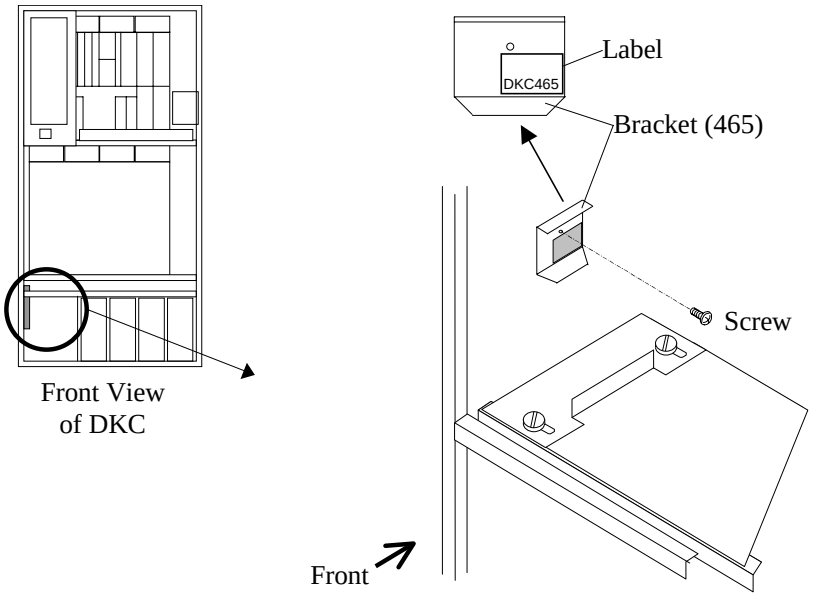

Fig. 4.5-5 Removal of Bracket

1-5 Disconnect the Maintenance jumper plug from the socket on the DKCMN.

1-6 Remove the nameplate.
a. Remove the nameplate.

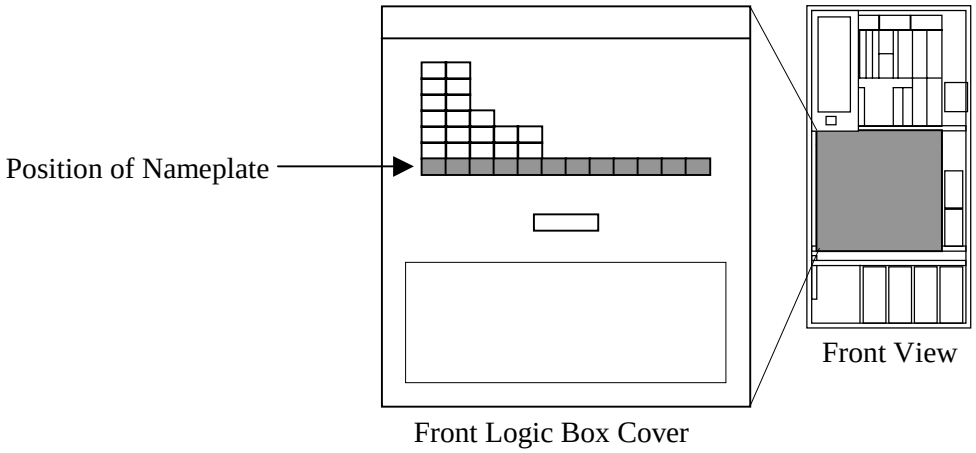

Fig. 4.5-6 Removal of Nameplate

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4.6 De-Installation of UPS Connection Kit (DKC-F460I-UPS)

Table 4.6-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-UPS	SH307-B	5513986-B	2	DKCMN
		SH298-A	5513547-A	1	UPS CON
		SH302-C	5513988-C	1	DKC Panel
		DSUB Cable	5485510-15	4	
		Cable	3261826-D	1	Label: PA-1 – P5
		Repeat Binder	5409042-2	2	
		Bracket (460)	5517954-1	1	for DKC460I
		Bracket (465)	5513818-1	1	for DKC465I
		Nameplate (HDS)	2105902-114	1	RSD
			2105903-114		HICAM
			2105903-214		HICEF
		Nameplate (HP)	2105902-214	1	RSD
			2105903-314		HICAM
			2105903-414		HICEF

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1. De-Installation Procedure of UPS Connection Kit

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. Replace the DKC Panel.
   a. Loosen the screw. Pull the plate forward, then lift up and remove it.

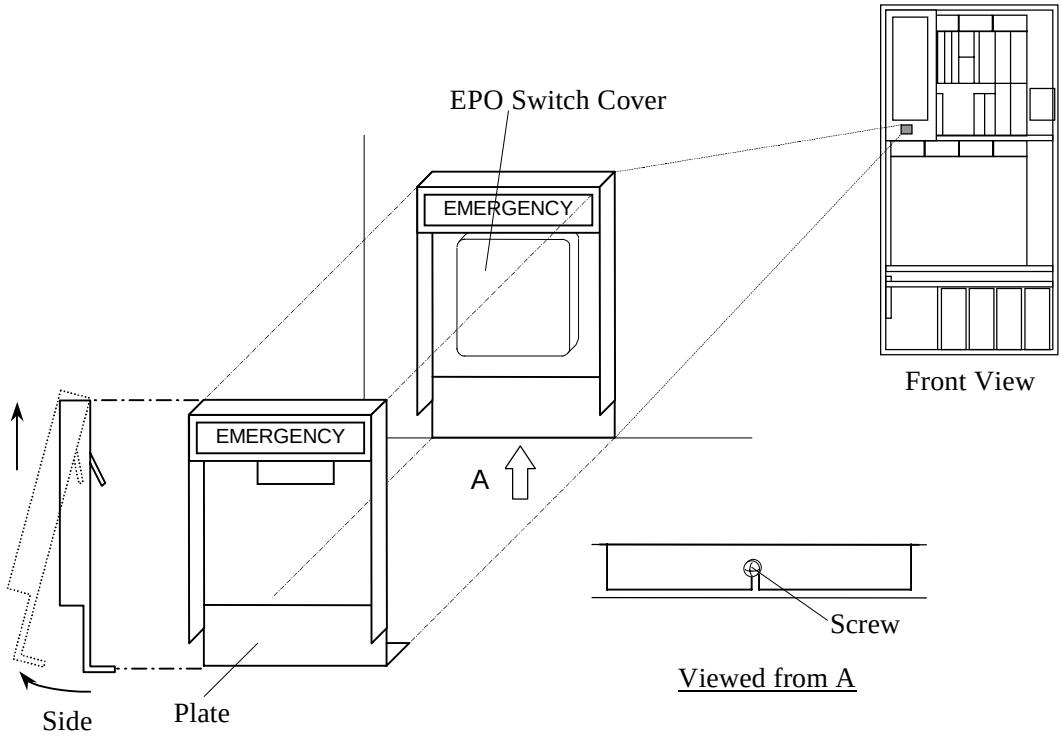

Fig. 4.6-1 Removal of Plate

   b. Remove the EPO Switch cover.

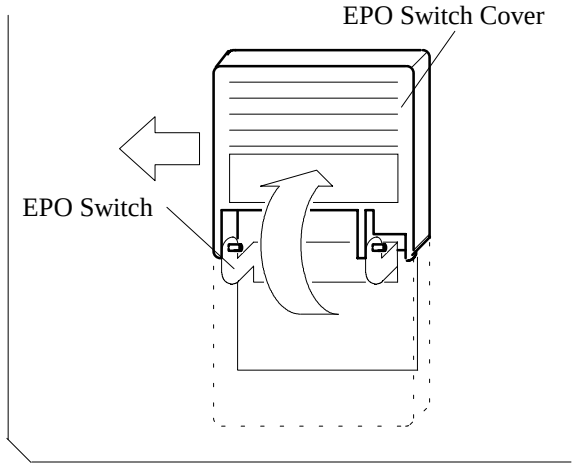

Fig. 4.6-2 Removal of EPO Switch Cover

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c. Loosen the three screws and remove the plate.

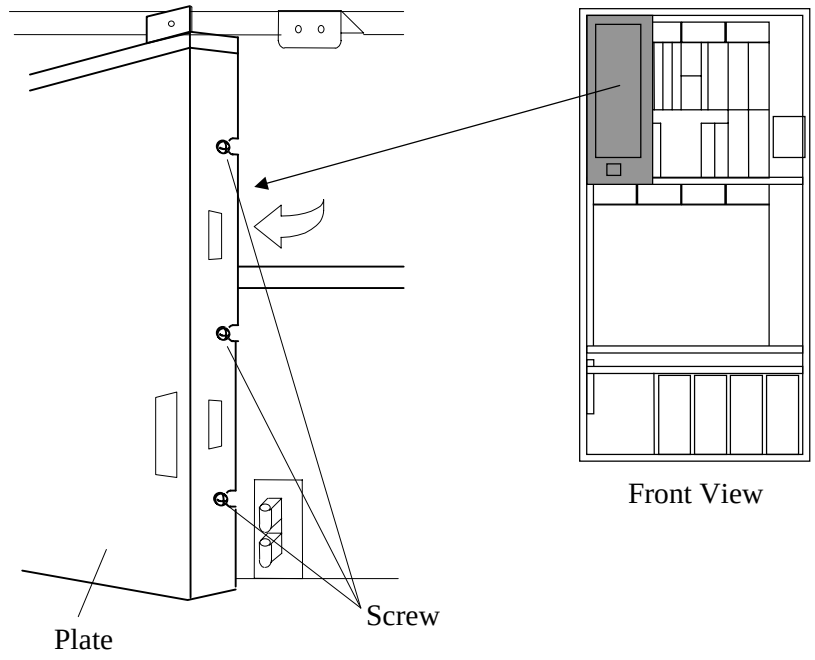

Fig. 4.6-3 Removal of Plate

d. Disconnect the cables from the DKC Panel PCB.
e. Loosen six screws and remove the the DKC Panel PCB for UPS.
f. Install the DKC Panel PCB, which is a basic component, by fastening it with the screws.
g. Connect the cables to the PCB.

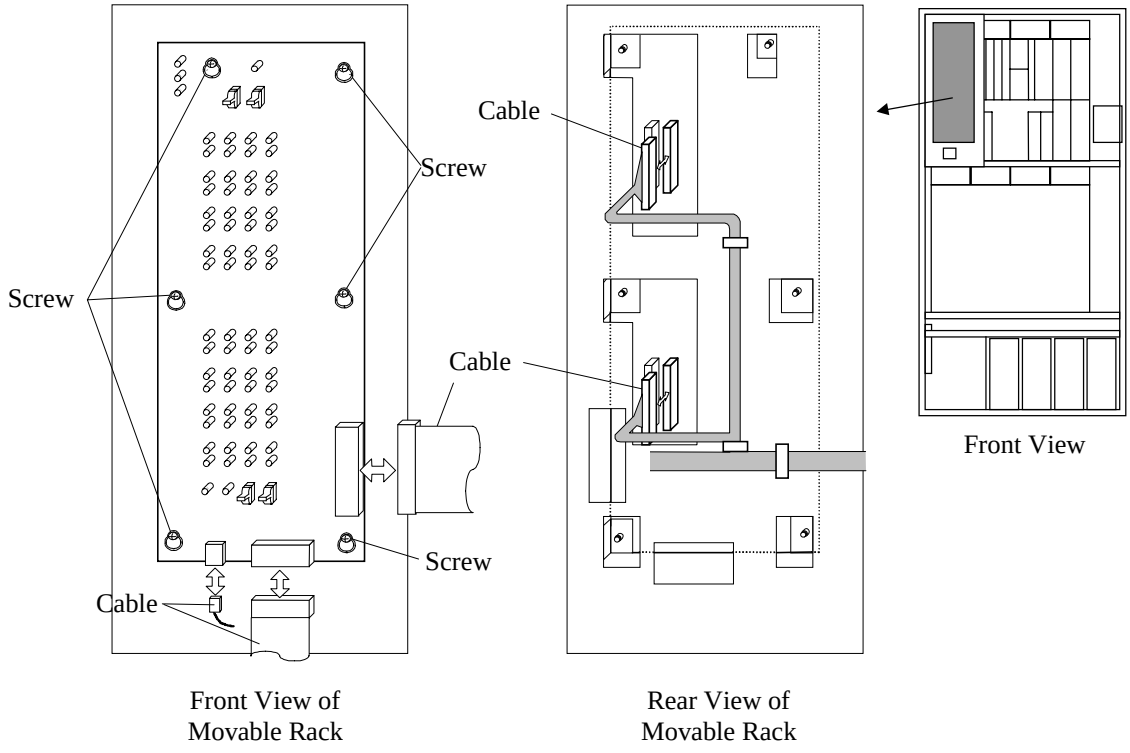

Fig. 4.6-4 Removal of PCB

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h. Attach the plate to the Movable rack and fasten the three screws. Refer to Fig. 4.6-3.
i. Attach the EPO Switch cover. Refer to Fig. 4.6-2.
j. Attach the plate and fasten the screw. Refer to Fig. 4.6-1.

2. Replace the DKCMN.
   a. Disconnect the cables from the DKCMN PCBs.
   b. Loosen the screw and remove the DKCMN PCB for UPS.

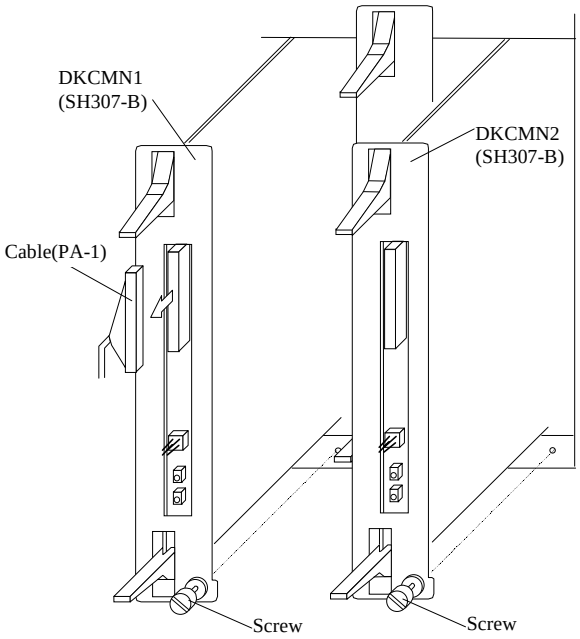

Fig. 4.6-5 Removal of DKCMN for UPS

c. Install the DKCMN PCB, which is a basic component, by fastening it with the screw.

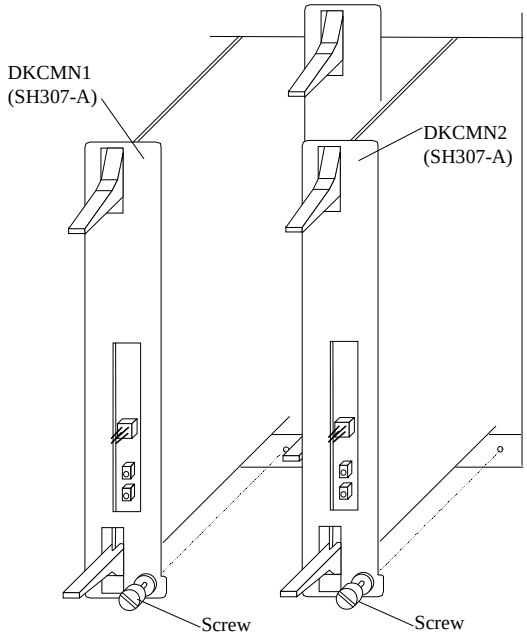

Fig. 4.6-6 Installation of DKCMN (Basic Component)

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3. Disconnect the DSUB Cables.
   a. Disconnect the DSUB cables from the UPS CON.

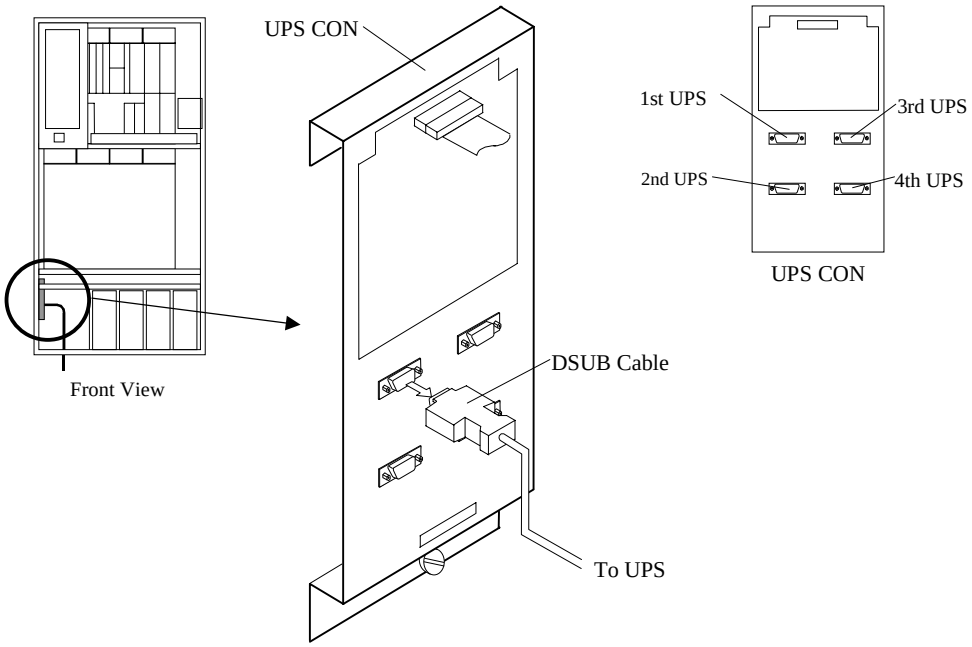

Fig. 4.6-7 Disconnection of DSUB Cables

4. Remove the UPS CON.
   a. Loosen the screw① and remove the screw② from the base plate.
   b. Slide the plate and turn it using the screw① as an axis.
   c. Remove the cable(P5) from the UPS CON.
   d. Remove the UPS CON by loosening the screw③.
   e. Return the plate as it was and tighten the screws① and ②.

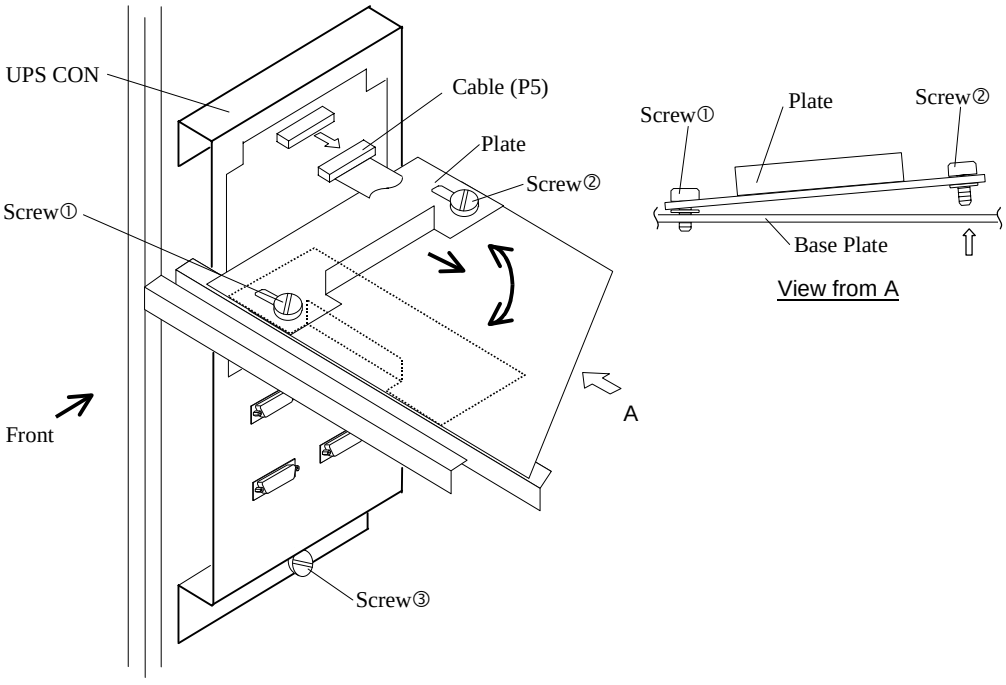

Fig. 4.6-8 Removal of UPS CON

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f. Remove the screw and remove the bracket (465).
g. Attach the screw.

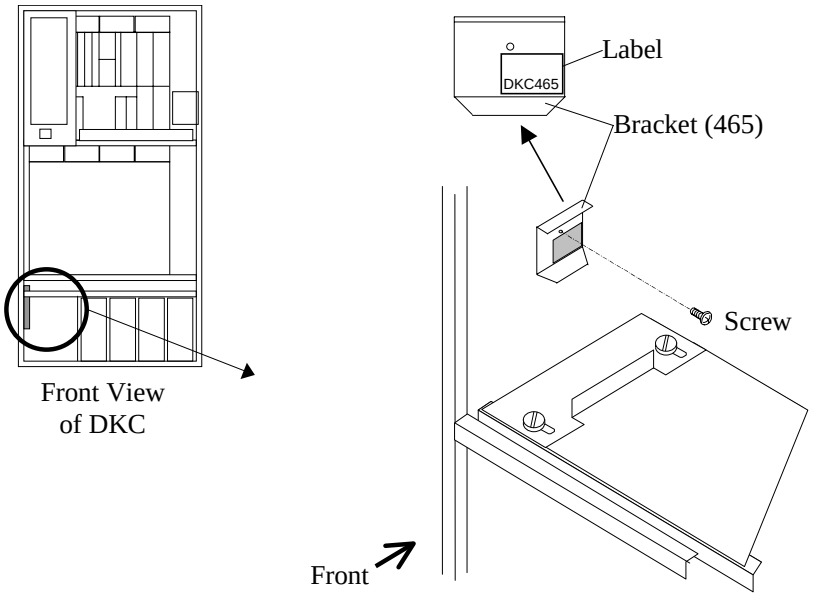

Fig. 4.6-8A Removal of Bracket

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5. Remove the Cable.
   a. Loosen the six screws③ and remove the Cover (HUB/SVP-PS) ASSY.
   b. Loosen the two screws② and remove the cable cover②.
   c. Loosen the two screws① and remove the cable cover①.
   d. Remove the two Repeat Binders from the cable.
   e. Remove the cable from the DKC frame.
   f. Install the cable covers① and ② by fastening them with the screws.
   g. Install the Cover (HUB/ SVP-PS) ASSY by fastening it with the screws.

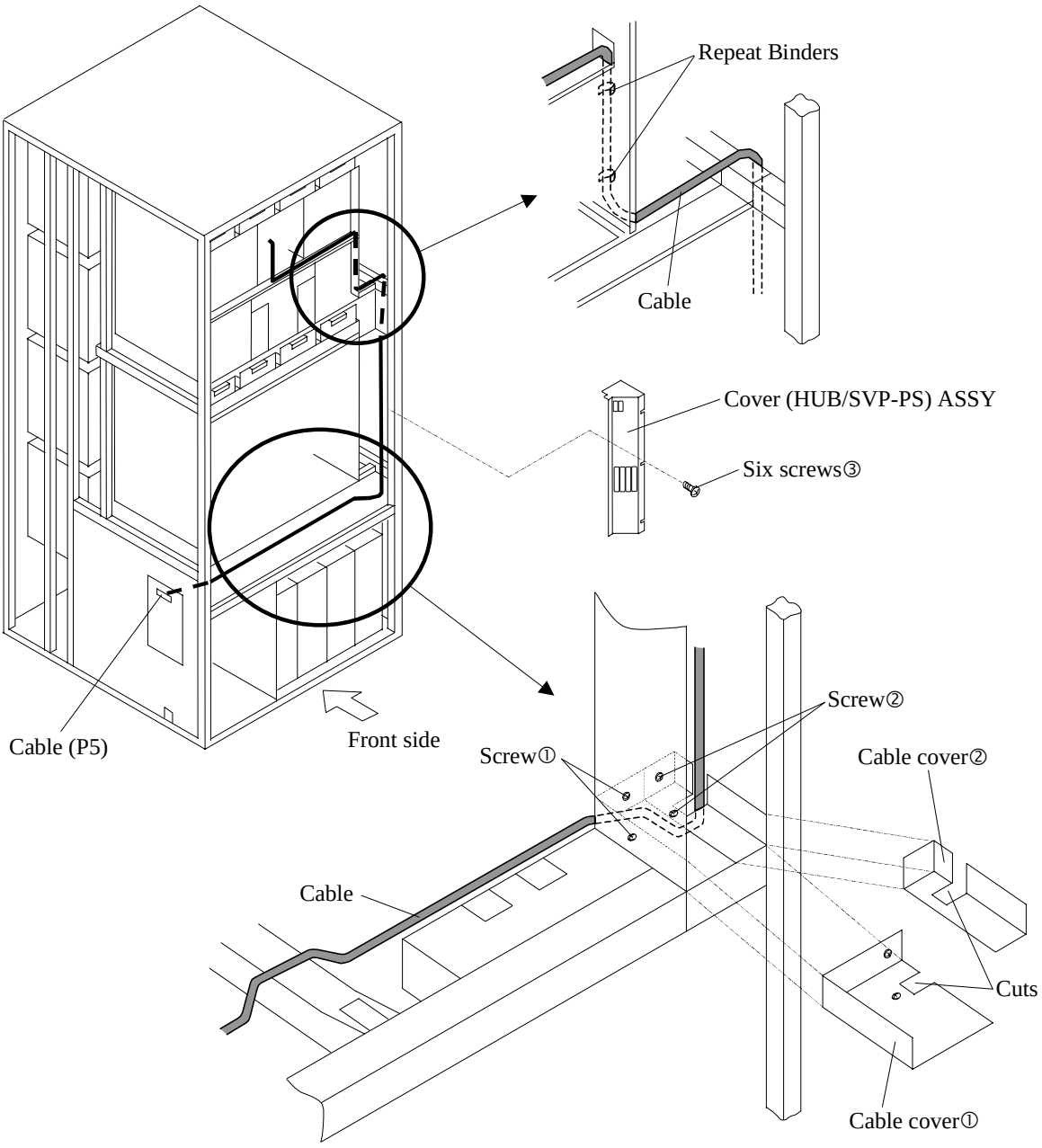

Fig. 4.6-9 Removal of Cable

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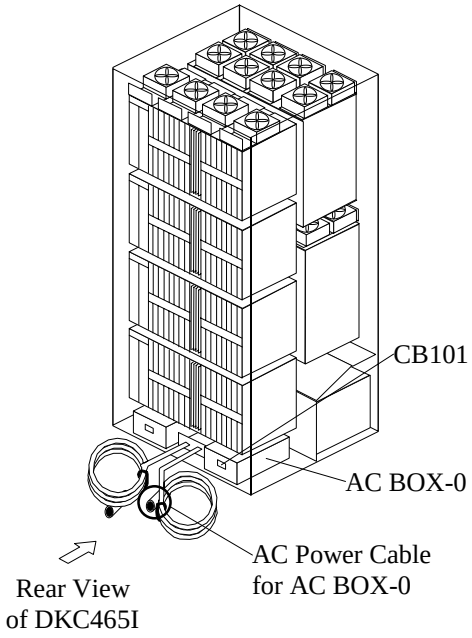
6. Connect the AC Power Cables.

CAUTION

Perform the UPS Connection Kit with care
Perform this procedure before connecting the AC Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breakers (CB101) located in the AC Boxes.

a. Disconnect the AC power cables from the branch distribution box.



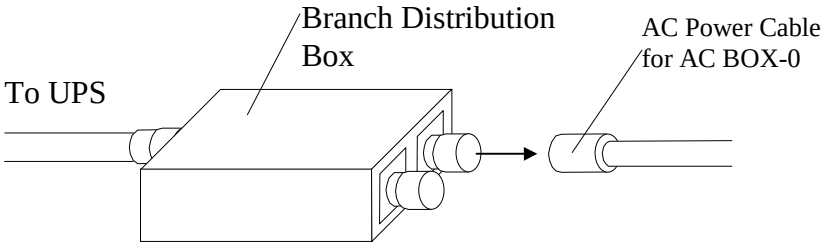


Fig. 4.6-10 Disconnection of AC Power Cables

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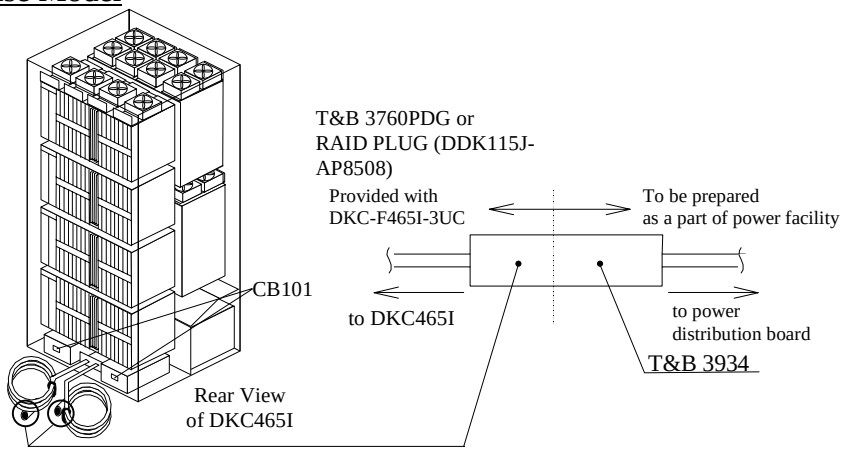
b. Connect the AC power cables to the distribution board.

3 Phase Model



Single Phase Model

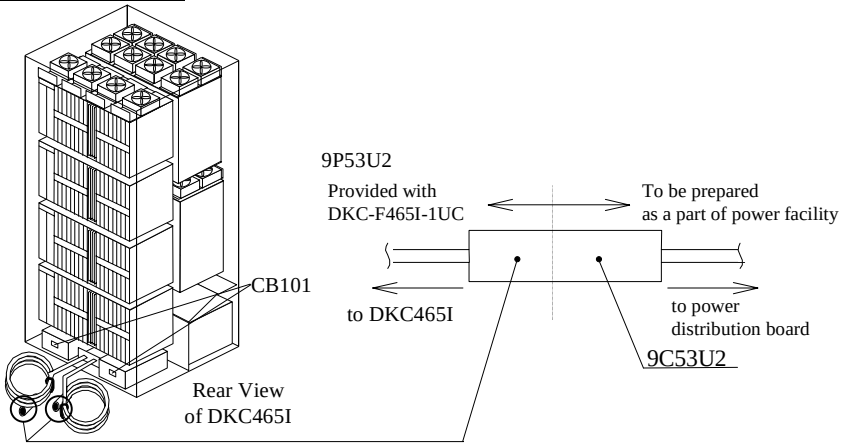


Fig. 4.6-11 Connection of AC Power Cables

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7. Remove the Nameplate
   a. Remove the nameplate referring to Fig. 4.6-12.

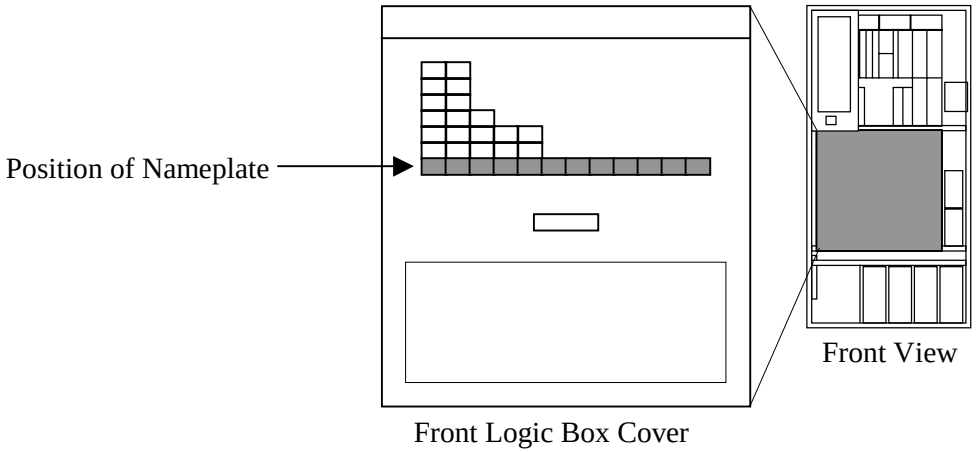

Fig. 4.6-12 Removal of Nameplate

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1-8 Overview

Change the following system option when the system operates.

<1> PS Off Timer ---------- The Destage time is effectively.

- OFF : The Destage time is effectively.
- ON : The Destage time is ineffectively, and change the Destage time.

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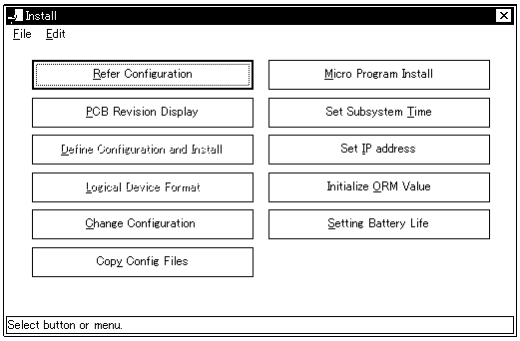
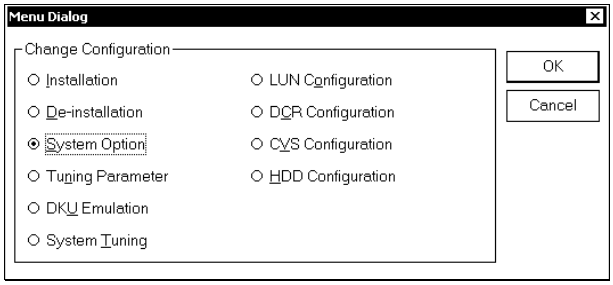
1-9 SVP procedure

(1) Select (CL) [Install].

(2) Select (CL) the [Change Configuration] menu in the 'Install' window.



(3) Select (CL) the [System Option] menu in the 'Menu Dialog' window and select (CL) [OK].



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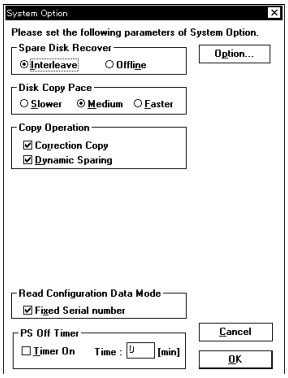
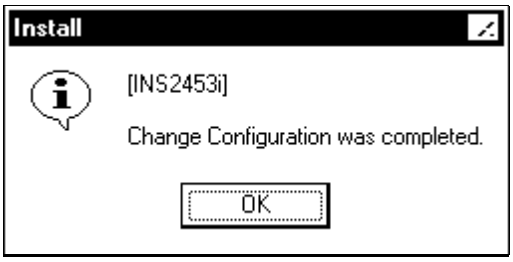
(4) Release [Timer On] check box in the column 'PS Off Timer', and then select (CL) [OK].



(5) "Loading configuration..." is displayed.

(6) "Change configuration was completed." is displayed.
Select (CL) [OK].



(7) "Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, select (CL) [OK].

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(8) When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, select (CL) [OK].

(9) Close the 'Install' window.

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4.7 De-Installation of Power Cable Kit (DKC-F465I-1EC/1UC/3EC/3UC, DKC-F460I-1ECD/1UCD)

⚠ CAUTION

Perform The Power Cable Kit with care.
This Power Cable Kit is concerned with Primary Circuit.
Perform this procedure before connecting the Power Cable.
(Turn off the circuit breakers on the power distribution panel)
Turn off the main circuit breaker CB101 located in the AC Box.

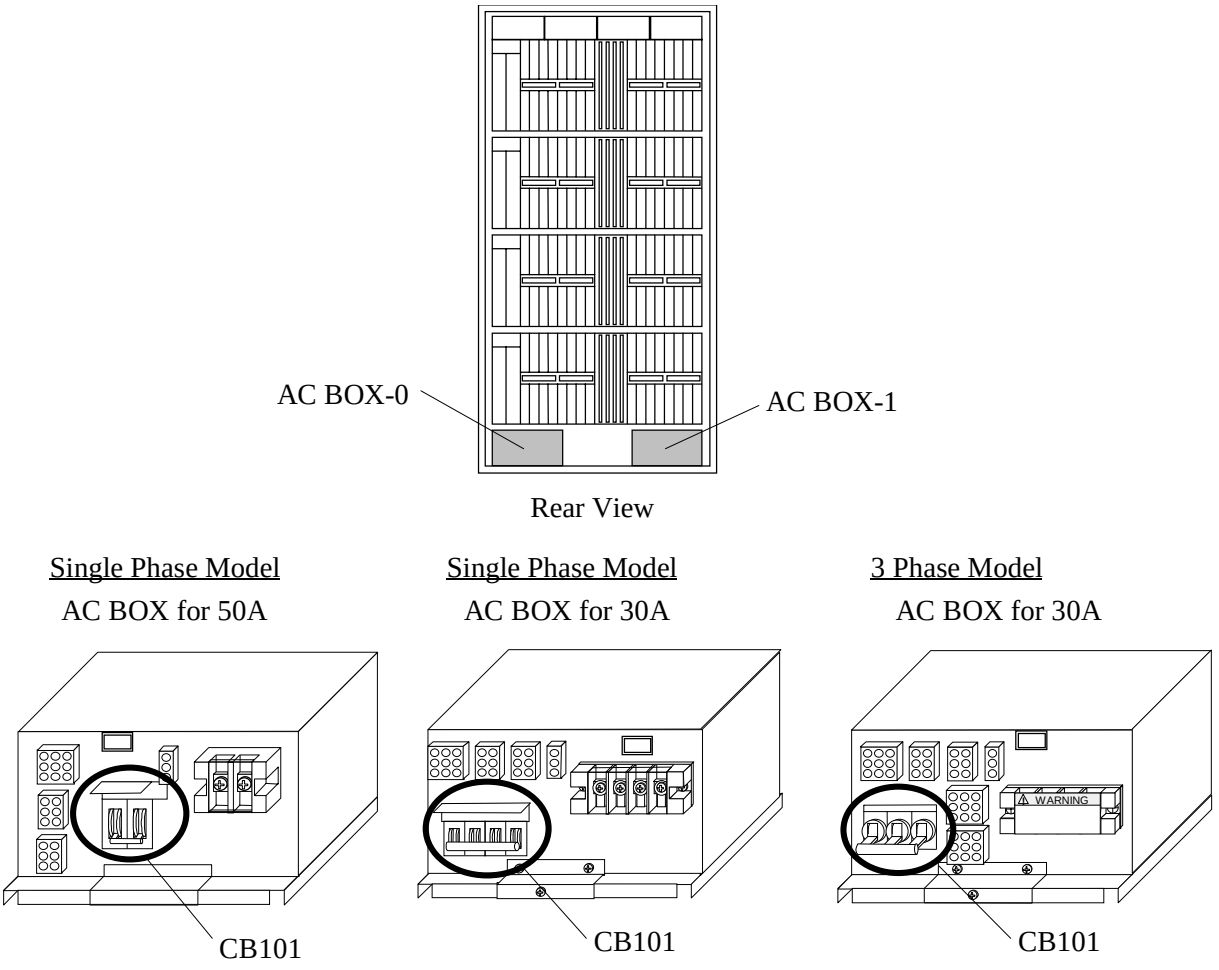

Fig. 4.7-1 Location of the Circuit Breakers

Table 4.7-1 Circuit Breakers

No.	Location No.	Breaker No.	Remarks
1	AC BOX-0	CB101	
2	AC BOX-1	CB101	

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4.7.1 De-Installation of Power Cable Kit for Single Phase/50A or 3 Phase/30A

Table 4.7.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-1UC	Power Cable	3263436-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-3	1	RSD
		Nameplate (HP)	2105894-103	1	RSD
2	DKC-F465I-1EC	Power Cable	3263438-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-5	1	RSD
		Nameplate (HP)	2105894-105	1	RSD
3	DKC-F465I-3UC	Power Cable	3263437-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-4	1	RSD
		Nameplate (HP)	2105894-104	1	RSD
4	DKC-F465I-3EC	Power Cable	3263439-A	1	
		Cover	5513750-1	1	
		Nameplate (HDS)	2105894-6	1	RSD
		Nameplate (HP)	2105894-106	1	RSD

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1. Disconnect the Power Cable.
   a. Remove the terminal block covers. Remove the screws from the terminal blocks.

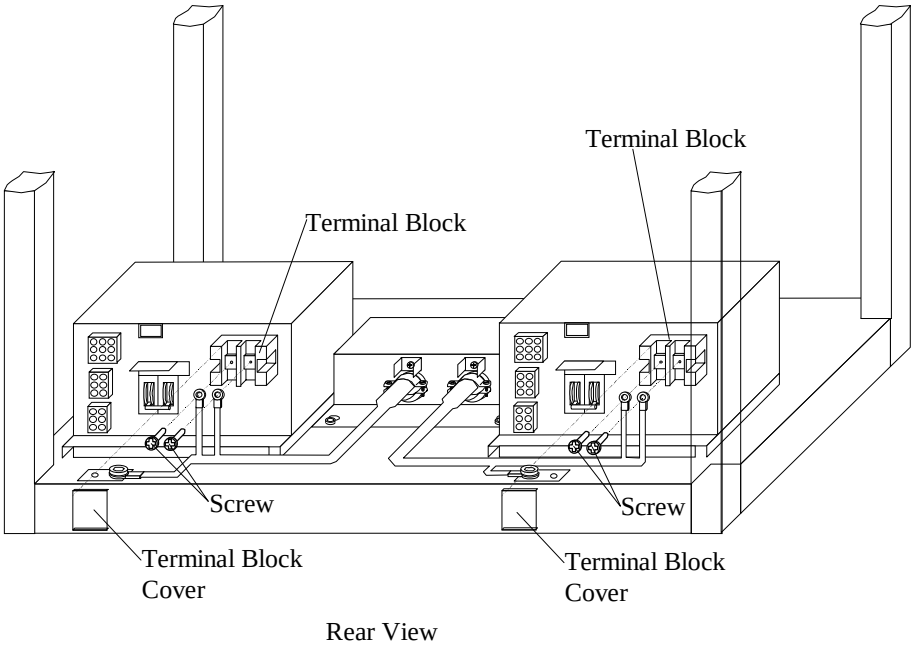

Fig. 4.7.1-1 Removal of Screws

   b. Remove the frame ground cable for each AC power cable from the frame.

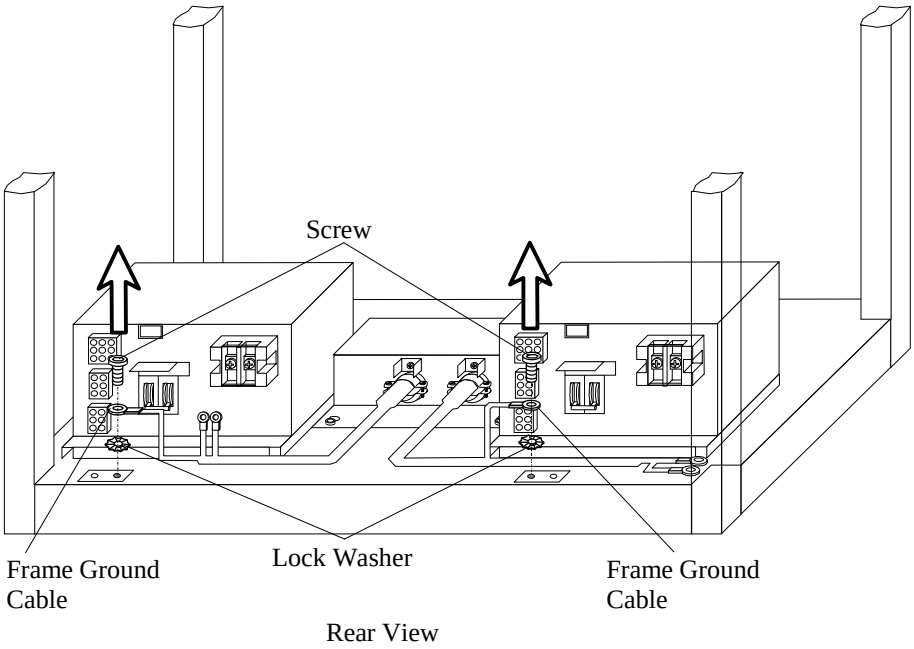

Fig. 4.7.1-2 Removal of Frame Ground Cable

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c. Loosen the screws① and remove the cover.
d. Loosen the screws② and remove the Power Cable.

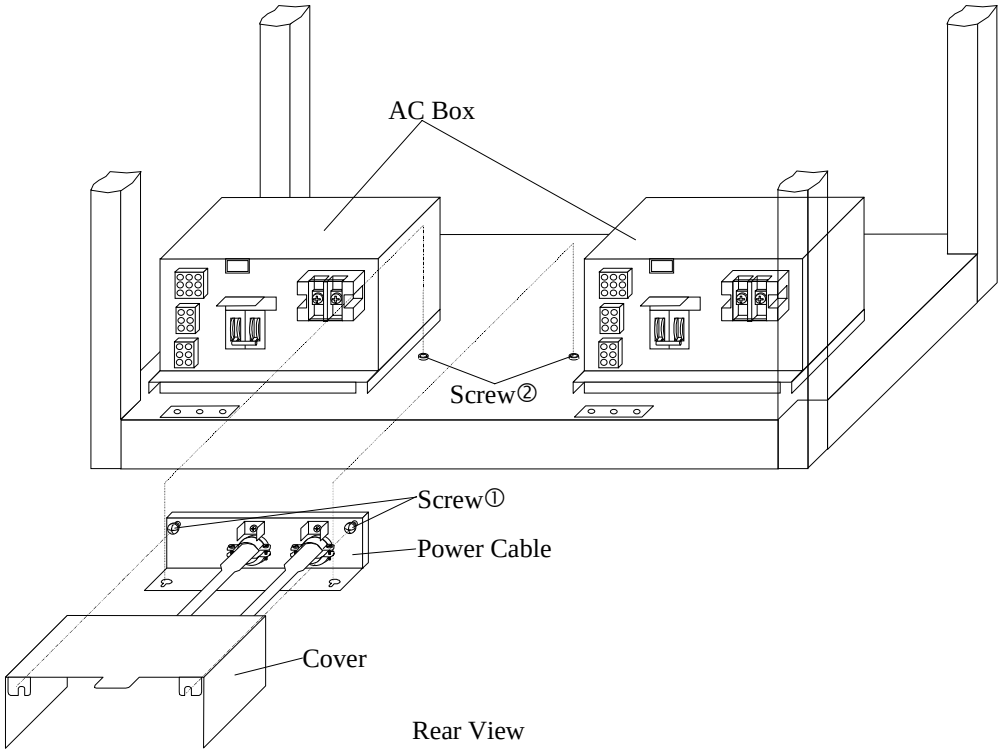

Fig. 4.7.1-3 Removal of Power Cable

2. Remove the Nameplate.
a. Remove the nameplate from the Front Logic Box Cover.

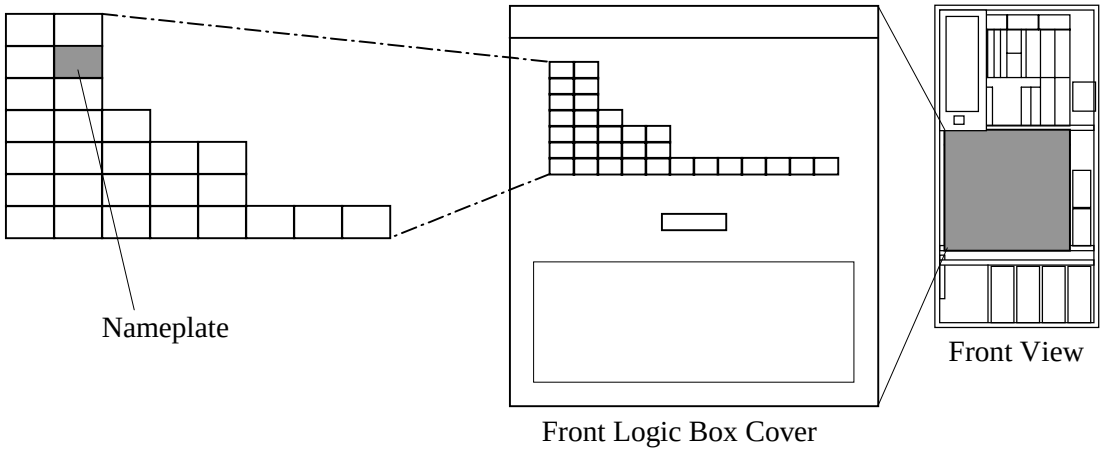

Fig. 4.7.1-4 Removal of Nameplate

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4.7.2 De-Installation of Power Cable Kit for Single Phase/30A

Table 4.7.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-1UCD	Power Cable Unit	3265665-A	1	
		Screw	SB408N	2	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		Nameplate (HDS)	2105902-131	1	RSD
			2105903-131/231		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF
2	DKC-F460I-1ECD	Power Cable Unit	3265664-A	1	
		Screw	SB408N	2	
		Screw	SB510N	4	
		Toothed Washer	WT005N	4	
		Nameplate (HDS)	2105902-130	1	RSD
			2105903-130/230		HICAM/HICEF
		Nameplate (HP)	—	1	RSD
			—		HICAM/HICEF

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1. Remove the Bracket.
   a. Remove the terminal block covers. Remove the screws from the terminal blocks.

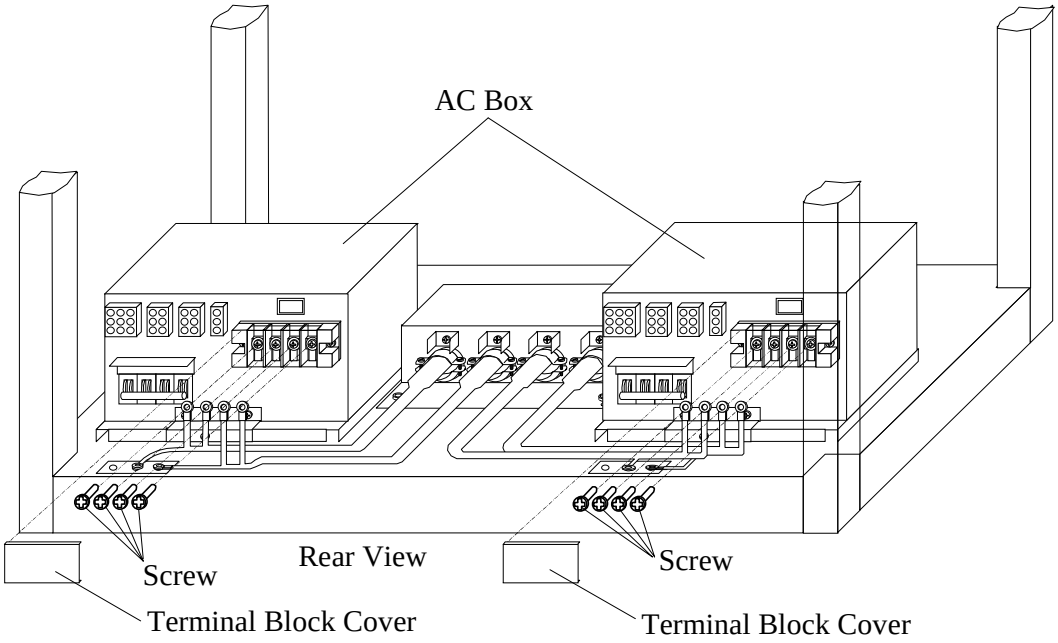

Fig. 4.7.2-1 Removal of Screws

   b. Remove the frame ground cable for each AC power cable from the frame.

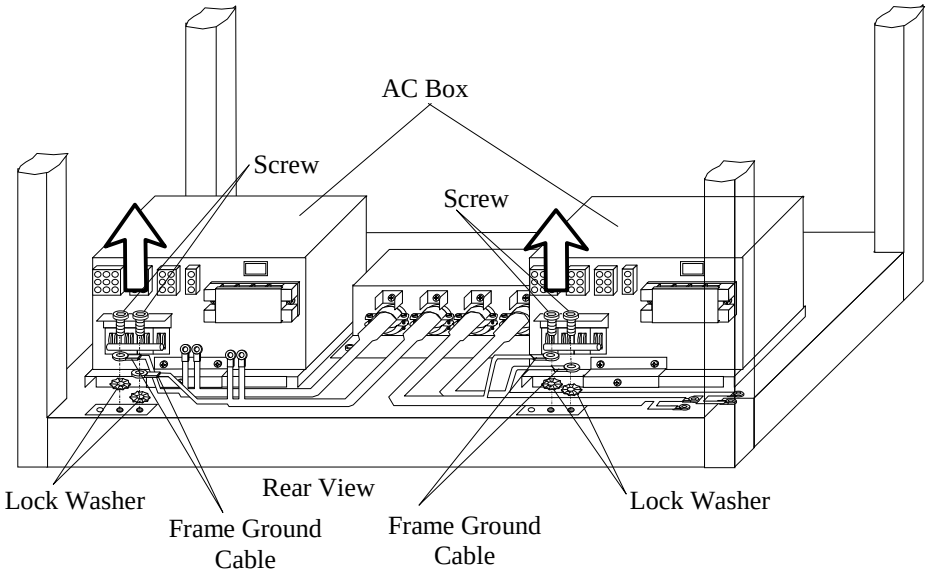

Fig. 4.7.2-2 Removal of Frame Ground Cable

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c. Loosen the screws ① and remove the cover.
d. Loosen the screws ② and remove the bracket.

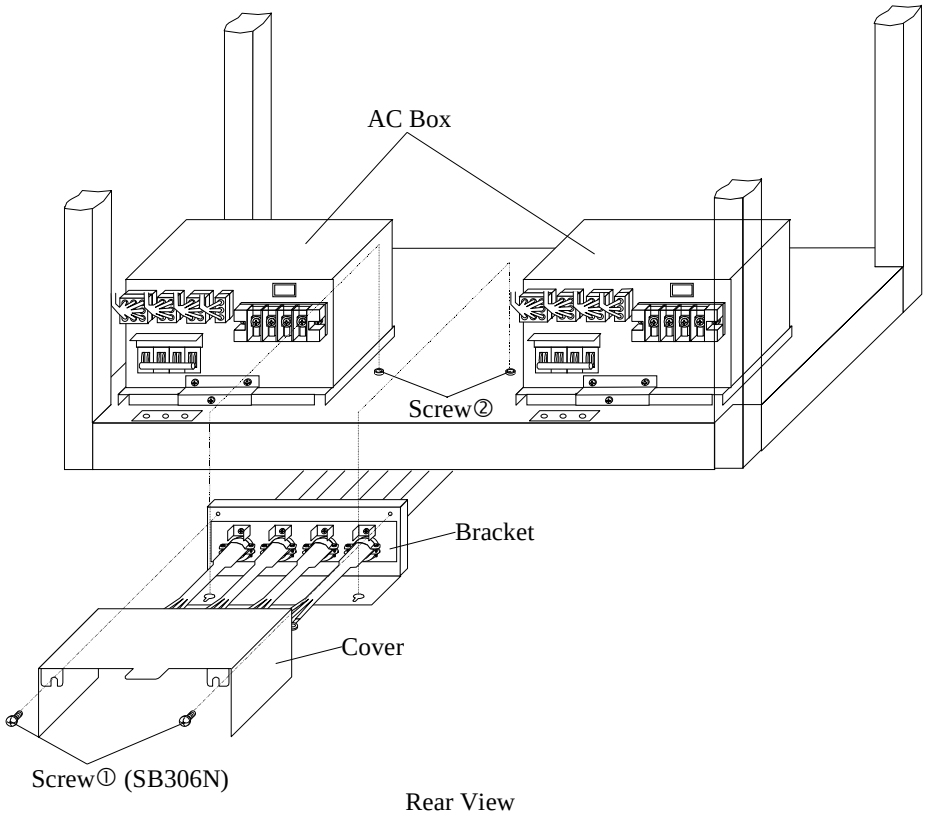

Fig. 4.7.2-3 Removal of Power Cable ASSY

e. Remove the six screws and remove the Bracket.

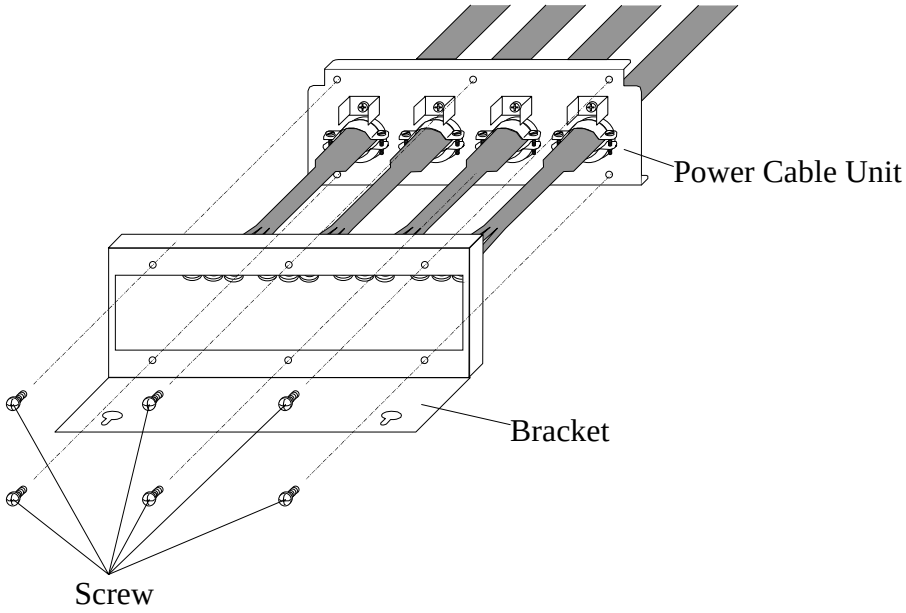

Fig. 4.7.2-4 Removal of Bracket

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2. Remove the Nameplate.
   a. Remove the nameplate from the Front Logic Box Cover.

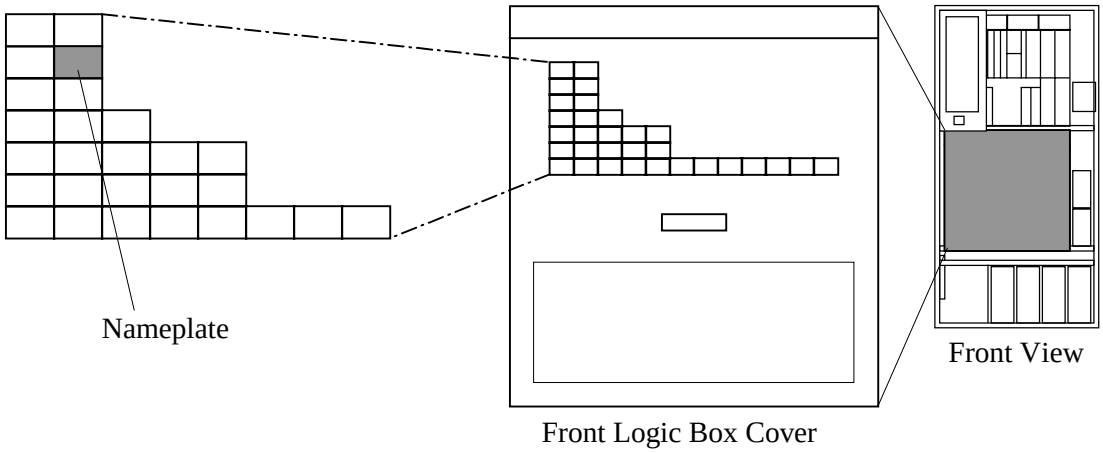

Fig. 4.7.2-5 Removal of Nameplate

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4.8 De-Installation of AC Box Kit

4.8.1 De-Installation of AC Box Kit for Single Phase/50A or 3 Phase/30A (DKC-F465I-1PS/3PS)

Table 4.8.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-1PS	AC Box	5513939-A	2	
		Screw	SB306N	4	
		Nameplate (HDS)	2105894-1	1	RSD
		Nameplate (HP)	2105894-101	1	RSD
2	DKC-F465I-3PS	AC Box	5513938-A	2	
		Screw	SB306N	4	
		Nameplate (HDS)	2105894-2	1	RSD
		Nameplate (HP)	2105894-102	1	RSD

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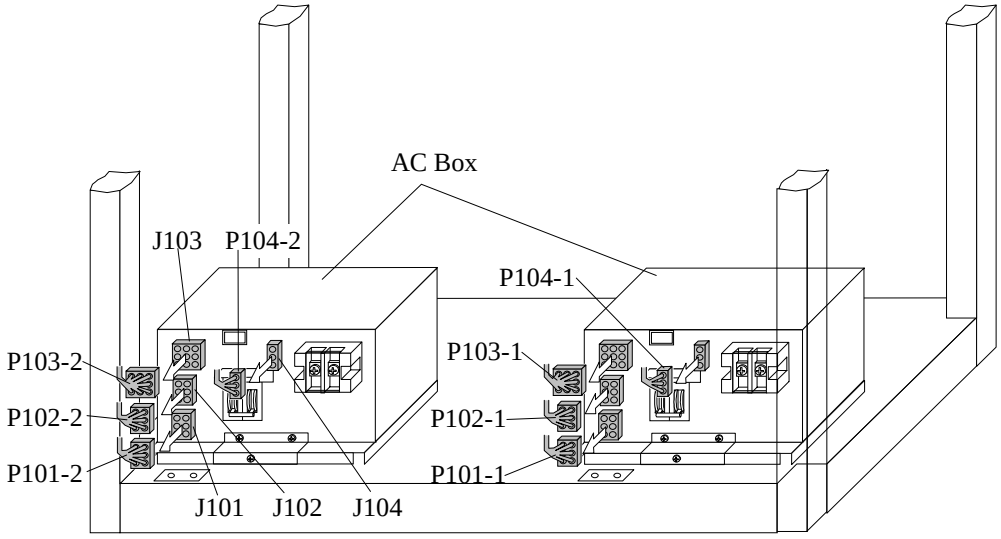
1. Disconnect the cables.

DKC-F465I-1PS

a. Disconnect the cables from the AC Boxes.

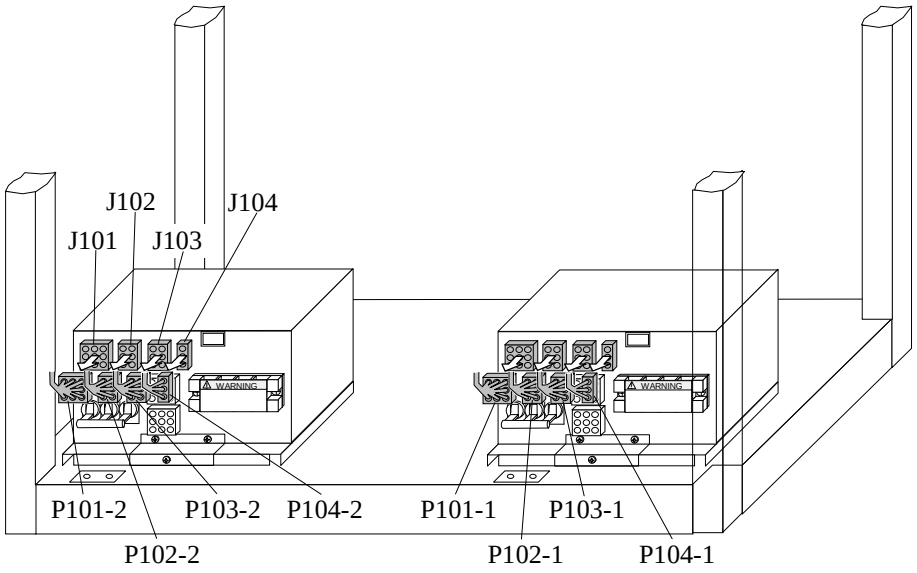


Rear View

Fig. 4.8.1-1 Disconnection of Cables

DKC-F465I-3PS

a. Disconnect the cables from the AC Boxes.



Rear View

Fig. 4.8.1-2 Disconnection of Cables

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2. Remove the AC Boxes.
   a. Loosen the screw and remove frame ground cable and lock washer.

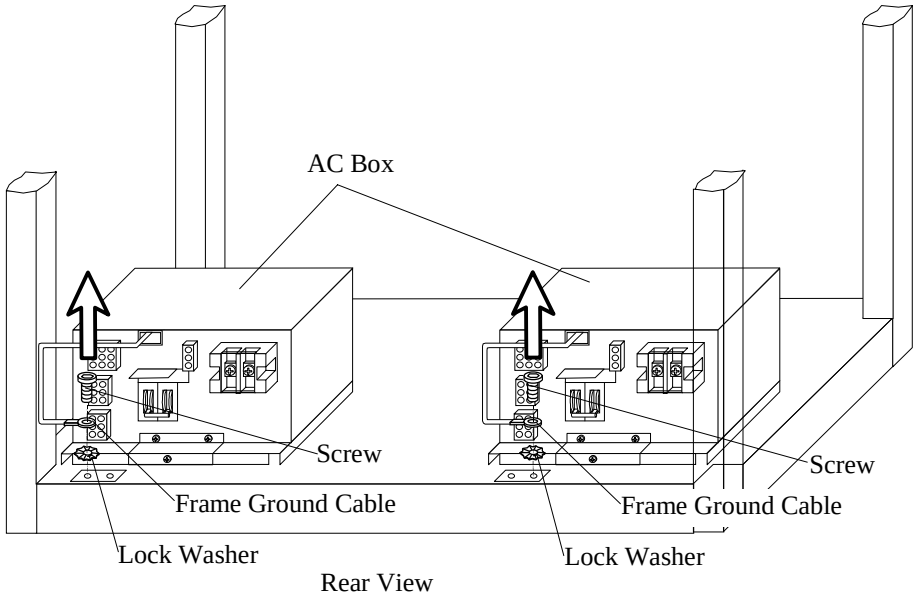

Fig. 4.8.1-3 Removal of Ground Cables

   b. Loosen the screws and remove the plates.

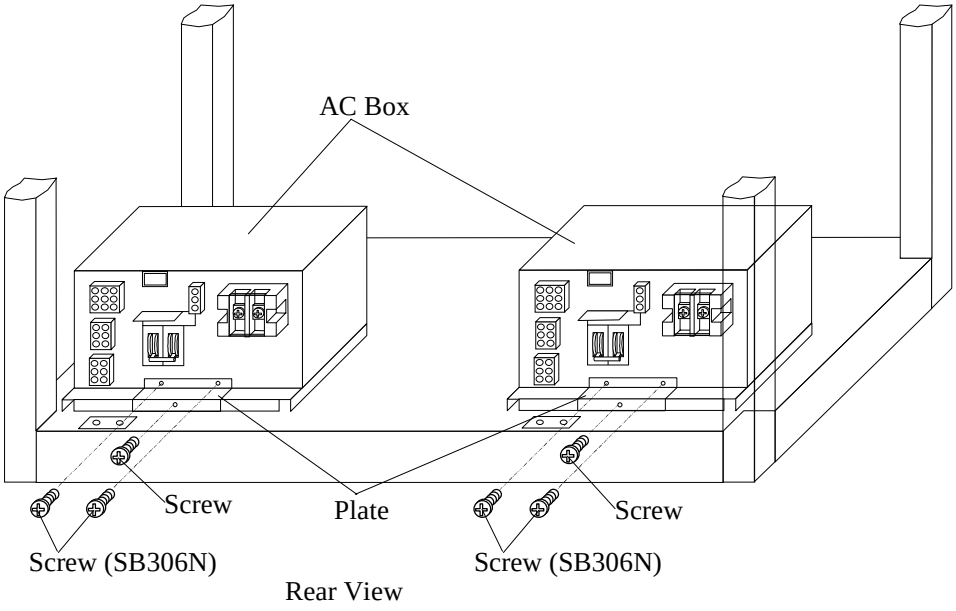

Fig. 4.8.1-4 Removal of Plates

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c. Remove the AC Boxes from the bases.

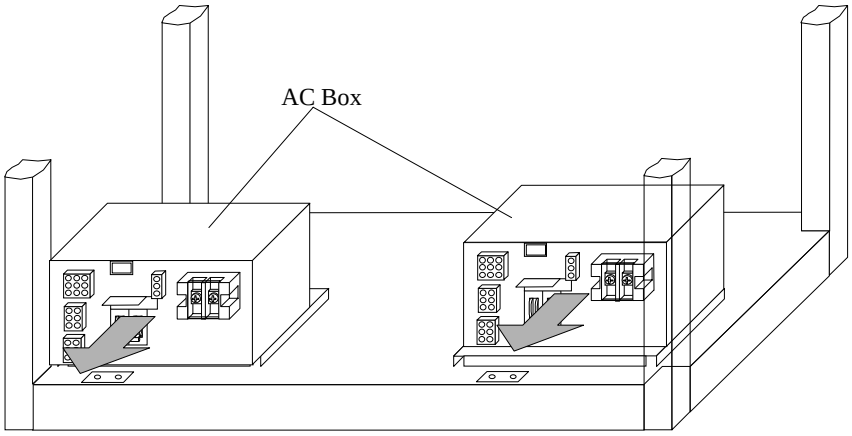

Fig. 4.8.1-5 Removal of AC Boxes

d. Attach the plates with the screws.

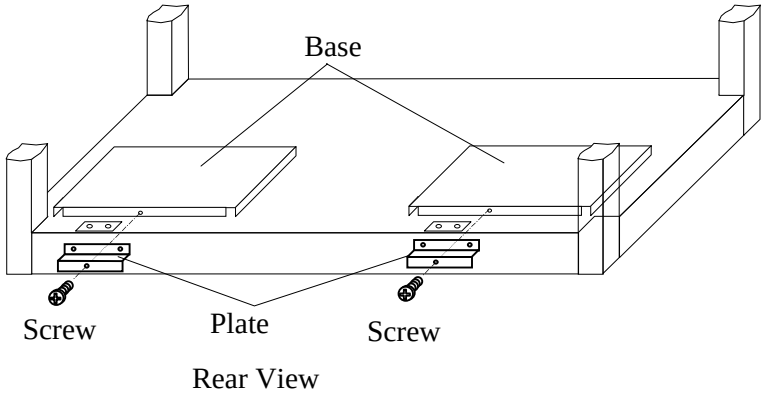

Fig. 4.8.1-6 Attachment of Plates

3. Remove the Nameplate.

a. Remove the nameplate from the Front Logic Box cover.

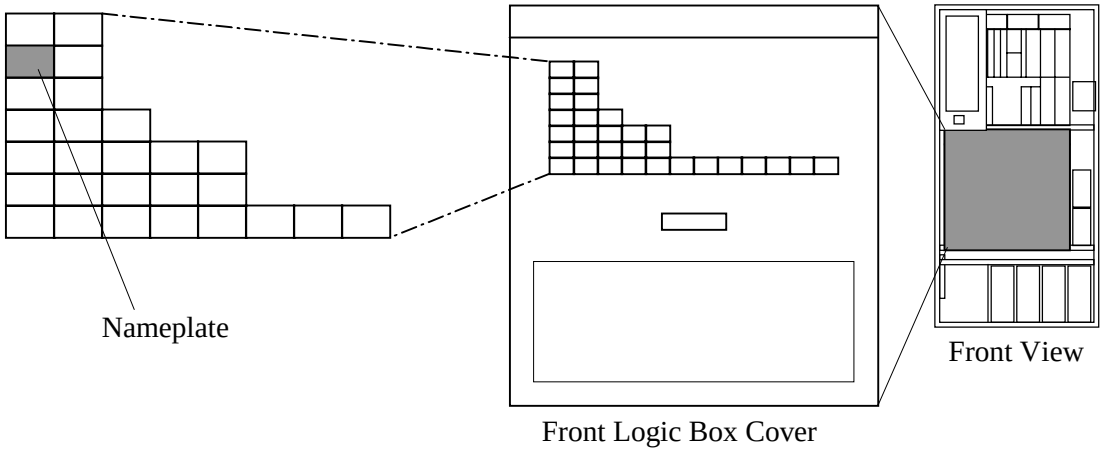

Fig. 4.8.1-7 Location of Nameplate

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4.8.2 De-Installation of AC Box Kit for Single Phase/30A (DKC-F465I-1PSD)

Table 4.8.2-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F465I-1PSD	AC Box	5518053-A	2	For 30A
		Bracket	3265678-1	1	
		Cover	5513750-1	1	
		Screw	SB306N	6	
		Label (V.Hz.PH.A.W)	3265705-1	1	
		Nameplate (HDS)	2105894-13	1	RSD
		Nameplate (HP)	2105894-110	1	RSD

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1. Remove the Bracket.
   a. Loosen the screws ① and remove the cover.
   b. Loosen the screws ② and remove the bracket.

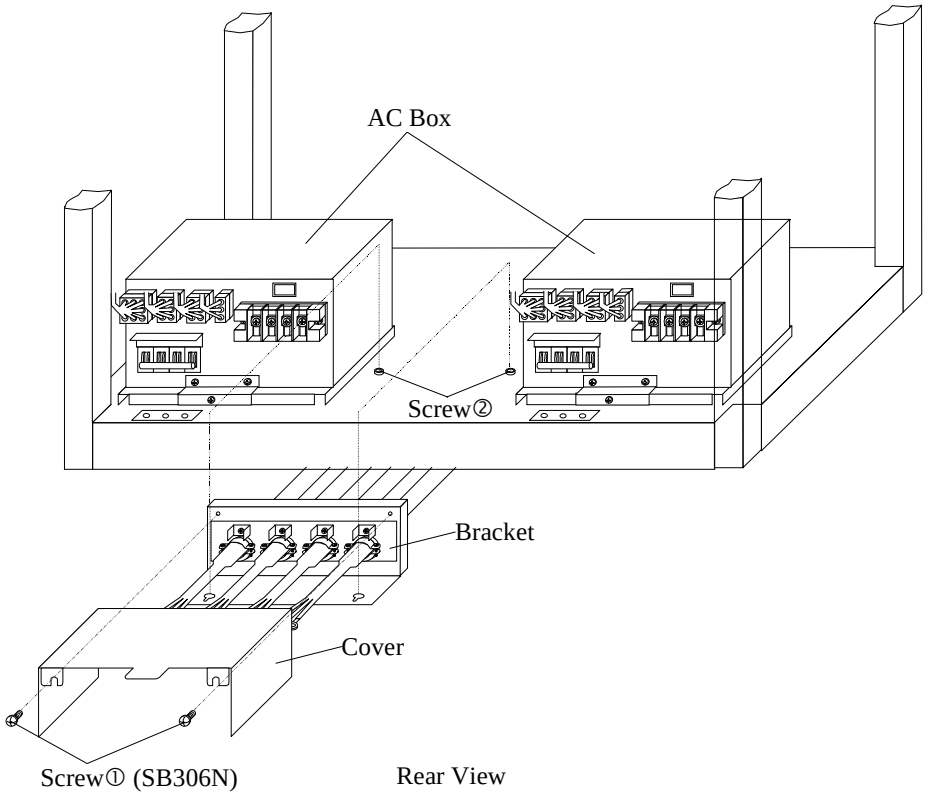

Fig. 4.8.2-1 Removal of Bracket

   c. Remove the six screws and remove the bracket.

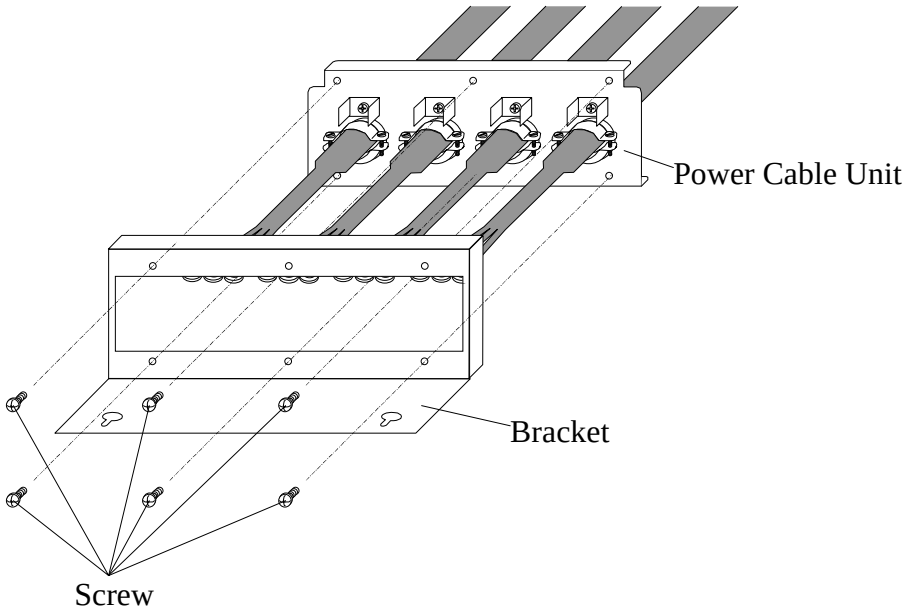

Fig. 4.8.2-2 Removal of Bracket

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2. Disconnect the cables.
   a. Disconnect the cables (P101-1, P102-1, P103-1, P104-1, P101-2, P102-2, P103-2 and P104-2) from the AC Boxes.

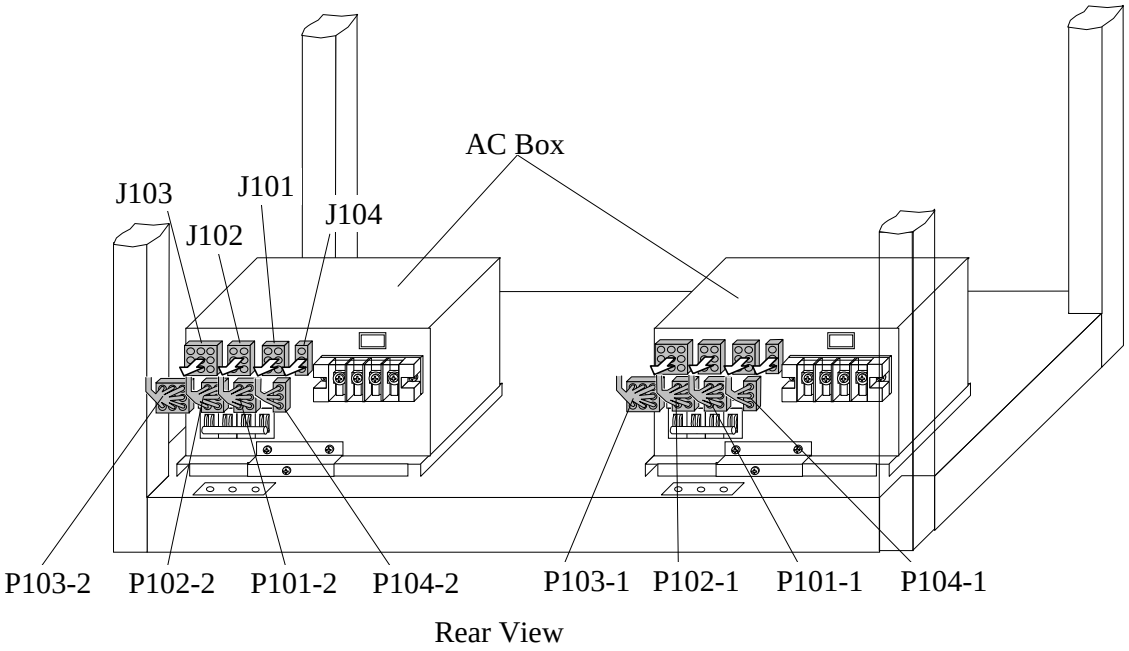

Fig. 4.8.2-3 Disconnection of Cables

3. Remove the AC Boxes.
   a. Loosen the screw and remove frame ground cable and lock washer.

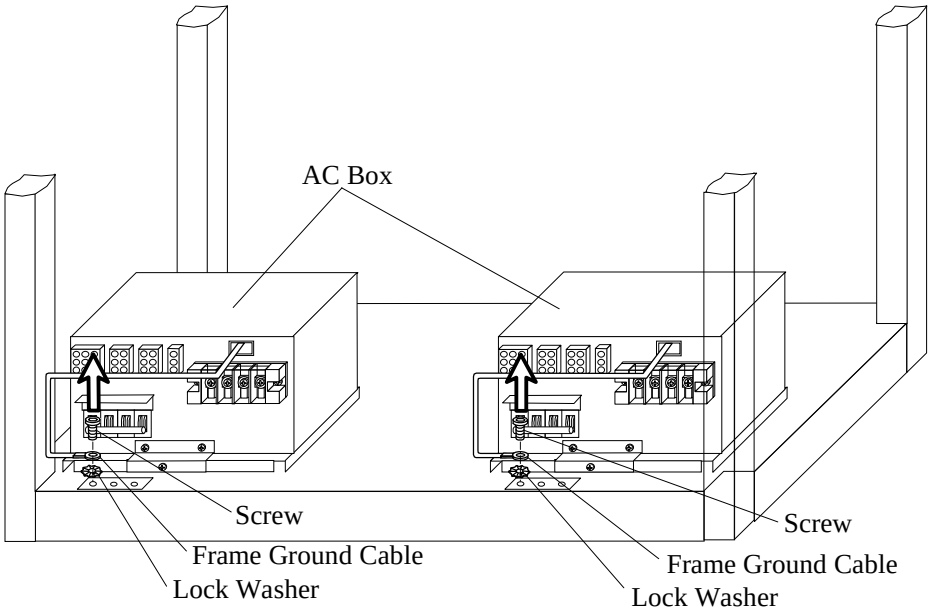

Fig. 4.8.2-4 Removal of Ground Cables

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b. Loosen the screws and remove the plates.

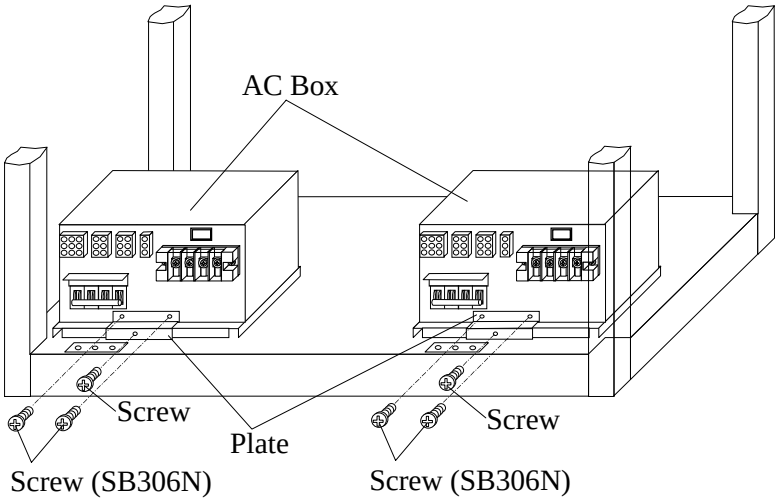

Fig. 4.8.2-5 Removal of Plates

c. Remove the AC Boxes from the bases.

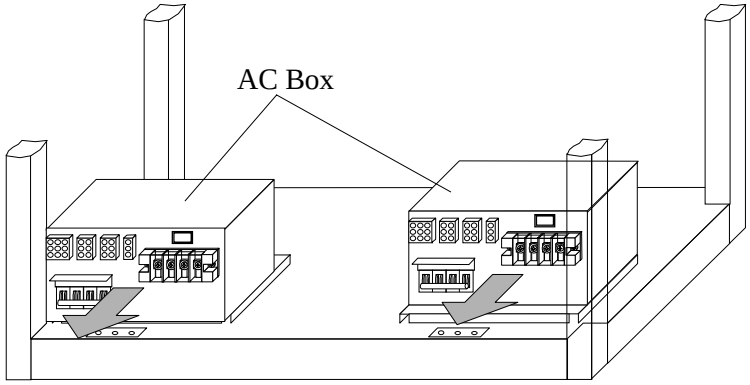

Fig. 4.8.2-6 Removal of AC Boxes

d. Attach the plates with the screws.

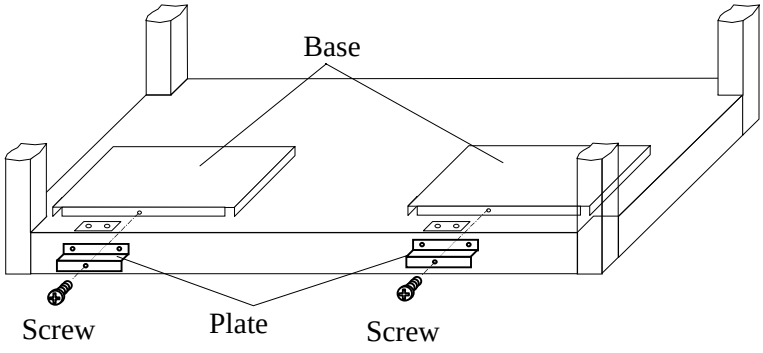

Fig. 4.8.2-7 Attachment of Plates

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4. Remove the Nameplate and Label.
   a. Remove the nameplate from the Front Logic Box cover.

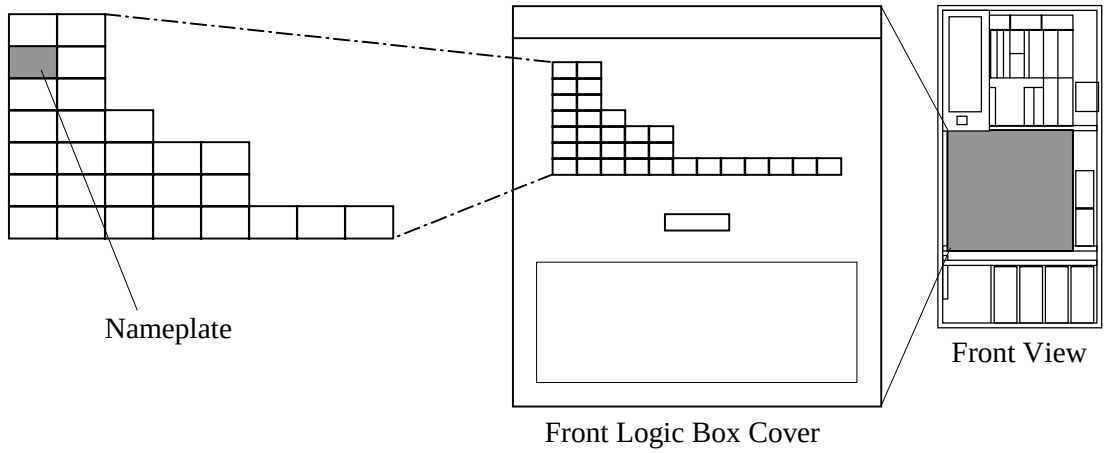

Fig. 4.8.2-8 Location of Nameplate

   b. Remove the label (V/Hz/PH.) and label (V.Hz.PH.A.W) from the frame.

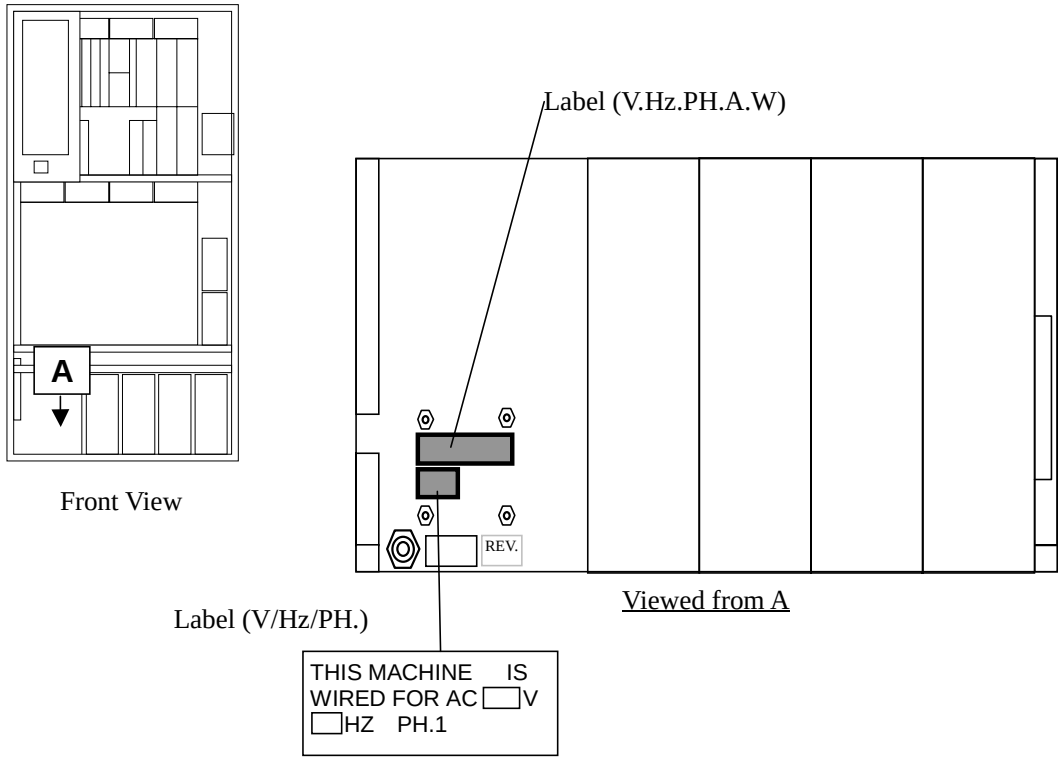

Fig. 4.8.2-9 Remove of Labels

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4.9 De-Installation of 256MB Additional Memory for SVP (DKC-F460I-256M)

Table 4.9-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DKC-F460I-256M	Additional SVP Memory	5518055-A	1	
		LABEL		1	
		Nameplate(HP)	2105902-235	1	RSD
			2105903-335	1	HICAM
			2105903-435	1	HICEF

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4.9.1 De-Installation Procedure of 256MB Additional Memory for SVP

1. Open the front door and then open the DKC panel.

2. Turn the SVP ASSY and turn off the power for the SVP.

3. Loosen the screw and open the SVP frame, and remove the lower SH box cover.
   (1) Open the SVP frame.
   SVP frame type1
   a. Remove the screw① and open the SVP frame.

   SVP frame type2
   a. Loosen the screw② and the SVP stopper is slide to the left.
   b. Open the SVP ASSY (Basic).
   c. Remove the screw③ and open the SVP frame.

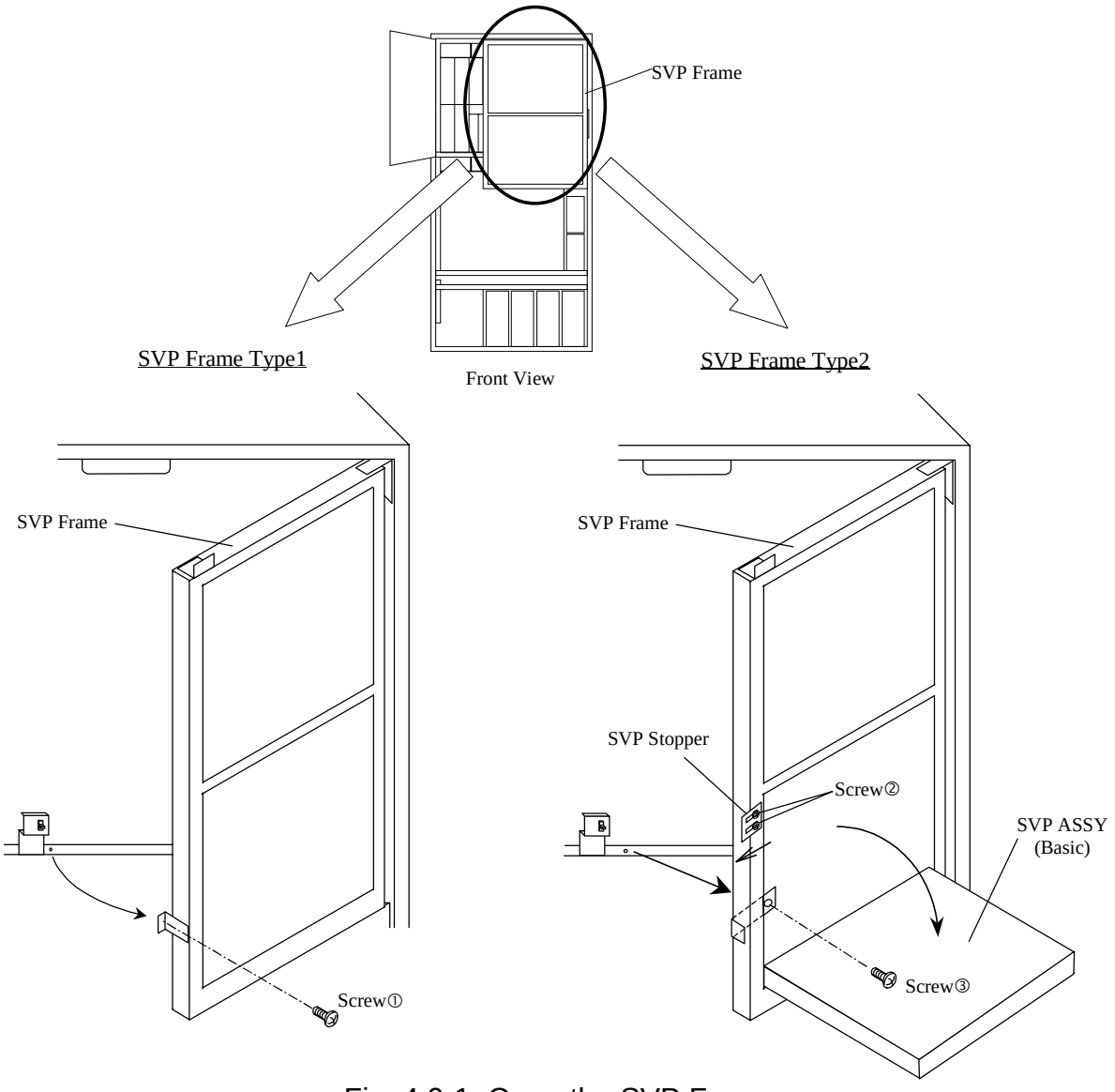

Fig. 4.9-1 Open the SVP Frame

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4. Insert the Jumper.

Replacement of Basic SVP ASSY

a. Insert the maintenance jumper into JP1 on the RS CON PCB.

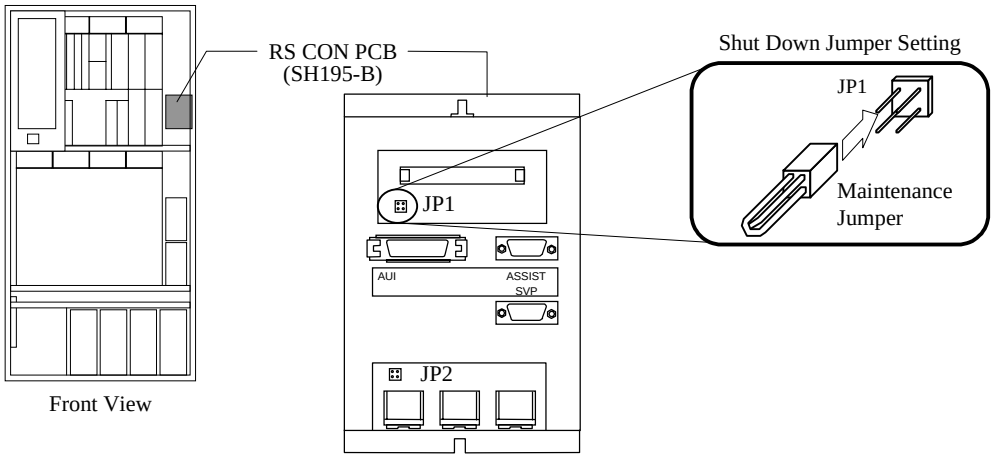

Fig. 4.9-2 Jumper settings of RS CON PCB

Replacement of Option SVP ASSY

a. Insert the maintenance jumper into PS SD on the SVPPS BOX.

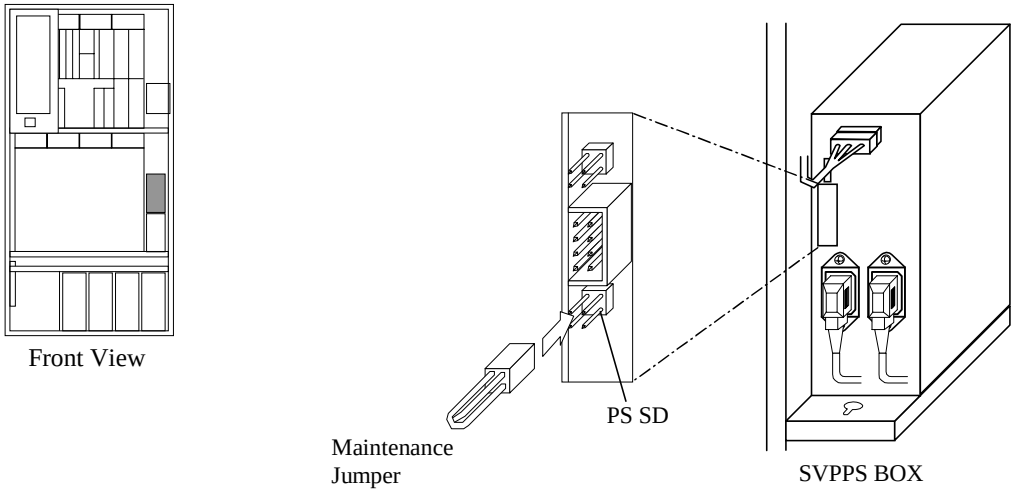

Fig. 4.9-3 Jumper settings of SVPPS BOX

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5. Remove the cables.

Additional Memory of Basic SVP

a. Disconnect the RS232C cable (RSVP-1) from the RS CON PCB.

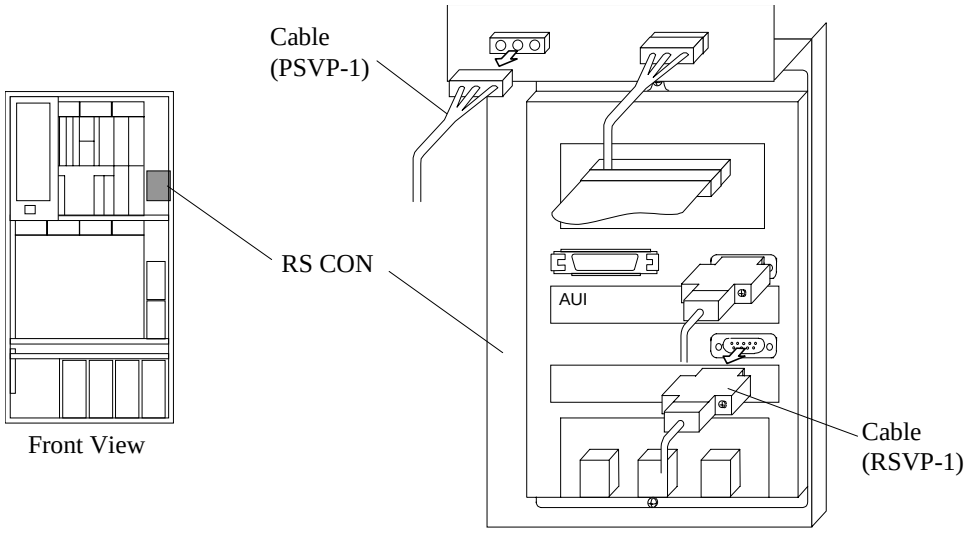

Fig. 4.9-4 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-1) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-1) from the CON PLATE.

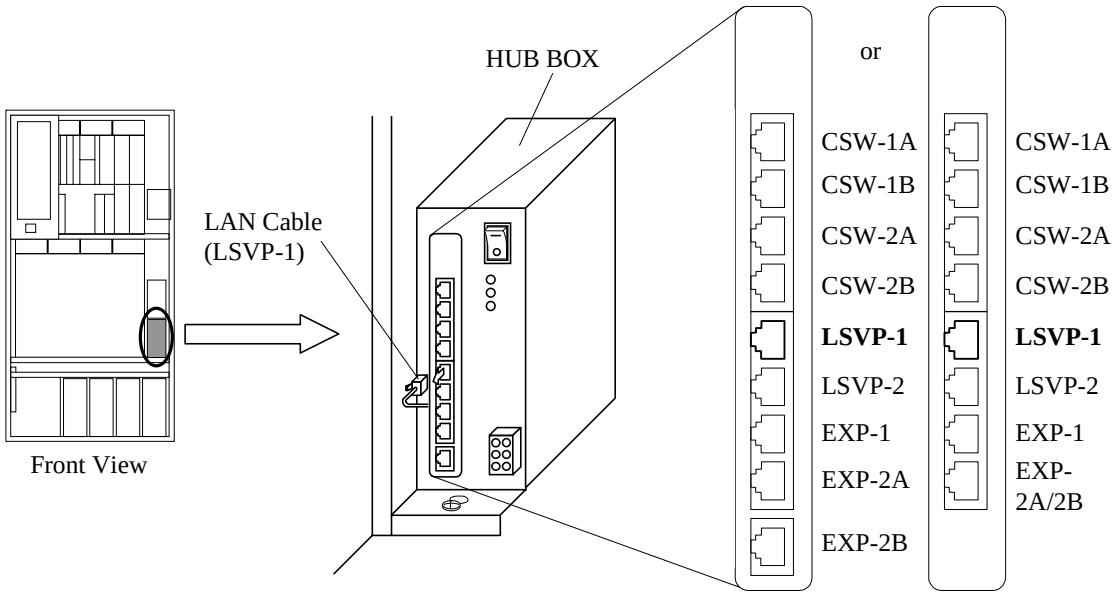

Fig. 4.9-5 Disconnection of LAN Cable and SVP-PS Cable

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c. Open the locking clamps and remove the cables.

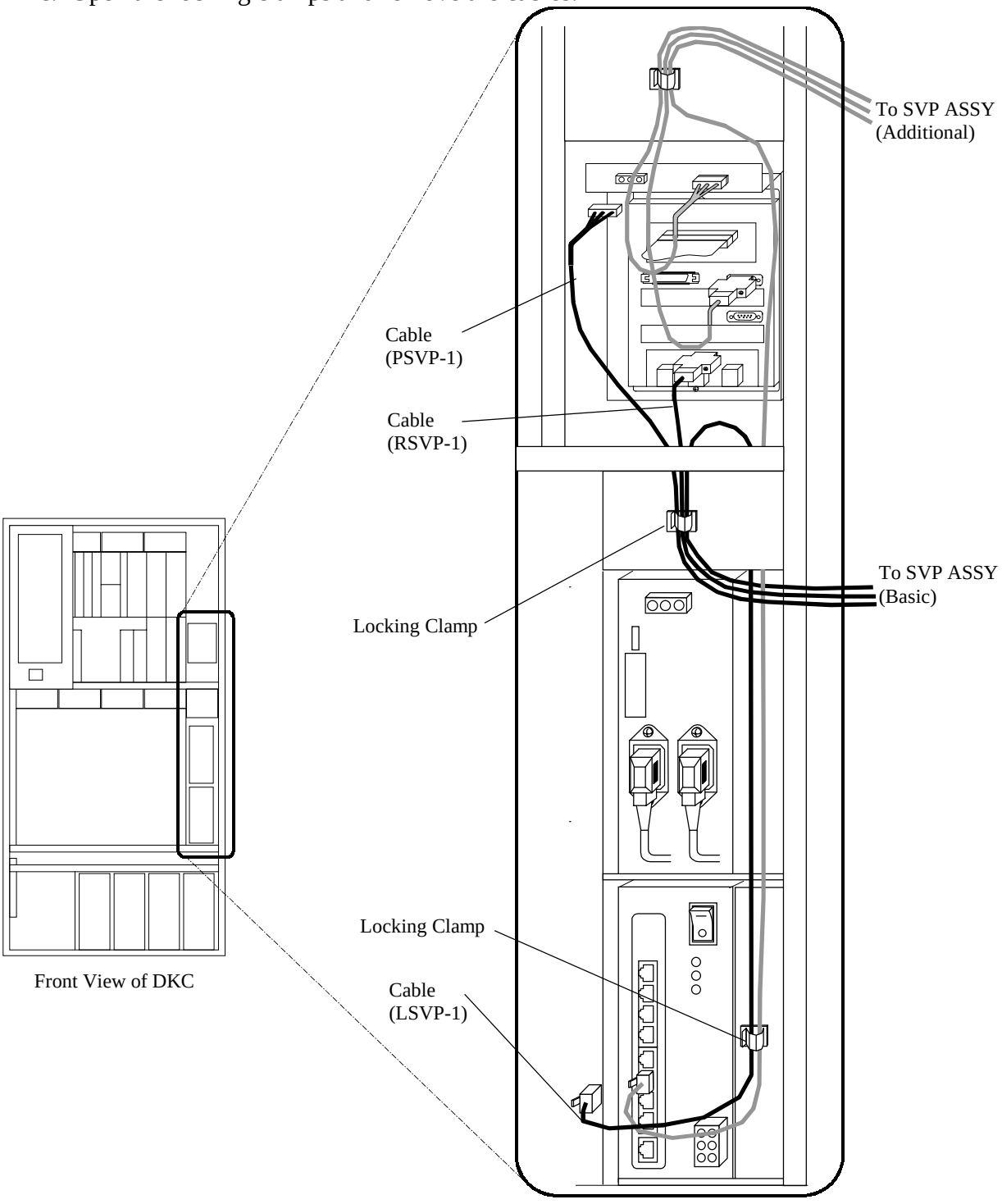

Fig. 4.9-6 Removal of Cables

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Additional Memory of Option SVP ASSY

a. Disconnect the RS232C cable (RSVP-2) from the RS CON PCB.

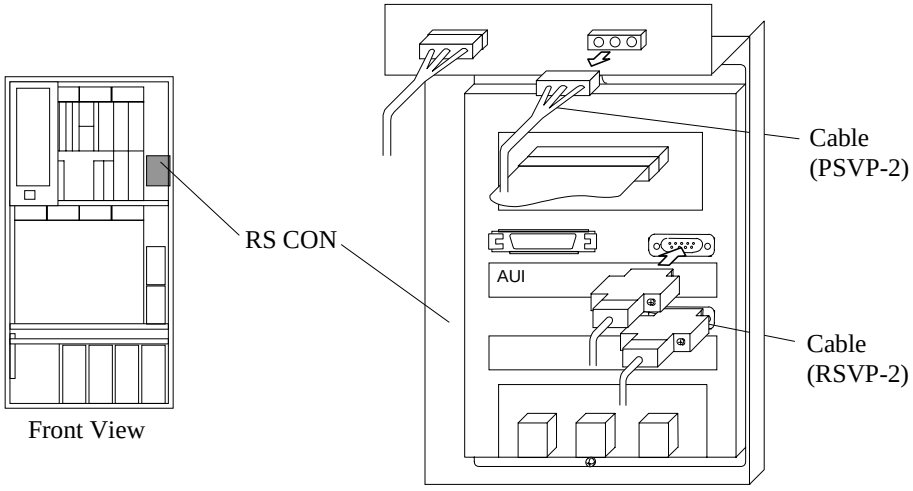

Fig. 4.9-7 Disconnection of RS232C Cable

b. Disconnect the LAN cable (LSVP-2) from the HUB BOX.
Disconnect the SVP PS cable (PSVP-2) from the CON PLATE.

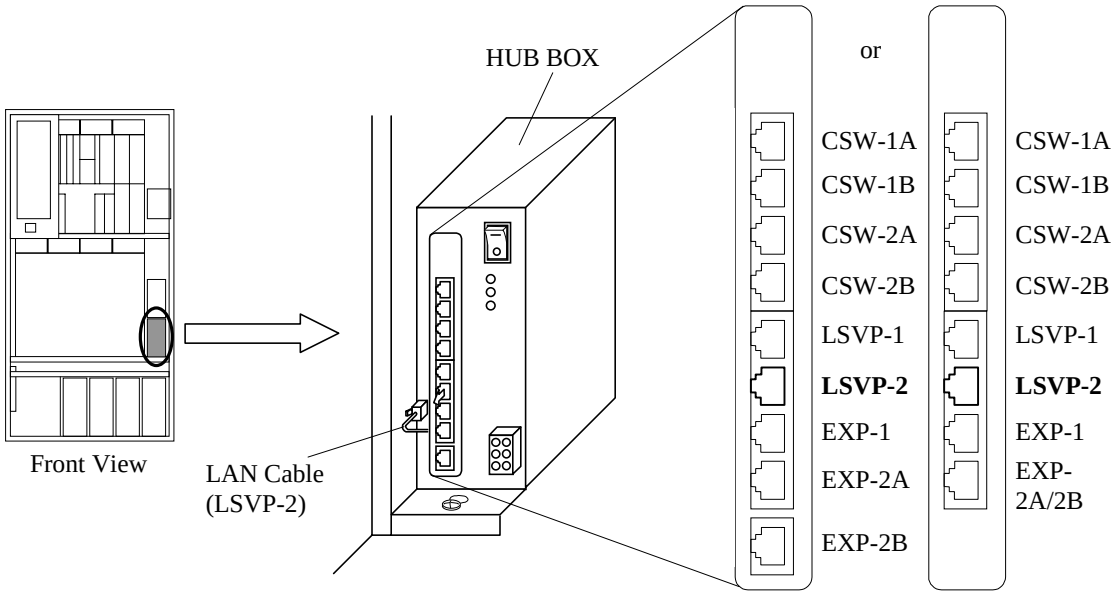

Fig. 4.9-8 Disconnection of LAN Cable and SVP PS Cable

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c. Open the locking clamps and remove the cables.

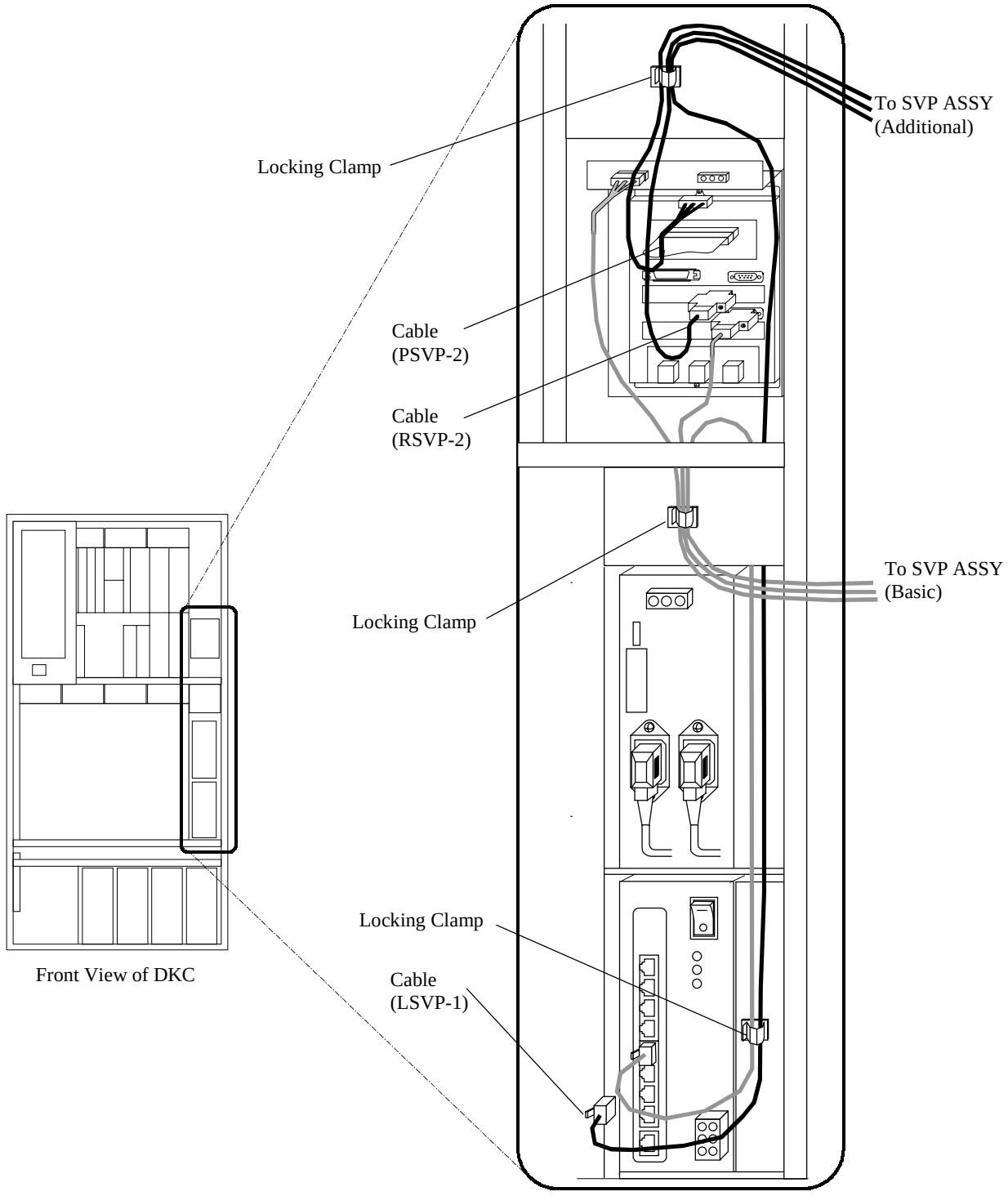

Fig. 4.9-9 Removal of Cables

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6. Remove the SVP cover.
   a. Close the SVP frame.
   b. Loosen the screws and remove the SVP cover.

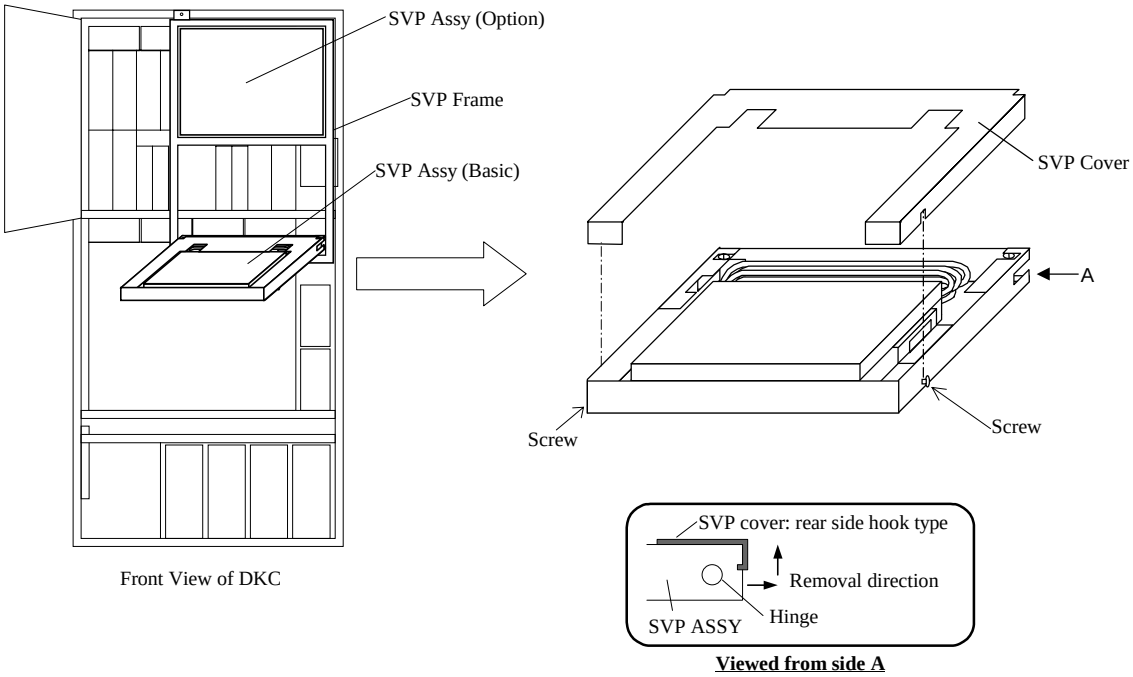

Fig. 4.9-10 Removing SVP cover

7. Loosen the screws and remove the stopper.
8. Pull out the SVP Assy.

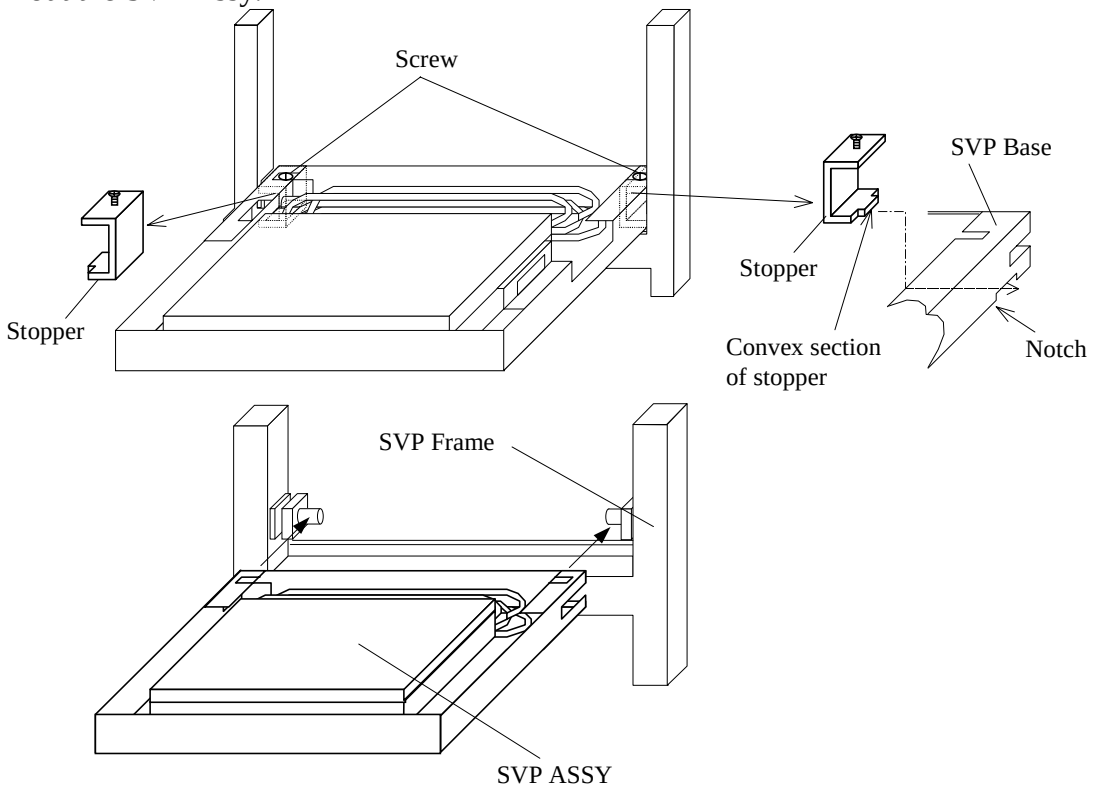

Fig. 4.9-11 Removing and installing the SVP ASSY

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9. Remove the DC Cable and LAN Cable from the SVP.

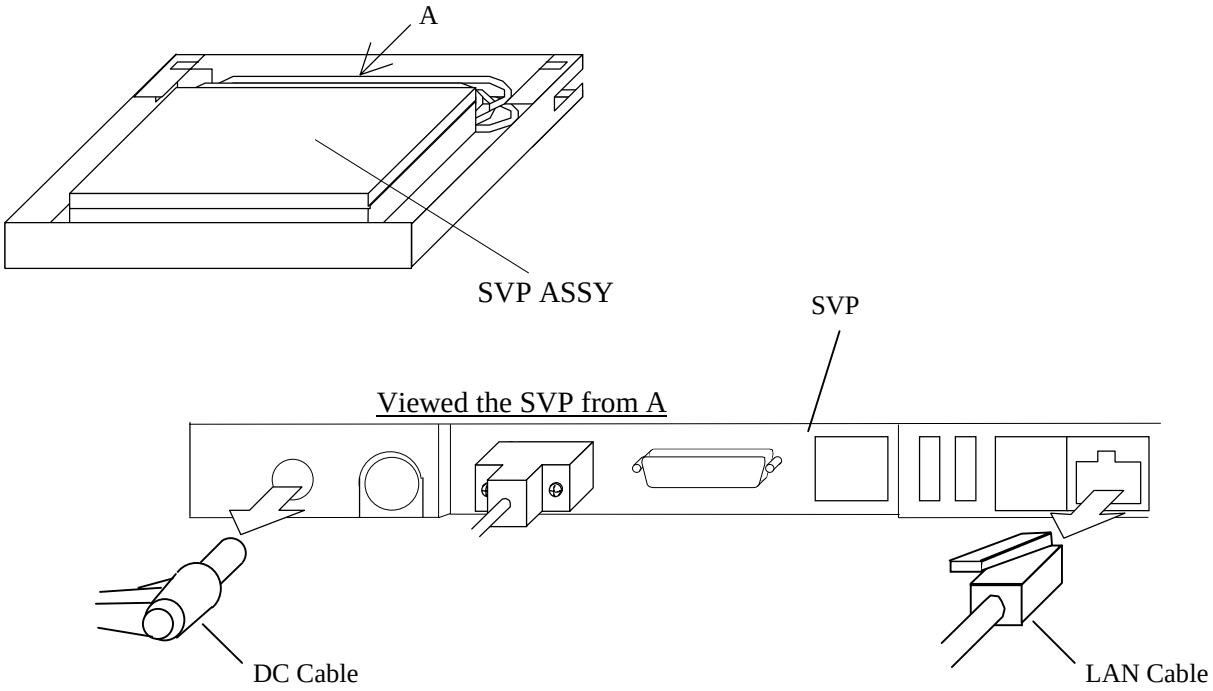

Fig. 4.9-12 Removing and installing Cables

10. Loosen the screws and remove the SVP stoppers.

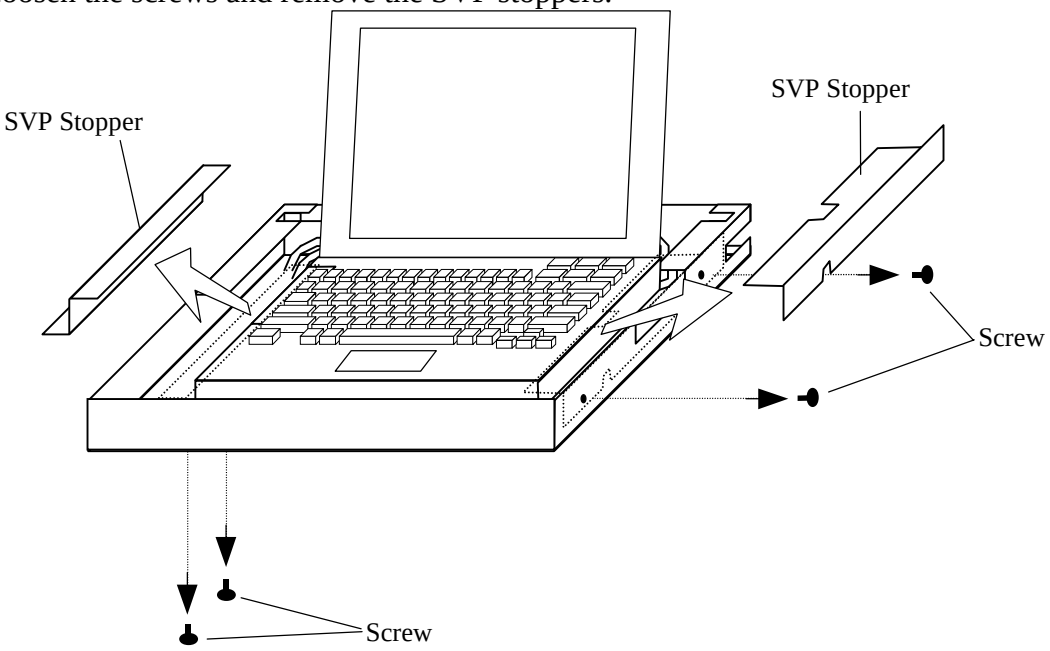

Fig. 4.9-13 Removing and installing the SVP Stoppers

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11. Remove the SVP and RS232C Cable.

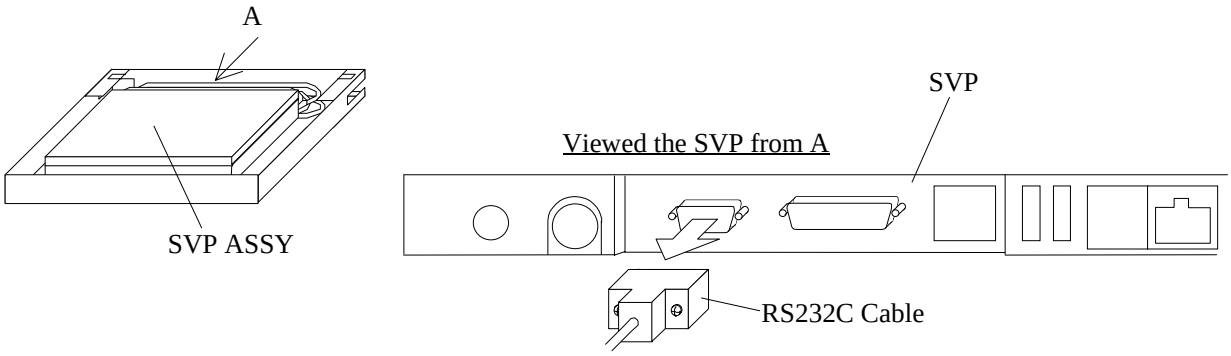

Fig. 4.9-14 Removing and installing RS232C Cable

12. Remove the Memory module.
    a. Loosen the screw and remove the Memory cover.
    b. Remove the Memory module from the slot 2.
    c. Attach the Memory cover with screw.

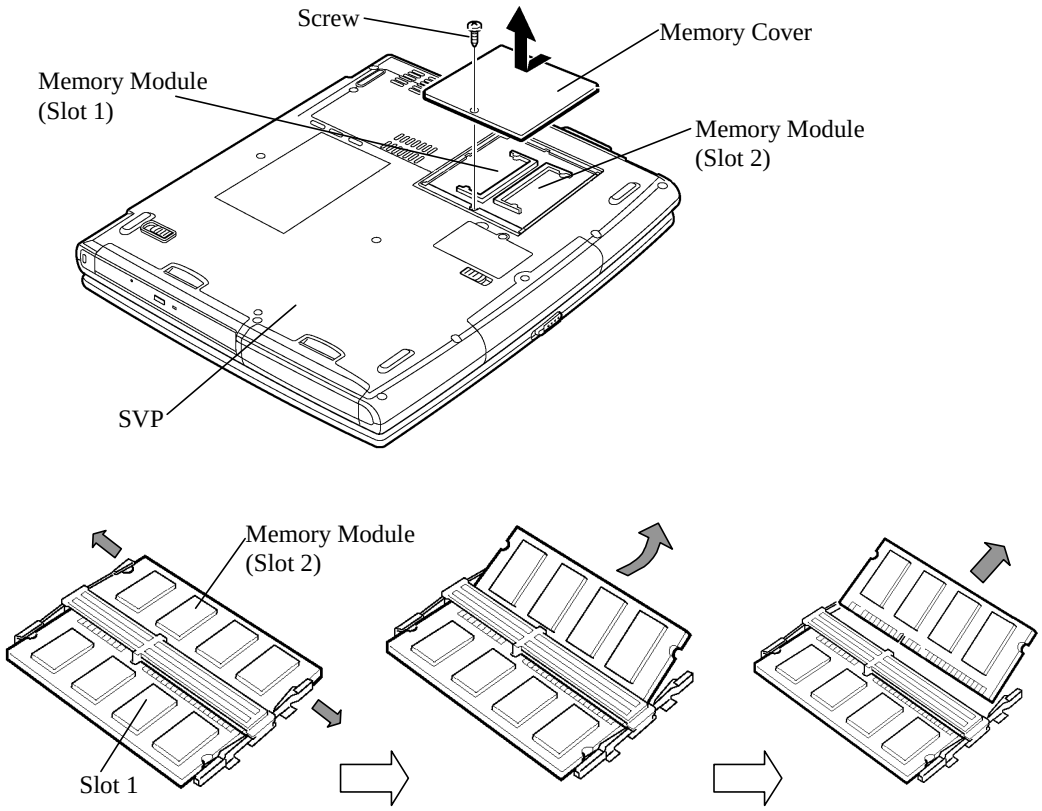

Fig. 4.9-15 Removal of Memory Module

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13. Detach the Label.
    a. Detach the Label of “256MB”.

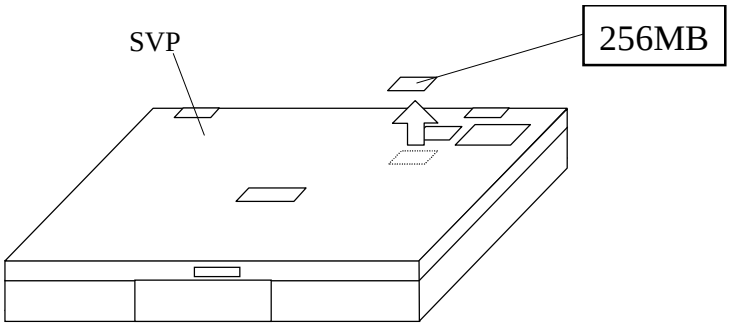

Fig. 4.9-16 Detachment of Label

14. Install a SVP.
    a. Attach the SVP and RS232C Cable. (See Fig. 4.9-14.)
    b. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 4.9-13.)
    c. Connect the LAN cable and DC cable to the SVP. (See Fig. 4.9-12.)

15. Install a SVP Assy.
    a. Install the SVP to the SVP ASSY and attach the SVP stoppers with screws. (See Fig. 4.9-11.)
    b. Attach the SVP ASSY cables to the RS CON PCB, HUB BOX and CON PLATE. And then close the locking clamps. (See Fig. 4.9-6 and 4.9-9.)
    c. Attach the SVP cover. (See Fig. 4.9-10.)

16. Remove the Jumper.

Replacement of Basic SVP ASSY

a. Remove the maintenance jumper of the JP1 on the RS CON PCB. (See Fig. 4.9-2.)

Replacement of Option SVP ASSY

a. Remove the maintenance jumper of the PS SD on the SVPPS BOX. (See Fig. 4.9-3.)

17. Remove the nameplate.
    a. Remove the nameplate from the Rear Logic Box cover.

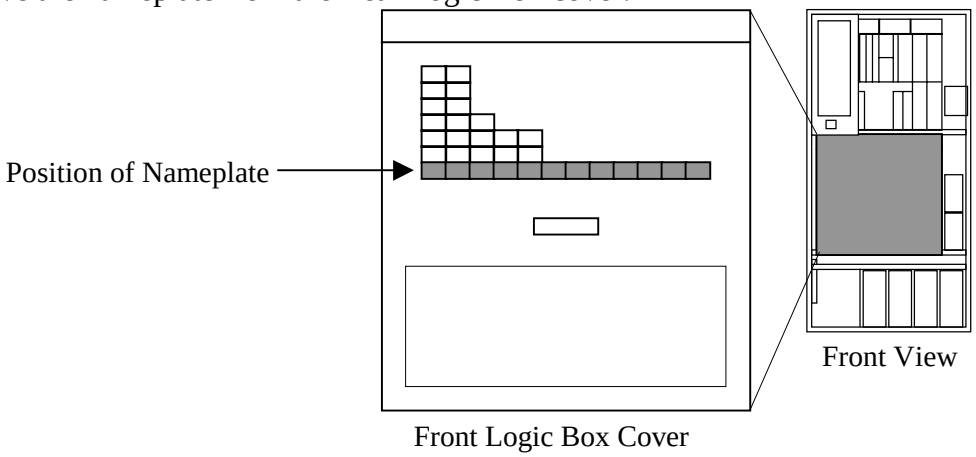

Fig. 4.9-17 Removal of Nameplate

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5 SVP procedure

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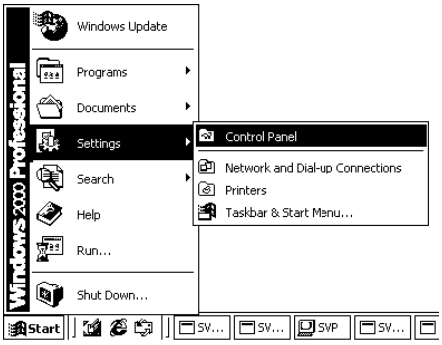
5.2 New Installation SVP Procedure

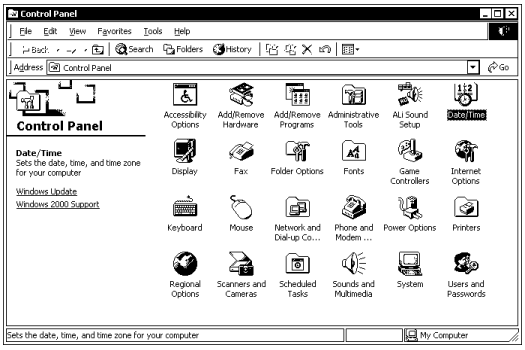
5.2.1 TOD Setting and Set IP Address

[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/Time]>
   Select (DC) [Date/Time] from [Control Panel].



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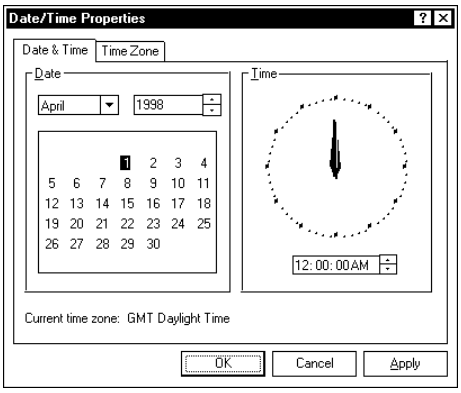
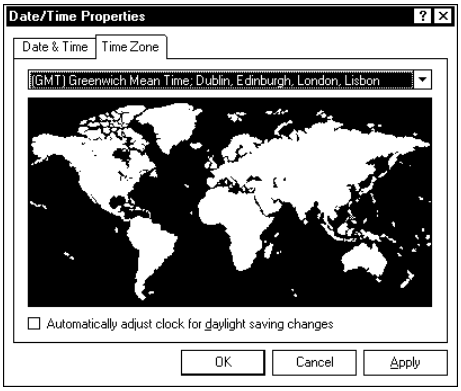
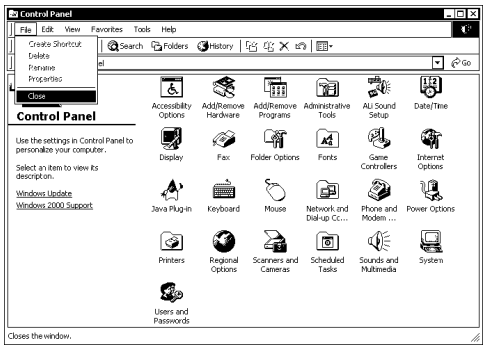
3. <Select [Time Zone]>
Select (CL) [Time Zone].



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].



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6.

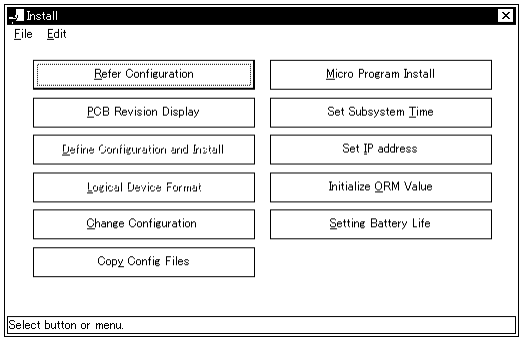
Change the mode to [Modify Mode] from [View Mode] (CL).

7.

Select (CL) [Install].

8.

Select (CL) [Set Subsystem Time] in the ‘Install’ window.



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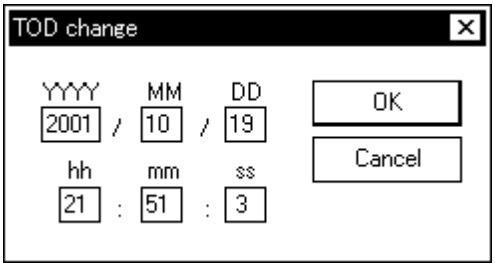
9.

Specify the date (year, month and day) and time (hour, minute and second) and select (CL) [OK].



10.

Close the ‘Install’ window.

In case of New Installation, go to INST02-530 step (5).

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[2] Set IP Address

NOTICE

- The Case where SVP High Reliability kit is installed
  When SVP High Reliability kit is installed, Both Master SVP and Standby SVP need to be set IP Address.
  Firstly power on Standby SVP, and set IP Address of Standby SVP.
  After completing it, please set the IP Address of Master SVP.

Although “RC = 7ff200” may occur, there is no problem.
Please complete SIM before operation.

1.

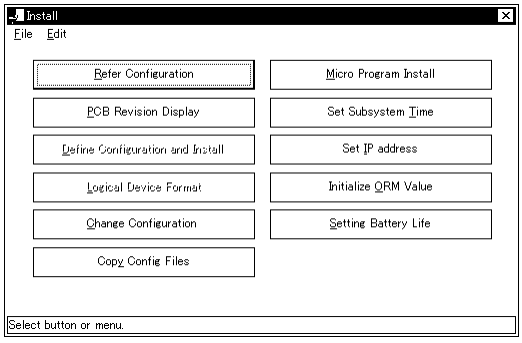
Change the mode to [Modify Mode] from [View Mode] (CL).

2.

Select (CL) [Install].

3.

Select (CL) [Set IP address] in the ‘Install’ window.



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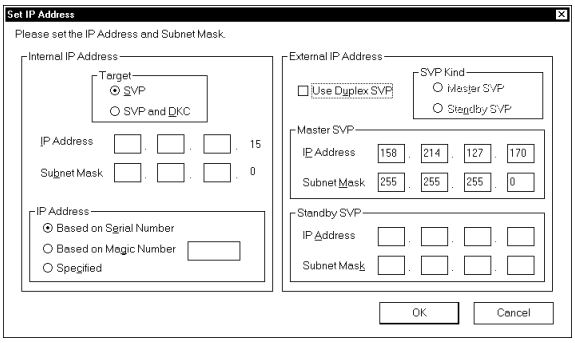
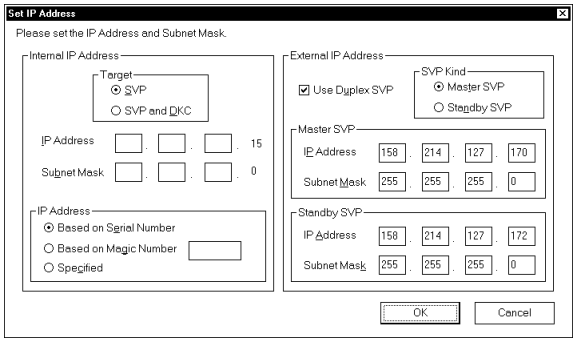
4. <Change the IP Address>

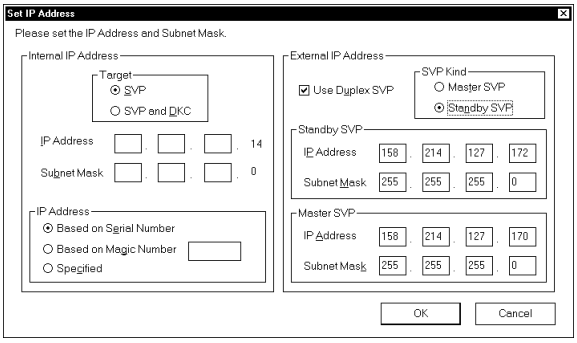
(i) Select (CL) [SVP] and then select (CL) [OK] after setting IP Address and Subnet Mask of an Internal IP Address, and an External IP Address.



The SVP High Reliability kit un-setting up

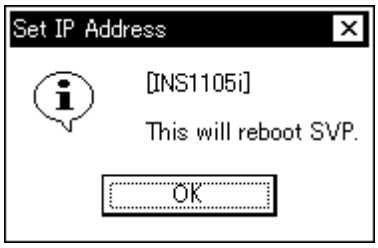


The SVP High Reliability kit setting up (Master SVP)



The SVP High Reliability kit setting up (Standby SVP)

(ii) In response to the message “This will reboot SVP.”, select (CL) [OK].



In case of New Installation, go to INST02-540 step (7).
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”.

(iii) When a “Use Duplex SVP” or “SVP Kind” of External IP Address is changed, it is necessary to execute the following operation.
- Setting an external IP Address (Refer to INST03-SVP-250 5-2)
- Executing SSVP Reset (Refer to INST03-SVP-270)

[3] Setting Web Console

Make a setting of the Web Console according to [Web Console] section 1. (WEB01-10)

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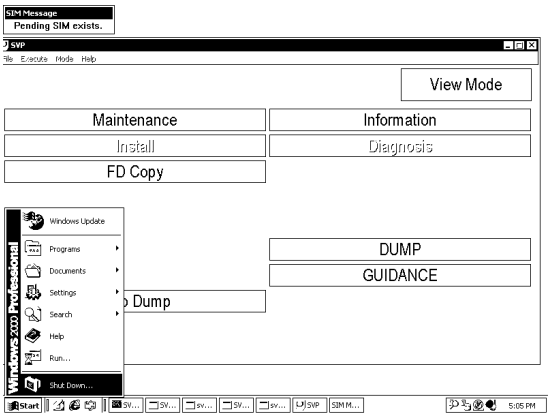
5. (This operation is executed only when setting IP Address of the SVP High Reliability kit (Standby SVP))

(i) <Quitting Windows>
Select (CL) [shut Down…] from the [Start] Menu.



(ii) <Shutting down the SVP>
Select (CL) “Shut down” in the Closing Window of Windows. When a message, “What do you want the computer to do?” is displayed, select (CL) the [OK] button.

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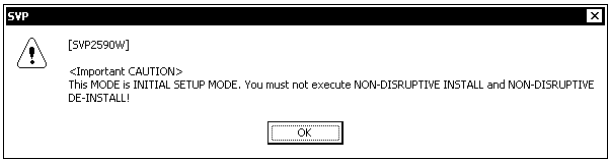
5.2.2 Configuration Information Definition

NOTICE
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".

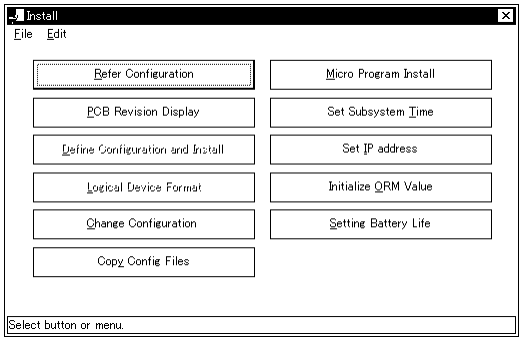
   Enter the password and select (CL) [OK].

   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 Center for asking the password.
   Select (CL) [Install].

2. Select (CL) [Define Configuration and Install...].



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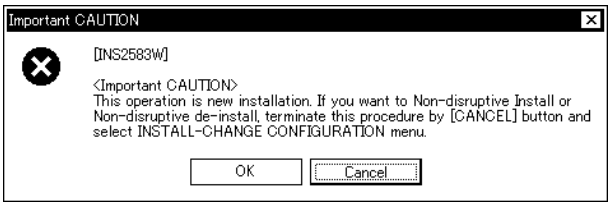
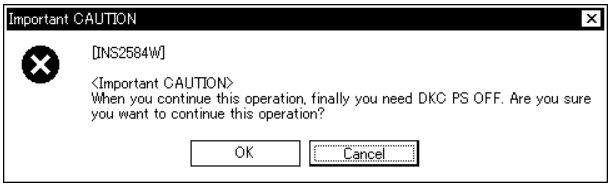
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other than the new subsystem installation, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

3.

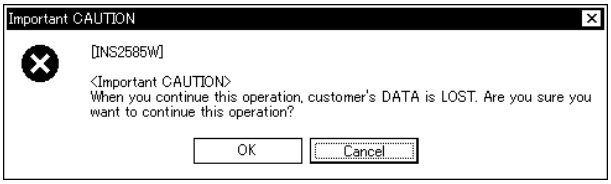
(1) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
This Operation is new installation. If you want to Non-disruptive Install or Non-disruptive de-install, terminate this procedure by [CANCEL] button and select INSTALL-CHANGE CONFIGURATION menu.".



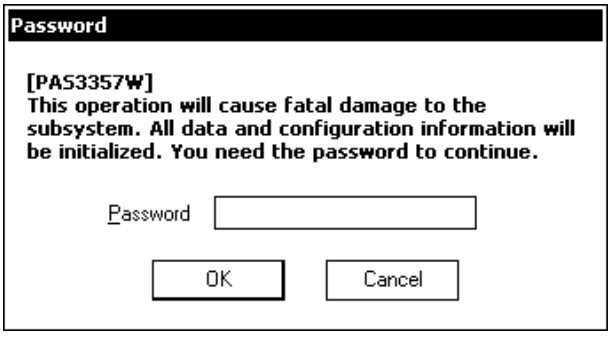
(2) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



(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?".



(4) Enter the password and select (CL) [OK].
Entering the password is required in this operation.
Please call Technical Support Center for asking it.



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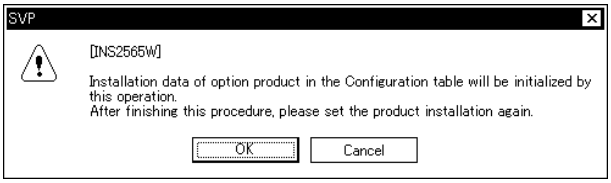
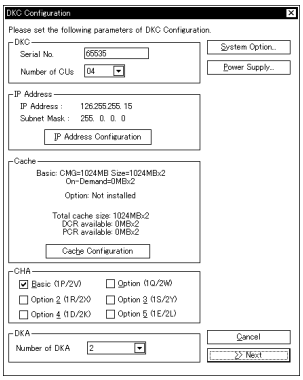
(5) Select (CL) [OK] in response to the confirmation message “Installation data of option product in the Configuration table will be initialized by this operation. After finishing this procedure, please set the product installation again.”.

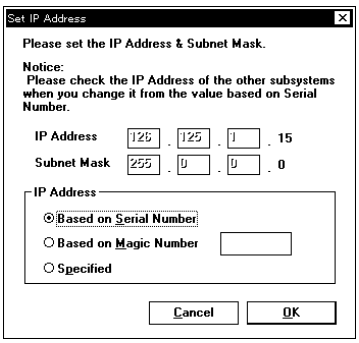


NOTICE
When SVP High Reliability kit is installed and IP Address is changed from this operation. Please power on Standby SVP, and set IP Address of Standby SVP. (Refer to [INST05-60])
After completing it, please set IP Address of Master SVP from this operation.

4. <Define configuration information>
Define the device configuration information from ‘DKC Configuration’ according to the device configuration worksheet.
After defining all input items is completed, select (CL) [>>Next].
If [Cache Configuration] is selected, the ‘Cache Configuration’ dialog box is displayed. (See step 4-2.)
If [System Option] is selected, the ‘System Option’ dialog box is displayed. (See step 4-3.)
If [Power Supply] is selected, the ‘Redundant Power Supply’ dialog box is displayed. (See step 4-4.)
If [Cancel] is selected, this procedure is terminated.



4-1. <Setting IP Address>
Set the IP Address and Subnet Mask in the ‘Set IP Address Configuration’ dialog box.
After setting up all items, select (CL) [OK].
Go to step 4.
Selecting (CL) [Cancel] returns you to step 4.



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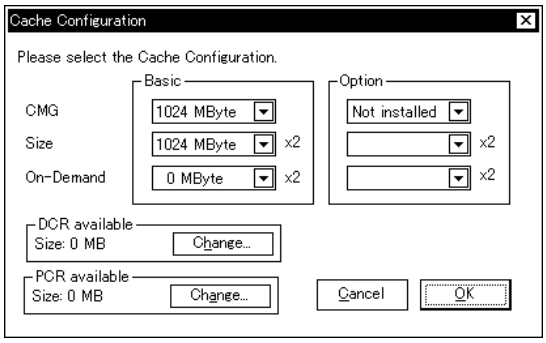
4-2. <Define Cache Capacity>

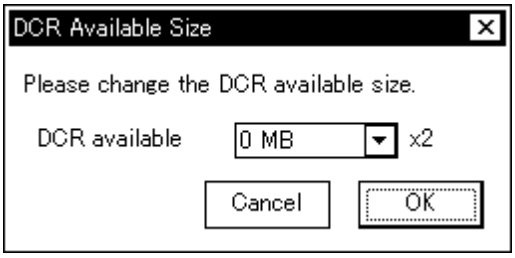
Define the cache capacity in the 'Cache Configuration' dialog box.
When the [Change...] of DCR available is selected (CL), the 'DCR Available Size' dialog box is displayed. (Go to Step 4-2-1.)
(See SSD Optional Function Section)
When the [Change...] of PCR available is selected (CL), the 'PCR Available Size' dialog box is displayed. (Go to Step 4-2-2.)



Note: For Single Cabinet Model, Option is not displayed.

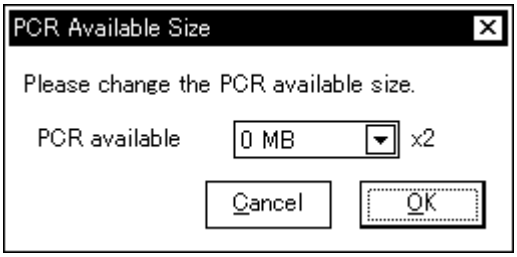
4-2-1. <Setting DCR size>

Set the DCR Available size in the 'DCR Available Size' window and select (CL) the [OK] button.
Return to Step 4-2.



4-2-2. <Setting PCR size>

Set the PCR Available size in the 'PCR Available Size' window and select (CL) the [OK] button.
Return to Step 4-2.



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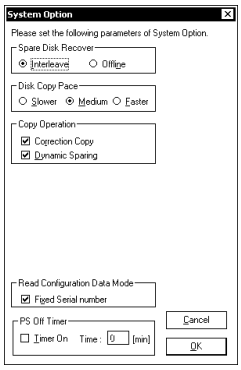
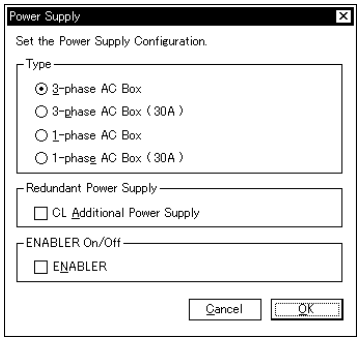
4-3. <Define System Options>

Define the device configuration information from ‘System Option Setup’ according to the device configuration worksheet.
After setting up all items, select (CL) [OK].
Go to step 4.
Selecting (CL) [Cancel] returns you to step 4.



4-4. <Set Power Supply>

Set the power supply information in the ‘Redundant Power Supply’ dialog box.
After setting up all items, select (CL) [OK].
Go to step 4.
Selecting (CL) [Cancel] returns you to step 4.



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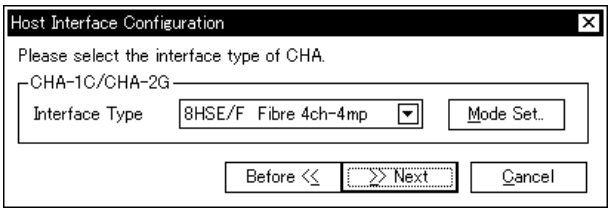
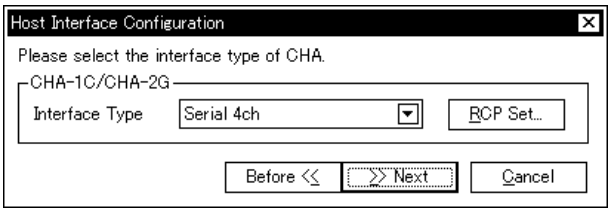
5. <Setting channel type>

Set the subsystem configuration information in the 'Host Interface Configuration' window according to the subsystem configuration information work sheet.



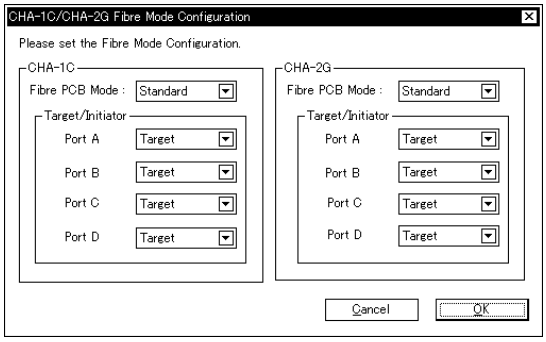
When [Fibre *] is selected to set the HRC/HORC or to change the Fibre PCB Mode, select (CL) [Mode Set...] and go to step 5-1.
Select (CL) [Next>>]. Go to step 5-6.



When [Serial 4 ch] is selected to set the HRC/HORC, select (CL) [RCP Set...] and go to step 5-2.
(Execute the operation above for all the channels installed.)
After all the items are set, select (CL) [>>Next]. Go to step 7.
When [Before<<] is selected (CL), the screen is returned to the previous one.

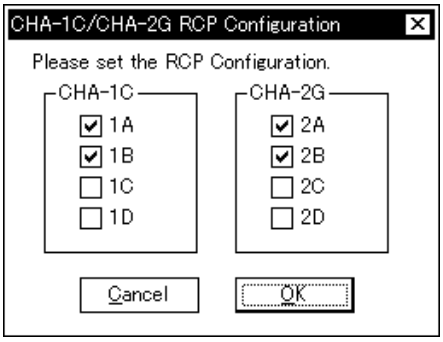
5-1. <Setting Fibre Mode>

Set the 'Target/ Initiator' in the 'Fibre Mode Configuration' dialog box only when setting the Fibre PCB Made or HRC/HORC.
After setting up all items, select (CL) [OK].
Go to step 5.
Selecting (CL) [Cancel] returns you to step 5.



5-2. <Setting RCP port>

When setting the HRC/HORC, select (CL) the port defined as the RCP port and select (CL) [OK].
Go to step 5-3.
When [Cancel] is selected (CL), the routine returns to step 5.



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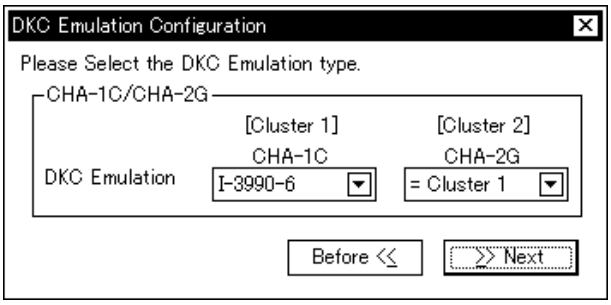
5-3. <Setting DKC emulation type>

Set the subsystem configuration information in the 'DKC Emulation Configuration' window according to the subsystem configuration information work sheet.
After the setting is completed, select (CL) [>>Next]. Go to step 5.
When [Before<<] is selected (CL), the routine returns to step 5.

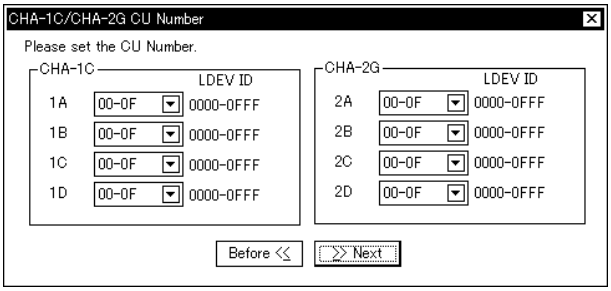


Note: This windows is displayed when Serial (8S) Channel or MFibre (8MS, 8ML) Channel is installed.

5-4. <Setting CU number>

CU number is displayed.
After the setting is completed, select (CL) [>>Next]. Go to step 5-5.
When [Before<<] is selected (CL), the routine returns to step 5-3.

Note: This windows is displayed when Serial (8S) Channel is installed.



5-5. <SVP message>

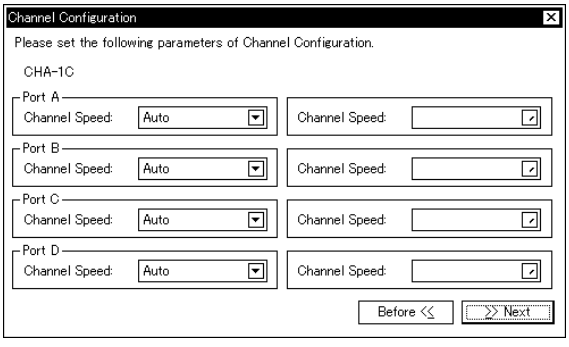
Select (CL) [OK] in response to the confirmation message "xxxxx".
Returns to step 5.

Note: This windows is displayed when Serial (8S) Channel is installed.

5-6. <Setting Channel>

Set the 'Channel Speed'.
After setting up, select (CL) [>>Next].
Go to step 6.
When [Before<<] is selected (CL), the routine returns to step 5.

Note: This windows is displayed when Fibre (8GSE/F, 4HSE/F, 8HSE/F, 8HLE/F, 16HSE/F) Channel is installed.



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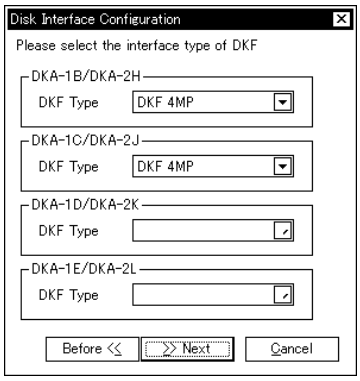
6. <Set DKF type>
   Set the 'DKF Type'.
   After setting up, select (CL) [>>Next].
   Go to step 6-1.
   When [Before<<] is selected (CL), the routine returns to step 5.



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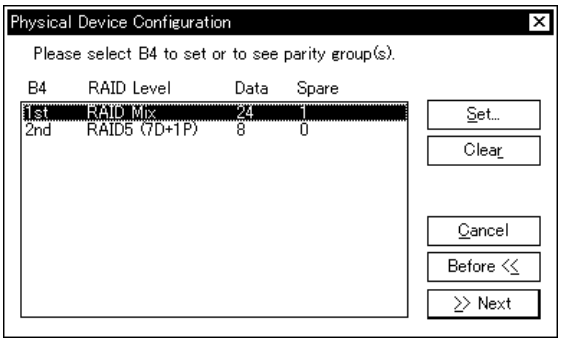
7. <Install Drive Configuration Information>
Define drive configuration according to the 'Physical Device Configuration' screen.
Detailed procedure is shown below.
[Set...]: Defines the parity group or spare disk.
The routine proceeds to Step 7-1.
[Clear...]: Cancels the setting of the B4.
After setting up all items, select (CL) [>>Next].



Selecting (CL) [Before<<] returns you to the previous screen.
This procedure is terminated by selecting (CL) [Cancel].

[Multi Cabinet Model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

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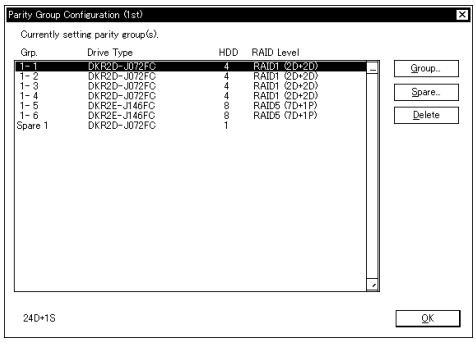
7-1.

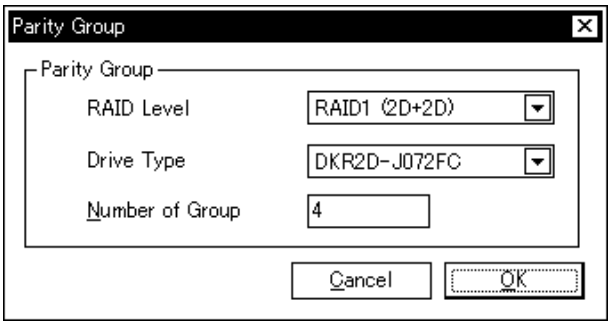


- To define Parity Group, select the drive to be defined and select (CL) [Group...] in the 'Parity Group Configuration' dialog box. See step 7-1-1.
- To define Spare, select the drive to be defined and select (CL) [Spare...] in the 'Parity Group Configuration' dialog box. See step 7-1-2.
- To delete an item, select an item to be deleted and select (CL) [Delete] in the 'Parity Group Configuration' dialog box.

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 7.

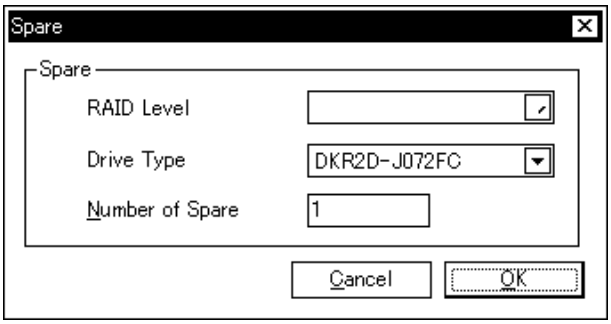
7-1-1.

Define the RAID Level and the drive capacity and the number of parity groups in the 'Parity Group' dialog box. Then select (CL) [OK]. Return to step 7-1.



7-1-2.

Define the RAID Level and the drive capacity and the number of spare drives in the 'Spare' dialog box. Then select (CL) [OK]. Return to step 7-1.



8. <Define Device Emulation>

After setting up all items for definition of Device Emulation, select (CL) [>>Next]. Selecting (CL) [Before<<] returns you to the previous screen.

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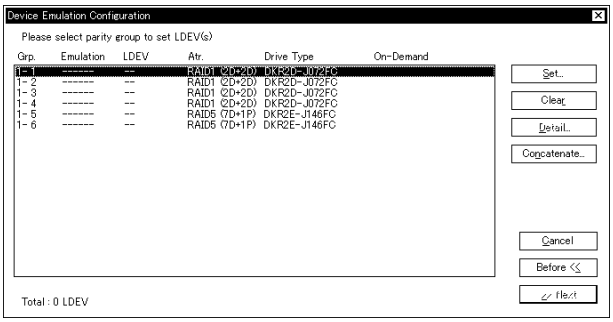
8-1.

In the case of defining Device Emulation:
Select (CL) a device and select (CL) [Set...].
This procedure is terminated by selecting (CL) [Cancel].

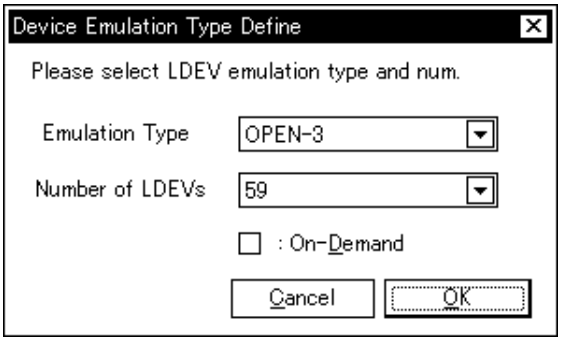
(CVS): A parity group where CVS is installed.

Grp*: A parity group where RAID Concatenation is installed.



8-1-1.

After setting up all items in the 'Logical Device Emulation Type' dialog box, select (CL) [OK].
Go to step 8-1.
Selecting (CL) [Cancel] returns you to step 8-1.

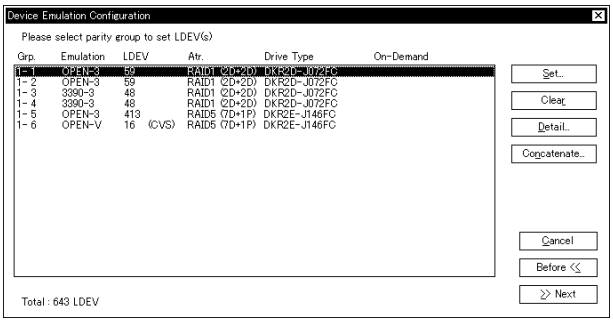


8-1-2. <Setting RAID concatenation>

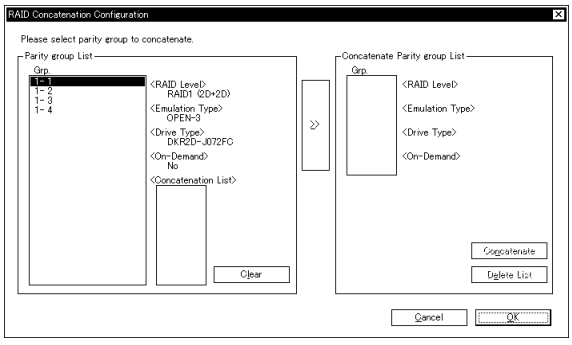
(1) After setting the LDEV emulation type and a number of LDEVs, select (CL) the [Concatenate...].
This operation is terminated when the [Cancel] is selected (CL).

(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.



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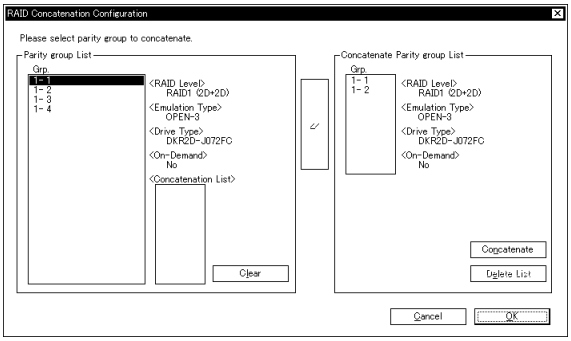
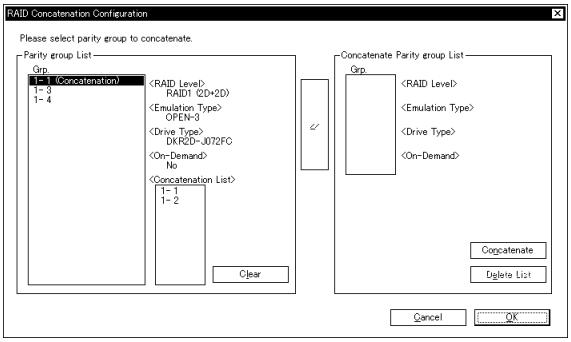
(3) The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.

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.



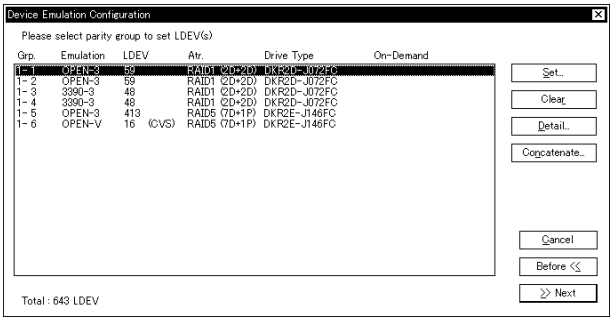
(4) When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List. Pressing the [Clear] button cancels the RAID concatenation.



(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 8-1-2 (1).

8-2. <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" screen 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.



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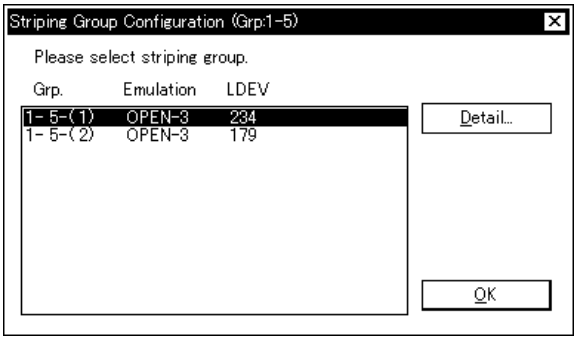
(1-1) When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

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

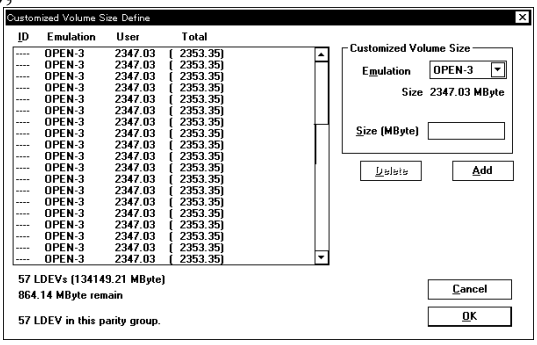


When you select (CL) the [OK], the preceding window returns. The routine returns to Step (1).

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

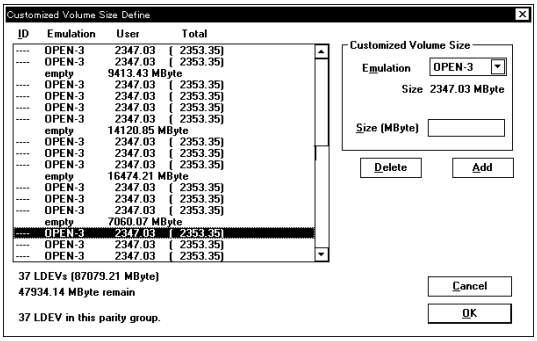
- When you select a striping group other than OPEN-V, the routine goes to Step (2).
- When you select OPEN-V, the routine goes to Step (4).

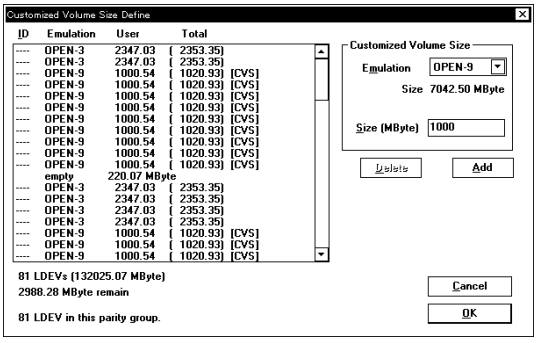
(2) Press (CL) the [Delete] button to delete the Volume(s), enter the LDEV emulation type of a customized volume(CV) to be registered and the number of user cylinders (in the case of Mainframe system. Refer to the upper screen) or the size (Mbyte) (in the case of open system. Refer to the lower screen) on the "Customized Volume Size Define" screen, then press (CL) the [Add] button to add them.
Selecting (CL) [Cancel] returns you to the previous screen.



Note : Meaning of "+" character

1) Volume with SCSI path.
2) LU expanded volume.
3) Volume with LDEV Security.





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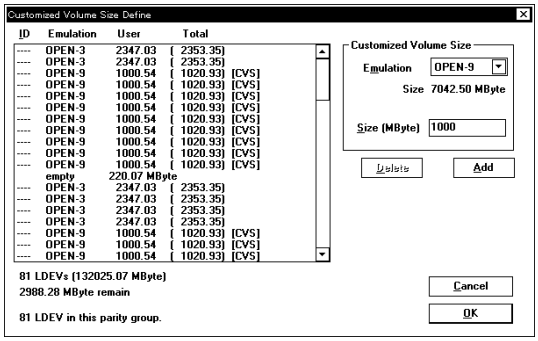
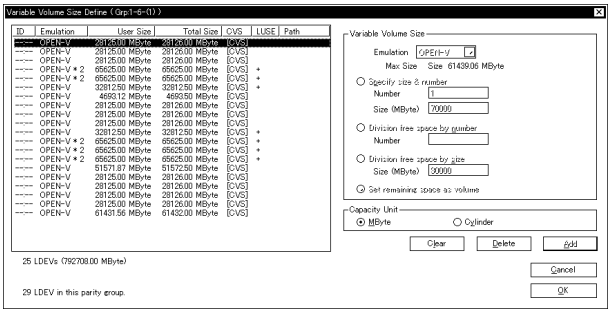
(3) The CV registered by mistake can be deleted by selecting it from the list box and pressing (CL) the [Delete] button.
Note: One or more CVs can be selected.



(4) Definition of OPEN-V
Delete all the volumes by selecting (CL) the [Clear] or delete specified volumes by selecting (CL) the [Delete] in the "Variable Volume Size Define" window. After that, select (CL) a variable volume size, and then select (CL) the [Add].



- 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 user 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.
- LUSE : When the LUSE connection is made, a symbol "+" is displayed.
- Path : When a path is defined, a symbol "+" 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 (1) or (1-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (1) or (1-1).

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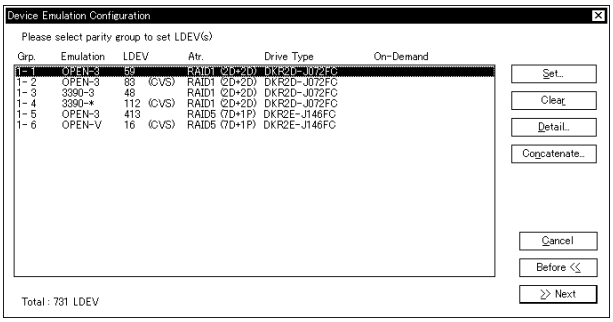
8-3.

In the case of deletion:
Select (CL) a device and select (CL) [Clear].
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.



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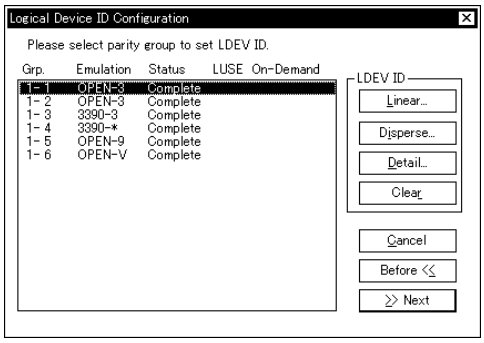
9. <Define LDEV ID>

After setting up all items, select (CL) [>>Next]. Selecting (CL) [Before<<] returns you to the previous screen.

9-1. <Definition Screen for LDEV ID>

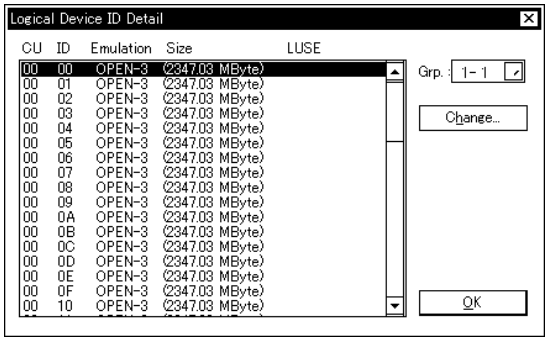


Select (CL) the parity group to be defined and select (CL) a function from the [LDEV ID] list box.
[Linear...]: LDEV ID is assigned to LDEV in the order of parity group. See step 9-3.
[Disperse...]: LDEV is assigned discretely in the order of parity group. See step 9-3.
[Detail...]: A screen to define 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.

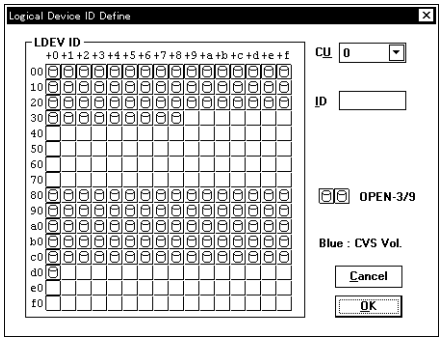
This procedure is terminated by selecting (CL) [Cancel].

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.

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.

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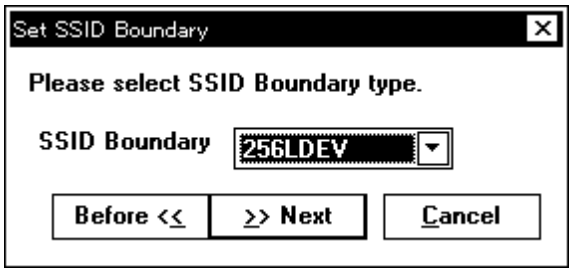
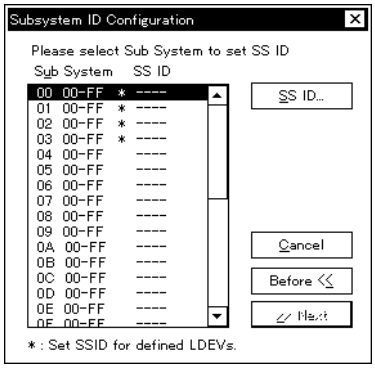
10. <Define Subsystem ID Boundary>

Set the Subsystem ID Boundary in the 'Set SSID Boundary' dialog box.
After setting up all items, select (CL) [OK].
Go to step 5.
This procedure is terminated by selecting (CL) [Cancel].



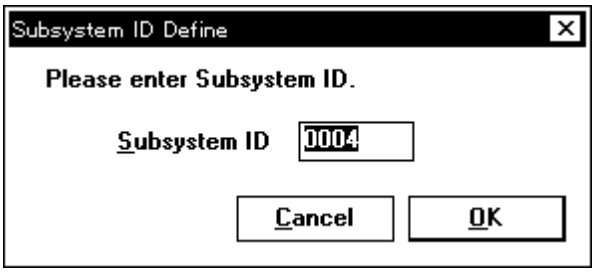
10-1. <Define Subsystem ID>

To define Subsystem ID, select (CL) [SSID].
After setting, select (CL) [>>Next].
This procedure is terminated by selecting (CL) [Cancel].



10-2.

Define Subsystem ID and select (CL) [OK].
Return to step 10-1.



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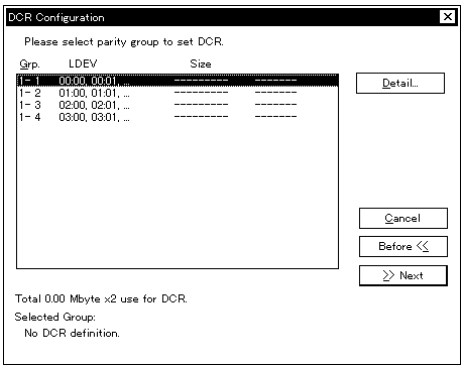
11. <Defining DCR>

(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.

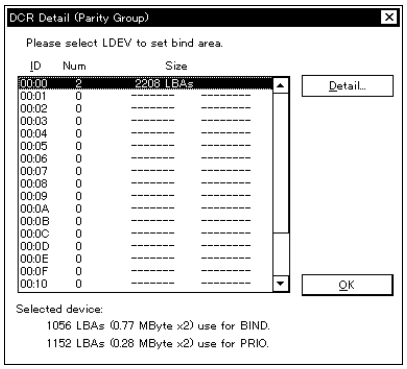


Total cache memory size which DCR area use is displayed.

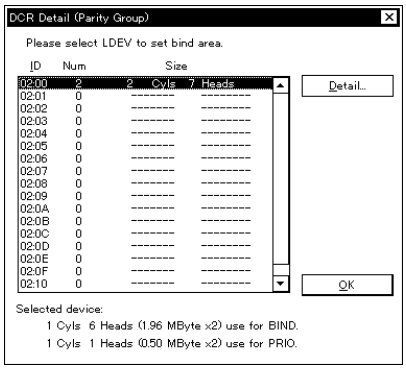
If the selected parity group has a DCR area, the BIND size and to PRIO size are displayed under the “DCR Configuration” screen.

After setting above, select (CL) [>>Next].

This procedure is terminated by selecting (CL) [Cancel].



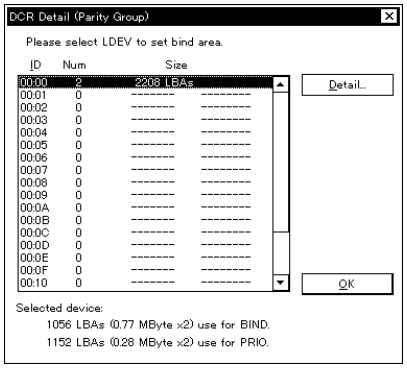
(For open system)



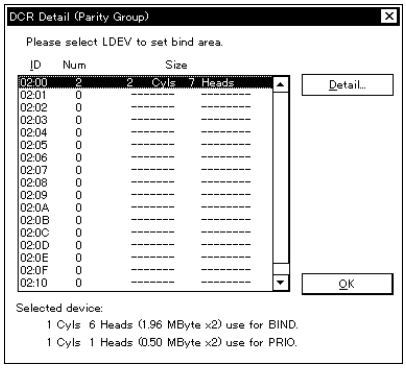
(For Mainframe system)

(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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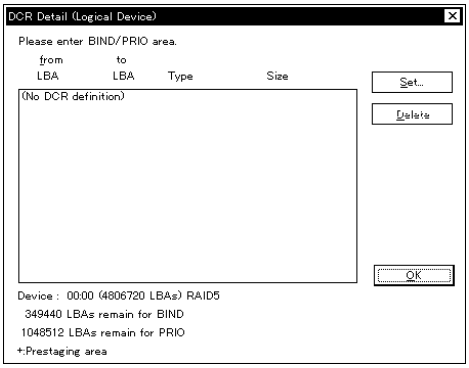
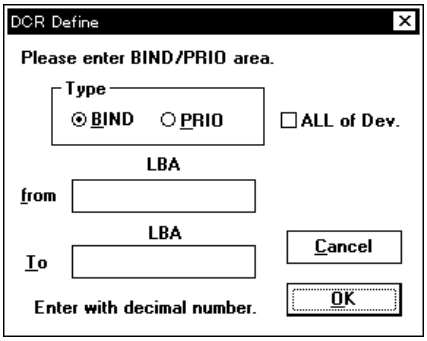
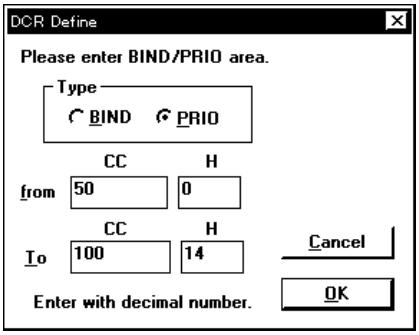
(3) Confirm the LDEV size and the number of slots allowed to be set for each type on the “DCR Detail (Logical Device)” screen. Press (CL) the [Set...] button to set the DCR area.



(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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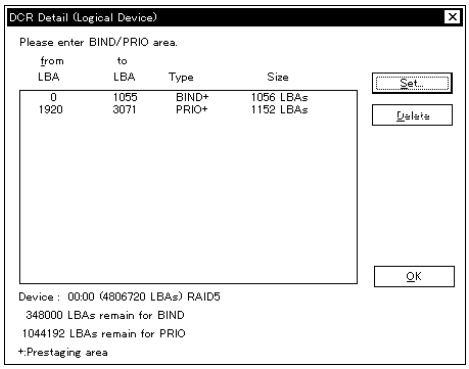
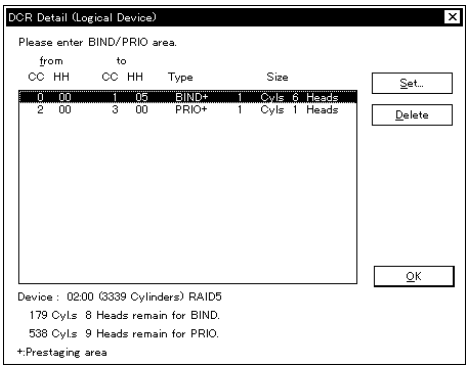
(5) When the screen is returned to the “DCR Detail (Logical Device)” screen, the entrance result is displayed.

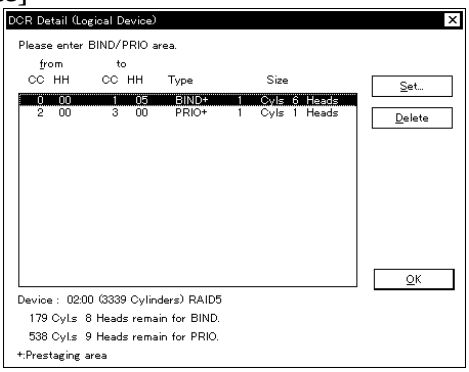


(Foe open system)



(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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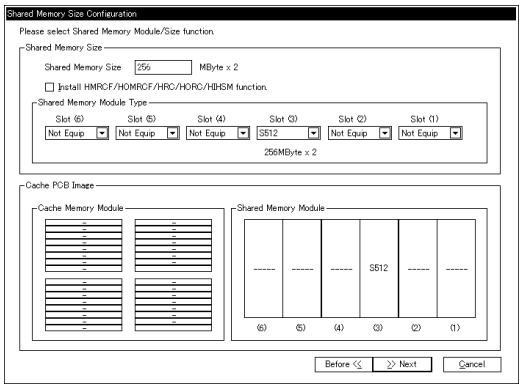
12. <Define Shared Memory Size>

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].

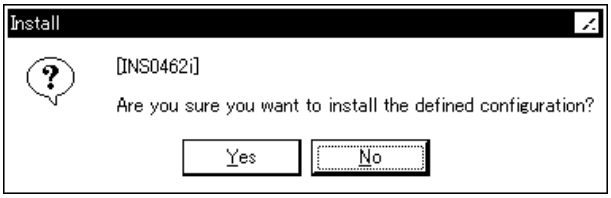


Note: Select 'Shared Memory Module Type' in order of "Slot(1) → Slot(2) → Slot(3) → Slot(4) → Slot(5) → Slot(6)".

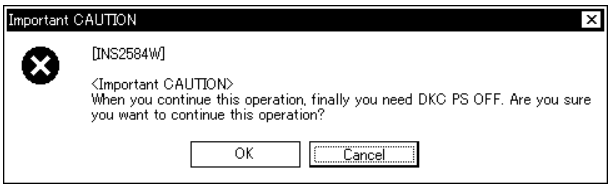
Go to INST05-610.

13. <Include configuration information>

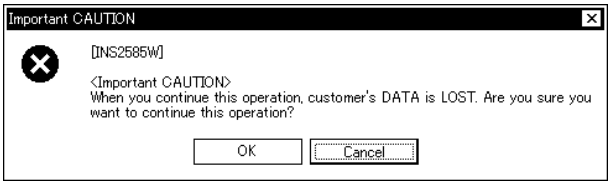
(1) Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?".
"Wait..." is displayed, then "Turn off DKC subsystem" is displayed.
Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



(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 continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".



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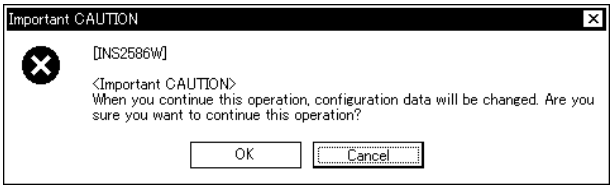
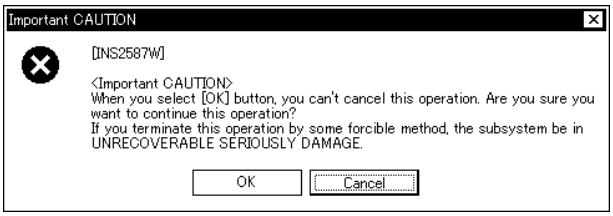
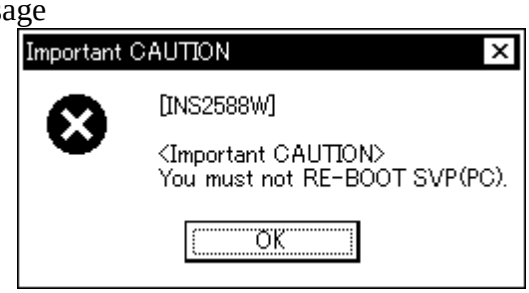
(4) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
When you continue this operation, configuration data will be changed. Are you sure you want to continue this operation?".



(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.".

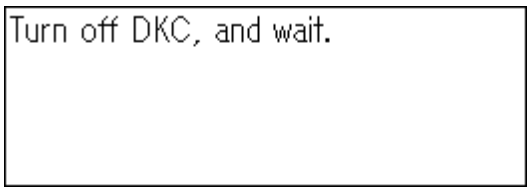


(6) Select (CL) [OK] in response to the confirmation message "<Important CAUTION>
You must not RE-BOOT SVP(PC).".



14. <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.



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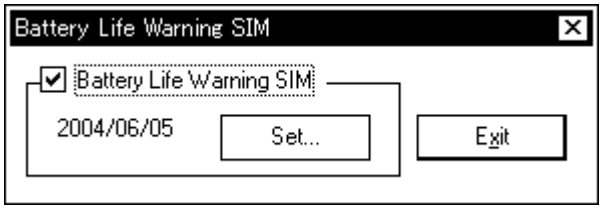
15.

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.

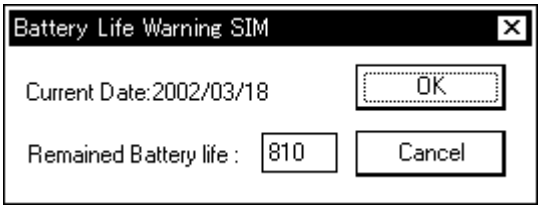
16.

Select [Set...] applying the check to ‘Battery Life Warning SIM’.



17.

Select (CL) [OK] after inputting the remainder days by reporting on warning SIM.



18.

Insert the configuration FD into FDD, and select (CL) [OK].

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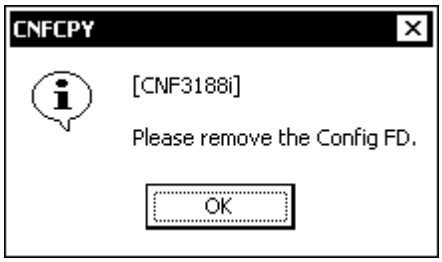
19.

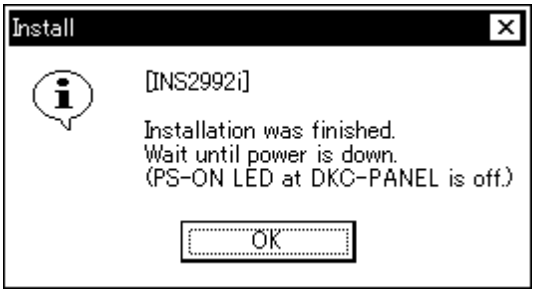
When this procedure is completed, the message “Please remove the Config FD.” is displayed. Remove the FD, and then select (CL) [OK].

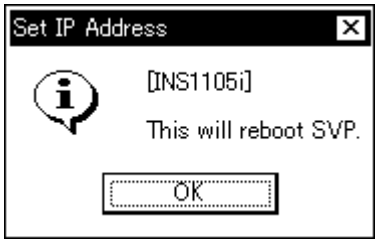


20.

After making sure that the DKC power is turned off, select (CL) [OK] in response to “Installation was finished.”.
Select (CL) [OK] in response to “This will reboot SVP.”.
Go to INST02-550 step (31).

Note: SVP power will not turn off or reboot even when DKC is powered off.





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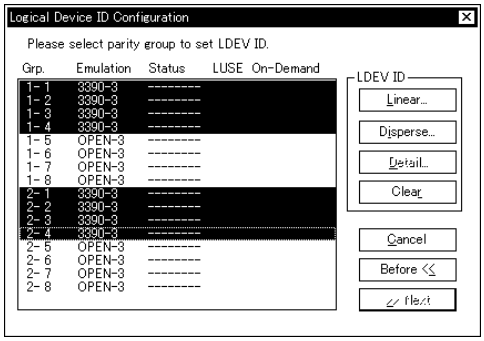
5.2.2.1 LDEV ID setting procedure when the emulation types of different systems coexist

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.

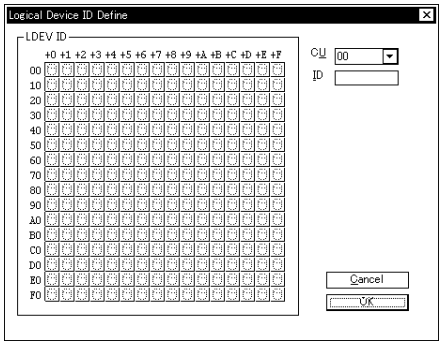
1.

Select only the parity group for which the 3390 system emulation type has been defined.



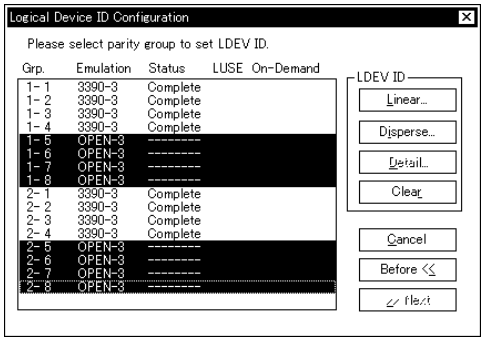
2.

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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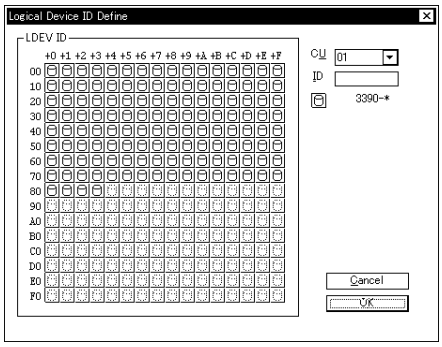
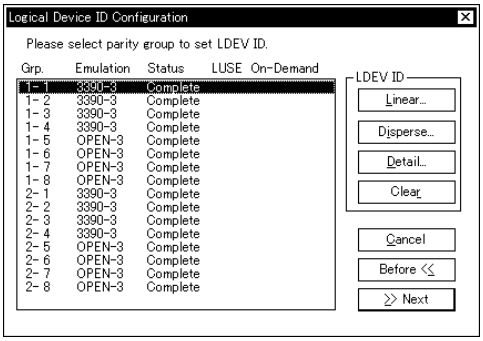
4.

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.



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 unselectable.

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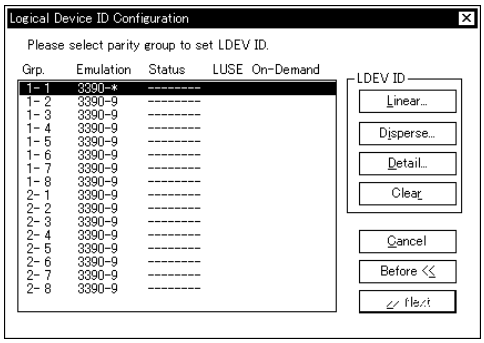
5.2.2.1.2 Coexistence in a parity group

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.

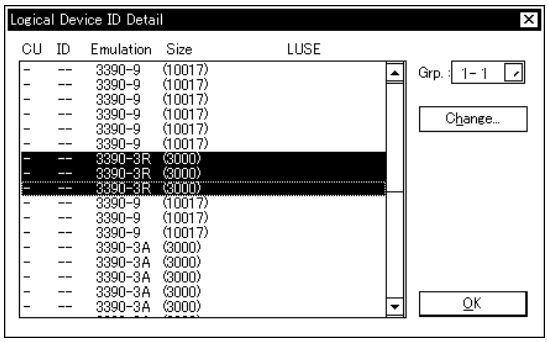
For the parity group for which definitions of the 3390 system and 3390-3R coexist, the emulation type is displayed as "3390-*". Select one parity group defining the 3390-3R as the CV and press the Detail button to open the screen displaying the LDEV definition detail in the parity group.



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.

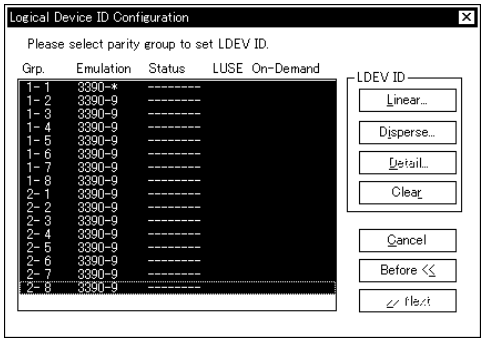


3.

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

NOTICE
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-PWR-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.
   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 SVP03-180)

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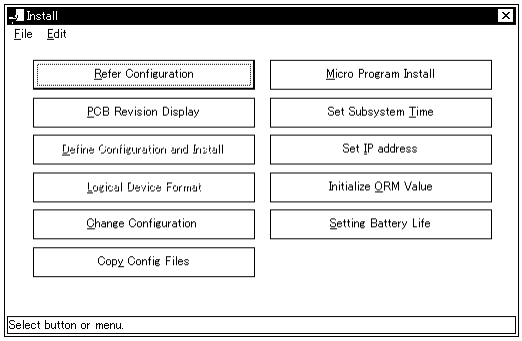
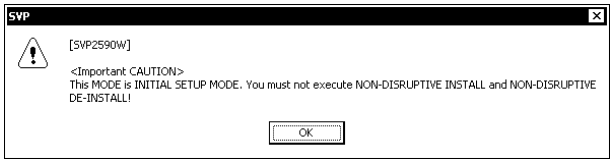
NOTICE
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other the new subsystem installation, and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

4. <Format L-DEV>

(1) Change the mode to[INITIAL SETUP Mode].
Select "Shift" + "Ctrl" + "I".
Enter the password and select (CL) [OK].
Please call Technical Support Center 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!"



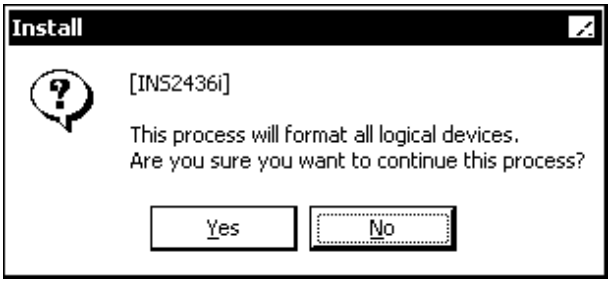
Select (CL) [Install].

(2) 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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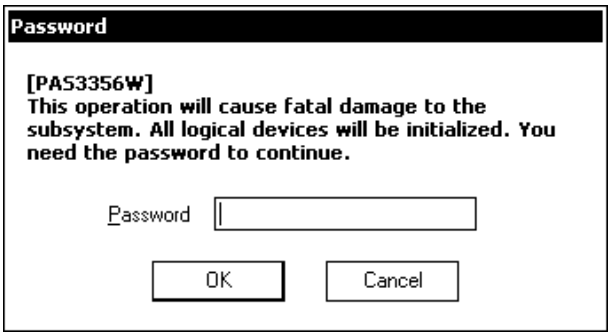
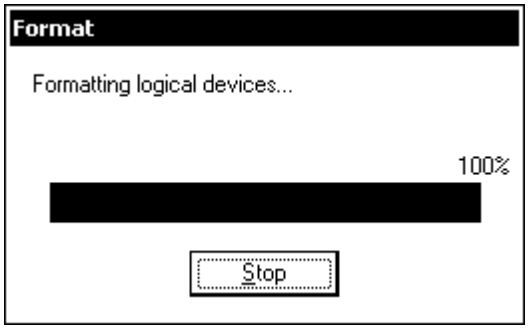
4.2.

Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Center to obtain a password and authorization.



4.3.

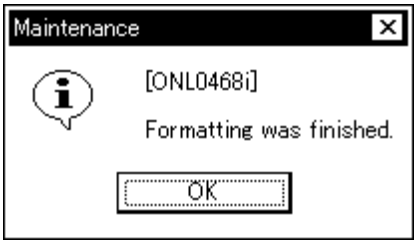
When L-DEV Formatting is complete, 'Formatting logical devices...' shown in the right figure disappears and "Formatting was finished." is displayed.



4.4.

Select (CL) [OK] in response to "Formatting was finished.".

L-DEV 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 SVP02-170.

   Go to INST02-560 step (END).

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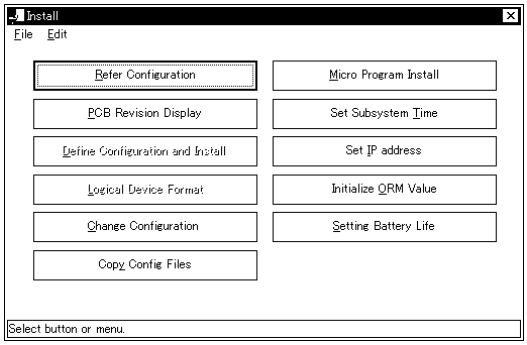
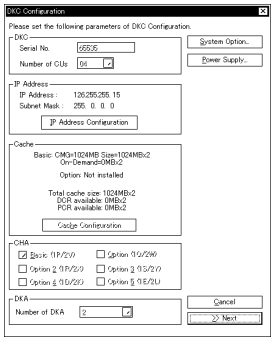
5.2.4 Refer Configuration

1. <Start [Install]>
   Select (CL) [Install] from 'SVP'.

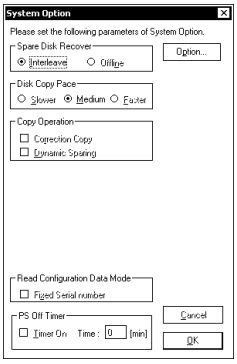
2.
   Select (CL) [Refer Configuration].



3. <DKC configuration information>
   If [System Options...] is selected (CL), 'System Option' is automatically displayed.
   If [Power Supply...] is selected (CL), 'Redundant Power Supply' is automatically displayed.
   When you select (CL) [>>Next], 'Host Interface Configuration' is automatically displayed.
   This procedure finishes when you select (CL) [Cancel].



4. <System Option information>
   When the [Option...] is selected (CL), the 'Option Product' dialog box is displayed. (Refer to Step 4-1.)
   Selecting (CL) [OK] returns the screen to step 3.



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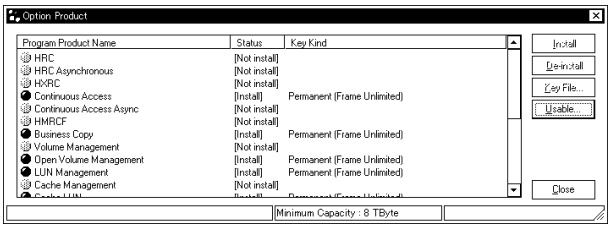
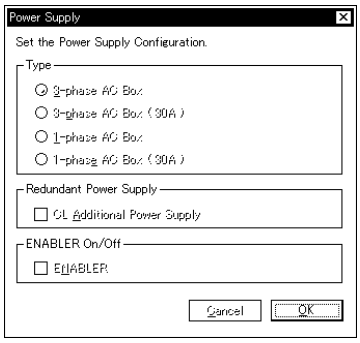
4-1. <Setting Program Product>

Select (CL) the [Close] button.
Return to Step 4.



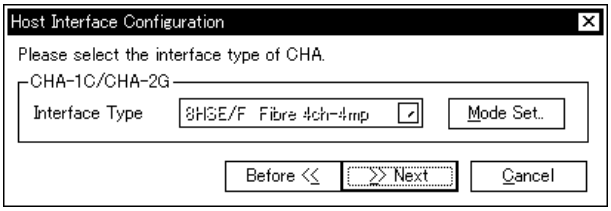
5. <Setting Power Supply>

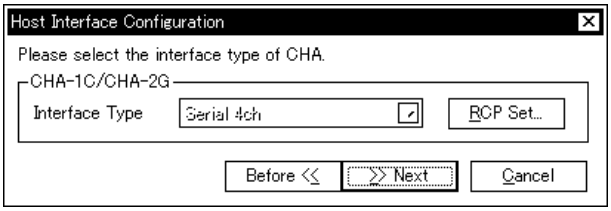
Selecting (CL) [OK] returns the screen to step 3.



6. <Setting Channel type>

When you select (CL) [Fibre *], [Mode set] is enabled, selecting (CL) [Mode set] processing skip to step 8.
Select (CL) [>>Next] processing skip to step 9-2.
When you select (CL) [Serial 4ch] or [Serial 2ch].
The [RCP Set...] button is enabled. Selecting (CL) [RCP Set...] skip the screen to step 9.
Processing skip to step 10 if you selecting (CL) [>>Next].
Selecting (CL) [Before <<] returns the screen to step 6.





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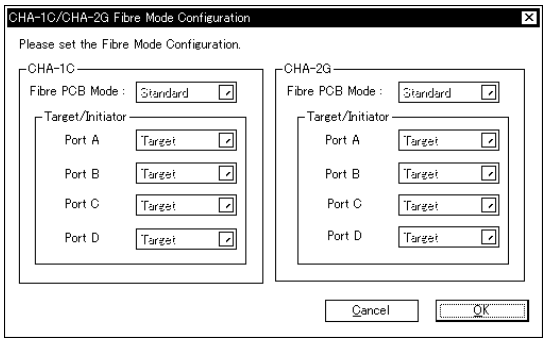
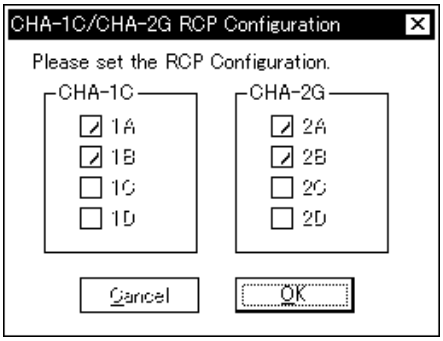
7. <Set Fibre Mode>
'Fibre Mode Configuration' is displayed.
Selecting (CL) [OK] returns the screen to step 7.

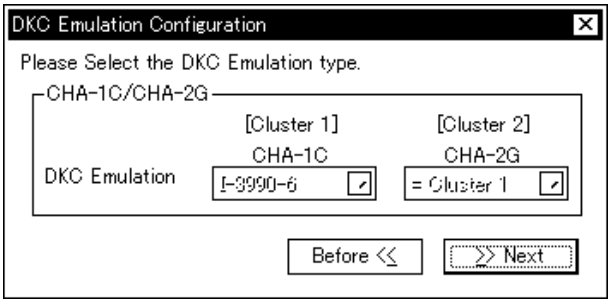


8. <Set RCP port>
RCP Configuration is displayed.
Then, by selecting (CL) [OK] returns the screen to step 7.



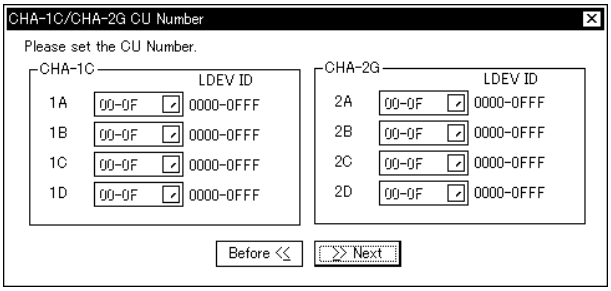
9. <Set DKC Emulation>
DKC Emulation type is displayed.
Select (CL) [>>Next]. Go to step 9-1.
When [Before<<] is selected (CL), the routine return to step 9.

Note: This windows is displayed when Serial (8S) Channel or MFibre (8MS, 8ML) Channel is installed.



9-1. <Setting CU number>
CU number is displayed.
After the setting is completed, select (CL) [>>Next]. Go to step 6.
When [Before<<] is selected (CL), the routine returns to step 9.

Note: This windows is displayed when Serial (8S) Channel is installed.



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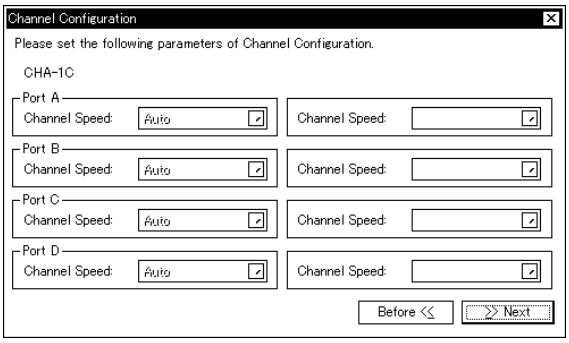
9-2. <Setting Channel>

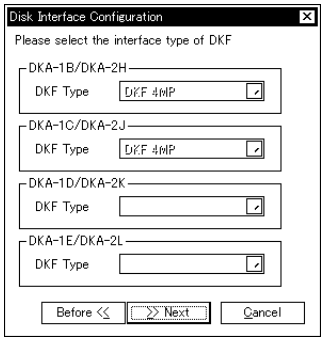
Set the 'Channel Speed'.
After setting up, select (CL) [>>Next].
Go to step 6.
When [Before<<] is selected (CL), the routine returns to step 5.

Note: This windows is displayed when Fibre (8GSE/F, 4HSE/F, 8HSE/F, 8HLE/F, 16HSE/F) Channel is installed.



10. <Set DKF type >

DKF type is displayed.
Select (CL) [>> Next]. Go the screen to step 10-1.
Select (CL) [Before<<]. Go the screen to step 6.



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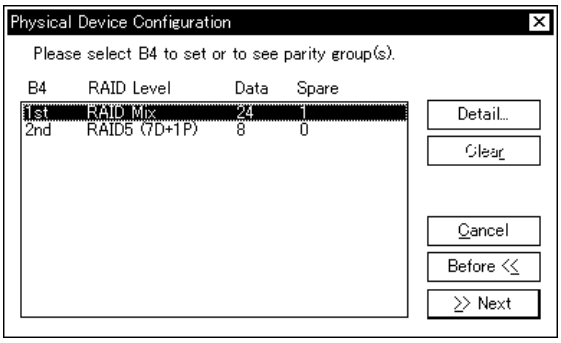
11. <Set Physical Device>

Physical device configuration is displayed.
[Detail...]: Refers to the details of the parity group or spare drive in the B4. The routine proceeds to Step 11-1.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



[Multi Cabinet Model]

B4	Location	B4	Location
1st	HDU-R10, 11, 12, 13	7th	HDU-L20, 21, 22, 23
2nd	HDU-R14, 15, 16, 17	8th	HDU-L24, 25, 26, 27
3rd	HDU-L10, 11, 12, 13	9th	HDU-R30, 31, 32, 33
4th	HDU-L14, 15, 16, 17	10th	HDU-R34, 35, 36, 37
5th	HDU-R20, 21, 22, 23	11th	HDU-L30, 31, 32, 33
6th	HDU-R24, 25, 26, 27	12th	HDU-L34, 35, 36, 37

Note: The 9th to 12th of the B4 are valid only when the DKUs for the RAID 400 are connected.

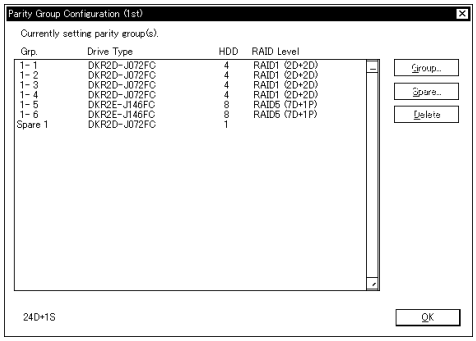
[Single Cabinet Model]

B4	Location	Comment
1st	HDU-0, 1, 2, 3	HDD-X00 ~ X0F
2nd	HDU-0, 1, 2, 3	HDD-X10 ~ X1F

11-1.

Parity Group Configuration is displayed.
Select (CL) [OK]. Return to step 11

Grp*: A parity group where RAID Concatenation is Installed.



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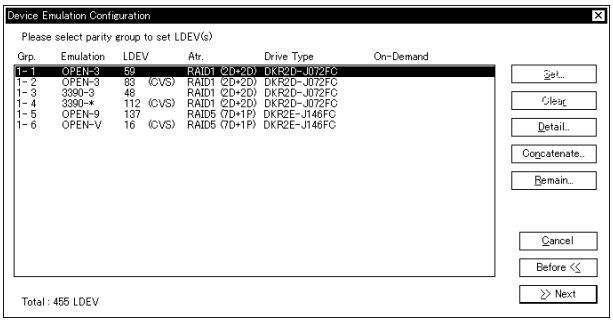
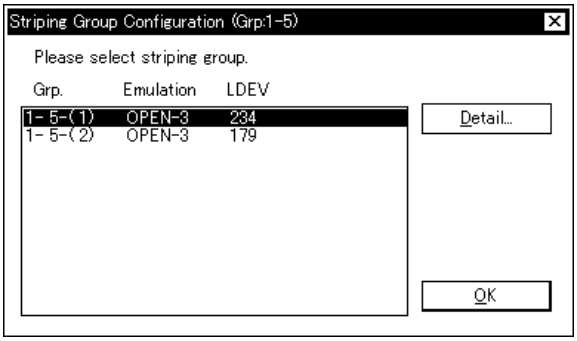
12. <Set Device Emulation>

Device Emulation Configuration is displayed.
Select (CL) parity group and select (CL) [Detail...].
Select (CL) [>> Next]. Go to 12-1.
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.



12-1. 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 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.

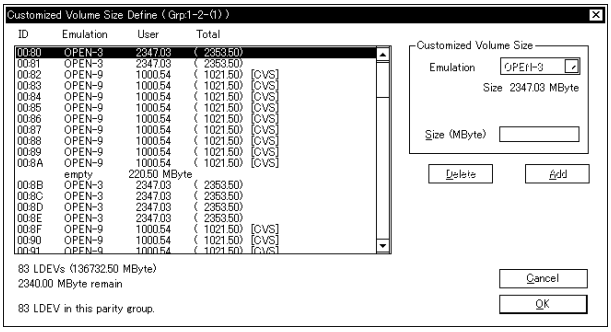
- When you select a striping group other than OPEN-V, the routine goes to Step 12-2.
- When you select OPEN-V, the routine goes to Step 12-3.

12-2.

Customized Volume Size Define is displayed.
Select (CL) [OK]. Return to step 12 or 12-1.

Note : Meaning of "+" character

1) Volume with SCSI path.
2) LU expanded volume.
3) Volume with LDEV Security.



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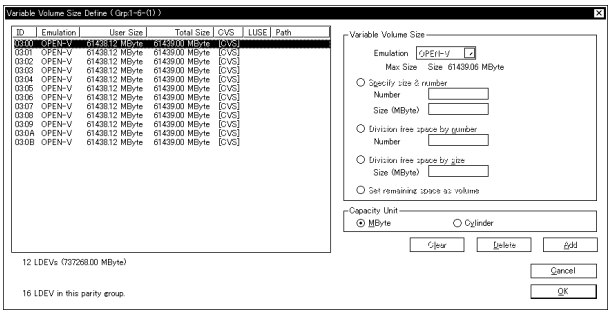
12-3. Definition of OPEN-V

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.
- Path : When a path is defined, a symbol “+” is displayed.

[Cancel] : Invalidates the setting and makes the preceding window return. The routine is returned to Step 12 or 12-1.

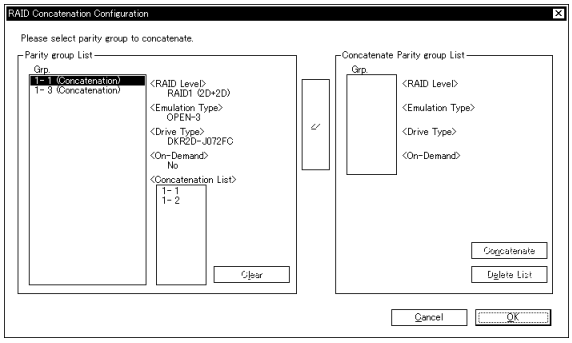
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step 12 or 12-1.

12-4. <Setting RAID concatenation>

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.

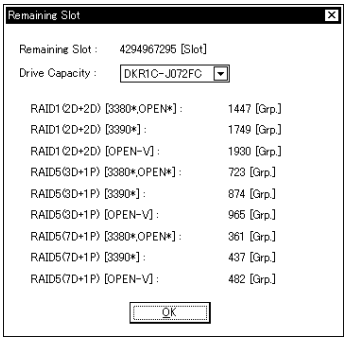


12-5. <Displaying remaining slot (s)>

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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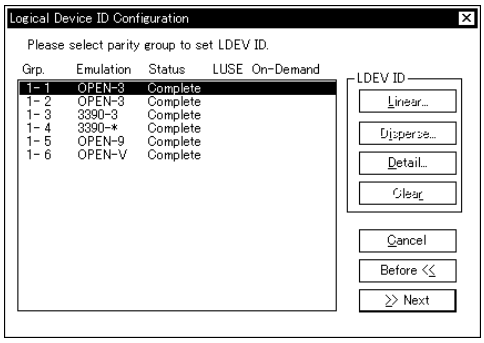
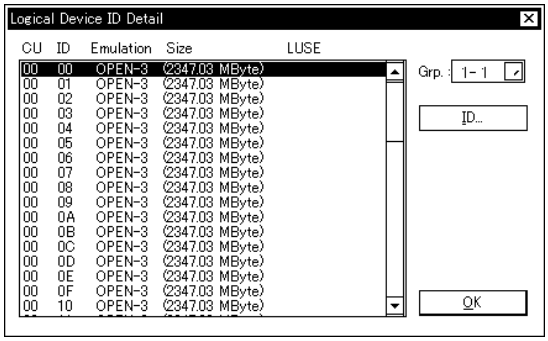
13. <Set Logical Device ID>

Logical Device ID Configuration is displayed.
Select (CL) a parity group and select (CL) [Detail...].
Select (CL) [>> Next]. Go to 13-1.
This procedure is terminated by selecting (CL) [Cancel].
Grp*: The top parity group where RAID Concatenation is installed.



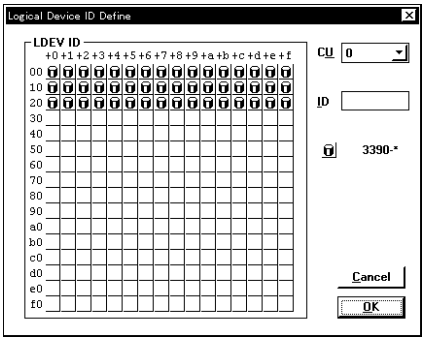
13-1.

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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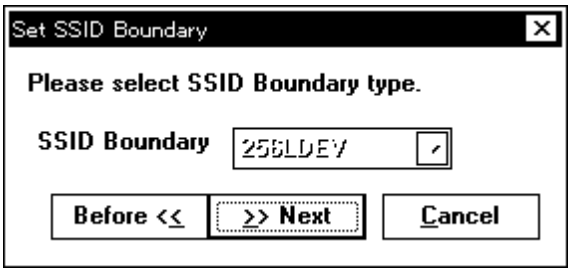
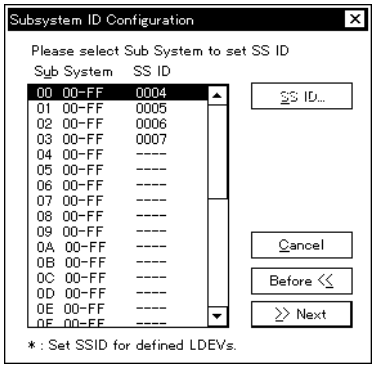
14. <Define Subsystem ID Boundary>

Set the Subsystem ID Boundary in the 'Set SSID Boundary' dialog box.
After setting up all items, select (CL) [>>Next].
Go to step 5.
This procedure is terminated by selecting (CL) [Cancel].



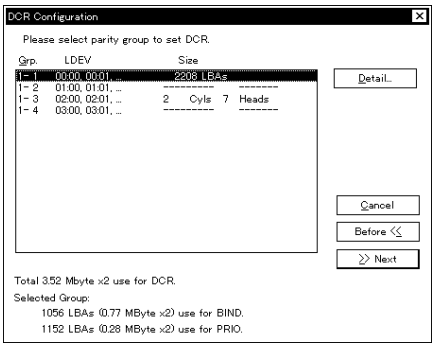
14-1. <Set Subsystem ID>

Subsystem ID Configuration is displayed.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



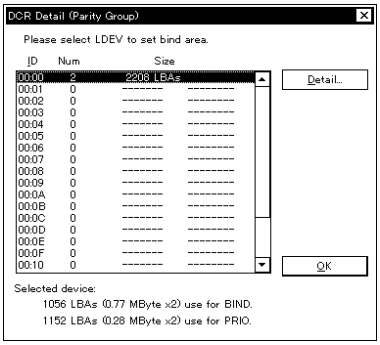
15. <Set DCR>

DCR Configuration is displayed.
Select (CL) a parity group and select (CL) [Detail...]. Go to step 15-1.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].



15-1.

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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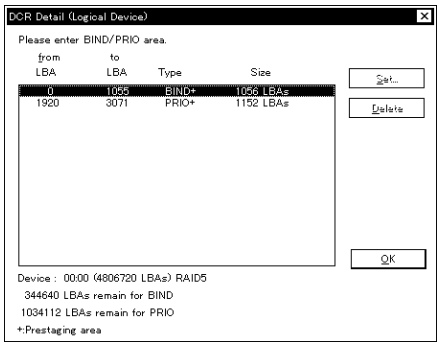
15-2.

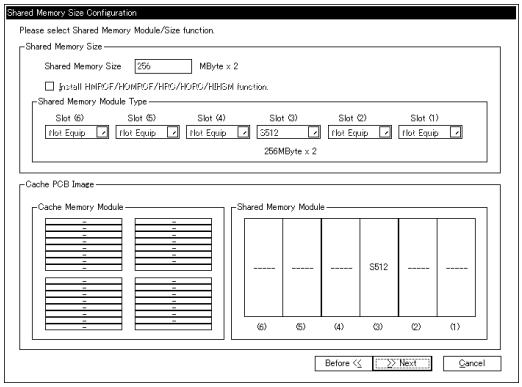
DCR detail (Logical device) is displayed.
Select (CL) [OK]. Return to step 15-1.



16. <Set Shared Memory Size >

Shared Memory Size Configuration is displayed.
Select (CL) [>> Next].
This procedure is terminated by selecting (CL) [Cancel].

Go to INST05-610.



17.

Select (CL) [OK].
Close the 'Install' window.

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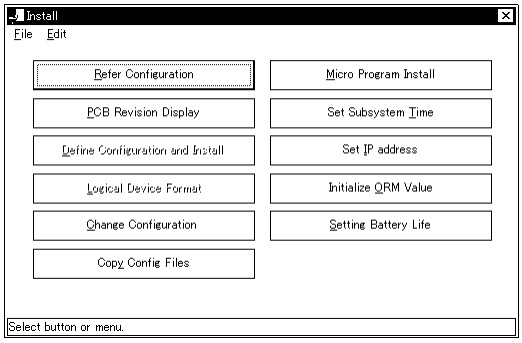
5.3 Change Configuration SVP Procedure

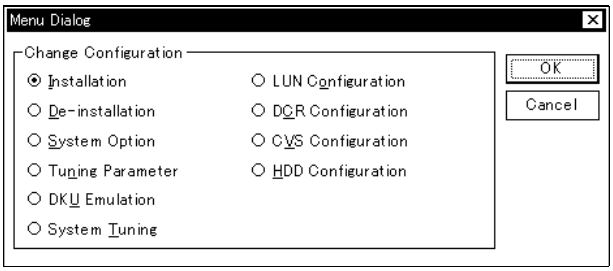
5.3.2 Setting up the New Device Structure Information

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) the item in the 'Menu Dialog' dialog box and select (CL) [OK].



Function	Menu Item	
• System Option ----------	System Option	(INST05-460)
• DCR Configuration ----------	DCR Configuration	(INST05-470)
• CVS Configuration----------	CVS Configuration	(INST05-510)
• LUN Management ----------	LUN Configuration	(INST05-610)

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Blank Sheet

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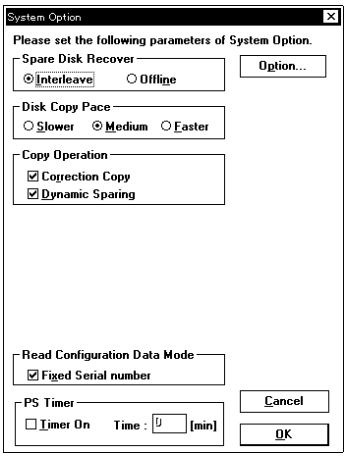
5.3.2.1 System Option

1. <System Option Definition>
   Define system option information in the 'System Option'.
   After setting up all items, select (CL) [OK].



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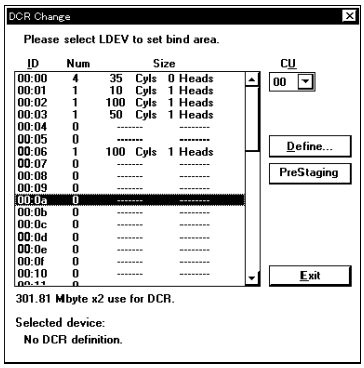
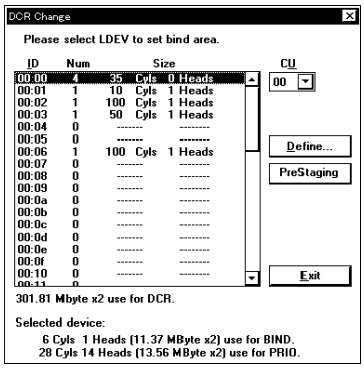
5.3.2.2 DCR Configuration

(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.

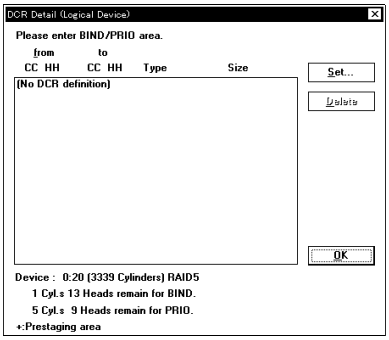
If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the “DCR Change” screen.





NOTICE
To use DCR function, you should install DCR program product (P-242R-J6641) for mainframe volumes or Open DCR program product (P-242R-J6642) for open volumes into the DKC.

(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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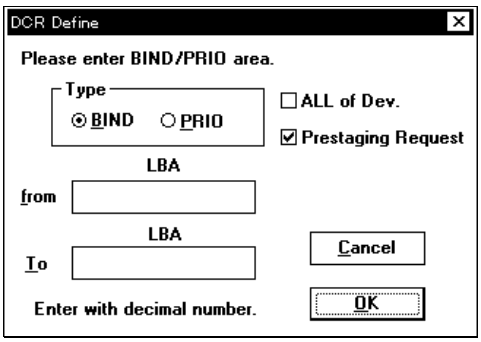
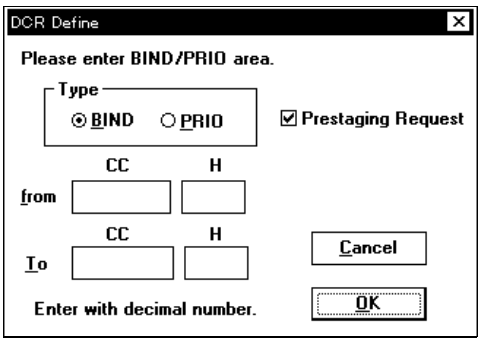
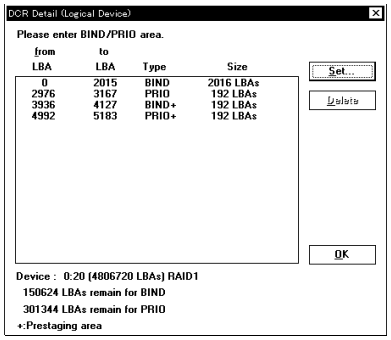
(3) When the [Set...] button is pressed (CL) on the "DCR Detail (Logical Device)" screen, the "DCR Define" screen appears. To register new data in the DCR area, enter the type, starting cylinder number, starting head number, ending cylinder number, and ending head number (In the case of Mainframe, refer 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.

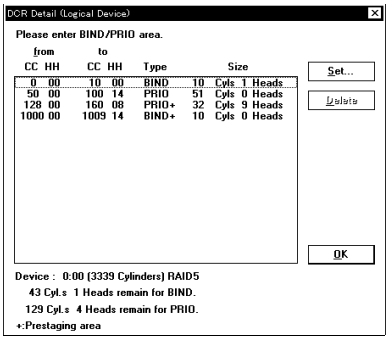




(4) Contents of the entered setting are displayed in the list box on the "DCR Detail (Logical Device)" screen.

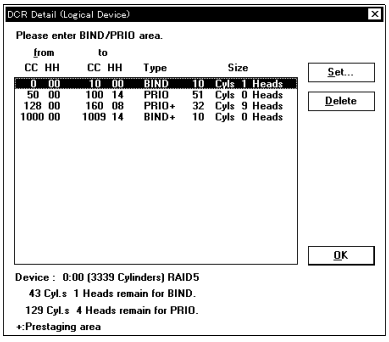


(In the case of open system)



(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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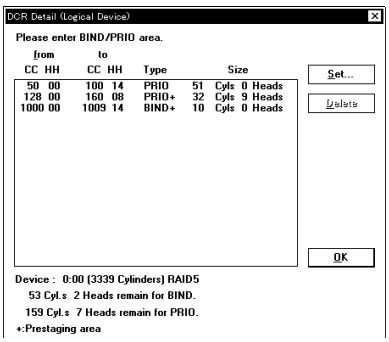
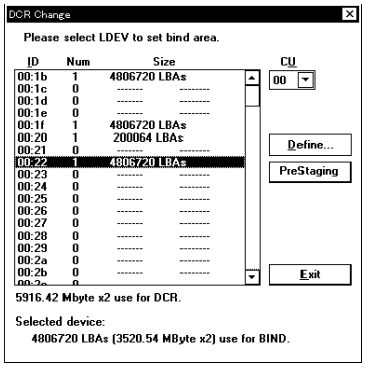
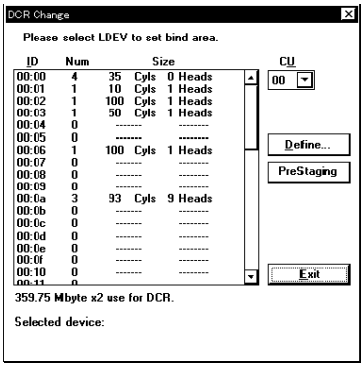
(6) By pressing (CL) the [OK] button on the "DCR Detail (Logical Device)" screen after the new setting is entered, a process to change the setting for the LDEV is executed. When no change is required, press (CL) the [Cancel] button.



(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.

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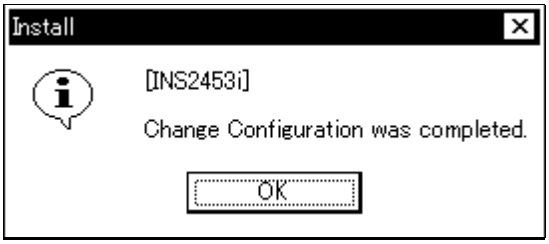
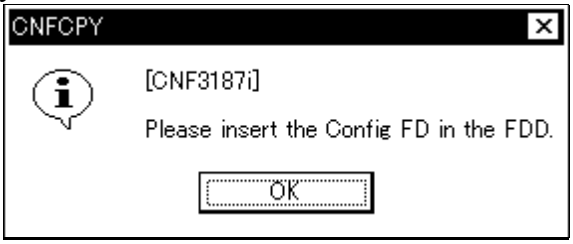
(9) The [PreStaging] button begins the Pre-staging processing.

(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.
“Please insert the Config FD in the FDD.” is displayed.
Insert the Config FD into FDD, and select (CL) [OK].



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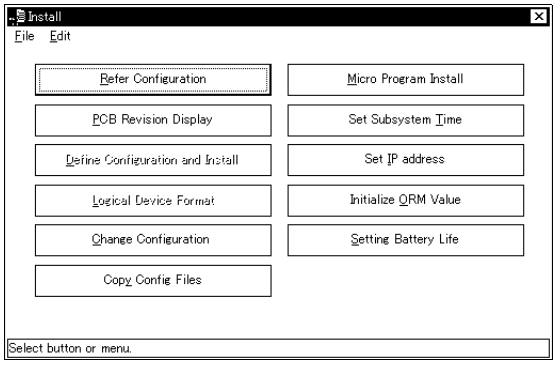
(13) When this procedure is completed, the message "Please remove the Config FD." is displayed. Remove the FD, select (CL) [OK].

(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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5.3.2.3 CVS Configuration

- Volume to Space ---------- Go to step 1.
- LDEV (CVS) Installation ---------- Go to step 2.
- Volume Initialize---------- Go to step 3.

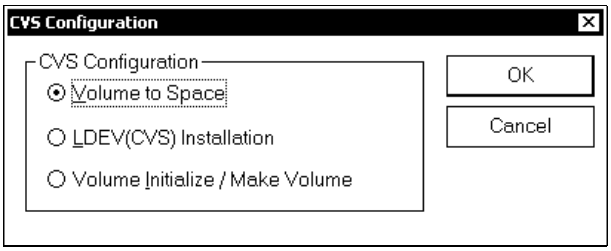
1. <Volume to Space>

NOTICE
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	

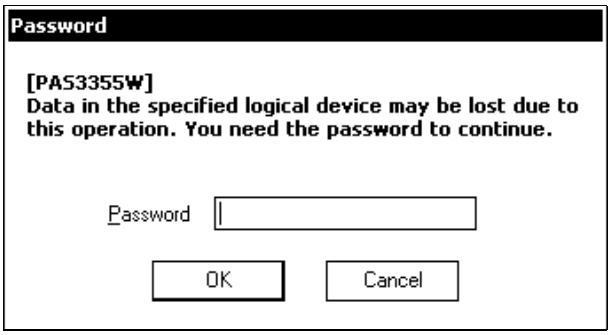
If you want to reset these volumes as HMDE, please call technical support center to set them to HMDE volumes by SVP.

(1) Select (CL) [Volume to Space] and press (CL) [OK].



NOTICE
To use CVS function, you should install CVS program product (P-242R-J6541) for mainframe volumes or Open CVS program product (P-242R-J6542) for open volumes into the DKC.

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 and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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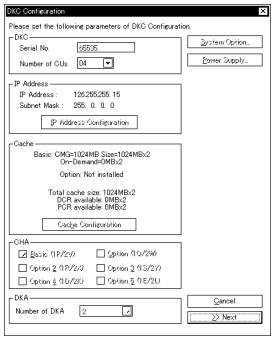
(1-1) Define the number of CU in DKC in the 'DKC Configuration' window.

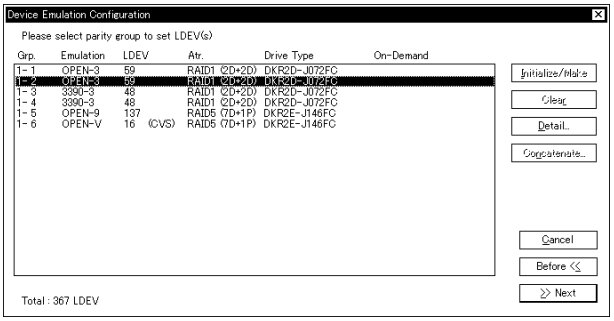
Make sure that the entered item is correct and select (CL) [>>Next].



(2) Select (CL) a parity group with Volume(s) to be changed on the "Device Emulation Configuration" screen and press (CL) the [Detail...] button.

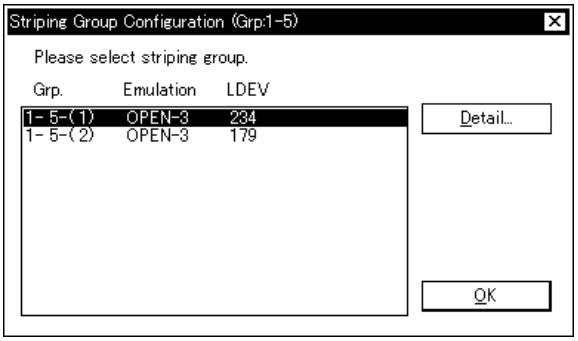
(CVS): A parity group where CVS is installed.

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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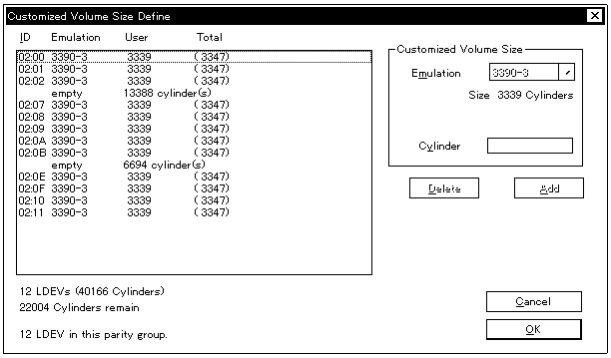
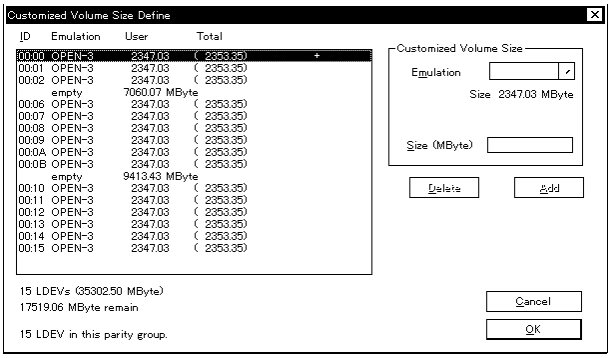
(3) When the Volume(s) to be deleted is selected (CL) on the "Customized Volume Size Define" screen and the [Delete] button is pressed (CL), the Volume(s) is deleted. When the operation fails, the screen can be returned to the preceding one by pressing (CL) the [Cancel] button.



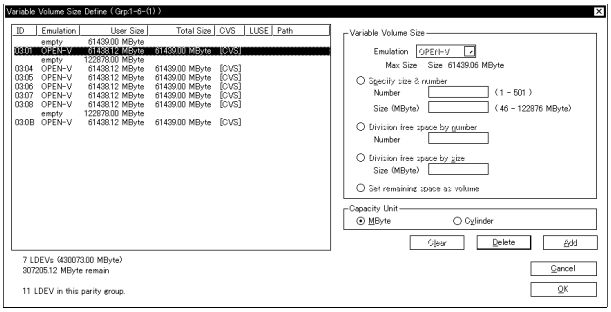
Note: In the following case, the [Delete] button is not available.

1) The last CV is selected.
2) Volume with SCSI path(s) ("+" indicated) is selected.
3) Volume with LUN ("+" indicated) is selected.
4) Volume with LDEV Security ("+" indicated) is selected.



(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.
- LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol "+" 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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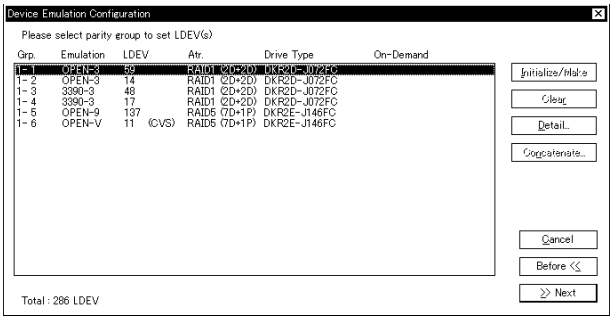
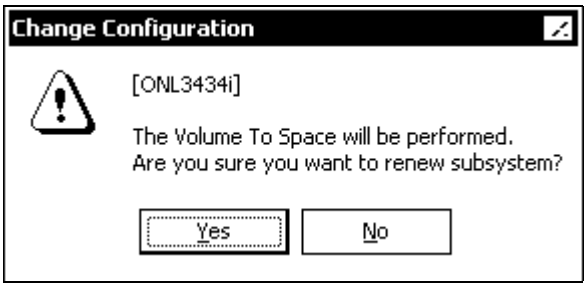
(4) When the screen is returned to the "Device Emulation Configuration" screen by pressing (CL) the [OK] button and the[>>Next] button is pressed (CL), the definition of reduction is decided.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(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 INST05-440 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.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

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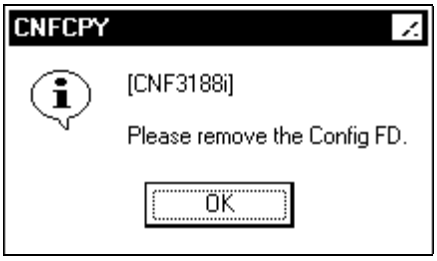
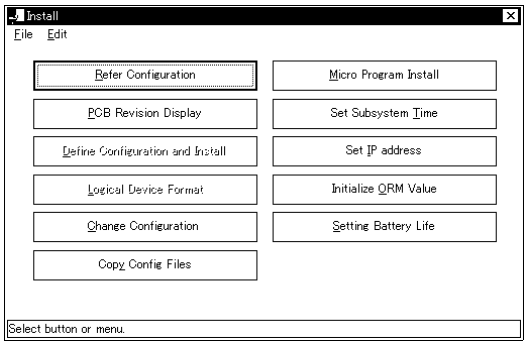
(8)

When this procedure is completed, the message “Please remove the Config FD.” 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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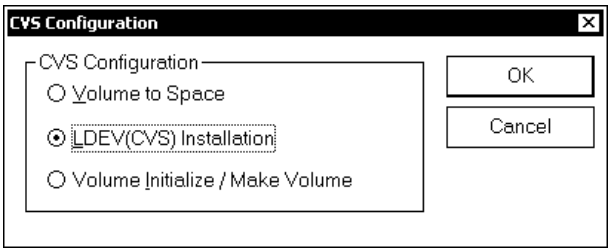
2. <LDEV(CVS) Installation>

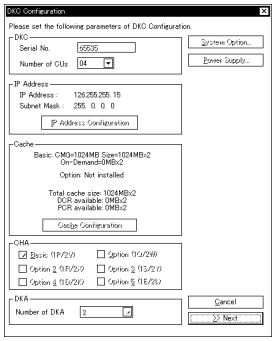
(1) Select (CL) [LDEV(CVS) Installation] and press (CL) [OK].



(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].

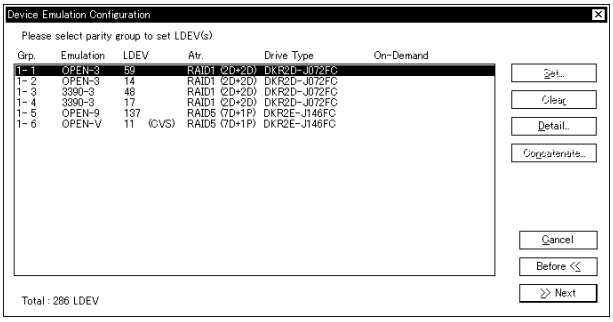
Make sure that the entered item is correct and select (CL) [>>Next].



(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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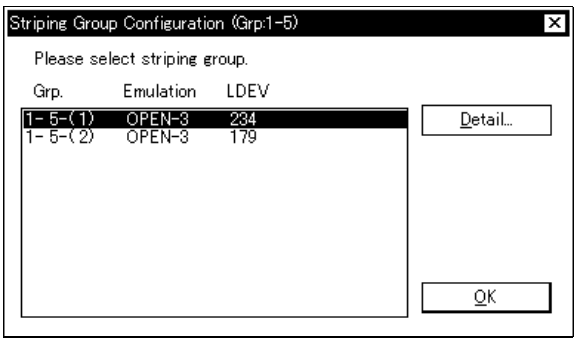
(2-1) When there are two or more striping groups, the Striping Group Configuration window is displayed. Select (CL) a striping group, and then select (CL) the [Detail…].

- 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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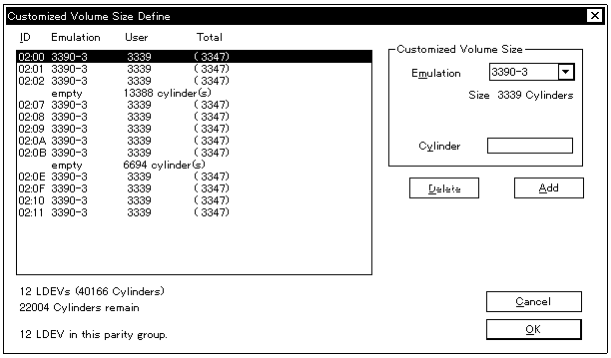
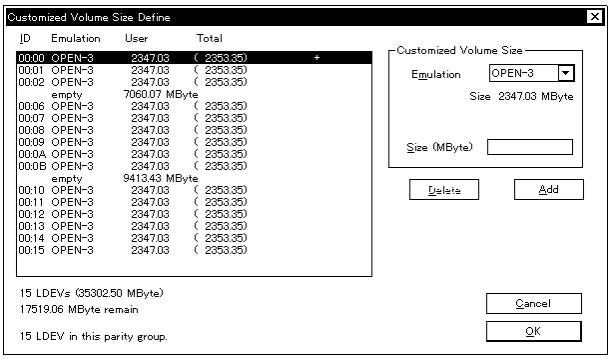
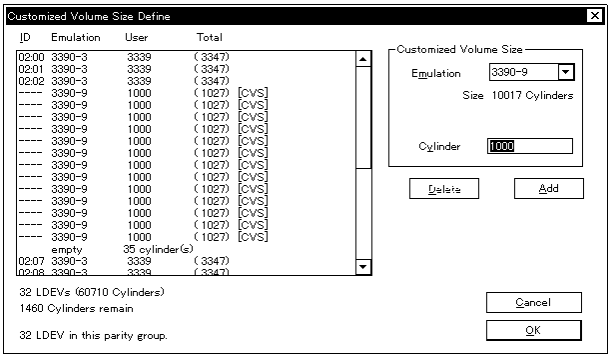
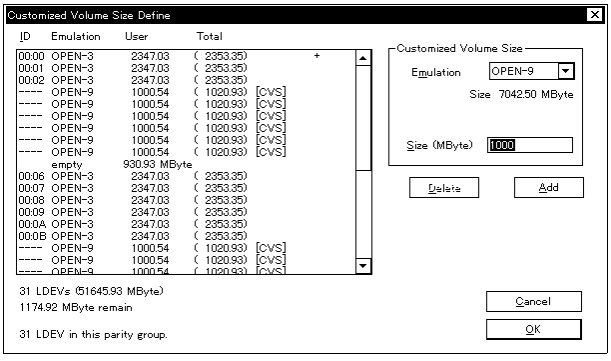
(3) Register the CV to be added by selecting (CL) the CV's emulation type of it, entering the number of cylinders, and selecting (CL) [Add] on the "Customized Volume Size Define" screen. The two or more CVs can be registered when the operation above is performed repeatedly.
When an emulation type for open host is selected, the size per cylinder is displayed in Mbytes.





(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.
When CV for open host is selected, the size is displayed ([M byte]).





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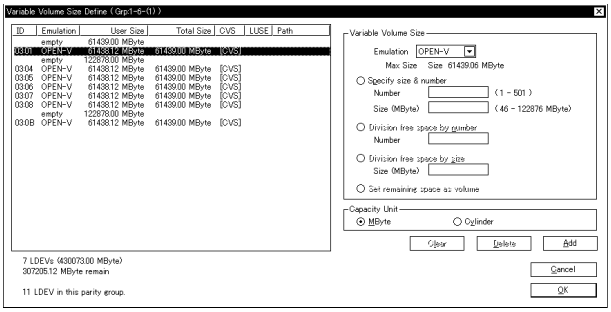
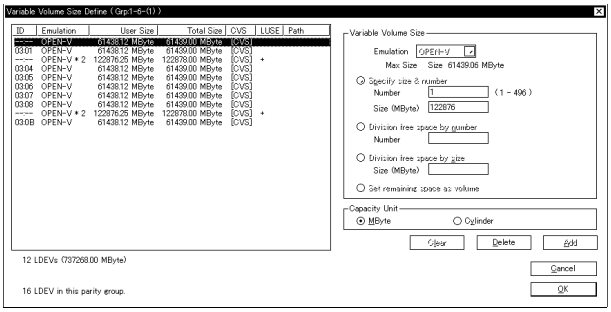
(4-1) Definition of OPEN-V

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.



- Capacity Unit
  “MByte” : Makes data displayed or entered by the Mbyte.
  “Cylinder” : Makes data displayed or entered by the cylinder.
- LUSE : When the LUSE connection is made, a symbol “+” and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol “+” 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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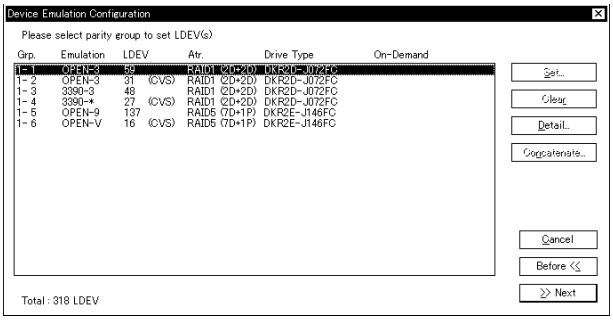
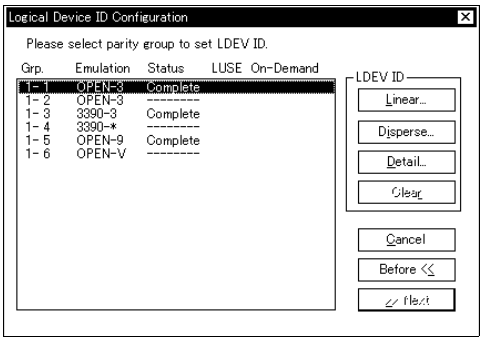
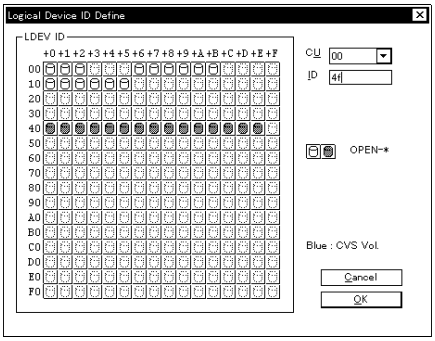
(5) When the screen is returned to the "Device Emulation Configuration" screen by a pressing (CL) of the [OK] button, the setting result is displayed.
The LDEV status is displayed as [CVS] for the parity group for which the CV was set.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



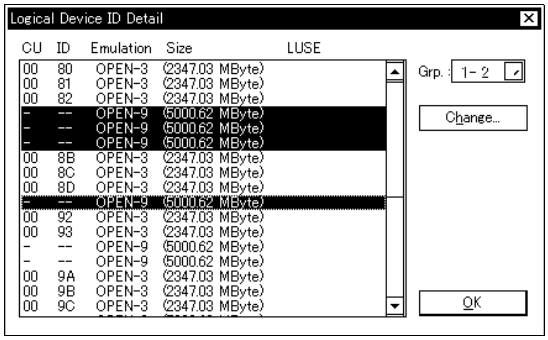
(6) When the [>>Next] button is pressed (CL), the LDEV ID setting screen appears.
Set LDEV ID(s) for the added CV(s). For the parity group having the added CV(s), the status which shows the ID allocation is indicated as "---------". Therefore, select (CL) such a parity group.
When [Linear...] or [Disperse...] 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.



(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.



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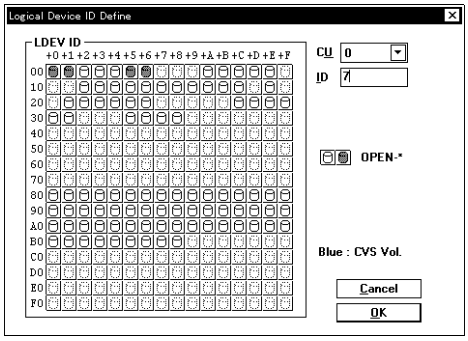
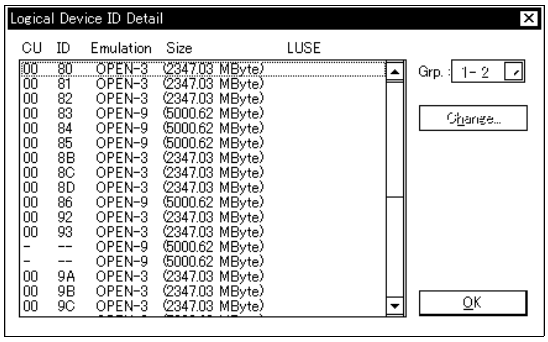
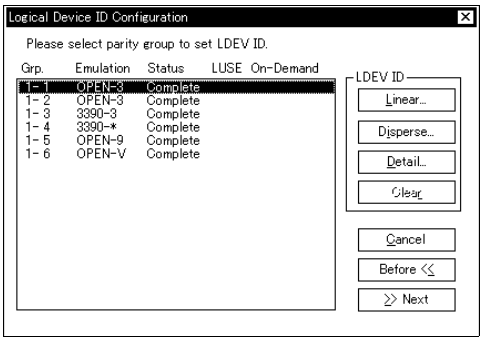
(7)-2 Enter a CU and LDEV ID you want to allocate on the "Logical Device ID Define" screen. Then, select (CL) [OK].
Go to Step (7)-3.



(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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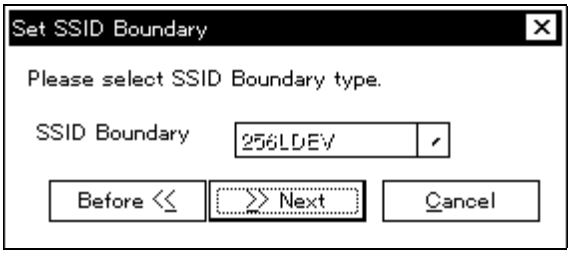
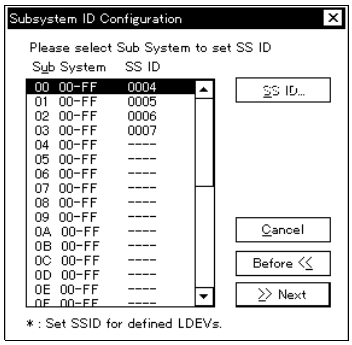
(9)

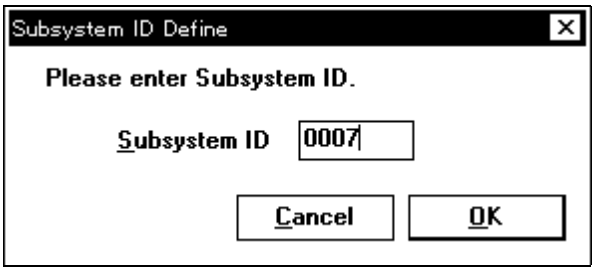
Press (CL) the [>>Next] button to change the screen to the “Set SSID Boundary” screen.



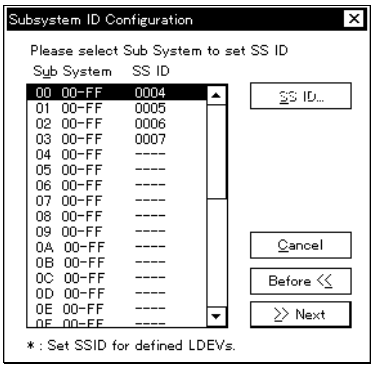
(10) When the [>>Next] button is pressed (CL), the “Subsystem ID Configuration” screen is opened. If a new SS ID is required as a result of defining an LDEV ID, define the new SS ID. Select (CL) a subsystem where the SS ID is to be newly defined and press (CL) the [SS ID...] button.
When no subsystem ID is to be defined, go to Step (13) by selecting [>>Next].



(11) Enter the SS ID on the “Subsystem ID Define” screen and select (CL) [OK].



(12) 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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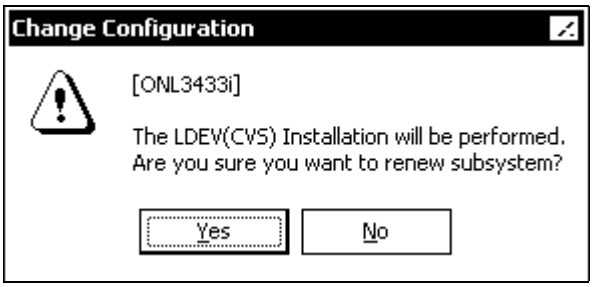
(13) When [>>Next] is selected (CL), the definition of the addition ends. (Additional process starts.)

---

(14)

Select (CL) [Yes] in response to "The LDEV(CVS) Installation will be performed. Are you sure you want to renew subsystem?".

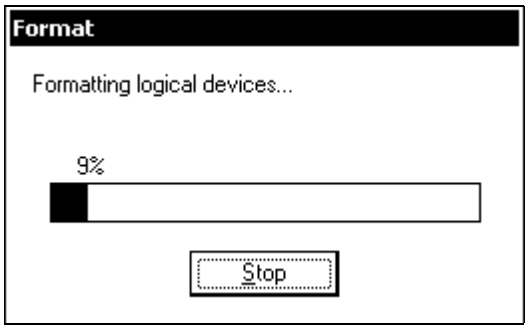
When [No] is selected (CL), returns to INST05-440 step 2.



---

(15)

"Formatting the logical device..." is displayed.



---

(16)

"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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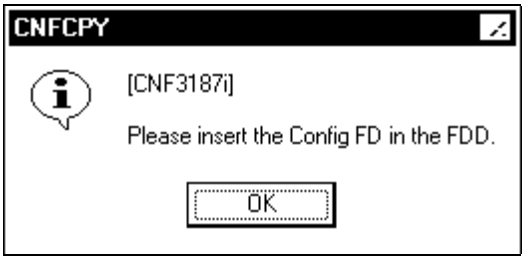
(17)

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

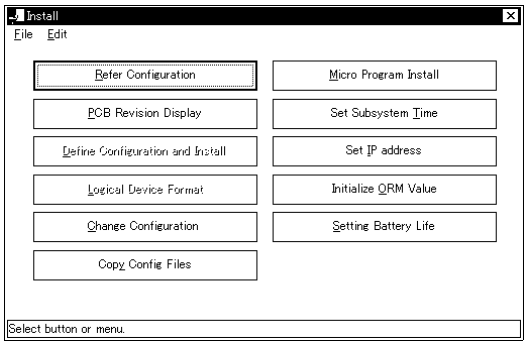


(18)

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

(19)

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



(20)

Change the mode to View Mode.

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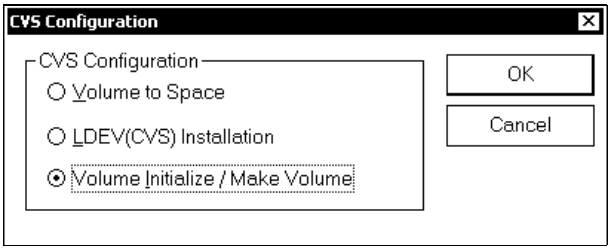
3. <Volume Initialize>

NOTICE
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	

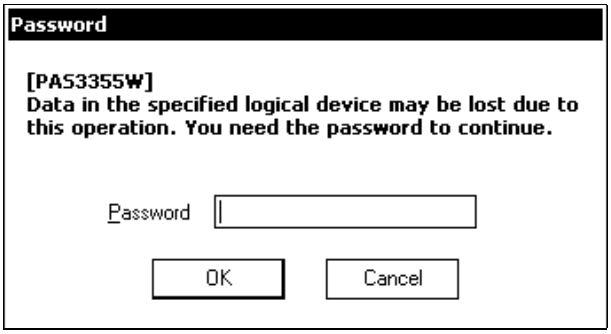
If you want to reset these volumes as HMDE, please call technical support center to set them to HMDE volumes by SVP.

(1) Select (CL) [Volume Initialize/Make Volume], then select (CL) [OK].



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 and requires an input of a password. Ask the technical support center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.



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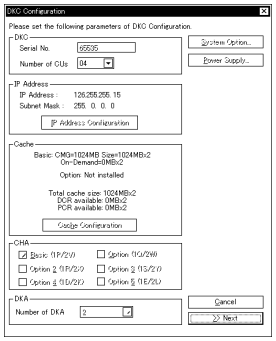
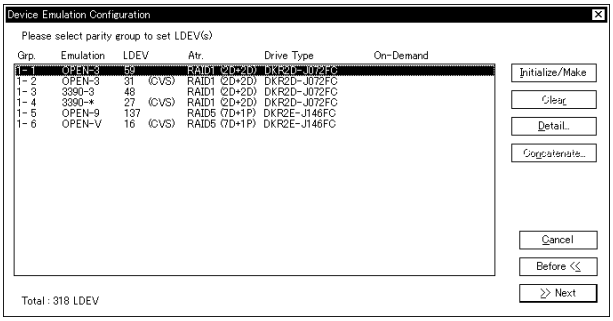
(1-1) Define the number of CU in DKC in the 'DKC Configuration' window.

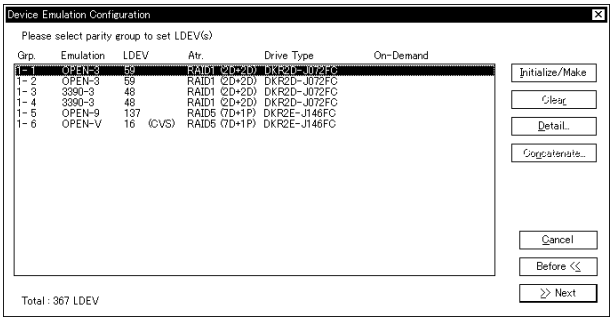
Make sure that the entered item is correct and select (CL) [>>Next].



(2) Select (CL) a parity group having volume(s) to be changed on the "Device Emulation Configuration" screen.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



(3) Select (CL) a CV from the list box on the "Customized Volume Size Define" screen, 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.
(CVS): A parity group where CVS is installed.
Grp*: A parity group where RAID Concatenation is installed.



Note: In the following case, the [Initialize] button is not available.
1) Volume with SCSI path(s) is selected.
2) Volume with LUN is selected.
3) Volume with LDEV Security is selected.

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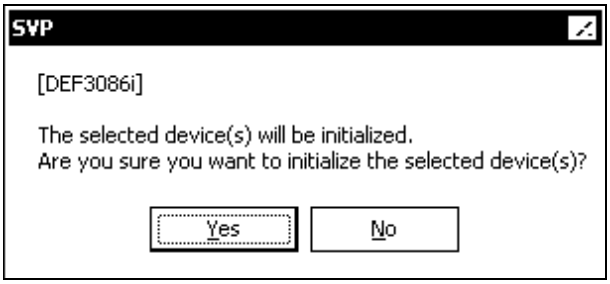
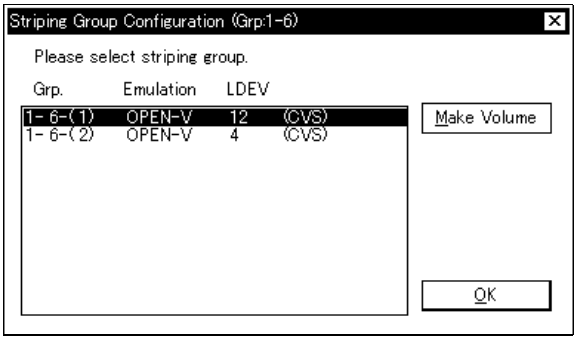
(3-1) A message, “This operation initializes the logical device (CVS) that has been selected in the list box. Do you want to continue the operation?” is displayed. Select (CL) [Yes].
- When you select a striping group other than OPEN-V, the routine goes to Step (4).
- When you select OPEN-V, the routine goes to Step (3-2).



(3-2) 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 [Make Volume]. The routine goes to Step (3-3).

When you select (CL) the [OK], the preceding window returns. The routine returns to Step (3).



Note: When there is only one striping group, the Striping Group Configuration window is not displayed. The routine goes to Step (3-3).

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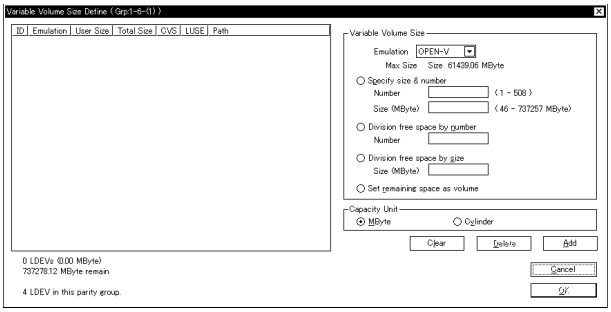
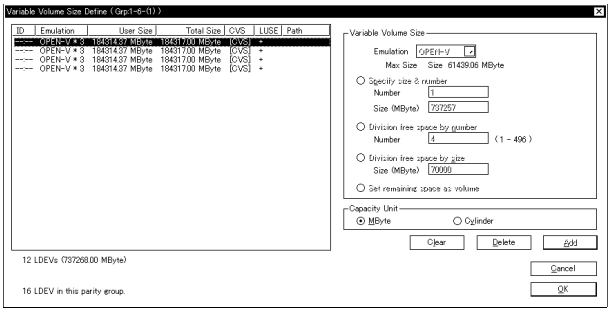
(3-3) Definition of OPEN-V

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.
- LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume at the top are displayed.
- Path : When a path is defined, a symbol "+" 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 (3) or (3-1).
[OK] : Fixes the setting and makes the preceding window return. The routine is returned to Step (3) or (3-1).

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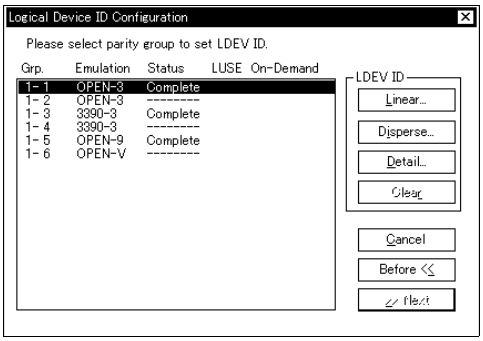
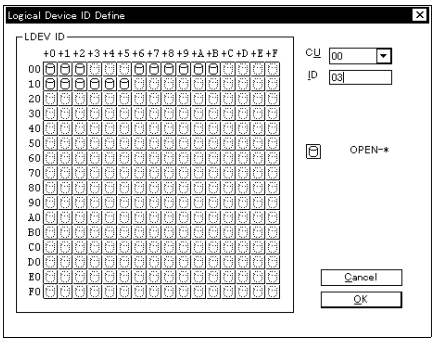
(4) To return the volume(s) in other parity group(s) to the normal LDEV(s), repeat steps (3).

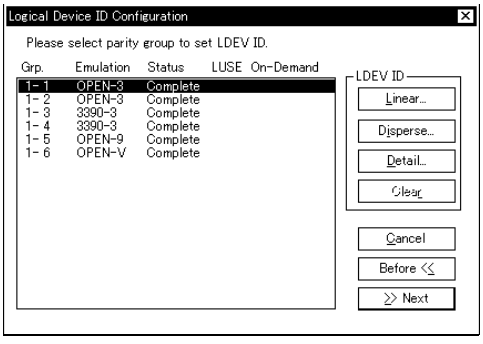
(5) Press (CL) the [>>Next] button to change the screen to the "Logical Device ID Configuration" screen. Since the normal LDEV returned from the base volume is a newly defined LDEV, define the ID. Select (CL) the parity group having the LDEV(s) for which the ID(s) has not been set, then select (CL) [Linear...]. Two or more parity groups can be selected.
Grp*: The top parity group where RAID Concatenation is installed.



(6) 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].



(7) 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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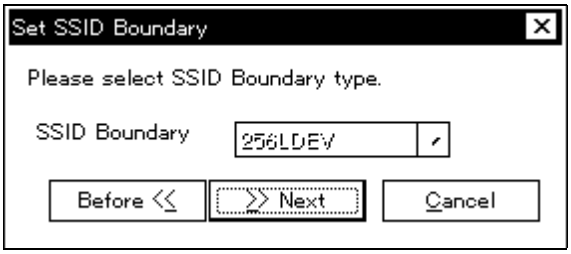
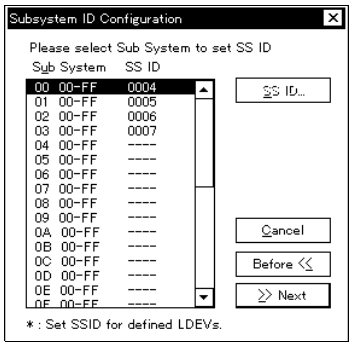
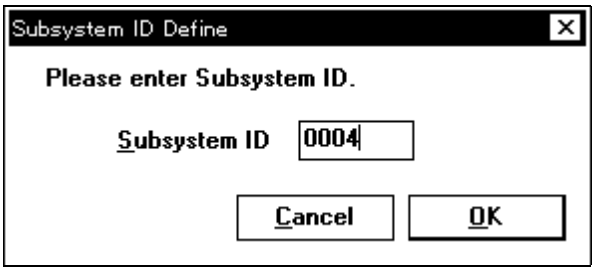
(8) Press (CL) the [>>Next] button to change the screen to the “Subsystem ID Configuration] screen.



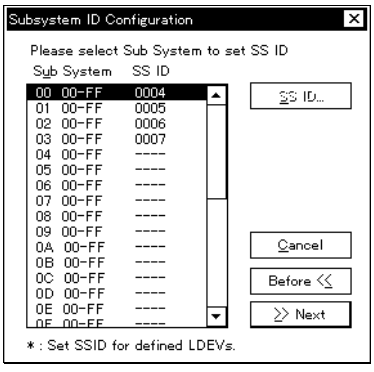
(9) When it is necessary to set a new SS ID, define the SS ID.
Select (CL) a subsystem whose SS ID is not defined, then select (CL) [SS ID...].



(10) Enter an SS ID on the “Subsystem ID Define” screen and select (CL) [OK].



(11) 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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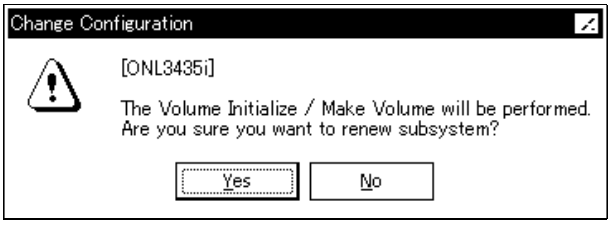
(12)

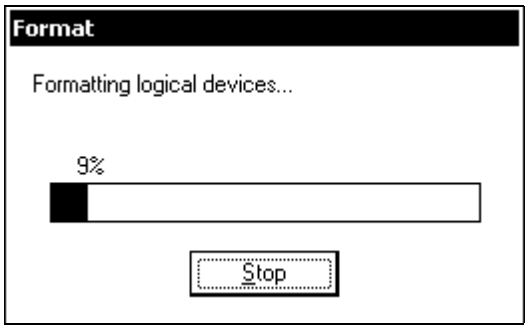
Select (CL) [Yes] in response to "The Volume Initialize/Make Volume will be performed. Are you sure you want to renew subsystem?".



When [No] is selected (CL), returns to INST05-440 step 2.

(13)

"Formatting the logical device..." is displayed when LDEV Format is necessary.



(14)

"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.

(15)

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD." is displayed.
Insert the configuration FD into FDD, and select (CL) [OK].

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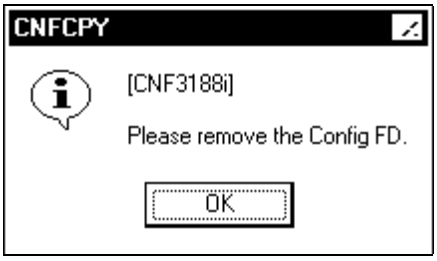
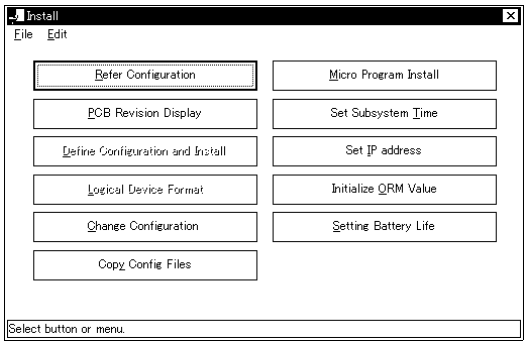
(16)

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



(17)

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



(18)

Change the mode to View Mode.

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5.3.2.4 LUN Management

(1) Outline

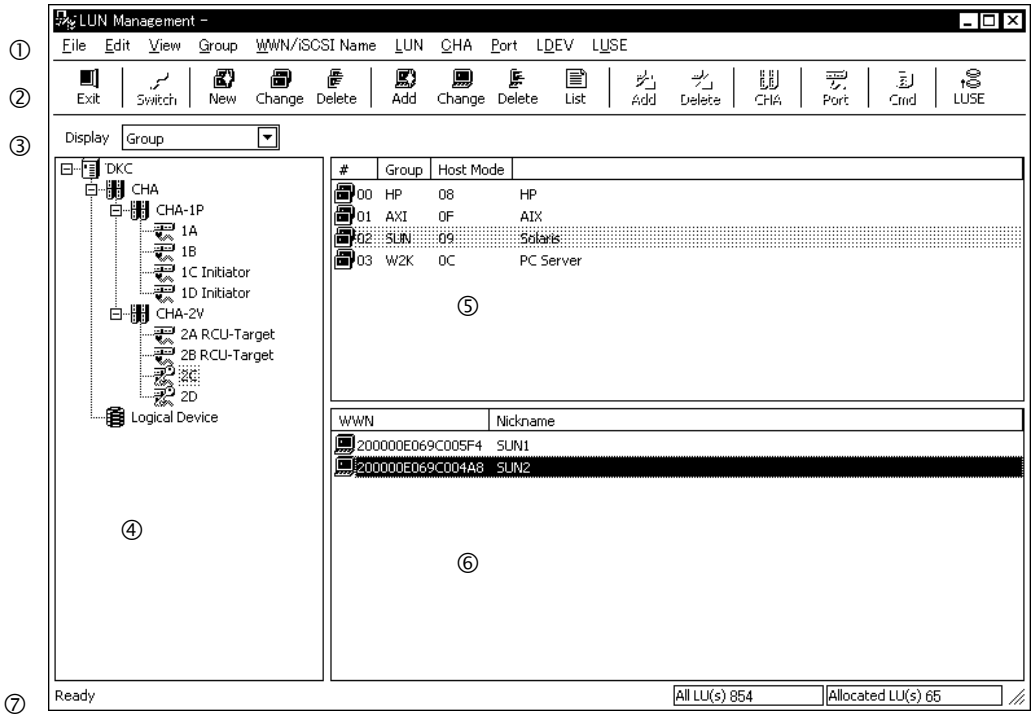

Figure 1.1 Main Window

The Main window consists of the following elements.

Table 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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Menu items and their details are shown below.

Table 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
Group	New		• Creates a new group.	"New"
	Change		• Changes a group name or adds a member.	"Change"
	Delete		• Deletes a group.	"Delete"
WWN/ iSCSI Name	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 WWNs/iSCSI Names login to the DKC.	"List"
LUN	Add		• Adds a LUN.	"Add"
	Delete		• Deletes a LUN.	"Delete"
	Command Device		• Changes command device and command device security information.	"Cmd"
CHA	Change…		• Changes a CHA option.	"CHA"
Port	Parameter		• Changes a port parameter.	"Port"
	Security Switch		• Sets whether to use the security function or not.	"Switch"
LDEV	Command Device		• Changes command device and command device security information.	"Cmd"
	`Property		• Refers to LUN information from LDEV.	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 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	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

2. Fibre Channel High Performance Mode executable check item

Table 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 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.

4. Command device check item

Table 1.6 System operating condition, and change of configuration

#	Item	Operation	Host I/O	E-Copy*1 I/O	Pair Status	Guard status	iSCSI
1	Cmd. Dev.	Set	A	A	B	D	E
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/M has to be stopped when this parameter is modified.
*1: E-COPY: Extended Copy Command
D: Volumes that do not have "R/W" attribute cannot be defined as command devices.
E: A setting of a command device is not allowed for a LUN using the iSCSI-Port.

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(2) Setting Security Switch

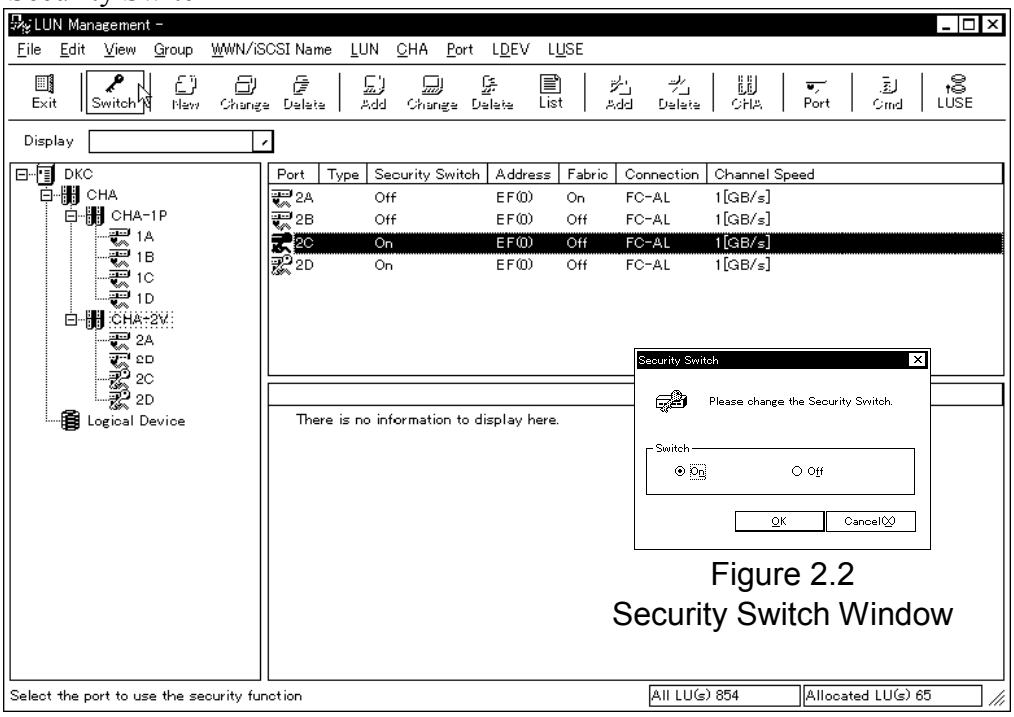

Figure 2.2
Security Switch Window

Figure 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 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 2.1).

Details of the Main window (Figure 2.1) and the Security Switch window (Figure 2.2) are shown below.

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Table 2.1 Details and Operation of Main Window (Switch)

Item	Description
Upper list	Displays statuses of the security switches that have been set. In the case of the iSCSI-Port, items, that is, Address, Fabric, Connection, and Channel Speed are not displayed.
	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 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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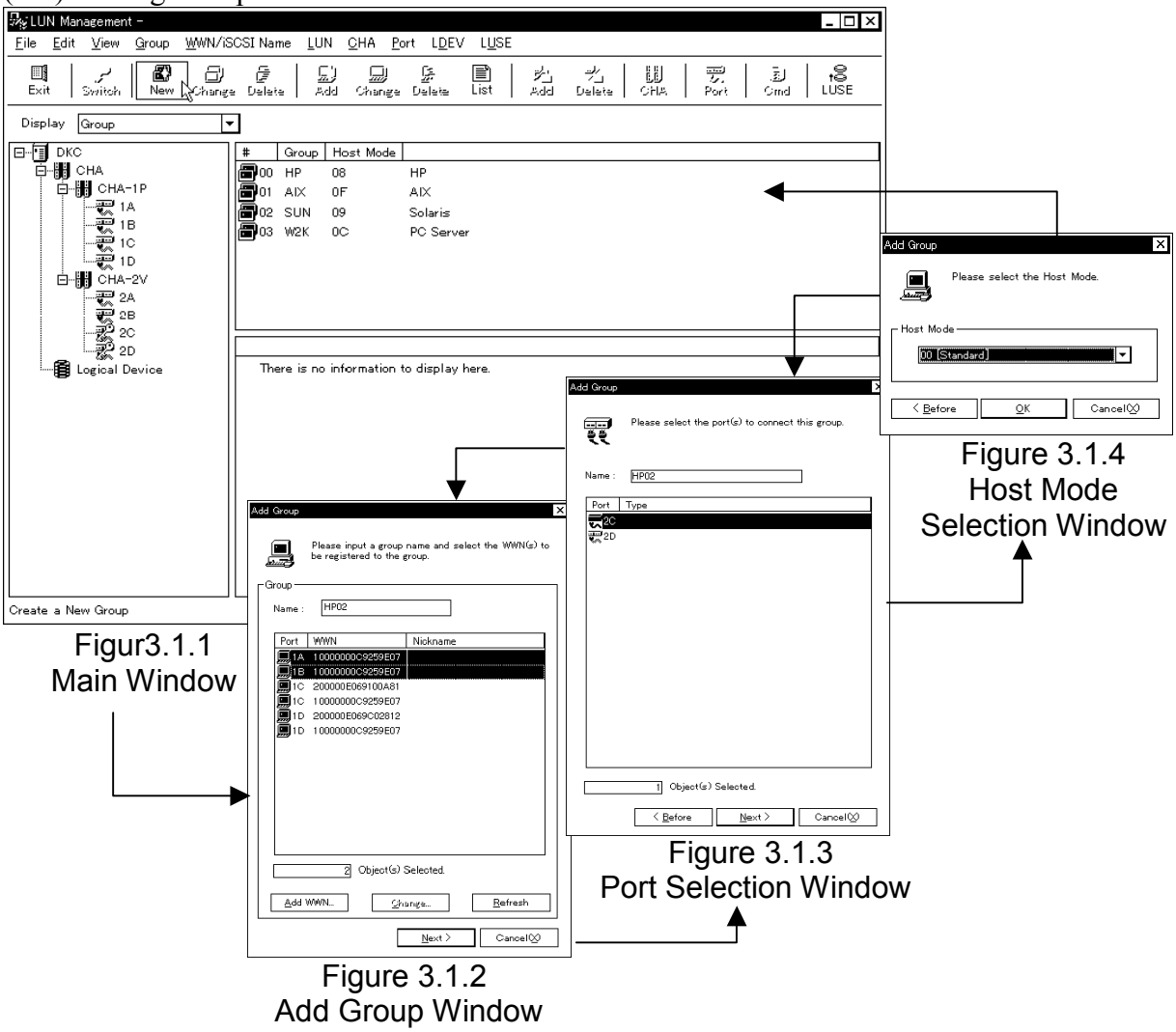
(3) Setting Group

(3-1) Adding Group



Figur3.1.1
Main Window

Figure 3.1.4
Host Mode
Selection Window

Figure 3.1.3
Port Selection Window

Figure 3.1.2
Add 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.

Addition of a group is done in the following procedure.

① Select (DR) [New...] from the [Group] menu in the Main window (Figure 3.1.1).

② Since the Add Group window (Figure 3.1.2) is displayed, enter a group name, register a WWN, (In the case of iSCSI is iSCSI Name) and select (CL) the [Next] button.

③ Since the Port Selection window (Figure 3.1.3) 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 3.1.4) and select (CL) the [OK] button.

⑤ Information on the group that has been newly registered is reflected in the Main window (Figure 3.1.1).

Details of the Main window (Figure 3.1.1) and the other windows are shown on the following page.

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Table 3.1.1 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 3.1.2 Details and Operation of Add Group Window (for Fibre gruop)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be added.
List	Displays a WWN list. Selects WWN that wants to be set.
Add WWN button	Activates a window for manually registering a WWN when no applicable WWN exists in the list.
Change button	Changes a selected WWN and its nickname. (Only one WWN is selectable.)
Refresh button	Redraws the list
Next button	Closes the window and activates a window for selecting a port for connecting the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.1.3 Details and Operation of Add Group Window (for iSCSI gruop)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be added.
List	Displays a iSCSI Name list. Selects iSCSI Name that wants to be set.
Add button	Activates a window for manually registering a iSCSI Name when no applicable iSCSI Name exists in the list.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name is selectable.)
Refresh button	Redraws the list
Next button	Closes the window and activates a window for selecting a port for connecting the group concerned.
Cancel button	Returns you to the Main window without doing anything.

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Table 3.1.4 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 3.1.5 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.

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(3-2) Changing Group

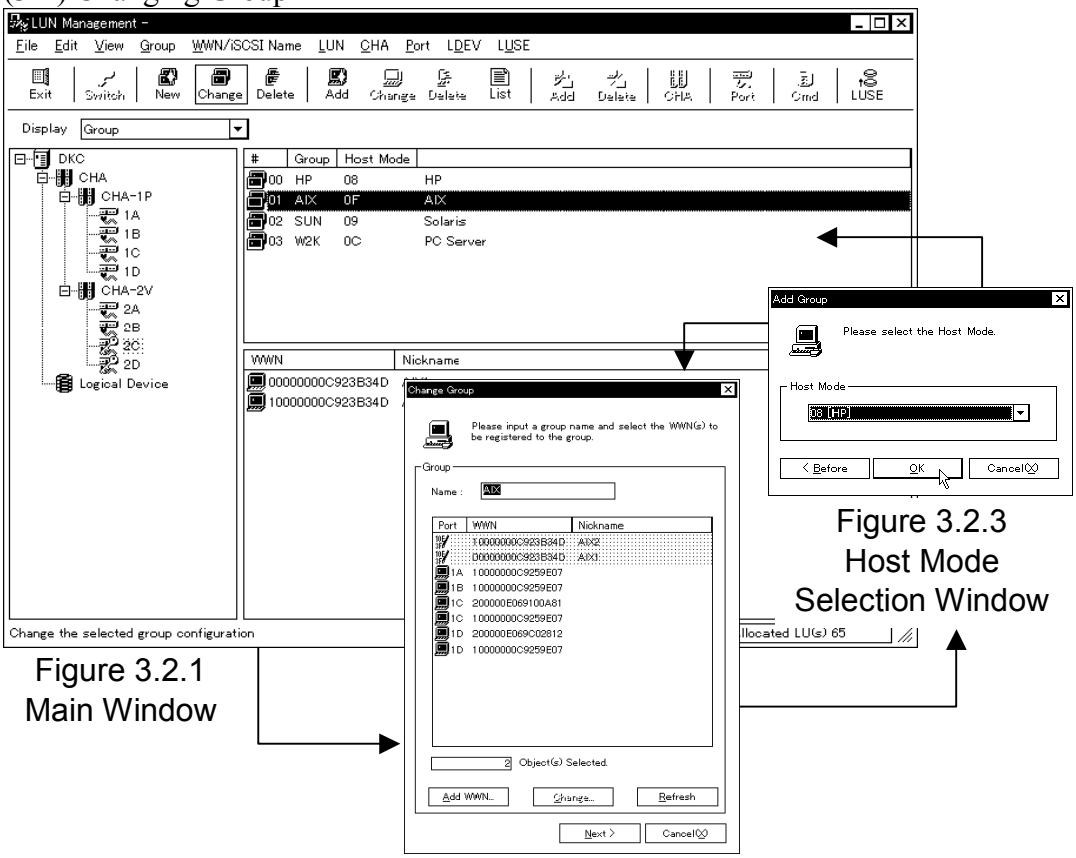

Figure 3.2.1
Main Window

Figure 3.2.3
Host Mode
Selection Window

Figure 3.2.2
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 3.2.1).
③ Since the Change Group window (Figure 3.2.2) is displayed, change the group name (In the case of iSCSI is iSCSI 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 3.2.3) and select (CL) the [OK] button.
⑤ Information on the group that has been changed is reflected in the Main window (Figure 3.2.1).

In case of changing the group against the port of the Security Switch off, the Change Group window (Figure 3.2.2) is not displayed.

Details of the Main window (Figure 3.2.1) and the other windows are shown on the following page.

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Table 3.2.1 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.
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 3.2.2 Details and Operation of Change Group Window (for Fibre group)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be changed.
List	Displays a WWN list. Selects WWN that wants to be set.
Add WWN button	Activates a window for manually registering a WWN when no applicable WWN exists in the list.
Change button	Changes a selected WWN and its nickname. (Only one WWN is selectable.)
Refresh button	Redraws the list.
Next button	Closes the window and activates a window for selecting a host mode to be registered for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.2.3 Details and Operation of Change Group Window (for iSCSI group)

Item	Description
Name	To be used for entering a name (up to eight characters) of a group to be changed.
List	Displays a iSCSI Name list. Selects iSCSI Name that wants to be set.
Add button	Activates a window for manually registering a iSCSI Name when no applicable iSCSI Name exists in the list.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name is selectable.)
Refresh button	Redraws the list.
Next button	Closes the window and activates a window for selecting a host mode to be registered for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

Table 3.2.4 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.

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(3-3) Deleting Group

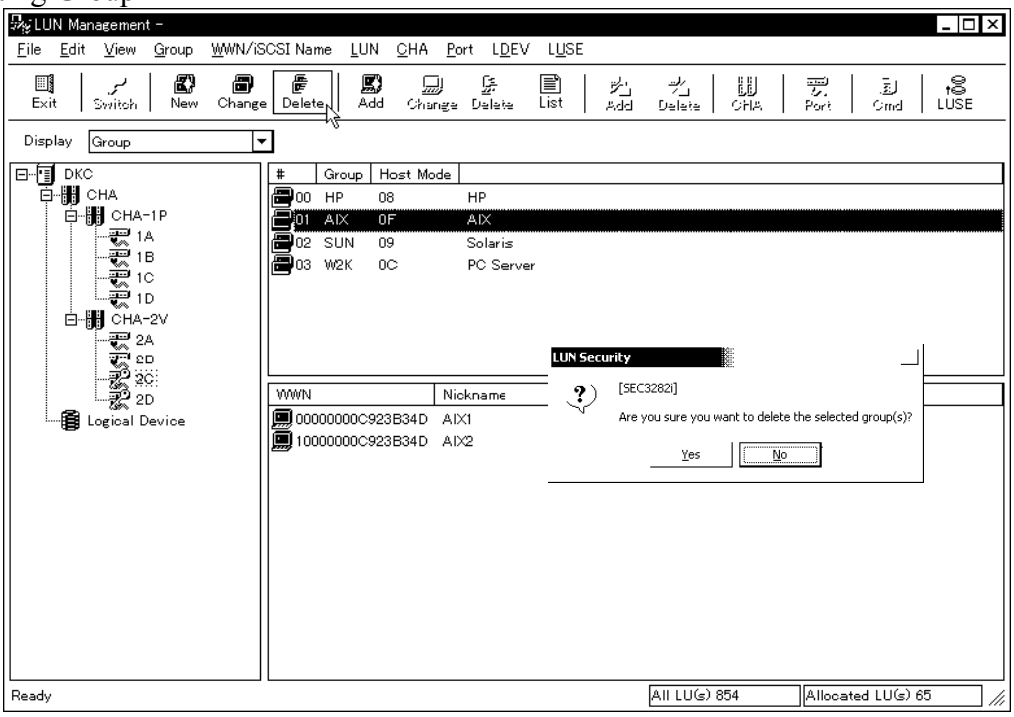

Figure 3.3.1 Main Window

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 3.3.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [OK] 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 or iSCSI Name, and LUN) is also deleted.

Table 3.3.1 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.
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/iSCSI Name

(4-1) Adding WWN

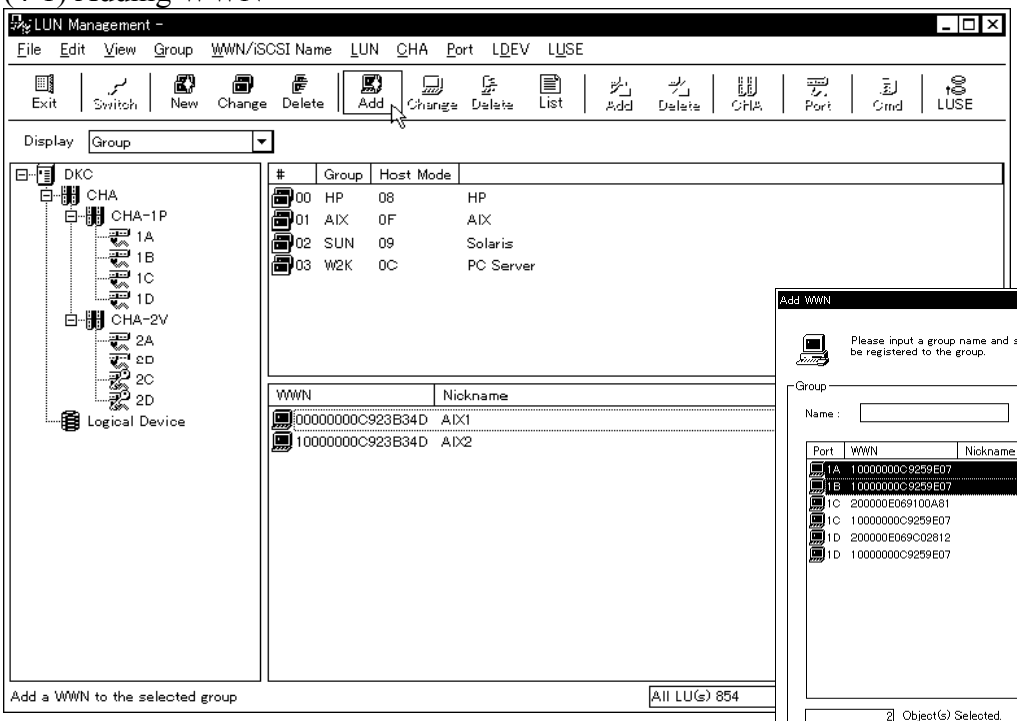

Figure 4.1.1 Main window

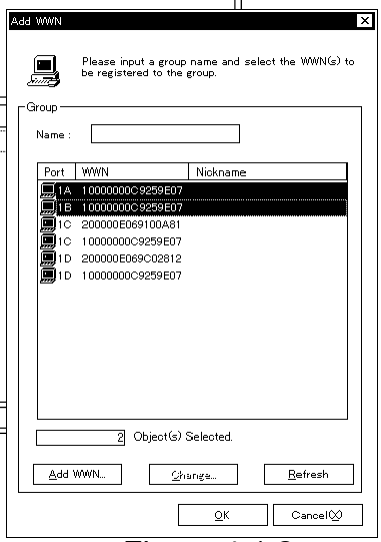

Figure 4.1.2
Add WWN Window

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/iSCSI Name] menu in the Main window (Figure 4.1.1).
③ Since the Add WWN window (Figure 4.1.2) 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 4.1.1) and the other windows are shown on the following page.

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Table 4.1.1 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 4.1.2 Details and Operation of Add WWN Window

Item	Description
Name	Displays the group name. (Unchangeable)
List	Displays a WWN list. Select the registration WWN.
Add WWN button	Activates a window for manually registering a WWN when no applicable WWN exists in the list.
Change button	Changes a selected WWN and its nickname. (Only one WWN is selectable.)
Refresh button	Redraws the list.
OK button	Closes the window after registering the WWN, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-2) Changing WWN

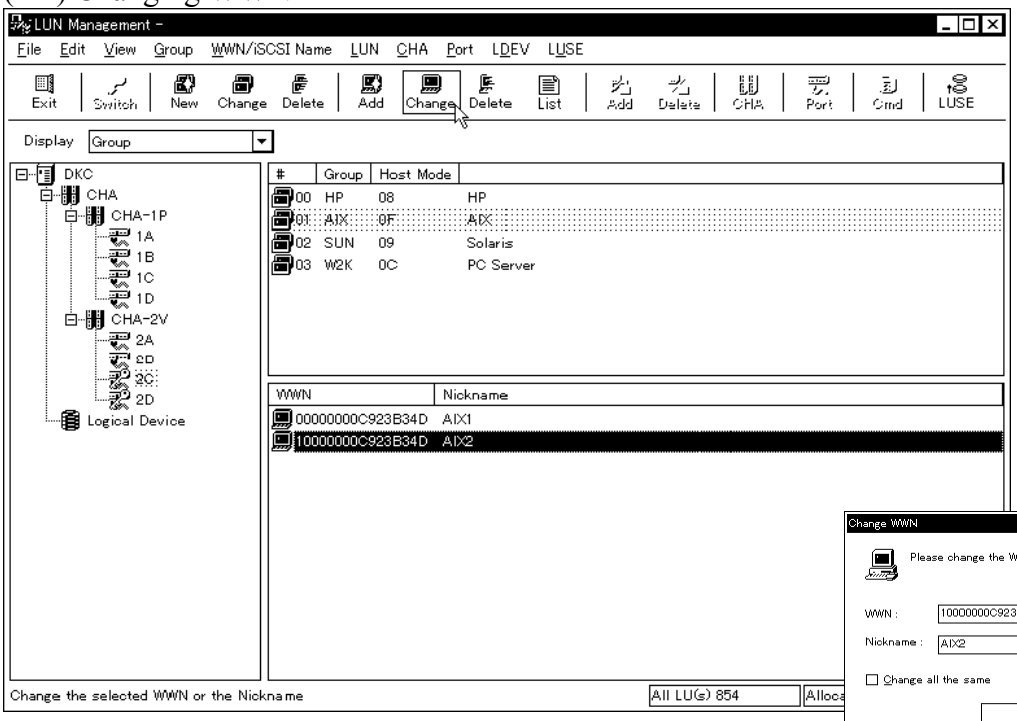

Figure4.2.1 Main Window

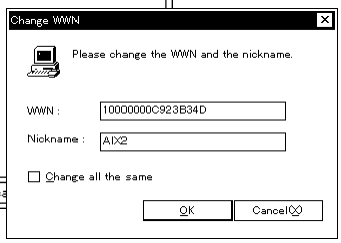

Figure 4.2.2
Change WWN Window

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/iSCSI Name] menu in the Main window (Figure 4.2.1).
③ Since the Change WWN window (Figure 4.2.2) 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 4.2.1) and the other windows are shown on the following page.

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Table 4.2.1 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 - 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 4.2.2 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 eight 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

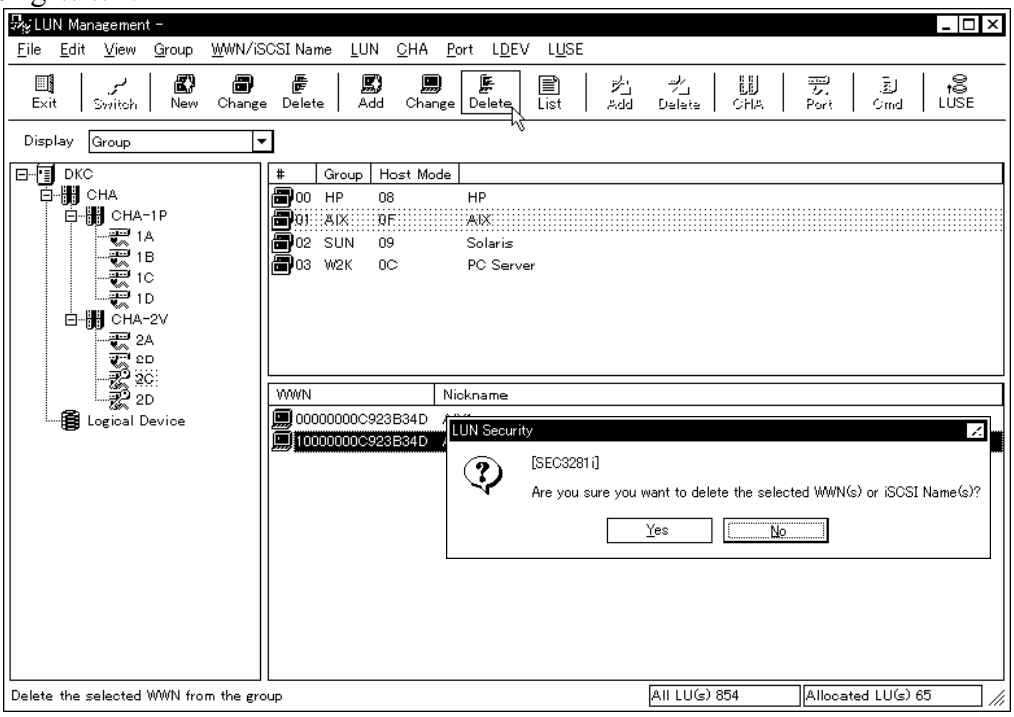

Figure 4.3.1 Main Window

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/iSCSI Name] menu in the Main window (Figure 4.3.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [OK] button.
④ The WWN that has been selected from the lower right list is deleted.

Table 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.
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/iSCSI Name – 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

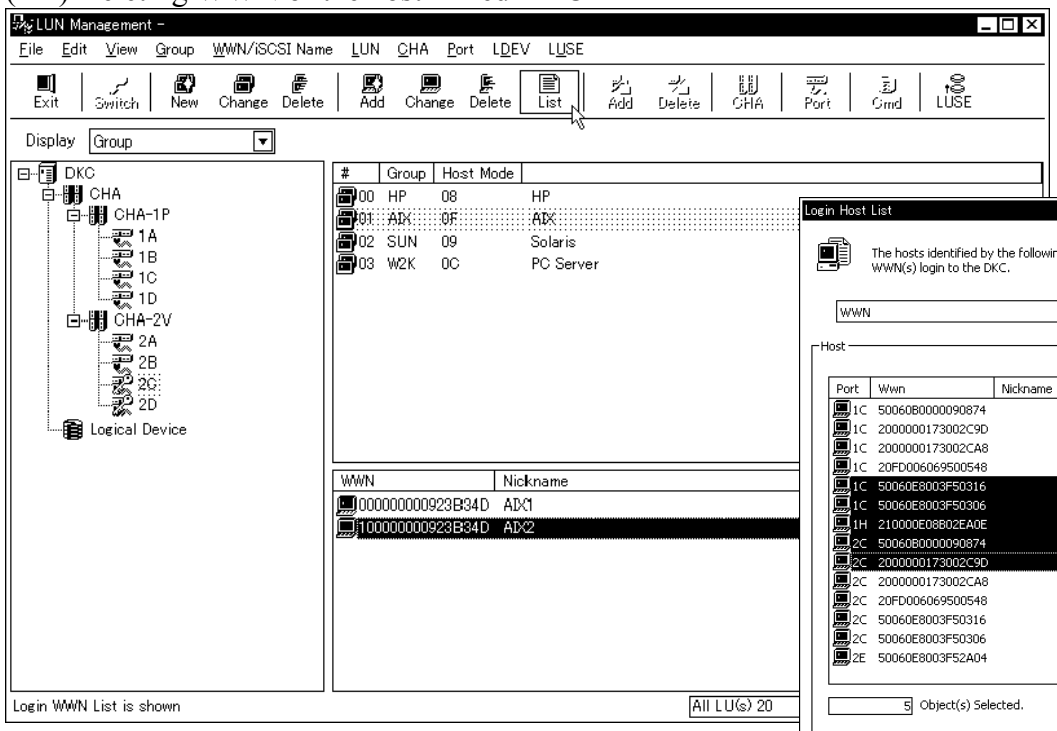

Figure 4.4.1 Main Window

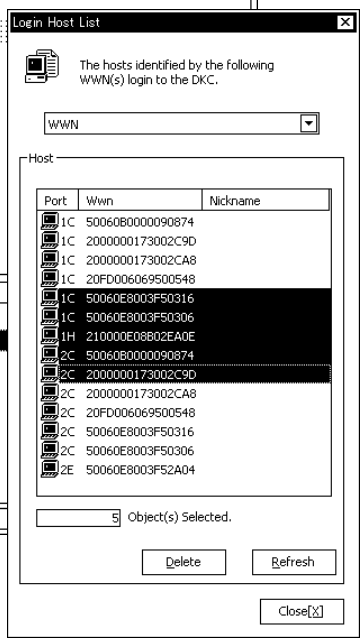

Figure 4.4.2 Login Host List Window

Deletion of a WWN of the host linked to DKC is done in the following procedure.

① Select (DR) [Login List] form the [WWN/iSCSI Name] menu in the Main Window (Figure 4.4.1).

② Select (CL) the [Refresh] button is redraws the WWN list.

③ Since the Login Host List window (Figure 4.4.2) 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 4.4.1 Details and Operation Login Host List window

Item	Description
WWN	The hosts identified by the following WWNs login to the DKC.
List	Displays a WWN list.
Delete button	Deletes a selected WWN.
Refresh button	Redraws the list.
Close button	Returns you the Main window.

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(4-5) Adding iSCSI Name

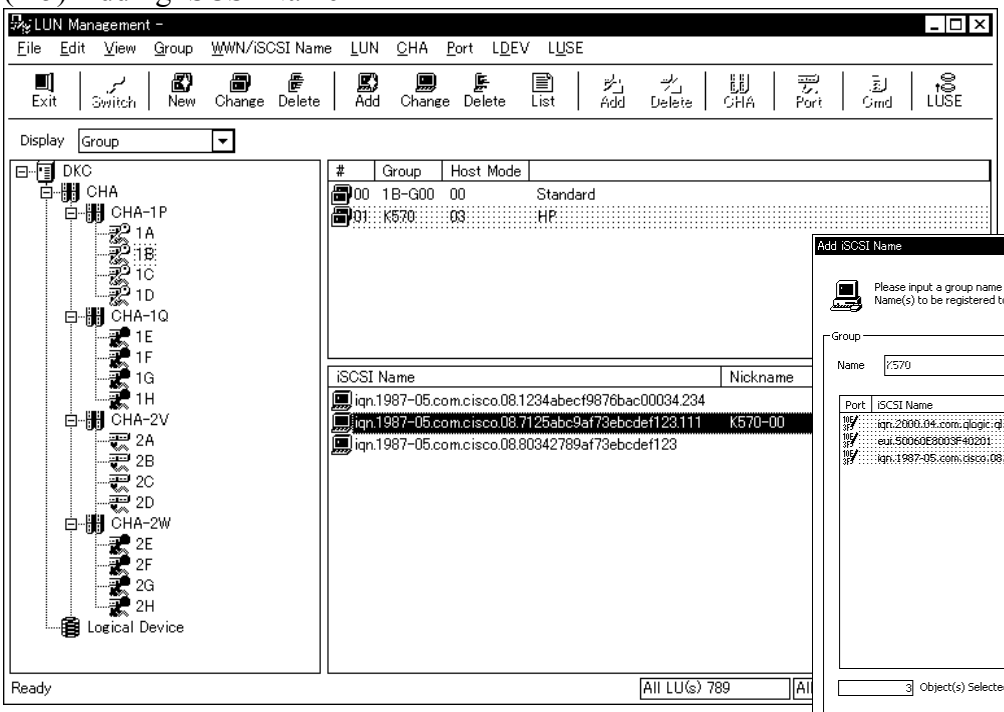

Figure 4.5.1 Main window

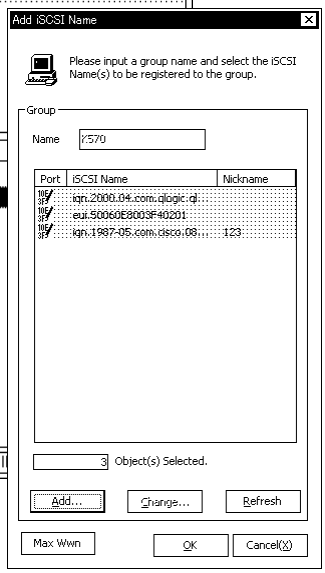

Figure 4.5.2
Add iSCSI Name Window

When “iSCSI-Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the iSCSI-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 iSCSI Name is made in the following procedure.

① Select (CL) a group to which you want to add a iSCSI Name from the upper right list.
② Select (DR) [Add] from the [WWN/iSCSI Name] menu in the Main window (Figure 4.5.1).
③ Since the Add iSCSI Name window (Figure 4.5.2) is displayed, select (CL) “iSCSI Name” registering from the list, and select (CL) the [OK] button.
④ The iSCSI Name that has been newly added is reflected in the lower right list.

Details of the Main Window (Figure 4.5.1) and the other windows are shown on the following page.

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Table 4.5.1 Details and Operation of Main Window (iSCSI Name)

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/iSCSI Name - 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 4.5.2 Details and Operation of Add iSCSI Name Window

Item	Description
Name	Displays the group name. (Unchangeable)
List	Displays a iSCSI Name list. Select the registration iSCSI Name.
Add button	Activates a window for manually registering a iSCSI Name when no applicable iSCSI Name exists in the list.
Change button	Changes a selected iSCSI Name and its nickname. (Only one iSCSI Name is selectable.)
Refresh button	Redraws the list.
OK button	Closes the window after registering the iSCSI Name, and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.

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(4-6) Changing iSCSI Name

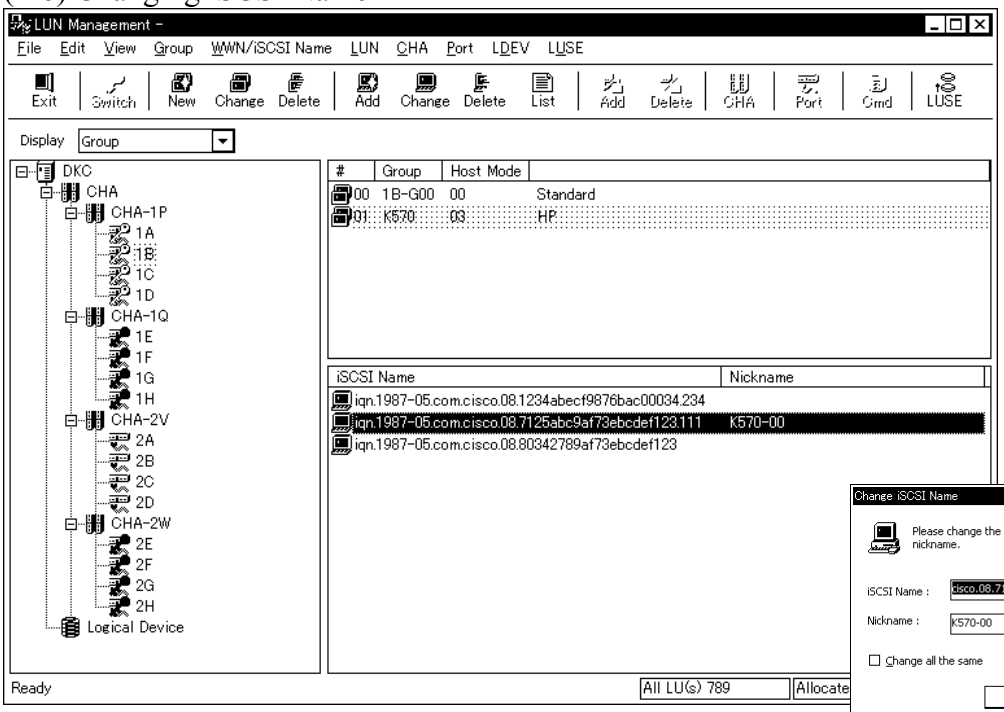

Figure 4.6.1 Main Window

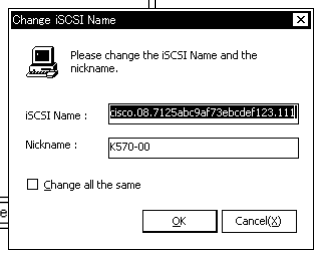

Figure 4.6.2
Change iSCSI Name Window

When “iSCSI-Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the iSCSI-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 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 [WWN/iSCSI Name] menu in the Main window (Figure 4.6.1).
③ Since the Change iSCSI Name window (Figure 4.6.2) 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 4.6.1) and the other windows are shown on the following page.

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Table 4.6.1 Details and Operation of Main Window (iSCSI Name)

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/iSCSI Name - 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 4.6.2 Details and Operation of Change iSCSI Name Window

Item	Description
iSCSI Name	To be used for entering a iSCSI Name.
Nick name	Used for entering a nickname (up to eight 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

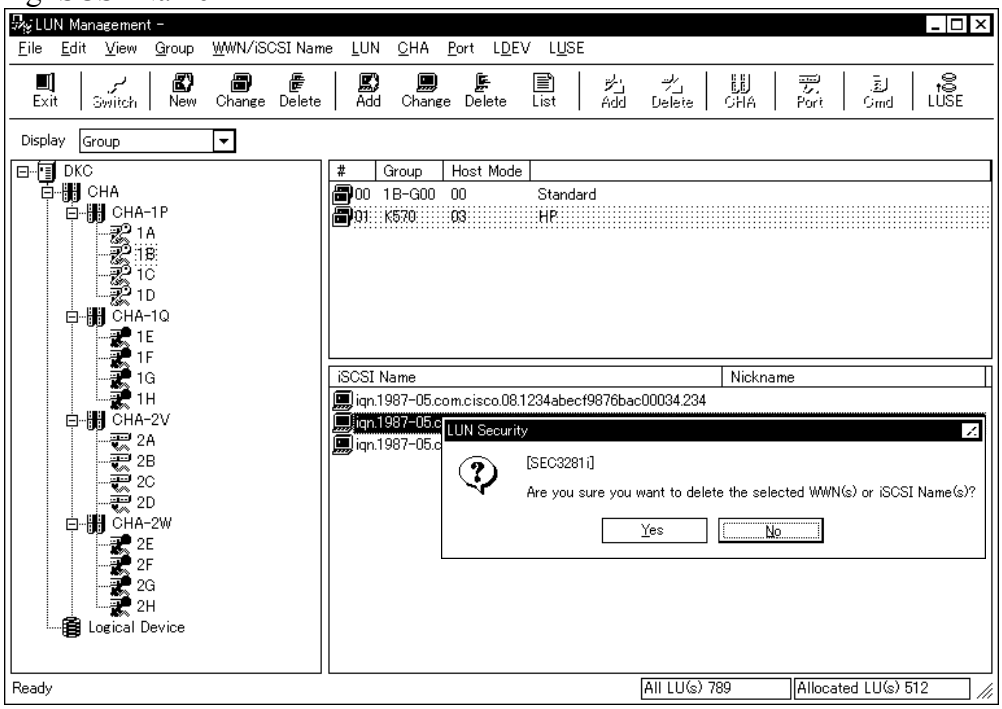

Figure 4.7.1 Main Window

When “iSCSI-Port” in the tree view is selected, “Group” is set on the Display. Displays the group setting in the iSCSI-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 [WWN/iSCSI Name] menu in the Main window (Figure 4.7.1).
③ Since a message asking for a confirmation is displayed, select (CL) the [OK] button.
④ The iSCSI Name that has been selected from the lower right list is deleted.

Table 4.7.1 Details and Operation of Main Window (iSCSI Name)

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/iSCSI Name – 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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(4-8) The host's iSCSI Name linked to DKC

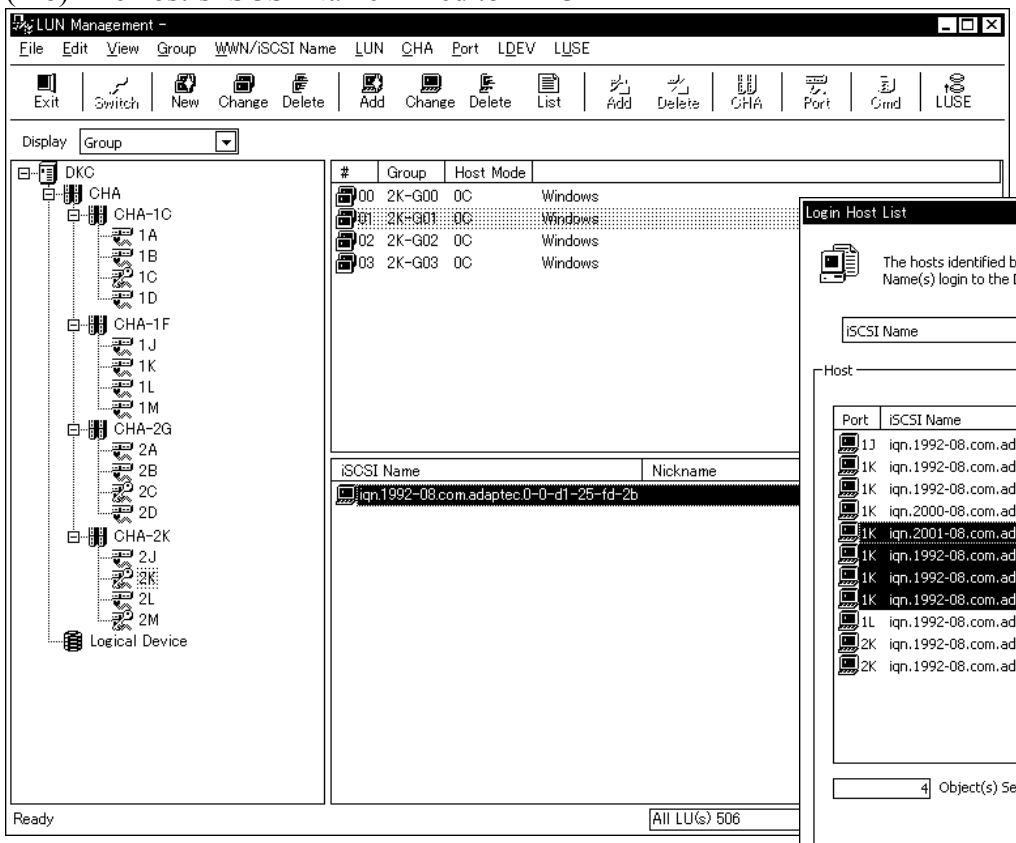

Figure 4.8.1 Main Window

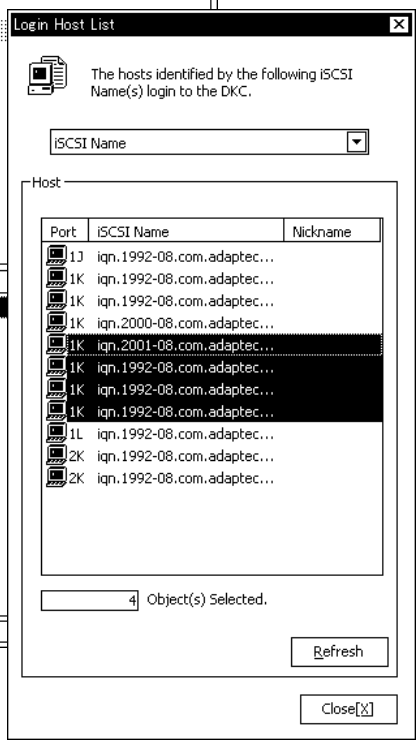

Figure 4.8.2 Login Host List Window

Select (DR) [Login List] from the [WWN/iSCSI Name] menu in the Main Window (Figure 4.8.1), Login Host List Window (Figure 4.8.2) is displayed. When you select the 'WWN' or the 'iSCSI Name', the login WWNs or iSCSI Names are displayed respectively.

Table 4.8.1 Details and Operation Login Host List Window

Item	Description
Switch	WWN or iSCSI Name.
List	Displays a iSCSI Name list.
Refresh button	Redraws the list.
Close button	Returns you the Main Windows.

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(5) Setting LUN

(5-1) Adding LUN

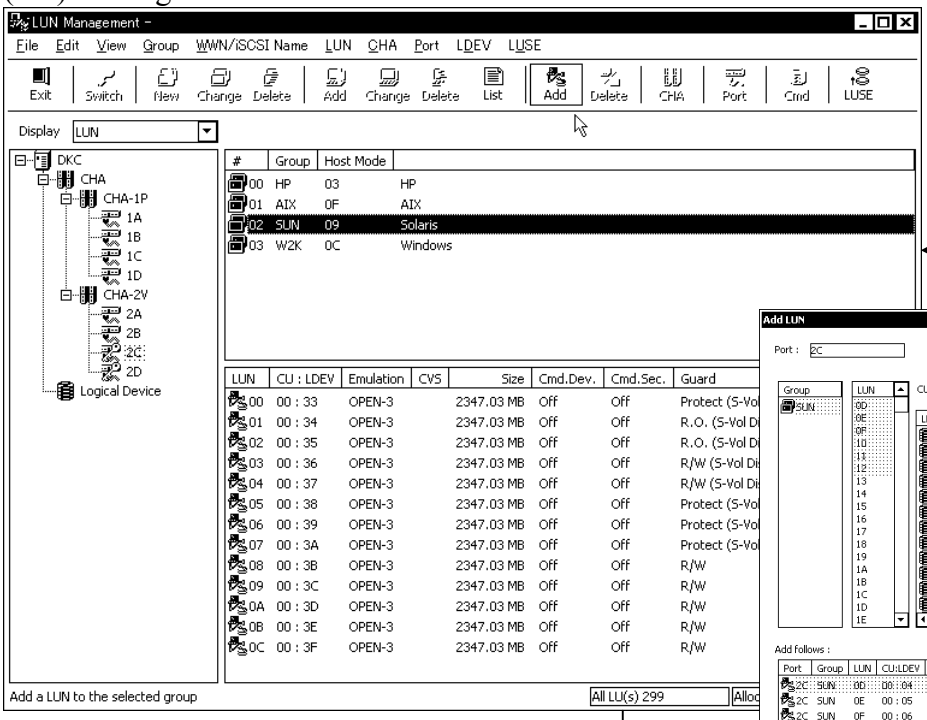

Figure 5.1.1 Main Window

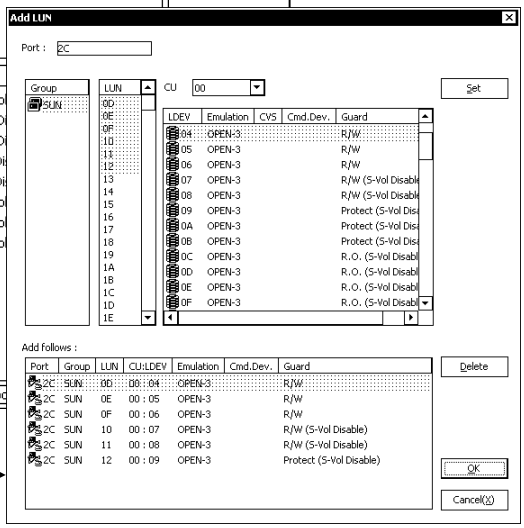

Figure 5.1.2 Add LUN Window

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 5.1.1).
④ Since the LUN Registration window (Figure 5.1.2) 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 5.1.1).

Details of the Main Window(Figure 5.1.1) and the other windows are shown on the following page.

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Table 5.1.1 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. The symbol '+' added to CU:LDEV# denotes the existence of path setting as follow: '+' A LUN is set. '++'Multiple LUNs are set. (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.
"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.

Table 5.1.2 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. The symbol '+' added to LDEV ID denotes the existence of path setting as follow: '+' A LUN is set. '++'Multiple LUNs are set.
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

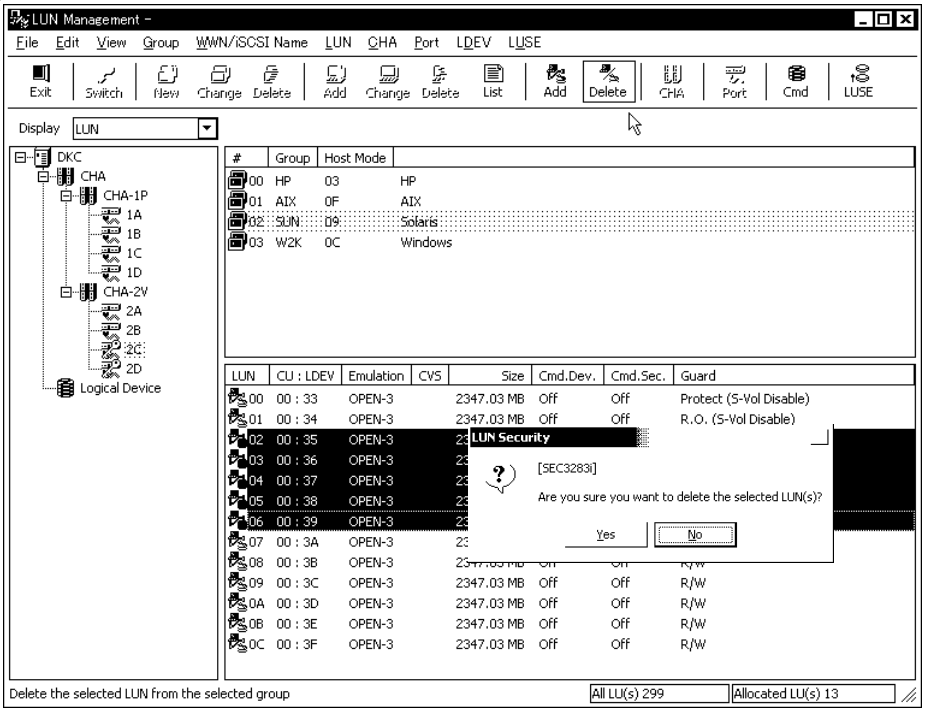

Figure 5.2.1 Main Window

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 5.2.1).
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.

Table 5.2.1 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 LUNs defined for a group selected from the upper list. The symbol ‘+’ added to CU:LDEV# denotes the existence of path setting as follow: ‘+’ A LUN is set. ‘++’Multiple LUNs are set. (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.
"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

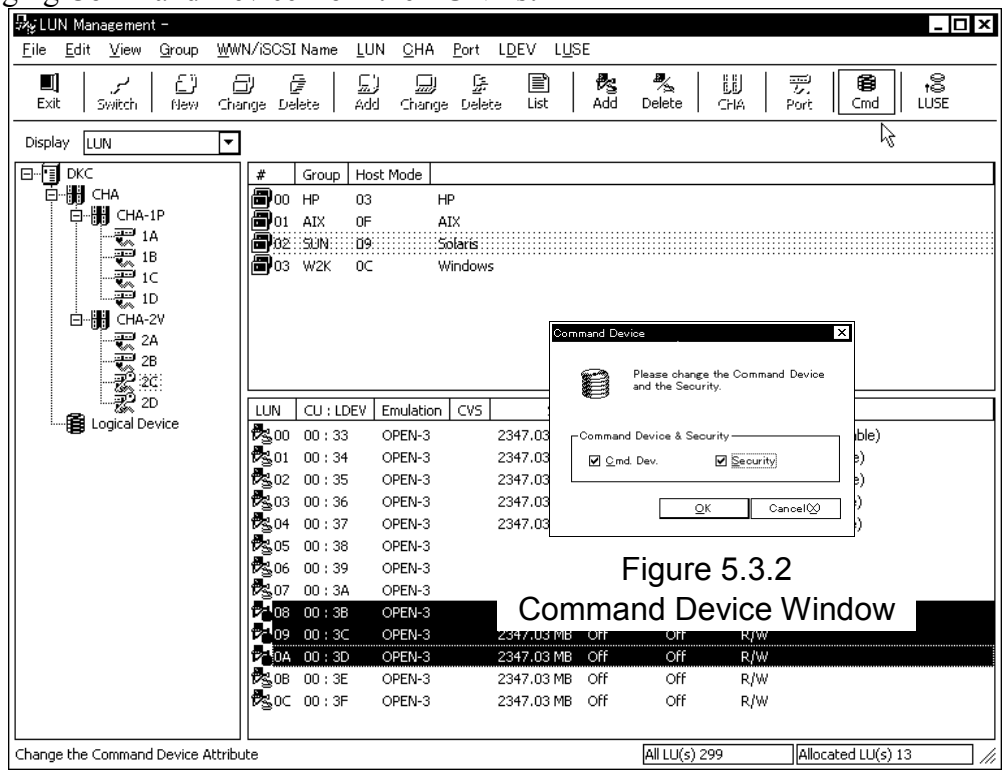

Figure 5.3.2
Command Device Window

Figure 5.3.1 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).
③ Change “Command Device” in the Command Device Window (Figure 5.3.2), 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 INST05-850.

Notice: The command device cannot be set for a LUN connected to the iSCSI-Port.

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Table 5.3.1 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. The symbol '+' added to CU:LDEV# denotes the existence of path setting as follow: '+' A LUN is set. '++'Multiple LUNs are set. (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.
"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 5.3.2 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 CHA

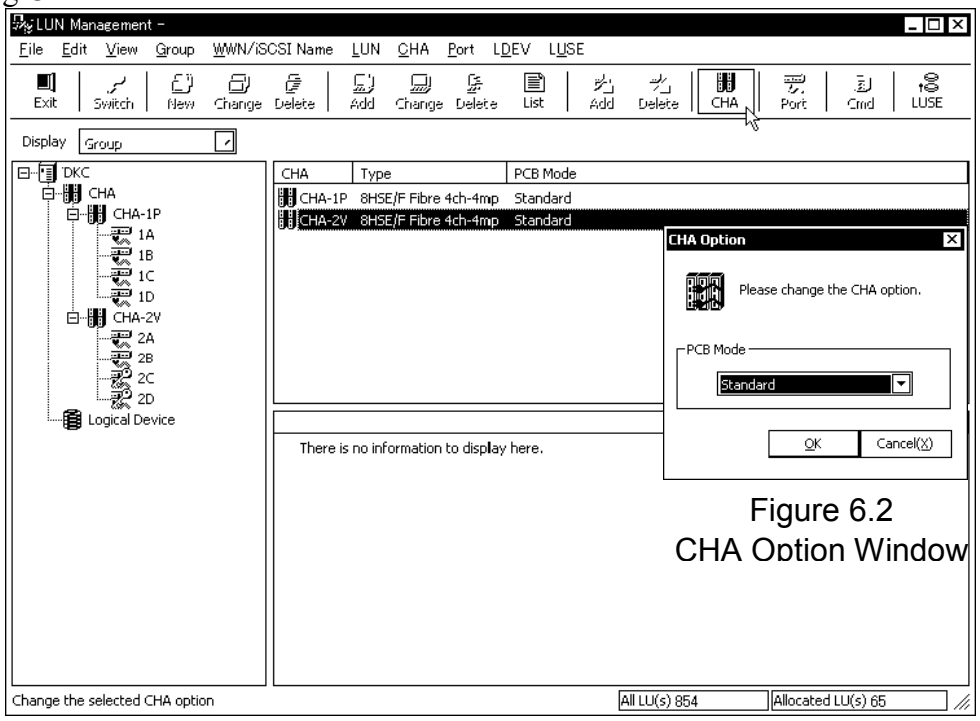

Figure 6.2
CHA Option Window

Figure 6.1 Main Window

When “CHA” in the tree view is selected (CL), installed CHA PCB’s supported by this function are displayed in the upper right list.

A change of a CHA PCB Mode is made in the following procedure.

① Select (CL) a CHA from the upper right list.
② Select (DR) [Change...] from the [CHA] menu in the Main window (Figure 6.1).
③ Since the CHA Option window (Figure 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.

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Table 6.1 Details and Operation of Main Window (CHA)

Item	Description
Upper list	Displays installed CHA PCB's supported by this function.
	Provided with a sorting function.
Lower list	Displays no item.
"CHA - Change" menu	Selectable when a CHA has been selected from the upper list.
	Displays the CHA Option window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the upper list.

Table 6.2 Details and Operation of CHA Option Window

Item	Description
PCB Mode	Displays a set operational mode of a CHA PCB in a form that it 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

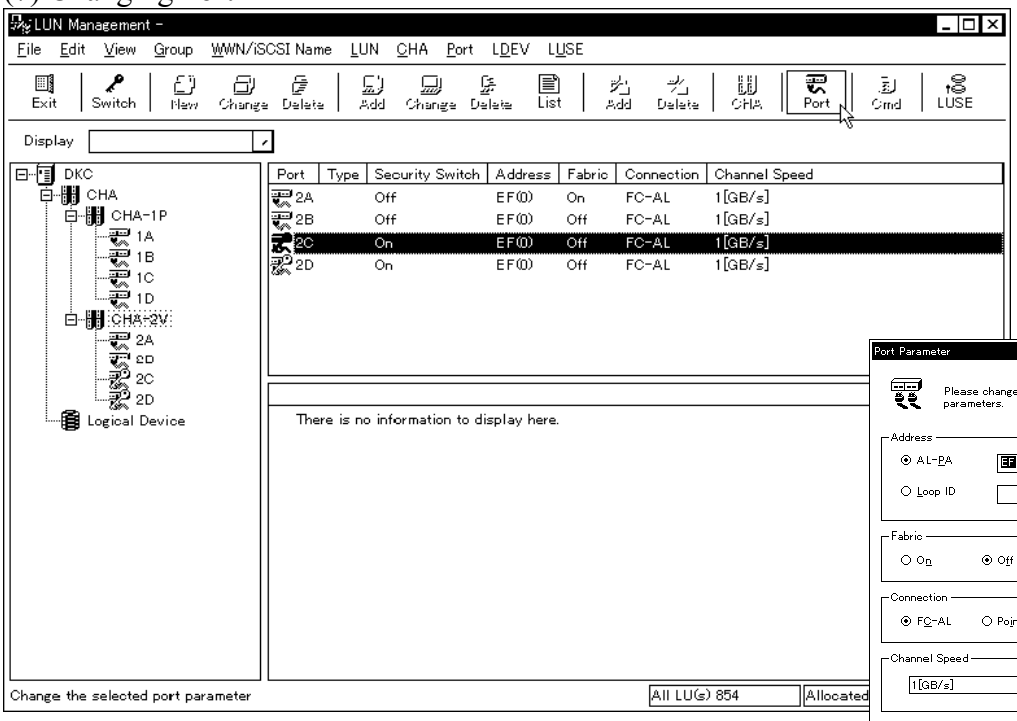

Figure 7.1 Main Window

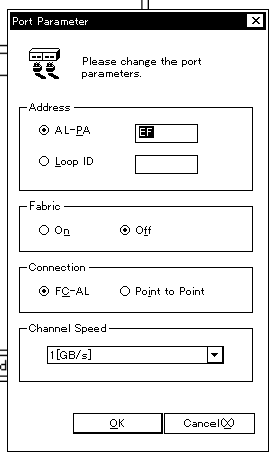

Figure 7.2
Port Parameter Window

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 7.1).
③ Since the Port Parameter window (Figure 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: iSCSI-Port can not change port Parameter.
When you change the configure of Port Parameters and User Authentication for iSCSI Port, please operate from the Web Console. For the detail of operation, refer to WEB02-40, and ‘3.9 Configuring iSCSI Ports’ of LUN Management User's Guide.

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Table 7.1 Details and Operation of Main Window (Port)

Item	Description
Upper list	Displays installed ports supported by this function. In the case of the iSCSI-Port, items, that is, Address, Fabric, Connection, and Channel Speed are not displayed.
	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 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, 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.

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Fibre port addresses (AL-PA's and loop ID's) are shown below.

Table 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) Changing Command Device from LDEV list

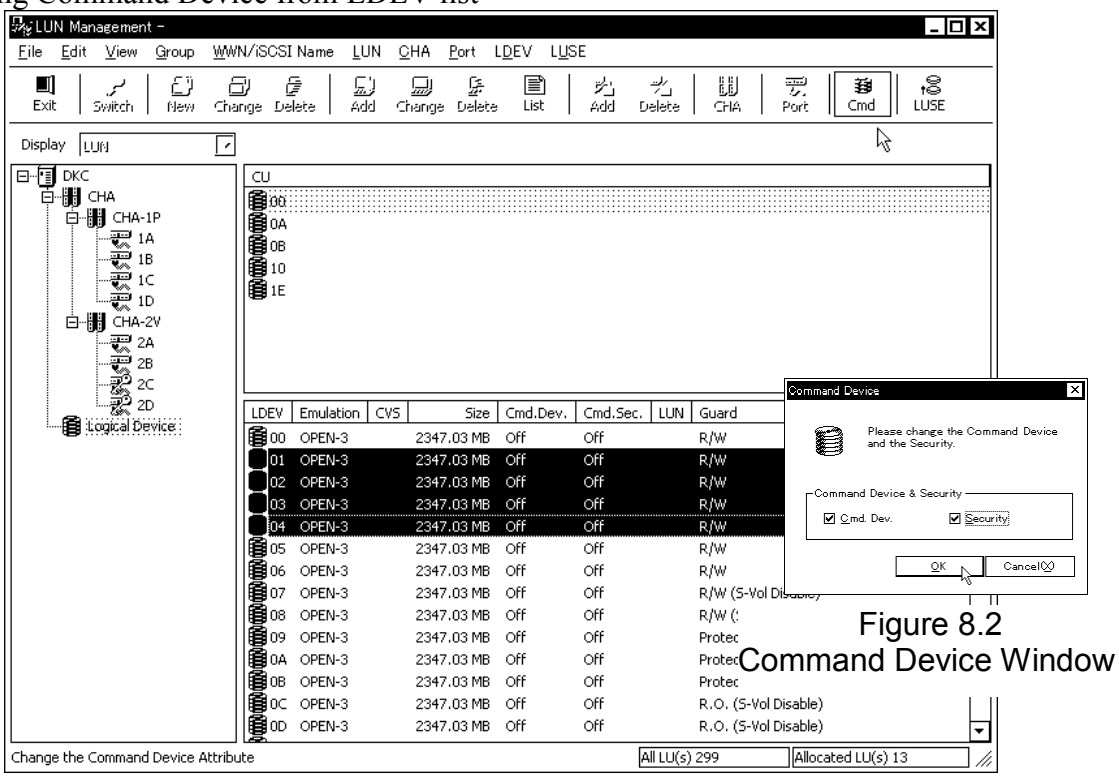

Figure 8.2
Command Device Window

Figure 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 8.1).
③ Since the Command Device window (Figure 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.

Notice: The command device cannot be set for a LUN connected to the iSCSI-Port.

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Table 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. Displayed items: CVS (Defined: “*”, Not defined: No indication), LUN (Defined: “*”, Not defined: No indication) (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.
"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 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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(9) Setting LUSE

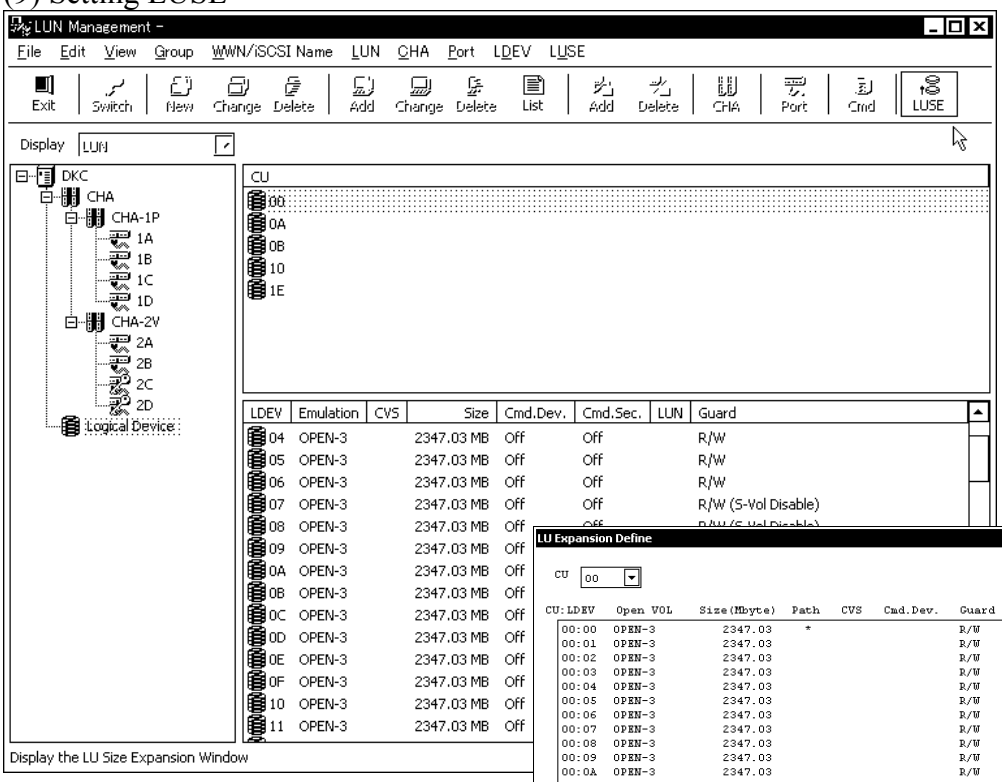

Figure 9.1 Main Window

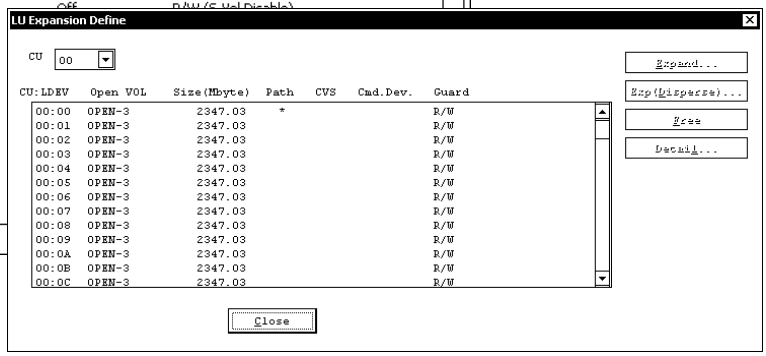

Figure 9.2 LU Expansion Define Window

A change of a LUSE is made in the following procedure. For details, go to INST05-880.

① Select (DR) [LU Size Expansion…]from the [LUSE] menu in the Main window (Figure9.1).

② Since the LU Expansion Define window (Figure 9.2) is displayed, set each items and select (CL) the [OK] button (When 'Change Configuration', select (CL) the [Close] button, because the [Close] button is displayed instead of the [OK]/[Cancel] button).

③ Selected information is defined to the Main Window (Figure9.1).

⚠ CAUTION

The conditions of the LU to connect are follows.

(1) Unconnected LU
(2) LU without SCSI path definition
(3) LU without Command Device definition
(4) LU with same emulation type
(5) LU with same capacity
(6) LU without CVS definition, if you select LU without CVS definition
(7) LU with CVS definition, if you select LU with CVS definition
(8) LU with R/W attribute (when 'Change Configuration')

If you set the LUSE by dispersive LUs, the condition (1) is excluded.

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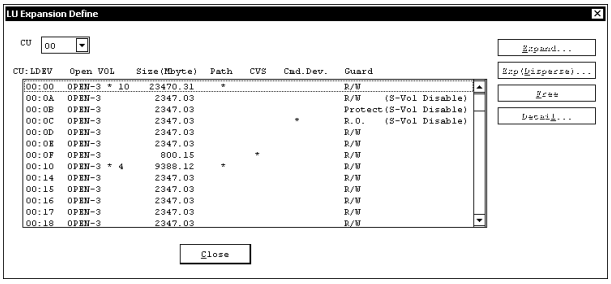
LU Expansion Define window

Detail of the list



- The list is displayed line by line in CU (The selection can be done on CU list).
- The number of LDEVs connected sequentially together which formalize LU Expansion (Open VOL)
  ex.) The first line on the right figure indicates that 10 LDEVs whose emulation type is OPEN-3 are connected together sequentially.
- The existence of LUN definition to the Open VOL.
  ex.) In the first line, '*' shows that CU:LDEV=00:00 and 00:10 have a LUN definition.
- The existence of CVS definition to the Open VOL.
  ex.) In the seventh line '*' shows that CU:LDEV=00:0F has a CVS definition.
- The existence of Command Device (Cmd. Dev.) definition of the Open VOL.
  ex.) In the fourth line '*' shows that CU:LDEV=00:0C has a Command Device definition.
- The attribute of Open LDEV Guard to the Open VOL.

Function	String	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

Detail of the buttons

- [OK] button: To register the setting information (Only when 'Define Configuration & Install')
- [Cancel] button: Not to register the setting information (Only when 'Define Configuration & Install')
- [Expand...] button: To display 'LU Expansion' window (go to (9-1))
- [Exp(Disperse)...] button: To display 'LU Expansion (Disperse)' window (go to (9-2))
- [Free] button: To dissolve LU Expansion consisted of two or more LDEVs (go to (9-3))
- [Detail...] button: To display 'Open VOL Detail' window (go to (9-4))
- [Close] button: To close 'LU Expansion Define' window (Only when 'Change Configuration')

LUSE is set by the continuous LUs or by the dispersive LUs.

- To set the LUSE by the continuous LUs: Go to (9-1)
- To set the LUSE by the dispersive LUs: Go to (9-2)
- To delete the LUSE: Go to (9-3)

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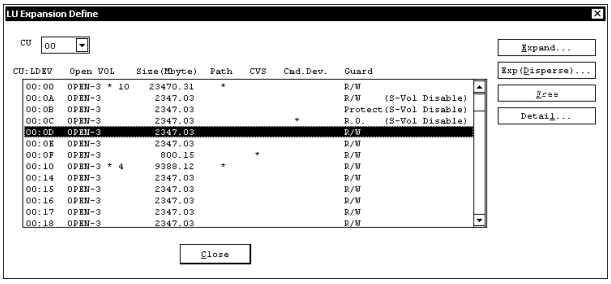
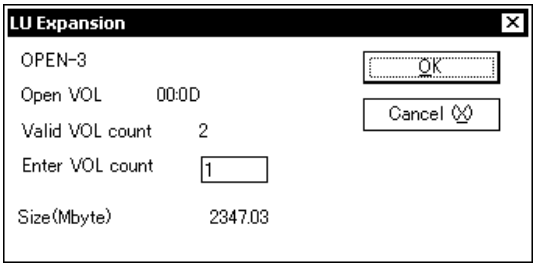
(9-1) The setting of LU Expansion (‘LU Expansion’ window)

Select an LU to define the LUSE and select (CL) [Expand...] button in ‘LU Expansion Define’ window. [Expand...] button comes to be available at the time of selecting connectable LU from the list.



The selected CU:LDEV comes to be the head of Open VOL and also CU:LDEV# comes to be Open VOL#.

‘LU Expansion’ window is displayed.



Detail of displayed information
OPEN-XXX: Emulation type
OPEN VOL: Open VOL# (Selected CU:LDEV#)
Valid VOL count: Total number of LDEVs connectable together (maximum: 36)
Enter VOL count: The input field of connection number
Size [Mbyte]: The capacity of Open VOL

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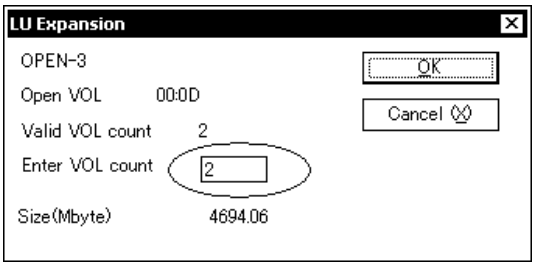
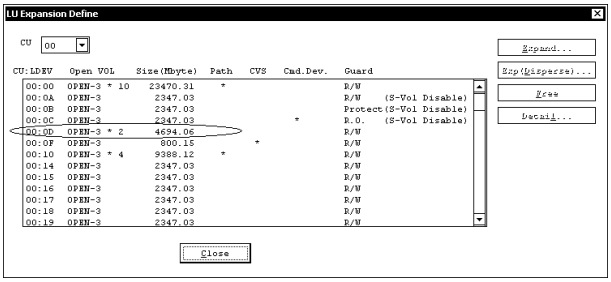
After the input of connection number, select (CL) [OK] button.



The LUSE is displayed in the list of 'LU Expansion Define' window. (The right figure shows the case that 2 LDEVs starting at CU:LDEV=00:0D are connected together.)



When the all LUSEs have been set completely, select (CL) [OK] button.
(When Change Configuration, select (CL) [Close] button.)
Go back to 'LUN Management' window and check the LUSE definition.

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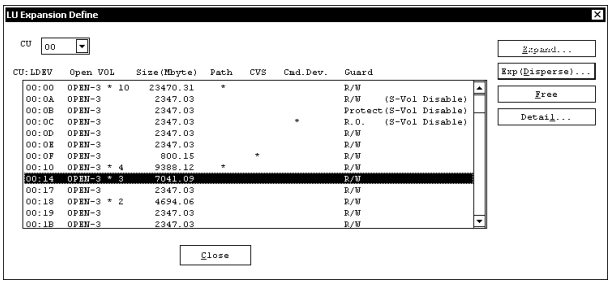
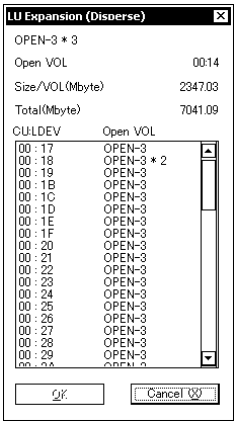
(9-2) The setting of LU Expansion by dispersive LDEV (‘LU Expansion (Disperse)’ window)

Select an LU to define the LUSE and select (CL) [Exp(Disperse)…] button in ‘LU Expansion Define’ window. [Exp(Disperse)…] button comes to be available at the time of selecting connectable LU from the list.



The selected LU comes to be the head of Open VOL and also CU:LDEV# comes to be Open VOL#.

“LU Expansion (Disperse)” window is displayed.



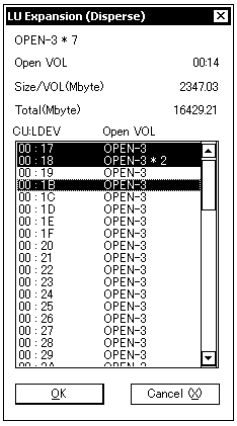
Detail of displayed information:

OPEN-XXX:	Emulation type
Open VOL:	Open VOL#(CU:LDEV# of the top the selected LU)
Size/VOL(Mbyte):	The capacity per one CU:LDEV#
Total(Mbyte):	The capacity of Open VOL
CU:LDEV list:	Connectable CU:LDEV#

After selecting (CL) the LU from the CU:LDEV list, select (CL) [OK] button. (You can connect up to 36 CU:LDEVs or up to 2[TB].)

* In the right figure, CU:LDEV=00:18 is an LUSE including CU:LDEV=00:1A. CU:LDEV=00:19 cannot select at the same time, because the CU:LDEV cannot insert the LUSE.

* When ‘Change Configuration’, only the LU with R/W attribute is listed up.



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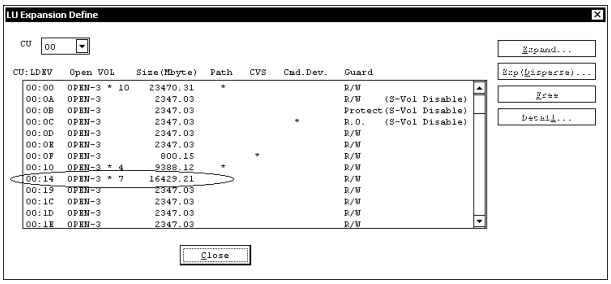
The LUSE is displayed in the list of ‘LU Expansion Define’ window. (The right figure shows the case that CU:LDEV=00:14, 00:15, 00:16, 00:17, 00:18, 00:1A, 00:1B are connected together.)



When the all LUSEs have been set completely, select (CL) [OK] button.
(When Change Configuration, select (CL) [Close] button.)
Go back to ‘LUN Management’ window and check the LUSE definition.

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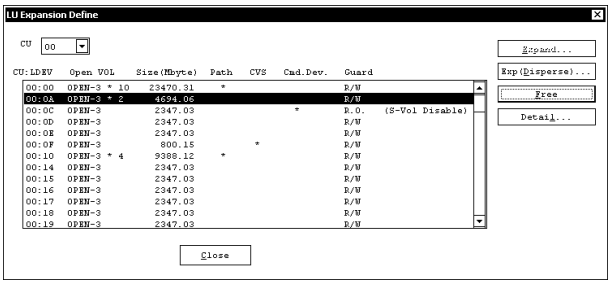
(9-3) Dissolution of Open VOL (‘LU Expansion Define’ window)

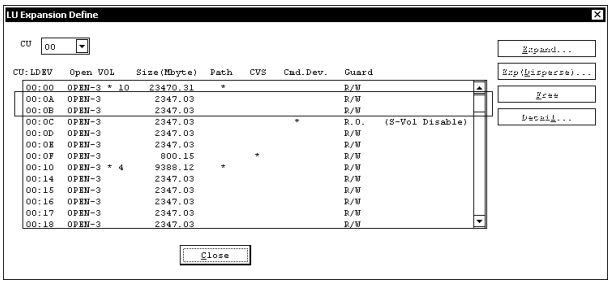
Select an LUSE to dissolve and select (CL) [Free] button on ‘LU Expansion Define’ window.
[Free] button comes to be available at the time that the “Dissolvable” Open VOL is selected in the list.



“Dissolvable” Open VOL denotes the Open VOL which satisfies the following conditions:

- Open VOL which has two or more LDEVs connected
- Open VOL which has no SCSI path definition
- Open VOL which has no Command Device definition
- Open VOL which has R/W attribute (when ‘Change Configuration’)

The dissolved LU is displayed in the list of ‘LU Expansion Define’ window. (The right figure shows the case that Open VOL#=00:0A which consisted of 2 LDEVs has been dissolved.)



Selecting (CL) [OK] button brings you back to ‘LUN Management’ window, and the contents of the window automatically updated.

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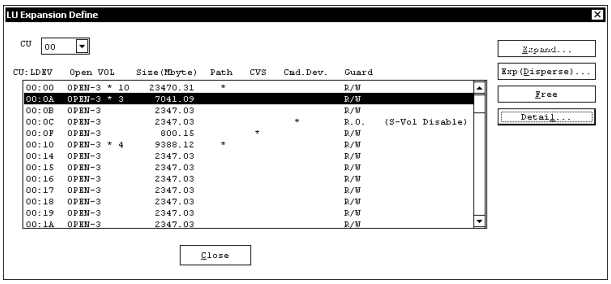
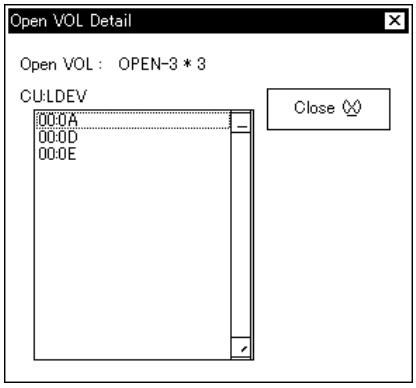
(9-4) Display detail information of Open VOL (‘Open VOL Detail’ window)

After the selection (CL) of LDEV at ‘LU Expansion Define’ window, select (CL) [Detail...] button.



‘Open VOL Detail’ window is displayed.



Detail of displayed information
CU:LDEV : CU:LDEV# of LDEV compose Open VOL

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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.

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(11) Definition of NAS LUN

(11-1) NAS System LUN

(11-1-1) Definition of NAS System LUN

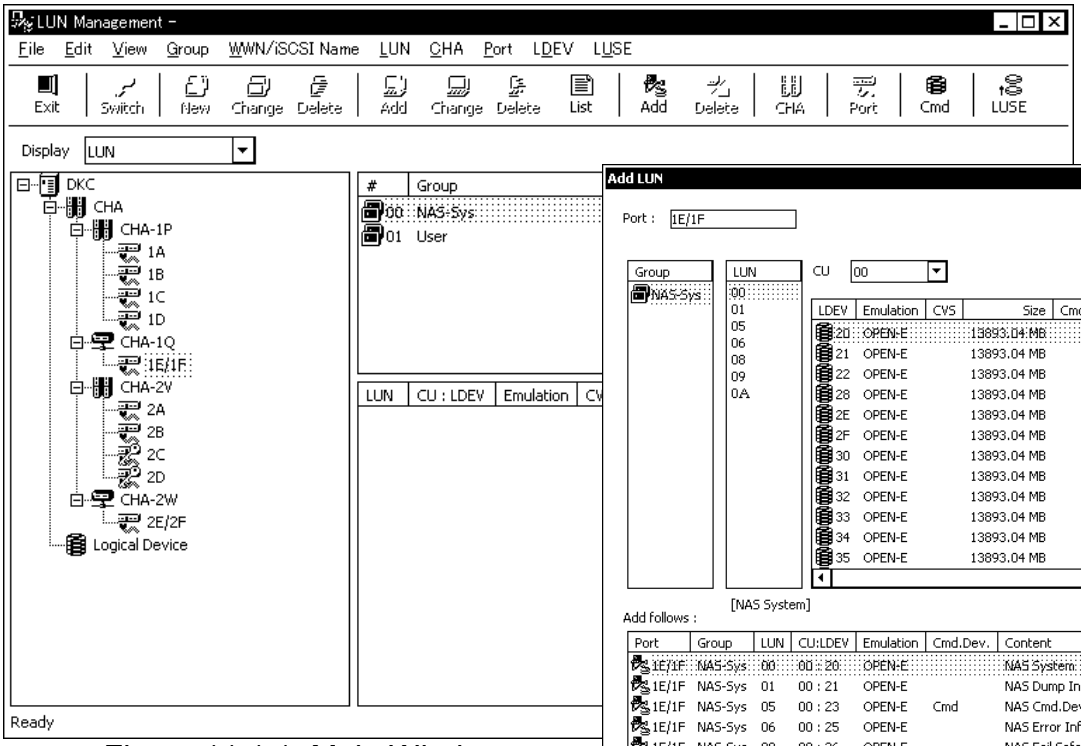

Figure 11.1.1 Main Window

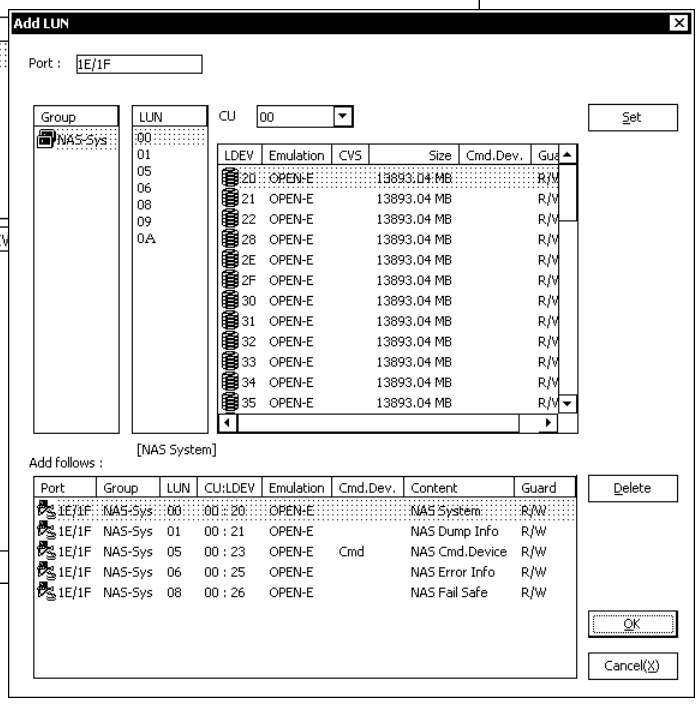

Figure 11.1.2 LUN Registration Window

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 11.1.1, select the NAS port, 1E/1F 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 11.1.1).

③ Since the LUN Registration window (Figure 11.1.2) 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 11.1.1).

(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 11.1.2 because they are set automatically when system LUNs of the other CHNs are defined. (For the system LUN, refer to Tables 11.1.3 and 11.1.4.)

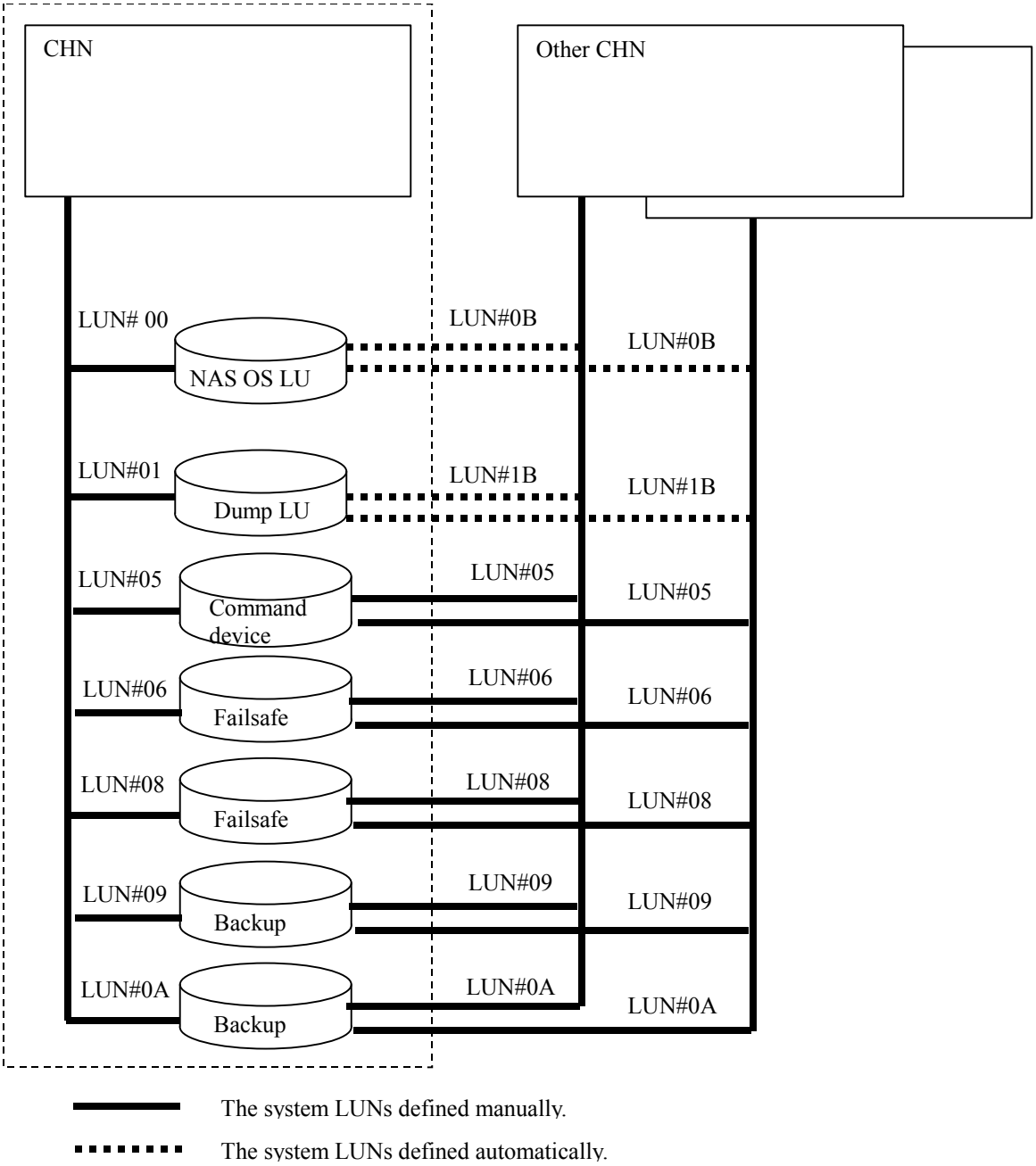

Figure 11.1.3 System LUN concept figure

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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 11.1.1, the LUN#0C and LUN#1C are not defined for the NAS-Sys group of the NAS (1E/1F) port.)

Table 11.1.1 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 11.1.2 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 11.1.3 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

Table 11.1.4 System LUNs of the Other CHNs

For Multi Cabinet Model

LUN#	System LUN	Content	Minimum capacity
0B	NAS OS LU for CHA-1P	NAS System	6667 MB
0C	NAS OS LU for CHA-1Q	NAS System	6667 MB
0D	NAS OS LU for CHA-1R	NAS System	6667 MB
0E	NAS OS LU for CHA-1S	NAS System	6667 MB
0F	NAS OS LU for CHA-2V	NAS System	6667 MB
10	NAS OS LU for CHA-2W	NAS System	6667 MB
11	NAS OS LU for CHA-2X	NAS System	6667 MB
12	NAS OS LU for CHA-2Y	NAS System	6667 MB
1B	Dump LU for CHA-1P	NAS Dump Info	4926 MB
1C	Dump LU for CHA-1Q	NAS Dump Info	4926 MB
1D	Dump LU for CHA-1R	NAS Dump Info	4926 MB
1E	Dump LU for CHA-1S	NAS Dump Info	4926 MB
1F	Dump LU for CHA-2V	NAS Dump Info	4926 MB
20	Dump LU for CHA-2W	NAS Dump Info	4926 MB
21	Dump LU for CHA-2X	NAS Dump Info	4926 MB
22	Dump LU for CHA-2Y	NAS Dump Info	4926 MB

For Single Cabinet Model

LUN#	System LUN	Content	Minimum capacity
0B	NAS OS LU for CHA-1C	NAS System	6667 MB
0C	NAS OS LU for CHA-1D	NAS System	6667 MB
0D	NAS OS LU for CHA-1F	NAS System	6667 MB
0F	NAS OS LU for CHA-2G	NAS System	6667 MB
10	NAS OS LU for CHA-2J	NAS System	6667 MB
11	NAS OS LU for CHA-2K	NAS System	6667 MB
1B	Dump LU for CHA-1C	NAS Dump Info	4926 MB
1C	Dump LU for CHA-1D	NAS Dump Info	4926 MB
1D	Dump LU for CHA-1F	NAS Dump Info	4926 MB
1F	Dump LU for CHA-2G	NAS Dump Info	4926 MB
20	Dump LU for CHA-2J	NAS Dump Info	4926 MB
21	Dump LU for CHA-2K	NAS Dump Info	4926 MB

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In addition, numbers of system LUNs required for the settings are shown in Table 11.1.5.

Notice:
One each of the LUs for the command device, for failure information storage, and for failsafe are required for a subsystem.

Table 11.1.5 Numbers of System LUNs That Must Be Defined

For Multi Cabinet Model

CHA Location		NAS OS LU	Dump LU	Command Device	Failure information storage	Fail-safe + Operation management	Backup data ①	Backup data ②
Basic	CHA-1P	1	1	1	1	1	1	1
	CHA-2V	1	1					
Option	CHA-1Q	1	1					
	CHA-2W	1	1					
Option2	CHA-1R	1	1					
	CHA-2X	1	1					
Option3	CHA-1S	1	1					
	CHA-2Y	1	1					

For Single Cabinet Model

CHA Location		NAS OS LU	Dump LU	Command Device	Failure information storage	Fail-safe	Backup data ①	Backup data ②
Basic	CHA-1C	1	1	1	1	1	1	1
	CHA-2G	1	1					
Option	CHA-1D	1	1					
	CHA-2J	1	1					
Option2	CHA-1F	1	1					
	CHA-2K	1	1					

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(11-1-2) Deleting NAS System LUN

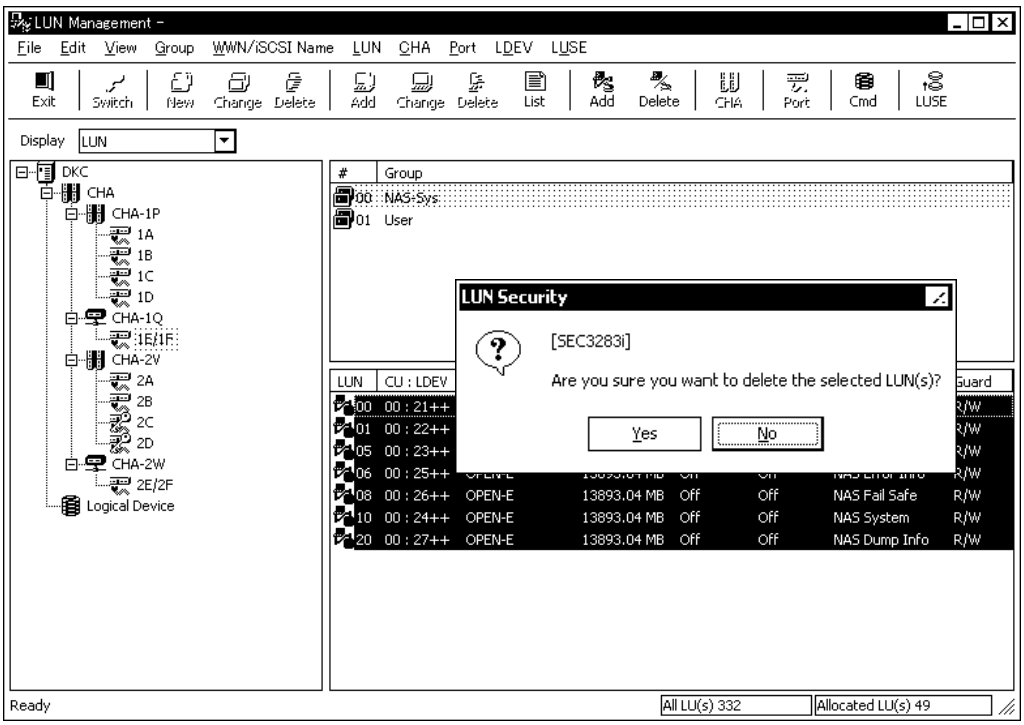

Figure 11.1.4 Main Window

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 11.1.4, select the NAS port, 1E/1F 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, and 08 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, and 08 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 11.1.4).
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 11.1.6 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

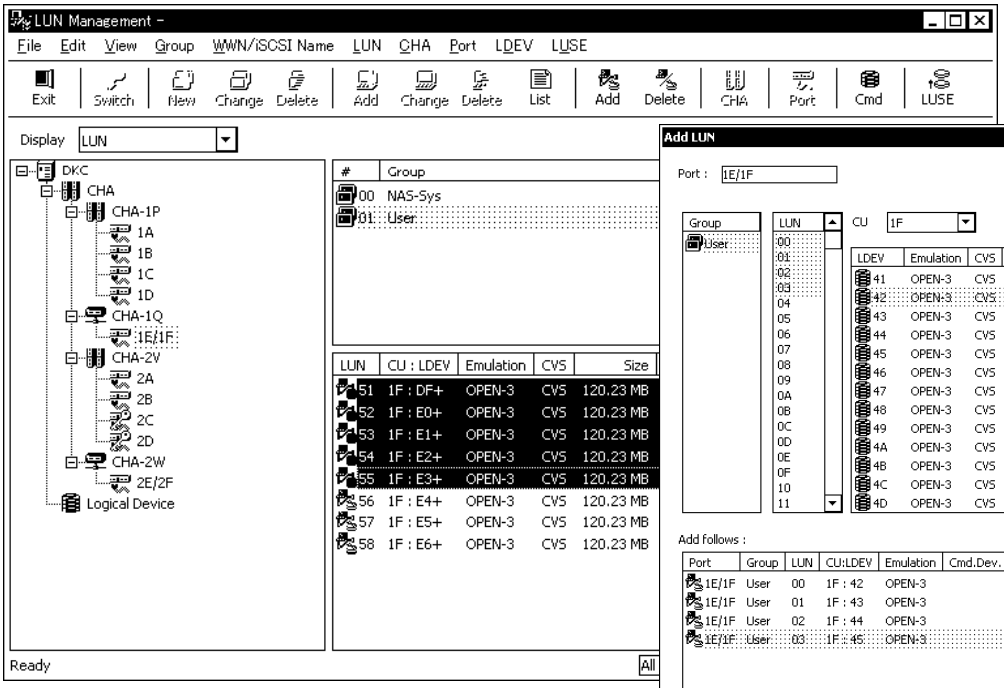

Figure 11.2.1 Main Window

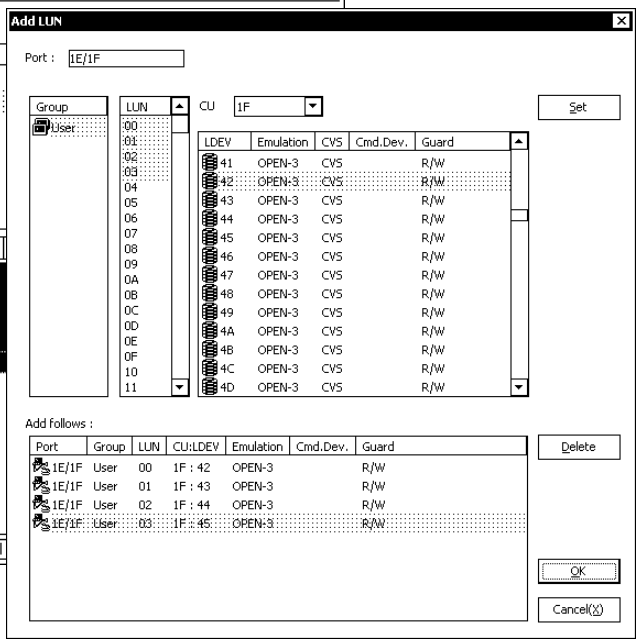

Figure 11.2.2 LUN Registration Window

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 displayed in the upper right list. Select "User" of the Group#01. (In an example shown in Figure 11.2.1, select the NAS port, 1E/1F from the tree diagram.)

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, and 08 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 11.2.1).
③ Since the LUN Registration window (Figure 11.2.2) 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.
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 11.2.1).

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 11.2.1 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 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 11.2.2 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 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

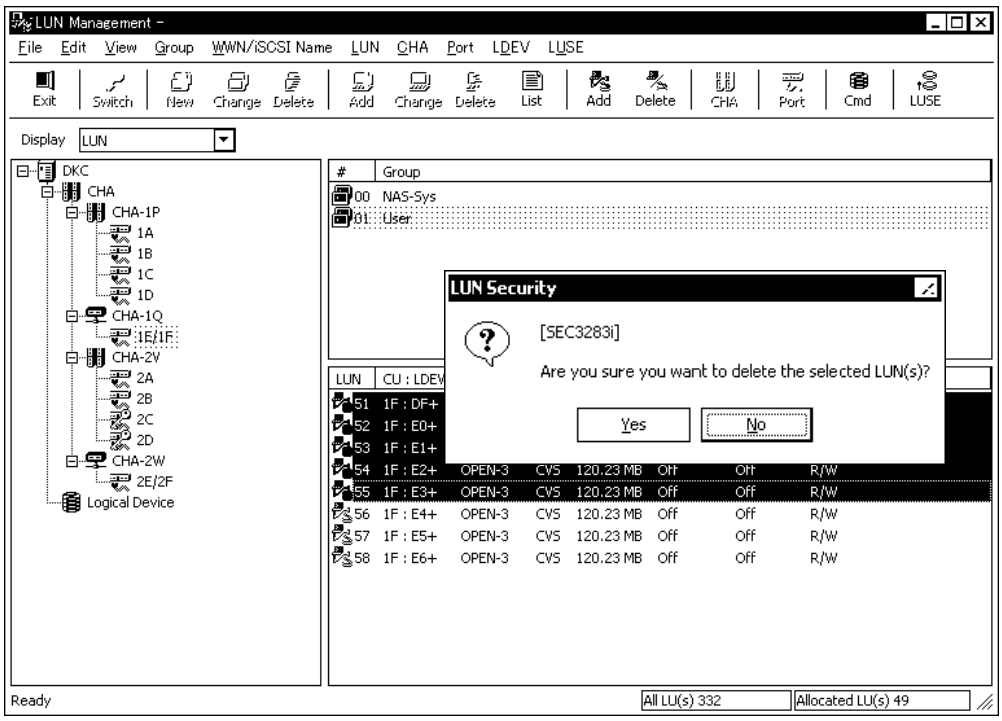

Figure 11.2.3 Main Window

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 11.2.3, select the NAS port, 1E/1F from the tree diagram.)

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.

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 11.2.3).
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.

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Table 11.2.3 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

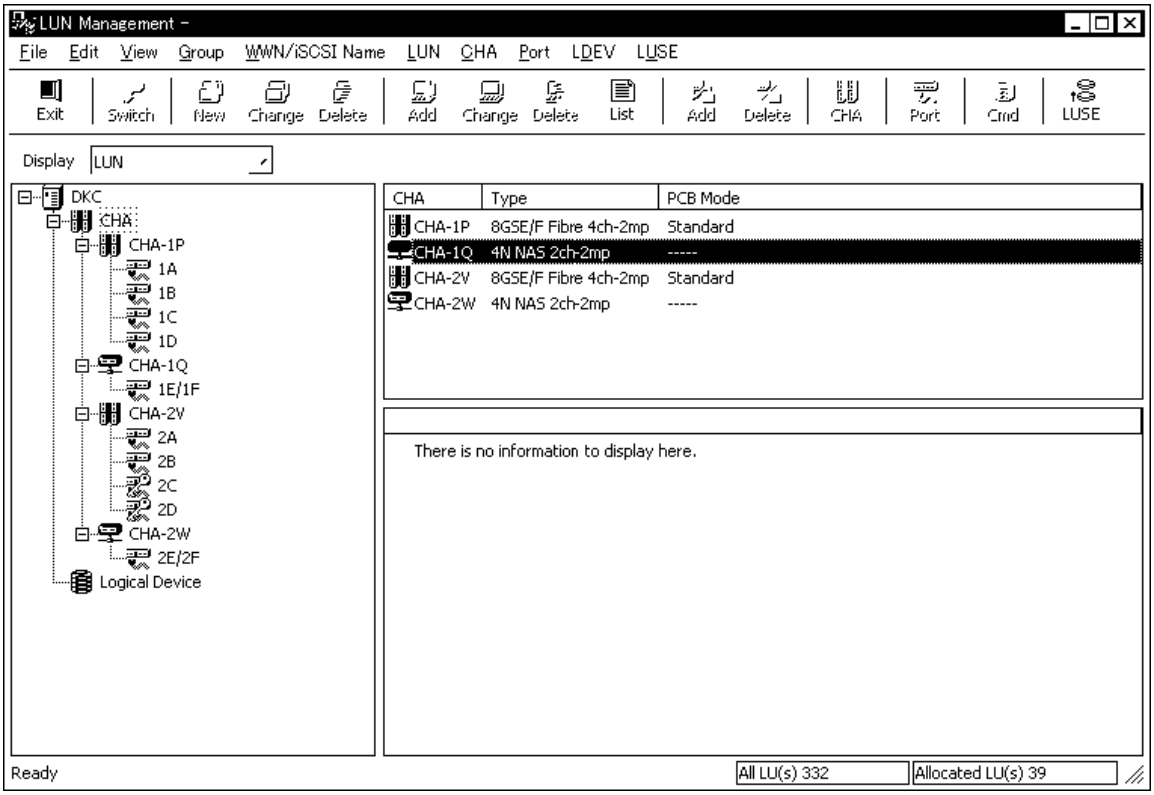

Figure 11.3.1 CHA List Window

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, “4N NAS 2ch-2mp” is displayed in the Type column. There is no setting of the CHA PCB mode for the E-NAS (CHN).

Table 11.3.1 Details and Operation of CHA List Window

Item	Description
Upper list	Displays installed CHA PCB(s) supported by this function.
	Provided with a sorting function.
Lower list	Displays nothing.
“CHA-Change” menu	When the E-NAS (CHN) has been selected, this menu cannot be selected.
“Change” tool bar	
Pop-up menu	

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(11-3-2) Port List window

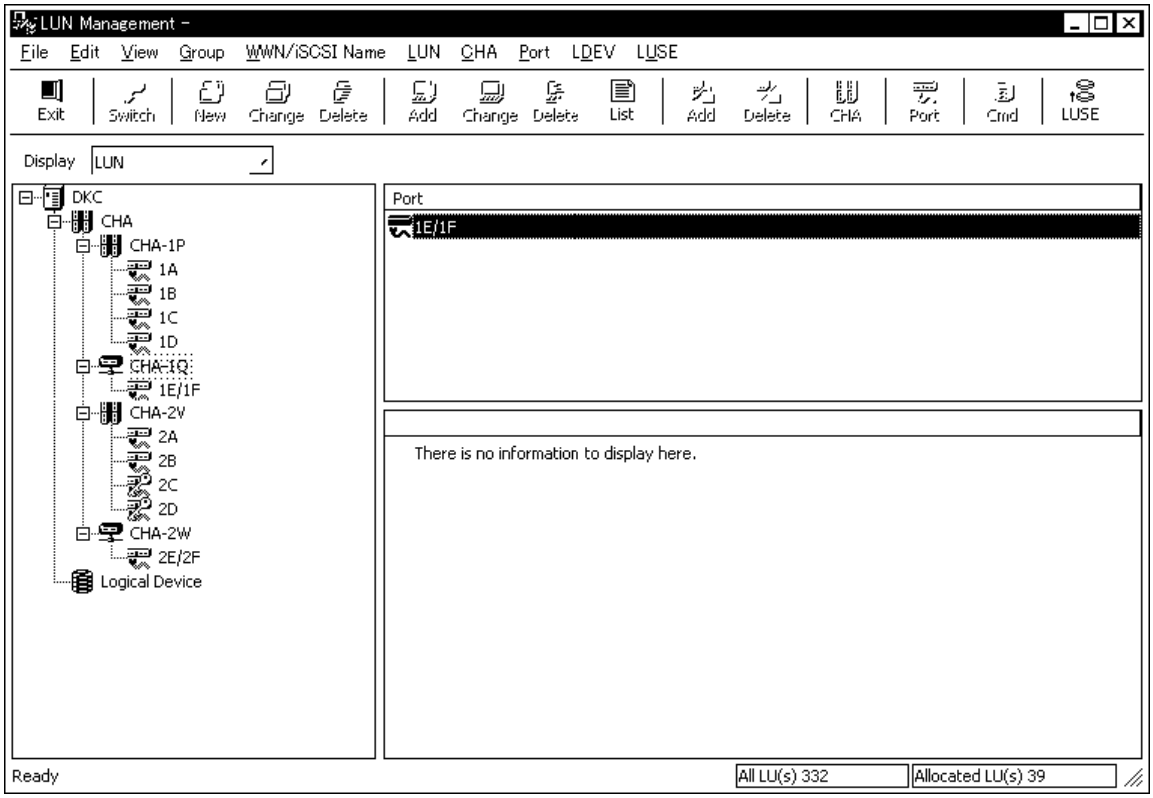

Figure 11.3.2 Port List Window

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 11.3.2 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

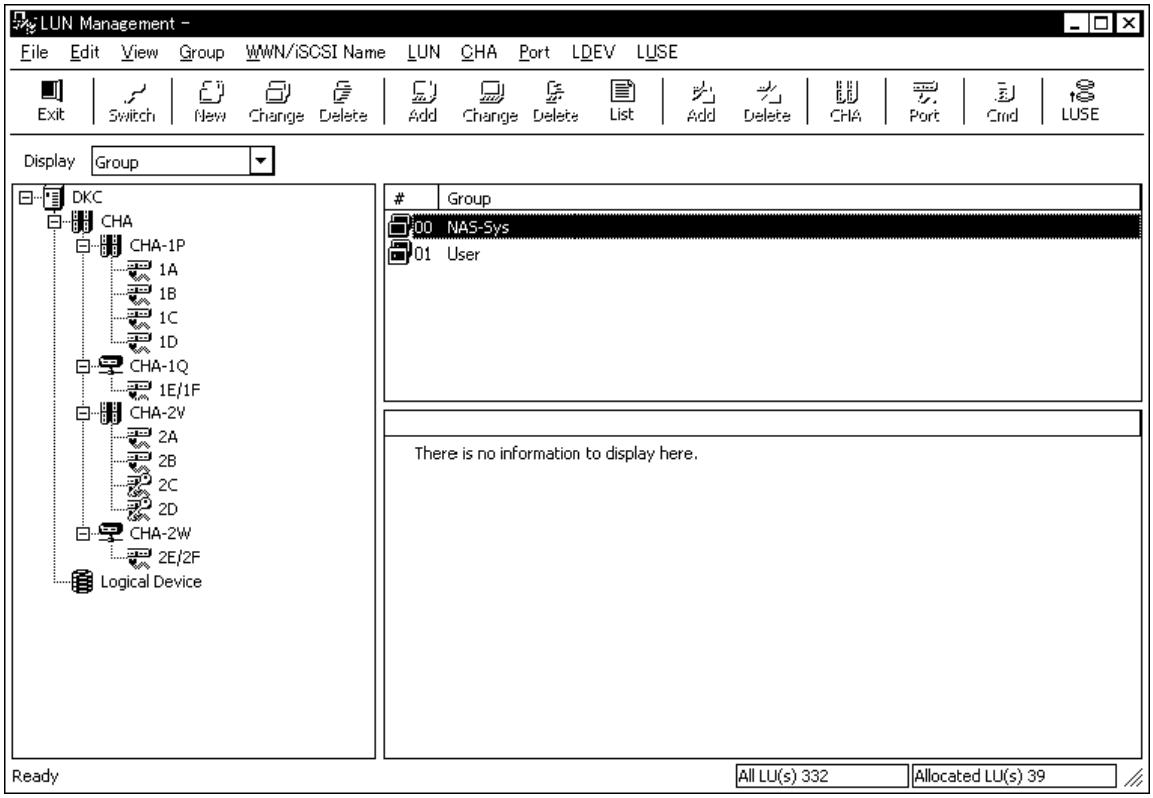

Figure 11.3.3 Group List Window

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 11.3.3, select the NAS port, 1E/1F from the tree diagram.)

Table 11.3.3 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.

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(11-3-4) LDEV List window

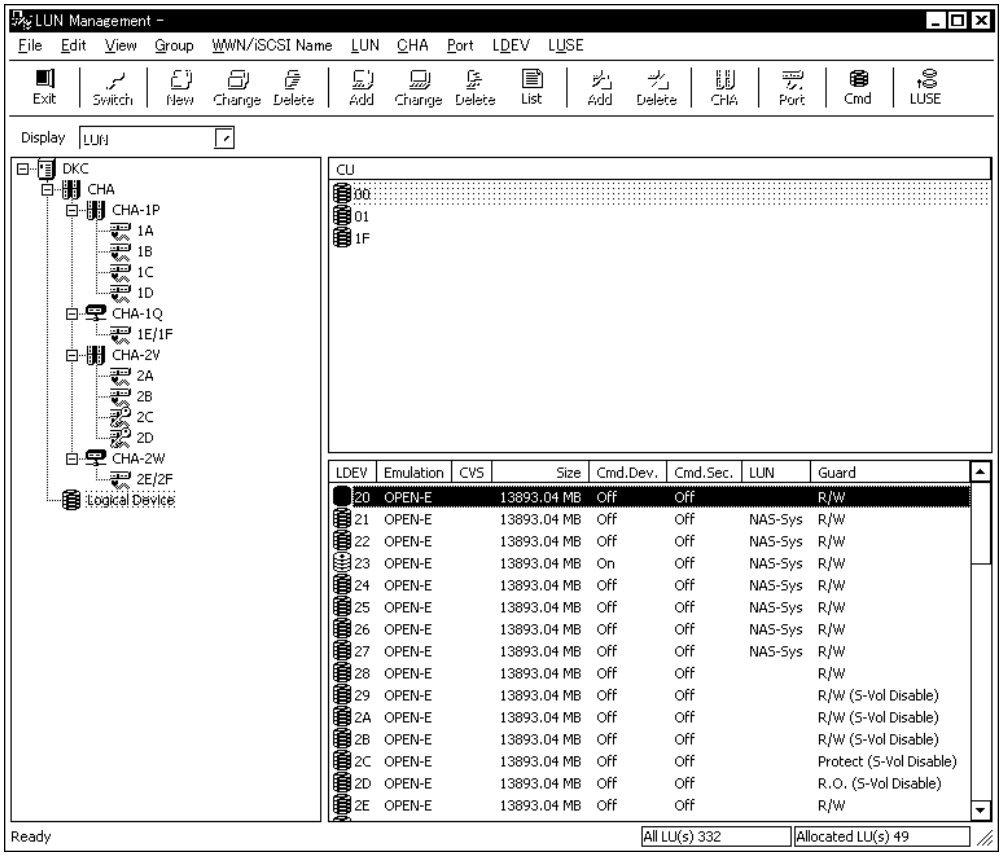

Figure 1.3.4 LDEV List Window

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 11.3.4 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

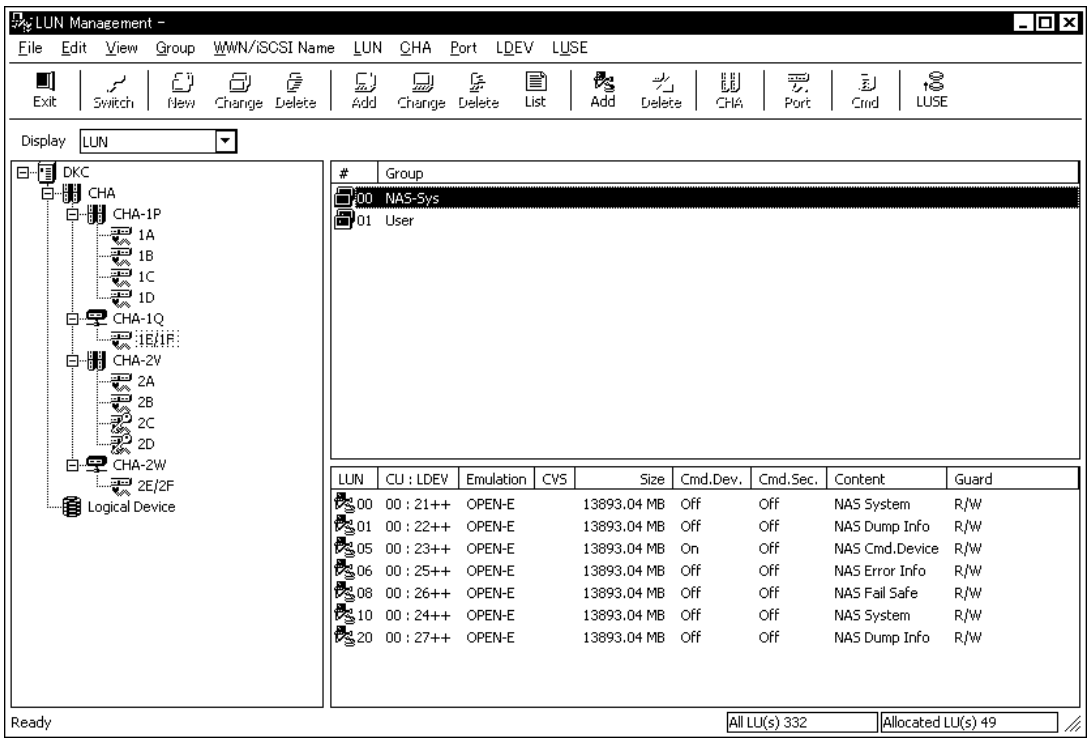

Figure 11.3.5 System LUN List Window

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.

Table 11.3.5 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 11.3.6 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 11.3.5, the LUN#0C and LUN#1C are not defined for the NAS-Sys group of the NAS (1E/1F) port.)

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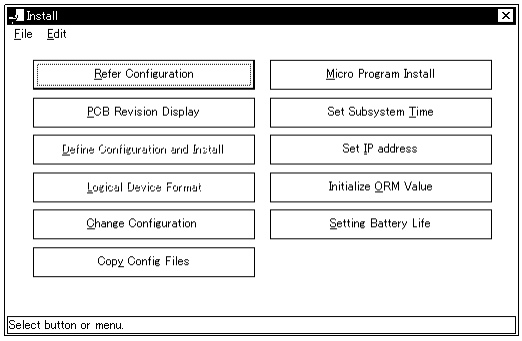
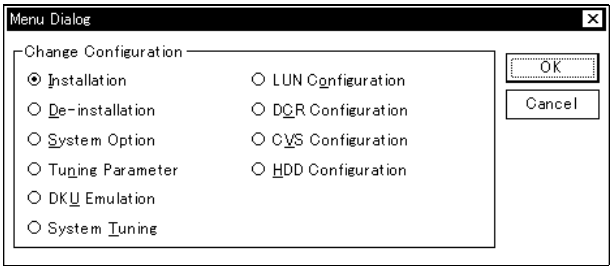
5.3.4 Emulation Type Change

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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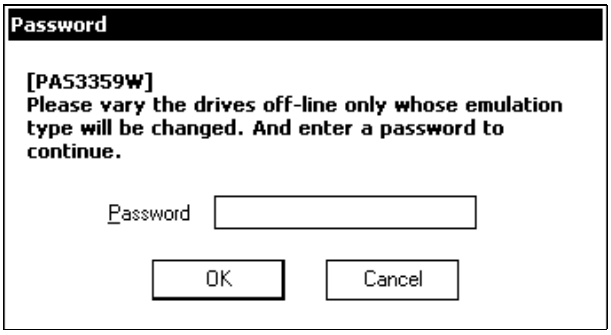
4. <Input password>

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 drive for which the emulation type is to be changed is selected, and requires an input of a password. Ask the technical support center 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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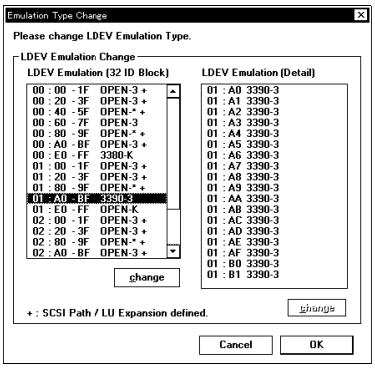
5. Emulation Change Procedure

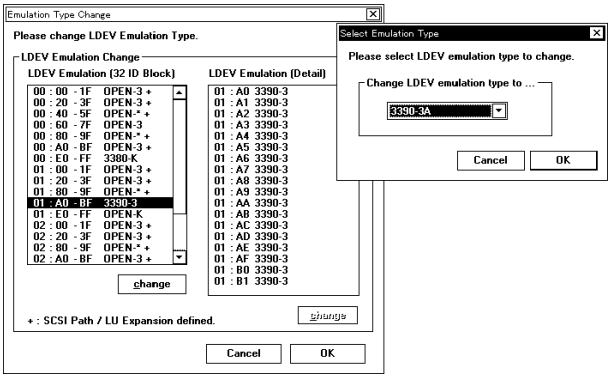
- Emulation Type Change for Single Block----------Go to step 5.1.
- Emulation Type Change for Single LDEV----------Go to step 5.2.
- Emulation Type Change for Multiple Blocks----------Go to step 5.3.
- Individual Emulation Type Change for Multiple LDEVs--------Go to step 5.4.

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.

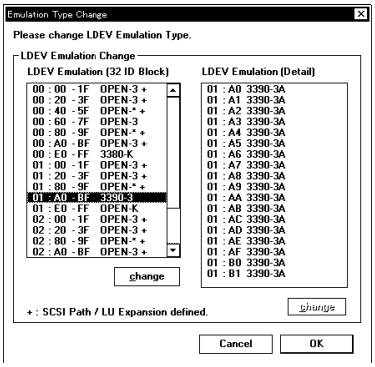


In the following case, the[Change] button is not available. (It's concerned with a "+" indicated LDEV.)

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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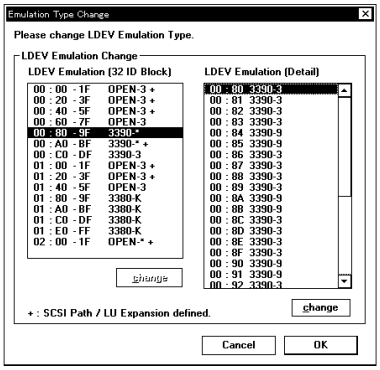
5.2 Emulation Type Change for Single LDEV

(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.

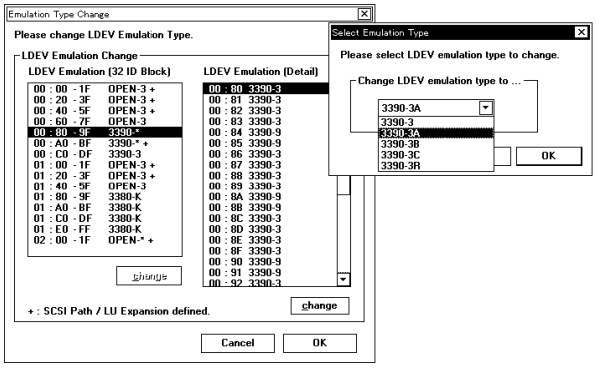


(2) In the LDEV Emulation (Detail) list box, select (CL) an LDEV whose emulation type to be changed.

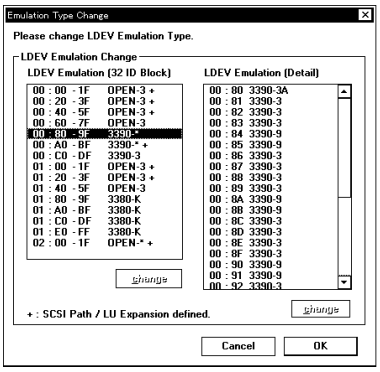
(3) Select (CL) [Change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.

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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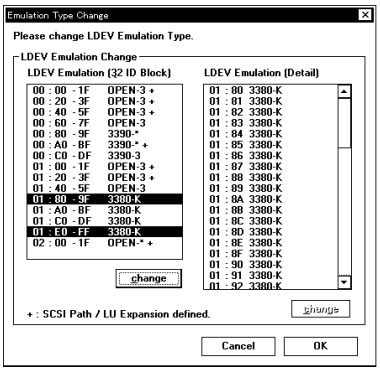
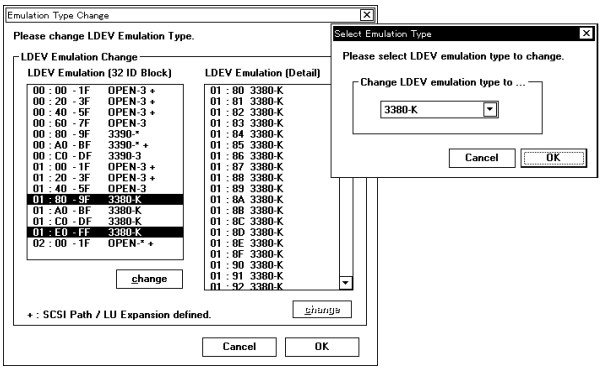
5.3 Emulation Type Change for Multiple Blocks

(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.

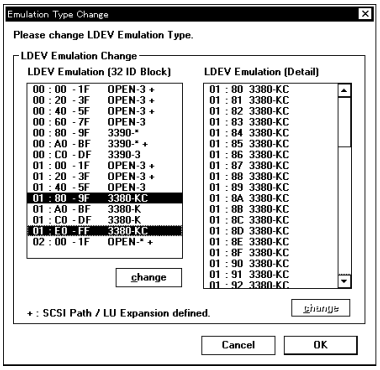


In the following case, the [Change] button is not available. (It's concerned with a "+" indicated LDEV.)

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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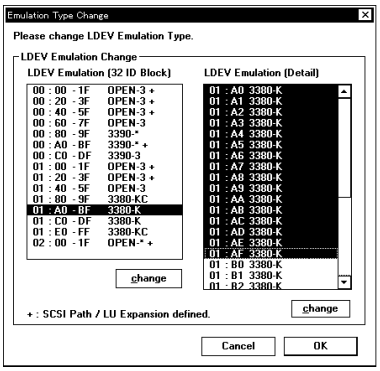
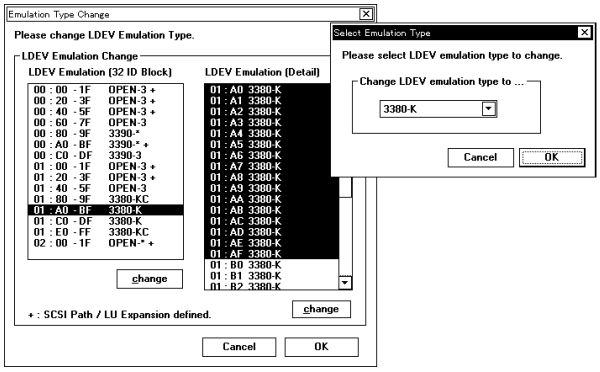
5.4 Individual Emulation Type Change for Multiple LDEVs

(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.

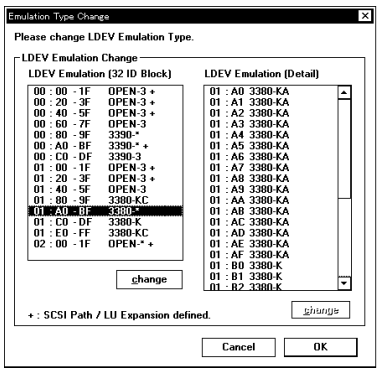
(3) Select (CL) [Change] beneath the LDEV Emulation (Detail) list box to open the dialog box for (choosing) the emulation type to be changed, and select (CL) the changed emulation type.



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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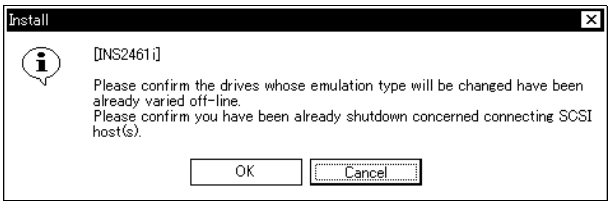
6.

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].



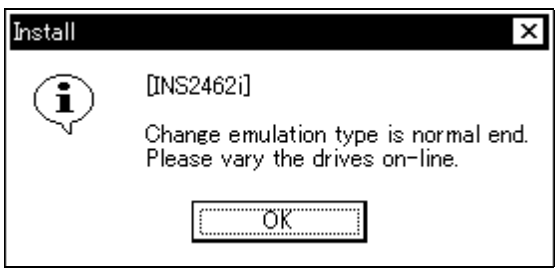
When [Cancel] is selected (CL), the processing is aborted.

8.

"Changing DKU Emulation" is displayed.

9. <Drive Vary On-line>

When the emulation type change processing terminates normally, the message "Changing 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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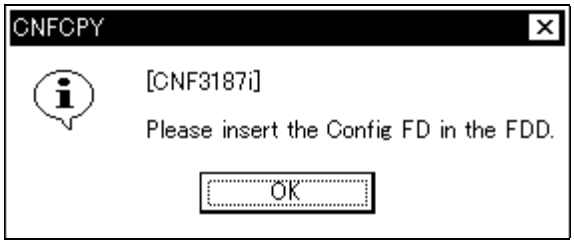
10.

"Reading subsystem configuration data..." is displayed.
"Please insert the Config FD in the FDD" is displayed.
Insert the Config FD into FDD, and select (CL) [OK].

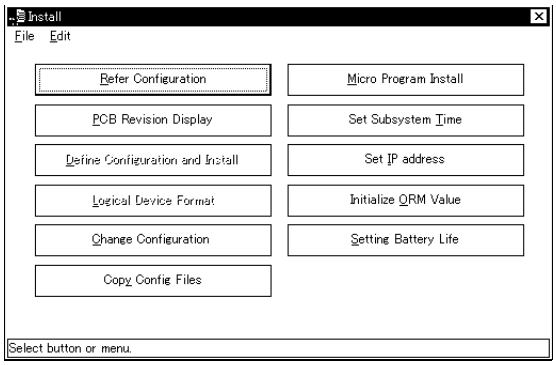


11.

When this procedure is completed, the message "Please remove the Config FD" 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

NOTICE
Powering off/on is required owing to the performance of this operation.

NOTICE
- The Case where IP Address is changed from System Tuning, when SVP High Reliability kit is installed.
  When SVP High Reliability kit is installed, Both Master SVP and Standby SVP need to be set IP Address.
  Firstly power on Standby SVP, and set IP Address of Standby SVP. (Refer to [INST05-60])
  After completing it, please set the IP Address of Master SVP.
  Although “RC=7ff200” may occur, there is no problem. Please complete SIM before 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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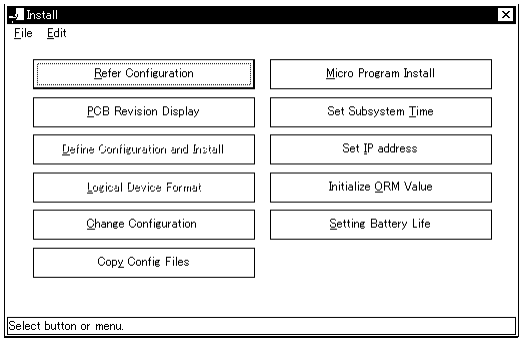
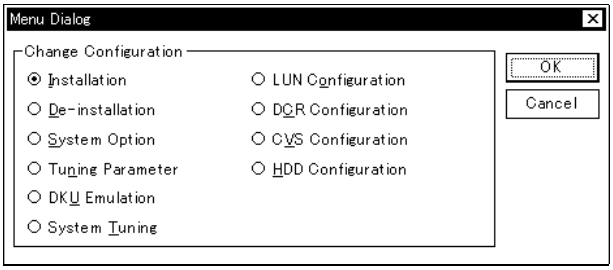
2.

Select [Change Configuration] (CL) from 'Install'.



3. <Specify the beginning of installation>
Select [System Tuning] from 'Menu Dialog' (CL), and select [OK] (CL).

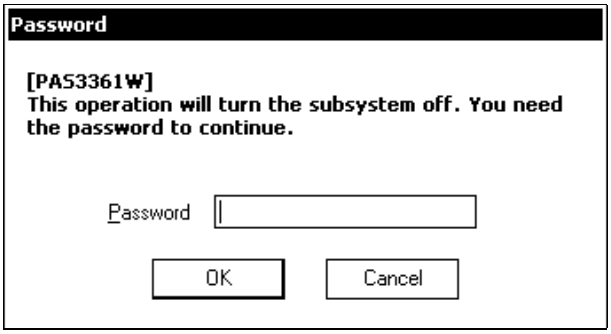


4.

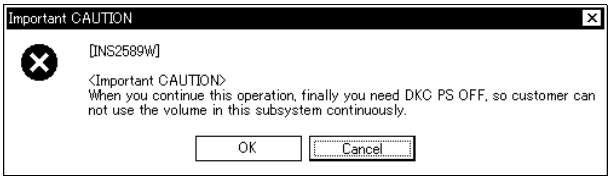
NOTICE
Powering off/on is required owing to the performance of this operation.
Ask the technical support center about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

(1) Enter the password and select [OK] (CL).
Password is needed for this operation.
Please call Technical Support Center 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. <Define configuration information>

Define the device configuration information from 'DKC Configuration' according to the device configuration worksheet.
Set Power Supply Type:

[Power Supply…] is selected (CL). Go to step 7.

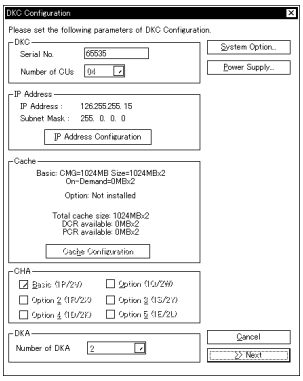
Set IP address:

[IP Address Configuration] is selected (CL). Go to step 8.

Other setting:

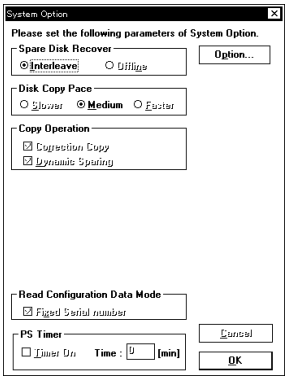
[>>Next] is selected (CL). Go to step 9.

This procedure finishes when select [Cancel].



6. <System option setup>

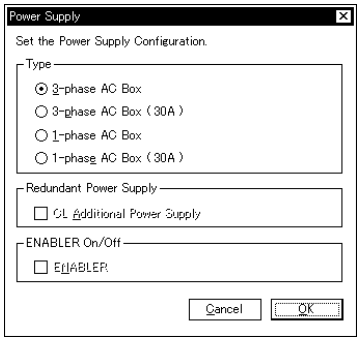
Define the device configuration information from 'System Option' according to the device configuration worksheet.
After setting up all items, select [OK] (CL).
The next message screen is displayed.
When you select [Cancel] (CL), 'System Option' is closed and 'DKC Configuration' appears again.
Return to step 5.



7. <Set Power Supply>

Set the power supply information in the 'Power Supply' dialog box, and select (CL) [OK].

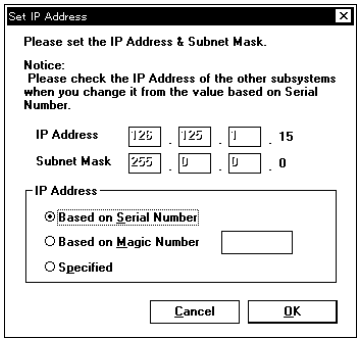
Return to step 5.



8. <Set IP Address>

Set the IP Address and Subnet Mask in the 'Set IP Address' dialog box, and select (CL) [OK].

Return to step 5.



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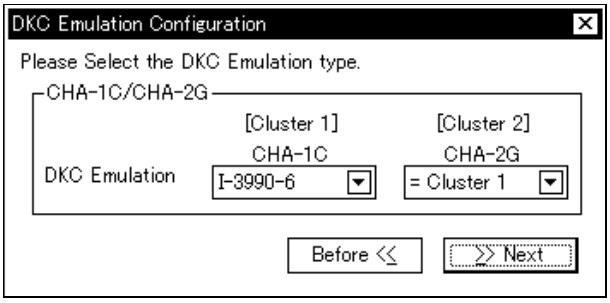
9. <Setting DKC Emulation type>

Set the subsystem configuration information in the 'DKC Emulation Configuration' window according to the subsystem configuration information work sheet.
After the setting is completed, select (CL) [>>Next]. Go to step 9-1.
When [Before<<] is selected (CL), the routine returns to step 5.

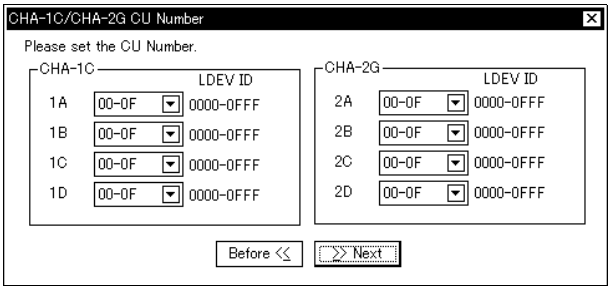


Note: This windows is displayed when Serial (8S) Channel or MFibre (8MS, 8ML) Channel is installed.

9-1. <Setting CU number>

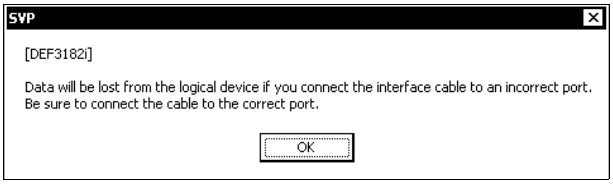
CU number is displayed.
After the setting is completed, select (CL) [>>Next]. Go to step 9-2.
When [Before<<] is selected (CL), the routine returns to step 9.

Note: This windows is displayed when Serial (8S) Channel is installed.



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 (8S) Channel is installed.

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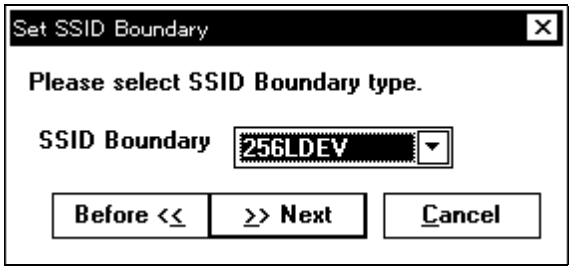
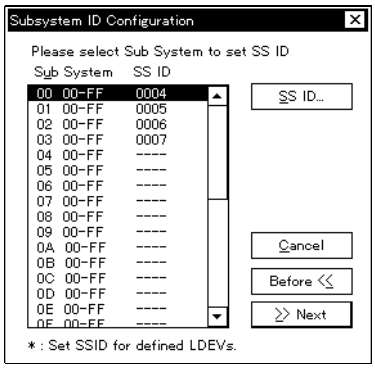
10. <Define Subsystem ID Boundary>

Set the Subsystem ID Boundary in the "Set SSID Boundary" dialog box.
Select (CL) [>>Next].



10-1. <Define Subsystem ID>

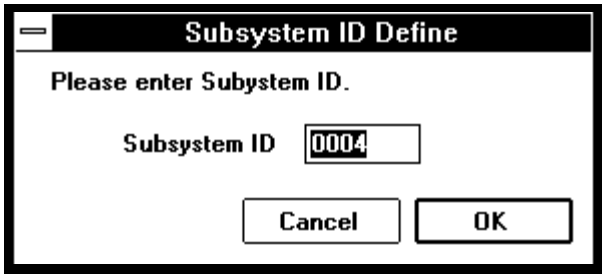
To define Subsystem ID, select (CL) [SSID]. Go to step 11.
After setting, select (CL) [>>Next]. Go to step 12.
This procedure is terminated by selecting (CL) [Cancel].



11.

Define Subsystem ID and select (CL) [OK].
Return to step 10.

"Checking subsystem configuration..." is displayed.



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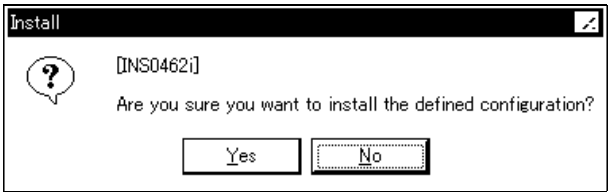
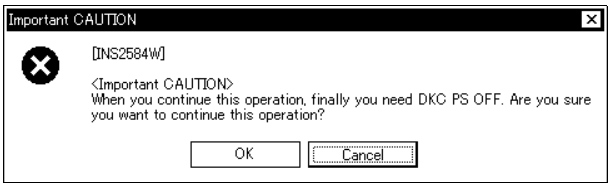
12. <Include configuration information>

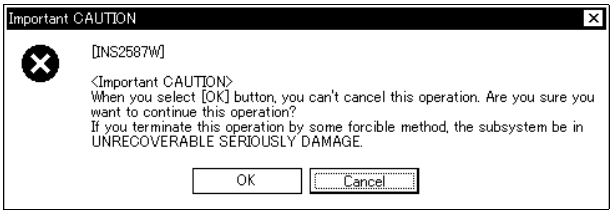
(1) Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?".
"Wait..." is displayed, then "Turn off the subsystem" is displayed.
Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.



(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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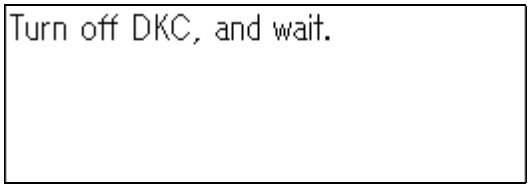
13.

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.

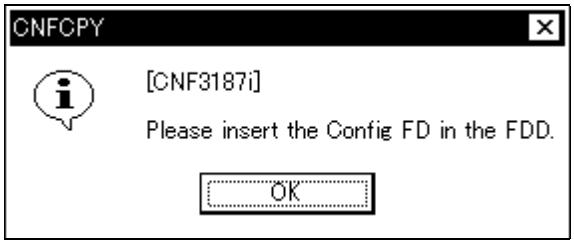


14.

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.

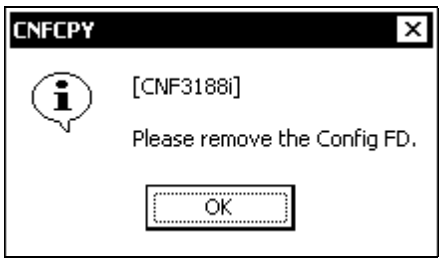
15.

Insert the configuration FD into FDD, and select [OK].



16.

When this procedure is completed, the message “Please remove the Config FD.” is displayed.
Remove the FD, and then select [OK].



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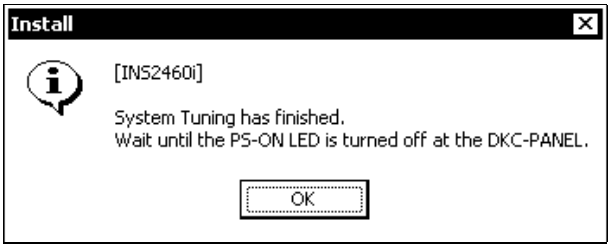
17.

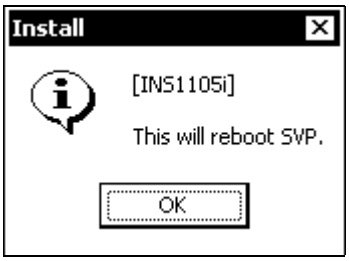
After making sure that the DKC power is turned off, select [OK] (CL) in response to "System Tuning has finished.".

Note : SVP power will not turn off even when DKC is powered off.



18.

"This will reboot SVP." is displayed.
Select [OK] (CL).



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7 TPF installation procedures

7.1 Preparations

(a) Get additional SM parts by the number you need according to INST01-70.
(b) Get the "Configuration" floppy disk which supports the MPLF/RC (or TPF) function from T.S.C.

7.2 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 ((3-1) '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 INST01-70, install the required number of additional SM parts.
- Remove Jumper connectors (BTJP) from BAT CTR. And wait for 5 minutes. (volatile CACHE, SM)
- Reconnect Jumper connectors.

(e) Starting TPF Micro-program.
- Turn on the DKC power switch.

(f) Confirming the TPF MODE.
- Select (CL) [DUMP] in the "SVP" window.
- Confirm that "TPF" is shown in the "DUMP" dialog box.

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8 Storage Capacity and Cache Capacity Upgrade Table

8.1 Standard Configuration for RAID5 (3D+1P)

(1) 36GB 15K rpm HDD, RAID5 (3D+1P) INST08-20
(2) 73GB 10K rpm HDD, RAID5 (3D+1P) INST08-30
(3) 146GB 10K rpm HDD, RAID5 (3D+1P) INST08-35
(4) 72GB 15K rpm HDD, RAID5 (3D+1P) INST08-37

8.2 Standard Configuration for RAID5 (7D+1P)

(1) 36GB 15K rpm HDD, RAID5 (7D+1P) INST08-40
(2) 73GB 10K rpm HDD, RAID5 (7D+1P) INST08-50
(3) 146GB 10K rpm HDD, RAID5 (7D+1P) INST08-60
(4) 72GB 15K rpm HDD, RAID5 (7D+1P) INST08-65

8.3 Standard Configuration for RAID1 (2D+2D)

(1) 36GB 15K rpm HDD, RAID1 (2D+2D) INST08-80
(2) 73GB 10K rpm HDD, RAID1 (2D+2D) INST08-90
(3) 146GB 10K rpm HDD, RAID1 (2D+2D) INST08-100
(4) 72GB 15K rpm HDD, RAID1 (2D+2D) INST08-105

8.4 Standard Configuration for OPEN-V

(1) 36GB 15K rpm HDD, OPEN-V INST08-110
(2) 73GB 10K rpm HDD, OPEN-V INST08-120
(3) 146GB 10K rpm HDD, OPEN-V INST08-130
(4) 72GB 15K rpm HDD, OPEN-V INST08-140

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8.1 Standard Configuration for RAID5 (3D+1P)

(1) 36GB 15K rpm HDD, RAID5 (3D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options			
		Open System						Mainframe System							
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		DKC-F460I-2048	DKC-F460I-S512	DKC-F465I-FSW	DKU-F455I-36K4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap				
1	2	43	106	14	103	7	102	35	99	11	94	1	*1		1
2	4	86	212	28	207	14	204	70	199	22	187	2			2
3	4	129	317	42	310	21	306	105	298	33	281	2			3
4	4	172	423	56	414	28	408	140	397	44	374	2			4
5	4	215	529	70	517	35	510	175	497	55	468	2			5
6	4	258	635	84	620	42	612	210	596	66	562	2			6
7	6	301	741	98	724	49	714	245	695	77	655	3			7
8	6	344	847	112	827	56	816	280	795	88	749	3			8
9	6	387	952	126	930	63	918	315	894	99	842	3			9
10	6	430	1,058	140	1,034	70	1,020	350	993	110	936	3			10
11	6	473	1,164	154	1,137	77	1,122	385	1,093	121	1,030	3			11
12	6	516	1,270	168	1,241	84	1,224	420	1,192	132	1,123	3			12
13	6	559	1,376	182	1,344	91	1,326	455	1,291	143	1,217	3			13
14	8	602	1,482	196	1,447	98	1,428	490	1,391	154	1,311	4			14
15	8	645	1,587	210	1,551	105	1,530	525	1,490	165	1,404	4			15
16	8	688	1,693	224	1,654	112	1,632	560	1,589	176	1,498	4		1	16
17	8	731	1,799	238	1,757	119	1,734	595	1,689	187	1,591	4		1	17
18	8	774	1,905	252	1,861	126	1,836	630	1,788	198	1,685	4		1	18
19	8	817	2,011	266	1,964	133	1,938	665	1,887	209	1,779	4		1	19
20	8	860	2,116	280	2,068	140	2,040	700	1,987	220	1,872	4		1	20
21	8	903	2,222	294	2,171	147	2,141	735	2,086	231	1,966	4		1	21
22	8	946	2,328	308	2,274	154	2,243	770	2,185	242	2,059	4		1	22
23	8	989	2,434	322	2,378	161	2,345	805	2,285	253	2,153	4		1	23
24	8	1,032	2,540	336	2,481	168	2,447	840	2,384	264	2,247	4		1	24
25	8	1,075	2,646	350	2,584	175	2,549	875	2,483	275	2,340	4		1	25
26	8	1,118	2,751	364	2,688	182	2,651	910	2,583	286	2,434	4		1	26
27	10	1,161	2,857	378	2,791	189	2,753	945	2,682	297	2,527	5		1	27
28	10	1,204	2,963	392	2,895	196	2,855	980	2,781	308	2,621	5		1	28
29	10	1,247	3,069	406	2,998	203	2,957	1,015	2,881	319	2,715	5		1	29
30	10	1,290	3,175	420	3,101	210	3,059	1,050	2,980	330	2,808	5		1	30
31	10	1,333	3,281	434	3,205	217	3,161	1,085	3,079	341	2,902	5		1	31

*1: The number of the Shard Memory option (DKC-F460I-S512) necessary is refer to table 1.1.2-3 in INST01-60 and table 1.1.2-4 in INST01-70. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option, DKA option and the Channel options are required.

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(2) 73GB 10K rpm HDD, RAID5 (3D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options			
		Open System								Mainframe System							
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		DKC-F460I -2048	DKC-F460I -S512	DKC-F465I -FSW	DKU-F455I -72J4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap				
1	4	88	217	29	214	15	219	6	219	73	207	24	204	2	*1		1
2	4	176	433	58	428	30	437	12	437	146	414	48	408	2			2
3	4	264	650	87	642	45	656	18	656	219	622	72	613	2			3
4	6	352	866	116	857	60	874	24	875	292	829	96	817	3			4
5	6	440	1,083	145	1,071	75	1,093	30	1,094	365	1,036	120	1,021	3			5
6	6	528	1,299	174	1,285	90	1,311	36	1,312	438	1,243	144	1,225	3			6
7	8	616	1,516	203	1,499	105	1,530	42	1,531	511	1,450	168	1,430	4			7
8	8	704	1,733	232	1,713	120	1,748	48	1,750	584	1,657	192	1,634	4			8
9	8	792	1,949	261	1,927	135	1,967	54	1,968	657	1,865	216	1,838	4			9
10	8	880	2,166	290	2,141	150	2,185	60	2,187	730	2,072	240	2,042	4			10
11	8	968	2,382	319	2,355	165	2,404	66	2,406	803	2,279	264	2,247	4			11
12	8	1,056	2,599	348	2,570	180	2,622	72	2,624	876	2,486	288	2,451	4			12
13	8	1,144	2,815	377	2,784	195	2,841	78	2,843	949	2,693	312	2,655	4			13
14	10	1,232	3,032	406	2,998	210	3,059	84	3,062	1,022	2,900	336	2,859	5			14
15	10	1,320	3,249	435	3,212	225	3,278	90	3,281	1,095	3,108	360	3,064	5			15
16	10	1,408	3,465	464	3,426	240	3,496	96	3,499	1,168	3,315	384	3,268	5		1	16
17	10	1,496	3,682	493	3,640	255	3,715	102	3,718	1,241	3,522	408	3,472	5		1	17
18	10	1,584	3,898	522	3,854	270	3,933	108	3,937	1,314	3,729	432	3,676	5		1	18
19	10	1,672	4,115	551	4,069	285	4,152	114	4,155	1,387	3,936	456	3,881	5		1	19
20	10	1,760	4,331	580	4,283	300	4,370	120	4,374	1,460	4,143	480	4,085	5		1	20
21	10	1,848	4,548	609	4,497	315	4,589	126	4,593	1,533	4,351	504	4,289	5		1	21
22	10	1,936	4,764	638	4,711	330	4,807	132	4,811	1,606	4,558	528	4,493	5		1	22
23	10	2,024	4,981	667	4,925	345	5,026	138	5,030	1,679	4,765	552	4,698	5		1	23
24	10	2,112	5,198	696	5,139	360	5,244	144	5,249	1,752	4,972	576	4,902	5		1	24
25	10	2,200	5,414	725	5,353	375	5,463	150	5,468	1,825	5,179	600	5,106	5		1	25
26	10	2,288	5,631	754	5,568	390	5,682	156	5,686	1,898	5,387	624	5,310	5		1	26
27	10	2,376	5,847	783	5,782	405	5,900	162	5,905	1,971	5,594	648	5,514	5		1	27
28	12	2,464	6,064	812	5,996	420	6,119	168	6,124	2,044	5,801	672	5,719	6		1	28
29	12	2,552	6,280	841	6,210	435	6,337	174	6,342	2,117	6,008	696	5,923	6		1	29
30	12	2,640	6,497	870	6,424	450	6,556	180	6,561	2,190	6,215	720	6,127	6		1	30
31	12	2,728	6,714	899	6,638	465	6,774	186	6,780	2,263	6,422	744	6,331	6		1	31

*1: The number of the Shard Memory option (DKC-F460I-S512) necessary is refer to table 1.1.2-3 in INST01-60 and table 1.1.2-4 in INST01-70. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option, DKA option and the Channel options are required.

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(3) 146GB 10K rpm HDD, RAID5 (3D+1P)

RAID group	Storage Capacity (GB)																	Number of necessary options				
	Open System									Mainframe System												
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		DKC-F460I -2048		DKC-F460I -S512	DKC-F465I -FSW	DKU-F455I -146J4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF			
1	4	174	428	58	428	29	422	11	401	4	144	409	48	408	14	389	2	2	*1		1
2	6	348	856	116	857	58	845	22	802	6	288	817	96	817	28	778	3	3			2
3	6	522	1,285	174	1,285	87	1,267	33	1,203	6	432	1,226	144	1,225	42	1,168	3	4			3
4	8	696	1,713	232	1,713	116	1,690	44	1,604	8	576	1,635	192	1,634	56	1,557	4	4			4
5	8	870	2,141	290	2,141	145	2,112	55	2,005	8	720	2,043	240	2,042	70	1,946	4	4			5
6	8	1,044	2,569	348	2,570	174	2,535	66	2,406	8	864	2,452	288	2,451	84	2,335	4	4			6
7	10	1,218	2,997	406	2,998	203	2,957	77	2,807	10	1,008	2,861	336	2,859	98	2,724	5	5			7
8	10	1,392	3,426	464	3,426	232	3,380	88	3,208	10	1,152	3,269	384	3,268	112	3,114	5	5			8
9	10	1,566	3,854	522	3,854	261	3,802	99	3,609	10	1,296	3,678	432	3,676	126	3,503	5	5			9
10	10	1,740	4,282	580	4,283	290	4,225	110	4,010	10	1,440	4,087	480	4,085	140	3,892	5	5			10
11	10	1,914	4,710	638	4,711	319	4,647	121	4,410	10	1,584	4,495	528	4,493	154	4,281	5	5			11
12	10	2,088	5,139	696	5,139	348	5,070	132	4,811	10	1,728	4,904	576	4,902	168	4,670	5	5			12
13	10	2,262	5,567	754	5,568	377	5,492	143	5,212	10	1,872	5,313	624	5,310	182	5,060	5	5			13
14	12	2,436	5,995	812	5,996	406	5,915	154	5,613	12	2,016	5,721	672	5,719	196	5,449	6	6			14
15	12	2,610	6,423	870	6,424	435	6,337	165	6,014	12	2,160	6,130	720	6,127	210	5,838	6	6			15
16	12	2,784	6,851	928	6,852	464	6,760	176	6,415	12	2,304	6,539	768	6,536	224	6,227	6	6		1	16
17	12	2,958	7,280	986	7,281	493	7,182	187	6,816	12	2,448	6,947	816	6,944	238	6,616	6	6		1	17
18	12	3,132	7,708	1,044	7,709	522	7,604	198	7,217	12	2,592	7,356	864	7,353	252	7,006	6	6		1	18
19	12	3,306	8,136	1,102	8,137	551	8,027	209	7,618	12	2,736	7,765	912	7,761	266	7,395	6	6		1	19
20	14	3,480	8,564	1,160	8,565	580	8,449	220	8,019	12	2,880	8,173	960	8,170	280	7,784	7	6		1	20
21	14	3,654	8,992	1,218	8,994	609	8,872	231	8,420	14	3,024	8,582	1,008	8,578	294	8,173	7	7		1	21
22	14	3,828	9,421	1,276	9,422	638	9,294	242	8,821	14	3,168	8,991	1,056	8,987	308	8,562	7	7		1	22
23	14	4,002	9,849	1,334	9,850	667	9,717	253	9,222	14	3,312	9,399	1,104	9,395	322	8,952	7	7		1	23
24	14	4,176	10,277	1,392	10,279	696	10,139	264	9,623	14	3,456	9,808	1,152	9,804	336	9,341	7	7		1	24
25	14	4,350	10,705	1,450	10,707	725	10,562	275	10,024	14	3,600	10,217	1,200	10,212	350	9,730	7	7		1	25
26	14	4,524	11,134	1,508	11,135	754	10,984	286	10,425	14	3,744	10,625	1,248	10,620	364	10,119	7	7		1	26
27	16	4,698	11,562	1,566	11,563	783	11,407	297	10,826	14	3,888	11,034	1,296	11,029	378	10,508	8	7		1	27
28	16	4,872	11,990	1,624	11,992	812	11,829	308	11,227	16	4,032	11,443	1,344	11,437	392	10,898	8	8		1	28
29	16	5,046	12,418	1,682	12,420	841	12,252	319	11,628	16	4,176	11,851	1,392	11,846	406	11,287	8	8		1	29
30	16	5,220	12,846	1,740	12,848	870	12,674	330	12,029	16	4,320	12,260	1,440	12,254	420	11,676	8	8		1	30
31	16	5,394	13,275	1,798	13,276	899	13,097	341	12,429	16	4,464	12,669	1,488	12,663	434	12,065	8	8		1	31

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(4) 72GB 15K rpm HDD, RAID5 (3D+1P)

RAID group	Storage Capacity (GB)																	Number of necessary options				
	Open System									Mainframe System												
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		DKC-F460I -2048		DKC-F460I -S512	DKC-F465I -FSW	DKU-F455I -72K4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF			
1	4	86	212	28	207	14	204	5	182	4	71	201	23	196	7	195	2	2	*1		1
2	4	172	423	56	414	28	408	10	365	4	142	403	46	391	14	389	2	2			2
3	4	258	635	84	620	42	612	15	547	4	213	604	69	587	21	584	2	2			3
4	6	344	847	112	827	56	816	20	729	6	284	806	92	783	28	778	3	3			4
5	6	430	1,058	140	1,034	70	1,020	25	911	6	355	1,007	115	979	35	973	3	3			5
6	6	516	1,270	168	1,241	84	1,224	30	1,094	6	426	1,209	138	1,174	42	1,168	3	3			6
7	8	602	1,482	196	1,447	98	1,428	35	1,276	8	497	1,410	161	1,370	49	1,362	4	4			7
8	8	688	1,693	224	1,654	112	1,632	40	1,458	8	568	1,612	184	1,566	56	1,557	4	4			8
9	8	774	1,905	252	1,861	126	1,836	45	1,640	8	639	1,813	207	1,762	63	1,751	4	4			9
10	8	860	2,116	280	2,068	140	2,040	50	1,823	8	710	2,015	230	1,957	70	1,946	4	4			10
11	8	946	2,328	308	2,274	154	2,243	55	2,005	8	781	2,216	253	2,153	77	2,141	4	4			11
12	8	1,032	2,540	336	2,481	168	2,447	60	2,187	8	852	2,418	276	2,349	84	2,335	4	4			12
13	8	1,118	2,751	364	2,688	182	2,651	65	2,369	8	923	2,619	299	2,544	91	2,530	4	4			13
14	10	1,204	2,963	392	2,895	196	2,855	70	2,552	10	994	2,821	322	2,740	98	2,724	5	5			14
15	10	1,290	3,175	420	3,101	210	3,059	75	2,734	10	1,065	3,022	345	2,936	105	2,919	5	5			15
16	10	1,376	3,386	448	3,308	224	3,263	80	2,916	10	1,136	3,224	368	3,132	112	3,114	5	5		1	16
17	10	1,462	3,598	476	3,515	238	3,467	85	3,098	10	1,207	3,425	391	3,327	119	3,308	5	5		1	17
18	10	1,548	3,810	504	3,722	252	3,671	90	3,281	10	1,278	3,627	414	3,523	126	3,503	5	5		1	18
19	10	1,634	4,021	532	3,928	266	3,875	95	3,463	10	1,349	3,828	437	3,719	133	3,697	5	5		1	19
20	10	1,720	4,233	560	4,135	280	4,079	100	3,645	10	1,420	4,030	460	3,915	140	3,892	5	5		1	20
21	10	1,806	4,445	588	4,342	294	4,283	105	3,827	10	1,491	4,231	483	4,110	147	4,087	5	5		1	21
22	10	1,892	4,656	616	4,549	308	4,487	110	4,010	10	1,562	4,433	506	4,306	154	4,281	5	5		1	22
23	10	1,978	4,868	644	4,755	322	4,691	115	4,192	10	1,633	4,634	529	4,502	161	4,476	5	5		1	23
24	10	2,064	5,080	672	4,962	336	4,895	120	4,374	10	1,704	4,836	552	4,698	168	4,670	5	5		1	24
25	10	2,150	5,291	700	5,169	350	5,099	125	4,556	10	1,775	5,037	575	4,893	175	4,865	5	5		1	25
26	10	2,236	5,503	728	5,376	364	5,303	130	4,739	10	1,846	5,239	598	5,089	182	5,060	5	5		1	26
27	10	2,322	5,714	756	5,582	378	5,507	135	4,921	10	1,917	5,440	621	5,285	189	5,254	5	5		1	27
28	12	2,408	5,926	784	5,789	392	5,711	140	5,103	12	1,988	5,642	644	5,480	196	5,449	6	6		1	28
29	12	2,494	6,138	812	5,996	406	5,915	145	5,285	12	2,059	5,843	667	5,676	203	5,643	6	6		1	29
30	12	2,580	6,349	840	6,203	420	6,119	150	5,468	12	2,130	6,045	690	5,872	210	5,838	6	6		1	30
31	12	2,666	6,561	868	6,409	434	6,323	155	5,650	12	2,201	6,246	713	6,068	217	6,033	6	6		1	31

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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8.2 Standard Configuration for RAID5 (7D+1P)

(1) 36GB 15K rpm HDD, RAID5 (7D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options				
		Open System						Mainframe System								
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		DKC-F460I-2048	DKC-F460I-S512	DKC-F460I-200	DKC-F465I-FSW2	DKU-F455I-36K4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap					
1	4	101	249	33	244	17	248	83	236	27	230	2	*1	2	1	2
2	4	202	497	66	487	34	495	166	471	54	460	2		2	1	4
3	6	303	746	99	731	51	743	249	707	81	689	3		2	1	6
4	6	404	994	132	975	68	991	332	942	108	919	3		2	1	8
5	6	505	1,243	165	1,218	85	1,238	415	1,178	135	1,149	3		2	1	10
6	8	606	1,491	198	1,462	102	1,486	498	1,413	162	1,379	4		2	1	12
7	8	707	1,740	231	1,706	119	1,734	581	1,649	189	1,608	4		2	1	14
8	8	808	1,988	264	1,949	136	1,981	664	1,884	216	1,838	4		2	1	16
9	8	909	2,237	297	2,193	153	2,229	747	2,120	243	2,068	4		2	1	18
10	8	1,010	2,486	330	2,437	170	2,477	830	2,356	270	2,298	4		2	1	20
11	8	1,111	2,734	363	2,680	187	2,724	913	2,591	297	2,527	4		2	1	22
12	10	1,212	2,983	396	2,924	204	2,972	996	2,827	324	2,757	5		2	1	24
13	10	1,313	3,231	429	3,168	221	3,220	1,079	3,062	351	2,987	5		2	1	26
14	10	1,414	3,480	462	3,411	238	3,467	1,162	3,298	378	3,217	5		2	1	28
15	10	1,515	3,728	495	3,655	255	3,715	1,245	3,533	405	3,447	5		2	1	30

*1: The number of the Shard Memory option (DKC-F460I-S512) necessary is refer to table 1.1.2-3 in INST01-60 and table 1.1.2-4 in INST01-70. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option, DKA option and the Channel options are required.

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(2) 73GB 10K rpm HDD, RAID5 (7D+1P)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options				
		Open System								Mainframe System								
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		DKC-F460I-2048	DKC-F460I-S512	DKC-F460I-200	DKC-F465I-FSW2	DKU-F455I-72J4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap					
1	4	206	507	68	502	35	510	14	510	171	485	57	485	2	*1	2	1	2
2	6	412	1,014	136	1,004	70	1,020	28	1,021	342	971	114	970	3		2	1	4
3	8	618	1,521	204	1,506	105	1,530	42	1,531	513	1,456	171	1,455	4		2	1	6
4	8	824	2,028	272	2,008	140	2,040	56	2,041	684	1,941	228	1,940	4		2	1	8
5	8	1,030	2,535	340	2,511	175	2,549	70	2,552	855	2,426	285	2,425	4		2	1	10
6	10	1,236	3,042	408	3,013	210	3,059	84	3,062	1,026	2,912	342	2,910	5		2	1	12
7	10	1,442	3,549	476	3,515	245	3,569	98	3,572	1,197	3,397	399	3,395	5		2	1	14
8	10	1,648	4,056	544	4,017	280	4,079	112	4,082	1,368	3,882	456	3,881	5		2	1	16
9	10	1,854	4,563	612	4,519	315	4,589	126	4,593	1,539	4,368	513	4,366	5		2	1	18
10	10	2,060	5,070	680	5,021	350	5,099	140	5,103	1,710	4,853	570	4,851	5		2	1	20
11	10	2,266	5,577	748	5,523	385	5,609	154	5,613	1,881	5,338	627	5,336	5		2	1	22
12	12	2,472	6,084	816	6,025	420	6,119	168	6,124	2,052	5,824	684	5,821	6		2	1	24
13	12	2,678	6,591	884	6,527	455	6,628	182	6,634	2,223	6,309	741	6,306	6		2	1	26
14	12	2,884	7,098	952	7,030	490	7,138	196	7,144	2,394	6,794	798	6,791	6		2	1	28
15	12	3,090	7,604	1,020	7,532	525	7,648	210	7,655	2,565	7,279	855	7,276	6		2	1	30

*1: The number of the Shard Memory option (DKC-F460I-S512) necessary is refer to table 1.1.2-3 in INST01-60 and table 1.1.2-4 in INST01-70. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option, DKA option and the Channel options are required.

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(3) 146GB 10K rpm HDD, RAID5 (7D+1P)

RAID group	Storage Capacity (GB)																	Number of necessary options					
	Open System									Mainframe System													
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		DKC-F460I -2048		DKC-F460I -200	DKC-F460I -S512	DKC-F465I -FSW2	DKU-F455I -146J4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF				
1	6	407	1,002	135	997	69	1,005	27	984	6	337	956	112	953	34	945	3	3	2	*1	1	2
2	8	814	2,003	270	1,994	138	2,010	54	1,968	8	674	1,913	224	1,906	68	1,890	4	4	2		1	4
3	10	1,221	3,005	405	2,991	207	3,016	81	2,952	10	1,011	2,869	336	2,859	102	2,836	5	5	2		1	6
4	10	1,628	4,007	540	3,987	276	4,021	108	3,937	10	1,348	3,826	448	3,812	136	3,781	5	5	2		1	8
5	10	2,035	5,008	675	4,984	345	5,026	135	4,921	10	1,685	4,782	560	4,766	170	4,726	5	5	2		1	10
6	12	2,442	6,010	810	5,981	414	6,031	162	5,905	12	2,022	5,738	672	5,719	204	5,671	6	6	2		1	12
7	12	2,849	7,011	945	6,978	483	7,036	189	6,889	12	2,359	6,695	784	6,672	238	6,616	6	6	2		1	14
8	12	3,256	8,013	1,080	7,975	552	8,042	216	7,873	12	2,696	7,651	896	7,625	272	7,562	6	6	2		1	16
9	14	3,663	9,015	1,215	8,972	621	9,047	243	8,857	14	3,033	8,608	1,008	8,578	306	8,507	7	7	2		1	18
10	14	4,070	10,016	1,350	9,968	690	10,052	270	9,842	14	3,370	9,564	1,120	9,531	340	9,452	7	7	2		1	20
11	14	4,477	11,018	1,485	10,965	759	11,057	297	10,826	14	3,707	10,520	1,232	10,484	374	10,397	7	7	2		1	22
12	16	4,884	12,020	1,620	11,962	828	12,062	324	11,810	16	4,044	11,477	1,344	11,437	408	11,342	8	8	2		1	24
13	16	5,291	13,021	1,755	12,959	897	13,067	351	12,794	16	4,381	12,433	1,456	12,391	442	12,288	8	8	2		1	26
14	18	5,698	14,023	1,890	13,956	966	14,073	378	13,778	16	4,718	13,390	1,568	13,344	476	13,233	9	8	2		1	28
15	18	6,105	15,024	2,025	14,953	1,035	15,078	405	14,762	18	5,055	14,346	1,680	14,297	510	14,178	9	9	2		1	30

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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(4) 72GB 15K rpm HDD, RAID5 (7D+1P)

RAID group	Storage Capacity (GB)																	Number of necessary options					
	Open System									Mainframe System													
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)			DKC-F460I -2048		DKC-F460I -200	DKC-F460I -S512	DKC-F465I -FSW2	DKU-F455I -72K4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap		OPEN	MF				
1	4	202	497	67	495	34	495	13	474	4	167	474	55	468	17	473		2	2	2	*1	1	2
2	6	404	994	134	989	68	991	26	948	6	334	948	110	936	34	945		3	3	2		1	4
3	8	606	1,491	201	1,484	102	1,486	39	1,422	8	501	1,422	165	1,404	51	1,418		4	4	2		1	6
4	8	808	1,988	268	1,979	136	1,981	52	1,895	8	668	1,896	220	1,872	68	1,890		4	4	2		1	8
5	8	1,010	2,486	335	2,474	170	2,477	65	2,369	8	835	2,370	275	2,340	85	2,363		4	4	2		1	10
6	10	1,212	2,983	402	2,968	204	2,972	78	2,843	10	1,002	2,844	330	2,808	102	2,836		5	5	2		1	12
7	10	1,414	3,480	469	3,463	238	3,467	91	3,317	10	1,169	3,318	385	3,276	119	3,308		5	5	2		1	14
8	10	1,616	3,977	536	3,958	272	3,962	104	3,791	10	1,336	3,792	440	3,744	136	3,781		5	5	2		1	16
9	10	1,818	4,474	603	4,453	306	4,458	117	4,265	10	1,503	4,266	495	4,212	153	4,253		5	5	2		1	18
10	10	2,020	4,971	670	4,947	340	4,953	130	4,739	10	1,670	4,739	550	4,681	170	4,726		5	5	2		1	20
11	10	2,222	5,468	737	5,442	374	5,448	143	5,212	10	1,837	5,213	605	5,149	187	5,199		5	5	2		1	22
12	12	2,424	5,965	804	5,937	408	5,944	156	5,686	12	2,004	5,687	660	5,617	204	5,671		6	6	2		1	24
13	12	2,626	6,463	871	6,431	442	6,439	169	6,160	12	2,171	6,161	715	6,085	221	6,144		6	6	2		1	26
14	12	2,828	6,960	938	6,926	476	6,934	182	6,634	12	2,338	6,635	770	6,553	238	6,616		6	6	2		1	28
15	12	3,030	7,457	1,005	7,421	510	7,430	195	7,108	12	2,505	7,109	825	7,021	255	7,089		6	6	2		1	30

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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8.3 Standard Configuration for RAID1 (2D+2D)

(1) 36GB 15K rpm HDD, RAID1 (2D+2D)

RAID group	Cache (GB)	Storage Capacity (GB)										Number of necessary options			
		Open System						Mainframe System							
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		DKC-F460I-2048	DKC-F460I-S512	DKC-F465I-FSW	DKU-F455I-36K4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap				
1	2	28	69	9	66	4	58	23	65	7	60	1	*1		1
2	2	56	138	18	133	8	117	46	131	14	119	1			2
3	4	84	207	27	199	12	175	69	196	21	179	2			3
4	4	112	276	36	266	16	233	92	261	28	238	2			4
5	4	140	345	45	332	20	291	115	326	35	298	2			5
6	4	168	413	54	399	24	350	138	392	42	357	2			6
7	4	196	482	63	465	28	408	161	457	49	417	2			7
8	4	224	551	72	532	32	466	184	522	56	477	2			8
9	4	252	620	81	598	36	524	207	587	63	536	2			9
10	4	280	689	90	665	40	583	230	653	70	596	2			10
11	6	308	758	99	731	44	641	253	718	77	655	3			11
12	6	336	827	108	797	48	699	276	783	84	715	3			12
13	6	364	896	117	864	52	758	299	849	91	774	3			13
14	6	392	965	126	930	56	816	322	914	98	834	3			14
15	6	420	1,034	135	997	60	874	345	979	105	894	3			15
16	6	448	1,103	144	1,063	64	932	368	1,044	112	953	3		1	16
17	6	476	1,171	153	1,130	68	991	391	1,110	119	1,013	3		1	17
18	6	504	1,240	162	1,196	72	1,049	414	1,175	126	1,072	3		1	18
19	6	532	1,309	171	1,263	76	1,107	437	1,240	133	1,132	3		1	19
20	6	560	1,378	180	1,329	80	1,165	460	1,305	140	1,191	3		1	20
21	8	588	1,447	189	1,396	84	1,224	483	1,371	147	1,251	4		1	21
22	8	616	1,516	198	1,462	88	1,282	506	1,436	154	1,311	4		1	22
23	8	644	1,585	207	1,528	92	1,340	529	1,501	161	1,370	4		1	23
24	8	672	1,654	216	1,595	96	1,399	552	1,567	168	1,430	4		1	24
25	8	700	1,723	225	1,661	100	1,457	575	1,632	175	1,489	4		1	25
26	8	728	1,792	234	1,728	104	1,515	598	1,697	182	1,549	4		1	26
27	8	756	1,861	243	1,794	108	1,573	621	1,762	189	1,608	4		1	27
28	8	784	1,929	252	1,861	112	1,632	644	1,828	196	1,668	4		1	28
29	8	812	1,998	261	1,927	116	1,690	667	1,893	203	1,728	4		1	29
30	8	840	2,067	270	1,994	120	1,748	690	1,958	210	1,787	4		1	30
31	8	868	2,136	279	2,060	124	1,806	713	2,023	217	1,847	4		1	31

*1: The number of the Shard Memory option (DKC-F460I-S512) necessary is refer to table 1.1.2-3 in INST01-60 and table 1.1.2-4 in INST01-70. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option, DKA option and the Channel options are required.

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(2) 73GB 10K rpm HDD, RAID1 (2D+2D)

RAID group	Cache (GB)	Storage Capacity (GB)												Number of necessary options			
		Open System								Mainframe System							
		OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		3390-3/3R (2.838GB)		3390-9 (8.510GB)		DKC-F460I -2048	DKC-F460I -S512	DKC-F465I -FSW	DKU-F455I -72J4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap				
1	2	59	145	19	140	10	146	4	146	48	136	16	136	1	*1		1
2	4	118	290	38	281	20	291	8	292	96	272	32	272	2			2
3	4	177	436	57	421	30	437	12	437	144	409	48	408	2			3
4	4	236	581	76	561	40	583	16	583	192	545	64	545	2			4
5	6	295	726	95	701	50	728	20	729	240	681	80	681	3			5
6	6	354	871	114	842	60	874	24	875	288	817	96	817	3			6
7	6	413	1,016	133	982	70	1,020	28	1,021	336	954	112	953	3			7
8	6	472	1,162	152	1,122	80	1,165	32	1,166	384	1,090	128	1,089	3			8
9	6	531	1,307	171	1,263	90	1,311	36	1,312	432	1,226	144	1,225	3			9
10	8	590	1,452	190	1,403	100	1,457	40	1,458	480	1,362	160	1,362	4			10
11	8	649	1,597	209	1,543	110	1,602	44	1,604	528	1,498	176	1,498	4			11
12	8	708	1,742	228	1,684	120	1,748	48	1,750	576	1,635	192	1,634	4			12
13	8	767	1,888	247	1,824	130	1,894	52	1,895	624	1,771	208	1,770	4			13
14	8	826	2,033	266	1,964	140	2,040	56	2,041	672	1,907	224	1,906	4			14
15	8	885	2,178	285	2,104	150	2,185	60	2,187	720	2,043	240	2,042	4			15
16	8	944	2,323	304	2,245	160	2,331	64	2,333	768	2,180	256	2,179	4		1	16
17	8	1,003	2,468	323	2,385	170	2,477	68	2,479	816	2,316	272	2,315	4		1	17
18	8	1,062	2,614	342	2,525	180	2,622	72	2,624	864	2,452	288	2,451	4		1	18
19	10	1,121	2,759	361	2,666	190	2,768	76	2,770	912	2,588	304	2,587	5		1	19
20	10	1,180	2,904	380	2,806	200	2,914	80	2,916	960	2,724	320	2,723	5		1	20
21	10	1,239	3,049	399	2,946	210	3,059	84	3,062	1,008	2,861	336	2,859	5		1	21
22	10	1,298	3,194	418	3,087	220	3,205	88	3,208	1,056	2,997	352	2,996	5		1	22
23	10	1,357	3,340	437	3,227	230	3,351	92	3,353	1,104	3,133	368	3,132	5		1	23
24	10	1,416	3,485	456	3,367	240	3,496	96	3,499	1,152	3,269	384	3,268	5		1	24
25	10	1,475	3,630	475	3,507	250	3,642	100	3,645	1,200	3,406	400	3,404	5		1	25
26	10	1,534	3,775	494	3,648	260	3,788	104	3,791	1,248	3,542	416	3,540	5		1	26
27	10	1,593	3,920	513	3,788	270	3,933	108	3,937	1,296	3,678	432	3,676	5		1	27
28	10	1,652	4,066	532	3,928	280	4,079	112	4,082	1,344	3,814	448	3,812	5		1	28
29	10	1,711	4,211	551	4,069	290	4,225	116	4,228	1,392	3,950	464	3,949	5		1	29
30	10	1,770	4,356	570	4,209	300	4,370	120	4,374	1,440	4,087	480	4,085	5		1	30
31	10	1,829	4,501	589	4,349	310	4,516	124	4,520	1,488	4,223	496	4,221	5		1	31

*1: The number of the Shard Memory option (DKC-F460I-S512) necessary is refer to table 1.1.2-3 in INST01-60 and table 1.1.2-4 in INST01-70. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option, DKA option and the Channel options are required.

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(3) 146GB 10K rpm HDD, RAID1 (2D+2D)

RAID group	Storage Capacity (GB)																	Number of necessary options				
	Open System									Mainframe System												
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		DKC-F460I -2048		DKC-F460I -S512	DKC-F465I -FSW	DKU-F455I -146J4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF			
1	4	116	285	38	281	19	277	7	255	4	96	272	32	272	9	250	2	2	*1		1
2	4	232	571	76	561	38	554	14	510	4	192	545	64	545	18	500	2	2			2
3	6	348	856	114	842	57	830	21	765	6	288	817	96	817	27	751	3	3			3
4	6	464	1,142	152	1,122	76	1,107	28	1,021	6	384	1,090	128	1,089	36	1,001	3	3			4
5	8	580	1,427	190	1,403	95	1,384	35	1,276	8	480	1,362	160	1,362	45	1,251	4	4			5
6	8	696	1,713	228	1,684	114	1,661	42	1,531	8	576	1,635	192	1,634	54	1,501	4	4			6
7	8	812	1,998	266	1,964	133	1,938	49	1,786	8	672	1,907	224	1,906	63	1,751	4	4			7
8	8	928	2,284	304	2,245	152	2,214	56	2,041	8	768	2,180	256	2,179	72	2,002	4	4			8
9	10	1,044	2,569	342	2,525	171	2,491	63	2,296	8	864	2,452	288	2,451	81	2,252	5	4			9
10	10	1,160	2,855	380	2,806	190	2,768	70	2,552	8	960	2,724	320	2,723	90	2,502	5	4			10
11	10	1,276	3,140	418	3,087	209	3,045	77	2,807	10	1,056	2,997	352	2,996	99	2,752	5	5			11
12	10	1,392	3,426	456	3,367	228	3,322	84	3,062	10	1,152	3,269	384	3,268	108	3,002	5	5			12
13	10	1,508	3,711	494	3,648	247	3,598	91	3,317	10	1,248	3,542	416	3,540	117	3,253	5	5			13
14	10	1,624	3,997	532	3,928	266	3,875	98	3,572	10	1,344	3,814	448	3,812	126	3,503	5	5			14
15	10	1,740	4,282	570	4,209	285	4,152	105	3,827	10	1,440	4,087	480	4,085	135	3,753	5	5			15
16	10	1,856	4,568	608	4,489	304	4,429	112	4,082	10	1,536	4,359	512	4,357	144	4,003	5	5		1	16
17	10	1,972	4,853	646	4,770	323	4,705	119	4,338	10	1,632	4,632	544	4,629	153	4,253	5	5		1	17
18	10	2,088	5,139	684	5,051	342	4,982	126	4,593	10	1,728	4,904	576	4,902	162	4,504	5	5		1	18
19	10	2,204	5,424	722	5,331	361	5,259	133	4,848	10	1,824	5,177	608	5,174	171	4,754	5	5		1	19
20	12	2,320	5,710	760	5,612	380	5,536	140	5,103	10	1,920	5,449	640	5,446	180	5,004	6	5		1	20
21	12	2,436	5,995	798	5,892	399	5,813	147	5,358	12	2,016	5,721	672	5,719	189	5,254	6	6		1	21
22	12	2,552	6,280	836	6,173	418	6,089	154	5,613	12	2,112	5,994	704	5,991	198	5,504	6	6		1	22
23	12	2,668	6,566	874	6,454	437	6,366	161	5,868	12	2,208	6,266	736	6,263	207	5,755	6	6		1	23
24	12	2,784	6,851	912	6,734	456	6,643	168	6,124	12	2,304	6,539	768	6,536	216	6,005	6	6		1	24
25	12	2,900	7,137	950	7,015	475	6,920	175	6,379	12	2,400	6,811	800	6,808	225	6,255	6	6		1	25
26	12	3,016	7,422	988	7,295	494	7,197	182	6,634	12	2,496	7,084	832	7,080	234	6,505	6	6		1	26
27	12	3,132	7,708	1,026	7,576	513	7,473	189	6,889	12	2,592	7,356	864	7,353	243	6,755	6	6		1	27
28	12	3,248	7,993	1,064	7,857	532	7,750	196	7,144	12	2,688	7,629	896	7,625	252	7,006	6	6		1	28
29	12	3,364	8,279	1,102	8,137	551	8,027	203	7,399	12	2,784	7,901	928	7,897	261	7,256	6	6		1	29
30	14	3,480	8,564	1,140	8,418	570	8,304	210	7,655	12	2,880	8,173	960	8,170	270	7,506	7	6		1	30
31	14	3,596	8,850	1,178	8,698	589	8,581	217	7,910	12	2,976	8,446	992	8,442	279	7,756	7	7		1	31

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1-1-2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note1: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

Note2: Even lines of RAID group are the storage capacity of RAID1 (4D+4D), and required cache capacity.

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(4) 72GB 15K rpm HDD, RAID1 (2D+2D)

RAID group	Storage Capacity (GB)																	Number of necessary options				
	Open System									Mainframe System												
	Cache (GB)	OPEN-3 (2.461GB)		OPEN-9 (7.384GB)		OPEN-E (14.568GB)		OPEN-L (36.450GB)		Cache (GB)	3390-3/3R (2.838GB)		3390-9 (8.510GB)		3390-L (27.80GB)		DKC-F460I -2048		DKC-F460I -S512	DKC-F465I -FSW	DKU-F455I -72K4
		VOL	Cap	VOL	Cap	VOL	Cap	VOL	Cap		VOL	Cap	VOL	Cap	VOL	Cap	OPEN	MF			
1	2	57	140	19	140	9	131	3	109	2	47	133	15	128	4	111	1	1	*1		1
2	4	114	281	38	281	18	262	6	219	4	94	267	30	255	8	222	2	2			2
3	4	171	421	57	421	27	393	9	328	4	141	400	45	383	12	334	2	2			3
4	4	228	561	76	561	36	524	12	437	4	188	534	60	511	16	445	2	2			4
5	6	285	701	95	701	45	656	15	547	4	235	667	75	638	20	556	3	2			5
6	6	342	842	114	842	54	787	18	656	6	282	800	90	766	24	667	3	3			6
7	6	399	982	133	982	63	918	21	765	6	329	934	105	894	28	778	3	3			7
8	6	456	1,122	152	1,122	72	1,049	24	875	6	376	1,067	120	1,021	32	890	3	3			8
9	6	513	1,262	171	1,263	81	1,180	27	984	6	423	1,200	135	1,149	36	1,001	3	3			9
10	8	570	1,403	190	1,403	90	1,311	30	1,094	6	470	1,334	150	1,277	40	1,112	4	3			10
11	8	627	1,543	209	1,543	99	1,442	33	1,203	8	517	1,467	165	1,404	44	1,223	4	4			11
12	8	684	1,683	228	1,684	108	1,573	36	1,312	8	564	1,601	180	1,532	48	1,334	4	4			12
13	8	741	1,824	247	1,824	117	1,704	39	1,422	8	611	1,734	195	1,659	52	1,446	4	4			13
14	8	798	1,964	266	1,964	126	1,836	42	1,531	8	658	1,867	210	1,787	56	1,557	4	4			14
15	8	855	2,104	285	2,104	135	1,967	45	1,640	8	705	2,001	225	1,915	60	1,668	4	4			15
16	8	912	2,244	304	2,245	144	2,098	48	1,750	8	752	2,134	240	2,042	64	1,779	4	4		1	16
17	8	969	2,385	323	2,385	153	2,229	51	1,859	8	799	2,268	255	2,170	68	1,890	4	4		1	17
18	8	1,026	2,525	342	2,525	162	2,360	54	1,968	8	846	2,401	270	2,298	72	2,002	4	4		1	18
19	10	1,083	2,665	361	2,666	171	2,491	57	2,078	8	893	2,534	285	2,425	76	2,113	5	4		1	19
20	10	1,140	2,806	380	2,806	180	2,622	60	2,187	8	940	2,668	300	2,553	80	2,224	5	4		1	20
21	10	1,197	2,946	399	2,946	189	2,753	63	2,296	8	987	2,801	315	2,681	84	2,335	5	4		1	21
22	10	1,254	3,086	418	3,087	198	2,884	66	2,406	10	1,034	2,934	330	2,808	88	2,446	5	5		1	22
23	10	1,311	3,226	437	3,227	207	3,016	69	2,515	10	1,081	3,068	345	2,936	92	2,558	5	5		1	23
24	10	1,368	3,367	456	3,367	216	3,147	72	2,624	10	1,128	3,201	360	3,064	96	2,669	5	5		1	24
25	10	1,425	3,507	475	3,507	225	3,278	75	2,734	10	1,175	3,335	375	3,191	100	2,780	5	5		1	25
26	10	1,482	3,647	494	3,648	234	3,409	78	2,843	10	1,222	3,468	390	3,319	104	2,891	5	5		1	26
27	10	1,539	3,787	513	3,788	243	3,540	81	2,952	10	1,269	3,601	405	3,447	108	3,002	5	5		1	27
28	10	1,596	3,928	532	3,928	252	3,671	84	3,062	10	1,316	3,735	420	3,574	112	3,114	5	5		1	28
29	10	1,653	4,068	551	4,069	261	3,802	87	3,171	10	1,363	3,868	435	3,702	116	3,225	5	5		1	29
30	10	1,710	4,208	570	4,209	270	3,933	90	3,281	10	1,410	4,002	450	3,830	120	3,336	5	5		1	30
31	10	1,767	4,349	589	4,349	279	4,064	93	3,390	10	1,457	4,135	465	3,957	124	3,447	5	5		1	31

*1: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B.
Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.

Note1: In addition to the Options listed in above table as necessary parts, the Power Cable Kit option, the AC Box Kit option and the Channel options are required.

Note2: Even lines of RAID group are the storage capacity of RAID1 (4D+4D), and required cache capacity.

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8.4 Standard Configuration for OPEN-V

(1) 36GB 15K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options					
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 35.744 GB / Vol *1			DKC-F460I-2048			DKC-F460I	DKC-F465I	DKU-F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-FSW	-36K4
1	2	2	107				2	2	71	1		1	*2		1
2	4	4	214	4	4	250	2	4	143	2	2	1			2
3	4	6	322				4	6	214	2		2			3
4	4	8	429	4	8	500	4	8	286	2	2	2			4
5	4	10	536				4	10	357	2		2			5
6	4	12	643	6	12	751	4	12	429	2	3	2			6
7	6	14	751				4	14	500	3		2			7
8	6	16	858	6	16	1,001	4	16	572	3	3	2			8
9	6	18	965				4	18	643	3		2			9
10	6	20	1,072	6	20	1,251	4	20	715	3	3	2			10
11	6	22	1,180				6	22	786	3		3			11
12	6	24	1,287	8	24	1,501	6	24	858	3	4	3			12
13	6	26	1,394				6	26	929	3		3			13
14	8	28	1,501	8	28	1,751	6	28	1,001	4	4	3			14
15	8	30	1,609				6	30	1,072	4		3			15
16	8	32	1,716	8	32	2,001	6	32	1,144	4	4	3		1	16
17	8	34	1,823				6	34	1,215	4		3		1	17
18	8	36	1,930	8	36	2,252	6	36	1,287	4	4	3		1	18
19	8	38	2,037				6	38	1,358	4		3		1	19
20	8	40	2,145	8	40	2,502	6	40	1,430	4	4	3		1	20
21	8	42	2,252				8	42	1,501	4		4		1	21
22	8	44	2,359	8	44	2,752	8	44	1,573	4	4	4		1	22
23	8	46	2,466				8	46	1,644	4		4		1	23
24	8	48	2,574	10	48	3,002	8	48	1,716	4	5	4		1	24
25	8	50	2,681				8	50	1,787	4		4		1	25
26	8	52	2,788	10	52	3,252	8	52	1,859	4	5	4		1	26
27	10	54	2,895				8	54	1,930	5		4		1	27
28	10	56	3,003	10	56	3,502	8	56	2,002	5	5	4		1	28
29	10	58	3,110				8	58	2,073	5		4		1	29
30	10	60	3,217	10	60	3,753	8	60	2,145	5	5	4		1	30
31	10	62	3,324				8	62	2,216	5		4		1	31

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB.
Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

*3: In the case of RAID5(7D+1P), installation of DKC-F465I-FSW2 is indispensable.
(DKC-F465I-FSW is unnecessary.)

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(2) 73GB 10K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options					
	RAID5(3D+1P) 54.684 GB / Vol *1			RAID5(7D+1P) 63.799 GB / Vol *1			RAID1(2D+2D) 48.607 GB / Vol *1			DKC-F460I-2048			DKC-F460I	DKC-F465I	DKU-F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-FSW	-72J4
1	4	4	219				2	3	146	2		1	*2	1	1
2	4	8	437	4	8	510	4	6	292	2	2	2		1	2
3	4	12	656				4	9	437	2		2		1	3
4	6	16	875	6	16	1,021	4	12	583	3	3	2		1	4
5	6	20	1,094				6	15	729	3		3		1	5
6	6	24	1,312	8	24	1,531	6	18	875	3	4	3		1	6
7	8	28	1,531				6	21	1,021	4		3		1	7
8	8	32	1,750	8	32	2,042	6	24	1,167	4	4	3		1	8
9	8	36	1,969				6	27	1,312	4		3		1	9
10	8	40	2,187	8	40	2,552	8	30	1,458	4	4	4		1	10
11	8	44	2,406				8	33	1,604	4		4		1	11
12	8	48	2,625	10	48	3,062	8	36	1,750	4	5	4		1	12
13	8	52	2,844				8	39	1,896	4		4		1	13
14	10	56	3,062	10	56	3,573	8	42	2,041	5	5	4		1	14
15	10	60	3,281				8	45	2,187	5		4		1	15
16	10	64	3,500	10	64	4,083	8	48	2,333	5	5	4		1	16
17	10	68	3,719				8	51	2,479	5		4		1	17
18	10	72	3,937	10	72	4,594	8	54	2,625	5	5	4		1	18
19	10	76	4,156				10	57	2,771	5		5		1	19
20	10	80	4,375	10	80	5,104	10	60	2,916	5	5	5		1	20
21	10	84	4,593				10	63	3,062	5		5		1	21
22	10	88	4,812	10	88	5,614	10	66	3,208	5	5	5		1	22
23	10	92	5,031				10	69	3,354	5		5		1	23
24	10	96	5,250	12	96	6,125	10	72	3,500	5	6	5		1	24
25	10	100	5,468				10	75	3,646	5		5		1	25
26	10	104	5,687	12	104	6,635	10	78	3,791	5	6	5		1	26
27	10	108	5,906				10	81	3,937	5		5		1	27
28	12	112	6,125	12	112	7,145	10	84	4,083	6	6	5		1	28
29	12	116	6,343				10	87	4,229	6		5		1	29
30	12	120	6,562	12	120	7,656	10	90	4,375	6	6	5		1	30
31	12	124	6,781				10	93	4,520	6		5		1	31

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB.
Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

*3: In the case of RAID5(7D+1P), installation of DKC-F465I-FSW2 is indispensable.
(DKC-F465I-FSW is unnecessary.)

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(3) 146GB 10K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options					
	RAID5(3D+1P) 61.612 GB / Vol *1			RAID5(7D+1P) 64.422/58.311GB/Vol *1			RAID1(2D+2D) 57.503 GB / Vol *1			DKC-F460I-2048			DKC-F460I	DKC-F465I	DKU-F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-FSW	-146J4
1	4	7	431				4	5	288	2		2	*2		1
2	6	14	863	6	16	1,006	4	10	575	3	3	2			2
3	6	21	1,294				6	15	863	3		3			3
4	8	28	1,725	8	32	2,013	6	20	1,150	4	4	3			4
5	8	35	2,156				8	25	1,438	4		4			5
6	8	42	2,588	10	48	3,019	8	30	1,725	4	5	4			6
7	10	49	3,019				8	35	2,013	5		4			7
8	10	56	3,450	10	64	4,025	8	40	2,300	5	5	4			8
9	10	63	3,882				10	45	2,588	5		5			9
10	10	70	4,313	10	80	5,032	10	50	2,875	5	5	5			10
11	10	77	4,744				10	55	3,163	5		5			11
12	10	84	5,175	12	96	6,038	10	60	3,450	5	6	5			12
13	10	91	5,607				10	65	3,738	5		5			13
14	12	98	6,038	12	112	7,044	10	70	4,025	6	6	5			14
15	12	105	6,469				10	75	4,313	6		5			15
16	12	112	6,901	12	128	8,050	10	80	4,600	6	6	5		1	16
17	12	119	7,332				10	85	4,888	6		5		1	17
18	12	126	7,763	14	144	9,057	10	90	5,175	6	7	5		1	18
19	12	133	8,194				10	95	5,463	6		5		1	19
20	14	140	8,626	14	160	10,063	12	100	5,750	7	7	6		1	20
21	14	147	9,057				12	105	6,038	7		6		1	21
22	14	154	9,488	16	176	11,069	12	110	6,325	7	8	6		1	22
23	14	161	9,920				12	115	6,613	7		6		1	23
24	14	168	10,351	16	192	12,076	12	120	6,900	7	8	6		1	24
25	14	175	10,782				12	125	7,188	7		6		1	25
26	14	182	11,213	16	208	13,082	12	130	7,475	7	8	6		1	26
27	16	189	11,645				12	135	7,763	8		6		1	27
28	16	196	12,076	18	224	14,088	12	140	8,050	8	9	6		1	28
29	16	203	12,507				12	145	8,338	8		6		1	29
30	16	210	12,939	18	240	15,095	14	150	8,625	8	9	7		1	30
31	16	217	13,370				14	155	8,913	8		7		1	31

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB.
Each volume capacity is a default value for using the user area in RAID group about 100%.
In case of RAID5(7D+1P), volumes in a RAID group are configured by the size and number of 64.422GBx12 and 58.311GBx4 as default volume capacity.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

*3: In the case of RAID5(7D+1P), installation of DKC-F465I-FSW2 is indispensable.
(DKC-F465I-FSW is unnecessary.)

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(4) 72GB 15K rpm HDD, OPEN-V

RAID group	Storage Capacity									Number of Options					
	RAID5(3D+1P) 53.618 GB / Vol *1			RAID5(7D+1P) 62.554 GB / Vol *1			RAID1(2D+2D) 47.660 GB / Vol *1			DKC-					DKU-
										F460I-2048			F460I	F465I	F455I
	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	Cache (GB)	Vol	Cap	3D+1P	7D+1P	2D+2D	-S512	-FSW	-72K4
1	4	4	214				2	3	143	2		1	*2	1	1
2	4	8	429	4	8	500	4	6	286	2	2	2		1	2
3	4	12	643				4	9	429	2		2		1	3
4	6	16	858	6	16	1,001	4	12	572	3	3	2		1	4
5	6	20	1,072				6	15	715	3		3		1	5
6	6	24	1,287	8	24	1,501	6	18	858	3	4	3		1	6
7	8	28	1,501				6	21	1,001	4		3		1	7
8	8	32	1,716	8	32	2,002	6	24	1,144	4	4	3		1	8
9	8	36	1,930				6	27	1,287	4		3		1	9
10	8	40	2,145	8	40	2,502	8	30	1,430	4	4	4		1	10
11	8	44	2,359				8	33	1,573	4		4		1	11
12	8	48	2,574	10	48	3,003	8	36	1,716	4	5	4		1	12
13	8	52	2,788				8	39	1,859	4		4		1	13
14	10	56	3,003	10	56	3,503	8	42	2,002	5	5	4		1	14
15	10	60	3,217				8	45	2,145	5		4		1	15
16	10	64	3,432	10	64	4,003	8	48	2,288	5	5	4		1	16
17	10	68	3,646				8	51	2,431	5		4		1	17
18	10	72	3,860	10	72	4,504	8	54	2,574	5	5	4		1	18
19	10	76	4,075				10	57	2,717	5		5		1	19
20	10	80	4,289	10	80	5,004	10	60	2,860	5	5	5		1	20
21	10	84	4,504				10	63	3,003	5		5		1	21
22	10	88	4,718	10	88	5,505	10	66	3,146	5	5	5		1	22
23	10	92	4,933				10	69	3,289	5		5		1	23
24	10	96	5,147	12	96	6,005	10	72	3,432	5	6	5		1	24
25	10	100	5,362				10	75	3,575	5		5		1	25
26	10	104	5,576	12	104	6,506	10	78	3,717	5	6	5		1	26
27	10	108	5,791				10	81	3,860	5		5		1	27
28	12	112	6,005	12	112	7,006	10	84	4,003	6	6	5		1	28
29	12	116	6,220				10	87	4,146	6		5		1	29
30	12	120	6,434	12	120	7,506	10	90	4,289	6	6	5		1	30
31	12	124	6,649				10	93	4,432	6		5		1	31

*1: OPEN-V is volume based on CVS. A customer can set up the volume capacity of OPEN-V freely from 48.1MB among 64.422GB.
Each volume capacity is a default value for using the user area in RAID group about 100%.

*2: The number of the Shard Memory option(DKC-F460I-S512) necessary is refer to table 1.1.2-3A and 1.1.2-3B. Please note that location of shared memory varies according to the purpose such as additional cache installation or additional LDEV installation.
In addition to the Options listed in above table as necessary parts, Power Cable Kit option, the AC Box Kit option and the Channel options are required.

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