### 3. Hardware Installation

### 3.1 Common Item of Installation and De-Installation

### 3.1.1 Bezel Opening-Closing Procedure



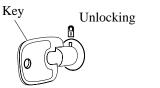
Watching for short-circuits:

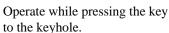
A short-circuit may cause a fire.

Never insert metal or the like into the cable connector or a short-circuit may occur.

Attach or remove the bezel carefully following the procedure. Otherwise, you may hurt your fingers by pinching them.

- **NOTICE:** To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the chassis before starting and do not take it off until you finish.
  - When inserting and turning the key, have it inserted completely. If it is turned when it is inserted half way, a damage of it may be caused.
  - When removing the key after locking up the bezel, pull it off aligning its groove with the positioning mark on the lock. When the key is pulled off in the state where its groove is not aligned with the positioning mark on the lock, a damage of the lock may be caused.
  - The key of the bezel for the DBF is different from those of the bezels for the CBX, DBL/DBS and DBX. When replacing the bezel for the DBF, use the key that comes with the bezel for the DBF.







Insert or pull off the key aligning its groove with the positioning mark on the lock.



The key cannot be pulled off when its groove is not aligned with the positioning mark on the lock.

#### INST03-01-20

#### 1. Bezel for CBX

A key is necessary to attach or remove a bezel.

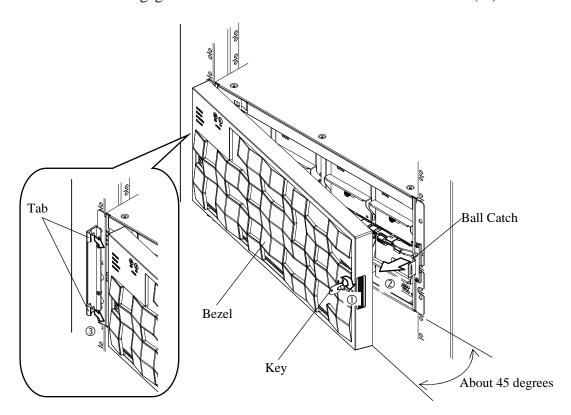
### Procedure for removal

- a. Insert the key into the keyhole on the bezel and release the lock of the bezel (①).
- b. Pull the key toward you while holding the lower right portion of the bezel, and then disengage the right side of the bezel from the ball catch (②).

NOTE: When disengaging the bezel, work with the opening angle between the bezel and the chassis of up to 45 degrees.

Do not force the bezel open too wide. Otherwise, a damage of bezel may be caused.

c. Disengage the bezel from the left tabs and then remove it (③).



The state in which the slit of the keyhole is aligned with the mark.

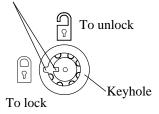
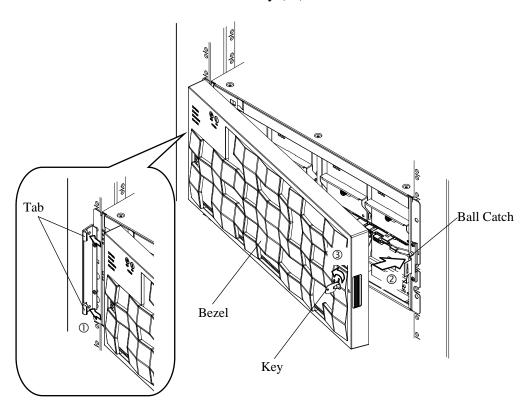


Fig. 3.1.1-1 Removal of Bezel

#### INST03-01-30

### Procedure for attachment

- a. Unlock the bezel with the key, and hold the key and bottom of bezel with your both hands.
- b. Insert the tabs on the left front side of the chassis into the tab holes on the bezel (①).
- c. Fix the bezel by pressing the right side of the bezel to engage it with the ball catch on the front side of the chassis (②).
- d. Lock the bezel with the key (3).



The state in which the slit of the keyhole is aligned with the mark.

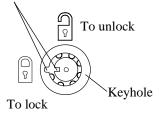


Fig. 3.1.1-2 Attachment of Bezel

#### INST03-01-40

#### 2. Bezel for DBL/DBS

A key is necessary to attach or remove a bezel.

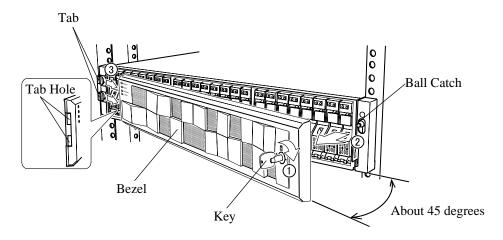
### Procedure for removal

- a. Insert the key into the keyhole on the bezel and release the lock of the bezel (①).
- b. Pull the key toward you while holding the lower right portion of the bezel, and then disengage the right side of the bezel from the ball catch (②).

NOTE: When disengaging the bezel, work with the opening angle between the bezel and the chassis of up to 45 degrees.

Do not force the bezel open too wide. Otherwise, a damage of bezel may be caused.

c. Disengage the bezel from the left tabs and then remove it (③).



The state in which the slit of the keyhole is aligned with the mark.

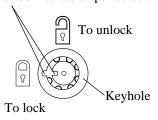
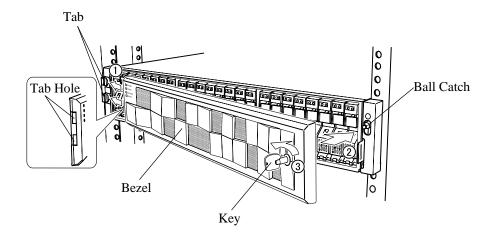


Fig. 3.1.1-3 Removal of Bezel

### Procedure for attachment

- a. Unlock the bezel with the key, and hold the key and bottom of bezel with your both hands.
- b. Insert the tabs on the left front side of the chassis into the tab holes on the bezel (①).
- c. Fix the bezel by pressing the right side of the bezel to engage it with the ball catch on the front side of the chassis (②).
- d. Lock the bezel with the key (③).



The state in which the slit of the keyhole is aligned with the mark.

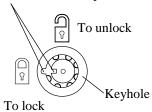


Fig. 3.1.1-4 Attachment of Bezel

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3. Bezel for DBX and Drawer/Storing of DBX

DBX does not have a key.

The key operation on the front side of DBX is required to pull the DBX out of the rack.



Watching for short-circuits:

A short-circuit may cause a fire.

Never insert metal or the like into the cable connector or a short-circuit may occur.

- Be careful of the workers on the other side when pulling out or storing the DBX.
- Do not pull out multiple DBXs at a time because the rack can fall over.
- Do not put objects on the DBX which has been pulled out of the rack or use it as working space because the rack can fall over.

NOTE: Check that the stabilizer is attached to the front side of the rack.

If the stabilizer is not attached, attach it to the rack.

### How to pull the DBX out of the rack frame

- a. Remove the bezel by pulling it toward you holding its both sides with both hands.
- b. Insert the key into the keyhole on the front side, and release the lock. When the lock is released, the front fixing screws appear.

NOTE: The key is not supplied with the DBX. Use the key of the Controller Chassis (CBX) to unlock.

- c. Loosen the front fixing screws. (blue) (one place each at right and left)
- d. Pull out the DBX slowly holding the handle on the front side until the latch of the rail clicks.

NOTE: Be careful not to hit your head on the chassis which was pulled out.

e. Remove the top cover of DBX by sliding it in the direction shown by the arrow.

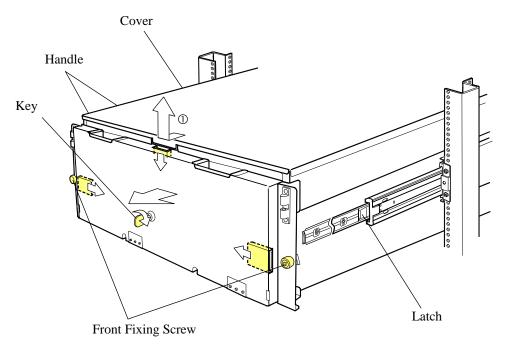


Fig. 3.1.1-5 How to Pulling Out the DBX

### How to store the DBX in the rack frame

a. Attach the top cover of DBX by sliding it in the direction shown by the arrow ①.

NOTE: Do not drop a screw and such in the chassis.

If you dropped it, immediately remove it.

If you leave it unattended, the parts will short out, and it will cause a fire or a failure.

- b. Release the lock by sliding the latch releasing lever which is located in the front terminal of right and left rack rails, and push the front side of the DBX gently all the way into the rack rail.
- c. Fix the front fixing screws (blue) (one place each at right and left) with your hands.
- d. Insert the key into the keyhole on the front side, and lock it. When it is locked, the fixing screws are covered.

NOTE: The key is not supplied with the DBX. Use the key of the Controller Chassis (CBX) to lock.

e. Attach the bezel holding its both sides with both hands.

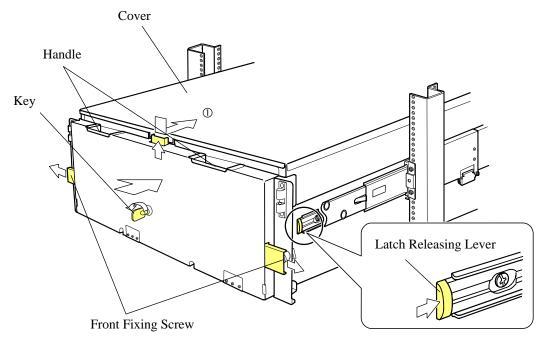


Fig. 3.1.1-6 How to Storing the DBX

#### INST03-01-81

#### 4. Bezel for DBF

A key is necessary to attach or remove a bezel.

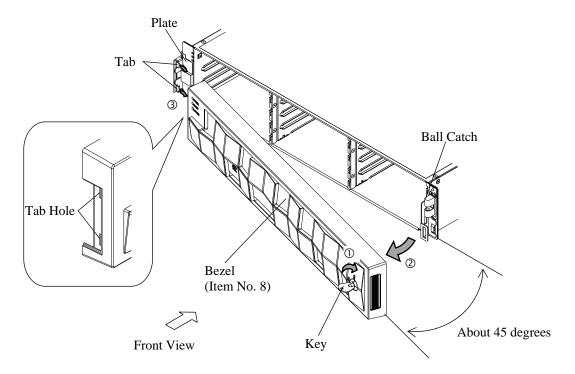
### Procedure for removal

- a. Insert the key into the keyhole on the bezel and release the lock of the bezel (①).
- b. Pull the key toward you while holding the lower right portion of the bezel, and then disengage the right side of the bezel from the ball catch (②).

NOTE: When disengaging the bezel, work with the opening angle between the bezel and the chassis of up to 45 degrees.

Do not force the bezel open too wide. Otherwise, a damage of bezel may be caused.

c. Disengage the bezel from the left tabs and then remove it (③).



The state in which the slit of the keyhole is aligned with the mark.

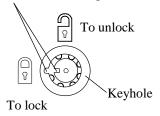


Fig. 3.1.1-7 Removal of Bezel

#### INST03-01-82

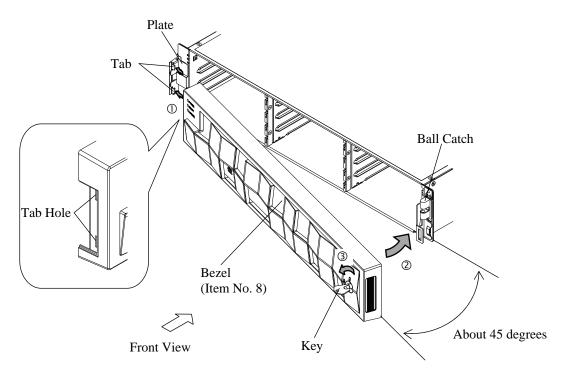
#### Procedure for attachment

- a. Unlock the bezel with the key, and hold the key and bottom of bezel with your both hands.
- b. Insert the tabs on the left front side of the chassis into the tab holes on the bezel (①) at an angle of about 45 degrees between the bezel and the chassis.

NOTE: Be careful not to catch the Plate between the chassis and the bezel when inserting the tabs on the chassis into the tab holes on the bezel.

The Plate may be damaged if catched.

- c. Fix the bezel by pressing the right side of the bezel to engage it with the ball catch on the front side of the chassis (②).
- d. Lock the bezel with the key (③).



The state in which the slit of the keyhole is aligned with the mark.

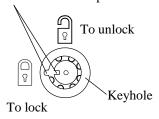


Fig. 3.1.1-8 Attachment of Bezel

### 3.1.2 Attaching the Wrist Strap

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

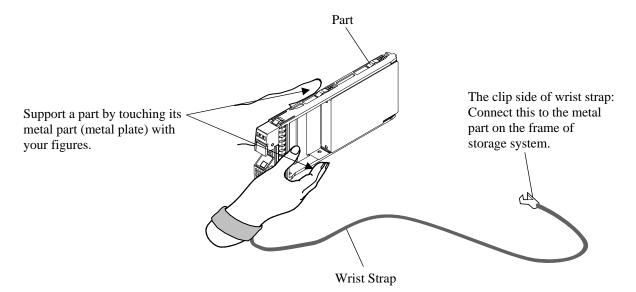


Fig. 3.1.2-1 Attachment of Wrist Strap

## 3.1.3 Notes when installing or removing the part

## 3.1.3.1 Notes when handling the Blade

1. Check that the main edge connector of the blade has linearity.

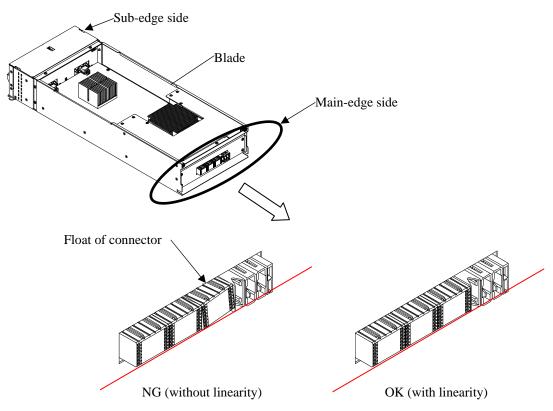


Fig. 3.1.3.1-1 Checking connectors

2. When there is a float or a position gap in a connector, mark it with a label, etc.

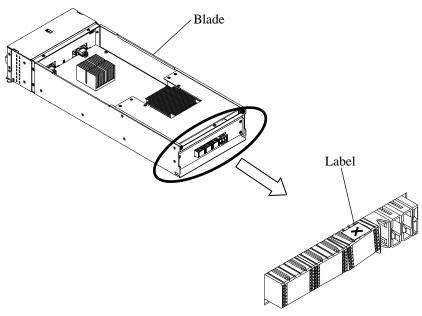


Fig. 3.1.3.1-2 Marking of defective connectors

#### INST03-01-110

- 3. Handle it as follows not to damage the main edge connector of the blade.
  - (1) When holding the blade, hold the middle part of the blade with both hands. Holding the main-edge side or sub-edge side of the blade may cause a breakdown of the blade by dropping it under its weight or hitting it against something. Moreover, holding the sub-edge side of the blade may cause a loosening or disconnecting of the connector.

### Right handling

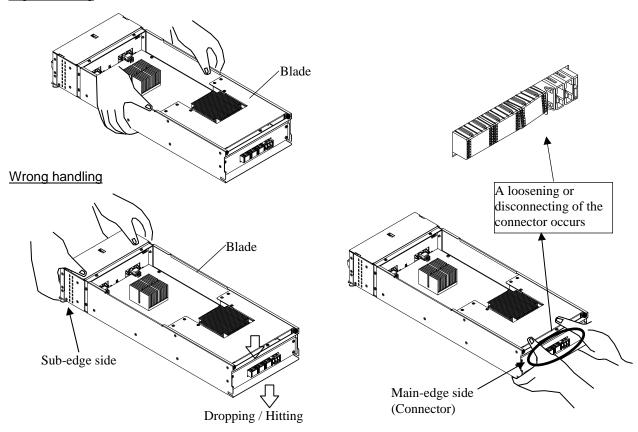


Fig. 3.1.3.1-3 Handling of the Blade (at maintenance)

(2) When moving the blade, be careful enough not to make it hit a carrier, a table or a unit.

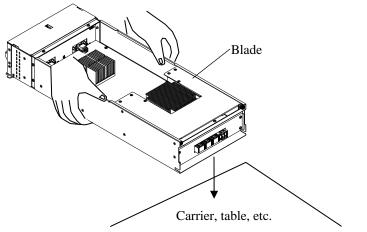


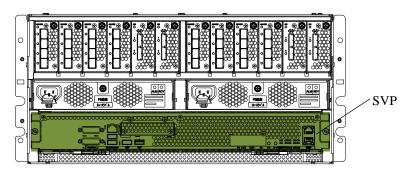
Fig. 3.1.3.1-4 Handling of the Blade (at moving)

#### INST03-01-120

## 3.1.4 About the storage media used for installation/maintenance process

The media showed in following table are attached in storage system, in order to advance installation, maintenance, and failure analysis smoothly. Please implement installation or collect information according to the work procedure indicated in each section.

No.	Media	Description	Installation device	Remarks
1	CD-ROM	CD-R for micro-program storage. Used for installation or micro-program download in time of micro FC.	CD-R Drive of CE Laptop PC	Attached to the device
2	USB Memory	USB memory for configuration information backup. Used for configuration information storage in time of device configuration change.	USB Connector of SVP	Attached to the device
3	USB Memory	USB memory for collecting device dump information. Used for collecting dump information in time of failure analysis or operation investigation.	USB Connector of SVP	Attached to the device



Rear View of DKC

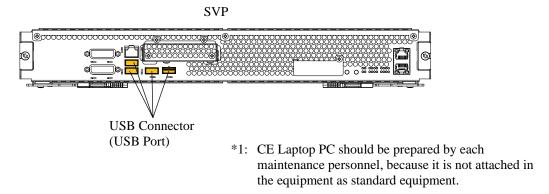


Fig. 3.1.4-1 Information Collection Device for each Media

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#### INST03-01-130

## 3.1.5 CE Laptop PC

## 3.1.5.1 Specifications for the CE Laptop PC

A laptop PC that can be used as the CE Laptop PC must meet specifications shown in Table 3.1.5.1-1.

Table 3.1.5.1-1 CE Laptop PC Specifications

	Specification		
OS	Windows XP / Windows Vista / Windows 7		
HDD	Available hard disk space: 500MB or upper		
Display	1024 × 768 (XGA) or higher-resolution 1284 × 1024 (SXGA) Recommendation		
CD-ROM	Need		
LAN	Ethernet 10Base-T/100Base-TX/1000 Base-T		
USB	Need		
AC input power specifications	<ul> <li>Voltage: 200-240V AC, 50/60Hz</li> <li>Current: 2A or less</li> <li>Connector form: The connector must have an inlet with either of the following forms. An inlet that conforms to the EN60320 Class I (2.5A; 250V) standard  3 (GND)  2 0 0 1  (N)  An inlet that conforms to the EN60320 Class II (2.5A; 250V) standard  2 0 0 1</li> </ul>		

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## 3.1.5.2 Installation Location of CE Laptop PC

When using a CE Laptop PC for this storage system, prepare a stand or the like to put a CE Laptop PC on.

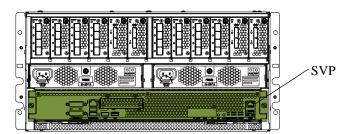
A CE Laptop PC also must be prepared by maintenance personnel because it is not included in the system.

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#### INST03-01-150

## 3.1.5.3 Attachment/Removal Procedure of LAN Cable for CE Laptop PC

- 1. Attachment procedure of LAN cable for CE Laptop PC.
  - a. Connect the power cable and LAN cable to the CE Laptop PC.
  - b. Connect the LAN cable to CONSOLE port of the SVP.
  - c. Connect the power cable.
  - d. Power on the CE Laptop PC.
  - e. When Windows is started, connect the PC to the SVP using the remote desktop function.



Rear View of DKC

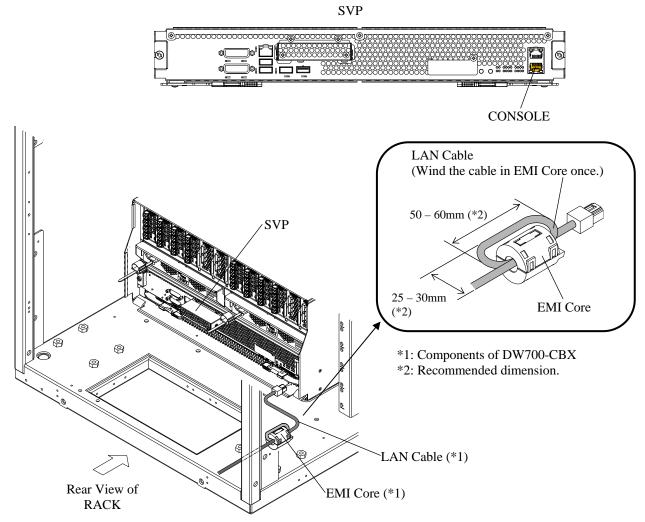


Fig. 3.1.5.3-1 Connection of LAN Cable (SVP)

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### INST03-01-160

- 2. Removal procedure of LAN cable for CE Laptop PC.
  - a. Quit the remote desktop function, and then power off the CE Laptop PC.
  - b. Disconnect the power cable.
  - c. Disconnect the LAN cable from the CONSOLE port of the SVP.
  - d. Disconnect the power cable and LAN cable from the CE laptop PC.

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### 3.1.6 Notes when connecting and routing the SAS cable

1. Check that the gasket is in the latch after removing the cap from the SAS cable.

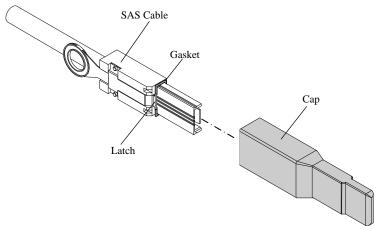


Fig. 3.1.6-1 Checking Gasket

2. When connecting the SAS Cable, hold the connector with your fingers and insert it into the PCB until it clicks. Do not turn the connector 90 degrees or more when inserting it into the PCB. If the connector has to be turned 90 degrees or more, do not turn only the connector but turn the connector and the cable together fitting the angle and connect it to the PCB. The procedure of binding the SAS Cable to the rack frame must be done only after the connector is connected.

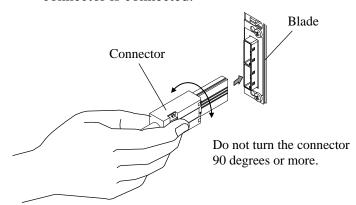


Fig. 3.1.6-2 Connecting the Connector

3. After inserting the SAS Cable into the blade, pull the connector gently to confirm that the connector will not be disconnected.

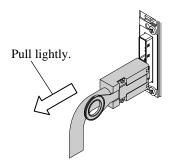


Fig. 3.1.6-3 Confirming Fixation

#### INST03-01-180

4. Unroll the roll of the cable, which was rolled up when packed, and stretch the distortion of the cable before cable routing. If the cable tends to wind when routed, route the cable making it straight.

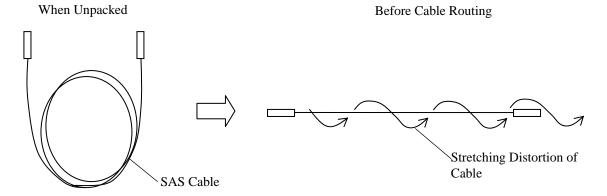


Fig. 3.1.6-4 Check of Distortion of Cable

5. When adjusting the cable length, roll the cable with a diameter of approximately 200mm or more.

When bending the cable, be careful not to bend it too much. A bend radius should be approximately 30mm or more.

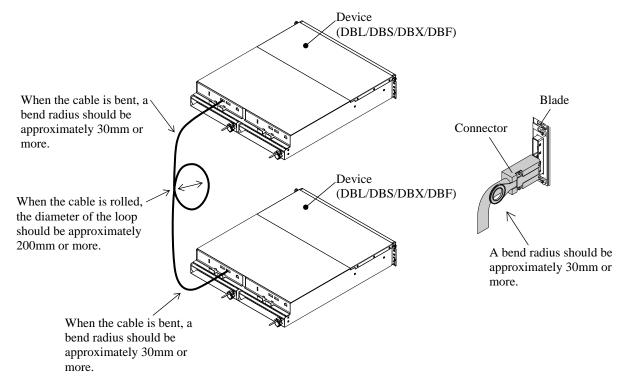


Fig. 3.1.6-5 Notes When Cable Routing

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INST03-02-10

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## 3.2 Unpacking and Inspection

## 3.2.1 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.

DW700

#### INST03-02-20

### 3.2.2 Unpacking

# **CAUTION**

- The unpacking should be done by two or more personnel to prevent turning over of the chassis or being caught under the chassis.
- Work carefully because the mass of the single CBX is about 72 kg, DBL is about 27 kg, DBS is about 23 kg, DBX is about 50 kg and DBF is about 38 kg.

### 1. Unpacking

NOTE: • Unpack it indoor.

- Especially, do not unpack it in such places with the outdoor dust, the direct sunlight, and the infiltration of rainwater.
- Work on the unpacking in the place where a rapid difference of temperature does not occur
- It may have dew condensation when it is unpacked in the place where a difference of temperature is extreme.
- a. Remove the outer package and packing materials.
- b. Take the chassis out of the polyethylene bag.
- c. Remove tapes, etc. applied to the chassis.
- d. Remove desiccating agent from the upper of the chassis.
- e. Check the exterior of the chassis visually for distortion or damage owing to the transport.

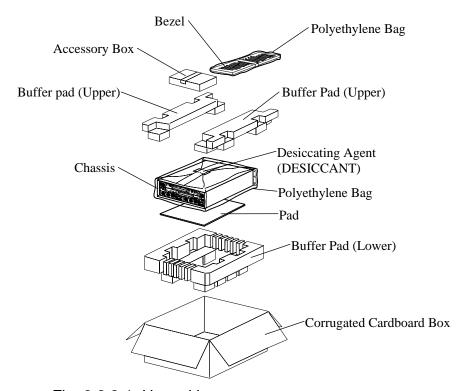


Fig. 3.2.2-1 Unpacking

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### 2. Checking contents of package

- a. Check if the contents of the package (their model names, product serial numbers, and quantities) agree with those in the packing list shipped with the unit.
- b. The key for Bezel is used to mount and dismount Bezel.
   The key for front lock is used to lock and unlock the front of the DBX.
   Keep the key carefully.

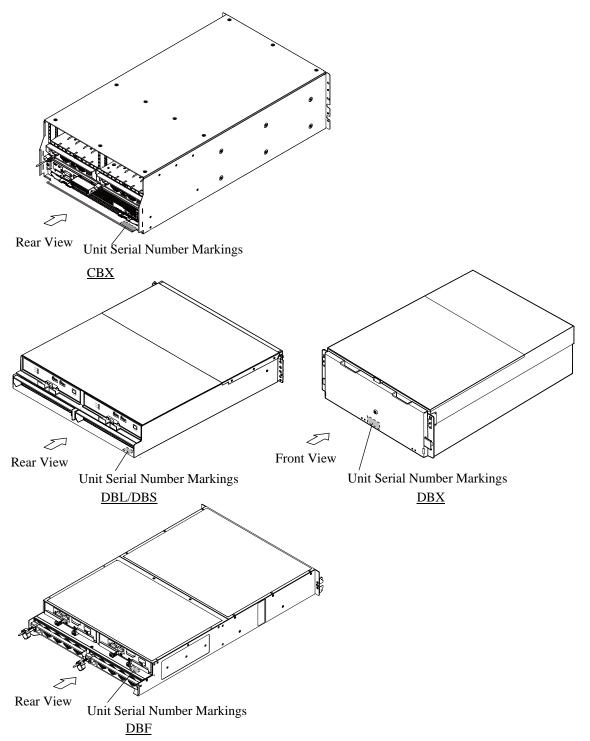


Fig. 3.2.2-2 Locations of Unit Serial Number Markings

# 3.3 Installation of Controller Chassis (DW700-CBX, DW-F700-RRCBR)

Table 3.3-1 Parts List of DW700-CBX

Item No.	Part Name	Part No.	Quantity	Remarks
1	Controller Chassis	1510093-A	1	DKC
2	CBX Bezel	3284394-J	1	Bezel
3	Bracket(R)	5547464-A	1	
4	Side Panel(5U)	3284248-1	1	
5	Screw	SB305N	4	
6	Clamp Tape	5544251-1	4	
7	LAN Cable	5533144-5	1	
8	EMI Core	5513535-1	3	
9	Label (DB-Address)	3287067-1	2	
10	Label (SAS Cable)	3287020-1	3	For CL1
11	Label (SAS Cable)	3287020-2	3	For CL2
12	Binder	5532297-A	10	292 mm
13	Key	_	2	Key No. T750

Table 3.3-2 Parts List of DW-F700-RRCBR

Item No.	Part Name	Part No.	Quantity	Remarks
101	Rail(HM)	3284479-A	1	
102	Rail(HM)	3284044-2	1	
103	Rack Nut	5510146-1	12	
104	WA Socket Bolt	3261959-516	8	
105	Screw	SB510N	4	

#### 3.3.1 Installation Procedure of Controller Chassis

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

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

- A unit (U) space conforming to EIA standard is 19 inches wide and 44.45 mm high as shown in the figure below.
- The boundary of the unit falls on the middle of the interval of 12.7 mm.
- Universal intervals: Repeat of 44.45 mm (15.875 mm + 15.875 mm + 2.7 mm) Wide intervals: Repeat of 44.45 mm (31.75 mm + 12.7 mm) Maximum number of mountable unit spaces: -

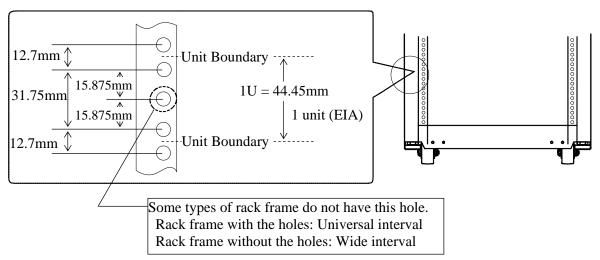


Fig. 3.3.1-1 Attachment Hole Size of Rack

#### INST03-03-30

The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame. The following figure shows a layout example of installing Controller Chassis in 40 units rack frame. However, installing positions of Controller Chassis may differ according to the construction within the rack frame.

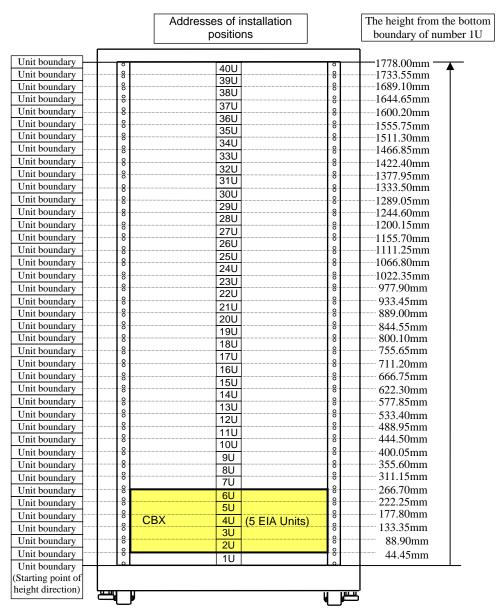


Fig. 3.3.1-2 Whole Layout of Installation Position Addresses

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#### INST03-03-40

a. On the right side of the installation location in the rack frame, align the round holes of the rail with those of the rack frame and insert the rack nuts (at four places in total in front and rear).

- b. Fasten the rail to the rack frame using the WA socket bolts (at two places each on the front and rear sides).
- c. Install the rail to the left side of the rack frame in the same way.

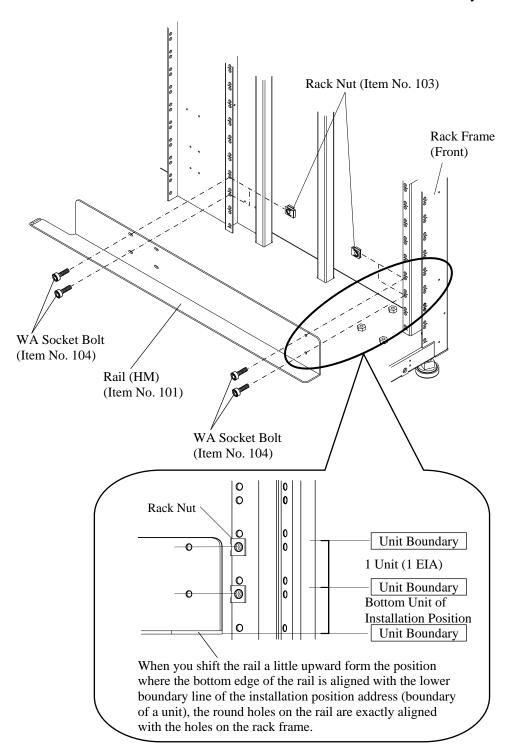


Fig. 3.3.1-3 Attachment of Rails

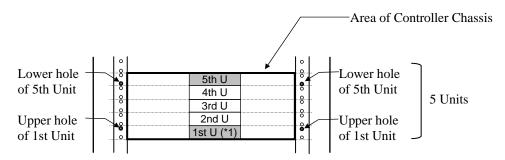
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#### INST03-03-50

## 2. Installing rack nuts

a. Fit the four rack nuts to each of the right and left beams on the front side of the rack frame.



Front View of Rack Frame

\*1: Bottom Unit of Installation Position

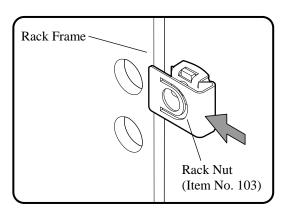


Fig. 3.3.1-4 Attachment of Rack Nuts

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#### INST03-03-60

### 3. Installing the DKC



Paying attention to falls:

Work carefully because the mass of the single DKC is about 72 kg.

- a. Install the DKC on the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)
- b. Fix the DKC with the four screws.

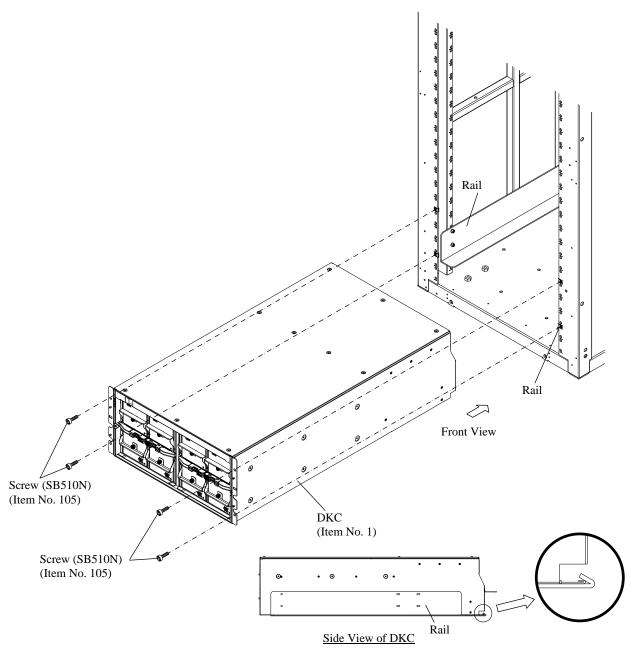


Fig. 3.3.1-5 Installing DKC

#### INST03-03-70

- 4. Connection of Power Cables
  - a. Connect the two power cables to the DKCPSs. and fix the cables with the cable holders.
  - b. Push the cable holders toward the DBPS.

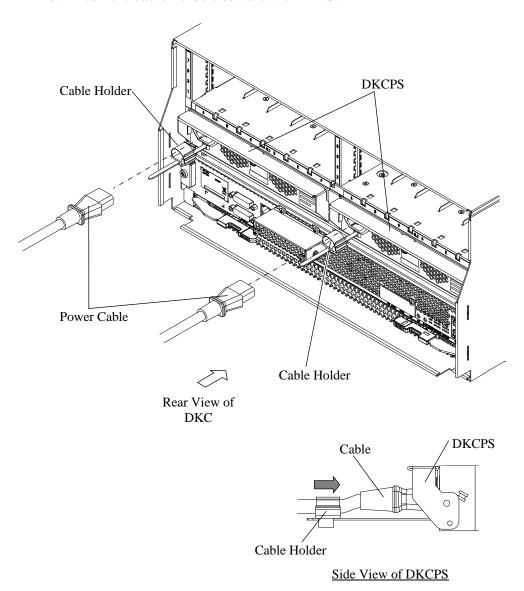


Fig. 3.3.1-6 Connection of Power Cables

#### INST03-03-80

- c. Connect the two power cables to the PDUs.
  - NOTE: Connect the power cable for the DKCPS1 to the left PDU.

    Connect the power cable for the DKCPS2 to the right PDU.

    If they are plugged in the receptacles of the PDUs on the same side, the function of the duplicated power supply does not work.
    - Check the rated current of the PDU to be used and make sure the total load doesn't exceed the rated current by calculation when connecting a power cable.

Table 3.3.1-1 Load Current of each Model Number

No.	Model Number	Load Current (per PS)	
1	DW700-CBX	3.81A	
2	DW-F700-DBL	2.07A	
3	DW-F700-DBS	2.61A	
4	DW-F700-DBX	4.03A	

d. Fix the power cables to the rack frame.

The figure below shows an example of fixing power cables.

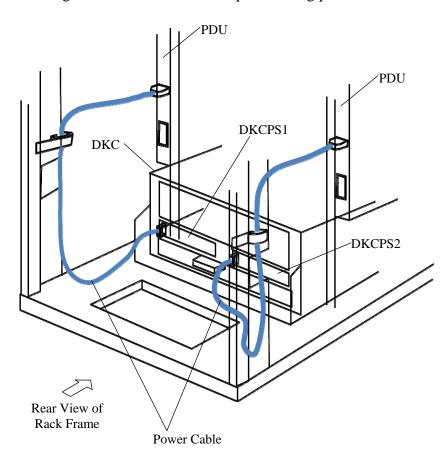


Fig. 3.3.1-7 Example of Fixing Power Cables

### 3.3.2 Installation Procedure of Bezel

- 1. Attachment of Parts
  - a. Attach the bracket on the front side and fasten the two screws.
  - b. Attach the side panel on the front side and fasten the two screws.

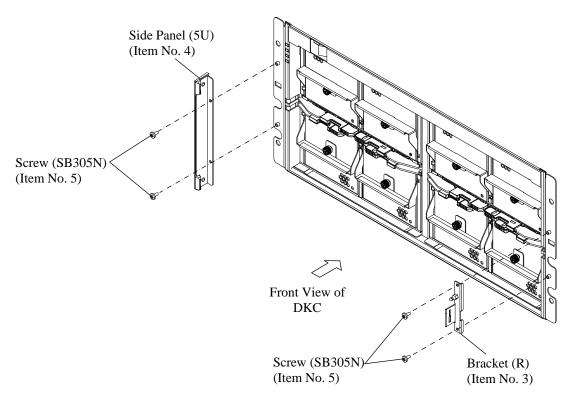
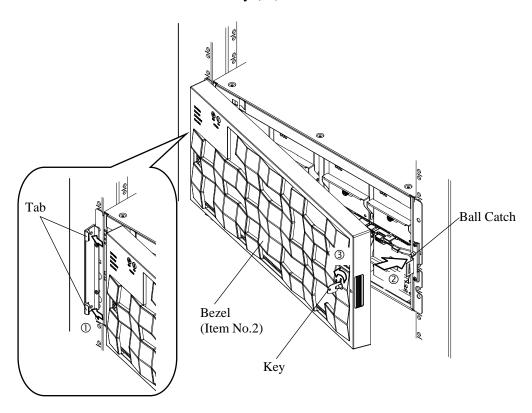


Fig. 3.3.2-1 Attachment of Bracket and Side Panel

#### INST03-03-100

- 2. Attachment of Bezel (5U)
  - a. Unlock the bezel with the key, and hold the key and bottom of bezel with your both hands.
  - b. Insert the tabs on the left front side of the chassis into the tab holes on the bezel (①).
  - c. Fix the bezel by pressing the right side of the bezel to engage it with the ball catch on the front side of the chassis (②).
  - d. Lock the bezel with the key (③).



The state in which the slit of the keyhole is aligned with the mark.

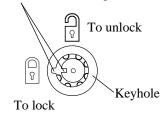


Fig. 3.3.2-2 Attachment of Bezel

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### INST03-03-110

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

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INST03-04-10

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## 3.4 Installation of Drive Box (DW-F700-DBL/DBS/DBX/DBF/RRDB)

Do this work after confirming the below-mentioned notices.

NOTICE: • Confirm Control Chassis (DW700-CBX) is installed.

• Confirm drive is not installed. De-install drive if drive is installed.

### 3.4.1 Rough time of installation

Rough time of RAID Group installation becomes addition of the following A, B, C, D, and E.

Table 3.4.1-1 Rough time of installation

	Process	Time	Note
A	Chassis setting time	DBL/DBS/DBF: 60min / 1chassis DBX: 120min / 1chassis	
В	HDD setting time	1min / 1HDD	
С	Micro code overhead for Path initialization	$90\text{sec} \times \text{(The number of of existing chassis} + \text{number of increase chassis)}$	
D	Micro code over head for HDD spin up	20sec × (number of increase HDD)	
Е	LDEV Formatting time	Refer to THEORY03-07-10	

### INST03-04-20

3.4.2 Parts List

Table 3.4.2-1 Parts List of DW-F700-DBL

Item No.	Part Name	Part No.	Quantity	Remarks
1	LFF Drive Box	3284410-В	1	
2	Bezel	3285062-A	1	
3	Accessory Packing	5548213-A	1	
4	Bracket (L)	3282470-1	1	(*1)
5	Bracket (R)	3285243-1	1	(*1)
6	Side Bezel (L)	2853845-1	1	(*1)
7	Side Bezel (R)	3282398-2	1	(*1)
8	Screw	SB510N	5	(*1)
9	Key	_	2	Key No. T750 (*1)
10	SAS Cable	3285194-A	2	1 m
11	Packing Work (ACC)	3287022-В	1	
12	Repeat Binder	5409042-1	2	100mm, Color: Black (*2)
13	Binder	5532297-1	2	292mm, Color: White (*2)
14	Label (SAS Cable)	3287020-1	1	For CL1 (*2)
15	Label (SAS Cable)	3287020-2	1	For CL2 (*2)

<sup>\*1:</sup> These parts are included in Accessory Packing (Item No.3).

<sup>\*2:</sup> These parts are included in Packing Work (ACC) (Item No.11).

Table 3.4.2-2 Parts List of DW-F700-DBS

Item No.	Part Name	Part No.	Quantity	Remarks
1	SFF Drive Box	3284410-A	1	
2	Bezel	3285062-A	1	
3	Accessory Packing	5548213-A	1	
4	Bracket (L)	3282470-1	1	(*1)
5	Bracket (R)	3285243-1	1	(*1)
6	Side Bezel (L)	2853845-1	1	(*1)
7	Side Bezel (R)	3282398-2	1	(*1)
8	Screw	SB510N	5	(*1)
9	Key	_	2	Key No. T750 (*1)
10	SAS Cable	3285194-A	2	1 m
11	Packing Work (ACC)	3287022-В	1	
12	Repeat Binder	5409042-1	2	100mm, Color: Black (*2)
13	Binder	5532297-1	2	292mm, Color: White (*2)
14	Label (SAS Cable)	3287020-1	1	For CL1 (*2)
15	Label (SAS Cable)	3287020-2	1	For CL2 (*2)

<sup>\*1:</sup> These parts are included in Accessory Packing (Item No.3).

<sup>\*2:</sup> These parts are included in Packing Work (ACC) (Item No.11).

### Table 3.4.2-3 Parts List of DW-F700-DBX

Item No.	Part Name	Part No.	Quantity	Remarks
1	Drive Box	2853983-В	1	
2	SAS Cable (3m)	3285194-B	4	
3	Bezel	3285129-A	1	
4	Cable Support	2853082-1	2	
5	Cable Bracket R	3282281-1	1	
6	Cable Bracket L	3282282-1	1	
7	Cable Tray	2853084-1	1	
8	Slide Rail Attachment Parts	3282120-C	1	
9	Cable Label2	3282126-1	2	Not used (*1)
10	Cable Label2	3282126-2	2	Not used (*1)
11	Screw	SB510N	10	2 spares are included. (*1)
12	Screw	SB406N	18	2 spares are included. (*1)
13	Rack Nut	5510146-1	14	4 spares are included. (*1)
14	Cage Nut	5528564-1	12	2 spares are included. (*1)
15	Socket Bolt	3261899-520	10	2 spares are included. (*1)
16	LL Washer	5513553-513	12	2 spares are included. (*1)
17	Clamp Tape	5544251-1	17	4 spares are included. (*1)
18	Rail R	2853095-D	1	
19	Rail L	2853095-В	1	
20	Stopper	3282300-В	1	
21	Packing Work (ACC)	3287022-C	1	
22	Repeat Binder	5409042-3	2	250mm, Color: Black (*2)
23	Binder	5532297-1	4	292mm, Color: White (*2)
24	Label (SAS Cable)	3287020-1	1	For CL1 (*2)
25	Label (SAS Cable)	3287020-2	1	For CL2 (*2)

<sup>\*1:</sup> These parts are included in Slide Rail Attachment Parts (Item No.8).

Table 3.4.2-4 Parts List of DW-F700-RRDB

Item No.	Part Name	Part No.	Quantity	Remarks
101	Slide Rail	2853847-В	1	
102	Repeat Binder	5409042-3	4	

<sup>\*2:</sup> These parts are included in Packing Work (ACC) (Item No.21).

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Table 3.4.2-5 Parts List of DW-F700-DBF

Item No.	Part Name	Part No.	Quantity	Remarks
1	Flash Module Drive Box	3286590-A	1	Drive Box
2	Slide Rail (NF)	2854494-A	1	
3	Packing (BEZEL-PARTS)①	3286582-A	1	
4	Key	_	2	Key No. 225 (*1)
5	Side Cover	3286577-1	1	(*1)
6	Packing (BEZEL-PARTS)@	3286582-В	1	
7	Rack Nut	5510146-1	10	(*2)
8	Plate	5550593-1	1	(*2)
9	Screw	3261898-512	12	(*2)
10	SAS Cable	3285194-A	2	1 m
11	Packing Work (ACC)	3287022-В	1	
12	Repeat Binder	5409042-1	2	100mm, Color: Black (*3)
13	Binder	5532297-1	2	292mm, Color: White (*3)
14	Label (SAS Cable)	3287020-1	1	For CL1 (*3)
15	Label (SAS Cable)	3287020-2	1	For CL2 (*3)
16	Bezel	3286592-A	1	

<sup>\*1:</sup> These parts are included in Packing (BEZEL-PARTS)① (Item No.3).

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<sup>\*2:</sup> These parts are included in Packing (BEZEL-PARTS)② (Item No.6).

<sup>\*3:</sup> These parts are included in Packing Work (ACC) (Item No.11).

### 3.4.3 Installation Procedure of Drive Box (DW-F700-DBL/DBS)

- 1. Installing the rails (If the rails are already installed, this installation procedure is not required.) EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard
  - A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
  - The boundary of the unit falls on the middle of the interval of 12.7 mm.
  - Universal intervals: Repeat of 44.45 mm (15.875 mm + 15.875 mm + 12.7 mm) Wide intervals: Repeat of 44.45 mm (31.75 mm + 12.7 mm) Maximum number of mountable unit spaces: -

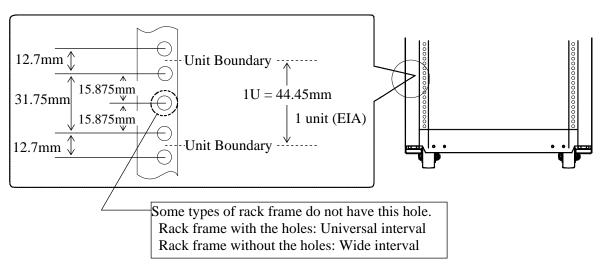


Fig. 3.4.3-1 Attachment Hole Size of Rack

The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame. The following figures show a layout example of installing Drive Box in 40 units rack frame. However, installing positions of Drive Box may differ according to the construction within the rack frame.



Fig. 3.4.3-2 Whole Layout of Installation Position Addresses (RACK-0)

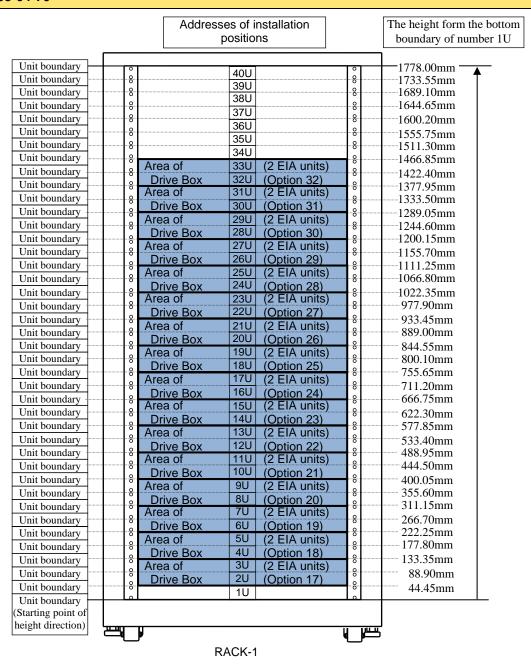


Fig. 3.4.3-3 Whole Layout of Installation Position Addresses (RACK-1)

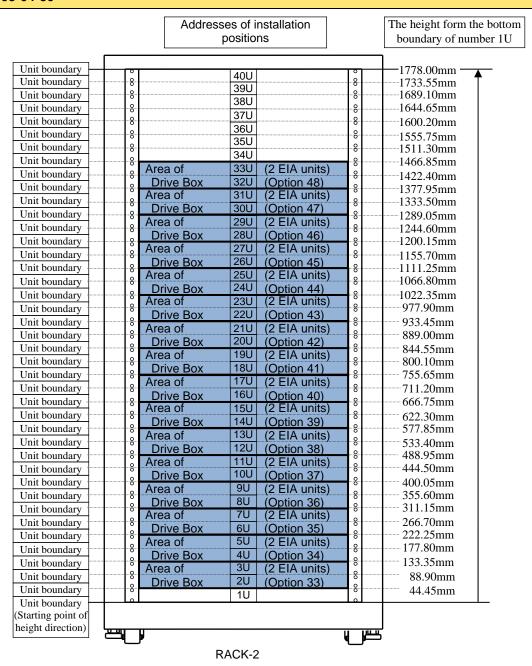


Fig. 3.4.3-4 Whole Layout of Installation Position Addresses (RACK-2)

# 2. Installing rails

- a. Bring down two Clips on the front and rear edge of the rail.
- b. Fit Positioning Pins of the rail (two pins in total on the front and back edge) into holes on the right side of the rack at the position where you want to install the Drive Box.
- c. Raise the Clips of the rail to fix the rail to the rack.

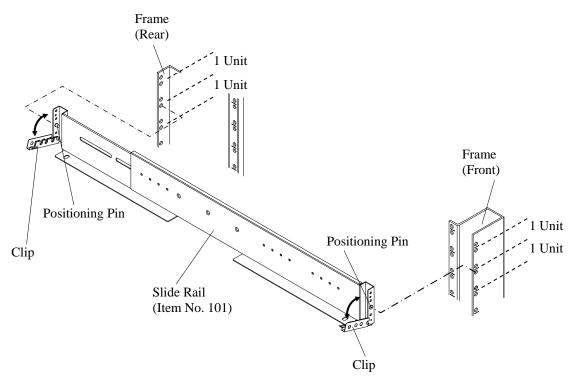


Fig. 3.4.3-5 Attachment of Rails

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- d. Tighten the screw on the rear edge of the rail to fit the rail to the rack. Do not tighten a screw on the front edge of the rail, as it shall be tightened afterward.
- Install the rail into the left side of the rack in the same way as procedures a to d. The same rails are used for right and left side of the rack, therefore the front and rear of the rail on the left side are opposite to those of the rail on the right side.

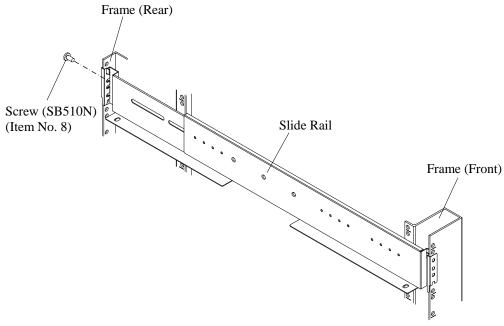


Fig. 3.4.3-6 Fixing the Rail

### 3. Removing parts

If the Drive Box is installed at height below 1m or installed by using the special lifter, this procedure is not required because the Drive Box is installed into the rack frame with its parts mounted. (Go to procedure 4.)

If other than above, remove the parts first and then install the Drive Box into the rack frame.

**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.

- a. Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the Drive Box.
- b. Pull the right and left levers and remove the ENC.
- c. Remove the other ENC in the same manner.

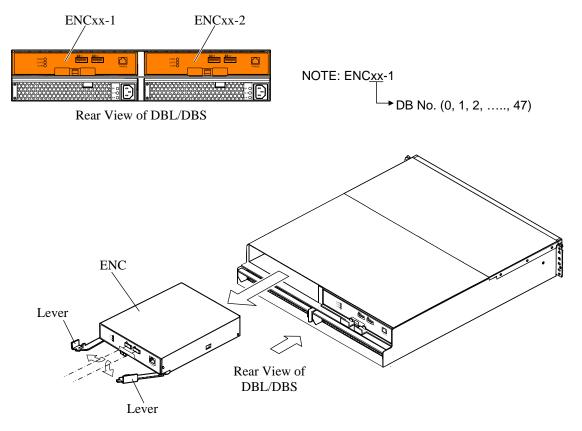


Fig. 3.4.3-7 Removal of ENC

- d. Bring the handle down and forward (②) while pushing the latch of the DBPS inward (①).
- e. Pull the DBPS and remove it from the Drive Box.
- f. Remove the other DBPS in the same manner.

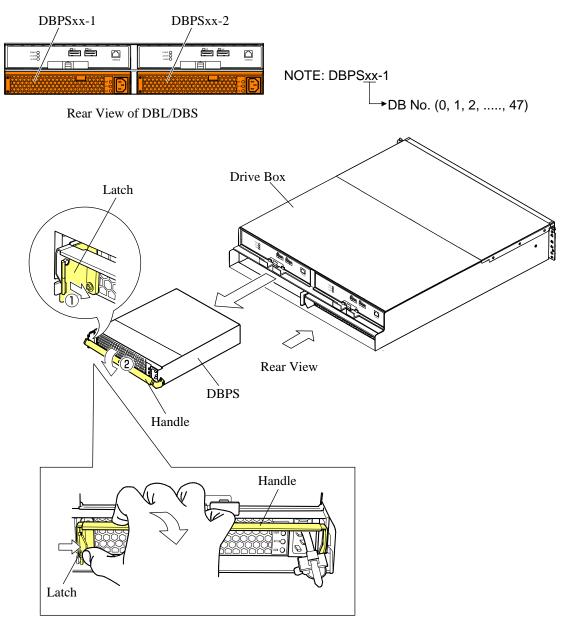


Fig. 3.4.3-8 Removal of DBPS

4. Installing the Drive Box



Paying attention to falls:

Work carefully because the mass of the single DBL is about 27 kg and DBS is about 23 kg.

Beware over turning and dropping:

To prevent Drive Box from over turning and dropping, the installation work must be done by two or more personnel.

a. Install the Drive Box on the front side of the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)

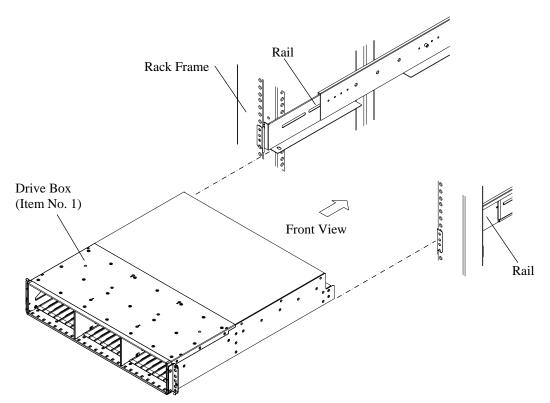


Fig. 3.4.3-9 Installing Drive Box

- 5. Fixing the Drive Box
  - a. Install the Drive Box with the brackets. Fasten the Drive Box to the rack frame with the screws temporarily.
  - b. Tighten the screw pressing the bracket in the direction of  $\mathbb O$  and  $\mathbb O$  to fix the bracket.

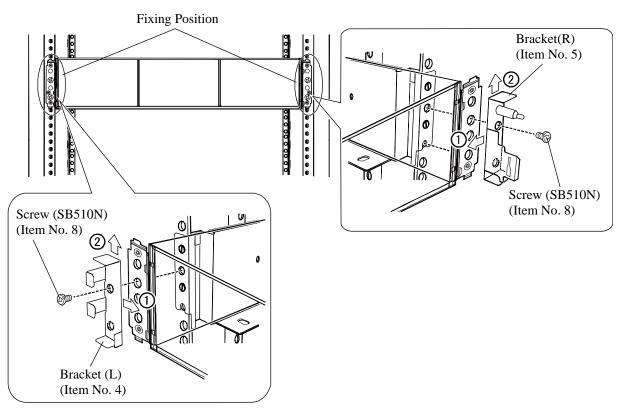


Fig. 3.4.3-10 Fixation of Drive Box (Front)

### 6. Attaching the side bezel

- a. Attach the side bezel in the procedure ① and ② to cover the left side of the front side of the drive box with the side bezel (L) from the top.
- b. Attach the side bezel in the procedure ① and ② to cover the right side of the front side of the drive box with the side bezel (R) from the top.

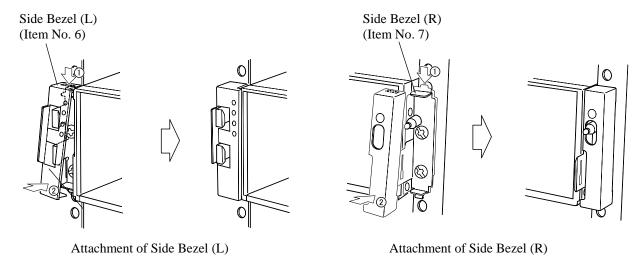


Fig. 3.4.3-11 Attachment of Side Bezels

## 7. Reinstalling removed parts

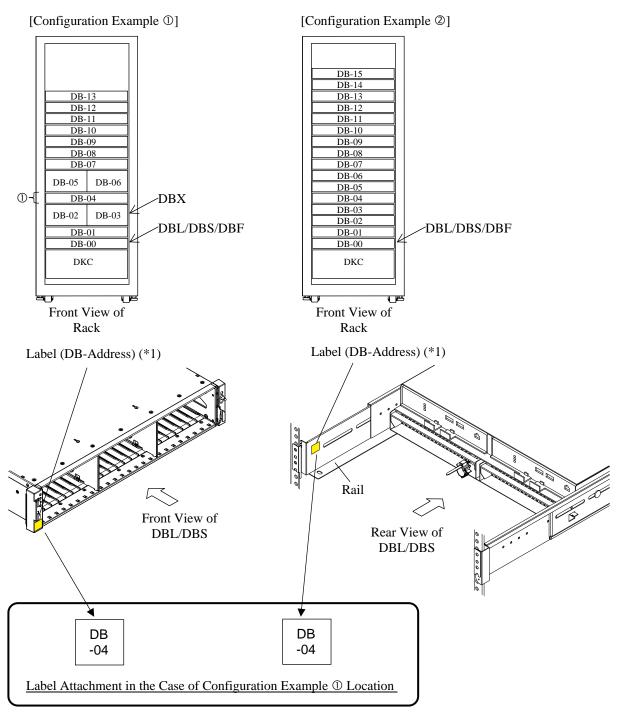
If parts were removed in procedure 3, reinstall the parts.

If parts were not removed, go to procedure 8.

- a. Make the handle of the DBPS completely fall down and forward. (See Fig. 3.4.3-8.)
- b. Insert the DBPS into the slot and push it to the full.
- c. Completely raise the handle and fix the DBPS.
- d. Install the other DBPS in the same manner.
- e. Make the right and left levers of the ENC open. (See Fig. 3.4.3-7.)
- f. Insert the ENC until the edge of the lever comes in contact with the Drive Box.
- g. Close the right and left levers to insert the ENC completely.
- h. Install the other ENC in the same manner.

- 8. Attaching the DB Address Label
  - a. Attach the label to both the front side of the DBL/DBS and the rear side of the rail (two labels in total).

Use the Label (DB-Address) (Part No.: 3287067-1) which is one of the accessories of the DW700-CBX.



\*1:Accessory of DW700-CBX

Fig. 3.4.3-12 Attachment of Label (DB-Address)

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- 9. Connection of Power Cables
  - a. Connect the two power cables to the DBPSs. and fasten it with the cable holder.
  - b. Push the power cable holder toward the DBPS until it stops.

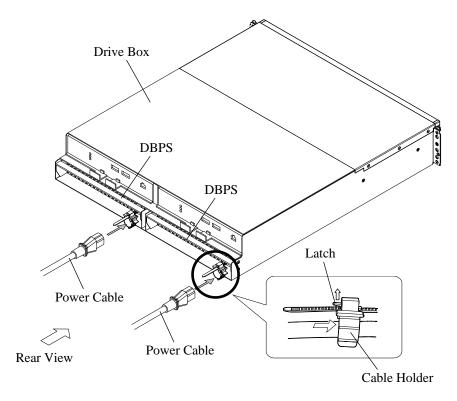


Fig. 3.4.3-13 Connection of Power Cables

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c. Pull the repeat binder through the hole on the rear edge of the rail to fix the power cable. The cables should have extra length moderately.

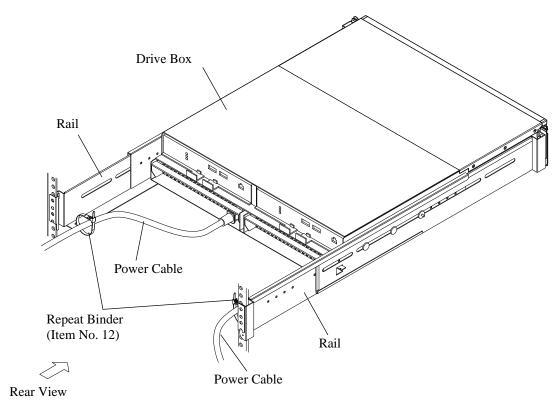


Fig. 3.4.3-14 Fixation of Power Cables

- d. Connect the two power cables to the PDUs.
  - NOTE: Connect the power cable for the DBPSxx-1 to the left PDU.

    Connect the power cable for the DBPSxx-2 to the right PDU.

    If they are plugged in the receptacles of the PDUs on the same side, the function of the duplicated power supply does not work.
    - Check the rated current of the PDU to be used and make sure the total load doesn't exceed the rated current by calculation when connecting a power cable.

Table 3.4.3-1 Load Current of each Model Number

No.	Model Number	Load Current (per PS)		
1	DW700-CBX	3.81A		
2	DW-F700-DBL	2.07A		
3	DW-F700-DBS	2.61A		
4	DW-F700-DBX	4.03A		
5	DW-F700-DBF	2.6A		

e. Fix the power cables to the rack frame.

- 10. Attaching location labels for SAS cable
  - a. Confirm IN/OUT of the SAS cables to be connected. See the Table 3.4.3-2 and the Table 3.4.3-3.

Table 3.4.3-2 Cluster 1 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 1 SAS Cable IN/OUT				
DB No.	DKB-1E(Port 0)	DKB-1E(Port 1)	DKB-1F(Port 0)	DKB-1F(Port 1)	
DB- 00/01/02/03	$1E-0(DKB)$ $\rightarrow ENC00-1(IN)$	$1E-1(DKB)$ $\rightarrow ENC01-1(IN)$	$1F-0(DKB)$ $\rightarrow ENC02-1(IN)$	1F-1(DKB) → ENC03-1(IN)	
DB- 04/05/06/07	ENC00-1(OUT) $\rightarrow$ ENC04-1(IN)	ENC01-1(OUT) $\rightarrow$ ENC05-1(IN)	ENC02-1(OUT) $\rightarrow$ ENC06-1(IN)	ENC03-1(OUT) → ENC07-1(IN)	
DB- 08/09/10/11	ENC04-1(OUT) $\rightarrow$ ENC08-1(IN)	ENC05-1(OUT) → ENC09-1(IN)	ENC06-1(OUT) $\rightarrow$ ENC10-1(IN)	ENC07-1(OUT) → ENC11-1(IN)	
DB- 12/13/14/15	ENC08-1(OUT) $\rightarrow$ ENC12-1(IN)	ENC09-1(OUT) → ENC13-1(IN)	ENC10-1(OUT) $\rightarrow$ ENC14-1(IN)	ENC11-1(OUT) → ENC15-1(IN)	
DB- 16/17/18/19	ENC12-1(OUT) $\rightarrow$ ENC16-1(IN)	ENC13-1(OUT) → ENC17-1(IN)	ENC14-1(OUT) → ENC18-1(IN)	ENC15-1(OUT) → ENC19-1(IN)	
DB- 20/21/22/23	ENC16-1(OUT) $\rightarrow$ ENC20-1(IN)	ENC17-1(OUT) $\rightarrow$ ENC21-1(IN)	ENC18-1(OUT) $\rightarrow$ ENC22-1(IN)	ENC19-1(OUT) → ENC23-1(IN)	
DB- 24/25/26/27	ENC20-1(OUT) → ENC24-1(IN)	ENC21-1(OUT) → ENC25-1(IN)	ENC22-1(OUT) → ENC26-1(IN)	ENC23-1(OUT) → ENC27-1(IN)	
DB- 28/29/30/31	ENC24-1(OUT) $\rightarrow$ ENC28-1(IN)	ENC25-1(OUT) → ENC29-1(IN)	ENC26-1(OUT) → ENC30-1(IN)	ENC27-1(OUT) → ENC31-1(IN)	
DB- 32/33/34/35	ENC28-1(OUT) $\rightarrow$ ENC32-1(IN)	ENC29-1(OUT) → ENC33-1(IN)	ENC30-1(OUT) → ENC34-1(IN)	ENC31-1(OUT) → ENC35-1(IN)	
DB- 36/37/38/39	ENC32-1(OUT) → ENC36-1(IN)	ENC33-1(OUT) → ENC37-1(IN)	ENC34-1(OUT) → ENC38-1(IN)	ENC35-1(OUT) → ENC39-1(IN)	
DB- 40/41/42/43	ENC36-1(OUT) $\rightarrow$ ENC40-1(IN)	ENC37-1(OUT) → ENC41-1(IN)	ENC38-1(OUT) $\rightarrow$ ENC42-1(IN)	ENC39-1(OUT) → ENC43-1(IN)	
DB- 44/45/46/47	ENC40-1(OUT) $\rightarrow$ ENC44-1(IN)	ENC41-1(OUT) → ENC45-1(IN)	ENC42-1(OUT) → ENC46-1(IN)	ENC43-1(OUT) → ENC47-1(IN)	

Table 3.4.3-3 Cluster 2 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 2 SAS Cable IN/OUT				
DB No.	DKB-2E(Port 0)	DKB-2E(Port 1)	DKB-2F(Port 0)	DKB-2F(Port 1)	
DB- 00/01/02/03	2E-0(DKB) → ENC00-2(IN)	2E-1(DKB) → ENC01-2(IN)	2F-0(DKB) → ENC02-2(IN)	2F-1(DKB) → ENC03-2(IN)	
DB- 04/05/06/07	ENC00-2(OUT) $\rightarrow$ ENC04-2(IN)	ENC01-2(OUT) $\rightarrow$ ENC05-2(IN)	ENC02-2(OUT) $\rightarrow$ ENC06-2(IN)	ENC03-2(OUT) $\rightarrow$ ENC07-2(IN)	
DB- 08/09/10/11	ENC04-2(OUT) $\rightarrow$ ENC08-2(IN)	ENC05-2(OUT) $\rightarrow$ ENC09-2(IN)	ENC06-2(OUT) $\rightarrow$ ENC10-2(IN)	ENC07-2(OUT) $\rightarrow$ ENC11-2(IN)	
DB- 12/13/14/15	ENC08-2(OUT) $\rightarrow$ ENC12-2(IN)	ENC09-2(OUT) $\rightarrow$ ENC13-2(IN)	ENC10-2(OUT) → ENC14-2(IN)	ENC11-2(OUT) $\rightarrow$ ENC15-2(IN)	
DB- 16/17/18/19	ENC12-2(OUT) $\rightarrow$ ENC16-2(IN)	ENC13-2(OUT) $\rightarrow$ ENC17-2(IN)	ENC14-2(OUT) → ENC18-2(IN)	ENC15-2(OUT) → ENC19-2(IN)	
DB- 20/21/22/23	ENC16-2(OUT) $\rightarrow$ ENC20-2(IN)	ENC17-2(OUT) $\rightarrow$ ENC21-2(IN)	ENC18-2(OUT) $\rightarrow$ ENC22-2(IN)	ENC19-2(OUT) → ENC23-2(IN)	
DB- 24/25/26/27	ENC20-2(OUT) $\rightarrow$ ENC24-2(IN)	ENC21-2(OUT) $\rightarrow$ ENC25-2(IN)	ENC22-2(OUT) $\rightarrow$ ENC26-2(IN)	ENC23-2(OUT) $\rightarrow$ ENC27-2(IN)	
DB- 28/29/30/31	ENC24-2(OUT) $\rightarrow$ ENC28-2(IN)	ENC25-2(OUT) $\rightarrow$ ENC29-2(IN)	ENC26-2(OUT) $\rightarrow$ ENC30-2(IN)	ENC27-2(OUT) $\rightarrow$ ENC31-2(IN)	
DB- 32/33/34/35	ENC28-2(OUT) $\rightarrow$ ENC32-2(IN)	ENC29-2(OUT) $\rightarrow$ ENC33-2(IN)	ENC30-2(OUT) $\rightarrow$ ENC34-2(IN)	ENC31-2(OUT) → ENC35-2(IN)	
DB- 36/37/38/39	ENC32-2(OUT) $\rightarrow$ ENC36-2(IN)	ENC33-2(OUT) $\rightarrow$ ENC37-2(IN)	ENC34-2(OUT) → ENC38-2(IN)	ENC35-2(OUT) → ENC39-2(IN)	
DB- 40/41/42/43	ENC36-2(OUT) $\rightarrow$ ENC40-2(IN)	ENC37-2(OUT) $\rightarrow$ ENC41-2(IN)	ENC38-2(OUT) $\rightarrow$ ENC42-2(IN)	ENC39-2(OUT) → ENC43-2(IN)	
DB- 44/45/46/47	ENC40-2(OUT) $\rightarrow$ ENC44-2(IN)	ENC41-2(OUT) $\rightarrow$ ENC45-2(IN)	ENC42-2(OUT) → ENC46-2(IN)	ENC43-2(OUT) → ENC47-2(IN)	

b. Select the labels corresponding to the DB from the location labels.

[[Example] Select the labels ① and ② shown below in case of the SAS Cables to connect the DKB-1E (1E-1) with the DB-01 (ENC01-1 IN).

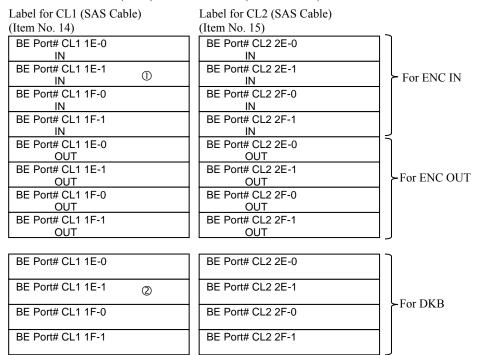
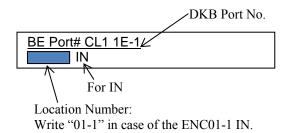


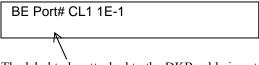
Fig. 3.4.3-15 Selecting Labels

c. Write a location number on a label with a pen conforming to RoHS Directive.

#### ① Writing Required



### ② No Writing Required



The label to be attached to the DKB cable is not required to be written the number.

Fig. 3.4.3-16 Writing on Label

d. Attach the location labels to the SAS Cables.

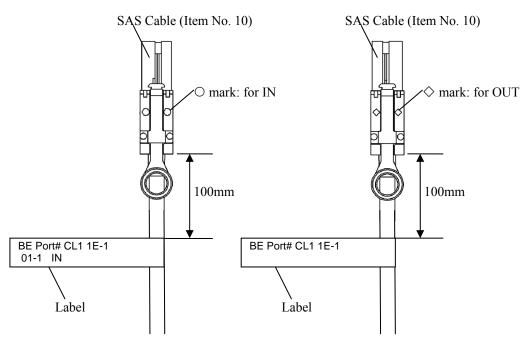


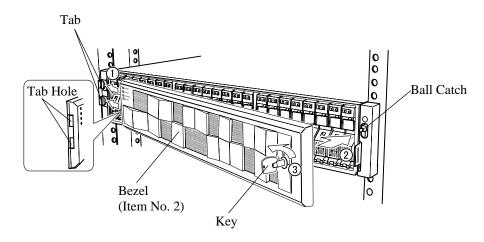
Fig. 3.4.3-17 Attaching Labels

#### 11. Routing and Connecting SAS Cables

a. To route and connect the SAS cables for the DB which are required to be installed at the same time of the installation of the DKB and drives, follow the procedures of the procedure table (INST02-50 No.11 "SAS Cable, Disk Blade and Drive Installation").

#### 12. Attachment of Bezel

- a. Unlock the bezel with the key, and hold the key and bottom of bezel with your both hands.
- b. Insert the tabs on the left front side of the chassis into the tab holes on the bezel (①).
- c. Fix the bezel by pressing the right side of the bezel to engage it with the ball catch on the front side of the chassis (②).
- d. Lock the bezel with the key (3).



The state in which the slit of the keyhole is aligned with the mark.

(The key can be inserted or pulled out in this state.)

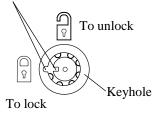


Fig. 3.4.3-18 Attachment of Bezel

13. Return to the working table and do the rest of the work

New Installation: INST02-10

Non-Disruptive Installation: INST02-50

### 3.4.4 Installation Procedure of Drive Box (DW-F700-DBX)

- 1. Installing the rails (If the rails are already installed, this installation procedure is not required.) EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard
  - A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
  - The boundary of the unit falls on the middle of the interval of 12.7 mm.
  - Universal intervals: Repeat of 44.45 mm (15.875 mm + 15.875 mm + 12.7 mm) Wide intervals: Repeat of 44.45 mm (31.75 mm + 12.7 mm)

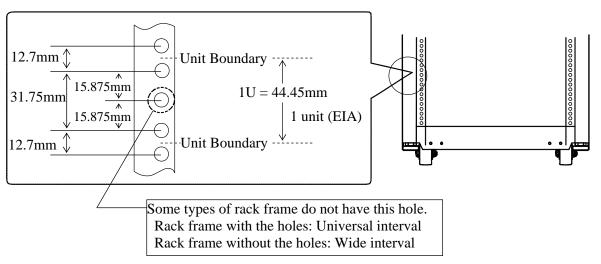


Fig. 3.4.4-1 Attachment Hole Size of Rack

The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame. The following figures show a layout example of installing Drive Box in 40 units rack frame. However, installing positions of Drive Box may differ according to the construction within the rack frame.

NOTICE: Up to six DBX (DENSE) can be installed in a rack. Up to five DBX can be installed in a rack when a DKC (CBX) is installed there.

Install the DBX at a height of 1,300mm or less above the ground (at a range between 2U and 26U).

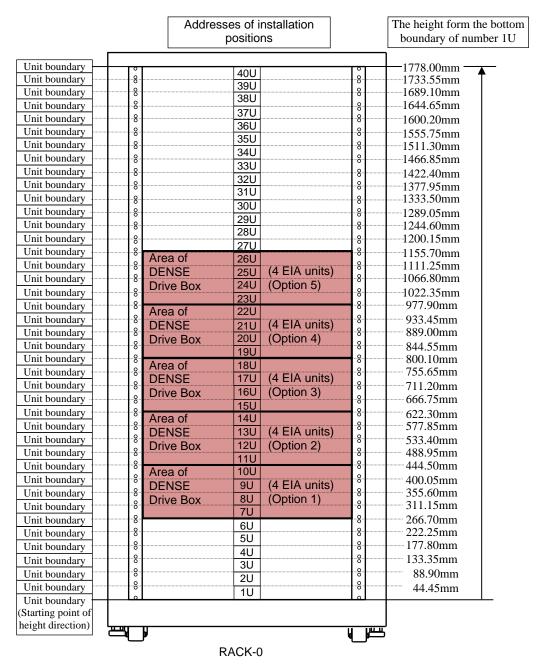


Fig. 3.4.4-2 Whole Layout of Installation Position Addresses (RACK-0)

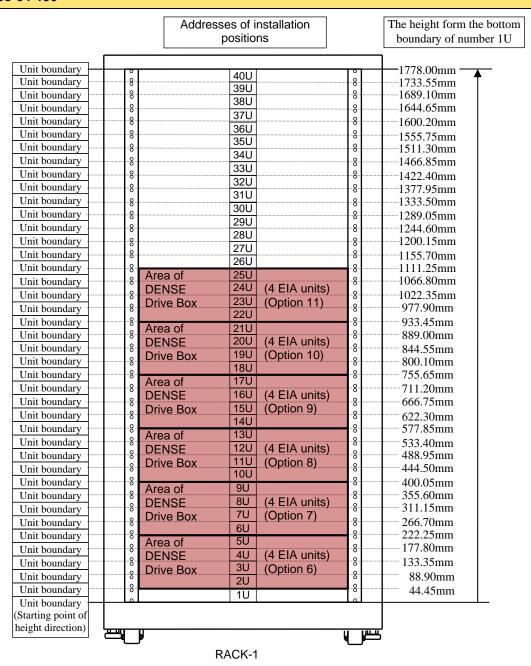


Fig. 3.4.4-3 Whole Layout of Installation Position Addresses (RACK-1)

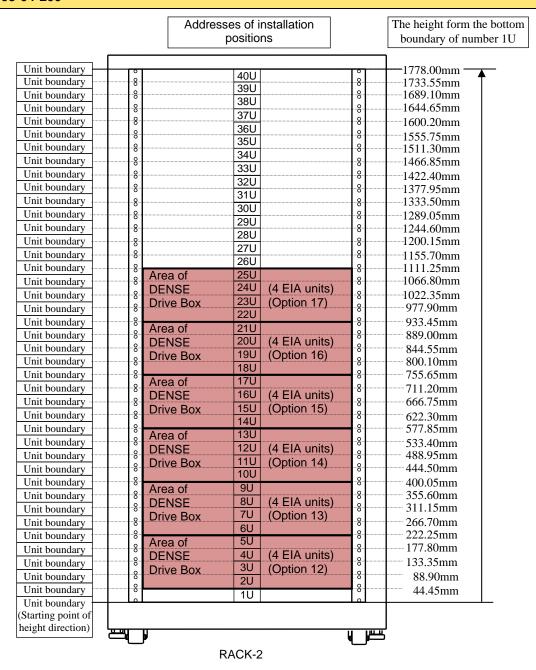


Fig. 3.4.4-4 Whole Layout of Installation Position Addresses (RACK-2)

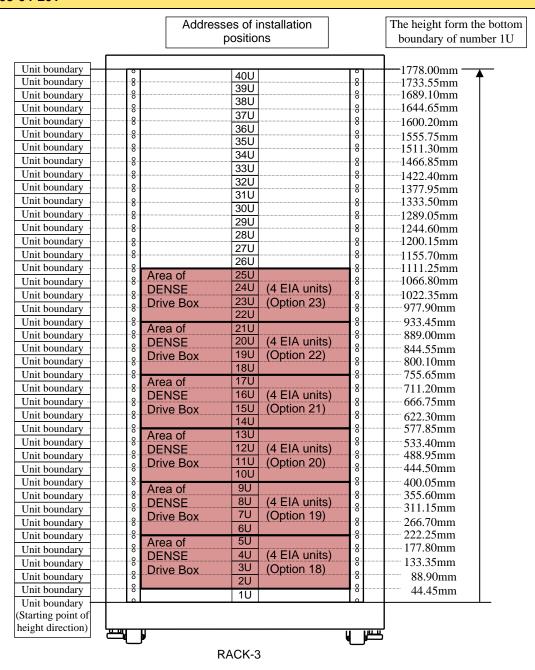


Fig. 3.4.4-5 Whole Layout of Installation Position Addresses (RACK-3)

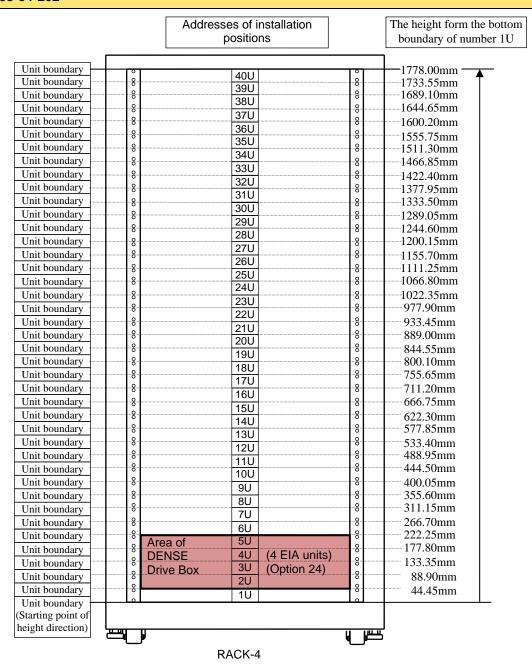


Fig. 3.4.4-6 Whole Layout of Installation Position Addresses (RACK-4)

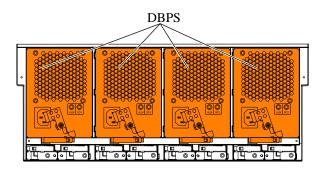
### 2. Removing parts

If the Drive Box is installed at height below 1m or installed by using the special lifter, this procedure is not required because the Drive Box is installed into the rack frame with its parts mounted. (Go to procedure 3.)

If other than above, remove the parts first and then install the Drive Box into the rack frame.

**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.

- a. Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the Drive Box.
- b. Open the lever toward you while pressing the button (blue) which fixes the lever of the DBPS.
  - When the lever is completely opened, the DBPS comes out forward.
- c. Pull and remove the DBPS.
- d. Remove the other DBPSs in the same manner.



Rear View of Drive Box

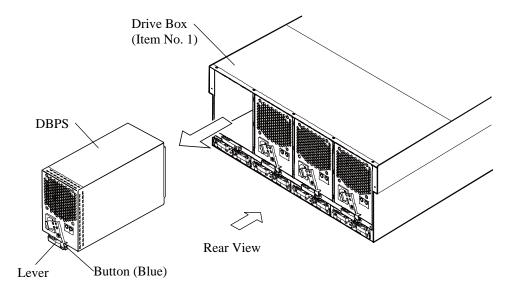


Fig. 3.4.4-7 Removal of DBPS

- 3. Installing the Inners
  - a. Remove the Inners from the Inters of the rails by sliding them. Remove the Inner of two rails respectively.

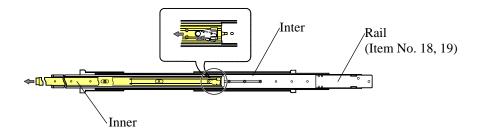


Fig. 3.4.4-8 Removal of Inner

b. Install the Inners in the both sides of DBX.Fix them with the bind screws (six places each at right and left).

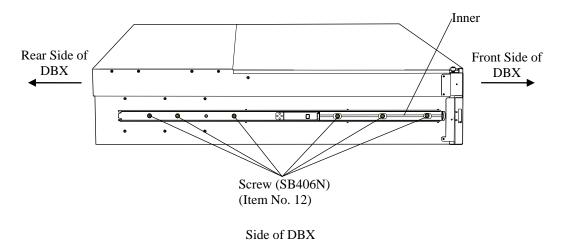


Fig. 3.4.4-9 Installation of the Inner

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### 4. Installing the rails

- a. Loosen the adjustable screws for the rail (four places).
  - Loosen the adjustable screw on the front side of the rail from the adjustable hole by sliding the Inter in the direction of the back side to the adjustable position.
  - When the rack frame and the width of rack rail are not matched even if the adjustable screw is loosened, refer to "When the rack frame and the width of rack rail are mismatched" (INST03-04-230), and then adjust the length of the rack rail.
- b. On the right side of the installation location in the rack frame, align the circular holes of the rail with those of the rack frame and insert the rack nuts (at four places in total in front and rear.).
- c. Fix the rail with the screws (at four places in total in front and rear.). Adjust the length of the rail by sliding the arrow part  $(\Leftrightarrow)$ .

NOTE: Fix the rail pressing it outward.

- d. Fix the rail with the adjustable screw.
  - Tighten the adjustable screw on the front side of the rail from the adjustable hole by sliding the Inter in the direction of the back side to the adjustable position.
- e. Attach the rack nut for fixing the chassis to the front side of the rail.
- f. In the same way, fix the rail to the left side of the rack frame.

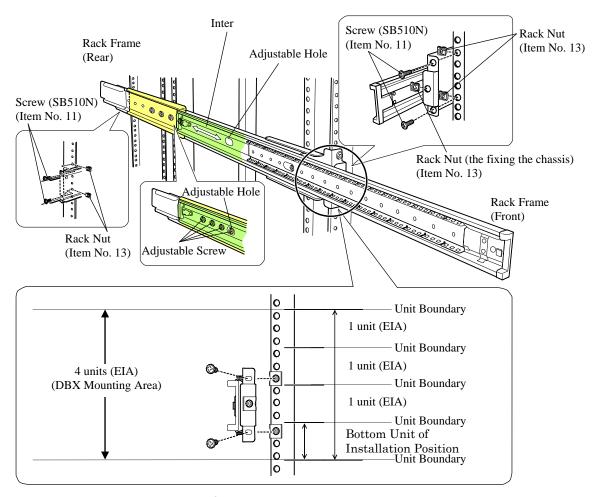


Fig. 3.4.4-10 Fixation of Rails

#### When the rack frame and the width of rack rail are mismatched

Just by loosening the adjustable screw, the width of rack rail may not fit the rack frame. In the following procedure, remove the adjusting screws and change the location of the rear bracket to adjust the length of the rack rail.

- a. Remove the adjusting screws 1 to 4 and the nut plates 1 and 2 which fix the rear bracket. To remove the adjusting screw which is hidden in the inter, move the inter, and then remove the screw from the adjusting hole.
- b. Slide the rear bracket according to the depth of the rack.
- c. Move the adjusting screws 1 to 4 and the nut plates 1 and 2 according to the rear bracket, and fix the rear bracket.

Here, fix the rear bracket with the adjusting screws loosened.

NOTE: When the rail length become shorter than 650mm to 700mm, install the nut plate 2 with the adjusting screw 3 and 4.

Adjusting screw 1 and 2, and nut plate 1 are not needed.

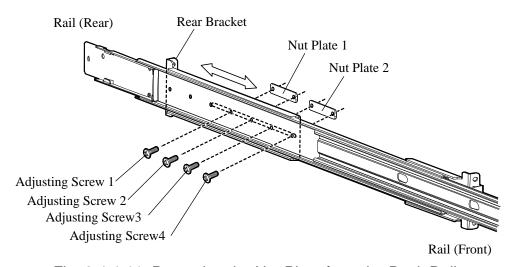


Fig. 3.4.4-11 Removing the Nut Plate from the Rack Rail

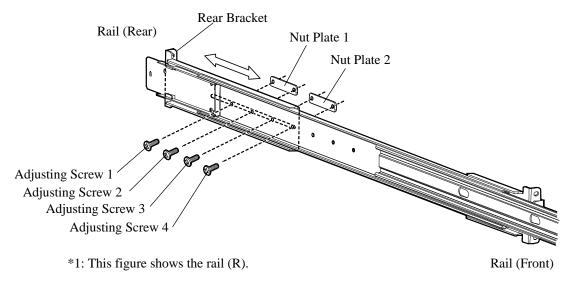


Fig. 3.4.4-12 Installing the Nut Plate by Adjusting the Rack Rail Length

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### INST03-04-240

# 5. Installing Drive Box

a. Pull out the right and left center rails toward you until they are locked.

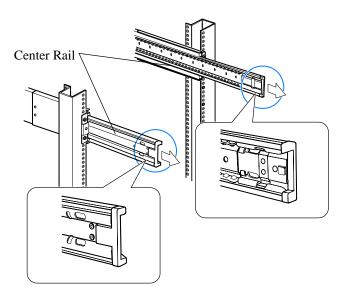


Fig. 3.4.4-13 Pulling out the Center Rails



Paying attention to falls:

Work carefully because the mass of the single DBX is about 50 kg.

Beware over turning and dropping:

To prevent Drive Box from over turning and dropping, the installation work must be done by two or more personnel.

- b. Move the Drive Box on the front side of the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)
- c. Adjust the position of the inner rails by pushing the right and left center rails inward by hand, and then insert them.

NOTE: Check that the inner rails fit surely in the center rail from the hole for checking of the center rail.

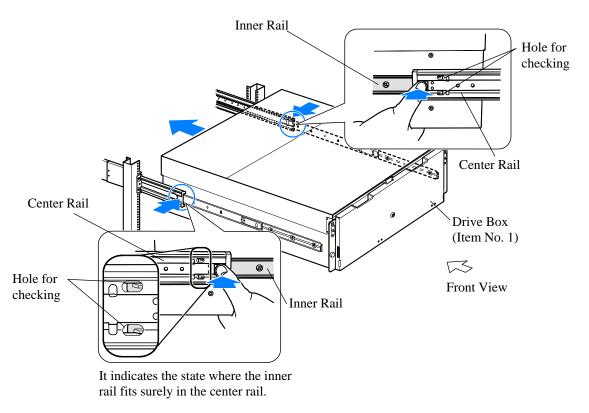


Fig. 3.4.4-14 Insertion of Inner Rails

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d. Push the Drive Box gently until the right and left rack rails are locked.

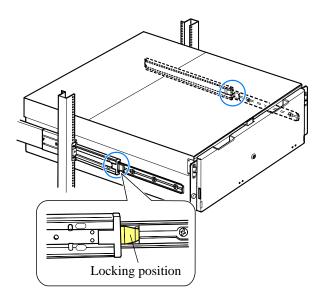


Fig. 3.4.4-15 Rack Rail Locking Position

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### 6. Fixing the Drive Box

a. Release the locks by sliding the latch releasing lever in the front end of the right and left rack rail, and then push the front side of DBX gently in to the end by pushing its front side gently.

NOTE: Be careful not to hit the center rail during the work.

b. Tighten the front side fixing screw (one each for right and left) to fix it.

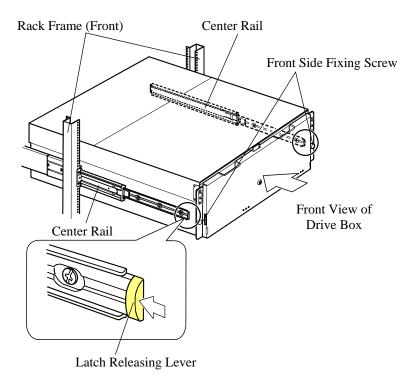


Fig. 3.4.4-16 Fixation of Drive Box

### 7. Reinstalling removed parts

If parts were removed in procedure 2, reinstall the parts.

If parts were not removed, go to procedure 8.

- a. Open the lever of the DBPS. (See Fig. 3.4.4-7.)
- b. Insert the DBPS until the lever leans a little and bring down the lever completely until the button (blue) which fixes the lever clicks.
- c. Install the other DBPSs in the same manner.

- 8. Attaching location labels for SAS cable
  - a. Confirm IN/OUT of the SAS cables to be connected. See the Table 3.4.4-1 and the Table 3.4.4-2.

Table 3.4.4-1 Cluster 1 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 1 SAS Cable IN/OUT				
DB No.	DKB-1E(Port 0)	DKB-1E(Port 1)	DKB-1F(Port 0)	DKB-1F(Port 1)	
DB- 00/01/02/03	$1E-0(DKB)$ $\rightarrow ENC00-1(IN)$	$1E-1(DKB)$ $\rightarrow ENC01-1(IN)$	$1F-0(DKB)$ $\rightarrow ENC02-1(IN)$	$ 1F-1(DKB) \\ \rightarrow ENC03-1(IN) $	
DB- 04/05/06/07	ENC00-1(OUT) $\rightarrow$ ENC04-1(IN)	ENC01-1(OUT) $\rightarrow$ ENC05-1(IN)	ENC02-1(OUT) $\rightarrow$ ENC06-1(IN)	ENC03-1(OUT) $\rightarrow$ ENC07-1(IN)	
DB- 08/09/10/11	ENC04-1(OUT) $\rightarrow$ ENC08-1(IN)	ENC05-1(OUT) $\rightarrow$ ENC09-1(IN)	ENC06-1(OUT) $\rightarrow$ ENC10-1(IN)	ENC07-1(OUT) $\rightarrow$ ENC11-1(IN)	
DB- 12/13/14/15	ENC08-1(OUT) $\rightarrow$ ENC12-1(IN)	ENC09-1(OUT) $\rightarrow$ ENC13-1(IN)	ENC10-1(OUT) $\rightarrow$ ENC14-1(IN)	ENC11-1(OUT) → ENC15-1(IN)	
DB- 16/17/18/19	ENC12-1(OUT) $\rightarrow$ ENC16-1(IN)	ENC13-1(OUT) $\rightarrow$ ENC17-1(IN)	ENC14-1(OUT) → ENC18-1(IN)	ENC15-1(OUT) $\rightarrow$ ENC19-1(IN)	
DB- 20/21/22/23	ENC16-1(OUT) $\rightarrow$ ENC20-1(IN)	ENC17-1(OUT) $\rightarrow$ ENC21-1(IN)	ENC18-1(OUT) $\rightarrow$ ENC22-1(IN)	ENC19-1(OUT) → ENC23-1(IN)	
DB- 24/25/26/27	ENC20-1(OUT) $\rightarrow$ ENC24-1(IN)	ENC21-1(OUT) $\rightarrow$ ENC25-1(IN)	ENC22-1(OUT) $\rightarrow$ ENC26-1(IN)	ENC23-1(OUT) $\rightarrow$ ENC27-1(IN)	
DB- 28/29/30/31	ENC24-1(OUT) $\rightarrow$ ENC28-1(IN)	ENC25-1(OUT) $\rightarrow$ ENC29-1(IN)	ENC26-1(OUT) $\rightarrow$ ENC30-1(IN)	ENC27-1(OUT) $\rightarrow$ ENC31-1(IN)	
DB- 32/33/34/35	ENC28-1(OUT) $\rightarrow$ ENC32-1(IN)	ENC29-1(OUT) $\rightarrow$ ENC33-1(IN)	ENC30-1(OUT) $\rightarrow$ ENC34-1(IN)	ENC31-1(OUT) $\rightarrow$ ENC35-1(IN)	
DB- 36/37/38/39	ENC32-1(OUT) $\rightarrow$ ENC36-1(IN)	ENC33-1(OUT) $\rightarrow$ ENC37-1(IN)	ENC34-1(OUT) $\rightarrow$ ENC38-1(IN)	ENC35-1(OUT) → ENC39-1(IN)	
DB- 40/41/42/43	ENC36-1(OUT) $\rightarrow$ ENC40-1(IN)	ENC37-1(OUT) $\rightarrow$ ENC41-1(IN)	ENC38-1(OUT) $\rightarrow$ ENC42-1(IN)	ENC39-1(OUT) → ENC43-1(IN)	
DB- 44/45/46/47	ENC40-1(OUT) $\rightarrow$ ENC44-1(IN)	ENC41-1(OUT) $\rightarrow$ ENC45-1(IN)	ENC42-1(OUT) → ENC46-1(IN)	ENC43-1(OUT) → ENC47-1(IN)	

Table 3.4.4-2 Cluster 2 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 2 SAS Cable IN/OUT				
DB No.	DKB-2E(Port 0)	DKB-2E(Port 0) DKB-2E(Port 1) DKB-2F(Port 0)		DKB-2F(Port 1)	
DB-	2E-0(DKB)	2E-1(DKB)	2F-0(DKB)	2F-1(DKB)	
00/01/02/03	$\rightarrow$ ENC00-2(IN)	$\rightarrow$ ENC01-2(IN)	$\rightarrow$ ENC02-2(IN)	$\rightarrow$ ENC03-2(IN)	
DB-	ENC00-2(OUT)	ENC01-2(OUT)	ENC02-2(OUT)	ENC03-2(OUT)	
04/05/06/07	$\rightarrow$ ENC04-2(IN)	$\rightarrow$ ENC05-2(IN)	$\rightarrow$ ENC06-2(IN)	$\rightarrow$ ENC07-2(IN)	
DB-	ENC04-2(OUT)	ENC05-2(OUT)	ENC06-2(OUT)	ENC07-2(OUT)	
08/09/10/11	$\rightarrow$ ENC08-2(IN)	$\rightarrow$ ENC09-2(IN)	$\rightarrow$ ENC10-2(IN)	$\rightarrow$ ENC11-2(IN)	
DB-	ENC08-2(OUT)	ENC09-2(OUT)	ENC10-2(OUT)	ENC11-2(OUT)	
12/13/14/15	$\rightarrow$ ENC12-2(IN)	$\rightarrow$ ENC13-2(IN)	$\rightarrow$ ENC14-2(IN)	$\rightarrow$ ENC15-2(IN)	
DB-	ENC12-2(OUT)	ENC13-2(OUT)	ENC14-2(OUT)	ENC15-2(OUT)	
16/17/18/19	$\rightarrow$ ENC16-2(IN)	$\rightarrow$ ENC17-2(IN)	$\rightarrow$ ENC18-2(IN)	$\rightarrow$ ENC19-2(IN)	
DB-	ENC16-2(OUT)	ENC17-2(OUT)	ENC18-2(OUT)	ENC19-2(OUT)	
20/21/22/23	$\rightarrow$ ENC20-2(IN)	$\rightarrow$ ENC21-2(IN)	$\rightarrow$ ENC22-2(IN)	$\rightarrow$ ENC23-2(IN)	
DB-	ENC20-2(OUT)	ENC21-2(OUT)	ENC22-2(OUT)	ENC23-2(OUT)	
24/25/26/27	$\rightarrow$ ENC24-2(IN)	$\rightarrow$ ENC25-2(IN)	$\rightarrow$ ENC26-2(IN)	$\rightarrow$ ENC27-2(IN)	
DB-	ENC24-2(OUT)	ENC25-2(OUT)	ENC26-2(OUT)	ENC27-2(OUT)	
28/29/30/31	$\rightarrow$ ENC28-2(IN)	$\rightarrow$ ENC29-2(IN)	$\rightarrow$ ENC30-2(IN)	$\rightarrow$ ENC31-2(IN)	
DB-	ENC28-2(OUT)	ENC29-2(OUT)	ENC30-2(OUT)	ENC31-2(OUT)	
32/33/34/35	$\rightarrow$ ENC32-2(IN)	$\rightarrow$ ENC33-2(IN)	$\rightarrow$ ENC34-2(IN)	$\rightarrow$ ENC35-2(IN)	
DB-	ENC32-2(OUT)	ENC33-2(OUT)	ENC34-2(OUT)	ENC35-2(OUT)	
36/37/38/39	$\rightarrow$ ENC36-2(IN)	$\rightarrow$ ENC37-2(IN)	$\rightarrow$ ENC38-2(IN)	$\rightarrow$ ENC39-2(IN)	
DB-	ENC36-2(OUT)	ENC37-2(OUT)	ENC38-2(OUT)	ENC39-2(OUT)	
40/41/42/43	$\rightarrow$ ENC40-2(IN)	$\rightarrow$ ENC41-2(IN)	$\rightarrow$ ENC42-2(IN)	$\rightarrow$ ENC43-2(IN)	
DB-	ENC40-2(OUT)	ENC41-2(OUT)	ENC42-2(OUT)	ENC43-2(OUT)	
44/45/46/47	$\rightarrow$ ENC44-2(IN)	$\rightarrow$ ENC45-2(IN)	$\rightarrow$ ENC46-2(IN)	$\rightarrow$ ENC47-2(IN)	

# b. Select the labels corresponding to the DB from the location labels.

[[Example] Select the labels ① and ② shown below in case of the SAS Cables to connect the DKB-1E (1E-1) with the DB-01 (ENC01-1 IN).

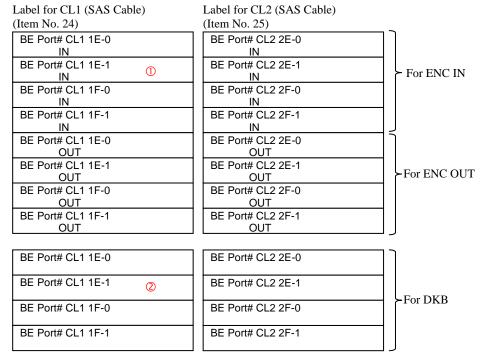
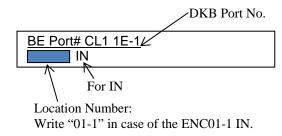


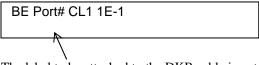
Fig. 3.4.4-17 Selecting Labels

c. Write a location number on a label with a pen conforming to RoHS Directive.

### ① Writing Required



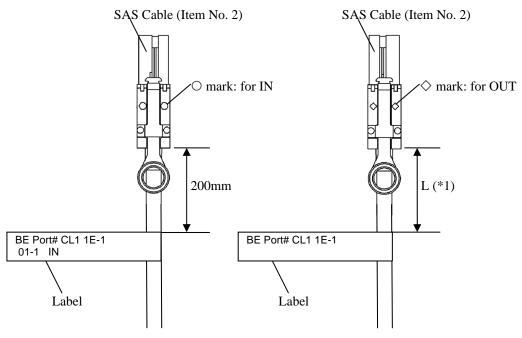
### ② No Writing Required



The label to be attached to the DKB cable is not required to be written the number.

Fig. 3.4.4-18 Writing on Label

d. Attach the location labels to the SAS Cables.



\*1: Label attaching position
When connecting to CBX/DBL/DBS: L=100mm
When connecting to DBX: L=200mm

Fig. 3.4.4-19 Attaching Labels

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## 9. Connecting the SAS Cables

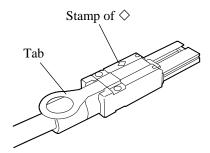
NOTE: • The rubber cap is attached to the SAS connector.

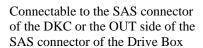
Remove the rubber cap before installing the SAS cable.

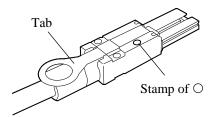
• As for the plug of the SAS cable, both ends are different. One plug can be inserted in the SAS connector of the DKC or the OUT side of the Drive Box.

The other plug can be inserted in the IN side of the Drive Box.

Check the stamp of the plug and connect the SAS cable.







Connectable to the IN side of the SAS connector of the Drive Box

Fig. 3.4.4-20 SAS Cable Stamp Position

- a. Open the cable routing bar on the rear side of the DBX toward you.
- b. Remove the cable holder of the ENC to which the SAS cable is connected.

  Open the lever and remove the SAS cable pressing the button (blue) which fixes the lever of the cable holder.

NOTE: When using the lever, be sure not to push the button (blue) of other cable holders.

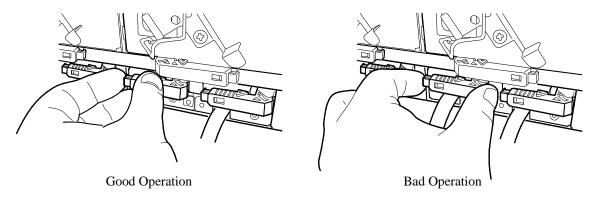


Fig. 3.4.4-21 Cable Holder Button (blue) Operation

c. Loosen the screw (blue) which fixes the holder cover, and remove it.

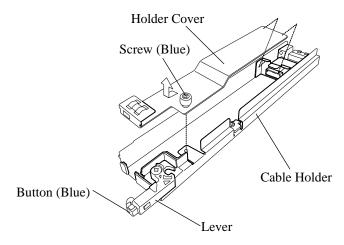


Fig. 3.4.4-22 Removal of Holder Cover

d. Connect the SAS cable to the cable holder.Connect the cable having it passed under the lever of the cable holder.

NOTE: Pull the SAS cable lightly to check if it is surely connected to the cable holder.

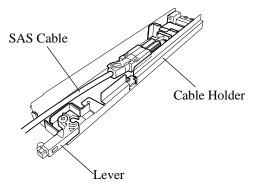


Fig. 3.4.4-23 Connection of SAS Cable

e. Attach the holder cover to the cable holder, and tighten the screw (blue) to fix the cover.

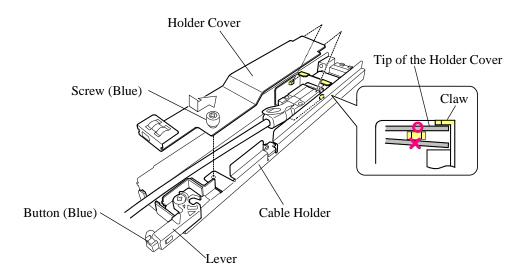


Fig. 3.4.4-24 Attachment of Cable Holder

f. Attach the cable holder to the Drive Box.

Open the lever of the cable holder toward you. Insert the cable holder until its lever is slightly closed, and then close the lever completely while pressing the button (blue), which fixes the lever.

NOTE: Connect the cable holder to the correct connector (IN/OUT).

g. Return the cable routing bar on the rear side of the Drive Box to its original position.

### 10. Installing the Cables Routing Bars

a. Install the cable routing bar installation parts in the right and left of the rear side of the Drive Box, and fix them with the screws. (two places each at right and left)
 The shape of the installation parts differs in the right and left routing bars, and they have no (R) and (L) mark. Install it confirming its shape.

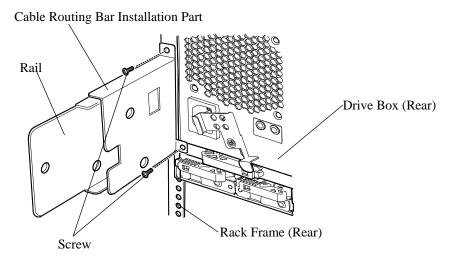
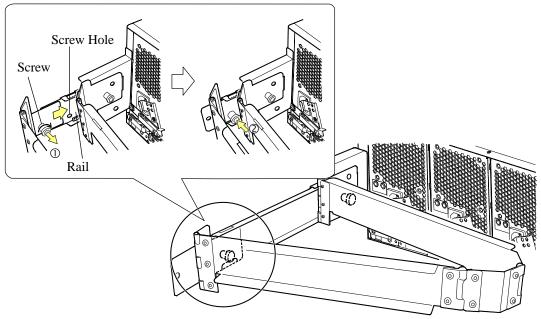


Fig. 3.4.4-25 Installation of Cable Routing Bar Installation Part

- b. Pull the screw of the stopper in the direction ①, and rotate it 90 degrees. The screw will be fixed with them opened.
- c. Install one side of the cable routing bars up to the place where the screw holes of the rails match, and fix it by pressing it in the direction ② while turning the screws 90 degrees.



\*1: The figure shows the rear left side of the DBX.

Fig. 3.4.4-26 Connection with Rail

d. Pull the screw of the stopper in the direction ①, and rotate it 90 degrees. The screw will be fixed with them opened.

e. Install the other side of the cable routing bars up to the place where the screw holes of the rails match, and fix it by pressing it in the direction ② while turning the screws 90 degrees.

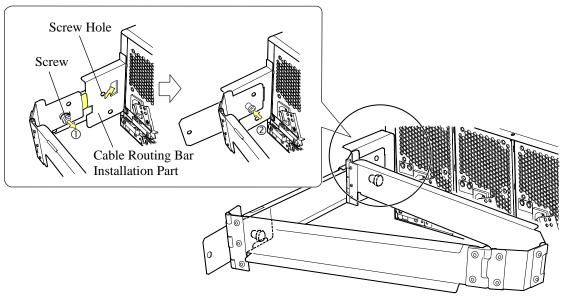


Fig. 3.4.4-27 Connection with Rail

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### 11. Attaching the DB-Address Label

Attach two labels to the front and rear side of the DBX (four labels in total).
 Use the Label (DB-Address) (Part No.: 3287067-1) which is one of the accessories of the DW700-CBX.

# [Configuration Example] DB-13 DB-12 DB-11 DB-10 DB-09 DB-08 DB-05 DB-06 **DBX** DB-04 ①-{| DB-02 DB-03 DBL/DBS/DBF DB-01 DB-00 DKC Front View of **RACK** Label (DB-Address) (\*1) Label (DB-Address) (\*1) Rear View of DBX Front View of DBX DB DB DB DB -03 -02 -02 -03 <u>Label Attachment in the Case of Configuration Example ① Location</u>

\*1: Accessory of DW700-CBX

Fig. 3.4.4-28 Attachment of Label (DB-Address)

## 12. Connecting Power Cables

- a. Connect the power cable to the DBPSs.
- b. Insert the each power cable plug into the corresponding receptacle of the PDU. (Use the PDU receptacles in the order from the J101 to J103.)
  - NOTE: Connect the power cables for the DBPSxx-1 and DBPSyy-1 to the left PDU. Connect the power cables for the DBPSxx-2 and DBPSyy-2 to the right PDU. If they are plugged in the receptacles of the PDUs on the same side, the function of the duplicated power supply does not work.
    - Do not plug any cable other than the power cable of the mounted chassis in the outlet of the PDU.
    - Check the rated current of the PDU to be used and make sure the total load doesn't exceed the rated current by calculation when connecting a power cable.
- c. Route the power cables and fix them to the rack frame.

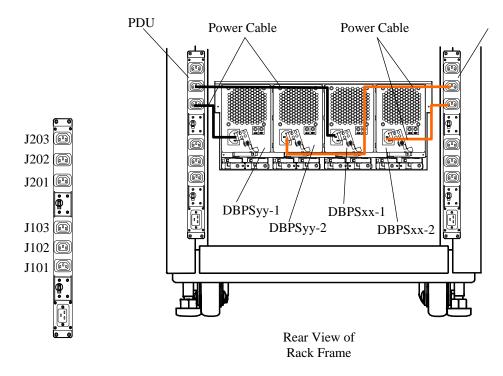


Fig. 3.4.4-29 Example of Connecting Power Cables

Table 3.4.4-3 Load Current of each Model Number

No.	Model Number	Load Current (per PS)	
1	DW700-CBX	3.81A	
2	DW-F700-DBL	2.07A	
3	DW-F700-DBS	2.61A	
4	DW-F700-DBX	4.03A	
5	DW-F700-DBF	2.6A	

13. Routing the Cables

Route the SAS cables and power cables.

The cable numbers to be routed are shown in Fig. 3.4.4-30.

NOTE: When bending the cable to connect it, give it a bend with a long radius (not less than 30 mm) so as not to apply the cable and the connector excessive stresses.

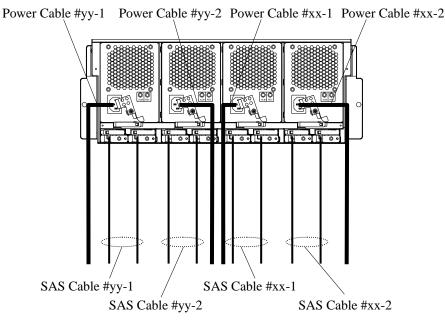


Fig. 3.4.4-30 Cable Number

- a. Open the cable routing bars toward you.
- b. Route the SAS cables (#xx-1, #xx-2) above the receptacles of the power supplies (#yy-1, #yy-2) and the SAS cables (#yy-1, #yy-2) above he receptacles of the power supplies (#xx-1, #xx-2) to be crossed and fasten them with a clamp tape. (The SAS cables around the cable holder slots are required to have extra length so as not to be stretched.)

NOTE: Keep the cables from hanging down below the Drive Box.

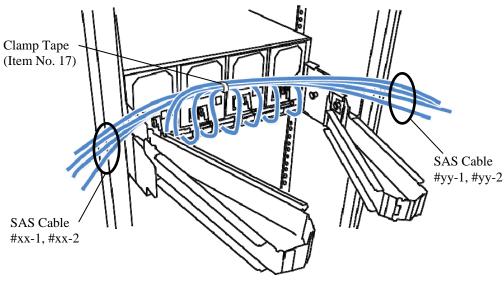


Fig. 3.4.4-31 Routing of SAS Cables

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c. Route the power cable #xx-2 and the power cable #yy-1 and fold them back to overlap each other at the center.

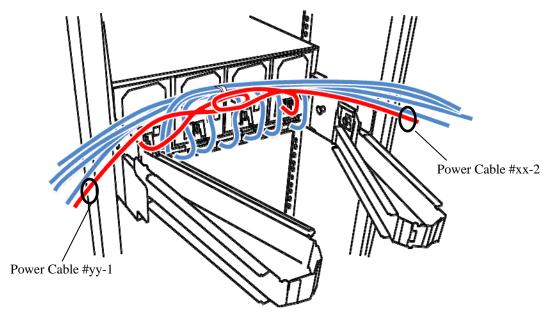


Fig. 3.4.4-32 Routing of Power Cables (#xx-2, #yy-1)

- d. Route the power cable #xx-1 and the power cable #yy-2 to be crossed so that they support the power cable #xx-2 and the power cable #yy-1 from below.
- e. Bundle the four power cables with the clamp tape at the center.

NOTE: Keep the cables from hanging down below the Drive Box.

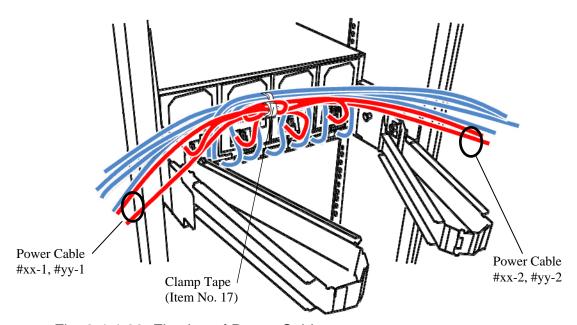


Fig. 3.4.4-33 Fixation of Power Cables

f. Fix the SAS cables (#xx-1, #xx-2) and the power cables (#xx-1, #yy-1) to the cable routing bar #1 with four clamp tapes.

The cables are required to have adequate extra length so as not to be stretched and be applied stress when the Drive Box is moved.

NOTE 1: Keep the cables from hanging down below the Drive Box.

NOTE 2: Be careful not to twist the cables.

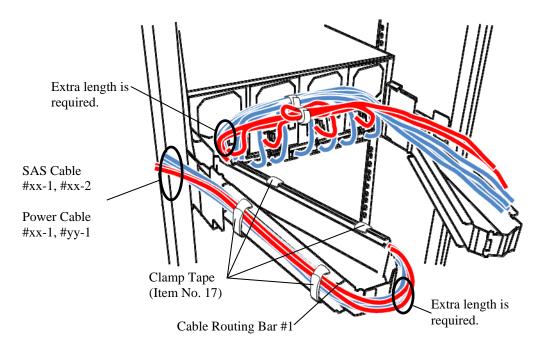


Fig. 3.4.4-34 Fixation of SAS Cables (#xx-1, #xx-2) and Power Cables (#xx-1, #yy-1)

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g. Fix the SAS cables (#yy-1, #yy-2) and the power cables (#xx-2, #yy-2) to the cable routing bar #2 with four clamp tapes.

The cables are required to have adequate extra length so as not to be stretched and be applied stress when the Drive Box is moved.

NOTE 1: Keep the cables from hanging down below the Drive Box.

NOTE 2: Be careful not to twist the cables.

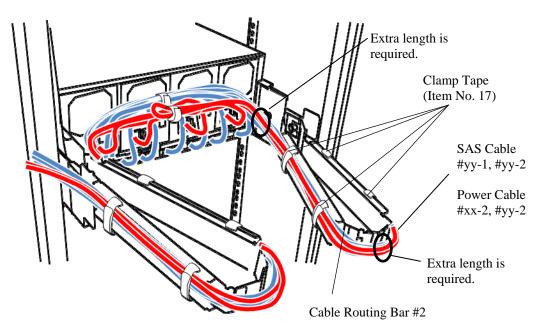


Fig. 3.4.4-35 Fixation of SAS Cables (#yy-1, #yy-2) and Power Cables (#xx-2, #yy-2)

h. Check that the cables are not stretched and are not applied stress by closing cable routing bars (#1, #2). If there is any problem, adjust cable routing.

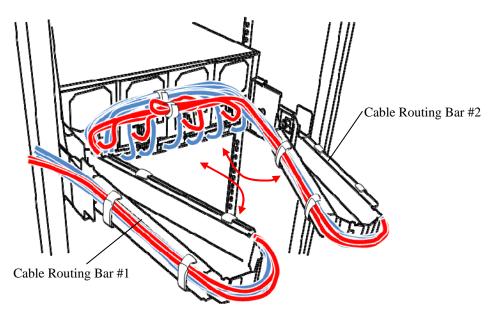


Fig. 3.4.4-36 Check of Routing of SAS Cables and Power Cables

i. Pull the right and left screws of the cable tray in the direction ①, and rotate them 90 degrees.

The screws are fixed with them opened.

- j. Press the cable tray in the direction ②.
- k. Push the stopper to the place where the right and left screws match the screw holes of the rails, and fix it by pressing it in the direction ③ while turning the screws 90 degrees.

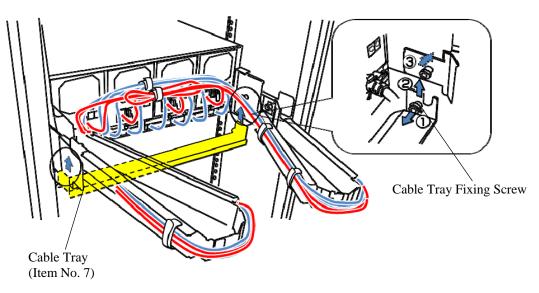


Fig. 3.4.4-37 Attachment of Cable Tray

- m. Pull the right and left screws in the direction ①, and rotate them 90 degrees. The screws are fixed with them opened.
- n. Press the stopper in the direction ② pushing the cables.
- p. Push the stopper to the place where the right and left screws match the screw holes of the rails, and fix it by pressing it in the direction ③ while turning the screws 90 degrees.

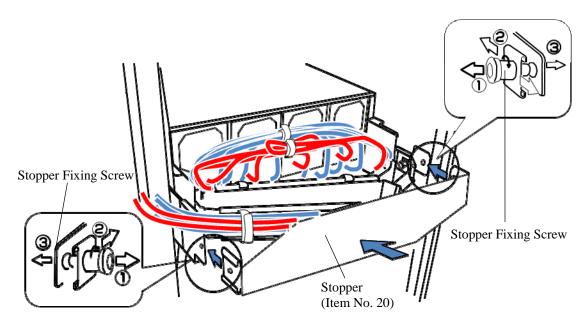


Fig. 3.4.4-38 Attachment of Stopper

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14. Checking the routing

a. Pull out the Drive Box and check that the routing is performed correctly. Refer to "3.1.1 Bezel Opening-Closing Procedure" (INST03-01-60).

NOTE: Check that the routing is not performed with other cables.

- b. Return the Drive Box on the rack. Refer to "3.1.1 Bezel Opening-Closing Procedure" (INST03-01-80).
- 15. Routing and connecting SAS cables to an existing Drive Box (connection source Drive Box)
  - a. To route and connect the SAS cables, which are required to be installed at the same time of the installation of the DKB and drives, to a connection source Drive Box, follow the procedures of the procedure table (INST02-50 No.11 "SAS Cable, Disk Blade and Drive Installation").
- 16. Attaching the Bezel
  - a. Attach the bezel to the front side of the Drive Box.
- 17. Return to the working table and do the rest of the work

New Installation: INST02-10

Non-Disruptive Installation: INST02-40

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# 3.4.5 Installation Procedure of Flash Module Drive Box (DW-F700-DBF)

- 1. Installing the rails (If the rails are already installed, this installation procedure is not required.) EIA units and intervals of mounting holes of 19-inch rack frame conforming to EIA standard
  - A unit (U) space conforming to EIA standard is 19 inches wide and 44.5 mm high as shown in the figure below.
  - The boundary of the unit falls on the middle of the interval of 12.7 mm.
  - Universal intervals: Repeat of 44.45 mm (15.875 mm + 15.875 mm + 12.7 mm) Wide intervals: Repeat of 44.45 mm (31.75 mm + 12.7 mm) Maximum number of mountable unit spaces: -

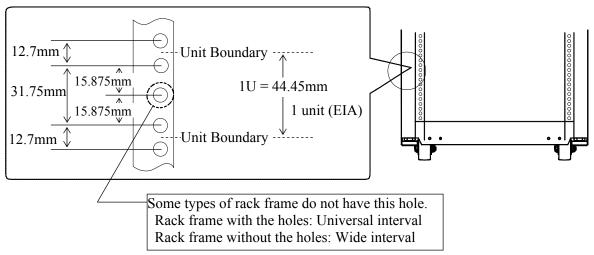


Fig. 3.4.5-1 Attachment Hole Size of Rack

The addresses are given as 1, 2, 3, and so on counted from the bottom of the rack frame. The following figures show a layout example of installing Flash Module Drive Box in 40 units rack frame. However, installing positions of Flash Module Drive Box may differ according to the construction within the rack frame.



Fig. 3.4.5-2 Whole Layout of Installation Position Addresses (RACK-0)

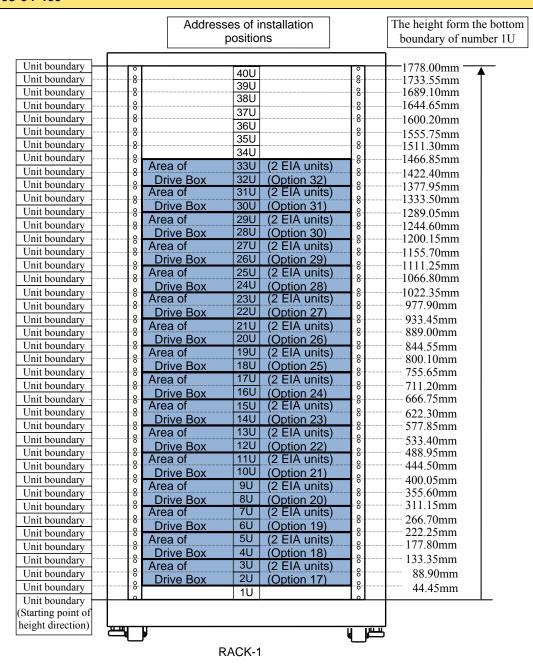


Fig. 3.4.5-3 Whole Layout of Installation Position Addresses (RACK-1)

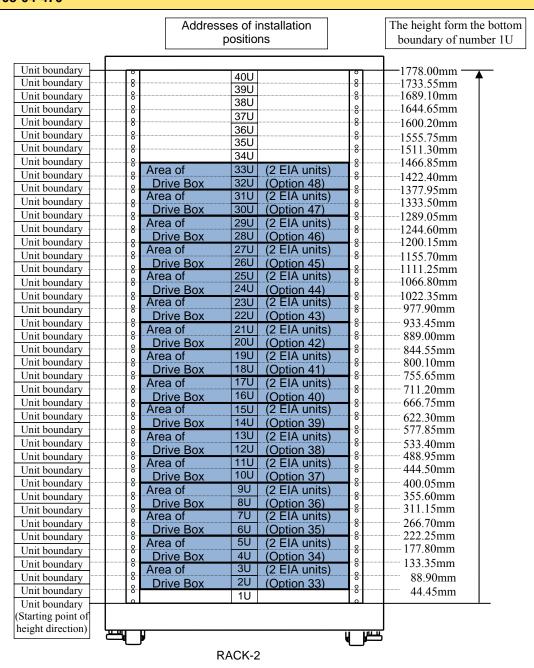


Fig. 3.4.5-4 Whole Layout of Installation Position Addresses (RACK-2)

- 2. Installing slide rails
  - a. Remove the four screws ① from the right slide rail.
  - b. Tighten the four screws ① temporarily at the position where the screw holes of the front rail and the rear rail are overlapped with each other.
  - c. Insert the rack nuts (four places in total at the front and rear) to the position where the round holes of the slide rail and the rack frame are overlapped at the height of installation of Flash Module Drive Box on the right side of the rack frame.
  - d. Secure the rack rail to the rack frame with the four screws ② at four places in total at the front and rear.

Tighten the screws securely so that they are not loosened.

NOTE: Secure the slide rail to the rack frame pressing it as outward as possible.

The slide rail that is placed in a more inward position of the rack frame may an obstruction to a device.

- e. Completely tighten the four screws ① which were tightened temporarily in Procedure b.
- f. In the same manner, install the left slide rail in the rack frame.

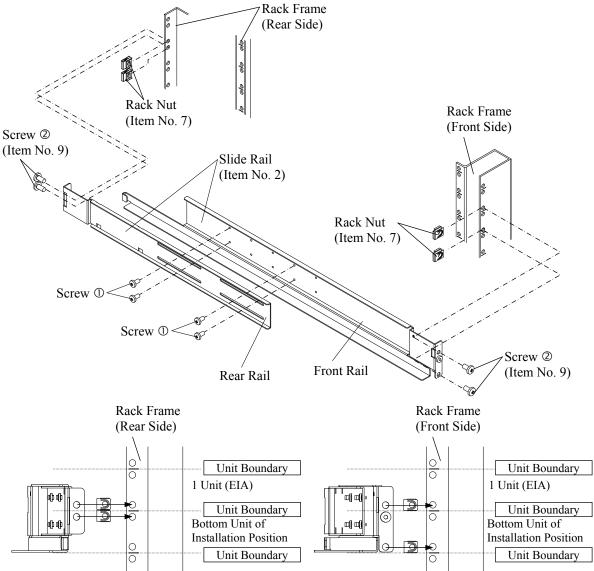


Fig. 3.4.5-5 Attachment of Slide Rails

# 3. Removing parts

If the Drive Box is installed at height below 1m or installed by using the special lifter, this procedure is not required because the Drive Box is installed into the rack frame with its parts mounted. (Go to procedure 4.)

If other than above, remove the parts first and then install the Drive Box into the rack frame.

**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.

- a. Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the Drive Box.
- b. Press the latches of the ENC inward to unlock the levers.
- c. Pull the right and left levers and remove the ENC.
- d. Remove the other ENC in the same manner.

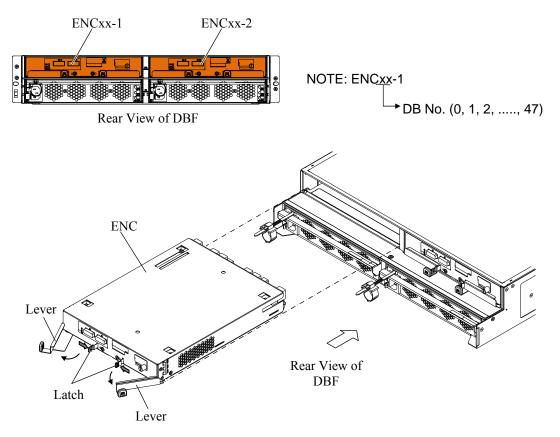


Fig. 3.4.5-6 Removal of ENC

- e. Bring the handle down and forward (②) while pushing the latch of the DBPS inward (①).
- f. Pull the DBPS and remove it from the Drive Box.
- g. Remove the other DBPS in the same manner.

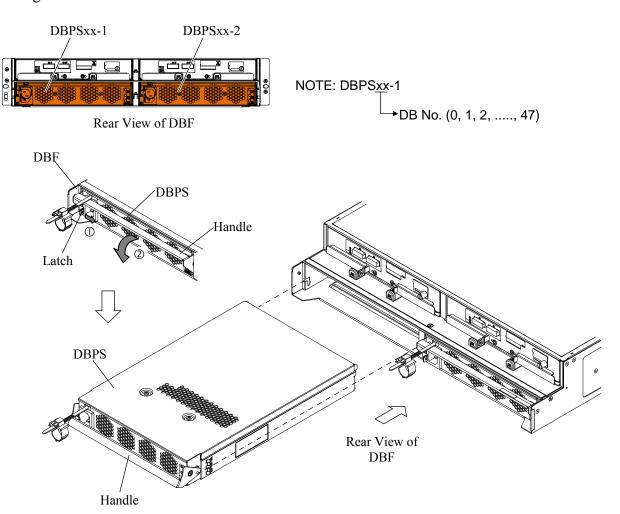


Fig. 3.4.5-7 Removal of DBPS

# 4. Installing the Drive Box



Paying attention to falls:

Work carefully because the mass of the single DBF is about 38 kg.

Beware over turning and dropping:

To prevent Drive Box from over turning and dropping, the installation work must be done by two or more personnel.

- a. Install the Drive Box on the front side of the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)
- b. Fix the Drive Box with the two screws.

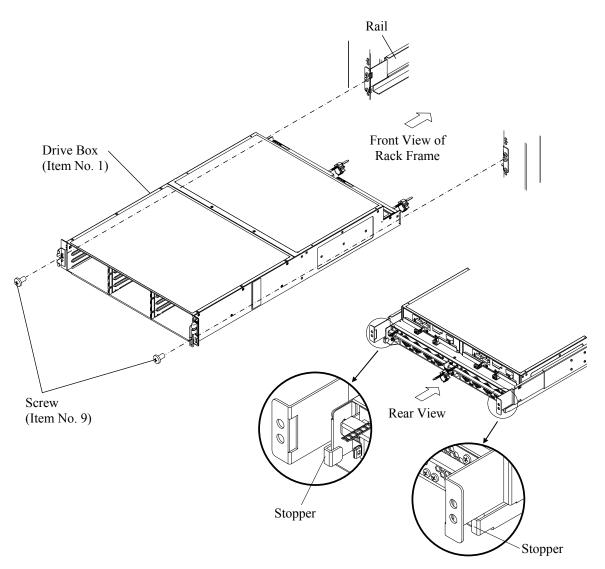


Fig. 3.4.5-8 Installing Drive Box

Attach the plate to the left side of the front of the Drive Box.

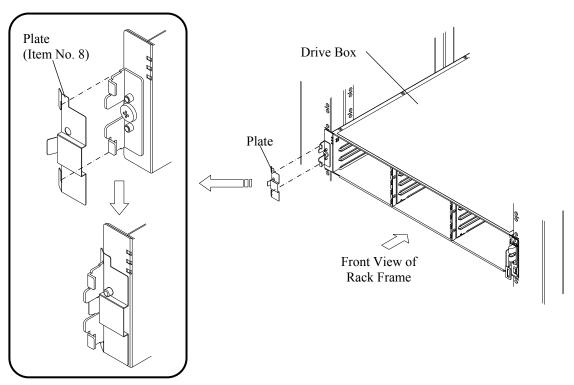


Fig. 3.4.5-9 Attachment of Plate

d. Attach the side cover to the left side of the front of the Drive Box.

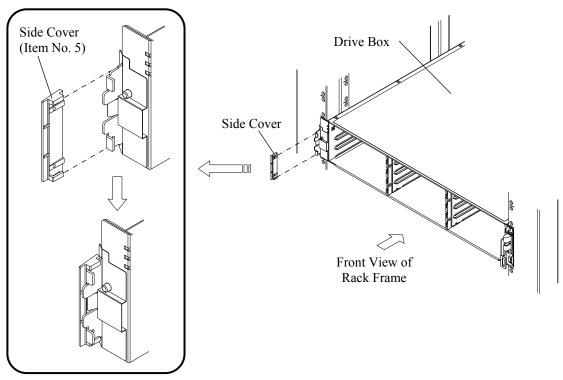


Fig. 3.4.5-10 Attachment of Side Cover

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5. Reinstalling removed parts

If parts were removed in procedure 3, reinstall the parts.

If parts were not removed, go to procedure 6.

- a. Make the handle of the DBPS completely fall down and forward. (See Fig. 3.4.5-7.)
- b. Insert the DBPS into the slot and push it to the full.
- c. Completely raise the handle and fix the DBPS.
- d. Install the other DBPS in the same manner.
- e. Make the right and left levers of the ENC open. (See Fig. 3.4.5-6.)
- f. Insert the ENC until the edge of the lever comes in contact with the Drive Box.
- g. Close the right and left levers to insert the ENC completely.
- h. Install the other ENC in the same manner.

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- 6. Attaching the DB Address Label
  - a. Attach the label to both the front side of the DBF and the rear side of the rail (two labels in total).

Use the Label (DB-Address) (Part No.: 3287067-1) which is one of the accessories of the DW700-CBX.

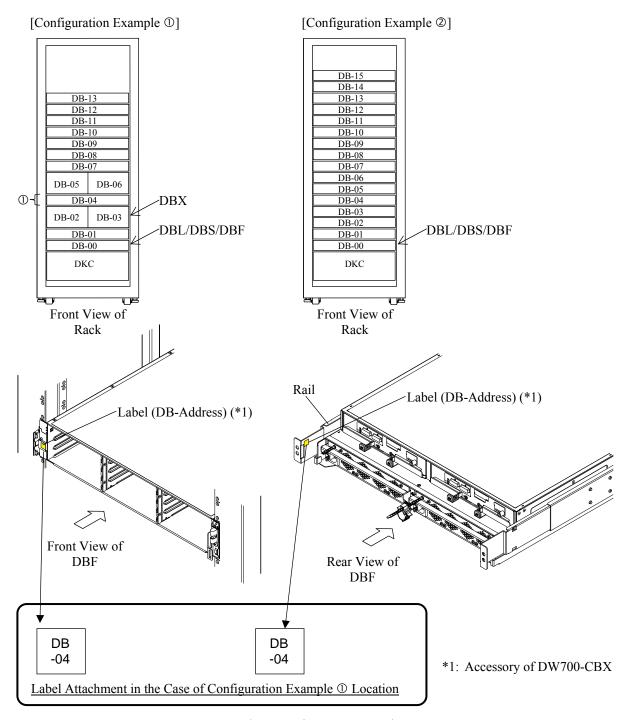


Fig. 3.4.5-11 Attachment of Label (DB-Address)

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- 7. Connection of Power Cables
  - a. Connect the two power cables to the DBPSs and fasten it with the cable holder.
  - b. Push the power cable holder toward the DBPS until it stops.

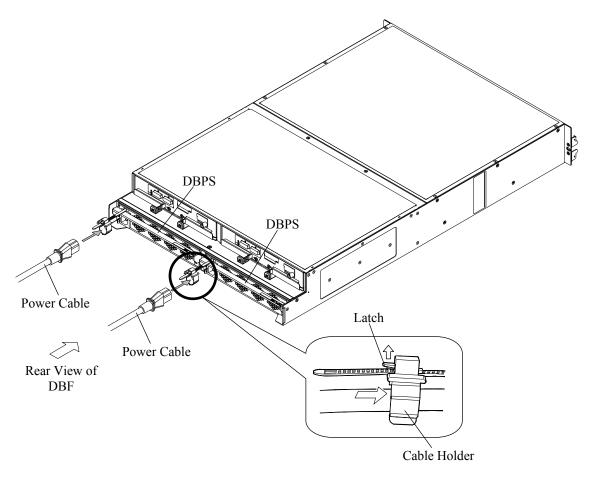


Fig. 3.4.5-12 Connection of Power Cables

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c. Connect the two power cables to the PDUs.

NOTE: • Connect the power cable for the DBPSxx-1 to the left PDU.

Connect the power cable for the DBPSxx-2 to the right PDU.

If they are plugged in the receptacles of the PDUs on the same side, the function of the duplicated power supply does not work.

• Check the rated current of the PDU to be used and make sure the total load doesn't exceed the rated current by calculation when connecting a power cable.

Table 3.4.5-1 Load Current of each Model Number

No.	Model Number	Load Current (per PS)	
1	DW700-CBX	3.81A	
2	DW-F700-DBL	2.07A	
3	DW-F700-DBS	2.61A	
4	DW-F700-DBX	4.03A	
5	DW-F700-DBF	2.6A	

d. Fix the power cables to the rack frame.

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- 8. Attaching location labels for SAS cable
  - a. Confirm IN/OUT of the SAS cables to be connected. See the Table 3.4.5-2 and the Table 3.4.5-3.

Table 3.4.5-2 Cluster 1 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 1 SAS Cable IN/OUT				
DB No.	DKB-1E(Port 0)	DKB-1E(Port 1)	DKB-1F(Port 0)	DKB-1F(Port 1)	
DB-	1E-0(DKB)	1E-1(DKB)	1F-0(DKB)	1F-1(DKB)	
00/01/02/03	→ ENC00-1(IN)	→ ENC01-1(IN)	→ ENC02-1(IN)	→ ENC03-1(IN)	
DB- 04/05/06/07	ENC00-1(OUT) $\rightarrow$ ENC04-1(IN)	ENC01-1(OUT) → ENC05-1(IN)	ENC02-1(OUT) $\rightarrow$ ENC06-1(IN)	ENC03-1(OUT) → ENC07-1(IN)	
DB- 08/09/10/11	ENC04-1(OUT) $\rightarrow$ ENC08-1(IN)	ENC05-1(OUT) → ENC09-1(IN)	ENC06-1(OUT) $\rightarrow$ ENC10-1(IN)	ENC07-1(OUT) → ENC11-1(IN)	
DB-	ENC08-1(OUT) $\rightarrow$ ENC12-1(IN)	ENC09-1(OUT)	ENC10-1(OUT)	ENC11-1(OUT)	
12/13/14/15		→ ENC13-1(IN)	→ ENC14-1(IN)	→ ENC15-1(IN)	
DB-	ENC12-1(OUT) $\rightarrow$ ENC16-1(IN)	ENC13-1(OUT)	ENC14-1(OUT)	ENC15-1(OUT)	
16/17/18/19		→ ENC17-1(IN)	→ ENC18-1(IN)	→ ENC19-1(IN)	
DB- 20/21/22/23	ENC16-1(OUT) $\rightarrow$ ENC20-1(IN)	ENC17-1(OUT) → ENC21-1(IN)	ENC18-1(OUT) $\rightarrow$ ENC22-1(IN)	ENC19-1(OUT) → ENC23-1(IN)	
DB-	ENC20-1(OUT) $\rightarrow$ ENC24-1(IN)	ENC21-1(OUT)	ENC22-1(OUT)	ENC23-1(OUT)	
24/25/26/27		→ ENC25-1(IN)	→ ENC26-1(IN)	→ ENC27-1(IN)	
DB- 28/29/30/31	ENC24-1(OUT) $\rightarrow$ ENC28-1(IN)	ENC25-1(OUT) → ENC29-1(IN)	ENC26-1(OUT) $\rightarrow$ ENC30-1(IN)	ENC27-1(OUT) → ENC31-1(IN)	
DB- 32/33/34/35	ENC28-1(OUT) $\rightarrow$ ENC32-1(IN)	ENC29-1(OUT) → ENC33-1(IN)	ENC30-1(OUT) $\rightarrow$ ENC34-1(IN)	ENC31-1(OUT) → ENC35-1(IN)	
DB-	ENC32-1(OUT) $\rightarrow$ ENC36-1(IN)	ENC33-1(OUT)	ENC34-1(OUT)	ENC35-1(OUT)	
36/37/38/39		→ ENC37-1(IN)	→ ENC38-1(IN)	→ ENC39-1(IN)	
DB-	ENC36-1(OUT) $\rightarrow$ ENC40-1(IN)	ENC37-1(OUT)	ENC38-1(OUT)	ENC39-1(OUT)	
40/41/42/43		→ ENC41-1(IN)	→ ENC42-1(IN)	→ ENC43-1(IN)	
DB-	ENC40-1(OUT) $\rightarrow$ ENC44-1(IN)	ENC41-1(OUT)	ENC42-1(OUT)	ENC43-1(OUT)	
44/45/46/47		→ ENC45-1(IN)	→ ENC46-1(IN)	→ ENC47-1(IN)	

Table 3.4.5-3 Cluster 2 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 2 SAS Cable IN/OUT				
DB No.	DKB-2E(Port 0)	DKB-2E(Port 1)	DKB-2F(Port 0)	DKB-2F(Port 1)	
DB- 00/01/02/03	2E-0(DKB) → ENC00-2(IN)	2E-1(DKB) → ENC01-2(IN)	2F-0(DKB) → ENC02-2(IN)	2F-1(DKB) → ENC03-2(IN)	
DB- 04/05/06/07	ENC00-2(OUT) $\rightarrow$ ENC04-2(IN)	ENC01-2(OUT) $\rightarrow$ ENC05-2(IN)	ENC02-2(OUT) $\rightarrow$ ENC06-2(IN)	ENC03-2(OUT) $\rightarrow$ ENC07-2(IN)	
DB- 08/09/10/11	ENC04-2(OUT) $\rightarrow$ ENC08-2(IN)	ENC05-2(OUT) → ENC09-2(IN)	ENC06-2(OUT) $\rightarrow$ ENC10-2(IN)	ENC07-2(OUT) → ENC11-2(IN)	
DB- 12/13/14/15	ENC08-2(OUT) $\rightarrow$ ENC12-2(IN)	ENC09-2(OUT) → ENC13-2(IN)	ENC10-2(OUT) → ENC14-2(IN)	ENC11-2(OUT) → ENC15-2(IN)	
DB- 16/17/18/19	ENC12-2(OUT) $\rightarrow$ ENC16-2(IN)	ENC13-2(OUT) → ENC17-2(IN)	ENC14-2(OUT) → ENC18-2(IN)	ENC15-2(OUT) → ENC19-2(IN)	
DB- 20/21/22/23	ENC16-2(OUT) $\rightarrow$ ENC20-2(IN)	ENC17-2(OUT) $\rightarrow$ ENC21-2(IN)	ENC18-2(OUT) $\rightarrow$ ENC22-2(IN)	ENC19-2(OUT) → ENC23-2(IN)	
DB- 24/25/26/27	ENC20-2(OUT) $\rightarrow$ ENC24-2(IN)	ENC21-2(OUT) $\rightarrow$ ENC25-2(IN)	ENC22-2(OUT) $\rightarrow$ ENC26-2(IN)	ENC23-2(OUT) $\rightarrow$ ENC27-2(IN)	
DB- 28/29/30/31	ENC24-2(OUT) $\rightarrow$ ENC28-2(IN)	ENC25-2(OUT) $\rightarrow$ ENC29-2(IN)	ENC26-2(OUT) $\rightarrow$ ENC30-2(IN)	ENC27-2(OUT) $\rightarrow$ ENC31-2(IN)	
DB- 32/33/34/35	ENC28-2(OUT) $\rightarrow$ ENC32-2(IN)	ENC29-2(OUT) $\rightarrow$ ENC33-2(IN)	ENC30-2(OUT) $\rightarrow$ ENC34-2(IN)	ENC31-2(OUT) $\rightarrow$ ENC35-2(IN)	
DB- 36/37/38/39	ENC32-2(OUT) $\rightarrow$ ENC36-2(IN)	ENC33-2(OUT) $\rightarrow$ ENC37-2(IN)	ENC34-2(OUT) $\rightarrow$ ENC38-2(IN)	ENC35-2(OUT) → ENC39-2(IN)	
DB- 40/41/42/43	ENC36-2(OUT) $\rightarrow$ ENC40-2(IN)	ENC37-2(OUT) $\rightarrow$ ENC41-2(IN)	ENC38-2(OUT) $\rightarrow$ ENC42-2(IN)	ENC39-2(OUT) → ENC43-2(IN)	
DB- 44/45/46/47	ENC40-2(OUT) $\rightarrow$ ENC44-2(IN)	ENC41-2(OUT) → ENC45-2(IN)	ENC42-2(OUT) → ENC46-2(IN)	ENC43-2(OUT) → ENC47-2(IN)	

### INST03-04-590

b. Select the labels corresponding to the DB from the location labels.

[Example] Select the labels  $\odot$  and  $\odot$  shown below in case of the SAS Cables to connect the DKB-1E (1E-1) with the DB-01 (ENC01-1 IN).

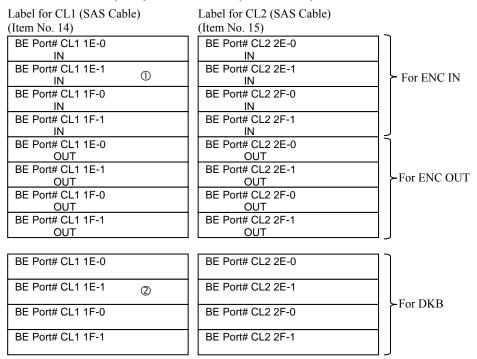
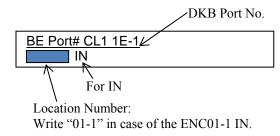


Fig. 3.4.5-13 Selecting Labels

c. Write a location number on a label with a pen conforming to RoHS Directive.

### ① Writing Required



### ② No Writing Required

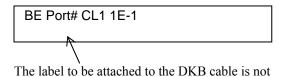


Fig. 3.4.5-14 Writing on Label

required to be written the number.

d. Attach the location labels to the SAS Cables.

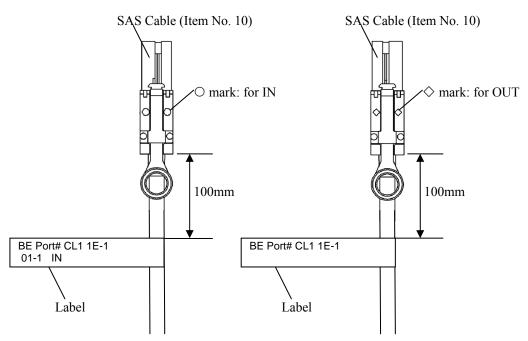


Fig. 3.4.5-15 Attaching Labels

- 9. Routing and Connecting SAS Cables
  - a. To route and connect the SAS cables for the DB which are required to be installed at the same time of the installation of the DKB and drives, follow the procedures of the procedure table (INST02-50 No.11 "SAS Cable, Disk Blade and Drive Installation").

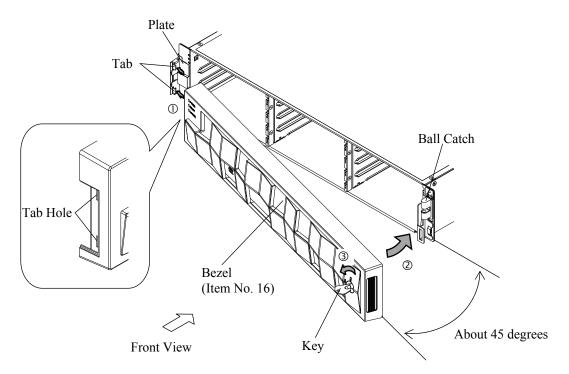
### 10. Attachment of Bezel

- a. Unlock the bezel with the key, and hold the key and bottom of bezel with your both hands.
- b. Insert the tabs on the left front side of the chassis into the tab holes on the bezel (①) at an angle of about 45 degrees between the bezel and the chassis.

NOTE: Be careful not to catch the Plate between the chassis and the bezel when inserting the tabs on the chassis into the tab holes on the bezel.

The Plate may be damaged if catched.

- c. Fix the bezel by pressing the right side of the bezel to engage it with the ball catch on the front side of the chassis (②).
- d. Lock the bezel with the key (③).



The state in which the slit of the keyhole is aligned with the mark.

(The key can be inserted or pulled out in this state.)

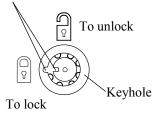


Fig. 3.4.5-16 Attachment of Bezel

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11. Return to the working table and do the rest of the work

New Installation: INST02-10

Non-Disruptive Installation: INST02-50

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### INST03-05-10

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# 3.5 Installation of Channel Blades

# 3.5.1 Installation of Host I/O Module (DF-F850-HF8GR)

Table 3.5.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DF-F850-HF8GR	СНВ	3285153-E	1	

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# Table 3.5.1-2 Working time

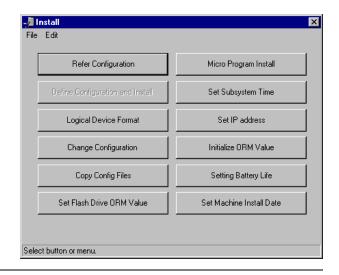
		Number of change (set)	Total (minutes)
CHB	Installation	1	15
		2	15
		3	20
		4	20
		5	20

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### INST03-05-30

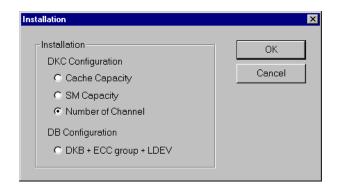
- 1. Setting up the New Device Structure Information
  - (1) <Mode Change>
    Change the mode to Modify Mode.
    Select (CL) [Install].
  - (2) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



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



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



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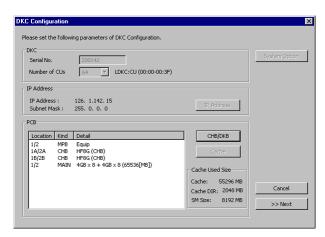
(5) <DKC Configuration screen>
In the 'DKC Configuration' screen, select
(CL) [CHB/DKB].

Go to Step (6).

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

(Go to Step (8).)

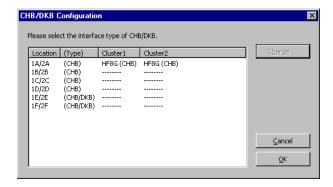
In the case of selecting (CL) [Cancel], this operation procedure terminates.



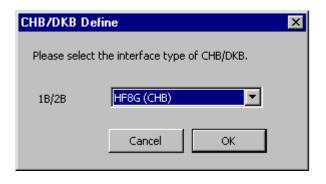
(6) <Setting the CHB type>
In the 'CHB/DKB Configuration' screen, select the location(s) to which the addition is to be made, and select (CL) [Change...]. Go to Step (7).

Make sure that the entry that has been made is correct and select (CL) [OK].

Go back to Step (5).



(7) <Select the CHB type> In the 'CHB/DKB Define' screen, select Fibre PCB. Select (CL) [OK]. The routine is returned to Step (5).



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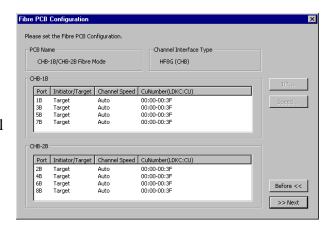
(8) <Setting details of the CHB> Enter the necessary items in the 'Fibre PCB Configuration' screen. Repeat this operation as many times as the CHBs installed.

[I/T...]: Change the Initiator / External / Target / RCU Target for the port selected.

Go to Step (9).

[Speed...]: Change the channel speed for the selected port .

Go to Step (10).



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

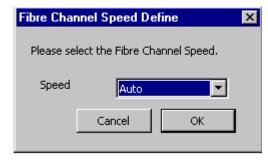
(9) <Setting the Initiator/Target>
Set the Initiator / External / Target / RCU Target.
After the setting is completed, select (CL) [OK].
Go back to Step (8).



(10) <Setting the channel speed>

Set the channel speed for the channel connected to the specified port.

After the setting is completed, select (CL) [OK]. Go back to Step (8).

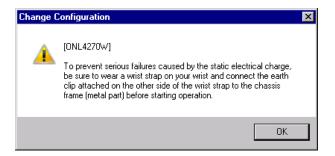


#### INST03-05-60

# 2. SVP pre procedure

# (1) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



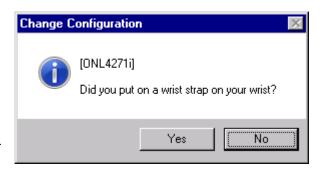
# (1)-1<Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist.

Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (1)-2.



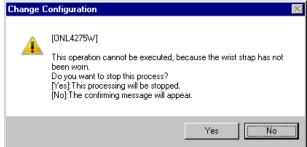
# (1)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear."

When [Yes] is selected (CL), the routine is returned to Step (2) on page INST03-05-30.

When [No] is selected (CL), returned to Step (1).



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### INST03-05-70

(2) <Starting the addition>
In response to a message, "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation?
(Note) Do not insert the components for upgrading the system at this time.", select (CL) [Yes].

When [No] is selected (CL), the routine is returned to Step (2) on page INST03-05-30.



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- (3) <Downloading the micro-program>
  The micro-program is downloaded to the SM.
  The progress of the downloading is displayed.
- (4) "Changing the storage system configuration data..." is displayed.
- (5) <Making sure of completion of the hardware component installation>
  A message, "Insert the CHB(s) on the storage system. Select [OK] when the

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

installation has completed." is displayed.



#### INST03-05-80

# 3. Installation Procedure of Host I/O Module

**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.

#### 3-1 Insertion of the Blades

Install one CHB into one slot at a time.

- a. Loosen the screw that fastens the dummy cover and let the handle fall down. (Refer to Table 3.5.1-3 and Fig. 3.5.1-1)
- b. Push down the handle and remove the dummy cover.

NOTE: There are two types of dummy covers. When it is difficult to extract the A-type dummy cover with the claw of its handle caught, slightly raise the handle and then extract the dummy cover.

- c. Insert the CHB until the claw on the lower part of the handle of the CHB reaches the front of the DKC.
- d. Push up the handle and fully insert the CHB.
- e. Tighten the screw and fasten the CHB. (When it is difficult to tighten the screw, use a screw driver.)
- f. Repeat the procedures a to e each time you add a CHB.

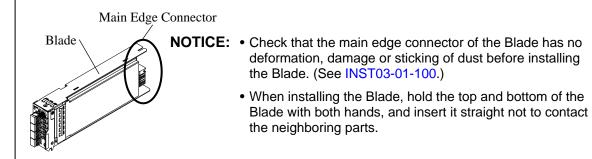
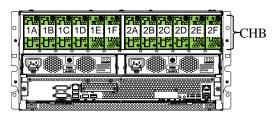


Table 3.5.1-3 Inserting Location

No.	Addition	Slot	No.	Locati	on No.	Remarks
	No.	Cluster 1	Cluster 2	Cluster 1	Cluster 2	
1	Basic	1A	2A	CHB-1A	CHB-2A	
2	Option 1	1B	2B	CHB-1B	CHB-2B	
3	Option 2	1C	2C	CHB-1C	CHB-2C	
4	Option 3	1D	2D	CHB-1D	CHB-2D	
5	Option 4	1E	2E	CHB-1E	CHB-2E	
6	Option 5	1F	2F	CHB-1F	CHB-2F	

# INST03-05-90



Rear View of DKC

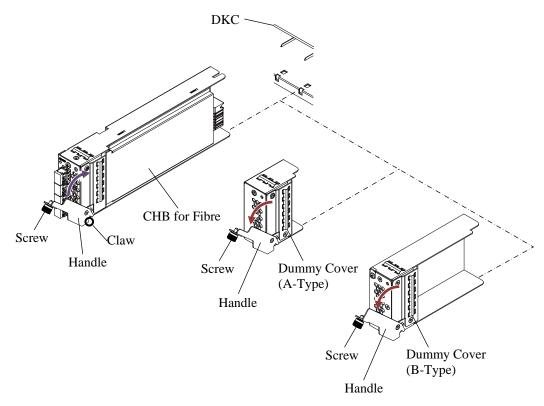


Fig. 3.5.1-1 Insertion of CHB

### INST03-05-100

# 3-2 Cleaning the fibre cable connectors

For the tools needed for the cleaning, refer to the tool list on page PARTS05-10.

- 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).

# 3-3 Connection of the optical fibre cables

a. Draw the optical fibre cables from the rear lower opening of the frame.

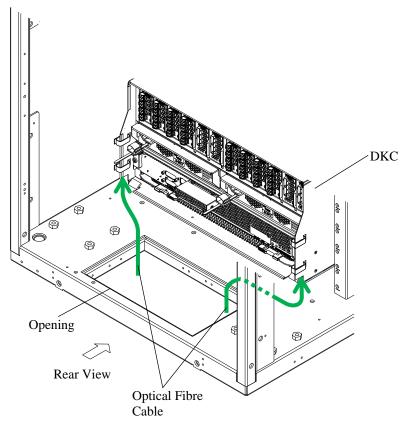
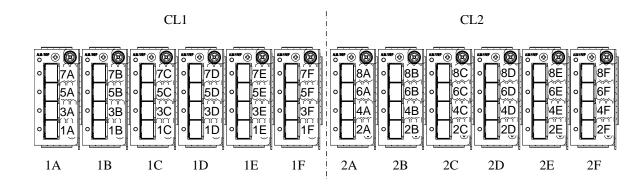


Fig. 3.5.1-2 Attachment of Optical Fibre Cables

b. Connect the optical fibre cables to the CHB.

# CHB Port Number



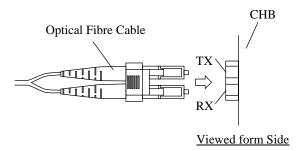


Fig. 3.5.1-3 Connection of Optical Fibre Cables

c. Secure the optical fibre cables with the binders on the frame side.

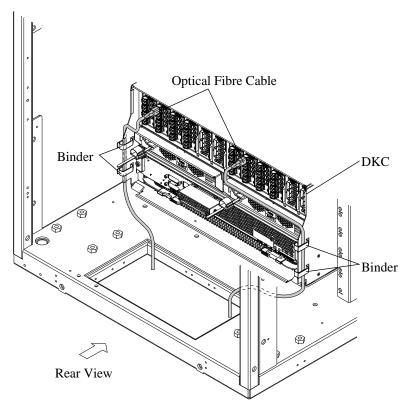


Fig. 3.5.1-4 Fixation of Optical Fibre Cables

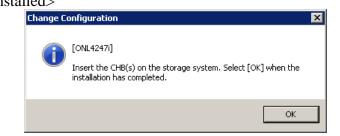
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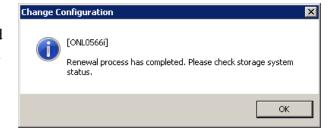
# 4. SVP post procedure

(1) <Check that hardware components are installed>
Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Insert the CHB(s) on the storage system. Select [OK] when the installation has completed".



When [Cancel] is selected (CL), returns to INST03-05-30 step (3).

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



(4)

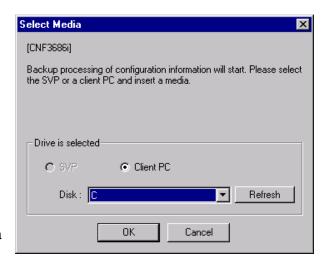
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.

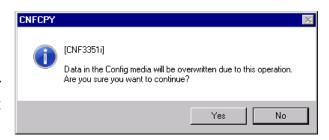


#### INST03-05-140

(5)

If the configuration information is not saved in the selected media, go to step (6).

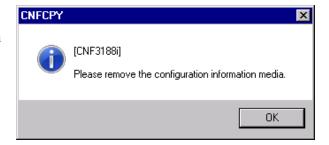
If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select



(CL) the [Yes] button. When the backup to the Config media is not necessary, select (CL) the [No] button and go to step (7).

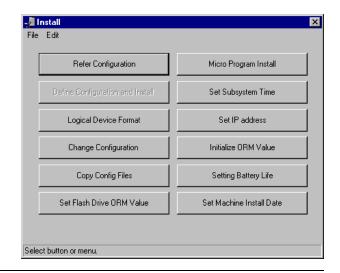
(6)

When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, 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 working table and do the rest of the work.

New Installation: INST02-10,

Non-Disruptive Installation: INST02-40

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INST03-06-10

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# 3.6 Changing of SFP (DW-F700-1UL/1US)

- **NOTICE:** 1. The SFP (DW-F700-1UL/1US) is an option to change the transceiver installed in the CHB of the Host I/O Module (DF-F850-HF8GR) to a port corresponding to Longwave or Shortwave.
  - 2. Note that you cannot just change between Longwave and Shortwave SFP transceivers in an existing configuration without considering the cables. Longwave requires 9 micrometer diameter, single mode cable, and Shortwave requires 50/62.5 micrometer diameter, multimode cable. The Customer will encounter many CRC and Loss of Sync errors should they replace only transceivers and try to reuse the pre-existing cables that do not match the transceivers.

Table 3.6-1 Parts List

N	lo.	Model Number	Part Name	Part No.	Quantity	Remarks
	1	DW-F700-1UL	SFP (LONG)	3284394-K	1	
	2	DW-F700-1US	SFP (SHORT)	3285226-E	1	

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INST03-06-20

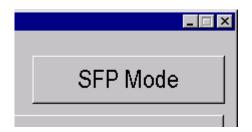
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**NOTICE:** Before the replacement, make sure that a host device has been disconnected.

- 1. SFP type change
  - (1) <Preparation>
    Close the all SVP menu.
  - (2) <Input password>
    Select "Shift" + "Ctrl" + "F" on the SVP window.
    Enter the password "RAID-SFP" and select (CL) [OK].



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



### INST03-06-30

2. Changing Procedure of SFP

**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.

# 2-1 Replacement of SFP

a. Make sure of the CHB and Port Locations of the SFP to be replaced. (Refer to page LOC04-10.)

# **A** CAUTION

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

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

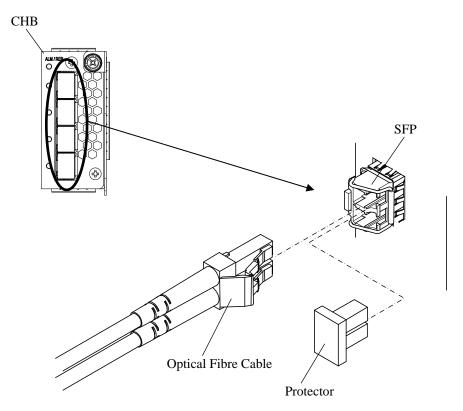


Fig. 3.6-1 Disconnection of Cable or Protector

c. Raise the lever forward and remove the SFP.

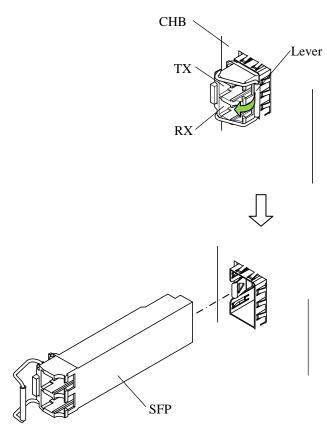


Fig. 3.6-2 Removal of SFP

### INST03-06-50

d. Insert the optional SFP to the CHB.

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

How to distinguish between SFP (SHORT) and SFP (LONG)

The whole or a part of the lever is a black for the SFP (SHORT).

The whole or a part of the lever is a blue for the SFP (LONG).

# [Example]

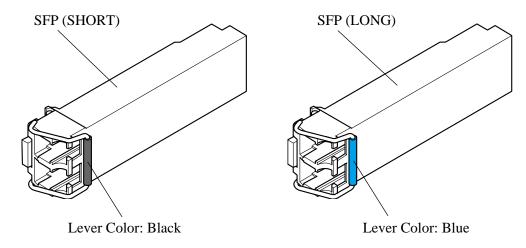


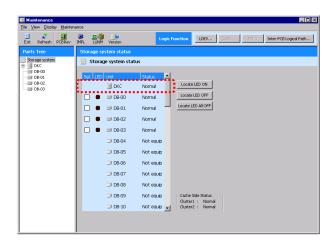
Fig. 3.6-3 How to distinguish SFP

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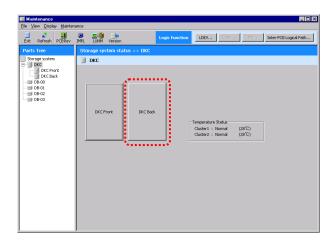
Copyright © 2012, Hitachi, Ltd.

# INST03-06-60

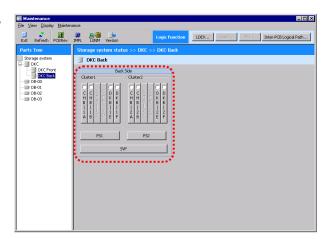
- 3. Check SFP Kind information
  - (1) <Instruction of DKC Information> Select (CL) [DKC].



(2) <Display of DKC Back Information> Select (CL) [DKC Back].



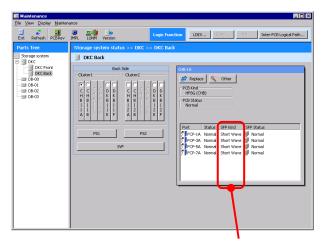
(3) <Display of CHB Information> Select (CL) [CHB-nX] which installs SFP of the maintenance target.



### INST03-06-70

(4) <Check SFP Kind information>
Make sure that information on the SFP
Kind is displayed at the CHB location
where the setting was changed and that the
SFP Kind information on the port where
the replacement was made is consistent
with the specified setting.

When the SFP Kind information is not displayed, check if the SFP is installed correctly. If the SFP is installed correctly, replace it with a part for maintenance.



SFP Kind information

- 4. Changing the SVP operation mode In the 'SVP' window, change the mode to [View Mode].
- 5. Return to the working table and do the rest of the work

New Installation: INST02-10
Non-Disruptive Installation: INST02-40
Non-Disruptive De-Installation: INST02-60

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# INST03-07-10

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# 3.7 Installation of Additional Cache Memory and Cache Flash Memory (DF-F850-4GB/8GB, DW-F700-16GB/BM160/BM256)

Table 3.7-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DF-F850-4GB	4GB DIMM	3285124-A	1	CM Module
2	DF-F850-8GB	8GB DIMM	3285126-A	1	CM Module
3	DW-F700-16GB	16GB DIMM	3284394-P	1	CM Module
4	DW-F700-BM160	CFM (80GB)	3284394-E	2	
5	DW-F700-BM256	CFM (128GB)	3284394-B	2	

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### INST03-07-20

Rough time of Cache memory and/or cache flash memory installation becomes addition of the following A, B, C and D.

Table 3.7-2 Rough time of installation

	process	Time	Remarks
Α	MAIN Blade blocking time	$5 \sim 60 \text{min} \times 2 \ (*1)$	
В	Cache memory, cache flash memory equipment process	5min × 2	
С	MAIN Blade diagnosis time	10min × 2	
D	MAIN Blade recovering time	$5 \sim 60 \text{min} \times 2 (*1)$	

<sup>\*1:</sup> Standard processing time is indicated. The processing time depends on the use situation, especially, the influence of the amount of write pending is received. When the amount of write pending is large, time more than the indication value might be required.

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#### INST03-07-30

- 1. Setting up the New Device Structure Information
  - (1) <Set path offline or switch of channel path>

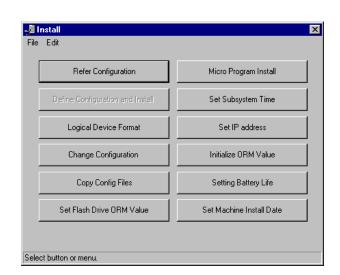
# **A** CAUTION

The switch to the alternate channel path or host shutdown is that connected with the CHB concerned.

As for other channel path, switching to the alternate channel path or host shutdown is unnecessary.

However, the host must be shut down when the Pinned track in CHB connected port.

- (2) <Mode Change>
  Change the mode to Modify Mode.
  Select (CL) [Install].
- (3) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



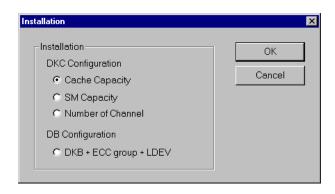
(4) <Start Device Structure Setup screen> Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



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



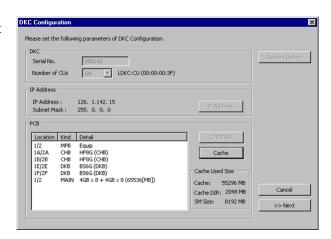
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### INST03-07-40

(6) <DKC Configuration screen> In the 'DKC Configuration' screen, select (CL) [Cache]. (Go to step (7).)

NOTE: It is impossible to install multiple types of parts at the same time.

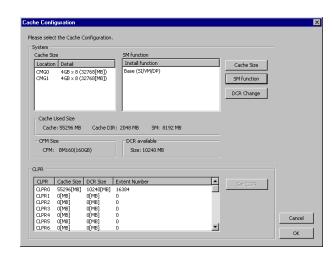
Make sure that the all input items are correct and select (CL) [>>Next]. Go to step (8).



(7) < Cache Configuration screen> In the 'Cache Configuration' screen, define each item.

When the change of Cache setting or installation of the PCB is required, select (CL) [Cache Size]. Go to Step (7)-1.

When the change of SM setting is required, select (CL) [SM function]. Go to Step (7)-2.

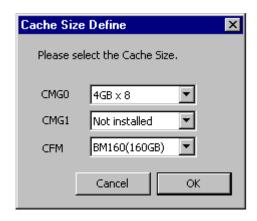


When the change of DCR setting is required, select (CL) [DCR Change] in DCR available. Go to Step (7)-3.

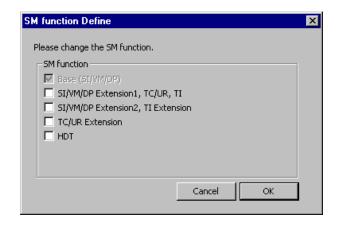
When the change of CLPR setting is required, select (CL) the target CLPR. and then select (CL) [Set CLPR]. Go to Step (7)-4.

After setting all items, select (CL) [OK]. Go back to Step (6).

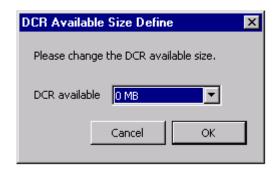
(7)-1 < Cache Size Define screen>
Set the CMG/CFM in the 'Cache Size Define' screen, and then select (CL) [OK].
Go back to Step (7).



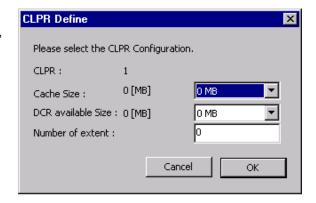
(7)-2 <SM function Define screen>
Set the SM function in the 'SM function
Define' screen, select (CL) [OK].
Go back to Step (7).



(7)-3 <DCR Available Size Define screen>
Set the DCR available size in the 'DCR Available Size Define' screen, select (CL) [OK].
Go back to Step (7).



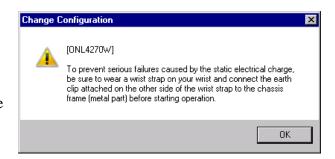
(7)-4 <CLPR Define screen>
Set the Cache Size/DCR available
Size/Number of extent in the 'CLPR Define'
screen, select (CL) [OK].
Go back to Step (7).



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# (8) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



# (8)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist.

Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (8)-2.



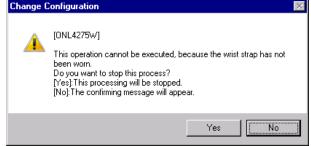
# (8)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear."

When [Yes] is selected (CL), the routine is returned to Step (3) on page INST03-07-30.

When [No] is selected (CL), returned to Step (8).



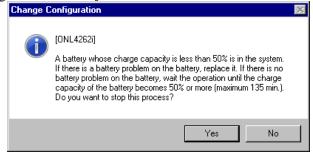
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- 2. SVP pre procedure (Confirmation of amount of battery charge)
  - (1) < Confirmation of amount of battery charge >
    - When there is PCB whose amount of charge of the battery is less than 50%:

"A battery whose charge capacity is less than 50% is in the system. If there is a battery problem on the battery, replace it. If there is no battery problem on the battery, wait the operation until the charge capacity of the battery becomes 50% or more (maximum 135 min.). Do you want to stop this process?"



When [Yes] is selected (CL), returned to INST03-07-30 step (2). When [Yes] is selected (CL),go to step (2)

- When there is no PCB whose amount of charge of the battery is less than 50%: go to step 3.
- (2) <Input password>
  Enter the password and select (CL) [OK].



# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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- 3. SVP pre procedure on the Cluster 1.
  - (1) <Confirm Channel Path offline> Select (CL) [Yes] in response to following message.

"This operation will block the CHBs of Cluster-1 and Cluster-2 alternately. Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST connected to this CHBs. Do you want to continue processing?"

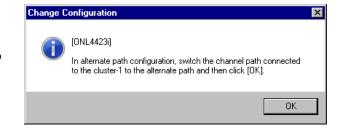


(2) <Start installation>
Select (CL) [Yes] in response to "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not insert the components for upgrading the system at this time."

When [No] is selected (CL), returns to INST03-07-30 step (3).



(3) Select (CL) [OK] in response to "In alternate path configuration, switch the channel path connected to the cluster-1 to the alternate path and then click [OK].".



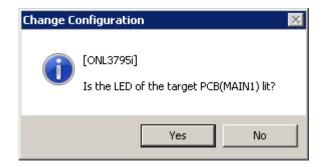
(4)

"The MAIN Blade is being blocked..."

"Lighting LED of the PCB..." is displayed.

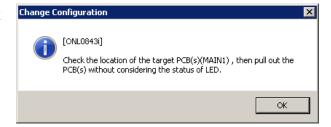
## INST03-07-90

- (5) <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(MAINn) lit?".



# If [No] is selected:

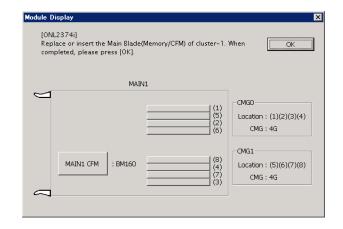
Select (CL) [OK] after response to "Check the location of the target PCB(s)(MAINn), then pull out the PCB(s) without considering the status of LED.". (Refer INST03-07-30)
Go to step (6).



(6) <Perform hardware installation>
At this point refrain from pressing the [OK] button.

When "Replace or insert the Main Blade(Memory/CFM) 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.



(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

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### INST03-07-100

4. Install the Cache Memory on the cluster 1.

**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.

- 4-1 Remove the MAIN Blade.
  - a. Check the Shut Down LED on the MAIN1.

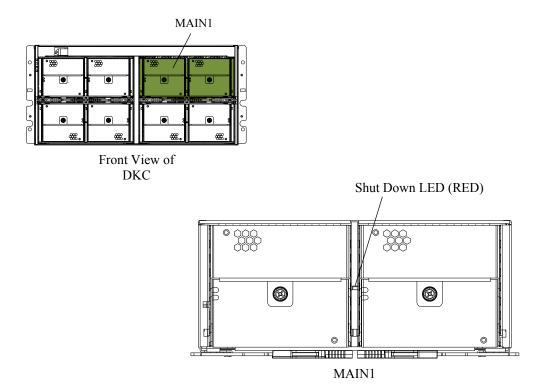


Fig. 3.7-1 Location of the Shut Down LED

Table 3.7-3 Location of the MAIN Blade

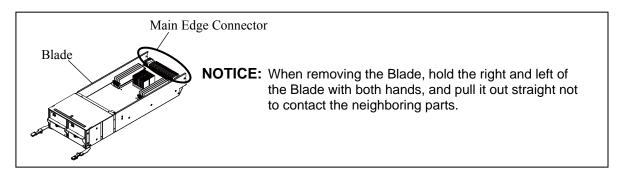
Cluster	Location	Location No.	Remarks
1	Front of DKC	MAIN1	

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- Slide the lock on the levers of the MAIN1 outward and open the levers.
- Open the levers completely and remove the MAIN1.



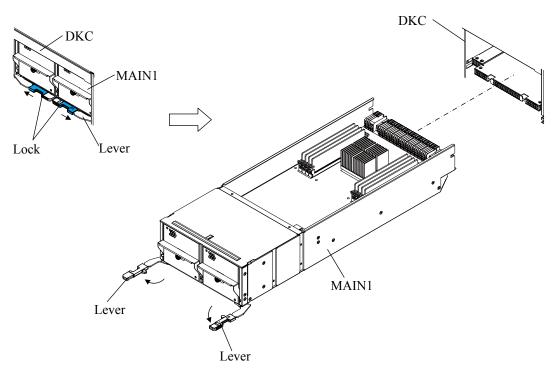
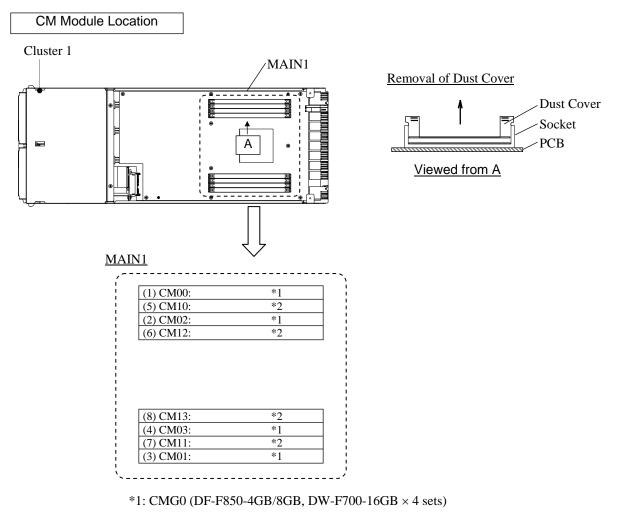


Fig. 3.7-2 Removal of MAIN1

### INST03-07-120

- 4-2 Insert the CM Modules.
  - a. Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.7-3 and Fig. 3.7-4.
  - b. Insert the CM Modules that match the required Cache Memory capacity.



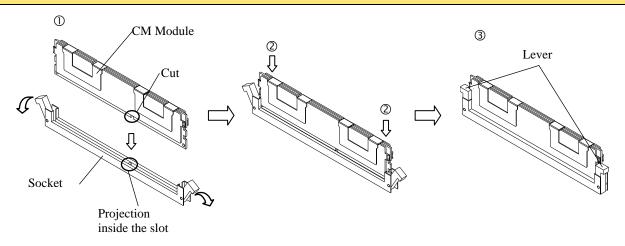
<sup>\*2:</sup> CMG1 (DF-F850-4GB/8GB, DW-F700-16GB × 4 sets)

Fig. 3.7-3 Inserting Location of the CM Module

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# **Installation**

- ① Position the cut of the CM Module with the projection inside the slot, and place the CM Module on the socket.
- ② Hold both ends of the CM Module by the fingers, and fit it into the socket.
- ③ Make sure that the lever is firmly fitted in the CM Module.

**NOTICE**: Do not put intense pressure on the CM Module to the extent that the PCB greatly bends after the CM Module is secured with the levers in installation procedure of the CM Module. The PCB may be damaged when intense pressure is applied.

Fig. 3.7-4 Insertion of CM Module

#### INST03-07-140

4-3 When you need to install Cache Flash Memory (DW-F700-BM160/BM256), attach the CFM. When you do not need to install Cache Flash Memory (DW-F700-BM160/BM256), go to step 4-4.

# **Installation Condition**

The Cache Flash Memory (DW-F700-BM160) is an indispensable option that is to be installed when the storage system configuration is as follows.

• When the cache memory capacity is 160GB or less, add a set of the Cache Flash Memory (DW-F700-BM160).

The Cache Flash Memory (DW-F700-BM256) is an indispensable option that is to be installed when the storage system configuration is as follows.

- When the cache memory capacity is 192GB or more, add a set of the Cache Flash Memory (DW-F700-BM256).
- a. Loosen the screw on the front of the DKCFAN and make the handle fall down.
- b. Pull the handle and detach the DKCFAN from the MAIN1.

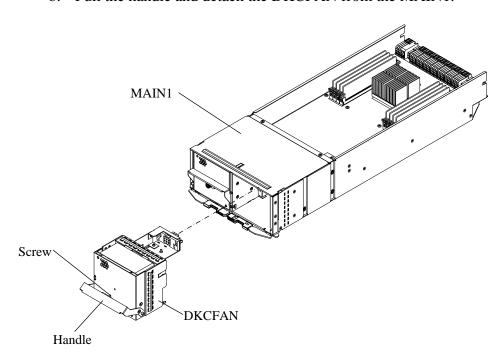


Fig. 3.7-5 Removal of DKCFAN

# INST03-07-150

- c. If there is a CFM in the MAIN1, loosen the screw and extract the CFM. If there is no CFM in the MAIN1, go to the procedure d.
- d. Insert the CFM until its claw reaches the part to attach of the MAIN1.
- e. Push up the handle and fully insert the CFM.
- f. Tighten the screw and fix the CFM.
- g. Install the DKCFAN removed in procedures a to b. (See Fig. 3.7-5.)

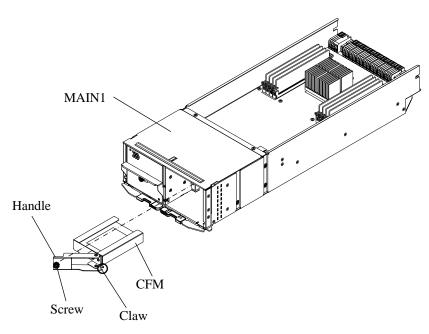
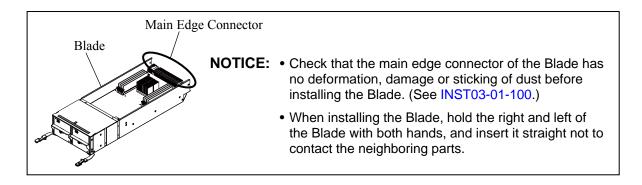


Fig. 3.7-6 Attachment of CFM

- 4-4 Insert the MAIN Blade.
  - a. Insert the MAIN1 until its lever edges reach the DKC.
  - b. Close the levers inward and fully insert the MAIN1. Then confirm that the lever locks are fastened to the DKC.



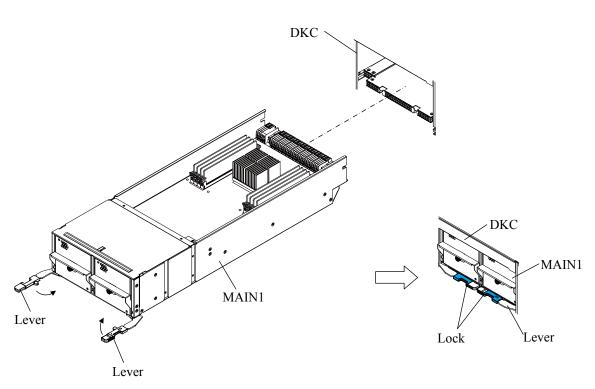


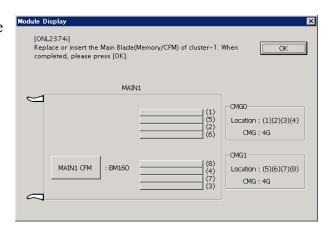
Fig. 3.7-7 Attachment of the MAIN1

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#### INST03-07-170

- 5. 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 Main Blade(Memory/CFM)of cluster-1. When completed, please press [OK].".



- (2) <Cache CUDG executes> "INLINE CUDG is now running..." is displayed.
- "Changing the configuration date, for equipment of shared/cache memory..."
  "Restoring the Main Blade..." is displayed.

# **A** CAUTION

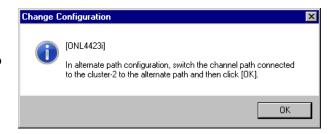
Recover according to the procedure shown in "TROUBLE SHOOTING SECTION" (Refer to TRBL04-600) when the mistake of the CM Module setting occurs .

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- 6. SVP pre procedure on the Cluster 2
  - (1) Select (CL) [OK] in response to "In alternate path configuration, switch the channel path connected to the cluster-2 to the alternate path and then click [OK].".

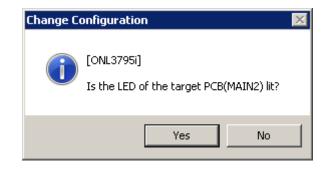


(2) <Recover one side of MAIN Blade> Processing proceeds to blocking of the other side of Main Blade.

"The MAIN Blade is being blocked..."

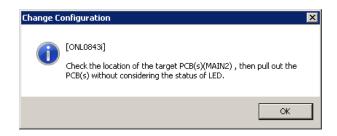
"Lighting LED of the PCB..." message appears.

- (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(MAINn) lit?".



If [No] is selected:
Select (CL) [OK] after response to
"Check the location of the target
PCB(s)(MAINn), then pull out the
PCB(s) without considering the status of
LED.".
(Refer INST03-07-190)

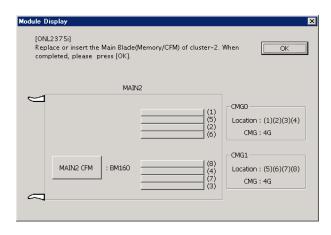
(Refer INST03-07-190) Go to step (4).



(4) <Perform hardware installation>
At this point refrain from pressing the [OK] button.

When "Replace or insert the Main Blade(Memory/CFM) of cluster-2. When completed, please press [OK]." is displayed, install hardware components according to the cache hardware installation procedure.

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



(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

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# INST03-07-200

7. Install the Cache Memory on the cluster 2.

**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.

7-1 Remove the MAIN Blade.

a. Check the Shut Down LED on the MAIN2.

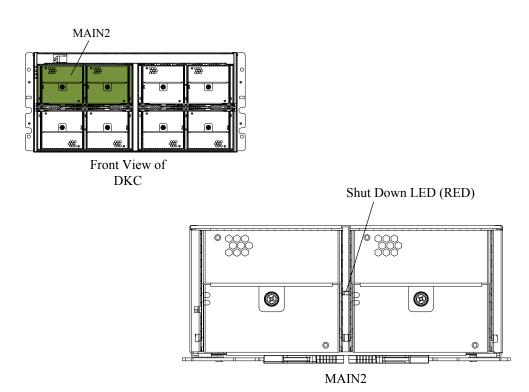


Fig. 3.7-8 Location of the Shut Down LED

Table 3.7-4 Location of the MAIN Blade

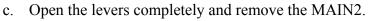
Cluster	Location	Location No.	Remarks
2	Front of DKC	MAIN2	

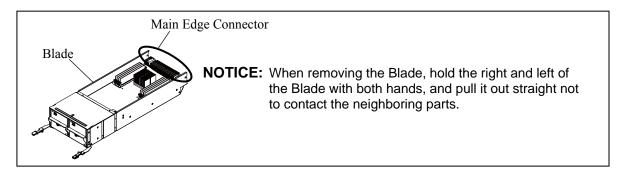
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b. Slide the lock on the levers of the MAIN2 outward and open the levers.





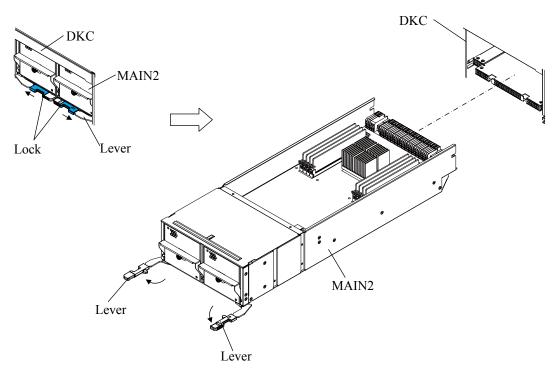


Fig. 3.7-9 Removal of MAIN2

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#### INST03-07-230

- 7-2 Insert the CM Modules.
  - Remove the dust covers that match the required Cache Memory capacity referring to Fig. 3.7-10 and Fig. 3.7-11.
  - b. Insert the CM Modules that match the required Cache Memory capacity.

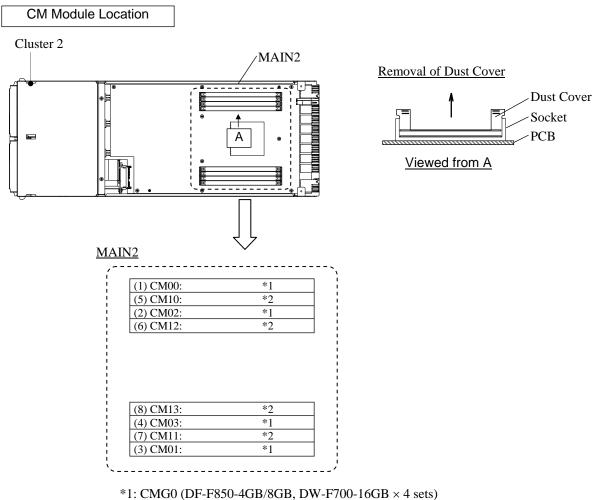


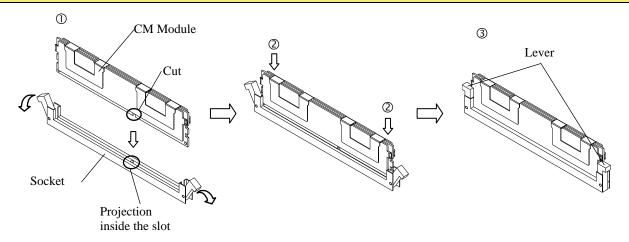
Fig. 3.7-10 Inserting Location of the CM Module

<sup>\*2:</sup> CMG1 (DF-F850-4GB/8GB, DW-F700-16GB × 4 sets)

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# **Installation**

- ① Position the cut of the CM Module with the projection inside the slot, and place the CM Module on the socket.
- ② Hold both ends of the CM Module by the fingers, and fit it into the socket.
- ③ Make sure that the lever is firmly fitted in the CM Module.

**NOTICE**: Do not put intense pressure on the CM Module to the extent that the PCB greatly bends after the CM Module is secured with the levers in installation procedure of the CM Module. The PCB may be damaged when intense pressure is applied.

Fig. 3.7-11 Insertion of CM Module

7-3 When you need to install Cache Flash Memory (DW-F700-BM160/BM256), attach the CFM. When you do not need to install Cache Flash Memory (DW-F700-BM160/BM256), go to step 7-4.

# **Installation Condition**

The Cache Flash Memory (DW-F700-BM160) is an indispensable option that is to be installed when the storage system configuration is as follows.

• When the cache memory capacity is 160GB or less, add a set of the Cache Flash Memory (DW-F700-BM160).

The Cache Flash Memory (DW-F700-BM256) is an indispensable option that is to be installed when the storage system configuration is as follows.

- When the cache memory capacity is 192GB or more, add a set of the Cache Flash Memory (DW-F700-BM256).
- a. Loosen the screw on the front of the DKCFAN and make the handle fall down.
- b. Pull the handle and detach the DKCFAN from the MAIN2.

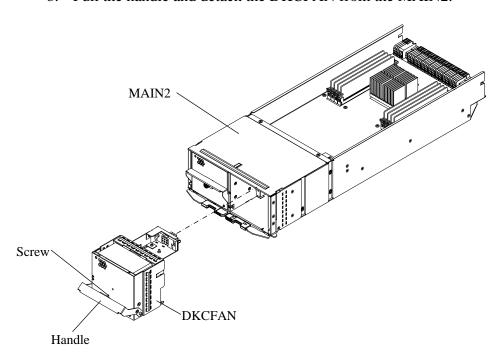


Fig. 3.7-12 Removal of DKCFAN

- c. If there is a CFM in the MAIN2, loosen the screw and extract the CFM. If there is no CFM in the MAIN2, go to the procedure d.
- d. Insert the CFM until its claw reaches the part to attach of the MAIN2.
- e. Push up the handle and fully insert the CFM.
- f. Tighten the screw and fix the CFM.
- g. Install the DKCFAN removed in procedures a to b. (See Fig. 3.7-12.)

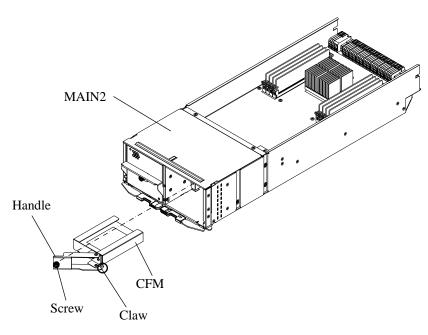
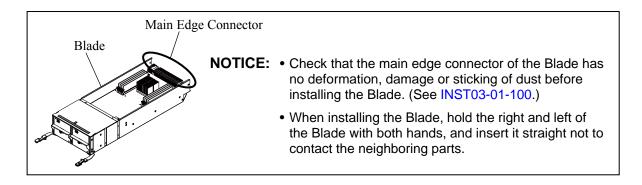


Fig. 3.7-13 Attachment of CFM

- 7-4 Insert the MAIN Blade.
  - a. Insert the MAIN2 until its lever edges reach the DKC.
  - b. Close the levers inward and fully insert the MAIN2. Then confirm that the lever locks are fastened to the DKC.



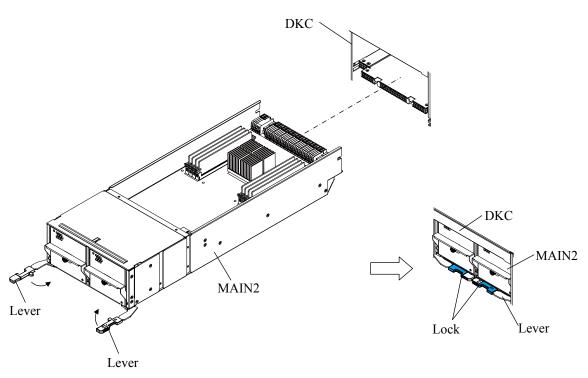
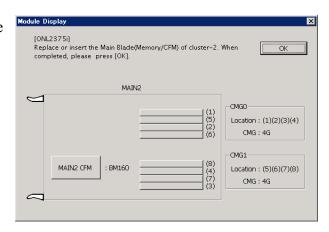
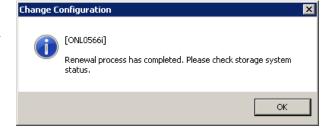


Fig. 3.7-14 Attachment of MAIN2

- 8. 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 Main Blade(Memory/CFM) of cluster-2. When completed, please press [OK].".



- (2) <Cache CUDG executes> "INLINE CUDG is now running..." is displayed.
- "Changing the configuration date, for equipment of shared/cache memory..."
  "Restoring the Main Blade..." is displayed.
- (4) <End of system update processing>
  "Renewal process has completed. Please check storage system status." is displayed when recovery processing on all installed components is completed. Select (CL)
  [OK] in response to this message.



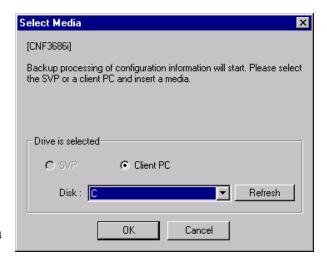
(5) Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

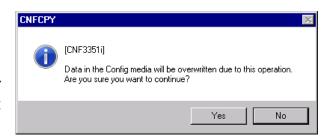
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(6)

If the configuration information is not saved in the selected media, go to step (7).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select



(CL) the [Yes] button. When the backup to the Config media is not necessary, select (CL) the [No] button and go to step (8).

(7)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

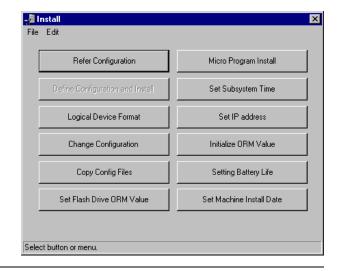
Remove the configuration information media, select (CL) [OK].



(8)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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

(10) <Path online>

Set the stopped channel path online by your customer.

Return to the working table and do the rest of the work.

New Installation: INST02-10,

Non-Disruptive Installation: INST02-40

# 3.8 Installation of Disk Blade, SAS Cable and Drive (DW-F700-BS6G/BS6GE/SC1, DF-F850-SC3/SC5/3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)

Table 3.8-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DW-F700-BS6G	DKB	3285154-A	1	
2	DW-F700-BS6GE	DKB	3284394-N	1	
3	DW-F700-SC1	SAS cable (1m)	3285194-A	1	
4	DF-F850-SC3	SAS cable (3m)	3285194-B	1	
		Cable Label	3282126-1	2	Not used
		Cable Label	3282126-2	2	Not used
		How to use labels stuck on SAS cable of DF-F850-DBX	3285256-1	1	Not used
5	DF-F850-SC5	SAS cable (5m)	3285194-C	1	
		Cable Label	3282126-1	2	Not used
		Cable Label	3282126-2	2	Not used
		How to use labels stuck on SAS cable of DF-F850-DBX	3285256-1	1	Not used
6	DF-F850-3HGSSH	SFF Drive (300GB/15k/ 6Gbps/SAS-HDD)	3585276-A	1	For DBS
7	DF-F850-6HGSS	SFF Drive (600GB/10k/6Gbps/SAS-HDD)	3282390-A	1	For DBS
8	DF-F850-9HGSS	SFF Drive (900GB/10k/ 6Gbps/SAS-HDD)	3282390-D	1	For DBS
9	DF-F850-12HGSS	SFF Drive (1.2TB/10k/6Gbps/SAS-HDD)	3282390-E	1	For DBS
10	DF-F850-2HGDM	SFF Drive (200GB/6Gbps/MLC-SSD)	3285262-A	1	For DBS
11	DF-F850-4HGDM	SFF Drive (400GB/6Gbps/MLC-SSD)	3285262-B	1	For DBS
12	DF-F850-8HGDM	SFF Drive (800GB/6Gbps/MLC-SSD)	3285262-C	1	For DBS
13	DF-F850-3TNL	LFF Drive (3TB/7.2k/ 6Gbps/SAS-HDD)	3285067-В	1	For DBL
14	DF-F850-4TNL	LFF Drive (4TB/7.2k/ 6Gbps/SAS-HDD)	3285067-C	1	For DBL
15	DF-F850-3TNX	LFF Drive (3TB/7.2k/ 6Gbps/SAS-HDD)	3285134-B	1	For DBX
16	DF-F850-4TNX	LFF Drive (4TB/7.2k/ 6Gbps/SAS-HDD)	3285134-C	1	For DBX

(To be continued)

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(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
17	DKC-F710I-1R6FM	Drive (1.6TB/6Gbps/ MLC-SSD)	3286549-A	1	For DBF
18	DKC-F710I-3R2FM	Drive (3.2TB/6Gbps/ MLC-SSD)	3286550-A	1	For DBF

Table 3.8-2 Working time

		Total (minutes)	
DKB	Installation	20	

NOTE: In the case of DBL/DBS/DBF, for DKB installation / removal, additional 24 minutes is necessary to newly route cable(s) between drives.

In the case of DBX, for DKB installation / removal, additional 60 minutes is necessary to newly route cable(s) between drives.

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# 3.8.1 Flowchart

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

Case	Option Installation Procedure	Page
①	When performing addition of the data/spare Drive (DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)	INST03-08-40
2	When performing addition of the DKB (DW-F700-BS6G/BS6GE)	INST03-08-40
3	When performing addition of the data/spare Drive, DKB and SAS cable that accompanies the addition of the Drive Box (DW-F700-BS6G/BS6GE/SC1, DF-F850-SC3/SC5/3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)	INST03-08-50

# INST03-08-40

① When performing addition of the data/spare Drive	
	[INST03-08A-10 through 260]
1. Setting up the New Device Structure Information	
↓	
2. SVP pre procedure	
$\downarrow$	
3. Installation Procedure of Drive	
$\downarrow$	
4. SVP post procedure	
② When performing addition of the DKB	[INST03-08B-10 through 120]
1. Setting up the New Device Structure Information	
$\downarrow$	
2. SVP pre procedure	
$\downarrow$	
3. Installation Procedure of Backend I/O Module (DW-F700	-BS6G/BS6GE)
↓	,
4. SVP post procedure	

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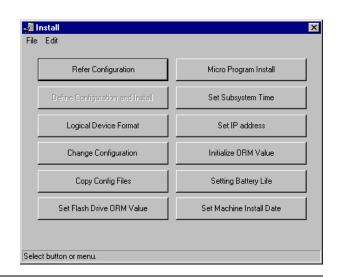
#### INST03-08-50

3.8.2 When performing addition of the data/spare Drive (DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)

# **A** CAUTION

If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

- 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].



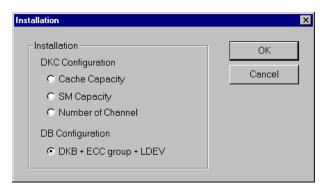
(3) <Start Device Structure Setup screen> Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



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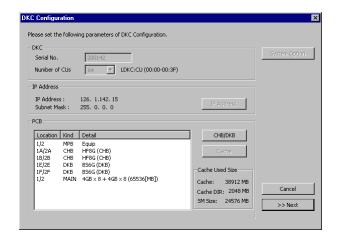
#### INST03-08A-20

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

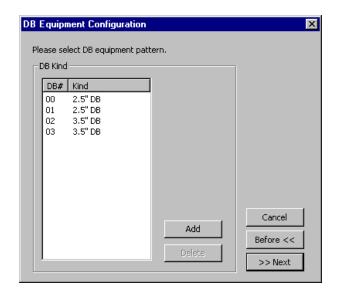


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(5) <DKC Configuration screen>
 In the 'DKC Configuration' screen, select
 (CL) [>>Next].
 Go to Step (6).



(6) <DB Equipment Configuration screen>Select (CL) [>>Next] in the 'DB Equipment Configuration' screen.Go to Step (7).



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# (7) < Physical Device Configuration screen>

Define the drive configuration according to the 'Physical Device Configuration' screen.

Detailed procedure is shown below.

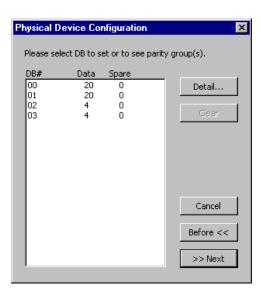
[Detail...]: Defines the parity group or spare disk. Go to Step (8).

Cancels the setting of the DB. [Clear]:

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

Go to Step (9).

Selecting (CL) [Before << ] returns to Step (6).



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#### INST03-08A-40

# (8) < Define Parity Group>

'Parity Group Configuration' dialog box is displayed.

[Detail...]: Refer the HDDs constituting the defined parity group or the spare drive.

See Step (8)-1.

# [Group(Detail)...]:

Define the parity group which appointed the HDDs to constitute. See Step (8)-2.

# [Group(Auto)...]:

Define the parity groups which the HDDs to constitute are selected

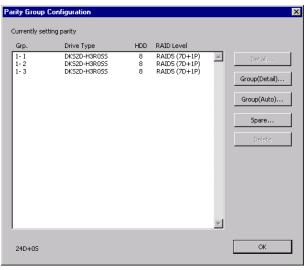
automatically. (The appointment of plural parity groups is possible) See Step (8)-3.

[Spare...]: Defines the spare drive. See Step (8)-4.

[Delete]: Deletes the added parity group or spare drive.

Grp.: A parity group where RAID Concatenation is installed.

After setting up all items, select (CL) [OK]. Go back to Step (7).



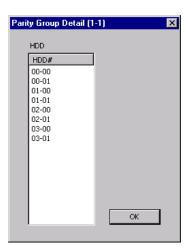
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#### INST03-08A-50

(8)-1

Select (CL) [OK]. Go back to Step (8).



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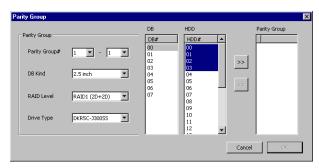
(8)-2

(8)-2-1

Define the Parity Group#, the DB Kind, the RAID Level, and the Drive Type in the 'Parity Group' dialog box.

DBs to which the Parity Group can be constructed are displayed in DB List, then select (CL) DBs and HDDs to which you want to construct the Parity Group and select (CL) the [>>] button.

Go to Step (8)-2-2.



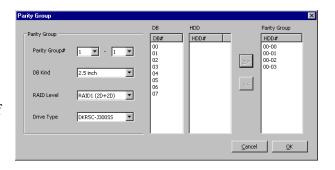
NOTE: The selection of plural DBs and the HDDs is possible. But cannot select (CL) [>>] when it does not match the constitution HDD number of an appointed parity group.

(8)-2-2

After Parity Group List is registered, select (CL) [OK].

Go back to Step (8).

NOTE: The [OK] button cannot be pressed if the HDDs do not meet a condition of the Parity Group. Adjust the number of the HDDs in the Parity Group List.



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#### INST03-08A-51

#### (8)-3

Define the Parity Group#, the DB Kind, the DB#, the RAID Level, the Drive Type, the Num of Groups, the Select HDD in the 'Parity Group(Auto)' dialog box.

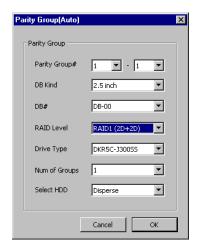
Go to Step (8)-3-1.

• Parity Group# : Start parity group number

• DB Kind : DB Kind (2.5 inch/3.5 inch/FMD)

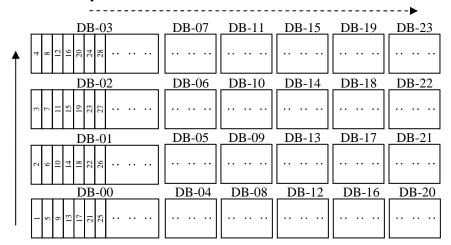
DB# : Start DB number
RAID Level : RAID Level
Drive Type : Drive Type

Num of Groups : Number of the definition Parity groups
 Select HDD : HDD Selection method (Disperse/Linear)



# <Disperse>

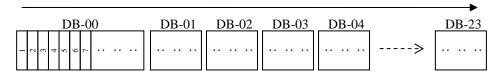
A parity group is composed of the HDDs which it is dispersed by 4 DBs unit and selected automatically. The HDDs are selected with the turn of the chart below.



The HDDs are selected to 4 DBs unit in the solid line direction and is repeated to the dashed line direction. But by the setting for the constitution that DB kind (2.5 inch DB/3.5 inch DB/DBX/DBF) is mixed and that HDDs have been already defined, the location that cannot be equipped is skipped, and HDDs are selected.

#### <Linear>

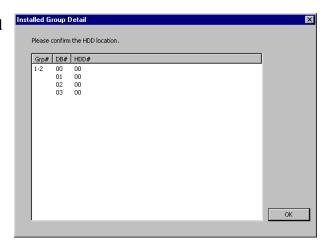
A parity group is comprised of automatic selected HDDs by DB order. The HDDs are selected with the turn of the chart below.



The HDDs of the solid line direction is selected. But by the setting for the constitution that DB kind (2.5 inch DB/3.5 inch DB/DBX/DBF) is mixed and that HDDs have been already defined, the location that cannot be equipped is skipped, and HDDs are selected.

# (8)-3-1

Confirm parity groups which were defined and constitution HDDs in the 'Installed Group Detail' dialog box, and select (CL) [OK]. Go back to Step (8).

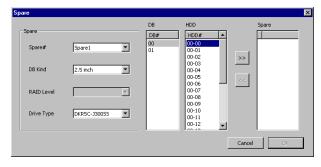


# (8)-4

# (8)-4-1

Define the Spare#, the DB Kind, the Drive Type in the 'Spare' dialog box.

DBs to which the Spare can be constructed are displayed in DB List, then select (CL) DBs and HDDs to which you want to construct the Spare and select (CL) the [>>] button. Go to Step (8)-4-2.

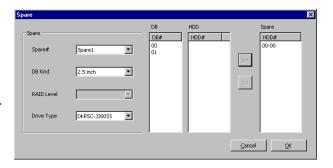


# (8)-4-2

After Spare List is registered, selsect (CL) [OK].

Go back to Step (8).

NOTE: The [OK] button cannot be pressed if the HDDs do not meet a condition of the Spare. Adjust the number of the HDDs in the Spare List.



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# (9) < Define Device Emulation>

After setting up all items corresponding (9)-1 to (9)-4 for definition of Device Emulation, select (CL) [>>Next].

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

In the case of only spare drive installation, select (CL) [>>Next]. Go to Step (10).

- If defining Device Emulation, go to Step (9)-1.
- If setting RAID concatenation, go to Step (9)-2.
- If defining of Customized Volume Size (CVS) and System Disk, go to Step (9)-3.
- If setting copy back mode, go to Step (9)-4.

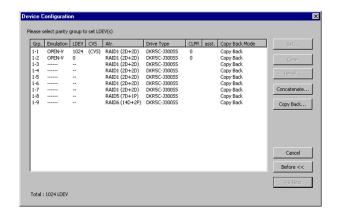
# (9)-1 < Define Device Emulation>

Select (CL) parity group and select (CL) [Set...].

Go to Step (9)-1-1.

(CVS): A parity group where CVS is installed.

Grp\*: A parity group where RAID Concatenation is installed.



# (9)-1-1

After setting up all items in the 'Device Define' dialog box, select (CL) [OK]. Go back to Step (9).

Selecting (CL) [Cancel] returns you to Step (9)-1 without reflecting the setting items.

NOTE: "0" can be set to the value of Number of LDEVs.

If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run.
When you set "0", please make LDEVs later using the CVS function.



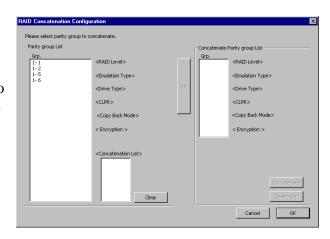
# (9)-2 <Setting RAID concatenation>

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.

Go to Step (9)-2-1.

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

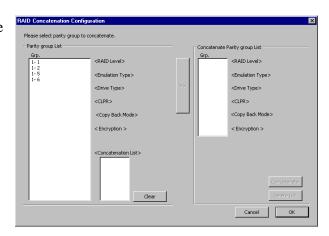


# (9)-2-1

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

Go to Step (9)-2-2.

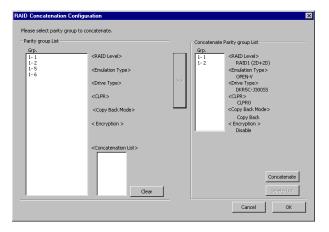
NOTE: The [Concatenate] button cannot be pressed if the concatenation does not meet a condition of the RAID concatenation. Adjust the number of the parity groups in the Concatenate Parity group List.



# (9)-2-2

After Concatenate Parity group List is registered, select (CL) [Concatenate]. Go to Step (9)-2-3.

NOTE: If it does not meet RAID concatenation conditions, it is impossible to select [Concatenate]. Adjust the number in the Concatenate Parity group List.



# (9)-2-3

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.

Selecting (CL) [Clear] cancels the RAID concatenation.

When all the settings of the RAID concatenation are completed, select (CL) [OK].

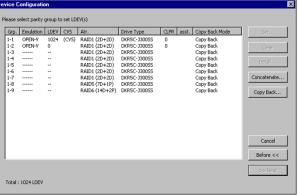
Go back to Step (9).

Selecting (CL) [Cancel] returns the routine to Step (9).

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

Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the 'Device Configuration' screen and select (CL) [Detail...].

When you do not perform the CVS, go back to Step (9).



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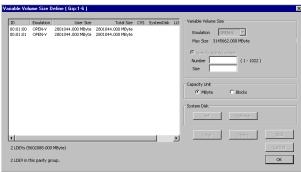
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# (9)-3-1 < Definition of OPEN-V>

Open-V can be defined in the 'Variable Volume Size Define' screen.

- Set of a CVS volume
   Perform ① Delete of the Volume and ② Add of the Volume.
- Set of the System Disk in a normal volume Perform ③ Set of the System Disk.
- Set of the System Disk in a CVS volume
  Perform ① Delete of the Volume, ② Add of
  the Volume, and then ③ Set of the System Disk.



# ① Delete of the Volume

The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.

All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].

# ② Add of the Volume

It can be added by selecting (CL) Variable Volume Size from the status "select (CL) 'empty" or "no selection" in the LDEV list box and selecting (CL) [Add].

# 3 Set of the System Disk

The System Disk can be set by selecting (CL) the volume from the LDEV list box and selecting (CL) [Set].

The System Disk registered by mistake can be released by selecting (CL) the System Disk from the LDEV list box and selecting (CL) [Release].

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

NOTE: The two or more volumes can be selected and deleted or set System Disk.

# • Variable Volume Size

"Specify size & number"

: Defines the specified number of the specified user size.

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• Capacity Unit

"MByte"
"Blocks"
Makes data displayed or entered by [Mbyte].
Makes data displayed or entered by the [Blocks].
LUSE
When the LUSE is connected, "+" is displayed.

• asst. : When Path/LUSE/pool-VOL is defined, "+" is displayed.

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

[Clear] : Deletes all the volumes.

[Delete] : Deletes all the selected volumes.

[Add] : Adds volumes.[Set] : Sets System Disk.[Release] : Release System Disk.

[Cancel] : Invalidates the setting, and returns to the preceding window.

[OK] : Confirms the setting, and returns to the preceding window.

# (9)-4 <Setting copy back mode>

Select (CL) [Copy Back...], go to Step (9)-4-1.

Selecting (CL) [Cancel] returns the routine to Step (9).

# (9)-4-1

Select parity group changing the copy back mode, and press (CL) the [Change...] button.

• Copy Back: When a failed HDD

recovered, the copy back will

be performed. (default)

• No Copy Back: When a failed HDD

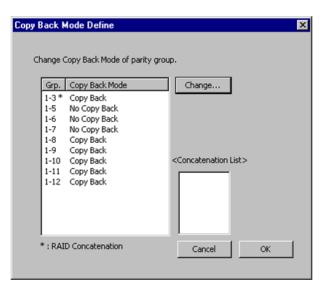
recovered, the copy back will

be not performed.

[OK]: Invalidates the setting, and returns to

Step (9).

[Cancel]: Confirms the setting, and returns to Step (9).



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

Selecting the concatenated parity groups the concatenated parity groups in the Concatenation List.

If you selected the parity group where RAID Concatenation is installed, and press (CL) the [Change...] button, go to Step (9)-4-2.

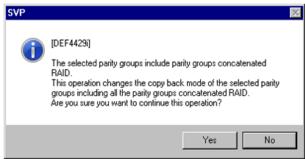
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# (9)-4-2

In response to a message, "The selected parity groups include parity groups concatenated RAID. This operation changes the copy back mode of the selected parity groups including all the parity groups concatenated RAID. Are you sure you want to continue this operation?".

When [Yes] is selected (CL), the copy back mode changes, and returns to Step (9)-4-1.
When [No] is selected (CL), returns to Step (9)-4-1.



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(10) < Define LDEV ID>

(10)-1 < Definition Screen for LDEV ID>

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

[Linear...]: LDEV ID is assigned to LDEV

in the order of parity groups.

See Step (10)-3.

[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.

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned.

② "-----": LDEV ID is not assigned.

③ "Error" : Invalid LDEV ID is assigned.

After setting up all items, select [Detail...] to confirm the items that have been set up, and select (CL) [>>Next].

Go to Step (11).

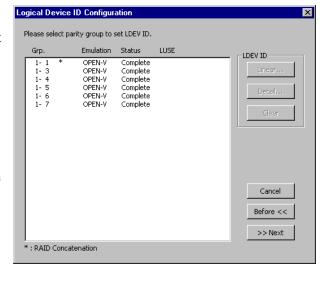
(10)-2 < Detailed Definition Screen for LDEV ID> LDEV ID is defined in detail for each LDEV in the parity group.

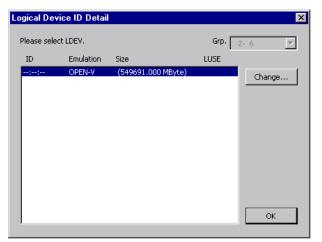
Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed. After setting, select (CL) [OK]. Return to Step (10)-1.

• '----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

NOTE: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.





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#### INST03-08A-130

# (10)-3 <Input LDEV ID>

Select CU 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

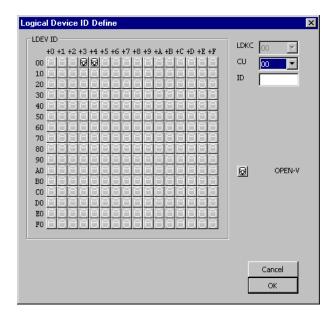
Patterned disk of panel: using

Input LDEV ID you want to set or the head

LDEV ID in the ID Edit box.

After setting, select (CL) [OK].

Go back to Step (10)-1.



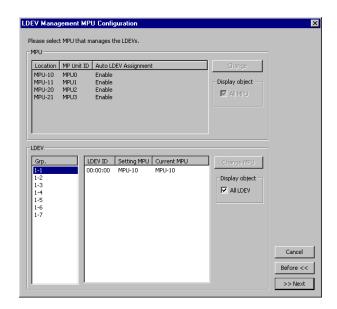
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(11) <Define LDEV Management MPU>
In the 'LDEV Management MPU
Configuration' screen, select (CL) [Change MPU].
Go to Step (11)-1.

After the setting is completed, select (CL) [>>Next]. (Go to Step 12)



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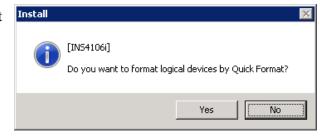
(11)-1 < Define Management MPU > Define Management MPU and select (CL) [OK]. Go back to Step (11).



# (12) < Selection of format>

Select (CL) [Yes] in response to "Do you want to format logical devices by Quick Format?" when you execute Quick Format.

When [No] is selected (CL), usual LDEV Format is executed.



NOTE: Next, Quick Format cannot be executed in the shown volume.

- external volume
- Volumes whose access attribute is not Read/Write
- Pool volumes (pool-VOLs)
- · Journal volumes

# (13) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



# (13)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (13)-2.

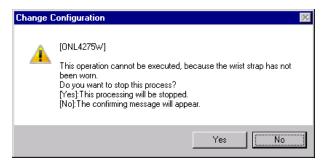


# (13)-2

In response to a message, "This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (2) on page INST03-08A-10.

When [No] is selected (CL), returned to Step (13).



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## (14) <Start installation>

Select (CL) [Yes] in response to "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not insert the components for upgrading the system at this time.".

When the [No] is selected, the routine is returned to Step (3) on page INST03-08A-10.



## (15) < Download microprogram>

Microprograms are automatically downloaded for each processor.

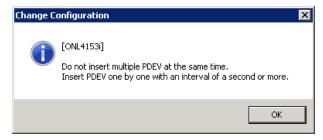
## (16) <Install DKB>

"Upgrading of the DKB..."

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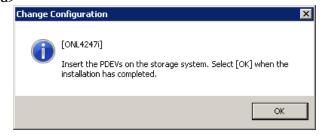
- 2. SVP pre procedure
- (1) <Notes when insert of PDEV> "Do not insert multiple PDEV at the same time. Insert PDEV one by one with an interval of a second or more." is displayed. Select (CL) [OK].



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(2) <Check that hardware components are installed> At this point refrain from pressing the [OK] button.

"Insert the PDEVs on the storage system. Select [OK] when the installation has completed." is displayed.



- 3. Installation Procedure of drive
- 3-1 Confirmation of position to install drive

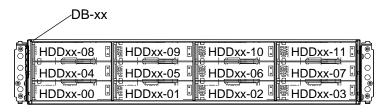
## In the case of DBL

a. Make sure of the location where the drive is to be added.

Table 3.8.2-1 Drive Model Number List (DBL)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNL/4TNL	LFF Disk Drive	

**Drive Location** 



Front View of DBL

\*1: HDDxx-02 DB No. (0, 1, 2, ..., 47)

Fig. 3.8.2-1 Drive Location (In the case of DBL)

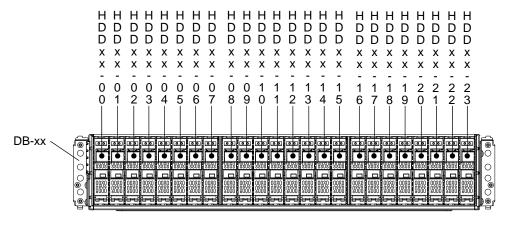
## In the case of DBS

a. Make sure of the location where the drive is to be added.

Table 3.8.2-2 Drive Model Number List (DBS)

No.	Model Number	Model Name	Remarks
1	DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS	SFF Disk Drive	
2	DF-F850-2HGDM/4HGDM/8HGDM	SFF SSD Drive	

**Drive Location** 



Front View of DBS

\*1: HDDxx-02 DB No. (0, 1, 2, ..., 47)

Fig. 3.8.2-2 Drive Location (In the case of DBS)

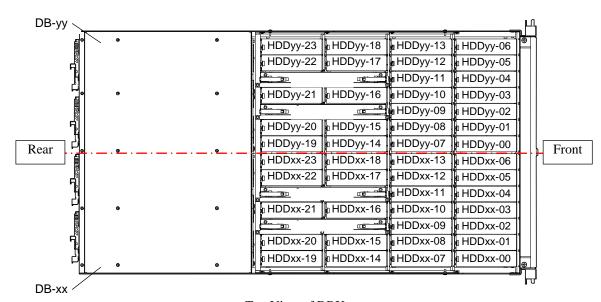
## In the case of DBX

a. Make sure of the location where the drive is to be added.

Table 3.8.2-3 Drive Model Number List (DBX)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNX/4TNX	LFF Disk Drive	

#### Drive Location



Top View of DBX

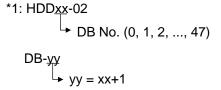


Fig. 3.8.2-3 Drive Location (In the case of DBX)

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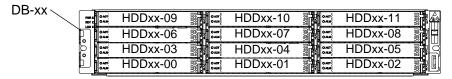
## In the case of DBF

a. Make sure of the location where the drive is to be added.

Table 3.8.2-4 Drive Model Number List (DBF)

No.	Model Number	Model Name	Remarks
1	DKC-F710I-1R6FM/3R2FM	Flash Module	FMD
		Drive	

## **Drive Location**

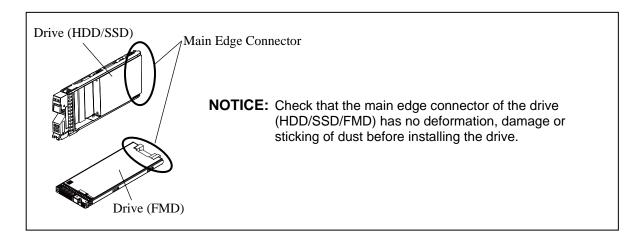


Front View of DBF

Fig. 3.8.2-3A Drive Location (In the case of DBF)

# 3-2 Checking the condition of the drive

a. Check the condition of the drive before installing it.



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## 3-3. Installing the drives

**NOTICE:** When two or more Drives are inserted at the same time, the already operating Drive might have blockade.

Insert Drive one by one at a second (\*1) interval.

Don't insert Drive that doesn't define in the configuration.

\*1: Interval of time necessary for stabilizing the voltage of back board after an Drive's insertion.

**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.

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## In the case of DBL

**NOTICE:** Since the Drive is a precision component, handle it very carefully not to apply a vibration or shock to it.

- a. Remove the dummy (drive) from the position installing the drive.
- b. Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

- c. Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- d. Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the drive array unit.

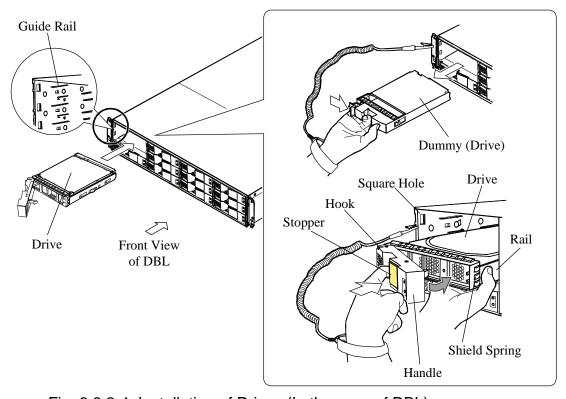


Fig. 3.8.2-4 Installation of Drives (In the case of DBL)

## In the case of DBS

**NOTICE:** Since the Drive is a precision component, handle it very carefully not to apply a vibration or shock to it.

- a. Remove the dummy (drive) from the position installing the drive.
- b. Fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- c. Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole at the lower part of a frame on the front side of the drive box.
- d. Raise the stopper, which has been tilted toward you, and then press the stopper to have the lock on.

If the handle is raised in the state where the hook of the handle cannot enter into each hole, the drive cannot be installed correctly because it runs into the frame of the drive box.

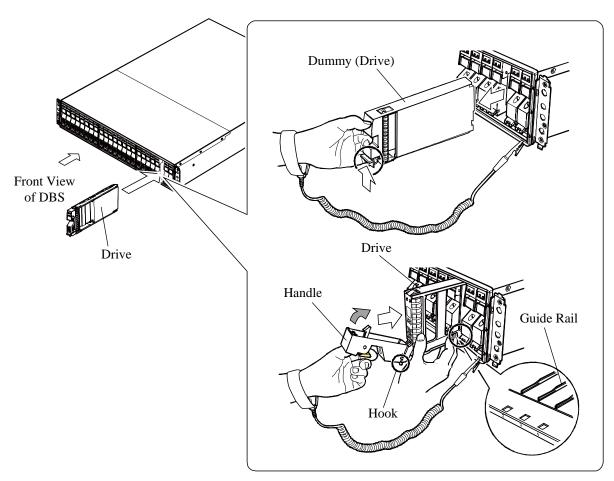


Fig. 3.8.2-5 Installation of Drives (In the case of DBS)

## In the case of DBX

**NOTICE:** Since the Drive is a precision component, handle it very carefully not to apply a vibration or shock to it.

- a. Draw the DBX. (See INST03-01-60.)
- b. Remove the dummy (drive) from the position installing the drive.
- c. Open the handle, and insert the drive holding it with both hands.

NOTE: Check that there is no foreign substance near the connector and in the chassis before inserting the drive.

- d. Close the handle.
- e. Reinstall the DBX. (See INST03-01-80.)

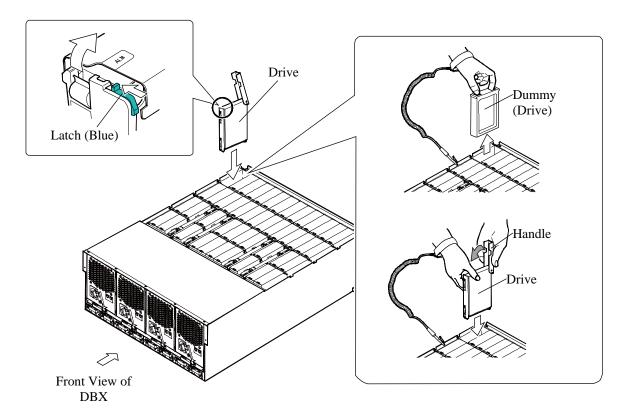


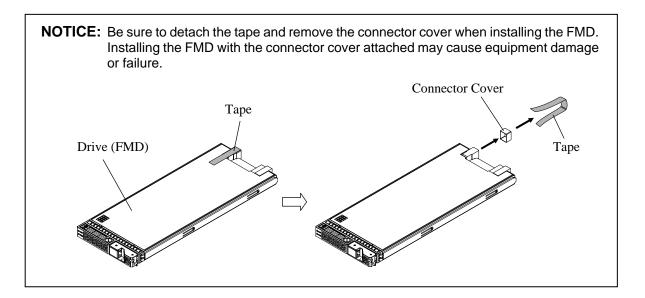
Fig. 3.8.2-6 Installation of Drives (In the case of DBX)

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# In the case of FMD



a. Remove the Dummy FMD from the installing position of a drive.Release the hook while pressing the lock to the left to pull the Dummy FMD toward you.

b. Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

- c. Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- d. Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the drive box.

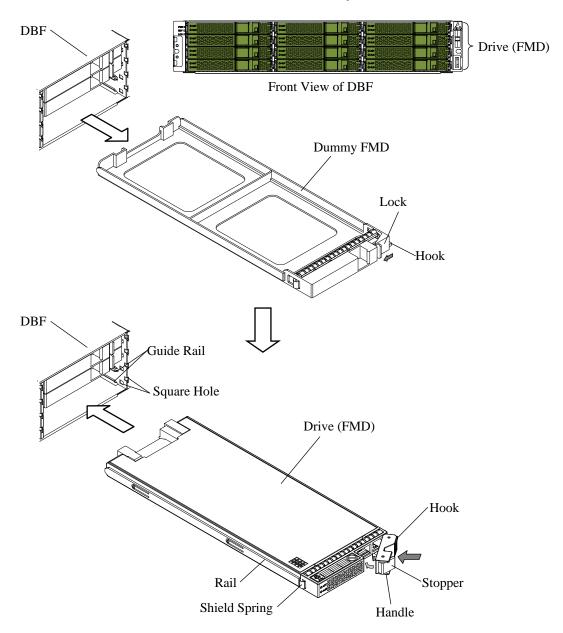


Fig. 3.8.2-7 Installation of Drive (In the case of FMD)

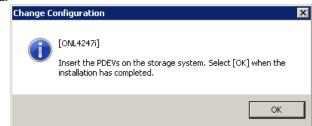
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#### INST03-08A-240

## 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 "Insert the PDEVs on the storage system. Select [OK] when the installation has completed.".



NOTE: On page INST03-08A-150 (13), it advances to (3)-1 when a Quick Format is selected (CL).

## (2) <PATH INLINE>

When DKB is installed, "PATH INLINE is now running..." is displayed.

## (3) <LDEV FORMAT>

"Formatting logical devices..." is displayed when Parity Group is defined.

## (3)-1 < QUICK FORMAT>

"Preparing Quick Format logical devices..." is displayed when Parity Group is defined.

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



## (4)-1 < QUICK FORMAT>

Refer to the logical device window in the "Maintenance" window to check that the Quick Format is in progress. (SVP03-320 through 370)

(5)

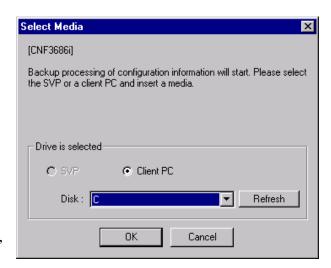
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

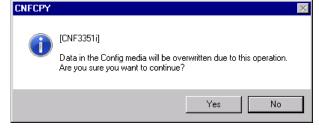
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(6)

If the configuration information is not saved in the selected media, go to step (7).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (8).

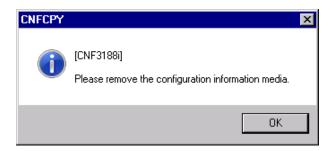
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(7)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

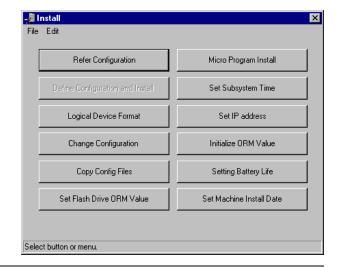
Remove the configuration information media, Select (CL) [OK].



(8)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



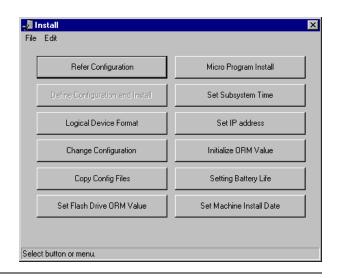
(9) <Mode Change>

Change the mode to View Mode.

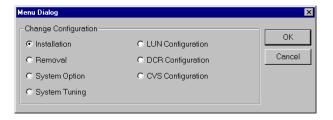
Return to the work table (INST02-40) and perform rest of the works.

# 3.8.3 When performing addition of the DKB (DW-F700-BS6G/BS6GE)

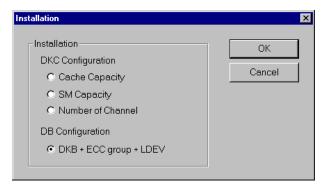
- 1. Setting up the New Device Structure Information
- (1) <Mode Change>Change the mode to Modify Mode.Select (CL) [Install].
- (2) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



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



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

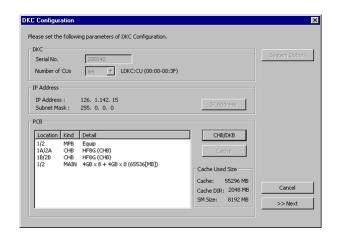


(5) <Update Configuration Information>Select (CL) [CHB/DKB] in the 'DKC Configuration' screen.Go to Step (6).

After confirming input items, select (CL) the [>>Next] button.

Go to Step (7).

In the case of selecting (CL) [Cancel], this operation procedure terminates.



## (6) <Setting DKB>

Define the DKB in the 'CHB/DKB Configuration' screen. Select (CL) the location to be added, and then select (CL) the [Change...].

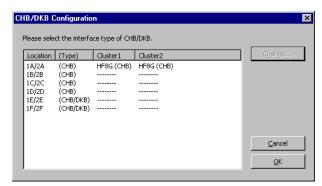
Go to Step (6)-1.

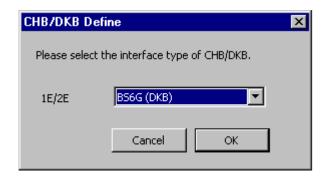
After confirming input items, select (CL) the [OK] button.

Go back to Step (5).

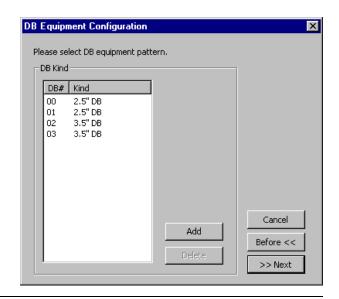


Define the DKB in the 'CHB/DKB Define' screen. After setting, select (CL) [OK]. Go back to Step (6).



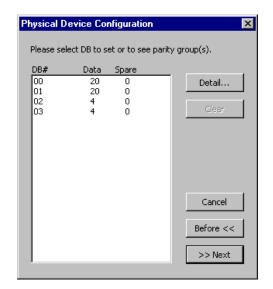


(7) <DB Equipment Configuration screen> Select (CL) [>>Next] in the 'DB Equipment Configuration' screen. Go to Step (8).



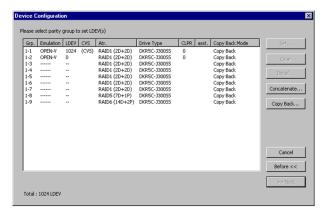
(8) <Change Drive Configuration Information> Select (CL) [>>Next] in the 'Physical Device Configuration' screen. Go to Step (9).

Selecting (CL) [Before << ] returns to Step (7).



(9) <Define Device Emulation>Select (CL) [>>Next] in the 'Device Configuration' screen.Go to Step (10).

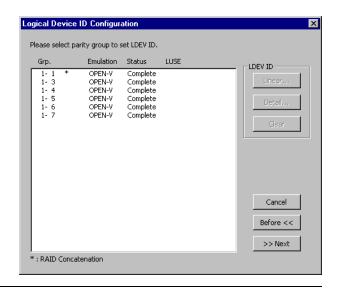
Selecting (CL) [Before<<] returns you to the previous screen.



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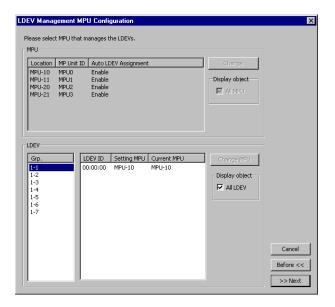
#### INST03-08B-40

(10) <Define LDEV ID>
Select (CL) [>>Next] in the 'Logical Device
ID Configuration' screen.
Go to Step (11).



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(11) <Define Management MPU> Select (CL) [>>Next] in the 'LDEV Management MPU Configuration' screen. Go to Step (12).

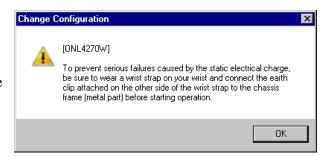


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## (12) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



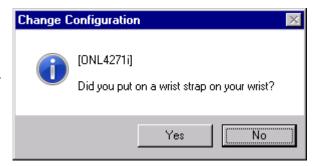
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## (12)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (12)-2.



#### (12)-2

In response to a message, "This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (2) on page INST03-08B-10.

When [No] is selected (CL), returned to Step (12).



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#### INST03-08B-60

(13) <Start installation>

Select (CL) [Yes] in response to "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not insert the components for upgrading the system at this time.".

When the [No] is selected, the routine is returned to Step (2) on page INST03-08B-10.



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(14) <Check that hardware components are installed>
At this point refrain from pressing the [OK] button.

"Insert the DKBs on the storage system. Select [OK] when the installation has completed." is displayed.



### 2. Installation Procedure of Backend I/O Module

**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.

## 2-1 Insertion of the Blades

Install one DKB into one slot at a time.

- a. Loosen the screw that fastens the dummy cover and let the handle fall down. (Refer to Table 3.8.3-1 and Fig. 3.8.3-1)
- b. Push down the handle and remove the dummy cover.
- c. Insert the DKB until the claw on the lower part of the handle of the DKB reaches the front of the DKC.
- d. Push up the handle and fully insert the DKB.
- e. Tighten the screw and fasten the DKB.
- f. Repeat the procedures a to e each time you add a DKB.

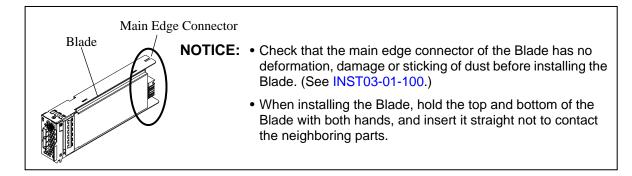


Table 3.8.3-1 Inserting Location

Addition	Slot No.		Location No.		Remarks
No.	Cluster 1	Cluster 2	Cluster 1	Cluster 2	
Basic	1E	2E	DKB-1E	DKB-2E	
Option 1	1F	2F	DKB-1F	DKB-2F	

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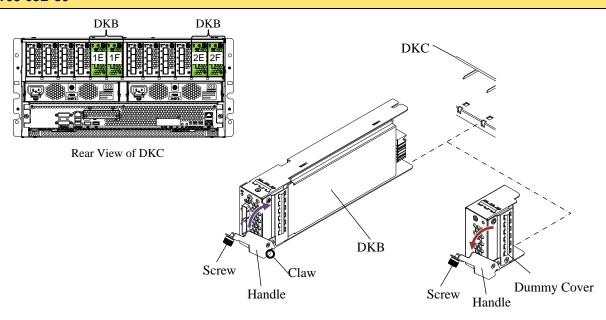


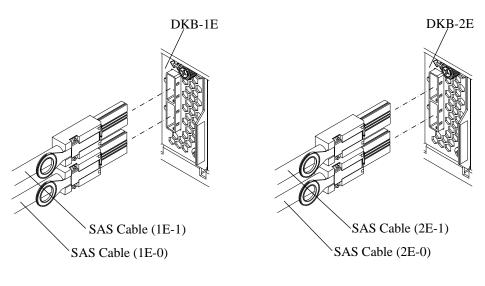
Fig. 3.8.3-1 Insertion of DKB

2-2 Connection of cables In the case of Basic

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

- a. Remove the caps from the SAS cables.
- b. Connect the cables to the DKBs after checking "3.1.6 Notes when connecting and routing the SAS cable" (INST03-01-170).



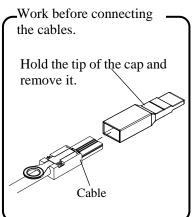


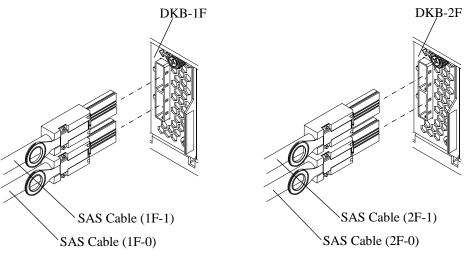
Fig. 3.8.3-2 Connection of Cables (Basic)

## In the case of Option 1

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

- a. Remove the caps from the SAS cables.
- b. Connect the cables to the DKBs after checking "3.1.6 Notes when connecting and routing the SAS cable" (INST03-01-170).



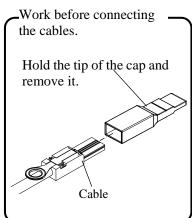


Fig. 3.8.3-3 Connection of Cables (Option 1)

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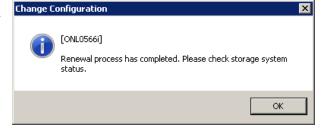
- 3. SVP post procedure
- (1) <Check that hardware components are installed Select (CL) [OK] after making sure that all hardware components are installed correctly in response to "Insert the DKBs on the storage system. Select [OK] when the installation has completed.".



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

If [ONL3437E] or [ONL3438E] is displayed, please refer 2.10.1. (INST02-320)

- (3) <PATH INLINE> When DKB is installed, "PATH INLINE is now running..." is displayed.
- (4) <End of system update processing> "Renewal process has completed. Please check storage system status." is displayed when recovery processing on all installed components is completed. Select (CL) [OK] in response to this message.



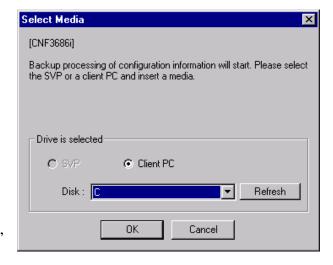
(5) Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.

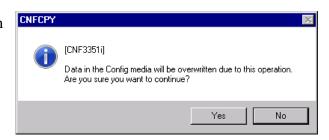


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(6)

If the configuration information is not saved in the selected media, go to step (7).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (8).

(7)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media

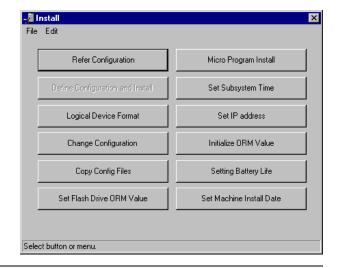
Remove the configuration information media, Select (CL) [OK].



(8)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



(9) <Mode Change>

Change the mode to View Mode.

Return to the work table (INST02-40) and perform rest of the works.

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3.8.4 When performing addition of the data/spare Drive, DKB and SAS Cable that accompanies the addition of the DB

(DW-F700-BS6G/BS6GE/SC1, DF-F850-SC3/SC5/3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)

NOTE: For the Non-Disruptive Installation, execute the operation after turning on the power supply of the RACK as shown in the step No.10 of 2.2 Non-Disruptive Installation Procedure Table (INST02-40).

# 3.8.4.1 SAS Cable type and connection

## 1. SAS Cable type

The table below shows the number and length of the SAS Cables included in options of the DW700.

If the length of the standard SAS Cable included in the DBL/DBS/DBX/DBF is too short to use, replace the standard SAS Cable with SC1/SC3/SC5 SAS Cable.

Table 3.8.4.1-1	Options and	Type of SAS Cable
-----------------	-------------	-------------------

No.	Model Number	Number of SAS Cable			Remarks
		1m	3m	5m	
1	DW-F700-DBL/DBS/DBF	2	0	0	
2	DW-F700-DBX	0	4	0	
3	DW-F700-SC1	1	0	0	For replacement
4	DF-F850-SC3	0	1	0	For replacement
5	DF-F850-SC5	0	0	1	For replacement

## 2. How to Connect SAS Cables

## In case of SAS Cable of DBL/DBS/DBF

The DBL/DBS/DBF includes two SAS Cables (1m).

- Use the standard SAS Cables (1m) when connecting cables to the CBX/DBL/DBS/DBF in the same rack at a distance of 6U or less from the DBL/DBS/DBF.
- Replace the standard SAS Cables with the DF-F850-SC3 SAS Cables (3m) for connection in the same rack in the following three cases.
  - ① Connection to the DBX at a distance of 17U or less from the DBL/DBS/DBF
  - ② Connection to the CBX at a distance of 7 to 22U from the DBL/DBS/DBF
  - 3 Connection to the DBL/DBS/DBF at a distance of 7 to 17U from the DBL/DBS/DBF
- Replace the standard SAS Cables with the DF-F850-SC5 SAS Cables (5m) when connecting cables to the Drive Box in a different rack.

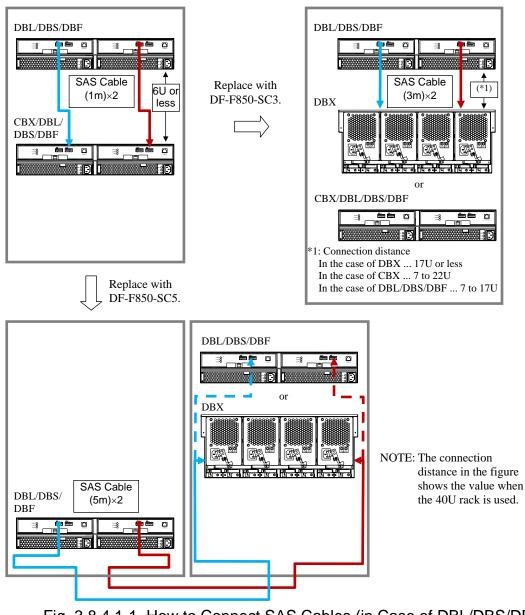


Fig. 3.8.4.1-1 How to Connect SAS Cables (in Case of DBL/DBS/DBF)

# In case of SAS Cable of DBX

The DBX includes four SAS Cables (3m).

- Use the standard SAS Cables (3m) for connection in the same rack in the following three cases.
  - ① Connection to the DBX at a distance of 4U or less from the DBX
  - ② Connection to the CBX at a distance of 13U or less from the DBX
  - 3 Connection to the DBL/DBS/DBF at a distance of 17U or less from the DBX
- Replace the standard SAS Cables with the DF-F850-SC5 SAS Cables (5m) for connection in the same rack in the following three cases.
  - ① Connection to the DBX at a distance of 5U or more from the DBX
  - © Connection to the CBX at a distance of 14U or more from the DBX
  - 3 Connection to the DBL/DBS/DBF at a distance of 18U or more from the DBX
- Replace the standard SAS Cables with the DF-F850-SC5 SAS Cables (5m) when connecting cables to the DBL/DBS/DBX/DBF in a different rack.

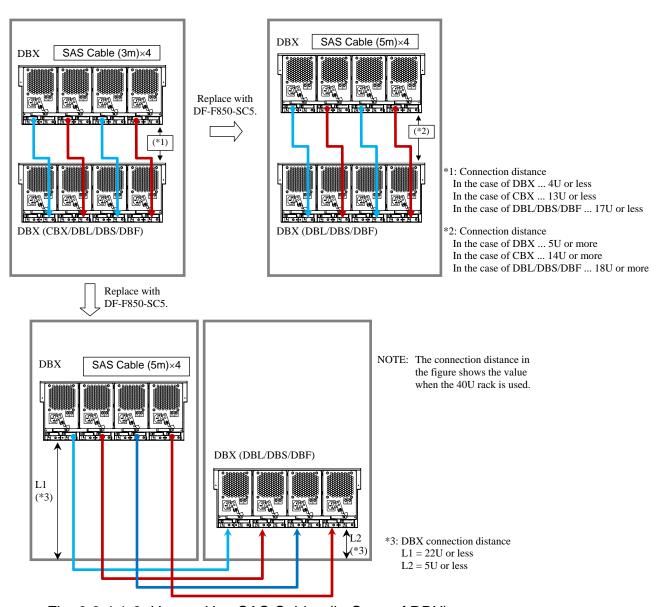


Fig. 3.8.4.1-2 How to Use SAS Cables (in Case of DBX)

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#### 3. SAS Cable connection

a. Each cluster has four paths for connection between the DKB and the Drive Box (DB), as shown below (① to ④).

The connections are not subject to change depending on the type of DB.

```
① DKB-1E/2E port 0 \to DB-00 \to DB-04 \to DB-08 \to \to DB-36 \to DB-40 \to DB-44
② DKB-1E/2E port 1 \to DB-01 \to DB-05 \to DB-09 \to \to DB-37 \to DB-41 \to DB-45
③ DKB-1F/2F port 0 \to DB-02 \to DB-06 \to DB-10 \to \to DB-38 \to DB-42 \to DB-46
④ DKB-1F/2F port 1 \to DB-03 \to DB-07 \to DB-11 \to \to DB-39 \to DB-43 \to DB-47
```

The following example shows a SAS Cable connection that starts from the DKB-1E port 0 in the cluster 1.

## [Example]

```
1E-0(DKB) \rightarrow ENC00-1(IN), ENC00-1(OUT) \rightarrow ENC04-1(IN), ENC04-1(OUT) \rightarrow ENC08-1(IN), ENC04-1(OUT) \rightarrow ENC12-1(IN), ENC12-1(OUT) \rightarrow ENC16-1(IN), ENC12-1(OUT) \rightarrow ENC20-1(IN), ENC20-1(OUT) \rightarrow ENC24-1(IN), ENC24-1(OUT) \rightarrow ENC28-1(IN), ENC28-1(OUT) \rightarrow ENC32-1(IN), ENC36-1(OUT) \rightarrow ENC36-1(IN), ENC36-1(OUT) \rightarrow ENC40-1(IN), ENC36-1(OUT) \rightarrow ENC44-1(IN)
```

The SAS Cable drawn from the DKB-1E port 0 is connected to the DB-00[ENC00-1(IN)]. Then the SAS Cable drawn from the DB-00[ENC00-1(OUT)] is connected to the DB-04[ENC04-1(IN)] that is four boxes away. Then the SAS Cable drawn from the DB-04[ENC04-1(OUT)] is connected to the DB-08[ENC08-1(IN)] that is four boxes away. To connect cables, these procedures shall be repeated. (See Fig. 3.8.4.1-3 to Fig. 3.8.4.1-13.)

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b. Confirm IN/OUT of the SAS cables to be connected. See the Table 3.8.4.1-2 and the Table 3.8.4.1-3.

Table 3.8.4.1-2 Cluster 1 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 1 SAS Cable IN/OUT			
DB No.	DKB-1E(Port 0)	DKB-1E(Port 1)	DKB-1F(Port 0)	DKB-1F(Port 1)
DB-	1E-0(DKB)	1E-1(DKB)	1F-0(DKB)	1F-1(DKB)
00/01/02/03	$\rightarrow$ ENC00-1(IN)	$\rightarrow$ ENC01-1(IN)	$\rightarrow$ ENC02-1(IN)	$\rightarrow$ ENC03-1(IN)
DB-	ENC00-1(OUT)	ENC01-1(OUT)	ENC02-1(OUT)	ENC03-1(OUT)
04/05/06/07	$\rightarrow$ ENC04-1(IN)	$\rightarrow$ ENC05-1(IN)	$\rightarrow$ ENC06-1(IN)	$\rightarrow$ ENC07-1(IN)
DB-	ENC04-1(OUT)	ENC05-1(OUT)	ENC06-1(OUT)	ENC07-1(OUT)
08/09/10/11	$\rightarrow$ ENC08-1(IN)	$\rightarrow$ ENC09-1(IN)	$\rightarrow$ ENC10-1(IN)	$\rightarrow$ ENC11-1(IN)
DB-	ENC08-1(OUT)	ENC09-1(OUT)	ENC10-1(OUT)	ENC11-1(OUT)
12/13/14/15	$\rightarrow$ ENC12-1(IN)	$\rightarrow$ ENC13-1(IN)	$\rightarrow$ ENC14-1(IN)	$\rightarrow$ ENC15-1(IN)
DB-	ENC12-1(OUT)	ENC13-1(OUT)	ENC14-1(OUT)	ENC15-1(OUT)
16/17/18/19	$\rightarrow$ ENC16-1(IN)	$\rightarrow$ ENC17-1(IN)	$\rightarrow$ ENC18-1(IN)	$\rightarrow$ ENC19-1(IN)
DB-	ENC16-1(OUT)	ENC17-1(OUT)	ENC18-1(OUT)	ENC19-1(OUT)
20/21/22/23	$\rightarrow$ ENC20-1(IN)	$\rightarrow$ ENC21-1(IN)	$\rightarrow$ ENC22-1(IN)	$\rightarrow$ ENC23-1(IN)
DB-	ENC20-1(OUT)	ENC21-1(OUT)	ENC22-1(OUT)	ENC23-1(OUT)
24/25/26/27	$\rightarrow$ ENC24-1(IN)	$\rightarrow$ ENC25-1(IN)	$\rightarrow$ ENC26-1(IN)	$\rightarrow$ ENC27-1(IN)
DB-	ENC24-1(OUT)	ENC25-1(OUT)	ENC26-1(OUT)	ENC27-1(OUT)
28/29/30/31	$\rightarrow$ ENC28-1(IN)	$\rightarrow$ ENC29-1(IN)	$\rightarrow$ ENC30-1(IN)	$\rightarrow$ ENC31-1(IN)
DB-	ENC28-1(OUT)	ENC29-1(OUT)	ENC30-1(OUT)	ENC31-1(OUT)
32/33/34/35	$\rightarrow$ ENC32-1(IN)	$\rightarrow$ ENC33-1(IN)	$\rightarrow$ ENC34-1(IN)	$\rightarrow$ ENC35-1(IN)
DB-	ENC32-1(OUT)	ENC33-1(OUT)	ENC34-1(OUT)	ENC35-1(OUT)
36/37/38/39	$\rightarrow$ ENC36-1(IN)	$\rightarrow$ ENC37-1(IN)	$\rightarrow$ ENC38-1(IN)	$\rightarrow$ ENC39-1(IN)
DB-	ENC36-1(OUT)	ENC37-1(OUT)	ENC38-1(OUT)	ENC39-1(OUT)
40/41/42/43	$\rightarrow$ ENC40-1(IN)	$\rightarrow$ ENC41-1(IN)	$\rightarrow$ ENC42-1(IN)	$\rightarrow$ ENC43-1(IN)
DB-	ENC40-1(OUT)	ENC41-1(OUT)	ENC42-1(OUT)	ENC43-1(OUT)
44/45/46/47	$\rightarrow$ ENC44-1(IN)	$\rightarrow$ ENC45-1(IN)	$\rightarrow$ ENC46-1(IN)	$\rightarrow$ ENC47-1(IN)

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Table 3.8.4.1-3 Cluster 2 SAS Cable IN/OUT for Each DB No.

Destination		Cluster 2 SAS	Cable IN/OUT	
DB No.	DKB-2E(Port 0)	DKB-2E(Port 1)	DKB-2F(Port 0)	DKB-2F(Port 1)
DB-	2E-0(DKB)	2E-1(DKB)	2F-0(DKB)	2F-1(DKB)
00/01/02/03	$\rightarrow$ ENC00-2(IN)	$\rightarrow$ ENC01-2(IN)	$\rightarrow$ ENC02-2(IN)	$\rightarrow$ ENC03-2(IN)
DB-	ENC00-2(OUT)	ENC01-2(OUT)	ENC02-2(OUT)	ENC03-2(OUT)
04/05/06/07	$\rightarrow$ ENC04-2(IN)	$\rightarrow$ ENC05-2(IN)	$\rightarrow$ ENC06-2(IN)	$\rightarrow$ ENC07-2(IN)
DB-	ENC04-2(OUT)	ENC05-2(OUT)	ENC06-2(OUT)	ENC07-2(OUT)
08/09/10/11	$\rightarrow$ ENC08-2(IN)	$\rightarrow$ ENC09-2(IN)	$\rightarrow$ ENC10-2(IN)	$\rightarrow$ ENC11-2(IN)
DB-	ENC08-2(OUT)	ENC09-2(OUT)	ENC10-2(OUT)	ENC11-2(OUT)
12/13/14/15	$\rightarrow$ ENC12-2(IN)	$\rightarrow$ ENC13-2(IN)	$\rightarrow$ ENC14-2(IN)	$\rightarrow$ ENC15-2(IN)
DB-	ENC12-2(OUT)	ENC13-2(OUT)	ENC14-2(OUT)	ENC15-2(OUT)
16/17/18/19	$\rightarrow$ ENC16-2(IN)	$\rightarrow$ ENC17-2(IN)	$\rightarrow$ ENC18-2(IN)	$\rightarrow$ ENC19-2(IN)
DB-	ENC16-2(OUT)	ENC17-2(OUT)	ENC18-2(OUT)	ENC19-2(OUT)
20/21/22/23	$\rightarrow$ ENC20-2(IN)	$\rightarrow$ ENC21-2(IN)	$\rightarrow$ ENC22-2(IN)	$\rightarrow$ ENC23-2(IN)
DB-	ENC20-2(OUT)	ENC21-2(OUT)	ENC22-2(OUT)	ENC23-2(OUT)
24/25/26/27	$\rightarrow$ ENC24-2(IN)	$\rightarrow$ ENC25-2(IN)	$\rightarrow$ ENC26-2(IN)	$\rightarrow$ ENC27-2(IN)
DB-	ENC24-2(OUT)	ENC25-2(OUT)	ENC26-2(OUT)	ENC27-2(OUT)
28/29/30/31	$\rightarrow$ ENC28-2(IN)	$\rightarrow$ ENC29-2(IN)	$\rightarrow$ ENC30-2(IN)	$\rightarrow$ ENC31-2(IN)
DB-	ENC28-2(OUT)	ENC29-2(OUT)	ENC30-2(OUT)	ENC31-2(OUT)
32/33/34/35	$\rightarrow$ ENC32-2(IN)	$\rightarrow$ ENC33-2(IN)	$\rightarrow$ ENC34-2(IN)	$\rightarrow$ ENC35-2(IN)
DB-	ENC32-2(OUT)	ENC33-2(OUT)	ENC34-2(OUT)	ENC35-2(OUT)
36/37/38/39	$\rightarrow$ ENC36-2(IN)	$\rightarrow$ ENC37-2(IN)	$\rightarrow$ ENC38-2(IN)	$\rightarrow$ ENC39-2(IN)
DB-	ENC36-2(OUT)	ENC37-2(OUT)	ENC38-2(OUT)	ENC39-2(OUT)
40/41/42/43	$\rightarrow$ ENC40-2(IN)	$\rightarrow$ ENC41-2(IN)	$\rightarrow$ ENC42-2(IN)	$\rightarrow$ ENC43-2(IN)
DB-	ENC40-2(OUT)	ENC41-2(OUT)	ENC42-2(OUT)	ENC43-2(OUT)
44/45/46/47	$\rightarrow$ ENC44-2(IN)	$\rightarrow$ ENC45-2(IN)	$\rightarrow$ ENC46-2(IN)	$\rightarrow$ ENC47-2(IN)

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## DKB to DB-00/01/02/03

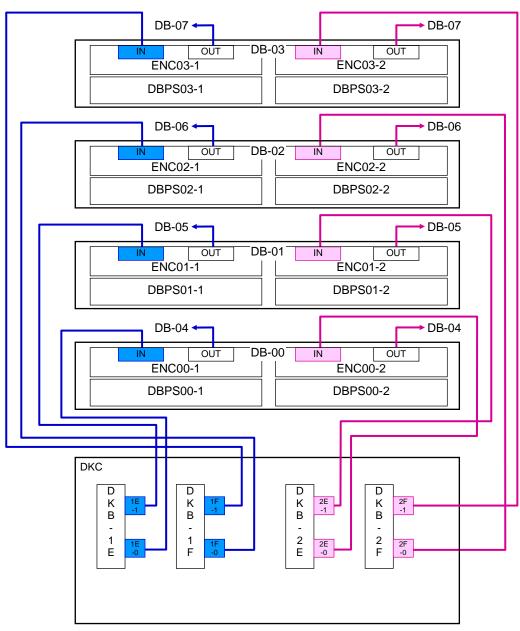


Fig. 3.8.4.1-3 Cable Connection between DKB and DB-00/01/02/03 (in Case of DBL/DBS/DBF)

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## DB-00/01/02/03 to DB-04/05/06/07

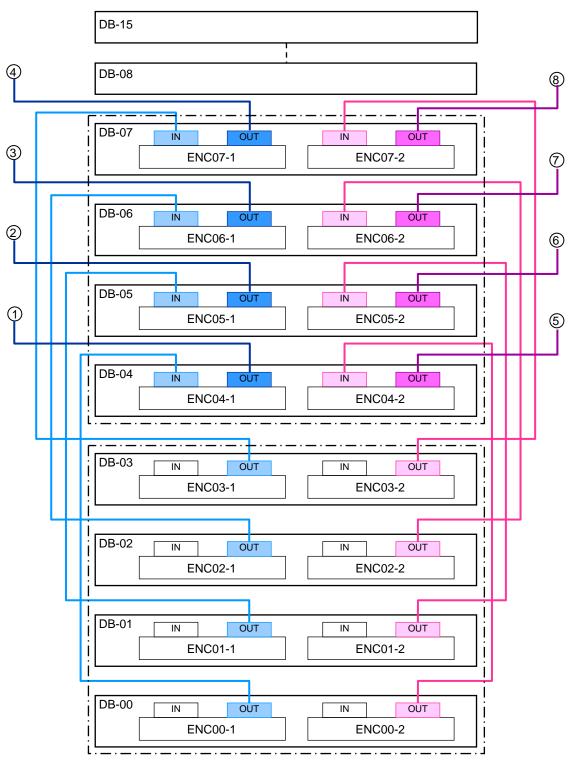


Fig. 3.8.4.1-4 Cable Connection between DB-00/01/02/03 and DB-04/05/06/07 (in Case of DBL/DBS/DBF)

# DB-08/09/10/11 to DB-12/13/14/15

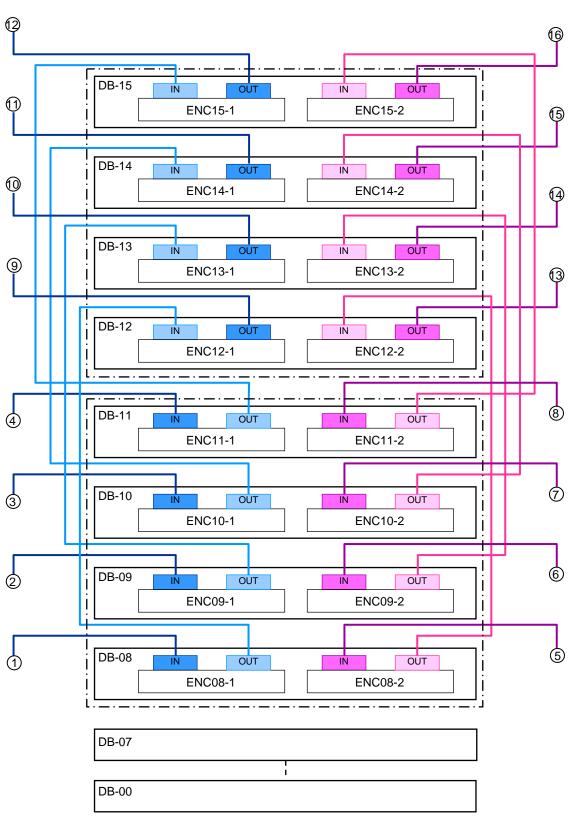


Fig. 3.8.4.1-5 Cable Connection between DB-08/09/10/11 and DB-12/13/14/15 (in Case of DBL/DBS/DBF)

# DB-16/17/18/19 to DB-20/21/22/23

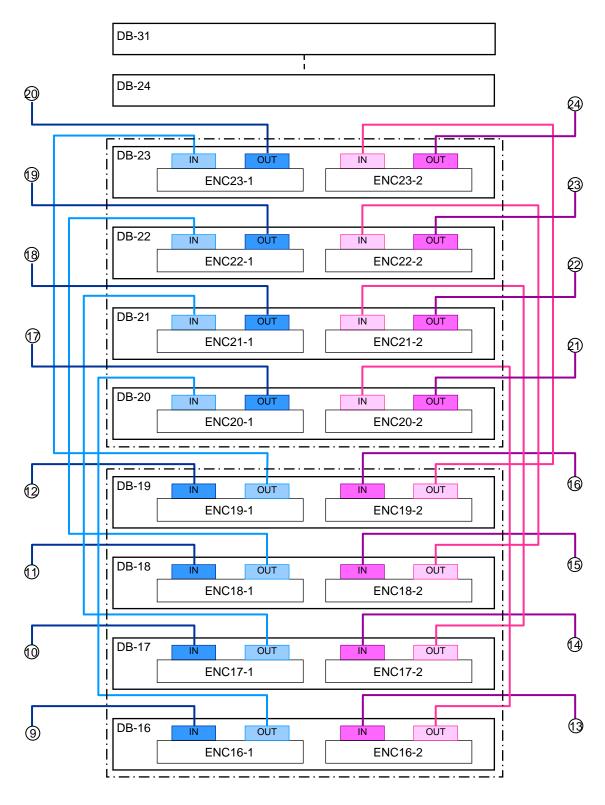


Fig. 3.8.4.1-6 Cable Connection between DB-16/17/18/19 and DB-20/21/22/23 (in Case of DBL/DBS/DBF)

# DB-24/25/26/27 to DB-28/29/30/31

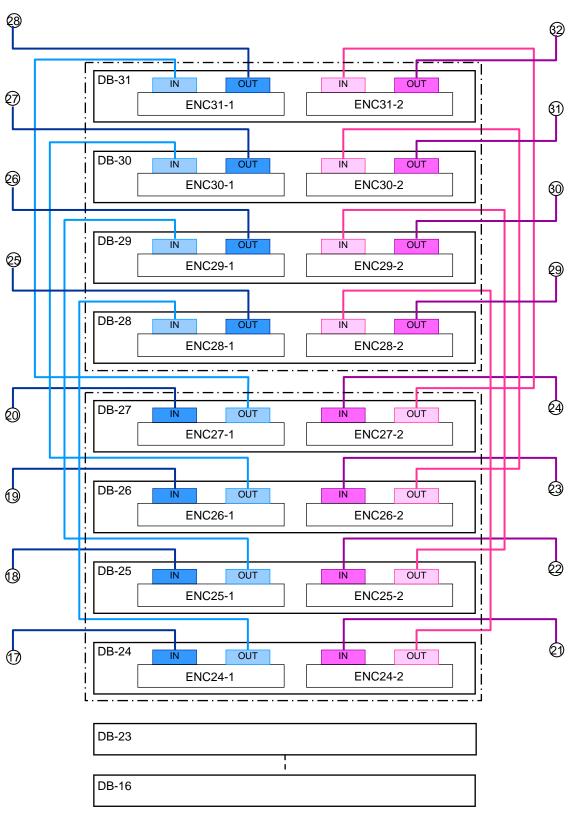


Fig. 3.8.4.1-7 Cable Connection between DB-24/25/26/27 and DB-28/29/30/31 (in Case of DBL/DBS/DBF)

# DB-32/33/34/35 to DB-36/37/38/39

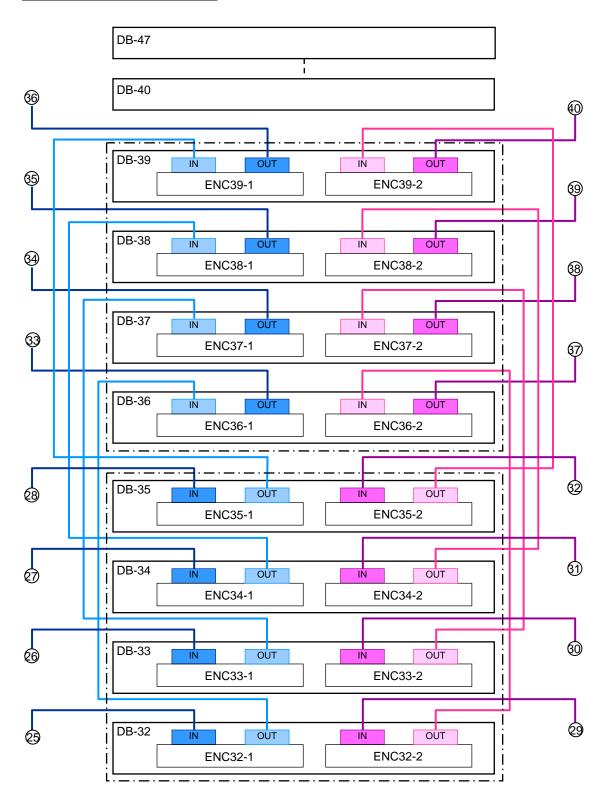


Fig. 3.8.4.1-8 Cable Connection between DB-32/33/34/35 and DB-36/37/38/39 (in Case of DBL/DBS/DBF)

# DB-40/41/42/43 to DB-44/45/46/47

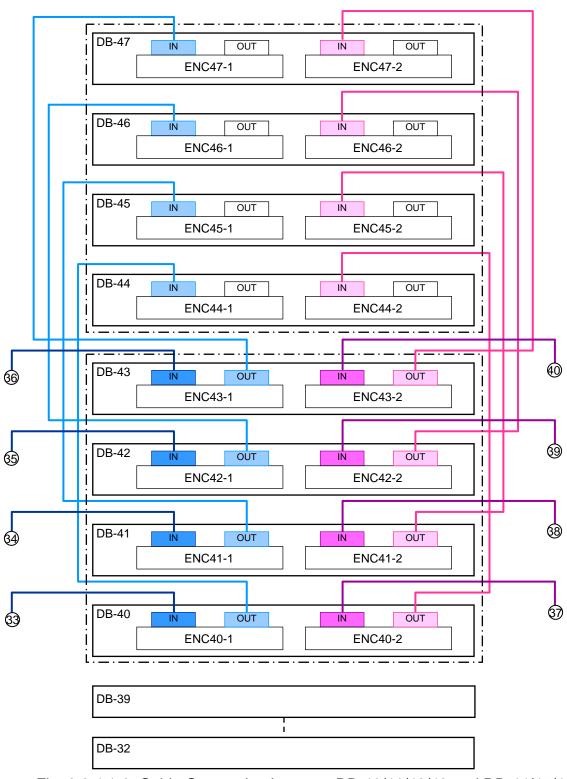


Fig. 3.8.4.1-9 Cable Connection between DB-40/41/42/43 and DB-44/45/46/47 (in Case of DBL/DBS/DBF)

#### DKB to DB-00/0/02/03

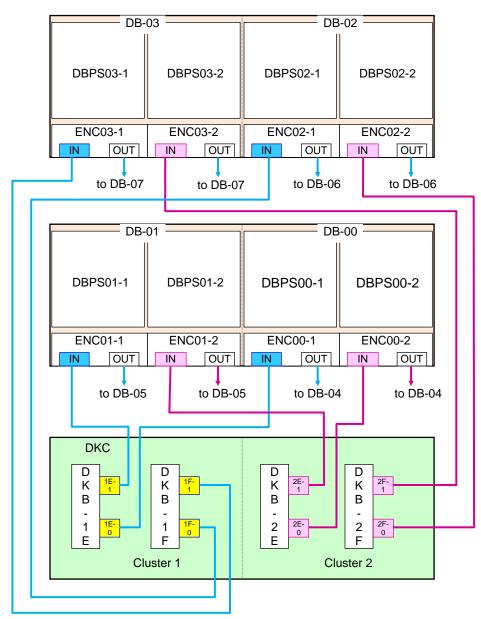


Fig. 3.8.4.1-10 Cable Connection between DKB and DB-00/01/02/03 (in Case of DBX)

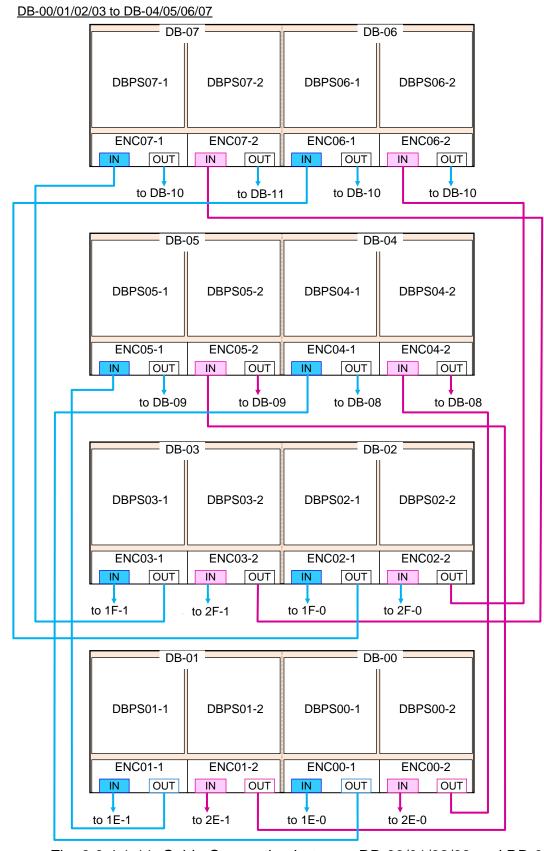


Fig. 3.8.4.1-11 Cable Connection between DB-00/01/02/03 and DB-04/05/06/07 (in Case of DBX)

#### DKB to DB-00/01/02/03/04/05/06/07

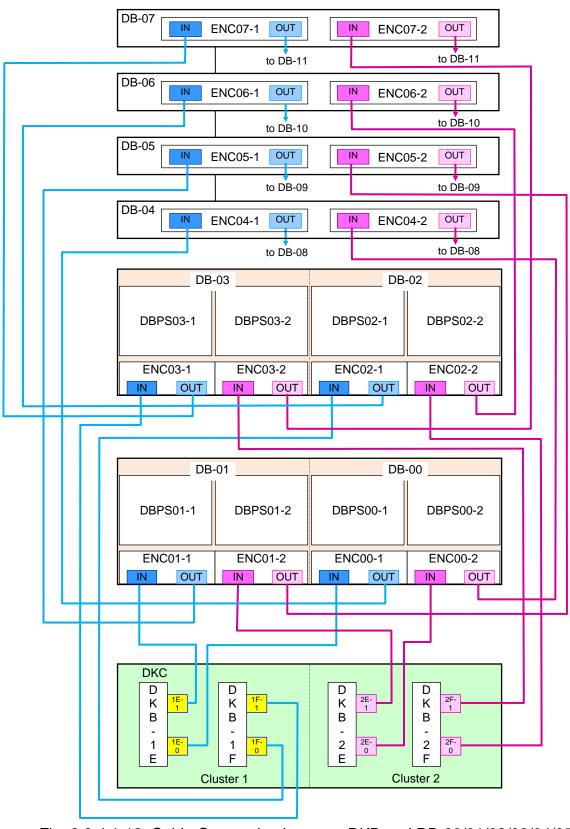


Fig. 3.8.4.1-12 Cable Connection between DKB and DB-00/01/02/03/04/05/06/07 (in Case of DKB - DBX - DBL/DBS/DBF)

#### DKB to DB-00/01/02/03/04/05/06/07

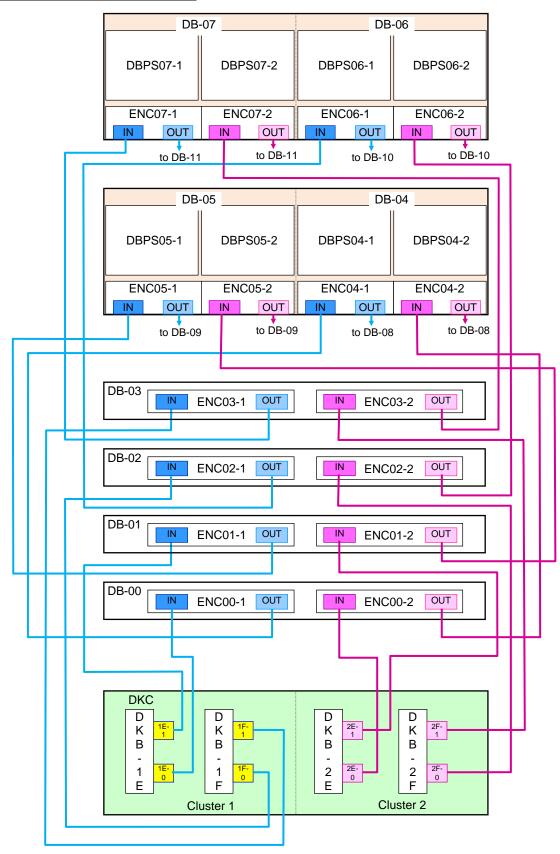


Fig. 3.8.4.1-13 Cable Connection between DKB and DB-00/01/02/03/04/05/06/07 (in Case of DKB - DBL/DBS/DBF - DBX)

#### INST03-08C-90

# 3.8.4.2 Attachment Procedure of Location Labels for SAS Cables (DW-F700-SC3/SC5)

If the DW-F700-SC3/SC5 is installed, attach the location labels to the SAS cables. If the DW-F700-SC3/SC5 is not installed, go to "3.8.4.3 Setting up the New Device Structure Information" (INST03-08C-130).

# 1. Attaching location labels

a. Confirm IN/OUT of the SAS cables to be connected. See the Table 3.8.4.2-1 and the Table 3.8.4.2-2.

Table 3.8.4.2-1 Cluster 1 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 1 SAS Cable IN/OUT						
DB No.	DKB-1E(Port 0)	DKB-1E(Port 1)	DKB-1F(Port 0)	DKB-1F(Port 1)			
DB- 00/01/02/03	1E-0(DKB) → ENC00-1(IN)	1E-1(DKB) → ENC01-1(IN)	1F-0(DKB) → ENC02-1(IN)	1F-1(DKB) → ENC03-1(IN)			
DB- 04/05/06/07	ENC00-1(OUT) $\rightarrow$ ENC04-1(IN)	ENC01-1(OUT) → ENC05-1(IN)	ENC02-1(OUT) $\rightarrow$ ENC06-1(IN)	ENC03-1(OUT) → ENC07-1(IN)			
DB- 08/09/10/11	ENC04-1(OUT) → ENC08-1(IN)	ENC05-1(OUT) → ENC09-1(IN)	ENC06-1(OUT) $\rightarrow$ ENC10-1(IN)	ENC07-1(OUT) → ENC11-1(IN)			
DB- 12/13/14/15	ENC08-1(OUT) $\rightarrow$ ENC12-1(IN)	ENC09-1(OUT) → ENC13-1(IN)	ENC10-1(OUT) → ENC14-1(IN)	ENC11-1(OUT) → ENC15-1(IN)			
DB- 16/17/18/19	ENC12-1(OUT) $\rightarrow$ ENC16-1(IN)	ENC13-1(OUT) $\rightarrow$ ENC17-1(IN)	ENC14-1(OUT) → ENC18-1(IN)	ENC15-1(OUT) → ENC19-1(IN)			
DB- 20/21/22/23	ENC16-1(OUT) $\rightarrow$ ENC20-1(IN)	ENC17-1(OUT) $\rightarrow$ ENC21-1(IN)	ENC18-1(OUT) $\rightarrow$ ENC22-1(IN)	ENC19-1(OUT) → ENC23-1(IN)			
DB- 24/25/26/27	ENC20-1(OUT) $\rightarrow$ ENC24-1(IN)	ENC21-1(OUT) $\rightarrow$ ENC25-1(IN)	ENC22-1(OUT) $\rightarrow$ ENC26-1(IN)	ENC23-1(OUT) → ENC27-1(IN)			
DB- 28/29/30/31	ENC24-1(OUT) $\rightarrow$ ENC28-1(IN)	ENC25-1(OUT) → ENC29-1(IN)	ENC26-1(OUT) $\rightarrow$ ENC30-1(IN)	ENC27-1(OUT) → ENC31-1(IN)			
DB- 32/33/34/35	ENC28-1(OUT) $\rightarrow$ ENC32-1(IN)	ENC29-1(OUT) $\rightarrow$ ENC33-1(IN)	ENC30-1(OUT) $\rightarrow$ ENC34-1(IN)	ENC31-1(OUT) $\rightarrow$ ENC35-1(IN)			
DB- 36/37/38/39	ENC32-1(OUT) $\rightarrow$ ENC36-1(IN)	ENC33-1(OUT) $\rightarrow$ ENC37-1(IN)	ENC34-1(OUT) $\rightarrow$ ENC38-1(IN)	ENC35-1(OUT) → ENC39-1(IN)			
DB- 40/41/42/43	ENC36-1(OUT) $\rightarrow$ ENC40-1(IN)	ENC37-1(OUT) $\rightarrow$ ENC41-1(IN)	ENC38-1(OUT) $\rightarrow$ ENC42-1(IN)	ENC39-1(OUT) → ENC43-1(IN)			
DB- 44/45/46/47	ENC40-1(OUT) → ENC44-1(IN)	ENC41-1(OUT) → ENC45-1(IN)	ENC42-1(OUT) → ENC46-1(IN)	ENC43-1(OUT) → ENC47-1(IN)			

Table 3.8.4.2-2 Cluster 2 SAS Cable IN/OUT for Each DB No.

Destination	Cluster 2 SAS Cable IN/OUT						
DB No.	DKB-2E(Port 0)	DKB-2E(Port 1)	DKB-2F(Port 0)	DKB-2F(Port 1)			
DB- 00/01/02/03	2E-0(DKB) → ENC00-2(IN)	2E-1(DKB) → ENC01-2(IN)	2F-0(DKB) → ENC02-2(IN)	2F-1(DKB) → ENC03-2(IN)			
DB- 04/05/06/07	ENC00-2(OUT) $\rightarrow$ ENC04-2(IN)	ENC01-2(OUT) $\rightarrow$ ENC05-2(IN)	ENC02-2(OUT) $\rightarrow$ ENC06-2(IN)	ENC03-2(OUT) → ENC07-2(IN)			
DB- 08/09/10/11	ENC04-2(OUT) $\rightarrow$ ENC08-2(IN)	ENC05-2(OUT) $\rightarrow$ ENC09-2(IN)	ENC06-2(OUT) $\rightarrow$ ENC10-2(IN)	ENC07-2(OUT) $\rightarrow$ ENC11-2(IN)			
DB- 12/13/14/15	ENC08-2(OUT) $\rightarrow$ ENC12-2(IN)	ENC09-2(OUT) $\rightarrow$ ENC13-2(IN)	ENC10-2(OUT) $\rightarrow$ ENC14-2(IN)	ENC11-2(OUT) → ENC15-2(IN)			
DB- 16/17/18/19	ENC12-2(OUT) $\rightarrow$ ENC16-2(IN)	ENC13-2(OUT) $\rightarrow$ ENC17-2(IN)	ENC14-2(OUT) → ENC18-2(IN)	ENC15-2(OUT) → ENC19-2(IN)			
DB- 20/21/22/23	ENC16-2(OUT) $\rightarrow$ ENC20-2(IN)	ENC17-2(OUT) $\rightarrow$ ENC21-2(IN)	ENC18-2(OUT) $\rightarrow$ ENC22-2(IN)	ENC19-2(OUT) → ENC23-2(IN)			
DB- 24/25/26/27	ENC20-2(OUT) $\rightarrow$ ENC24-2(IN)	ENC21-2(OUT) $\rightarrow$ ENC25-2(IN)	ENC22-2(OUT) $\rightarrow$ ENC26-2(IN)	ENC23-2(OUT) $\rightarrow$ ENC27-2(IN)			
DB- 28/29/30/31	ENC24-2(OUT) $\rightarrow$ ENC28-2(IN)	ENC25-2(OUT) $\rightarrow$ ENC29-2(IN)	ENC26-2(OUT) $\rightarrow$ ENC30-2(IN)	ENC27-2(OUT) → ENC31-2(IN)			
DB- 32/33/34/35	ENC28-2(OUT) $\rightarrow$ ENC32-2(IN)	ENC29-2(OUT) $\rightarrow$ ENC33-2(IN)	ENC30-2(OUT) $\rightarrow$ ENC34-2(IN)	ENC31-2(OUT) → ENC35-2(IN)			
DB- 36/37/38/39	ENC32-2(OUT) $\rightarrow$ ENC36-2(IN)	ENC33-2(OUT) $\rightarrow$ ENC37-2(IN)	ENC34-2(OUT) $\rightarrow$ ENC38-2(IN)	ENC35-2(OUT) → ENC39-2(IN)			
DB- 40/41/42/43	ENC36-2(OUT) $\rightarrow$ ENC40-2(IN)	ENC37-2(OUT) $\rightarrow$ ENC41-2(IN)	ENC38-2(OUT) $\rightarrow$ ENC42-2(IN)	ENC39-2(OUT) → ENC43-2(IN)			
DB- 44/45/46/47	ENC40-2(OUT) $\rightarrow$ ENC44-2(IN)	ENC41-2(OUT) $\rightarrow$ ENC45-2(IN)	ENC42-2(OUT) → ENC46-2(IN)	ENC43-2(OUT) → ENC47-2(IN)			

b. Select the labels corresponding to the DB from the location labels (included in the DW700-CBX).

[[Example] Select the labels ① and ② shown below in case of the SAS Cables to connect the DKB-1E (1E-1) with the DB-01 (ENC01-1 IN).

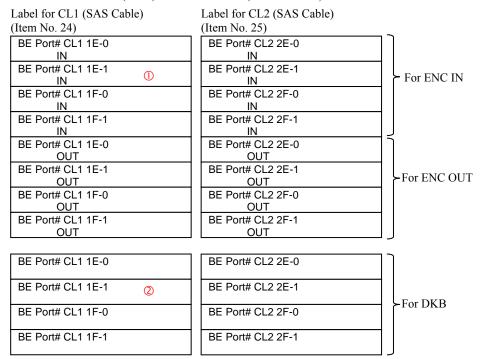
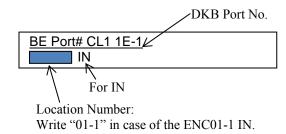


Fig. 3.8.4.2-1 Selecting Labels

c. Write a location number on a label with a pen conforming to RoHS Directive.

#### **1** Writing Required



#### ② No Writing Required

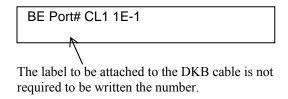
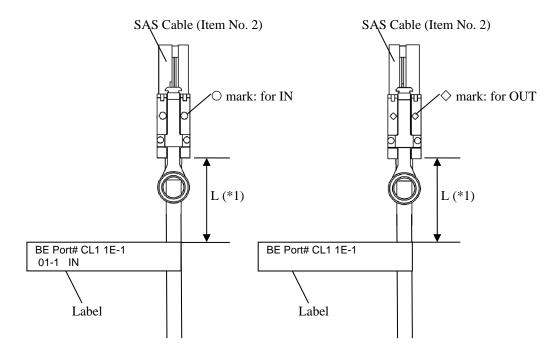


Fig. 3.8.4.2-2 Writing on Label

d. Attach the location labels to the SAS Cables.

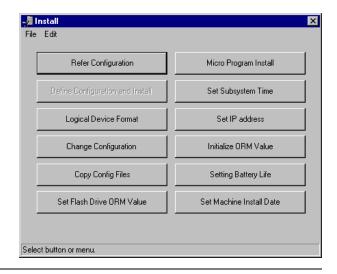


\*1: Label attaching position
When connecting to CBX/DBL/DBS/DBF: L=100mm
When connecting to DBX: L=200mm

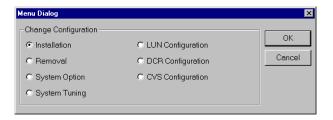
Fig. 3.8.4.2-3 Attaching Labels

# 3.8.4.3 Setting up the New Device Structure Information

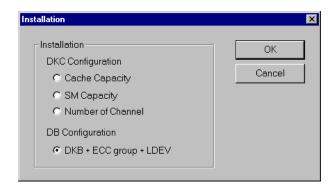
- (1) <Mode Change>
   Change the mode to Modify Mode.
   Select (CL) [Install].
- (2) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



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



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

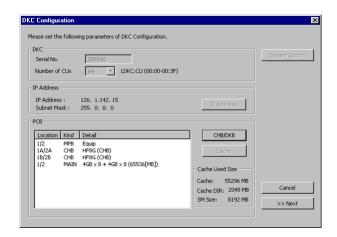


(5) <DKC Configuration screen> Select (CL) [CHB/DKB] in the 'DKC Configuration' screen. Go to Step (6).

After confirming input items, select (CL) the [>>Next] button.

Go to Step (7).

In the case of selecting (CL) [Cancel], this operation procedure terminates



# (6) <Setting DKB>

Define the DKB in the 'CHB/DKB

Configuration' screen.

Select (CL) the location to be added, and then select (CL) [Change...].

Go to Step (6)-1.

After confirming the input items, select (CL) [OK].

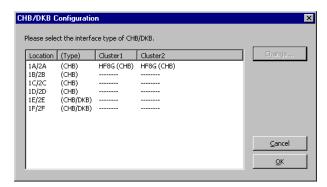
Go back to Step (5).

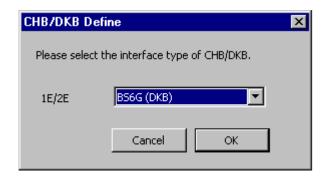


Define the DKB in the 'CHB/DKB Define' screen.

After setting, select (CL) [OK].

Go back to Step (6).



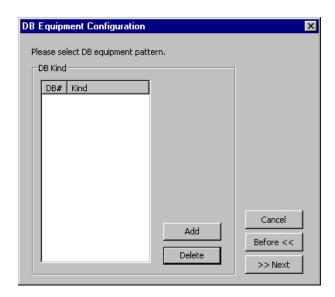


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(7) <DB Equipment Configuration screen>
Define the pattern of DB Equipment in the 'DB Equipment Configuration' screen.

Select (CL) [Add]. Go to Step (7)-1. After setting, select (CL) [>>Next]. Go to Step (8).

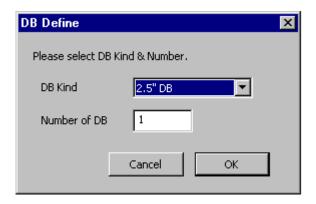


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(7)-1 <DB Define screen>
Set the DB type and the number of DBs, select

Go back to Step (7).

(CL) [OK].



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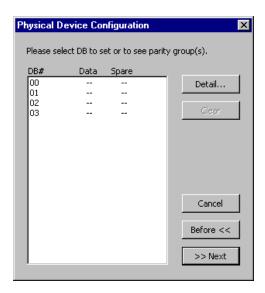
Copyright © 2012, Hitachi, Ltd.

(8) < Change Drive Configuration Information> Define the drive configuration according to the 'Physical Device Configuration' screen. Detailed procedure is shown below.

[Detail...]: Defines the parity group or spare disk. Go to Step (9).

Cancels the setting of the DB. [Clear]: After setting up all items, select (CL) [>>Next]. Go to Step (10).

Selecting (CL) [Before << ] returns to Step (7).



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#### INST03-08C-170

(9) < Define Parity Group>

The 'Parity Group Configuration' dialog box is displayed.

[Detail...]: Refer the HDDs constituting the defined parity group or the spare drive.

See Step (9)-1.

# [Group(Detail)...]:

Define the parity group which appointed the HDDs to constitute. See Step (9)-2.

# [Group(Auto)...]:

Define the parity groups which the HDDs to constitute are

selected automatically. (The appointment of plural parity groups is possible)

See Step (9)-3.

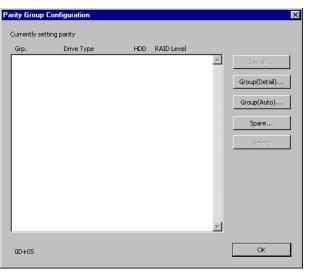
Defines the spare drive. [Spare...]:

See Step (9)-4.

Deletes the added parity group or spare drive. [Delete]:

A parity group where RAID Concatenation is installed. Grp.:

After setting up all items, select (CL) [OK]. Go back to Step (8).



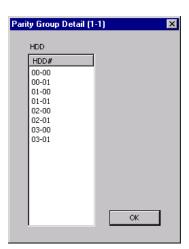
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#### INST03-08C-180

(9)-1

Select (CL) [OK]. Go back to Step (9).



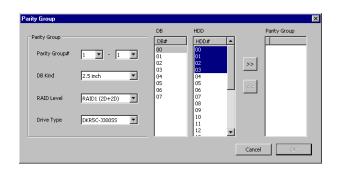
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(9)-2

(9)-2-1

Define the Parity Group#, the DB Kind, the RAID Level, and the Drive Type in the 'Parity Group' dialog box.

DBs to which the Parity Group can be constructed are displayed in DB List, then select (CL) DBs and HDDs to which you want to construct the Parity Group and select (CL) the [>>] button. Go to Step (9)-2-2.



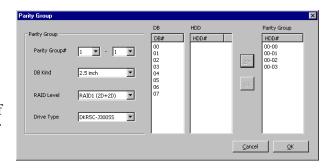
NOTE: The selection of plural DBs and the HDDs is possible. But cannot select (CL) [>>] when it does not match the constitution HDD number of an appointed parity group.

(9)-2-2

After Parity Group List is registered, select (CL) [OK].

Go back to Step (9).

NOTE: The [OK] button cannot be pressed if the HDDs do not meet a condition of the Parity Group. Adjust the number of the HDDs in the Parity Group List.



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#### (9)-3

Define the Parity Group#, the DB Kind, the DB#, the RAID Level, the Drive Type, the Num of Groups, the Select HDD in the 'Parity Group(Auto)' dialog box.

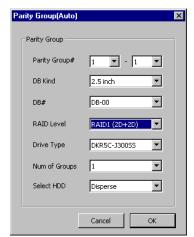
Go to Step (9)-3-1.

• Parity Group# : Start parity group number

• DB Kind : DB Kind (2.5 inch/3.5 inch/FMD)

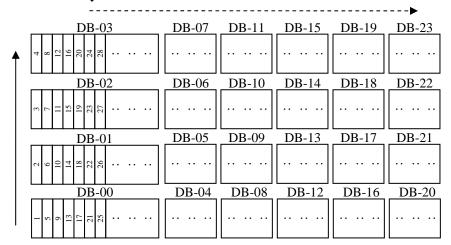
DB# : Start DB number
RAID Level : RAID Level
Drive Type : Drive Type

Num of Groups : Number of the definition Parity groups
 Select HDD : HDD Selection method (Disperse/Linear)



## <Disperse>

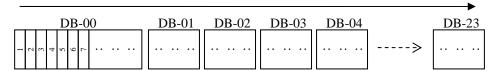
A parity group is composed of the HDDs which it is dispersed by 4 DBs unit and selected automatically. The HDDs are selected with the turn of the chart below.



The HDDs are selected to 4 DBs unit in the solid line direction and is repeated to the dashed line direction. But by the setting for the constitution that DB kind (2.5 inch DB/3.5 inch DB/DBX/DBF) is mixed and that HDDs have been already defined, the location that cannot be equipped is skipped, and HDDs are selected.

#### <Linear>

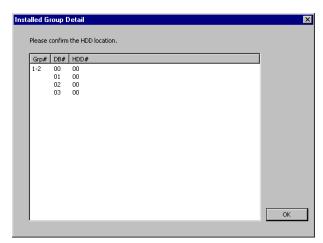
A parity group is comprised of automatic selected HDDs by DB order. The HDDs are selected with the turn of the chart below.



The HDDs of the solid line direction is selected. But by the setting for the constitution that DB kind (2.5 inch DB/3.5 inch DB/DBX/DBF) is mixed and that HDDs have been already defined, the location that cannot be equipped is skipped, and HDDs are selected.

# (9)-3-1

Confirm parity groups which were defined and constitution HDDs in the 'Installed Group Detail' dialog box, and select (CL) [OK]. Go back to Step (9).

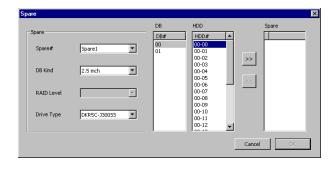


# (9)-4

# (9)-4-1

Define the Spare#, the DB Kind, the Drive Type in the 'Spare' dialog box.

DBs to which the Spare can be constructed are displayed in DB List, then select (CL) DBs and HDDs to which you want to construct the Spare and press (CL) the [>>] button. Go to Step (9)-4-2.

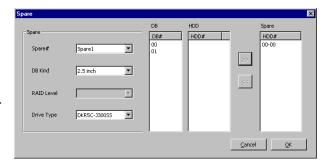


# (9)-4-2

After Spare List is registered, select (CL) [OK].

Go back to Step (9).

NOTE: The [OK] button cannot be pressed if the HDDs do not meet a condition of the Spare. Adjust the number of the HDDs in the Spare List.



## (10) < Define Device Emulation>

After setting up all items corresponding (10)-1 to (10)-4 for definition of Device Emulation, select (CL) [>>Next].

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

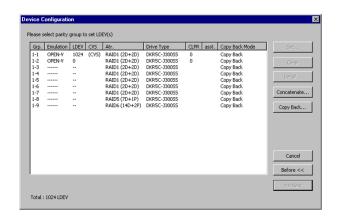
In the case of only spare drive installation, select (CL) [>>Next]. Go to Step (11).

- If defining Device Emulation, go to Step (10)-1.
- If setting RAID concatenation, go to Step (10)-2.
- If defining of Customized Volume Size (CVS) and System Disk, go to Step (10)-3.
- If setting copy back mode, go to Step (10)-4.

# (10)-1 < Define Device Emulation > Select (CL) parity group and select (CL) [Set...]. Go to Step (10)-1-1.

(CVS): A parity group where CVS is installed.

Grp\*: A parity group where RAID Concatenation is installed.



#### (10)-1-1

After setting up all items in the 'Device Define' dialog box, select (CL) [OK]. Go back to Step (10).

Selecting (CL) [Cancel] returns to step (10)-1 without reflecting the setting items.

NOTE: "0" can be set to the value of Number of LDEVs.

If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run. When you set "0", please make LDEVs later using the CVS function.



# (10)-2 < Setting RAID concatenation>

Select (CL) [Concatenate...].

When setting RAID concatenation is not executed, go back to Step (10).

### (10)-2-1

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. Go to Step (10)-2-2.

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.

# (10)-2-2

The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button. Go to Step (10)-2-3.

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.

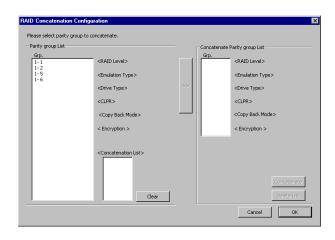
# (10)-2-3

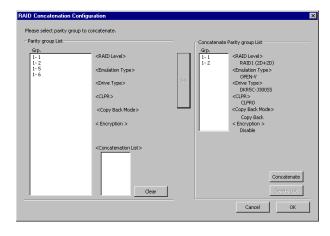
When the RAID concatenation is completed, "(Concatenation)" is displayed in the Parity group List. Selecting the "(Concatenation)" displays the concatenated parity groups in the Concatenation List.

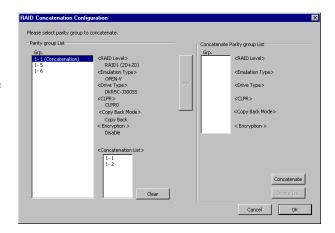
Pressing the [Clear] button cancels the RAID concatenation.

When all the settings of the RAID concatenation are completed, press (CL) the [OK] button. Go back to Step (10).

Pressing (CL) the [Cancel] button returns the routine to Step (10).





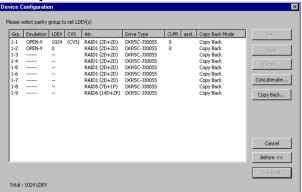


# Rev.1 / Jul.2012, Feb.2013 **INST03-08C-220**

(10)-3 < Defining of Customized Volume Size (CVS) and System Disk>

Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the 'Device Configuration' screen and select (CL) [Detail...].

When you do not perform the CVS, go back to Step (10).



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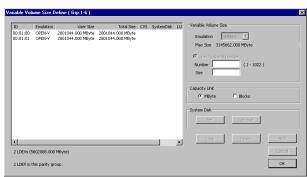
INST03-08C-230

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#### (10)-3-1 < Definition of OPEN-V>

Open-V can be defined in the 'Variable Volume Size Define' window.

- Set of a CVS volume
   Perform ① Delete of the Volume and ②
   Add of the Volume.
- Set of the System Disk in a normal volume Perform ③ Set of the System Disk.
- Set of the System Disk in a CVS volume
  Perform ① Delete of the Volume, ② Add of
  the Volume, and then ③ Set of the System Disk.



#### ① Delete of the Volume

The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.

All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].

#### ② Add of the Volume

It can be added by selecting (CL) Variable Volume Size from the status "select (CL) 'empty'" or "no selection" in the LDEV list box and selecting (CL) [Add].

#### 3 Set of the System Disk

The System Disk can be set by selecting (CL) the volume from the LDEV list box and selecting (CL) [Set].

The System Disk registered by mistake can be released by selecting (CL) the System Disk from the LDEV list box and selecting (CL) [Release].

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

NOTE: The two or more volumes can be selected and deleted or set System Disk.

• Variable Volume Size

"Specify size & number" : Defines the specified number of the specified user size.

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• Capacity Unit

"MByte" : Makes data displayed or entered by [Mbyte]. "Blocks" : Makes data displayed or entered by the [Blocks]. : When the LUSE is connected, "+" is displayed. • LUSE

: When Path/LUSE/pool-VOL is defined, "+" is displayed. asst.

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

[Clear] : Deletes all the volumes.

[Delete] : Deletes all the selected volumes.

[Add] : Adds volumes. : Sets System Disk. [Set] : Release System Disk. [Release]

[Cancel] : Invalidates the setting, and returns to the preceding window. [OK] : Confirms the setting, and returns to the preceding window.

# (10)-4 <Setting copy back mode>

Select (CL) [Copy Back...], go to Step (10)-4-1. Selecting (CL) [Cancel] returns the routine to Step (10).

# (10)-4-1

Select parity group changing the copy back mode, and press (CL) the [Change...] button.

When a failed HDD • Copy Back:

> recovered, the copy back will be performed. (default)

• No Copy Back: When a failed HDD

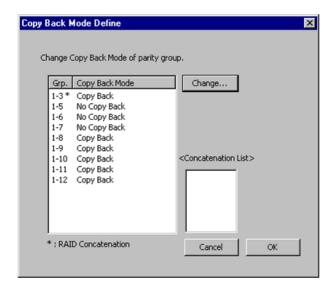
recovered, the copy back will be not performed.

[OK]: Invalidates the setting, and returns

to Step (10).

[Cancel]: Confirms the setting, and returns to

Step (10).



Grp\*: The top parity group where RAID Concatenation is installed. Selecting the concatenated parity groups the concatenated parity groups in the Concatenation List.

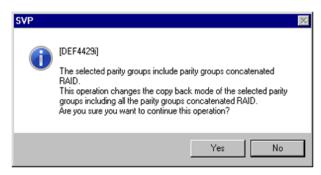
If you selected the parity group where RAID Concatenation is installed, and press (CL) the [Change...] button, go to Step (10)-4-2.

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#### INST03-08C-241

# (10)-4-2

In response to a message, "The selected parity groups include parity groups concatenated RAID. This operation changes the copy back mode of the selected parity groups including all the parity groups concatenated RAID. Are you sure you want to continue this operation?".



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When [Yes] is selected (CL), the copy back mode changes, and returns to Step (10)-4-1. When [No] is selected (CL), returns to Step (10)-4-1.

Logical Device ID Configuration

Please select parity group to set LDEV ID.

#### INST03-08C-250

#### (11) < Define LDEV ID>

(11)-1

Definition Screen for LDEV ID.

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

[Linear...]: LDEV ID is assigned to LDEV

in the order of parity groups.

See Step (11)-2.

[Detail...]: A screen to define LDEV in

detail is displayed. See Step

(11)-1. (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.

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned.
② "-----" : LDEV ID is not assigned.

③ "Error" : Invalid LDEV ID is assigned.

After setting up all items, select (CL) [Detail...] to confirm the items that have been setup, and select (CL) [>>Next]. Go to Step (12).

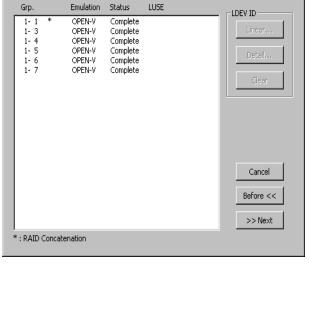
(11)-2 < Detailed Definition Screen for LDEV ID> LDEV ID is defined in detail for each LDEV in the parity group.

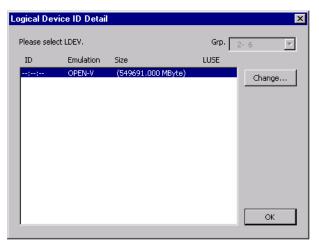
Select (CL) LDEV from the list box and select (CL) [Change...].

The screen for LDEV ID input is displayed. After setting, select (CL) [OK]. Go back to Step (11)-1.

• '----' is displayed in the CU area and the ID area for the LDEV to which LDEV ID is not assigned.

NOTE: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



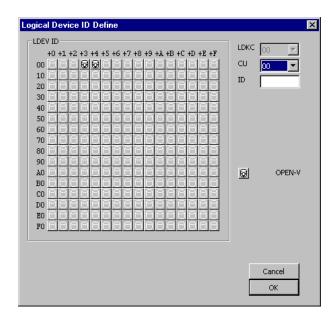


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#### INST03-08C-260

# (11)-3 <Input LDEV ID>

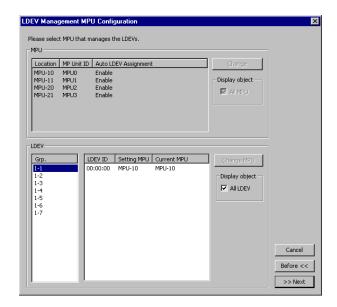
Select CU in the CU combo box.
The status of usage of ID in the CU is displayed in the LDEV ID panel.
White disk of panel: not used
Patterned disk of panel: using
Input LDEV ID you want to set or the head
LDEV ID in the ID Edit box.
After setting, select (CL) [OK].
Go back to Step (11).



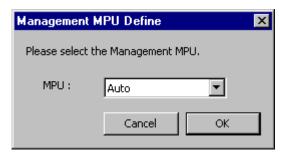
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(12) <Define LDEV Management MPU>
In the 'LDEV Management MPU
Configuration' screen, select (CL) [Change MPU].
Go to Step (12)-1.

After the setting is completed, select (CL) [>>Next]. (Go to Step 13)



(12)-1
Define Management MPU and select (CL) [OK].
Go back to Step (12).

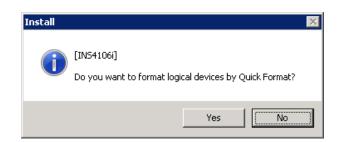


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#### INST03-08C-280

#### (13) < Selection of format>

Select (CL) [Yes] in response to "Do you want to format logical devices by Quick Format?" when you execute Quick Format. When [No] is selected (CL), usual LDEV Format is executed.



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NOTE: Next, Quick Format cannot be executed in the shown volume.

- external volume
- Volumes whose access attribute is not Read/Write
- Pool volumes (pool-VOLs)
- · Journal volumes

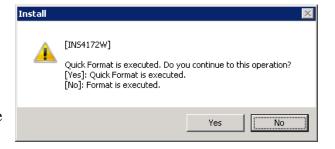
When [Yes] is selected Go to step (13)-1. When [No] is selected Go to step (14).

# (13)-1 < Execution of Quick Format>

For the message "Quick Format is executed. Do you continue to this operation?

[Yes]: Quick Format is executed.

[No]: Format is executed.", select (CL) [Yes] when Quick Format is to be executed. Select (CL) [No] when normal LDEV format is to be executed.

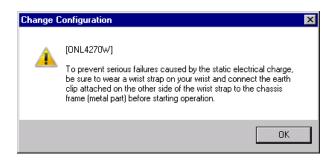


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#### INST03-08C-290

# (14) < Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



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# (14)-1<Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (14)-2.



#### (14)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (2) on page INST03-8C-130.

When [No] is selected (CL), returned to Step (14).



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#### INST03-08C-300

# (15) <Start installation>

Select (CL) [Yes] in response to "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not insert the components for upgrading the system at this time.".

When [No] is selected (CL), the routine is returned to Step (2) on page INST03-8C-130.



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#### INST03-08C-310

(16) < Download micro-program>

Micro-programs are automatically downloaded for each processor.

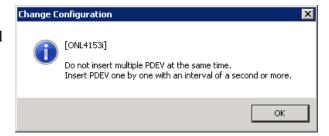
(17) < Install DKB>

"Upgrading of the DKB..."

(18) < Notes when insert of PDEV>

"Do not insert multiple PDEV at the same time. Insert PDEV one by one with an interval of a second or more." is displayed. Select (CL) [OK].

NOTE: If DB is already mounted on the rack, inserting PDEVs as mentioned in the above message is not required.

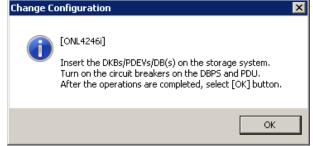


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(19) < Check that hardware components are installed >

At this point refrain from pressing the [OK] button.

"Insert the DKBs/PDEVs/DB(s) on the storage system. Turn on the circuit breakers on the DBPS and PDU. After the operations are completed, select [OK] button." is displayed.



NOTE: When the breaker of PDU is OFF, please turn it on.

# 3.8.4.4 Installation Procedure of Backend I/O Module (DW-F700-BS6G/BS6GE)

**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.

#### 1. Insertion of the Blades

Install one DKB into one slot at a time.

- a. Loosen the screw that fastens the dummy cover and let the handle fall down. (Refer to Table 3.8.4.4-1 and Fig. 3.8.4.4-1.)
- b. Push down the handle and remove the dummy cover.
- c. Insert the DKB until the claw on the lower part of the handle of the DKB reaches the front of the DKC.
- d. Push up the handle and fully insert the DKB.
- e. Tighten the screw and fasten the DKB.
- f. Repeat the procedures a to e each time you add a DKB.

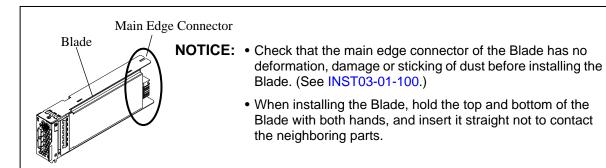


Table 3.8.4.4-1 Inserting Location

Addition	Slot No.		Location No.		Remarks
No.	Cluster 1	Cluster 2	Cluster 1	Cluster 2	
Basic	1E	2E	DKB-1E	DKB-2E	
Option 1	1F	2F	DKB-1F	DKB-2F	

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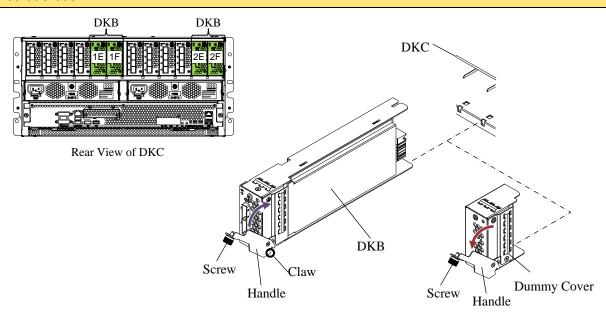


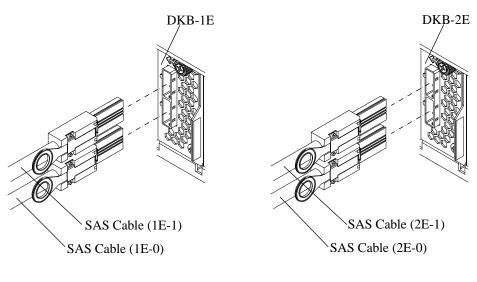
Fig. 3.8.4.4-1 Insertion of DKB

2. Connection of cables In the case of Basic

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

- a. Remove the caps from the SAS cables.
- b. Connect the cables to the DKBs after checking "3.1.6 Notes when connecting and routing the SAS cable" (INST03-01-170).



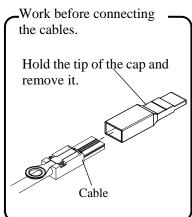


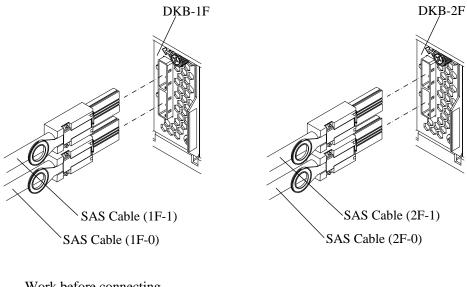
Fig. 3.8.4.4-2 Connection of cable (Basic)

# In the case of Option 1

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

- a. Remove the caps from the SAS cables.
- b. Connect the cables to the DKBs after checking "3.1.6 Notes when connecting and routing the SAS cable" (INST03-01-170).



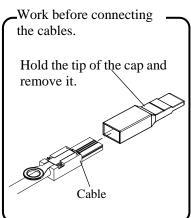


Fig. 3.8.4.4-3 Connection of cable (Option 1)

### 3.8.4.5 Installation Procedure of drive

# **A** CAUTION

If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

1. Confirmation of position to install drive

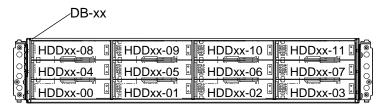
# In the case of DBL

a. Make sure of the location where the drive is to be added.

Table 3.8.4.5-1 Drive Model Number List (DBL)

No	Model Number	Model Name	Remarks
1	DF-F850-3TNL/4TNL	LFF Disk Drive	

**Drive Location** 



Front View of DBL

\*1: HDD<u>xx</u>-02 DB No. (0, 1, 2, ..., 47)

Fig. 3.8.4.5-1 Drive Location (In the case of DBL)

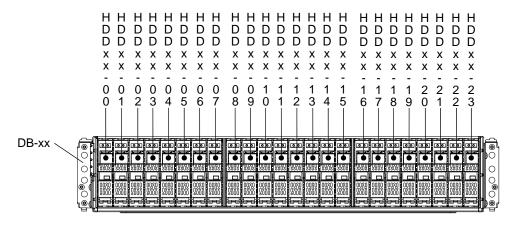
# In the case of DBS

a. Make sure of the location where the drive is to be added.

Table 3.8.4.5-2 Drive Model Number List (DBS)

No.	Model Number	Model Name	Remarks
1	DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS	SFF Disk Drive	
2	DF-F850-2HGDM/4HGDM/8HGDM	SFF SSD Drive	

### **Drive Location**



Front View of DBS

Fig. 3.8.4.5-2 Drive Location (In the case of DBS)

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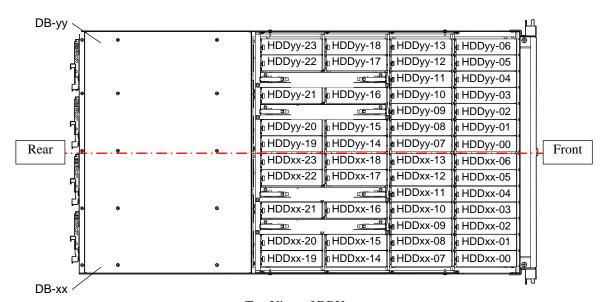
# In the case of DBX

a. Make sure of the location where the drive is to be added.

Table 3.8.4.5-3 Drive Model Number List (DBX)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNX/4TNX	LFF Disk Drive	

### **Drive Location**



Top View of DBX

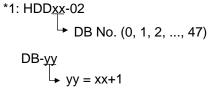


Fig. 3.8.4.5-3 Drive Location (In the case of DBX)

### INST03-08C-371

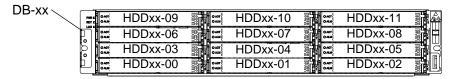
# In the case of DBF

a. Make sure of the location where the drive is to be added.

Table 3.8.4.5-4 Drive Model Number List (DBF)

No.	Model Number	Model Name	Remarks
1	DKC-F710I-1R6FM/3R2FM	Flash Module	FMD
		Drive	

# **Drive Location**



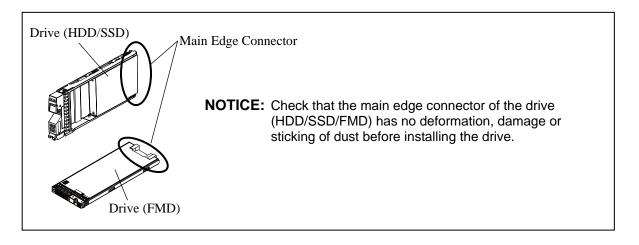
Front View of DBF

Fig. 3.8.4.5-3A Drive Location (In the case of DBF)

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# INST03-08C-380

- 2. Checking the condition of the drive
  - a. Check the condition of the drive before installing it.



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### INST03-08C-390

# 3. Installing the drives

**NOTICE:** When two or more Drives are inserted at the same time, the already operating Drive might have blockade.

Insert Drive one by one at a second (\*1) interval.

Don't insert Drive that doesn't define in the configuration.

\*1: Interval of time necessary for stabilizing the voltage of back board after an Drive's insertion.

**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.

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### In the case of DBL

**NOTICE:** Since the Drive is a precision component, handle it very carefully not to apply a vibration or shock to it.

- a. Remove the dummy (drive) from the position installing the drive.
- b. Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

- c. Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- d. Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the drive array unit.

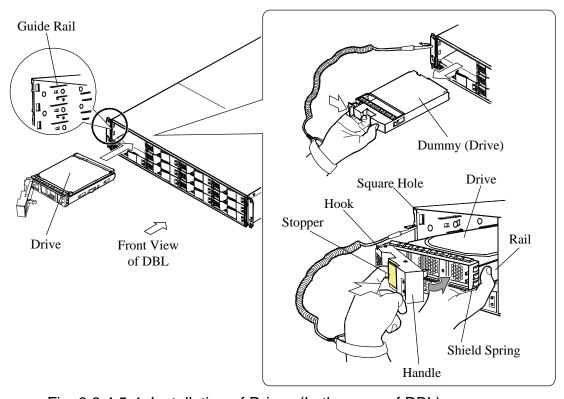


Fig. 3.8.4.5-4 Installation of Drives (In the case of DBL)

# In the case of DBS

**NOTICE:** Since the Drive is a precision component, handle it very carefully not to apply a vibration or shock to it.

- a. Remove the dummy (drive) from the position installing the drive.
- b. Fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- c. Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole at the lower part of a frame on the front side of the drive box.
- d. Raise the stopper, which has been tilted toward you, and then press the stopper to have the lock on.

If the handle is raised in the state where the hook of the handle cannot enter into each hole, the drive cannot be installed correctly because it runs into the frame of the drive box.

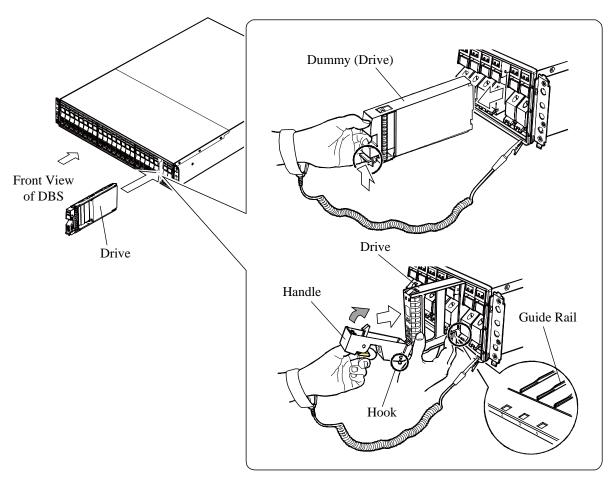


Fig. 3.8.4.5-5 Installation of Drives (In the case of DBS)

# In the case of DBX

**NOTICE:** Since the Drive is a precision component, handle it very carefully not to apply a vibration or shock to it.

- a. Draw the DBX. (See INST03-01-60.)
- b. Remove the dummy (drive) from the position installing the drive.
- c. Open the handle, and insert the drive holding it with both hands.

NOTE: Check that there is no foreign substance near the connector and in the chassis before inserting the drive.

- d. Close the handle.
- e. Reinstall the DBX. (See INST03-01-80.)

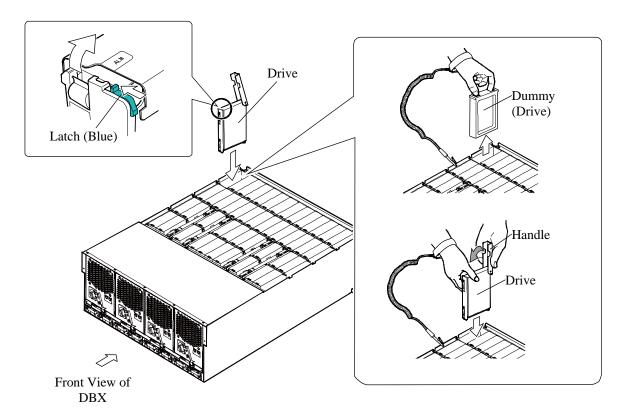
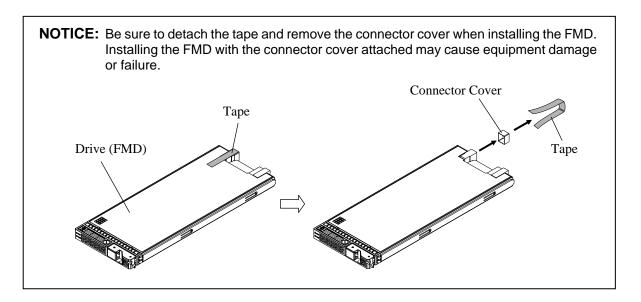


Fig. 3.8.4.5-6 Installation of Drives (In the case of DBX)

# In the case of FMD



a. Remove the Dummy FMD from the installing position of a drive.Release the hook while pressing the lock to the left to pull the Dummy FMD toward you.

b. Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

- c. Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- d. Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the drive box.

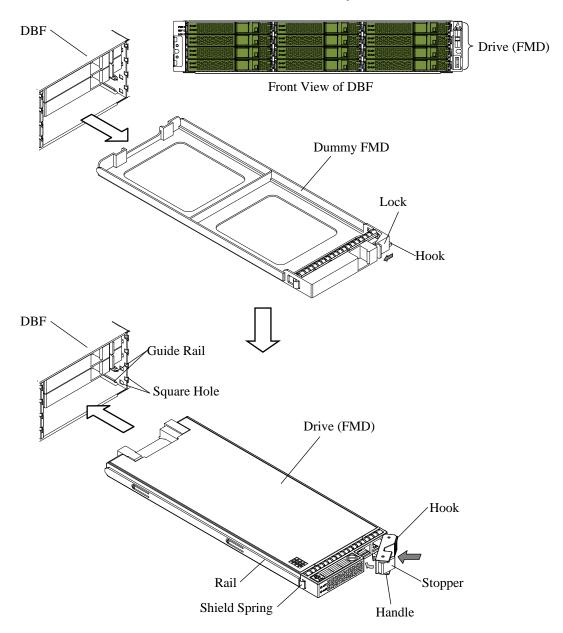
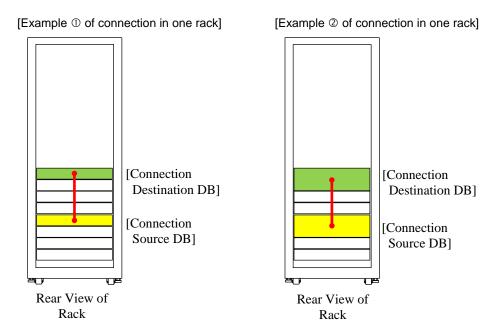


Fig. 3.8.4.5-7 Installation of Drive (In the case of FMD)

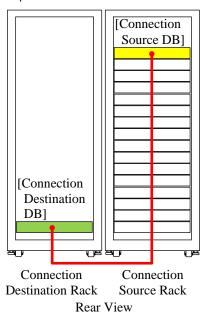
# 3.8.4.6 Connection of SAS Cable (DW-F700-SC1, DF-F850-SC3/SC5)

Name descriptions when connecting cables
 In this procedure, the output side of the SAS Cable is defined as a Connection Source, and the RACK is called a Connection Source RACK, and the DB is called a Connection Source DB.
 Moreover, the input side of the SAS Cable is defined as a Connection Destination, and the RACK is called a Connection Destination RACK, and the DB is called a Connection Destination DB.

Before starting this procedure, remember each name and the positional relation.



[Example ① of connection between two racks]



[Example ② of connection between two racks]

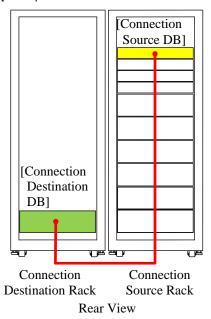


Fig. 3.8.4.6-1 Name Descriptions When Connecting Cables

### 2. Connect the SAS Cables to the Connection Destination DB

# In case the Connection Destination DB is the DBL/DBS

a. Connect two SAS Cables to the ENC of the connection destination DB.

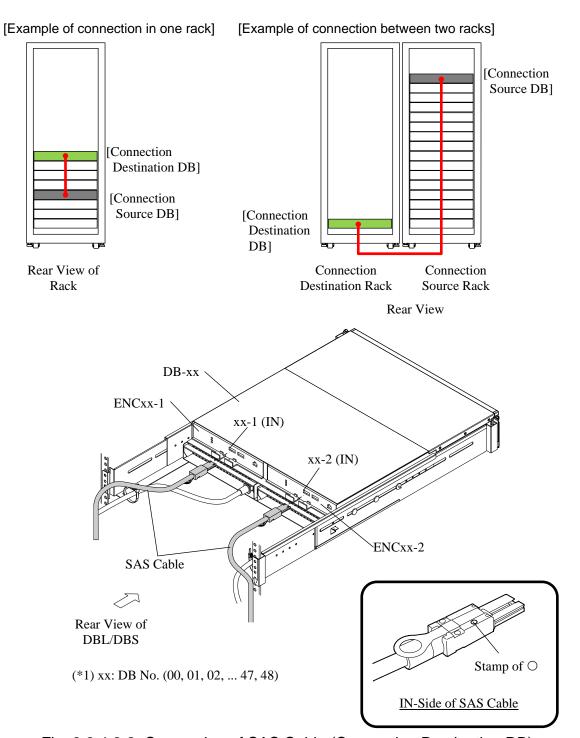


Fig. 3.8.4.6-2 Connection of SAS Cable (Connection Destination DB)

# In case the Connection Destination DB is the DBF

a. Connect two SAS Cables to the ENC of the connection destination DB.

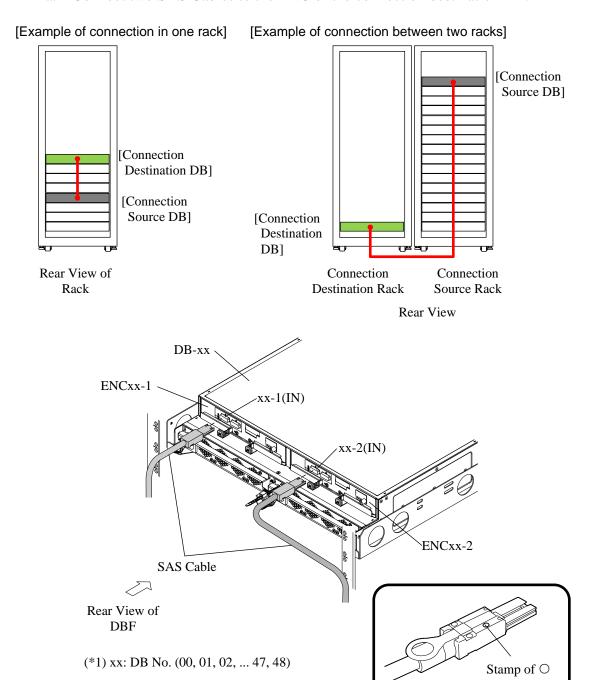


Fig. 3.8.4.6-2A Connection of SAS Cable (Connection Destination DB)

IN-Side of SAS Cable

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# In case the Connection Destination DB is the DBX

a. SAS Cable connection of the connection destination DB should be done when installing the DBX.

Do cable routing referring to "Installation Procedure of Drive Box (DW-F700-DBX)" (INST03-04-170~400) if the cables are not routed.

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# 3. Routing between racks

a. Route cables in the connection destination Rack first when wiring cables between two racks. The figure below shows an example of wiring cables.

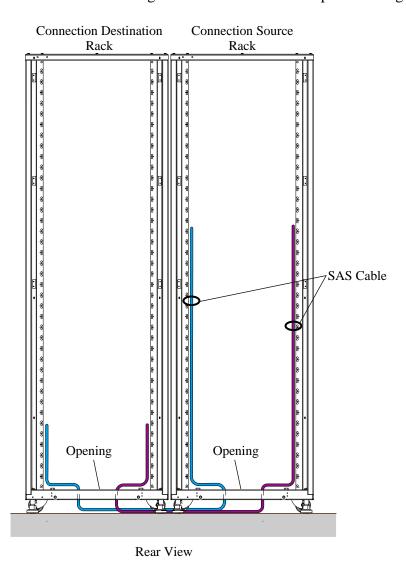


Fig. 3.8.4.6-3 Example of Wiring Cables

### 4. Connect the SAS Cables to the Connection Source DB

# In case the Connection Source DB is the DBL/DBS

a. Connect two SAS Cables to the ENC of the connection source DB.

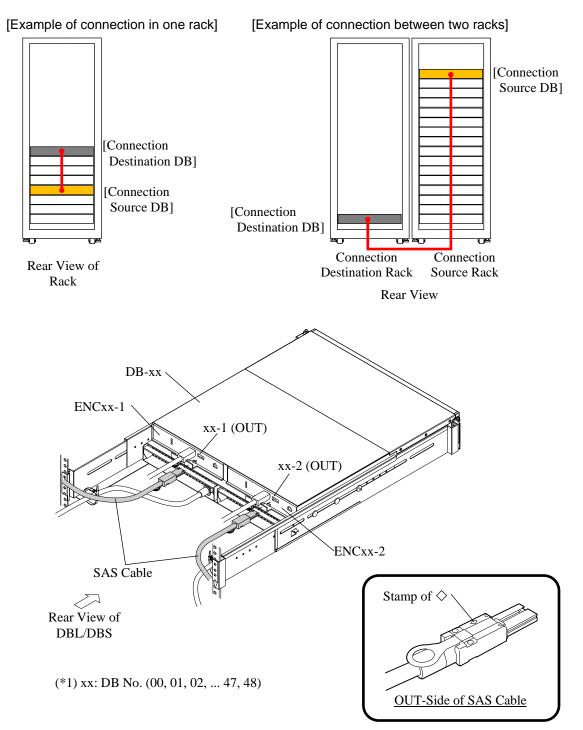


Fig. 3.8.4.6-4 Connection of SAS Cable (Connection Source DB)

# In case the Connection Source DB is the DBF

a. Connect two SAS Cables to the ENC of the connection source DB.

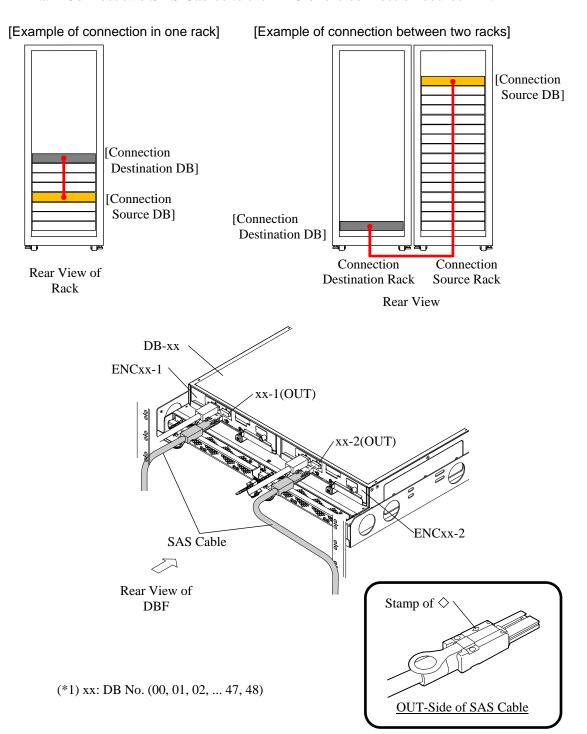


Fig. 3.8.4.6-4A Connection of SAS Cable (Connection Source DB)

# In case the Connection Source DB is the DBX

# 4-1 Removing the stopper

a. Pull the right and left screws of the stopper in the direction ① and rotate them 90 degrees. The screws become open and fixed.

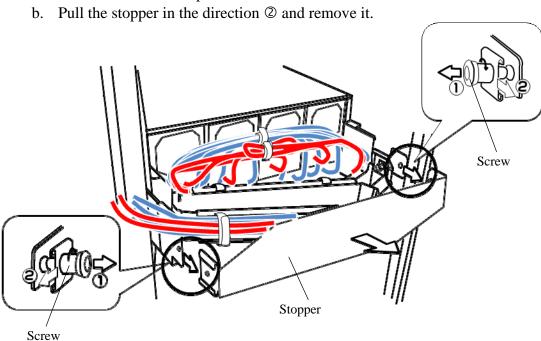


Fig. 3.8.4.6-5 Removal of Stopper

- c. Pull the right and left cable routing bars.
- d. Pull the right and left screws of the cable tray in the direction ① and rotate them 90 degrees.
  - The screws become open and fixed.
- e. Pull the cable tray in the direction ② and remove it.

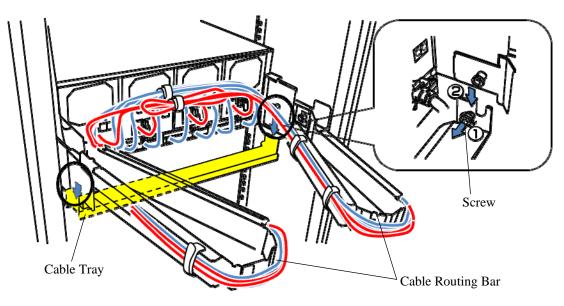


Fig. 3.8.4.6-6 Removal of Cable Tray

# 4-2 Removing the cables

a. Remove the four clamp tapes from the cable routing bar #2.

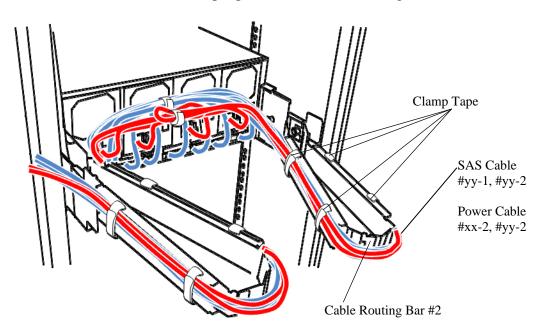


Fig. 3.8.4.6-7 Removal of Clamp Tapes

b. Remove the four clamp tapes from the cable routing bar #1.

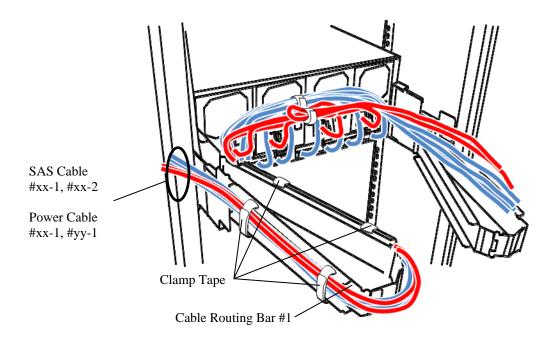


Fig. 3.8.4.6-8 Removal of Clamp Tapes

c. Remove the two clamp tapes which bind cables.

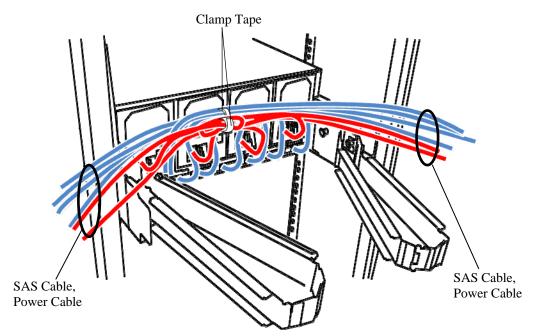


Fig. 3.8.4.6-9 Removal of Clamp Tapes in the Middle

- 4-3 Removing the Cable Routing Bar.
  - a. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
  - b. Remove the cable routing bar from the right rail and push it in the direction ② while rotating the screw 90 degrees.

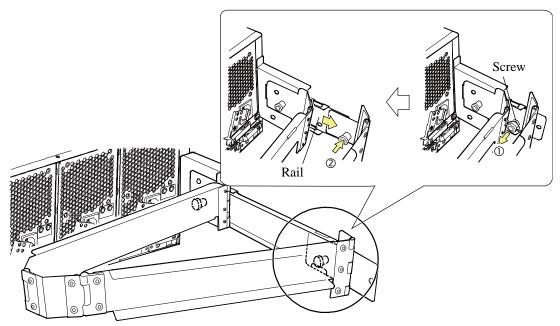


Fig. 3.8.4.6-10 Removal from Rail

- c. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
- d. Extract the cable routing bar from the cable routing bar installation part and push it in the direction ② while rotating the screw 90 degrees.

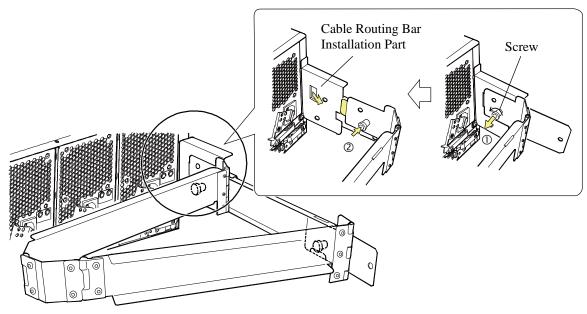
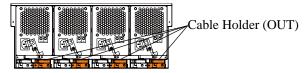


Fig. 3.8.4.6-11 Removal from Drive Box

# 4-4 Connecting the SAS cables

a. Remove the cable holder (OUT) of the ENC to which the SAS cable is connected. Open the lever and remove the SAS cable pressing the button (blue) which fixes the lever of the cable holder.

NOTE: When using the lever, be sure not to push the button (blue) of other cable holders.



Rear View of DBX

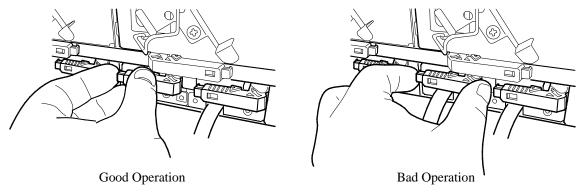


Fig. 3.8.4.6-12 Cable Holder Button (blue) Operation

b. Loosen the screw (blue) which fixes the holder cover, and remove it.

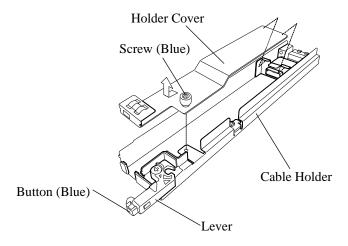


Fig. 3.8.4.6-13 Removal of Holder Cover

c. Connect the SAS cable to the cable holder.Connect the cable having it passed under the lever of the cable holder.

NOTE: Pull the SAS cable lightly to check if it is surely connected to the cable holder.

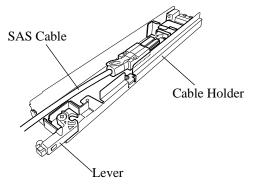


Fig. 3.8.4.6-14 Connection of SAS Cable

d. Attach the holder cover to the cable holder, and tighten the screw (blue) to fix the cover.

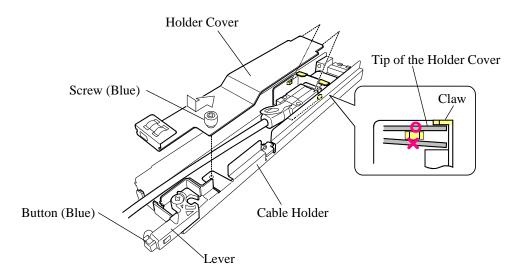


Fig. 3.8.4.6-15 Attachment of Cable Holder

e. Attach the cable holder to the Drive Box.

Open the lever of the cable holder toward you. Insert the cable holder until its lever is slightly closed, and then close the lever completely while pressing the button (blue), which fixes the lever.

- 4-5 Installing the cable routing bar
  - a. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
  - b. Install one side of the cable routing bar up to the place where the screw hole of the rail match, and fix it by pressing it in the direction ② while turning the screws 90 degrees.

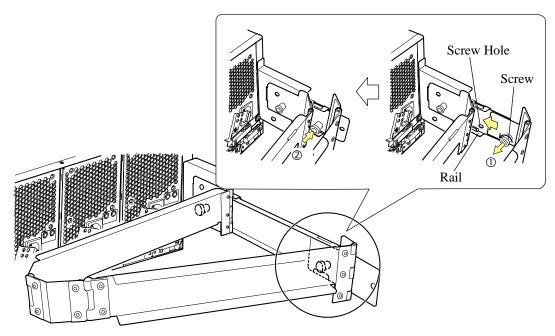


Fig. 3.8.4.6-16 Connection with Rail

- c. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
- d. Install the other side of the cable routing bar up to the place where the screw hole of the rail match, and fix it by pressing it in the direction ② while turning the screws 90 degrees.

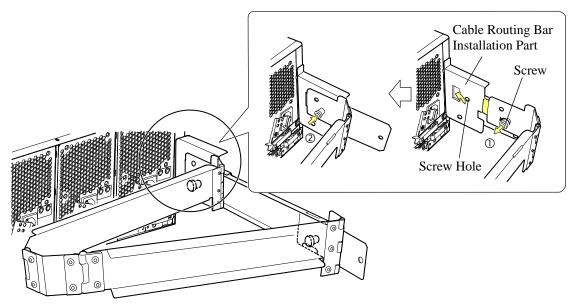


Fig. 3.8.4.6-17 Connection with Drive Box

### 4-6 Routing the Cables

Route the SAS cables and power cables.

The cable numbers to be routed are shown in Fig. 3.8.4.6-18.

NOTE: When bending the cable to connect it, give it a bend with a long radius (not less than 30 mm) so as not to apply the cable and the connector excessive stresses.

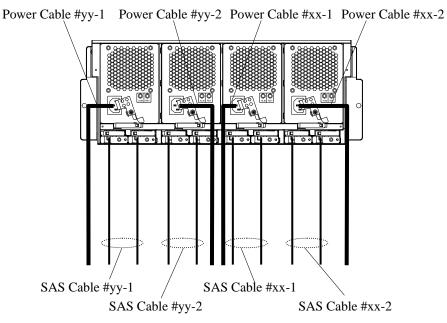


Fig. 3.8.4.6-18 Cable Number

- a. Open the cable routing bars toward you.
- b. Route the SAS cables (#xx-1, #xx-2) above the receptacles of the power supplies (#yy-1, #yy-2) and the SAS cables (#yy-1, #yy-2) above he receptacles of the power supplies (#xx-1, #xx-2) to be crossed and fasten them with a clamp tape. (The SAS cables around the cable holder slots are required to have extra length so as not to be stretched.)

NOTE: Keep the cables from hanging down below the Drive Box.

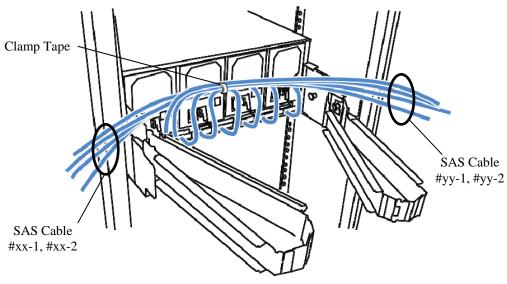


Fig. 3.8.4.6-19 Routing of SAS Cables

c. Route the power cable #xx-2 and the power cable #yy-1 and fold them back to overlap each other at the center.

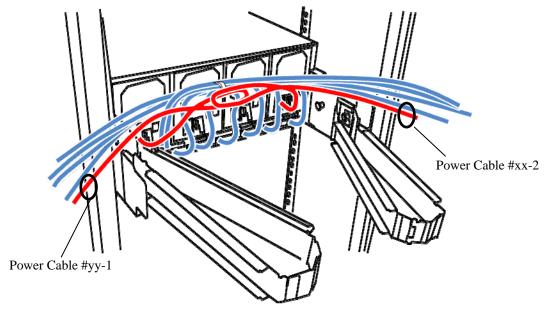


Fig. 3.8.4.6-20 Routing of Power Cables (#xx-2, #yy-1)

- d. Route the power cable #xx-1 and the power cable #yy-2 to be crossed so that they support the power cable #xx-2 and the power cable #yy-1 from below.
- e. Bundle the four power cables with the clamp tape at the center.

NOTE: Keep the cables from hanging down below the Drive Box.

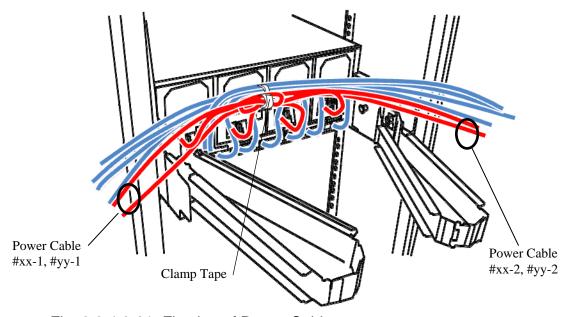


Fig. 3.8.4.6-21 Fixation of Power Cables

f. Fix the SAS cables (#xx-1, #xx-2) and the power cables (#xx-1, #yy-1) to the cable routing bar #1 with four clamp tapes.

The cables are required to have adequate extra length so as not to be stretched and be applied stress when the Drive Box is moved.

NOTE 1: Keep the cables from hanging down below the Drive Box.

NOTE 2: Be careful not to twist the cables.

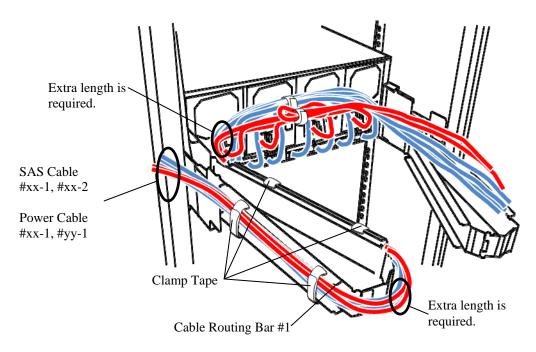


Fig. 3.8.4.6-22 Fixation of SAS Cables (#xx-1, #xx-2) and Power Cables (#xx-1, #yy-1)

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g. Fix the SAS cables (#yy-1, #yy-2) and the power cables (#xx-2, #yy-2) to the cable routing bar #2 with four clamp tapes.

The cables are required to have adequate extra length so as not to be stretched and be applied stress when the Drive Box is moved.

NOTE 1: Keep the cables from hanging down below the Drive Box.

NOTE 2: Be careful not to twist the cables.

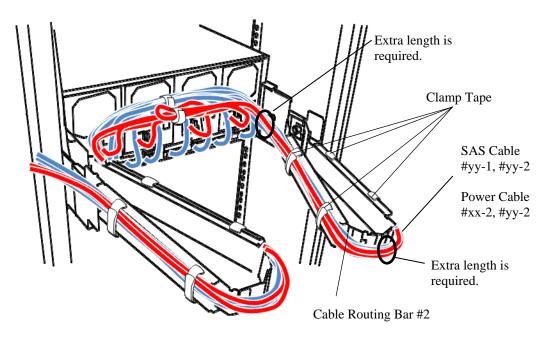


Fig. 3.8.4.6-23 Fixation of SAS Cables (#yy-1, #yy-2) and Power Cables (#xx-2, #yy-2)

Check that the cables are not stretched and are not applied stress by closing cable routing bars (#1, #2). If there is any problem, adjust cable routing.

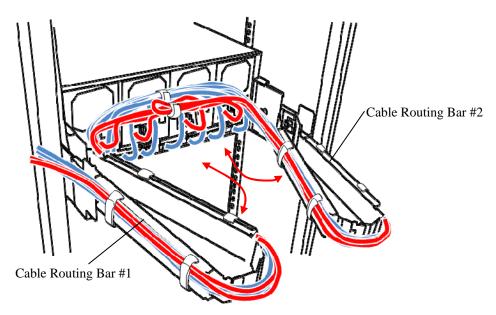


Fig. 3.8.4.6-24 Check of Routing of SAS Cables and Power Cables

### 4-7 Attaching the stopper

- a. Pull the right and left screws of the cable tray in the direction ①, and rotate them 90 degrees.
  - The screws are fixed with them opened.
- b. Press the cable tray in the direction ②.
- c. Push the stopper to the place where the right and left screws match the screw holes of the rails, and fix it by pressing it in the direction ③ while turning the screws 90 degrees.

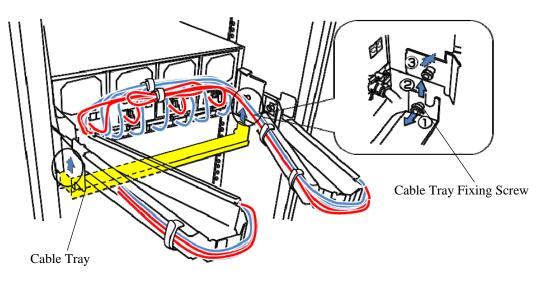


Fig. 3.8.4.6-25 Attachment of Cable Tray

- d. Pull the right and left screws in the direction ①, and rotate them 90 degrees. The screws are fixed with them opened.
- e. Press the stopper in the direction ② pushing the cables.
- f. Push the stopper to the place where the right and left screws match the screw holes of the rails, and fix it by pressing it in the direction ③ while turning the screws 90 degrees.

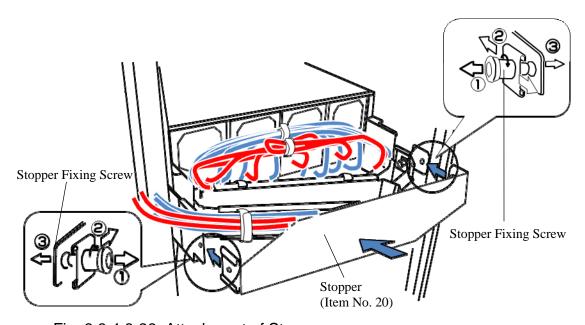


Fig. 3.8.4.6-26 Attachment of Stopper

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g. Pull out the Drive Box and check that the routing is performed correctly. Refer to "3.1.1 Bezel Opening-Closing Procedure" (INST03-01-60).

NOTE: Check that the routing is not performed with other cables.

h. Return the Drive Box on the rack. Refer to "3.1.1 Bezel Opening-Closing Procedure" (INST03-01-80).

- 5. Fix the cables to the rack frame
  - a. Fix the SAS Cables with the binders.If the cables have extra length, roll up the extra length at the binders and fix the cables.

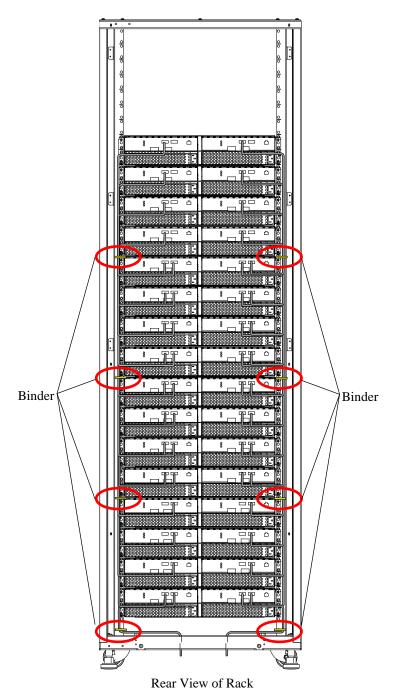


Fig. 3.8.4.6-27 Example of Fixing SAS Cables (When Configured with DBL/DBSs)

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# 3.8.4.7 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 "Insert the DKBs/PDEVs/DB(s) on the storage system. Turn on the circuit breakers on the DBPS and PDU. After the operations are completed, select [OK] button.".



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NOTE: When the breaker of PDU is OFF, please turn it on.

- (2) <PATH INLINE> When DKB is installed, "PATH INLINE is now running..." is displayed.
- (3) <LDEV FORMAT> "Formatting logical devices..." is displayed when Parity Group is defined.

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



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# (4)-1 < QUICK FORMAT>

Refer to the logical device window in the "Maintenance" window to check that the Quick Format is in progress. (SVP03-320 through 350)

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(5)

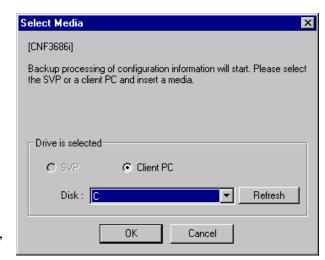
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

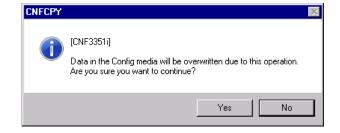
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



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(6)

If the configuration information is not saved in the selected media, go to step (7). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (8).

(7)When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media,

select (CL) [OK].



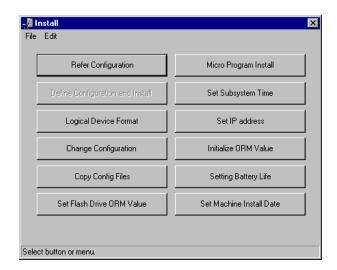
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(8)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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## **A** CAUTION

Check the Expander micro-program version of the installed ENC.

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

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INST03-09-10

## 3.9 Power ON/OFF Procedure

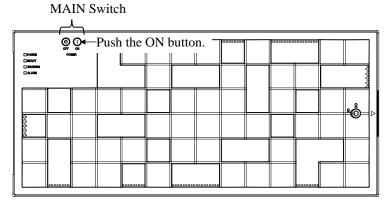
## 3.9.1 Power ON Procedure

- 1. Power ON Procedure of Storage System
  - a. Turn on the main circuit breakers at the PDUs on the Rack frames.

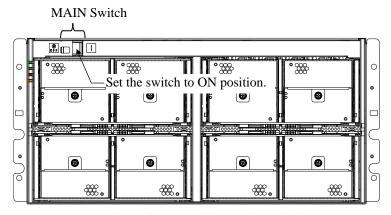
    The equipment is in a standby mode when the PDU breaker is in a power-on state and the power of equipment is off, therefore the FANs of the MAIN Blade and the MPB continue to operate. Execute this operation just before the power-on processing of the following procedure b when the standby electricity must be controlled, because the standby electricity exists in the equipment under this condition.

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## b. Turn on the MAIN Switch.



Front View of DKC (With Bezel Attached)



Front View of DKC (With Bezel Detached)

Fig. 3.9.1-1 Switch on DKC

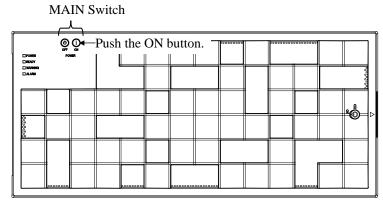
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## INST03-09-30

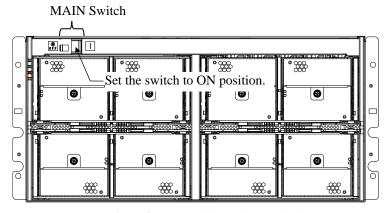
- 2. Power ON Procedure of additional Rack frame
  - a. Turn on the circuit breakers at the PDUs on the additional Rack frame.

## INST03-09-40

- 3. Power ON Procedure of Storage System in Power-On State of PDU Breaker
  - a. Turn on the MAIN Switch.



Front View of DKC(With Bezel Attached)



Front View of DKC (With Bezel Detached)

Fig. 3.9.1-2 Switch on DKC

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## 3.9.2 Power OFF Procedure

1. Power OFF Procedure of Storage System

**NOTICE:** Please confirm that maintenance operations (except for configuration information setting) have been completed before powering OFF DKC. When turning the breaker off before or during a power-off operation, an emergency processing that transfers data to the SSD is performed with the battery.

Make sure the power is completely turned off after executing the following procedures because the emergency processing drains the batteries and prolongs the next power-on time according to the remaining battery charge.

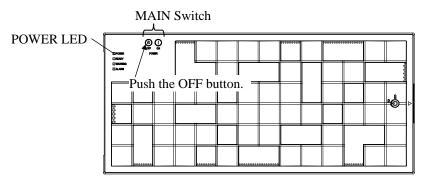
- a. Turn off the MAIN Switch. (Refer to Fig. 3.9.2-1.)
- b. Procedure for checking the power OFF of Storage system

  Perform all checks of the following (i), (ii), and confirm the power OFF status of Storage system.

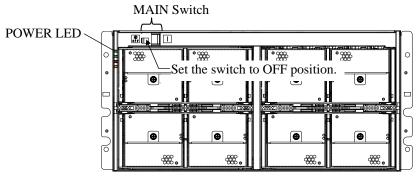
Even if the equipment is in the state of the power-off, the FANs of the MAIN Blade and the MPB continue to operate, because the equipment is in a standby mode. Execute the power-off processing of the PDU breaker as the following procedure d when the standby electricity must be controlled, because the standby electricity exists in the equipment under this condition.

- (i) Checking the POWER LED OFF
  - Move to the position where you can see the DKC from the front to be able to check that the POWER LED on the DKC is on.
  - Check that the POWER LED is amber (\*1). When the POWER LED is off, turn on the power of Storage system again and perform the power OFF procedure from Step a.
  - \*1: At this time, HDD ENABLE LED (green light) of SSD may light, however it is acceptable.

## INST03-09-60



Front View of DKC (With Bezel Attached)



Front View of DKC (With Bezel Detached)

Fig. 3.9.2-1 Switch on DKC

- (ii) Checking the SVP Power Off Event Log
  Check that there are the logs of "System OFF" of the date or later which the power
  OFF operation in Step a is operated to the Power Event Log for 1MP or more referring
  to the log display in the SVP SECTION (SVP02-130).
- c. Turn off the power of the SVP referring to the SVP SECTION (SVP01-160).

**NOTICE:** Make sure to perform the procedure d within 15 minutes after turning OFF the power of SVP. If the condition that SVP is OFF and breaker is ON continues for more than 15 minutes, the following occurs.

- SVP power is forcibly turned ON.
- d. Turn off the main circuit breakers at the PDUs on the Rack frames.

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## INST03-09-70

- 2. Power OFF Procedure of additional Rack frame
  - a. Turn off the main circuit breakers at the PDUs on the additional Rack frame.

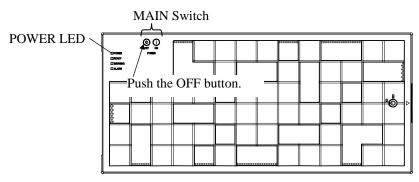
3. Power OFF Procedure of Storage System in Power-On State of PDU Breaker

**NOTICE:** Please confirm that maintenance operations (except for configuration information setting) have been completed before powering OFF DKC.

## Notes on the Power OFF Operation of Device:

Confirm the below requirements when turning off the device.

- · Make sure the SVP Mode is "View".
- All users from Navigator should log off.
- a. Turn off the MAIN Switch.



Front View of DKC (With Bezel Attached)

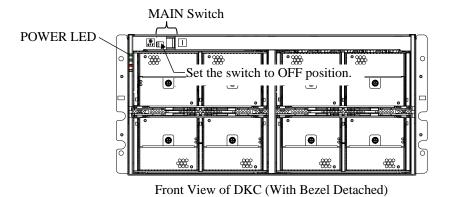


Fig. 3.9.2-2 Switch on DKC

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## b. Procedure for checking the power OFF of Storage system

Perform all checks of the following (i), (ii), and confirm the power OFF status of Storage system.

Even if the equipment is in the state of the power-off, the FANs of the MAIN Blade and the MPB continue to operate because the equipment is in a standby mode. The standby electricity exists in the equipment under this condition.

## (i) Checking the POWER LED OFF

Move to the position where you can see the DKC from the front to be able to check that the POWER LED on the DKC is on.

Check that the POWER LED is amber (\*1). When the POWER LED is off, turn on the power of Storage system again and perform the power OFF procedure from Step a.

\*1: At this time, HDD ENABLE LED (green light) of SSD may light, however it is acceptable.

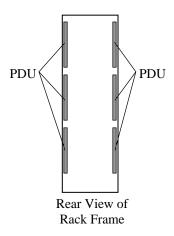
## (ii) Checking the SVP Power Off Event Log

Check that there are the logs of "System OFF" of the date or later which the power OFF operation in Step a is operated to the Power Event Log for 1MP or more referring to the log display in the SVP SECTION (SVP02-130).

## INST03-09-100

## 3.9.3 Method of Disconnecting Power Supply to Storage System

- 1. When there are some circuit breakers in PDU.
  - a. Turn off the circuit breakers of PDU.
- 2. When there are no circuit breakers in PDU.
  - a. Disconnect the power cables corresponding the each unit from PDU.



PDU (When there are some circuit breakers)

## PDU (When there is no circuit breakers)

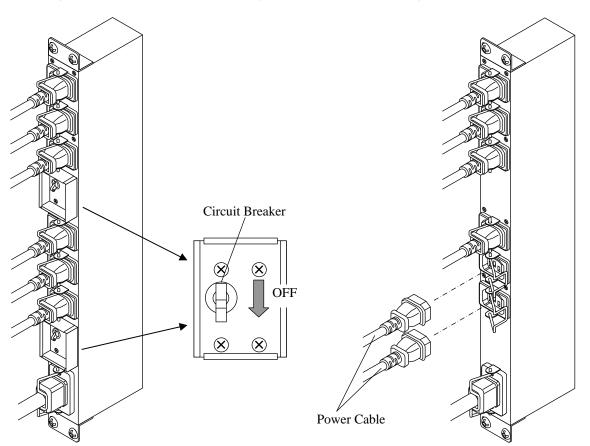


Fig. 3.9.3-1 Work Example of Disconnecting Power Supply

## 3.10 Mounting on Rack Frame

You can use a special lifter to mount the storage system on the rack frame.

This section explains a procedure for the mounting using the special lifter.

If you do not use the lifter, you must follow another procedure.



Rack mounting and lifter operation should only be conducted by a person who has been trained and qualified since the storage system could turn over or a worker could be caught under the storage system.

(1) External appearance of the special lifter Fig. 3.10-1 shows external appearance of the special lifter.

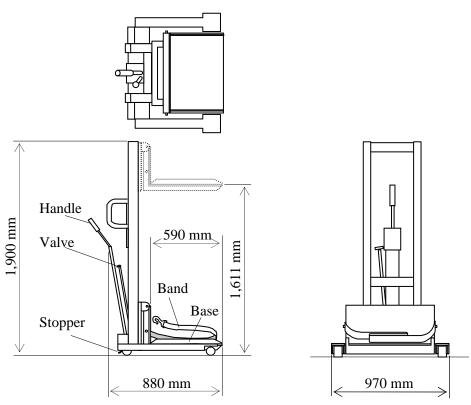


Fig. 3.10-1 External lifter

#### INST03-10-20

## 3.10.1 Mounting lifter on rack frame

## **CAUTION**

- Rack mounting and lifter operation should only be conducted by a person who has been trained and qualified since the storage system could turn over or a worker could be caught under the storage system.
- Be sure to perform the operation with two or more workers.
- Work carefully because the mass of the single CBX is about 72 kg, DBL is about 27 kg, DBS is about 23 kg, DBX is about 50 kg and DBF is about 38 kg.
- (1) Bring the special lifter close to the storage system to be mounted and apply the brake to the lifter.
- (2) Put the storage system on the special lifter.
- (3) Secure the storage system to the lifter with a band of the lifter.

  Bind the storage system with the band tightly by fitting the length of the belt to the storage system.

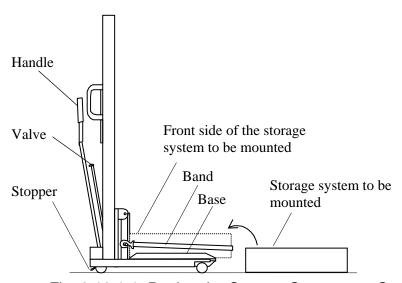


Fig. 3.10.1-1 Putting the Storage Systems on Special Lifter

#### INST03-10-30

## 3.10.2 Mounting storage system on rack frame



If the storage system falls when the elevator of the lifter is at a high position, a personal injury will be caused.

Perform the positioning, fastening, or other handlings very carefully.

## **CAUTION**

- Rack mounting and lifter operation should only be conducted by a person who has been trained and qualified since the storage system could turn over or a worker could be caught under the storage system.
- Operate the valve slowly when opening it. If it is opened quickly, the elevator of the lifter descends rapidly and may cause personal injury.
- Be sure to perform the operation with two or more workers.
- Work carefully because the mass of the single CBX is about 72 kg, DBL is about 27 kg, DBS is about 23 kg, DBX is about 50 kg and DBF is about 38 kg.
- Please be cautious of your safety and use a stepladder as you need while assembling or removing parts on top of the RACK frame.
- (1) Take off the brake of the special lifter on which the storage system has been put, and move the lifter close to the rack frame.
- (2) Adjust the position of the storage system so that it is seated in the center of the rack frame.
- (3) Move the pumping handle of the special lifter to the right and left repeatedly to lift the storage system up to the height suitable for the mounting.
  Be careful not to lift the elevating base too high. If you lift it too high, lower it by opening the up/down valve gently.
- (4) Remove the band and adjust the position of the storage system so that the storage system comes in the center in front of the rack frame. If the storage system is positioned off-centered, a screw contacts the front bezel preventing the bezel from being opened or closed.
- (5) Shift the storage system onto the rails in the rack frame. When shifting the storage system, push it in to the end gently.

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## INST03-10-40

(6) After mounting the storage system on the rack frame, lower the elevating base to the lowermost position by gently opening the up/down valve of the special lifter and take off the brake of the lifter.

(7) Move the special lifter to the place where the lifter does not disturb the following works.

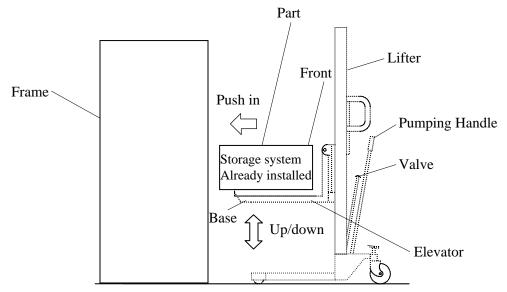


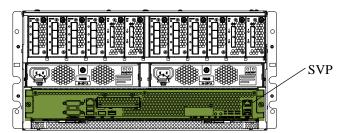
Fig. 3.10.2-1 Mounting Storage System on Rack Frame

## 3.11 LAN Cable Wiring for SVP

The SVP consists of the three LAN ports in all. The applications of the LAN cables that are connected to these LAN ports are shown the table below.

Refer to the table below for the LAN cable wiring operation procedures.

Please note that the EMI cores should be installed in each LAN cable.



Rear View of DKC

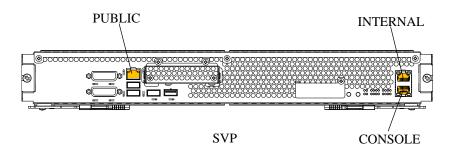


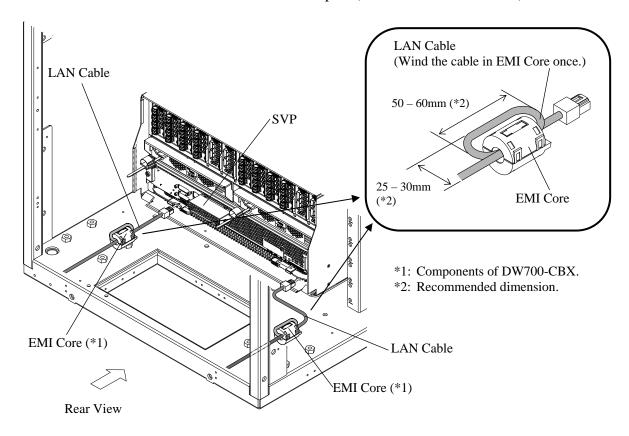
Fig. 3.11-1 LAN Port Positions of SVP

Table 3.11-1 Application of LAN Cables for SVP

No.	Port Name	Work	Pages	EMI Core	Note
1	PUBLIC	When SNMP Web Console is used	INST03-11-20	Required	
2	INTERNAL	When connected to other devices	INST03-11-20	Required	
3	CONSOLE	When CE Laptop PC is used	INST03-01-140	Required	

## 3.11.1 Procedures of LAN Cable Wiring for SVP

- a. Wire the LAN cable after pulling the cable into the RACK.
- b. Pass the LAN cable through the EMI core, and wind the cable in the EMI core once.
- c. Connect the LAN cable with the SVP port (PUBLIC or INTERNAL).



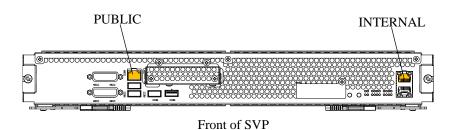


Fig. 3.11.1-1 Connection of LAN Cable

## 3.12 Installation of SM Size without adding Cache Memory

**NOTICE:** In addition, as the CM capacity decreases if SM size is increased, make sure there will be no performance effect and so on in the configuration to be built.

Rough time of SM size installation becomes addition of the following A, B and C.

Table 3.12-1 Rough time of installation

	Process	Time	Remarks
A	MAIN Blade blocking time	$5 \sim 60 \min \times 2 (*1)$	
В	MAIN Blade diagnosis time	$10\min \times 2$	
C	MAIN Blade recovering time	$5 \sim 60 \min \times 2 (*1)$	

<sup>\*1:</sup> Standard processing time is indicated. The processing time depends on the use situation, especially, the influence of the amount of write pending is received. When the amount of write pending is large, time more than the indication value might be required.

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## INST03-12-20

- 1. Setting up the New Device Structure Information
  - (1) <Set path offline or switch of channel path>

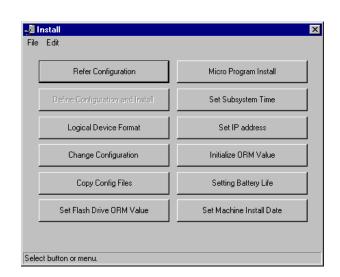
## **A** CAUTION

The switch to the alternate channel path or host shutdown is that connected with the CHB concerned.

As for other channel path, switching to the alternate channel path or host shutdown is unnecessary.

However, the host must be shut down when the Pinned track in CHB connected port.

- (2) <Mode Change>
  Change the mode to Modify Mode.
  Select (CL) [Install].
- (3) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



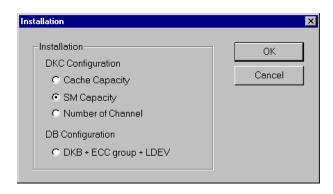
(4) <Start Device Structure Setup screen> Select (CL) [Installation] in the 'Menu Dialog' dialog box and select (CL) [OK].



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## INST03-12-21

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



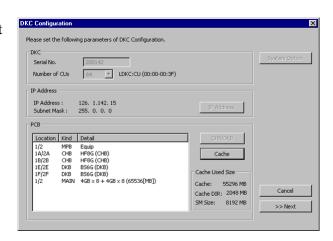
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## INST03-12-30

(6) <DKC Configuration screen>In the 'DKC Configuration' screen, select(CL) [Cache].(Go to step (7).)

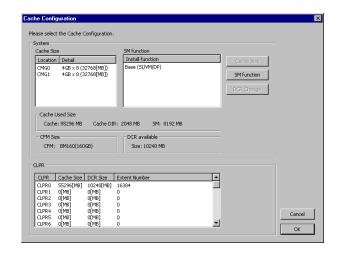
NOTE: It is impossible to install multiple types of parts at the same time.

Make sure that the all input items are correct and select (CL) [>>Next]. Go to step (8).

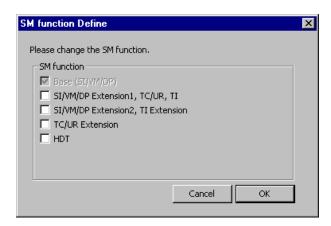


(7) <Cache Configuration screen>Select (CL) [SM function] in the 'Cache Configuration' screen.Go to Step (7)-1.

Make sure that the all input items are correct and select (CL) [OK]. Go back to Step (6).



(7)-1 <SM function Define screen>
Set the SM function in the 'SM function
Define' screen, select (CL) [OK].
Go back to Step (7).



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## INST03-12-40

(8) <Start installation> Select (CL) [Yes] in response to following message.

"This operation will block the CHBs of Cluster-1 and Cluster-2 alternately. Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST connected to this CHBs. Do you want to continue processing?"

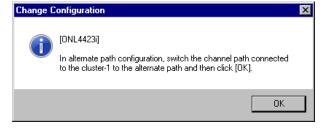


(9) <Start installation> Select (CL) [Yes] in response to "Are you sure you want to renew storage system?". When [No] is selected (CL), returns to INST03-12-20 step (3).



Select (CL) [OK] in response to "In alternate path configuration, switch the

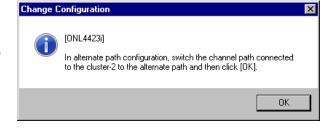
channel path connected to the cluster-1 to the alternate path and then click [OK].".



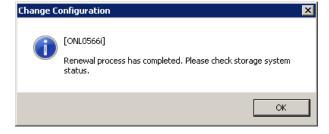
(11)

(10)

Select (CL) [OK] in response to "In alternate path configuration, switch the channel path connected to the cluster-2 to the alternate path and then click [OK].".



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



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#### INST03-12-50

(13)

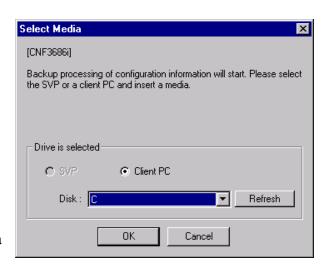
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

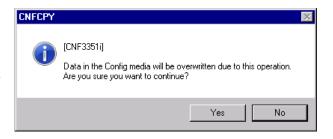
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(14)

If the configuration information is not saved in the selected media, go to step (15).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select



(CL) the [Yes] button. When the backup to the Config media is not necessary, select (CL) the [No] button and go to step (16).

(15)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, select (CL) [OK].



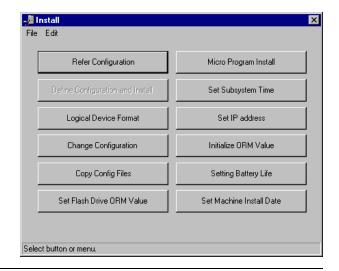
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## INST03-12-60

(16)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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(17) < Mode Change>

Change the mode to View Mode.

(18) < Path online >

Set the stopped channel path online by your customer.

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

## INST04-01-10

## 4. Hardware De-Installation

# 4.1 De-Installation of Disk Blade, SAS Cable and Drive (DW-F700-BS6G/BS6GE/SC1, DF-F850-SC3/SC5/3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)

Table 4.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DW-F700-BS6G	DKB	3285154-A	1	
2	DW-F700-BS6GE	DKB	3284394-N	1	
3	DW-F700-SC1	SAS cable (1m)	3285194-A	1	
4	DF-F850-SC3	SAS cable (3m)	3285194-B	1	
		Cable Label	3282126-1	2	Not used
		Cable Label	3282126-2	2	Not used
		How to use labels stuck on SAS cable of DF-F850-DBX	3285256-1	1	Not used
5	DF-F850-SC5	SAS cable (5m)	3285194-C	1	
		Cable Label	3282126-1	2	Not used
		Cable Label	3282126-2	2	Not used
		How to use labels stuck on SAS cable of DF-F850- DBX	3285256-1	1	Not used
6	DF-F850-3HGSSH	SFF Drive (300GB/15k/6Gbps/SAS-HDD)	3285276-A	1	For DBS
7	DF-F850-6HGSS	SFF Drive (600GB/10k/6Gbps/SAS-HDD)	3282390-A	1	For DBS
8	DF-F850-9HGSS	SFF Drive (900GB/10k/6Gbps/SAS-HDD)	3282390-D	1	For DBS
9	DF-F850-12HGSS	SFF Drive (1.2TB/10k/6Gbps/SAS-HDD)	3282390-Е	1	For DBS
10	DF-F850-2HGDM	SFF Drive (200GB/6Gbps/MLC-SSD)	3285262-A	1	For DBS
11	DF-F850-4HGDM	SFF Drive (400GB/6Gbps/MLC-SSD)	3285262-B	1	For DBS
12	DF-F850-8HGDM	SFF Drive (800GB/6Gbps/MLC-SSD)	3285262-C	1	For DBS
13	DF-F850-3TNL	LFF Drive (3TB/7.2k/ 6Gbps/SAS-HDD)	3285067-В	1	For DBL
14	DF-F850-4TNL	LFF Drive (4TB/7.2k/ 6Gbps/SAS-HDD)	3285067-C	1	For DBL
15	DF-F850-3TNX	LFF Drive (3TB/7.2k/ 6Gbps/SAS-HDD)	3285134-B	1	For DBX
16	DF-F850-4TNX	LFF Drive (4TB/7.2k/ 6Gbps/SAS-HDD)	3285134-C	1	For DBX

(To be continued)

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## INST04-01-20

(Continued from the preceding page)

No.	Model Number	Part Name	Part No.	Quantity	Remarks
17	DKC-F710I-1R6FM	Drive (1.6TB/6Gbps/ MLC-SSD)	3286549-A	1	For DBF
18	DKC-F710I-3R2FM	Drive (3.2TB/6Gbps/ MLC-SSD)	3286550-A	1	For DBF

Table 4.1-2 Working time

		Total (minutes)
DKB	Removal	10

NOTE: In the case of DBL/DBS/DBF, for DKB installation / removal, additional 24 minutes is necessary to newly route cable(s) between drives.

In the case of DBX, for DKB installation / removal, additional 60 minutes is necessary to newly route cable(s) between drives.

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INST04-01-30

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## 4.1.1 Flowchart

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

Case	Option De-Installation Procedure	Page
1	When performing removal of the data/spare Drive (DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)	INST04-01-40
2	When performing removal of the DKB (DW-F700-BS6G/BS6GE)	INST04-01-40
3	When performing removal of the data/spare Drive, DKB and SAS cable that accompanies the removal of the Drive Box (DW-F700-BS6G/BS6GE/SC1, DF-F850-SC3/SC5/3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)	INST04-01-50

3. SVP post procedure

② When performing removal of the DKB ------[INST04-01B-10 through 110]

1. Setting up the New Device Structure Information

2. De-Installation Procedure of Drive



2 SVD nost procedure

3. SVP post procedure

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## INST04-01-50

③ When performing removal of the data/spare drive, DKB and SAS cable that accompanies the removal of the Drive Box

-----[INST04-01C-10 through 420]

1. SAS Cable connection check



2. Setting up the New Device Structure Information



3. De-Installation Procedure of Drive



4. De-Installation Procedure of Backend I/O Module (DW-F700-BS6G/BS6GE)



5. De-Installation Procedure of SAS Cable (DW-F700-SC1, DF-F850-SC3/SC5)



6. SVP post procedure

INST04-01A-10

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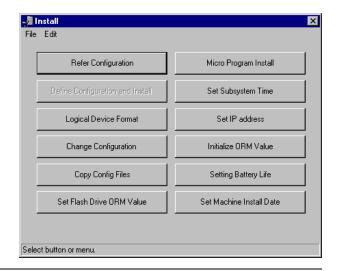
Rev.5 / Sep.2013, Oct.2013

## 4.1.2 When performing removal of the data/spare Drive (DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/

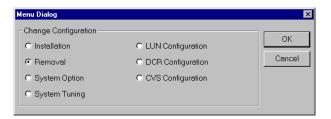
1. Setting up the New Device Structure Information

3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)

- (1) <Mode Change> Change the mode to Modify Mode. Select (CL) [Install].
- (2) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



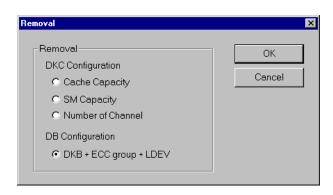
(3) <Start Device Structure Setup screen> Select (CL) [Removal] in the 'Menu Dialog' dialog box and select (CL) [OK].



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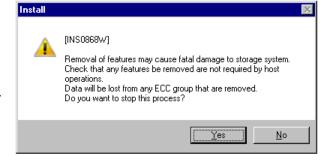
## INST04-01A-20

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



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(5)
Select (CL) [No] in response to "Removal of features may cause fatal damage to storage system. Check that any features be removed 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].



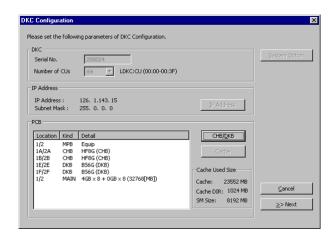
## **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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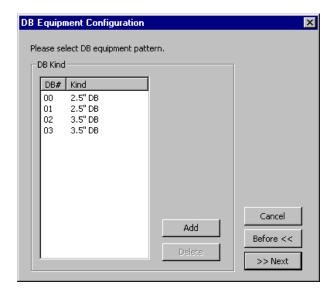
## INST04-01A-30

(7) <Updating the configuration information> Select (CL) the [>>Next] in the 'DKC Configuration' window. Go to Step (8).



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(8) <Setting the DB frame>
Select (CL) the [>>Next] in the 'DB
Equipment Configuration' window.
Go to Step (9).



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## INST04-01A-40

(9) <Changing the drive configuration information> Define the drive configuration according to the 'Physical Drive Configuration' window.

The detailed procedure is explained below.

[Detail...]: Defines a parity group or a spare disk. The routine goes to Step (9)-1.

[Clear]: Clears the setting of the DB.

After all the settings are made, select (CL) the [>>Next].

Go to Step (10).

When the [Before<<] is selected (CL), the window is returned to Step (8).

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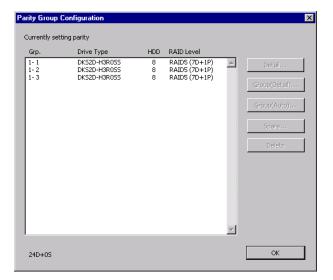
## (9)-1 < Defining the parity group>

Select (CL) the group to be removed or spare disk, and then select (CL) the [Delete] in the 'Parity Group Configuration' dialog box.

After the setting is made, select (CL) the [OK]. The routine is returned to Step (9).

Grp.: A parity group for which the RAID

Grp.: A parity group for which the RAID concatenation is set.

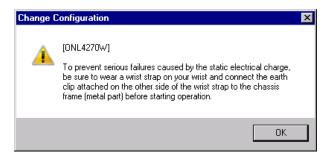


Rev.0 / Jul.2012

## INST04-01A-50

## (10) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



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## (10)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When the [No] is selected, go to Step (10)-2.



## (10)-2

In response to a message, "This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (2) on page INST04-01A-10.

When [No] is selected (CL), returned to Step (10).



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## INST04-01A-60

## (11) <Starting the removal>

In response to a message, "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not remove the components when downgrading the system at this time." select (CL) [Yes].

When the [No] is selected, the routine is returned to Step (2) on page INST04-01A-10.



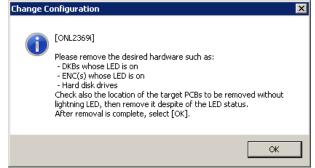
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## (12) < Removing the hardware>

Do not push the [OK] button at this time yet. A message, "Please remove the desired hardware such as:

- DKBs whose LED is on
- ENC(s) whose LED is on
- Hard disk drives

Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status. After removal is complete, select [OK]." is displayed.



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Rev.0 / Jul.2012

INST04-01A-70

Blank Sheet

#### INST04-01A-80

- 2. De-Installation Procedure of Drive
- 2-1 Confirmation of position to de-install drive

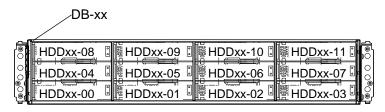
# In the case of DBL

a. Make sure of the location where the drive is to be removed.

Table 4.1.2-1 Drive Model Number List (DBL)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNL/4TNL	LFF Disk Drive	

**Drive Location** 



Front View of DBL

\*1: HDDxx-02 DB No. (0, 1, 2, ..., 47)

Fig. 4.1.2-1 Drive Location (In the case of DBL)

#### INST04-01A-81

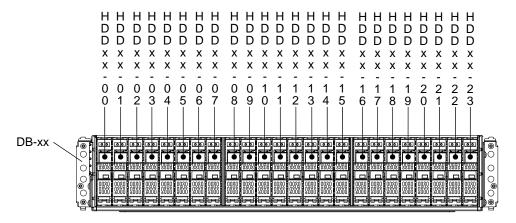
# In the case of DBS

a. Make sure of the location where the drive is to be removed.

Table 4.1.2-2 Drive Model Number List (DBS)

No.	Model Number	Model Name	Remarks
1	DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS	SFF Disk Drive	
2	DF-F850-2HGDM/4HGDM/8HGDM	SFF SSD Drive	

#### **Drive Location**



Front View of DBS

Fig. 4.1.2-2 Drive Location (In the case of DBS)

Rev.2 / Nov.2012, Jun.2013

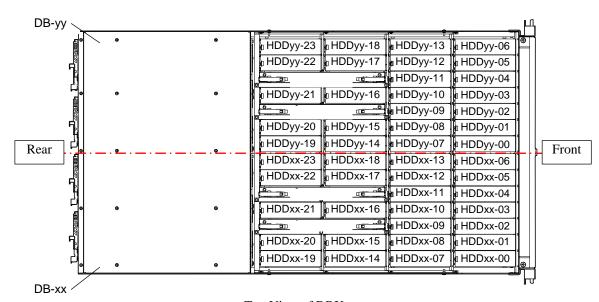
# In the case of DBX

a. Make sure of the location where the drive is to be removed.

Table 4.1.2-3 Drive Model Number List (DBX)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNX/4TNX	LFF Disk Drive	

### Drive Location



Top View of DBX

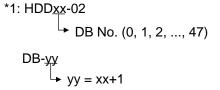


Fig. 4.1.2-3 Drive Location (In the case of DBX)

#### INST04-01A-91

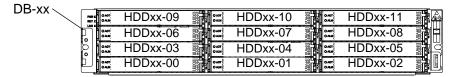
# In the case of DBF

a. Make sure of the location where the drive is to be removed.

Table 4.1.2-4 Drive Model Number List (DBF)

No.	Model Number	Model Name	Remarks
1	DKC-F710I-1R6FM/3R2FM	Flash Module Drive	FMD

# **Drive Location**



Front View of DBF

Fig. 4.1.2-3A Drive Location (In the case of DBF)

#### INST04-01A-100

#### 2-2 Check the Shut Down LED

# In the case of DBL

a. Check that the Shut Down LED on drive is turned on.

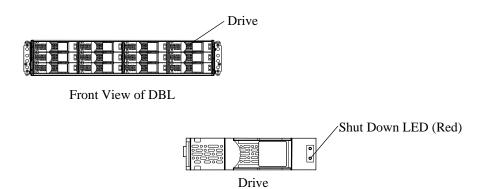


Fig. 4.1.2-4 Checking of Shut Down LED (for DBL)

# In the case of DBS

a. Check that the Shut Down LED on drive is turned on.

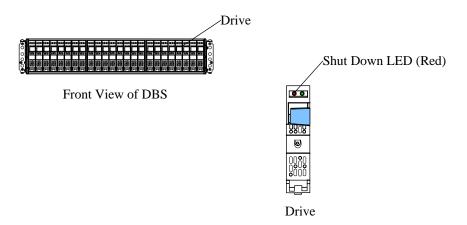


Fig. 4.1.2-5 Checking of Shut Down LED (for DBS)

#### INST04-01A-101

# In the case of DBX

- a. Draw the DBX. (See INST03-01-60.)
- b. Check that the Shut Down LED on drive is turned on.

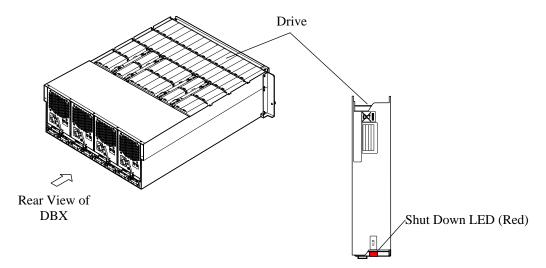
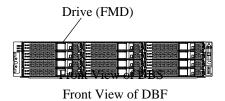


Fig. 4.1.2-6 Checking of Shut Down LED (for DBX)

# In the case of DBF

a. Check that the Shut Down LED on drive is turned on.



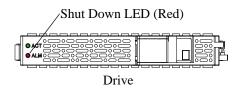


Fig. 4.1.2-6A Checking of Shut Down LED (for DBF)

#### INST04-01A-110

#### 2-3 Remove the drive

**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.

**NOTICE:** Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

# **Drive for DBL**

- a. Pull the stopper of the drive handle toward you to have the lock off.
- b. Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

c. Insert the dummy (drive) to the drive box.

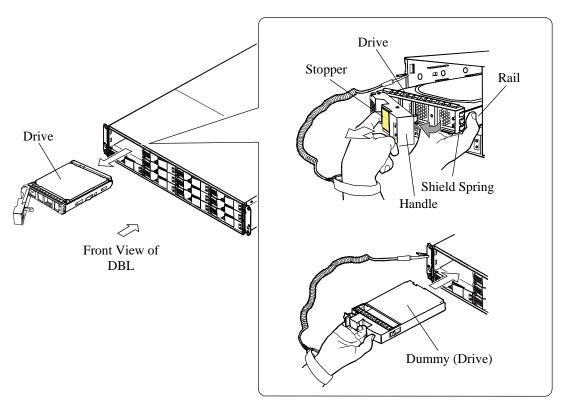


Fig. 4.1.2-7 Removal of Drive (for DBL)

# **Drive for DBS**

- a. Pull up the stopper of the drive handle toward you to release the lock.
- b. Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.
- c. Insert the dummy (drive) to the drive box.

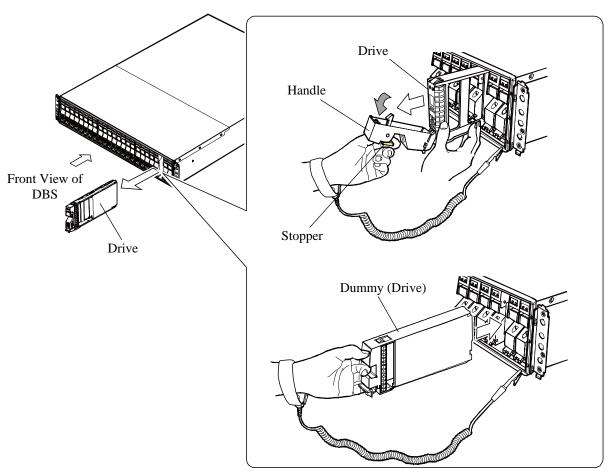


Fig. 4.1.2-8 Removal of Drive (for DBS)

# INST04-01A-120

# **Drive for DBX**

- a. Slide the latch (blue) on the drive and open the handle.
- b. Pull out and remove the drive to be replaced taking care not to apply a shock to it.
- c. Insert the dummy (drive) to the drive box.
- d. Reinstall the DBX. (See INST03-01-80.)

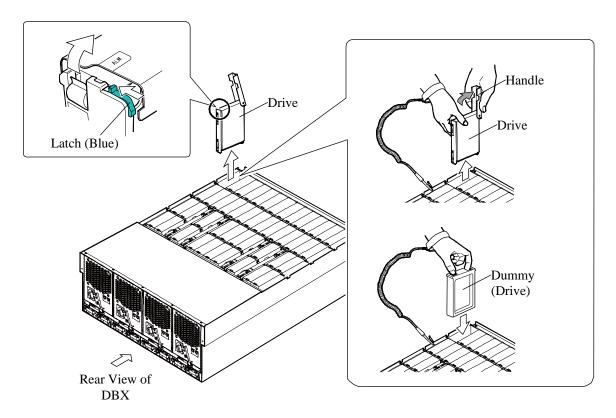


Fig. 4.1.2-9 Removal of Drive (for DBX)

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INST04-01A-121

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#### Drive for DBF

**NOTICE:** Just after the FMD is removed, the fans of the DBPS equipped in the rear of the DBF rotate at the highest speed. In 30 minutes after the removal of the FMD, the fans of the DBPS rotate at the speed suitable for environmental temperature.

- a. Pull the stopper of the drive handle toward you to have the lock off.
- b. Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

c. Install the dummy FMD into de-installation position of a drive.

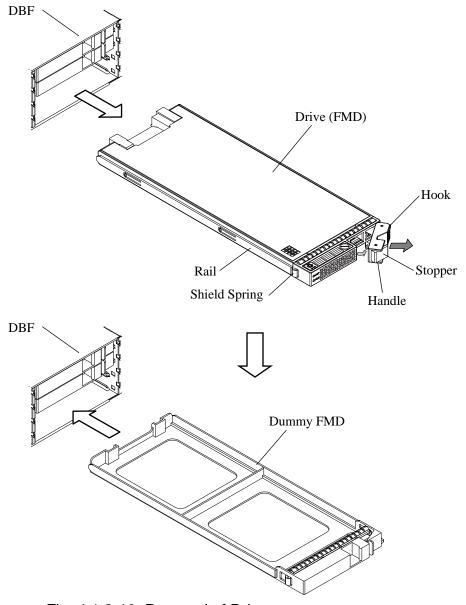


Fig. 4.1.2-10 Removal of Drive

Rev.0 / Jul.2012

#### INST04-01A-130

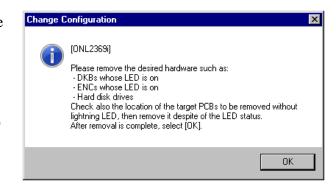
# 3. SVP post procedure

(1)

In response to a message, "Please remove the desired hardware such as:

- DKBs whose LED is on
- ENCs whose LED is on
- Hard disk drives

Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status. After removal is complete, select [OK].", select (CL) [OK].



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#### INST04-01A-140

(2) <Making sure of completion of the removal>
A message, "Renewal process has completed.
Please check storage system status." is
displayed. In response to the message, select
(CL) [OK].



(3)

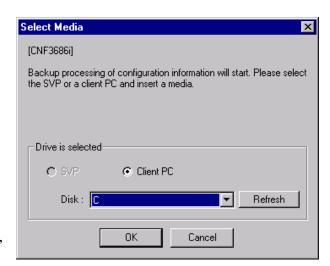
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(4)

If the configuration information is not saved in the selected media, go to step (5). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (6).

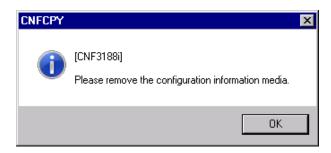
Rev.1 / Jul.2012, Feb.2013

#### INST04-01A-150

(5)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

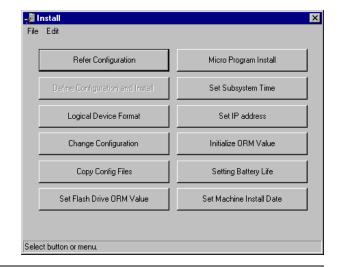
Remove the configuration information media, select (CL) [OK].



(6)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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

Return to the work table (INST02-60) and perform rest of the works.

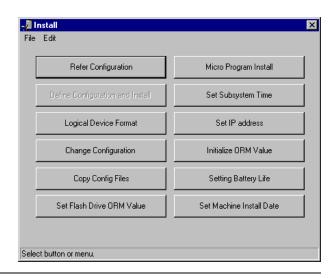
Rev.2 / Feb.2013, Sep.2013

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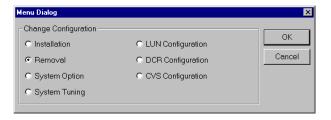
# INST04-01B-10

# 4.1.3 When performing removal of the DKB (DW-F700-BS6G/BS6GE)

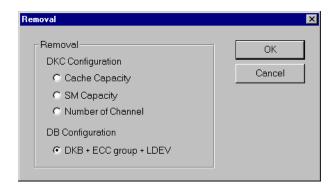
- 1. Setting up the New Device Structure Information
- (1) <Mode Change>Change the mode to Modify Mode.Select (CL) [Install].
- (2) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



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



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



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INST04-01B-20

(5)

Select (CL) [No] in response to "Removal of features may cause fatal damage to storage system. Check that any features be removed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



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(6) <Input password>Enter the password and select (CL) [OK].



# **A** CAUTION

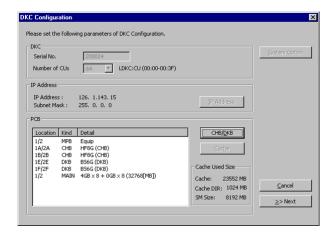
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(7) <Update Configuration Information> Select (CL) [CHB/DKB] in the 'DKC Configuration' window. Go to Step (8).

After confirming input items, select (CL) the [>>Next] button.

Go to Step (9).

In the case of selecting (CL) [Cancel], this operation procedure terminates.

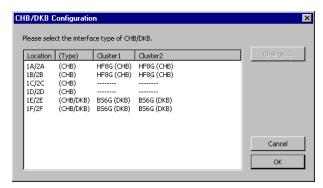


#### INST04-01B-30

(8) <Setting DKB>

In the 'CHB/DKB Configuration' window, select the location(s) where the DKB is to be removed from and select (CL) the [Change...]. Advances the routine to Step (8)-1. After setting it, select (CL) the [OK] button. Go back to Step (7).

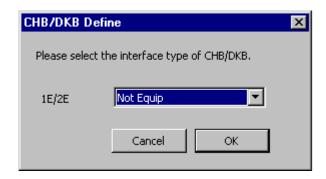
Refer to INST01-50 for the SVP screen display and the conversion of the option type names.



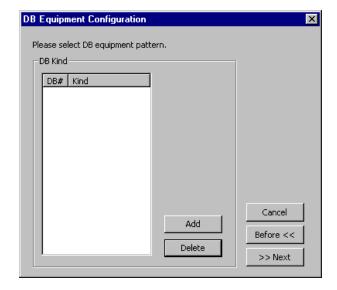
(8)-1 <Set the DKB type>

In the 'CHB/DKB Define' window, select the [Not Equip]. After the setting is completed, select (CL) the [OK].

The routine is returned to Step (8).



(9) <DB Equipment Configuration window> Select (CL) [>>Next] in the 'DB Equipment Configuration' window. Go to Step (10).

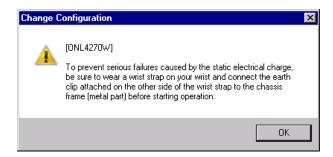


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#### INST04-01B-40

# (10) < Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



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# (10)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When the [No] is selected, go to Step (10)-2.



#### (10)-2

In response to a message, "This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (2) on page INST04-01B-10.

When [No] is selected (CL), returned to Step (10).



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#### INST04-01B-50

# (11) <Starting the removal>

In response to a message, "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not remove the components when downgrading the system at this time." select (CL) [Yes].

When the [No] is selected, the routine is returned to Step (2) on page INST04-01B-10.



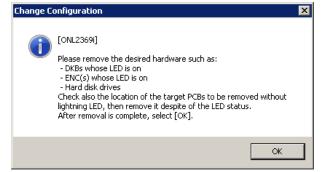
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### (12) < Removing the hardware>

Do not push the [OK] button at this time yet. A message, "Please remove the desired hardware such as:

- DKBs whose LED is on
- ENC(s) whose LED is on
- Hard disk drives

Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status. After removal is complete, select [OK]." is displayed.



#### INST04-01B-60

#### 2. De-Installation Procedure of Backend I/O Module

**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.

# 2-1 Confirmation of the Shut Down LED

a. Check the Shut Down LED on the DKB is turned on.

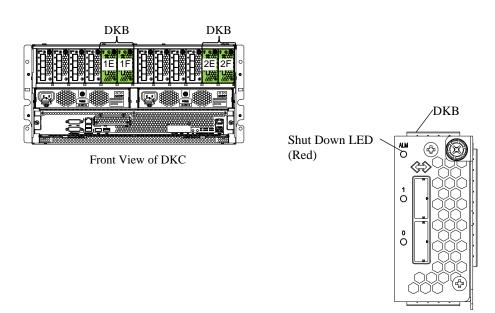


Fig. 4.1.3-1 Location of the Shut Down LED

Table 4.1.3-1 DKB Location List

Addition	Slot No.		Location No.		Remarks
No.	Cluster 1	Cluster 2	Cluster 1	Cluster 2	
Basic	1E	2E	DKB-1E	DKB-2E	
Option 1	1F	2F	DKB-1F	DKB-2F	

# 2-2 Disconnection of cables

# In the case of Basic

a. Disconnect the cables from the DKBs.

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

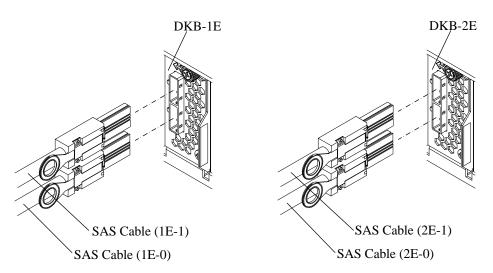


Fig.4.1.3-2 Disconnection of Cables (Basic)

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# In the case of Option 1

a. Disconnect the cables from the DKBs.

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

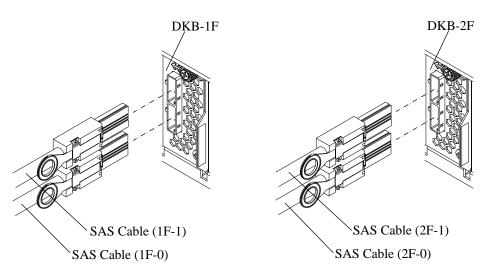


Fig.4.1.3-3 Disconnection of Cables (Option 1)

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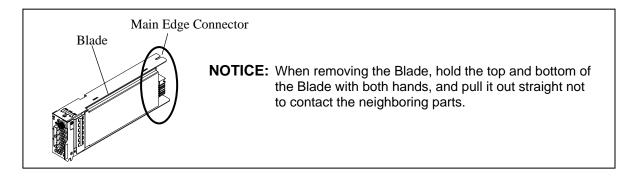
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#### INST04-01B-90

#### 2-3 Removal of the DKBs

Remove one DKB from one slot at a time.

- a. Loosen the screw that fastens the DKB and let the handle fall down.
- b. Push down the handle and remove the DKB.
- c. Insert the dummy cover until the claw on the lower part of the handle of the dummy cover reaches the front of the DKC.
- d. Push up the handle and fully insert the dummy cover.
- e. Tighten the screw and fasten the dummy cover.
- f. Repeat the procedures a to e each time you remove a DKB.



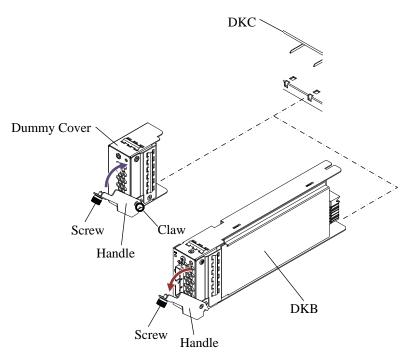


Fig. 4.1.3-4 Removal of DKB

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#### INST04-01B-100

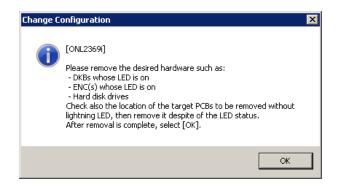
# 3. SVP post procedure

(1)

In response to a message, "Please remove the desired hardware such as:

- DKBs whose LED is on
- ENC(s) whose LED is on
- Hard disk drives

Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status. After removal is complete, select [OK].", select (CL) [OK].



(2) <Making sure of completion of the removal>
A message, "Renewal process has completed.
Please check storage system status." is
displayed. In response to the message, select
(CL) [OK].



(3)

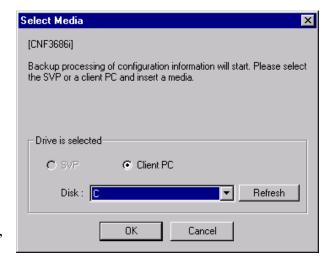
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.

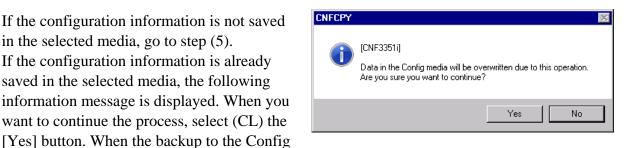


#### INST04-01B-110

(4)

If the configuration information is not saved in the selected media, go to step (5). If the configuration information is already saved in the selected media, the following information message is displayed. When you

want to continue the process, select (CL) the



media is not necessary, select (CL) the [No] button and go to step (6).

(5)

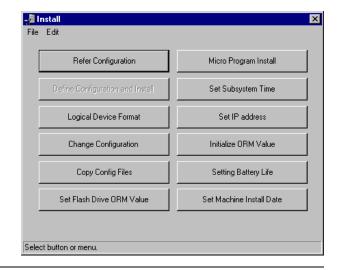
When this procedure is completed, the message "Please remove the configuration information media." is displayed. Remove the configuration information media, select (CL) [OK].



(6)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



(7) <Mode Change>

Change the mode to View Mode.

Return to the work table (INST02-60) and perform rest of the works.

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#### INST04-01C-10

4.1.4 When performing removal of the data/spare Drive, DKB and SAS Cable that accompanies the removal of the Drive Box

(DW-F700-BS6G/BS6GE/SC1, DF-F850-SC3/SC5/3HGSSH/6HGSS/9HGSS/12HGSS/2HGDM/4HGDM/8HGDM/3TNL/4TNL/3TNX/4TNX, DKC-F710I-1R6FM/3R2FM)

#### 4.1.4.1 SAS Cable connection check

1. SAS Cable connection

Each cluster has four paths for connection between the DKB and the Drive Box (DB), as shown below (① to ④).

The connections are not subject to change depending on the type of DB.

```
① DKB-1E/2E port 0 \to DB-00 \to DB-04 \to DB-08 \to \to DB-36 \to DB-40 \to DB-44
② DKB-1E/2E port 1 \to DB-01 \to DB-05 \to DB-09 \to \to DB-37 \to DB-41 \to DB-45
③ DKB-1F/2F port 0 \to DB-02 \to DB-06 \to DB-10 \to \to DB-38 \to DB-42 \to DB-46
④ DKB-1F/2F port 1 \to DB-03 \to DB-07 \to DB-11 \to \to DB-39 \to DB-43 \to DB-47
```

The following example shows a SAS Cable connection that starts from the DKB-1E port 0 in the cluster 1.

# [Example]

```
1E-0(DKB) \rightarrow ENC00-1(IN), ENC00-1(OUT) \rightarrow ENC04-1(IN), ENC04-1(OUT) \rightarrow ENC08-1(IN), ENC04-1(OUT) \rightarrow ENC12-1(IN), ENC12-1(OUT) \rightarrow ENC16-1(IN), ENC12-1(OUT) \rightarrow ENC20-1(IN), ENC20-1(OUT) \rightarrow ENC24-1(IN), ENC24-1(OUT) \rightarrow ENC28-1(IN), ENC28-1(OUT) \rightarrow ENC32-1(IN), ENC32-1(OUT) \rightarrow ENC36-1(IN), ENC36-1(OUT) \rightarrow ENC40-1(IN), ENC36-1(OUT) \rightarrow ENC44-1(IN)
```

The SAS Cable drawn from the DKB-1E port 0 is connected to the DB-00[ENC00-1(IN)]. Then the SAS Cable drawn from the DB-00[ENC00-1(OUT)] is connected to the DB-04[ENC04-1(IN)] that is four boxes away. Then the SAS Cable drawn from the DB-04[ENC04-1(OUT)] is connected to the DB-08[ENC08-1(IN)] that is four boxes away. To connect cables, these procedures shall be repeated. (See Fig. 4.1.4.1-1 to Fig. 4.1.4.1-11.)

Rev.2 / Nov.2012, Feb.2013

# DKB to DB-00/01/02/03

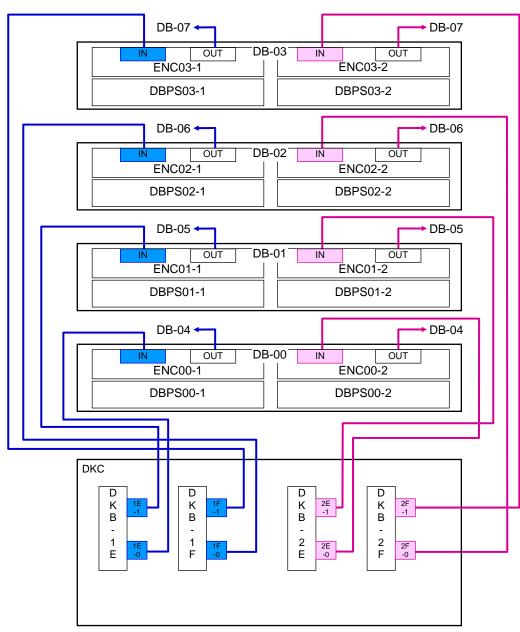


Fig. 4.1.4.1-1 Cable Connection between DKB and DB-00/01/02/03 (in Case of DBL/DBS/DBF)

Rev.3 / Nov.2012, Feb.2013

# DB-00/01/02/03 to DB-04/05/06/07

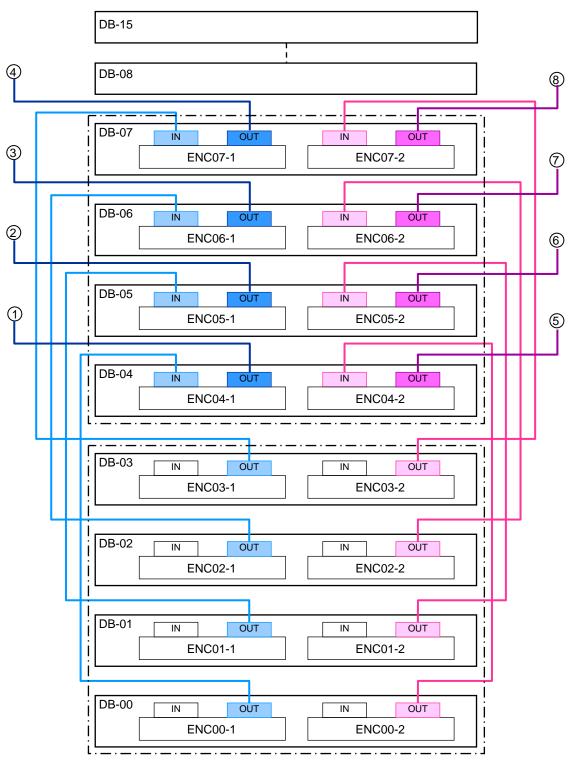


Fig. 4.1.4.1-2 Cable Connection between DB-00/01/02/03 and DB-04/05/06/07 (in Case of DBL/DBS/DBF)

# DB-08/09/10/11 to DB-12/13/14/15

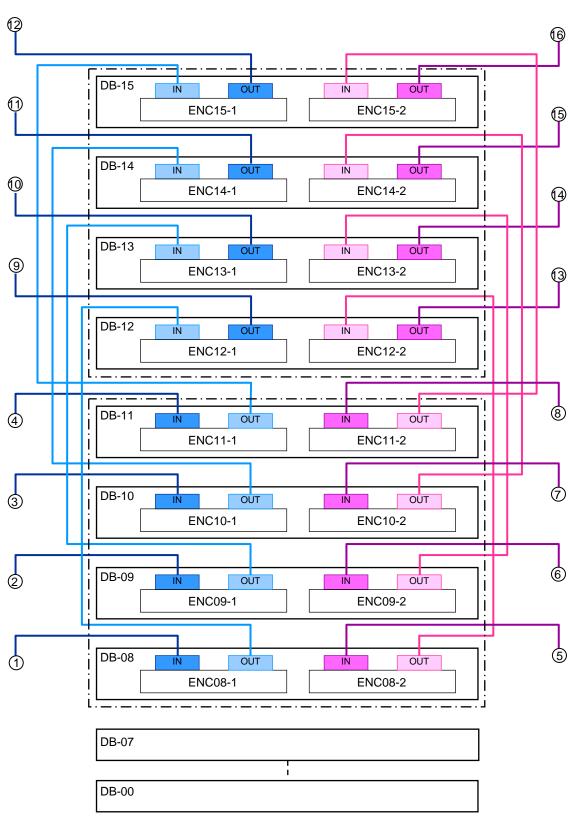


Fig. 4.1.4.1-3 Cable Connection between DB-08/09/10/11 and DB-12/13/14/15 (in Case of DBL/DBS/DBF)

Rev.2 / Nov.2012, Feb.2013

#### DB-16/17/18/19 to DB-20/21/22/23

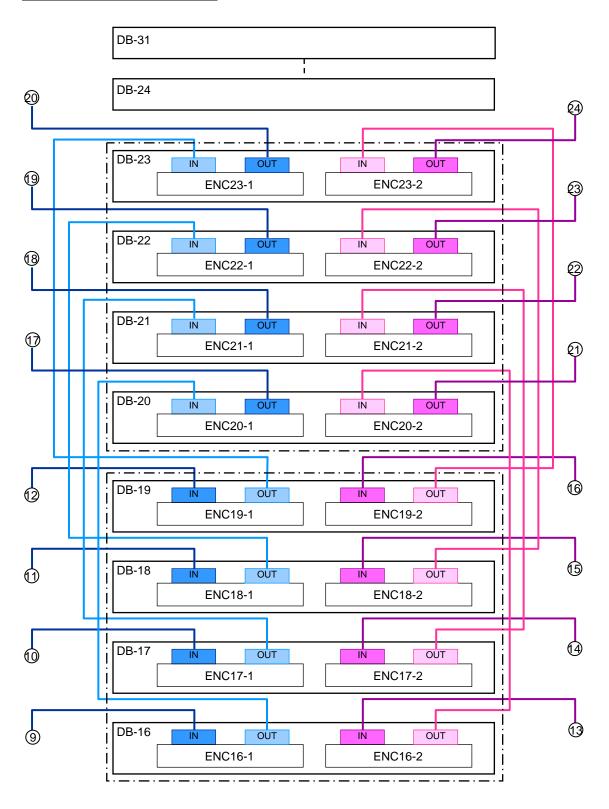


Fig. 4.1.4.1-4 Cable Connection between DB-16/17/18/19 and DB-20/21/22/23 (in Case of DBL/DBS/DBF)

# DB-24/25/26/27 to DB-28/29/30/31

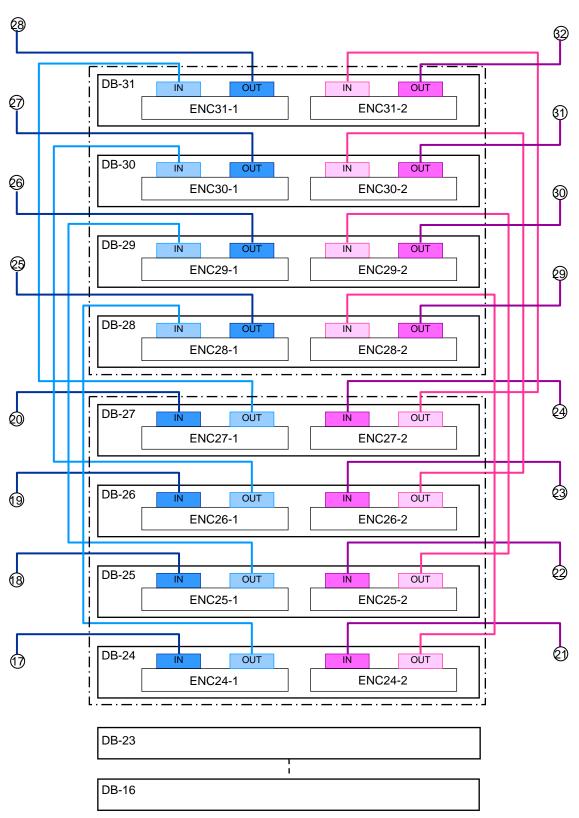


Fig. 4.1.4.1-5 Cable Connection between DB-24/25/26/27 and DB-28/29/30/31 (in Case of DBL/DBS/DBF)

Rev.2 / Nov.2012, Feb.2013

#### DB-32/33/34/35 to DB-36/37/38/39

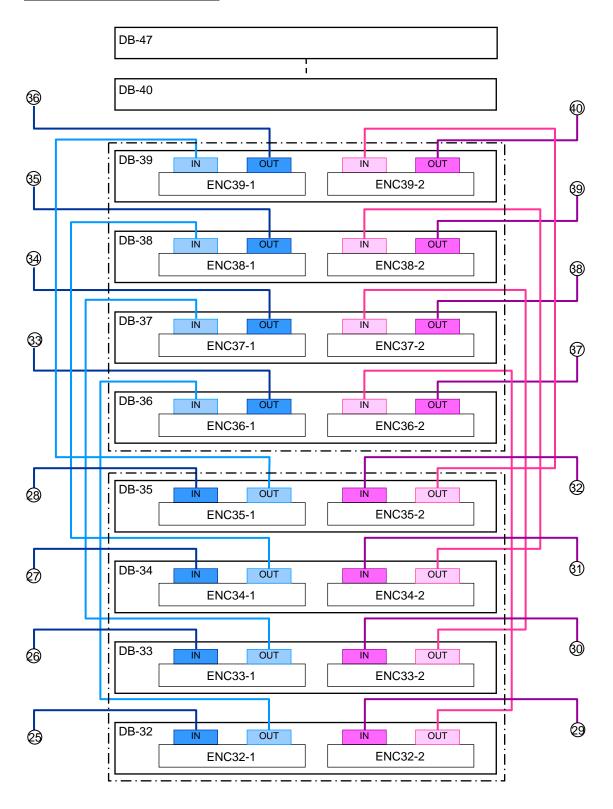


Fig. 4.1.4.1-6 Cable Connection between DB-32/33/34/35 and DB-36/37/38/39 (in Case of DBL/DBS/DBF)

Rev.2 / Nov.2012, Feb.2013

# DB-40/41/42/43 to DB-44/45/46/47

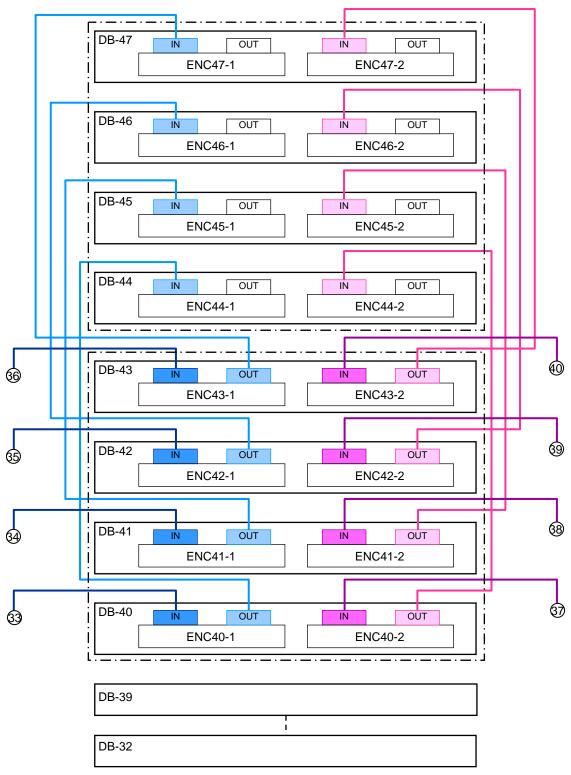


Fig. 4.1.4.1-7 Cable Connection between DB-40/41/42/43 and DB-44/45/46/47 (in Case of DBL/DBS/DBF)

#### DKB to DB-00/0/02/03

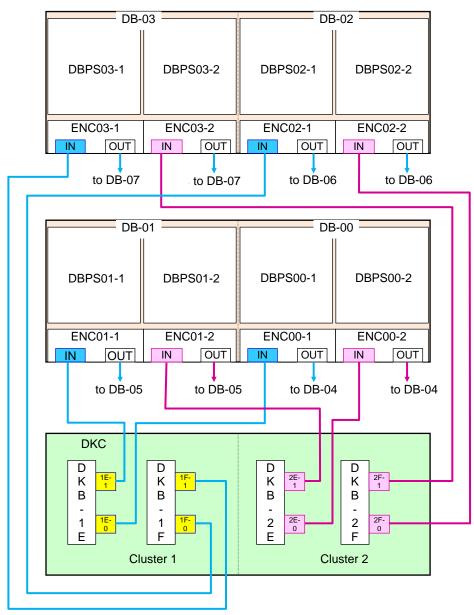


Fig. 4.1.4.1-8 Cable Connection between DKB and DB-00/01/02/03 (in Case of DBX)

#### INST04-01C-50

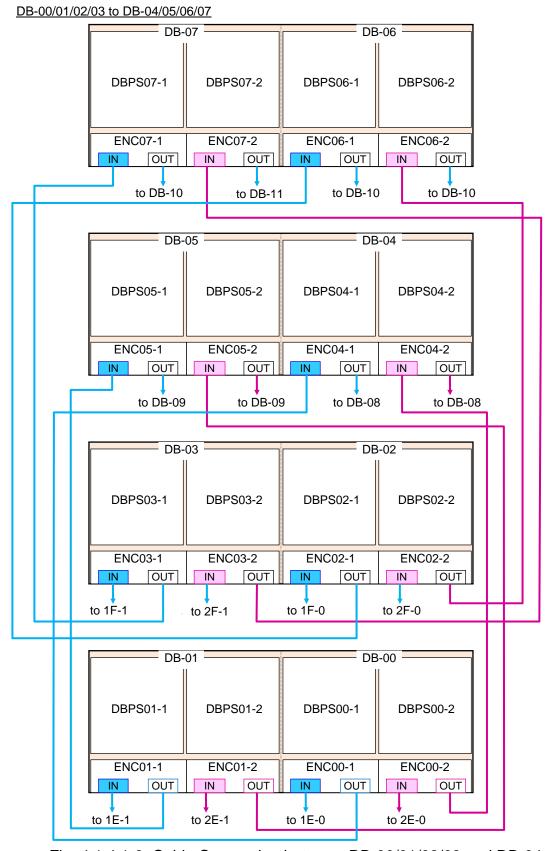


Fig. 4.1.4.1-9 Cable Connection between DB-00/01/02/03 and DB-04/05/06/07 (in Case of DBX)

Rev.2 / Nov.2012, Feb.2013

#### DKB to DB-00/01/02/03/04/05/06/07

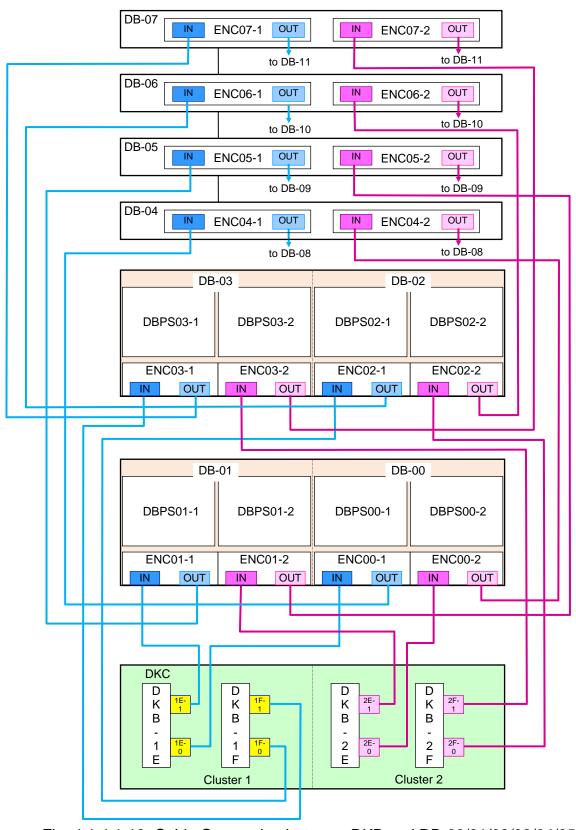


Fig. 4.1.4.1-10 Cable Connection between DKB and DB-00/01/02/03/04/05/06/07 (in Case of DKB - DBX - DBL/DBS/DBF)

#### DKB to DB-00/01/02/03/04/05/06/07

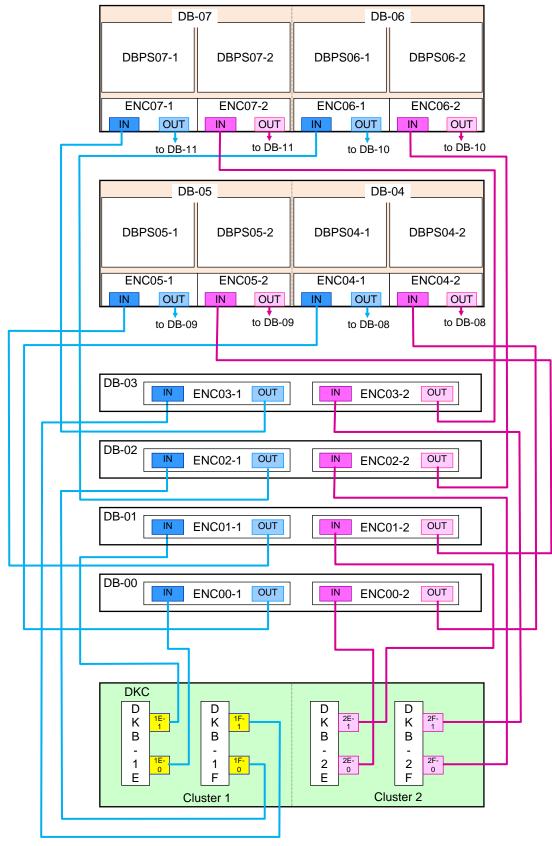
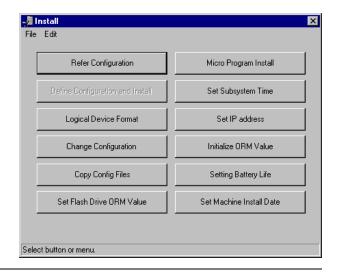


Fig. 4.1.4.1-11 Cable Connection between DKB and DB-00/01/02/03/04/05/06/07 (in Case of DKB - DBL/DBS/DBF - DBX)

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# INST04-01C-60

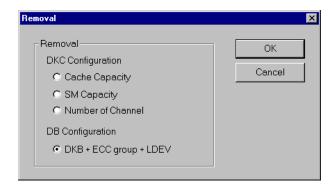
- 4.1.4.2 Setting up the New Device Structure Information
  - (1) <Mode Change>
     Change the mode to Modify Mode.
     Select (CL) [Install].
  - (2) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



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



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



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#### INST04-01C-70

(5)

Select (CL) [No] in response to "Removal of features may cause fatal damage to storage system. Check that any features be removed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



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(6) <Input password>Enter a password and select (CL) the [OK].

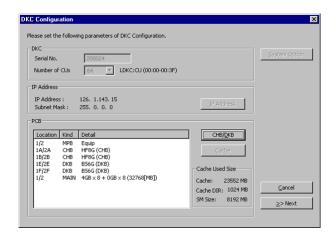


# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(7) <Updating the configuration information> In the 'DKC Configuration' window, select (CL) the [CHB/DKB]. Go to step (8).

After the setting is made, select (CL) the [>>Next]. Go to step (9).



CHB/DKB Configurat

Location (Type)

(CHB)

(CHB)

(CHB)

1A/2A

1B/2B

1C/2C 1D/2D

1E/2E 1F/2F Cluster1 Cluster2

(CHB/DKB) B56G (DKB) B56G (DKB) (CHB/DKB) B56G (DKB) B56G (DKB)

HF8G (CHB) HF8G (CHB)

HF8G (CHB) HF8G (CHB)

Cancel

#### INST04-01C-80

(8) <Setting the DKB>

In the 'CHB/DKB Configuration' window, select the location(s) where the DKB is to be removed from and select (CL) the [Change...]. Advances the routine to step (8)-1.

After the setting is completed, select (CL) [OK].

The routine is returned to step (7).

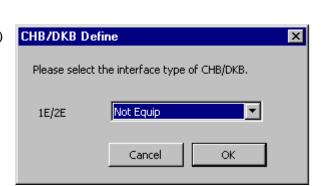
Refer to INST01-50 for the SVP screen display and the conversion of the option type names.

# (8)-1 <Select the DKB type>

In the 'CHB/DKB Define' window, select (CL) the [Not Equip].

After the setting is completed, select (CL) the [OK].

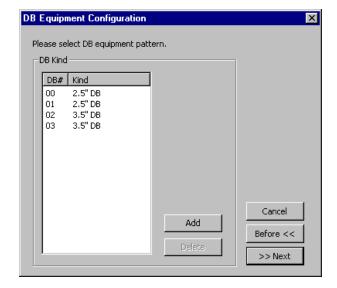
The routine is returned to step (8).



# (9) <Setting the DB frame>

Select the DB equipment of the smallest DB number to remove in the 'DB Equipment Configuration' window, and select(CL) the [Delete]. Go to step (9)-1.

After the setting is made, select (CL) the [>>Next]. Go to step (10).



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#### INST04-01C-90

(9)-1

In response to a message, "The DB# (nn) that you selected and all the later implementation information are also deleted.

Do you want to continue this process?". Select (CL) the [Yes] when you want to continue this process.

Select (CL) the [No] when you want to stop this process.

The routine is returned to step (9).



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(10) < Changing the drive configuration information > Define the drive configuration according to the 'Physical Drive Configuration' window.

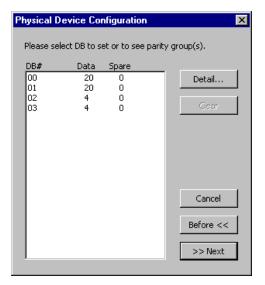
The detailed procedure is explained below.

[Detail...]: Defines a parity group or a spare disk. The routine goes to step (10)-1.

[Clear]: Clears the setting of the DB.

After all the settings are made, select (CL) the [>>Next]. Go to step (11).

When the [Before<<] is selected (CL), the window is returned to step (9).



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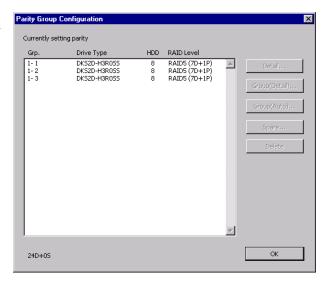
#### INST04-01C-100

# (10)-1 < Defining the parity group>

Select (CL) the group to be removed, and then select (CL) the [Delete] in the 'Parity Group Configuration' dialog box.

After the setting is made, select (CL) the [OK]. The routine is returned to step (10).

Grp.: A parity group for which the RAID concatenation is set.



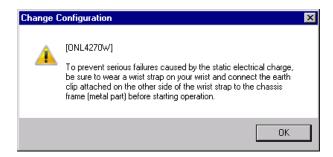
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#### INST04-01C-110

# (11) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



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# (11)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When the [No] is selected, go to Step (11)-2.



#### (11)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (2) on page INST04-01C-60.

When [No] is selected (CL), returned to Step (11).



#### INST04-01C-120

### (12) <Starting the removal>

In response to a message, "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not remove the components when downgrading the system at this time." select (CL) [Yes].

When the [No] is selected, the routine is returned to Step (2) on page INST04-01C-60.



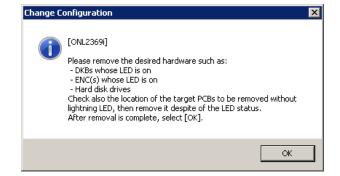
### (13) < Removing the hardware>

Do not push the [OK] button at this time yet. A message, "Please remove the desired hardware such as:

- DKBs whose LED is on
- ENC(s) whose LED is on
- Hard disk drives

Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status.

After removal is complete, select [OK]." is displayed.



## 4.1.4.3 De-Installation Procedure of Drive

1. Confirmation of position to de-install drive

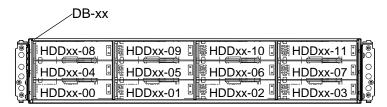
# In the case of DBL

a. Make sure of the location where the drive is to be removed.

Table 4.1.4.3-1 Drive Model Number List (DBL)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNL/4TNL	LFF Disk Drive	

Drive Location



Front View of DBL

\*1: HDDxx-02 DB No. (0, 1, 2, ..., 47)

Fig. 4.1.4.3-1 Drive Location (In the case of DBL)

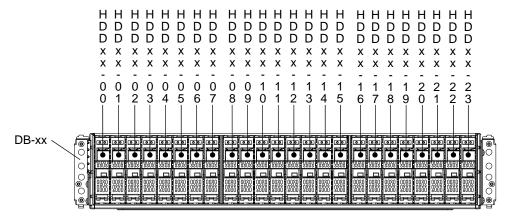
### In the case of DBS

a. Make sure of the location where the drive is to be removed.

Table 4.1.4.3-2 Drive Model Number List (DBS)

No.	Model Number	Model Name	Remarks
1	DF-F850-3HGSSH/6HGSS/9HGSS/12HGSS	SFF Disk Drive	
2	DF-F850-2HGDM/4HGDM/8HGDM	SFF SSD Drive	

**Drive Location** 



Front View of DBS

Fig. 4.1.4.3-2 Drive Location (In the case of DBS)

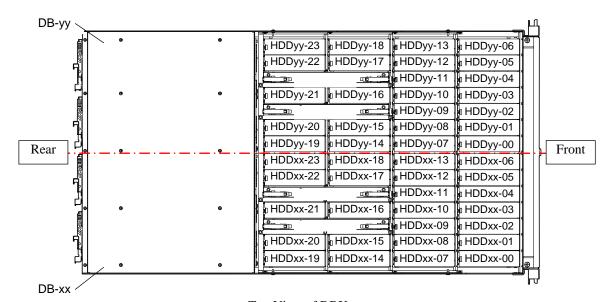
# In the case of DBX

a. Make sure of the location where the drive is to be removed.

Table 4.1.4.3-3 Drive Model Number List (DBX)

No.	Model Number	Model Name	Remarks
1	DF-F850-3TNX/4TNX	LFF Disk Drive	

### **Drive Location**



Top View of DBX

Fig. 4.1.4.3-3 Drive Location (In the case of DBX)

#### INST04-01C-141

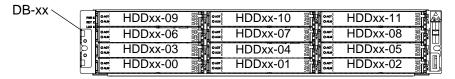
### In the case of DBF

a. Make sure of the location where the drive is to be removed.

Table 4.1.4.3-4 Drive Model Number List (DBF)

No.	Model Number	Model Name	Remarks
1	DKC-F710I-1R6FM/3R2FM	Flash Module	FMD
		Drive	

### **Drive Location**



Front View of DBF

Fig. 4.1.4.3-3A Drive Location (In the case of DBF)

#### INST04-01C-150

### Check the Shut Down LED

### In the case of DBL

a. Check that the Shut Down LED on drive is turned on.

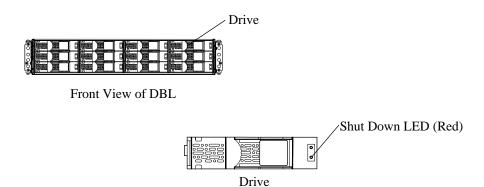


Fig. 4.1.4.3-4 Checking of Shut Down LED (for DBL)

# In the case of DBS

a. Check that the Shut Down LED on drive is turned on.

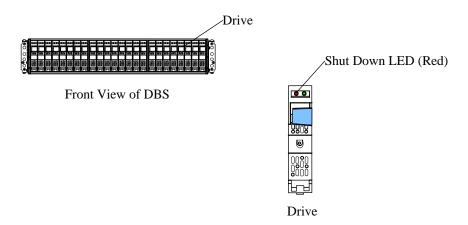


Fig. 4.1.4.3-5 Checking of Shut Down LED (for DBS)

### In the case of DBX

- a. Draw the DBX. (See INST03-01-60.)
- b. Check that the Shut Down LED on drive is turned on.

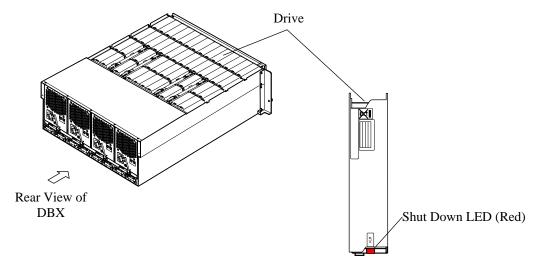
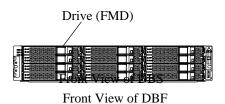


Fig. 4.1.4.3-6 Checking of Shut Down LED (for DBX)

# In the case of DBF

a. Check that the Shut Down LED on drive is turned on.



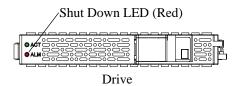


Fig. 4.1.4.3-6A Checking of Shut Down LED (for DBF)

### 3. Remove the drive

**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.

**NOTICE:** Since the HDD is a precision component, handle it very carefully not to apply a vibration or shock to it.

### Drive for DBL

- a. Pull the stopper of the drive handle toward you to have the lock off.
- b. Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

c. Insert the dummy (drive) to the drive box.

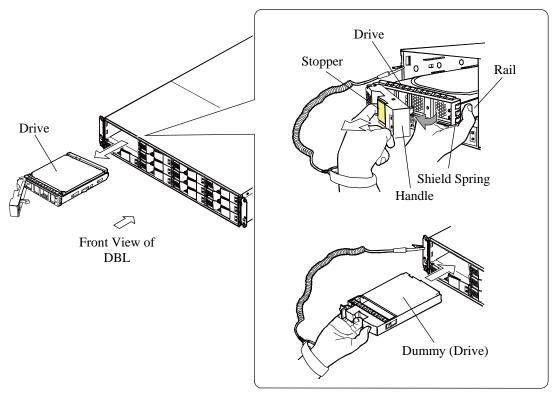


Fig. 4.1.4.3-7 Removal of Drive (for DBL)

### **Drive for DBS**

- a. Pull up the stopper of the drive handle toward you to release the lock.
- b. Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.
- c. Insert the dummy (drive) to the drive box.

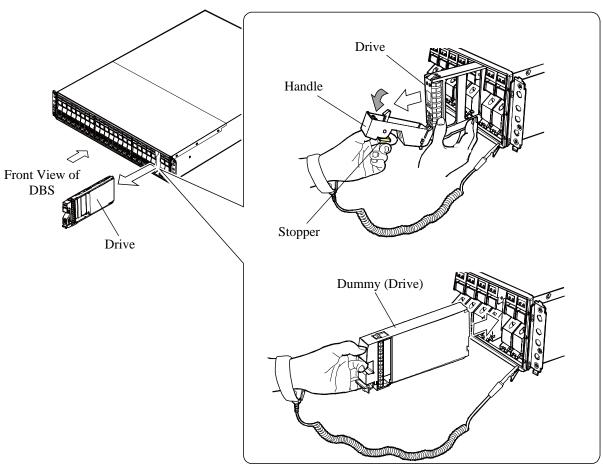


Fig. 4.1.4.3-8 Removal of Drive (for DBS)

# **Drive for DBX**

- a. Slide the latch (blue) on the drive and open the handle.
- b. Pull out and remove the drive to be replaced taking care not to apply a shock to it.
- c. Insert the dummy (drive) to the drive box.
- d. Reinstall the DBX. (See INST03-01-80.)

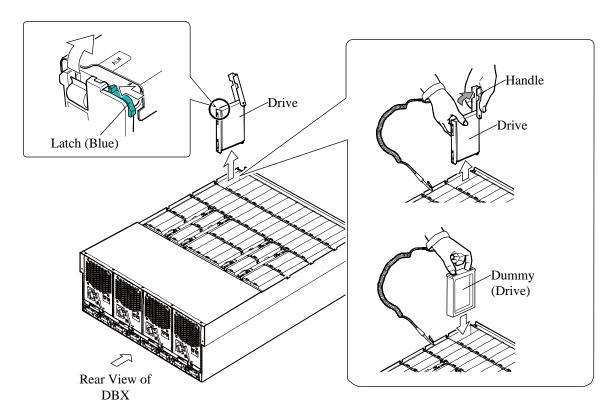


Fig. 4.1.4.3-9 Removal of Drive (for DBX)

### **Drive for DBF**

**NOTICE:** Just after the FMD is removed, the fans of the DBPS equipped in the rear of the DBF rotate at the highest speed. In 30 minutes after the removal of the FMD, the fans of the DBPS rotate at the speed suitable for environmental temperature.

- a. Pull the stopper of the drive handle toward you to have the lock off.
- b. Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

NOTE: When handling the drive, hold the rail side because the shield spring is subject to breakage.

c. Install the dummy FMD into de-installation position of a drive.

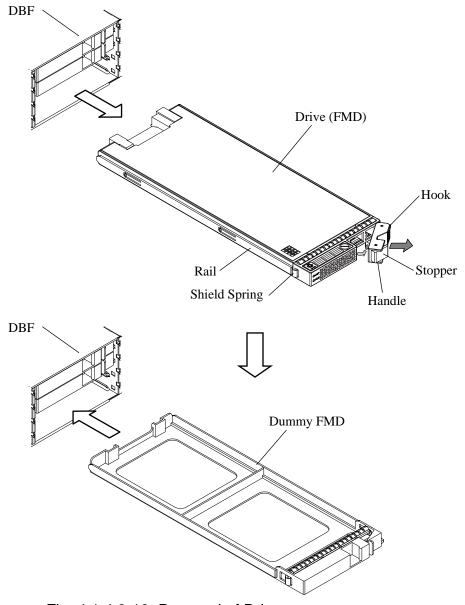


Fig. 4.1.4.3-10 Removal of Drive

# 4.1.4.4 De-Installation Procedure of Backend I/O Module (DW-F700-BS6G/BS6GE)

**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.

- 1. Confirmation of the Shut Down LED
  - a. Check the Shut Down LED on the DKB is turned on.

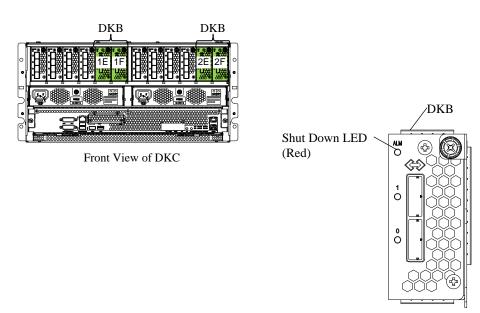


Fig. 4.1.4.4-1 Location of the Shut Down LED

Table 4.1.4.4-1 DKB Location List

Addition	Slot No.		Location No.		Remarks
No.	Cluster 1	Cluster 2	Cluster 1	Cluster 2	
Basic	1E	2E	DKB-1E	DKB-2E	
Option 1	1F	2F	DKB-1F	DKB-2F	

### INST04-01C-190

### 2. Disconnection of cables

### In the case of Basic

a. Disconnect the cables from the DKBs.

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

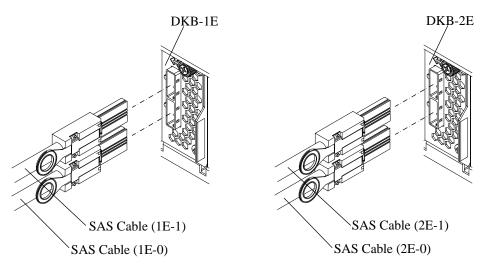


Fig. 4.1.4.4-2 Disconnection of cables (Basic)

# In the case of Option 1

a. Disconnect the cables from the DKBs.

# **A** CAUTION

A serious failure occurs if any of cables/connectors is wrongly connected. Check the connection of cables/connectors and pay sufficient attention during the work.

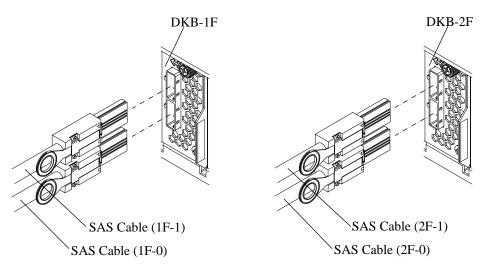


Fig. 4.1.4.4-3 Disconnection of Cables (Option 1)

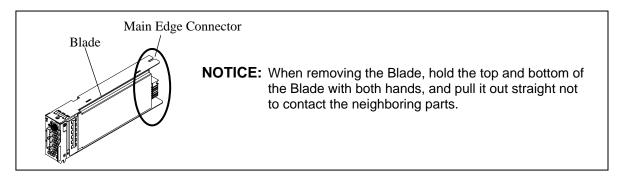
## 3. Removal of the DKBs

**NOTICE:** A serious failure occurs if a wrong PCB is removed.

Remove the PCB after making sure that the Shut Down LED is on.

Remove one DKB from one slot at a time.

- a. Loosen the screw that fastens the DKB and let the handle fall down.
- b. Push down the handle and remove the DKB.
- c. Insert the dummy cover until the claw on the lower part of the handle of the dummy cover reaches the front of the DKC.
- d. Push up the handle and fully insert the dummy cover.
- e. Tighten the screw and fasten the dummy cover.
- f. Repeat the procedures a to e each time you remove a DKB.



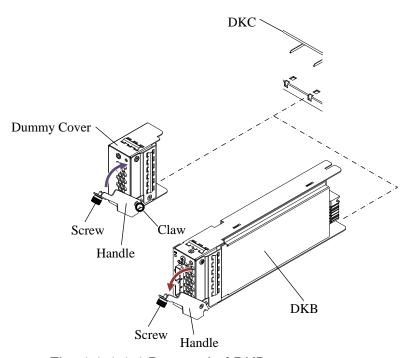
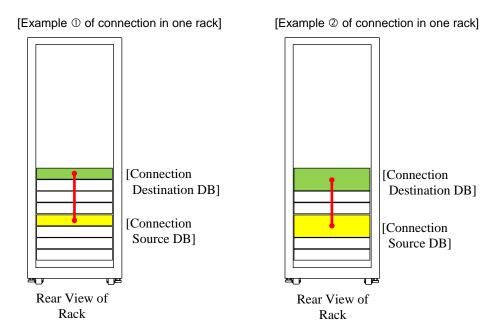


Fig. 4.1.4.4-4 Removal of DKB

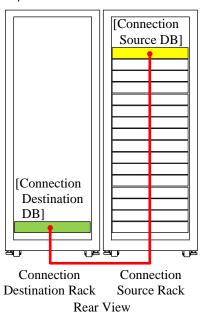
### 4.1.4.5 De-Installation Procedure of SAS Cable (DW-F700-SC1, DF-F850-SC3/SC5)

Name descriptions when disconnecting cables
 In this procedure, the output side of the SAS Cable is defined as a Connection Source, and the RACK is called a Connection Source RACK, and the DB is called a Connection Source DB.
 Moreover, the input side of the SAS Cable is defined as a Connection Destination, and the RACK is called a Connection Destination RACK, and the DB is called a Connection Destination DB.

Before starting this procedure, remember each name and the positional relation.



[Example ① of connection between two racks]



[Example ② of connection between two racks]

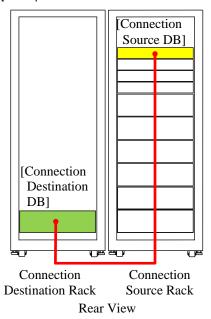


Fig. 4.1.4.5-1 Name Descriptions When Disconnecting Cables

### Disconnect the SAS Cables from the Connection Destination DB

# In case the Connection Destination DB is the DBL/DBS

a. Disconnect two SAS Cables from the ENCs of the connection destination DB.

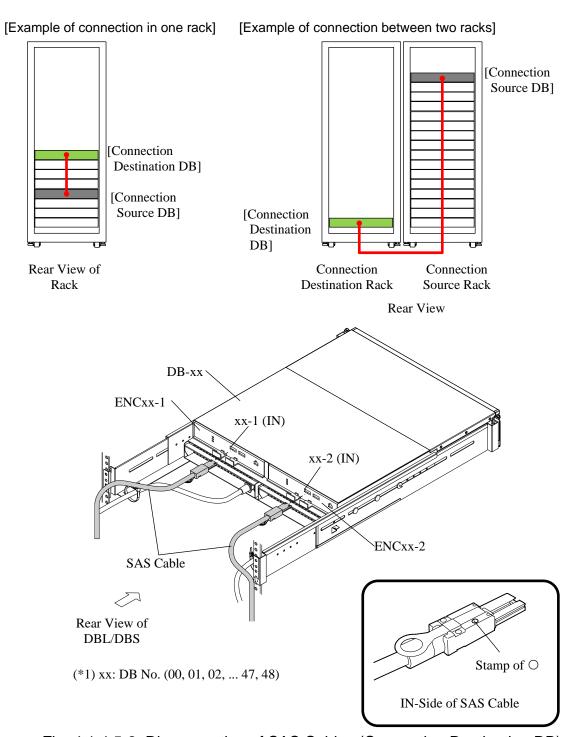


Fig. 4.1.4.5-2 Disconnection of SAS Cables (Connection Destination DB)

# In case the Connection Destination DB is the DBF

Disconnect two SAS Cables from the ENCs of the connection destination DB.

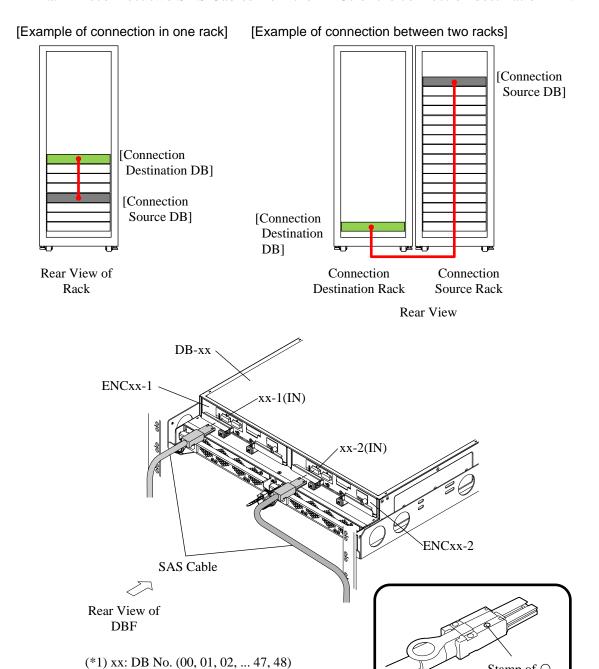


Fig. 4.1.4.5-2A Disconnection of SAS Cables (Connection Destination DB)

Stamp of ○

IN-Side of SAS Cable

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# In case the Connection Destination DB is the DBX

a. SAS Cable connection of the Connection Destination DB should be done when deinstalling the DBX.

Remove the cables referring to "4.2.3 De-Installation Procedure of Drive Box (DW-F700-DBX)" (INST04-02-160  $\sim$  320).

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### 3. Disconnect the SAS Cables from the Connection Source DB

## In case the Connection Source DB is the DBL/DBS

a. Disconnect two SAS Cables from the ENCs of the connection source DB.

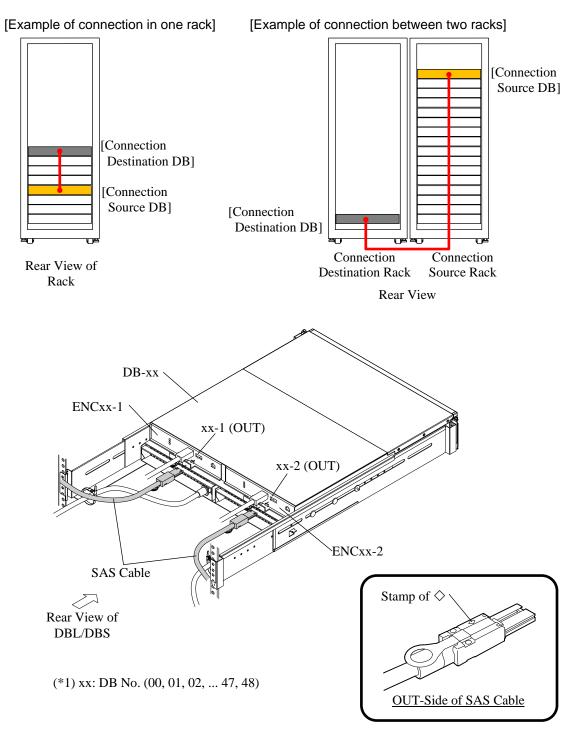


Fig. 4.1.4.5-3 Disconnection of SAS Cables (Connection Source DB)

# In case the Connection Source DB is the DBF

a. Disconnect two SAS Cables from the ENCs of the connection source DB.

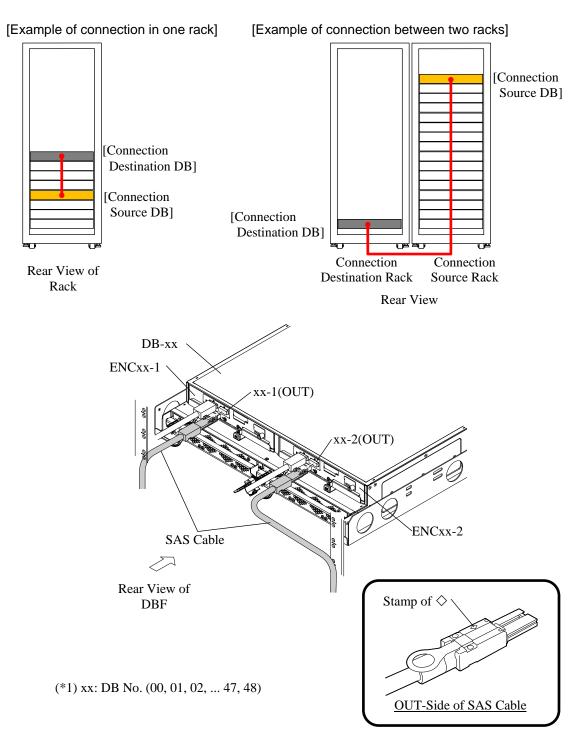


Fig. 4.1.4.5-3A Disconnection of SAS Cables (Connection Source DB)

# In case the Connection Source DB is the DBX

### 3-1 Removing the stopper

a. Pull the right and left screws of the stopper in the direction ① and rotate them 90 degrees. The screws become open and fixed.

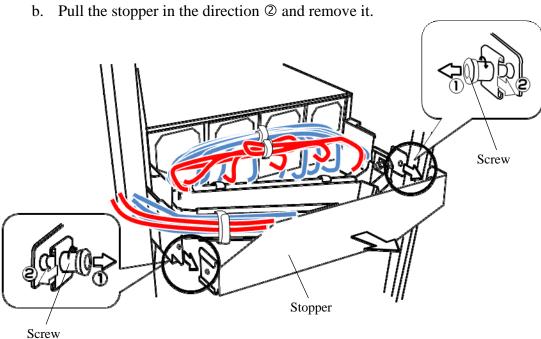


Fig. 4.1.4.5-4 Removal of Stopper

- c. Pull the right and left cable routing bars.
- d. Pull the right and left screws of the cable tray in the direction ① and rotate them 90 degrees.
  - The screws become open and fixed.
- e. Pull the cable tray in the direction ② and remove it.

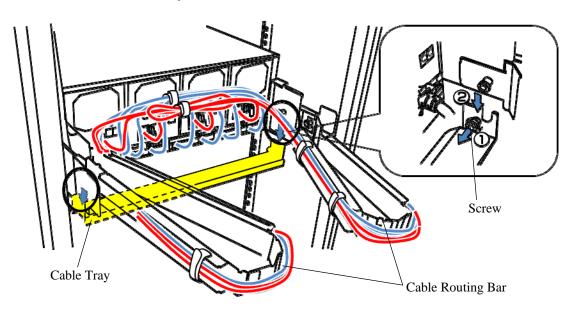


Fig. 4.1.4.5-5 Removal of Cable Tray

# 3-2 Removing the cables

a. Remove the four clamp tapes from the cable routing bar #2.

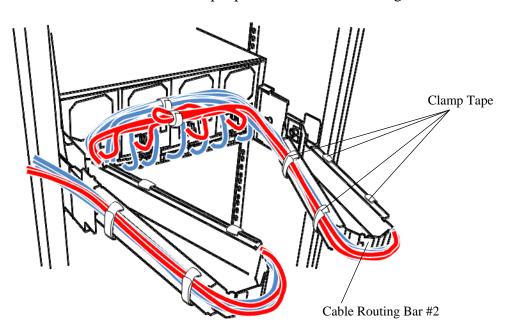


Fig. 4.1.4.5-6 Removal of Clamp Tapes

b. Remove the four clamp tapes from the cable routing bar #1.

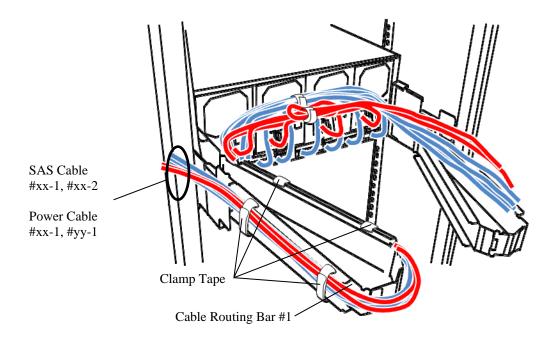


Fig. 4.1.4.5-7 Removal of Clamp Tapes

c. Remove the two clamp tapes which bind cables.

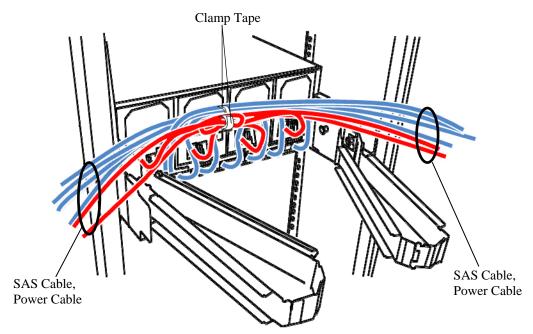


Fig. 4.1.4.5-8 Removal of Clamp Tapes in the Middle

- 3-3 Removing the Cable Routing Bar.
  - a. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
  - b. Remove the cable routing bar from the right rail and push it in the direction ② while rotating the screw 90 degrees.

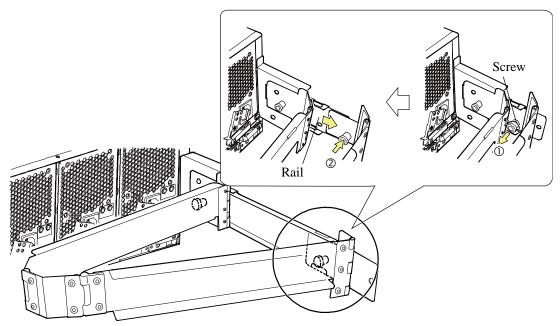


Fig. 4.1.4.5-9 Removal from Rail

- c. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
- d. Extract the cable routing bar from the cable routing bar installation part and push it in the direction ② while rotating the screw 90 degrees.

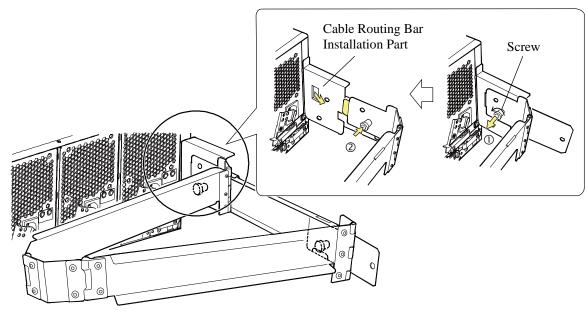
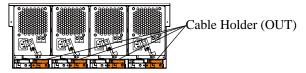


Fig. 4.1.4.5-10 Removal from Drive Box

### 3-4 Removing the SAS Cables

a. Remove the cable holder (OUT) of the ENC to which the SAS cable is connected. Open the lever and remove the SAS cable pressing the button (blue) which fixes the lever of the cable holder.

NOTE: When using the lever, be sure not to push the button (blue) of other cable holders.



Rear View of DBX

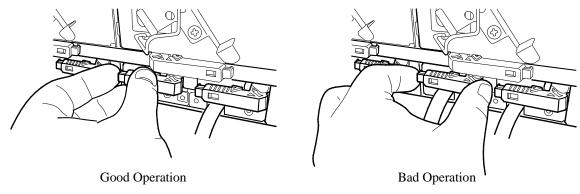


Fig. 4.1.4.5-11 Cable Holder Button (blue) Operation

b. Loosen the screw (blue) which fixes the holder cover, and remove it.

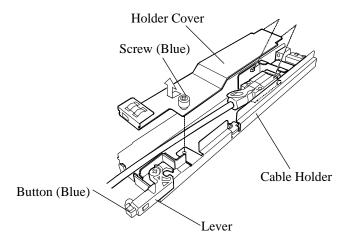


Fig. 4.1.4.5-12 Removal of Holder Cover

c. Disconnect the SAS cable from the cable holder.

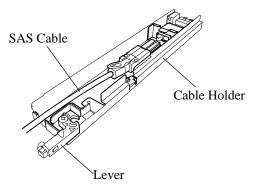


Fig. 4.1.4.5-13 Disconnection of SAS Cable

d. Attach the holder cover to the cable holder, and tighten the screw (blue) to fix the cover.

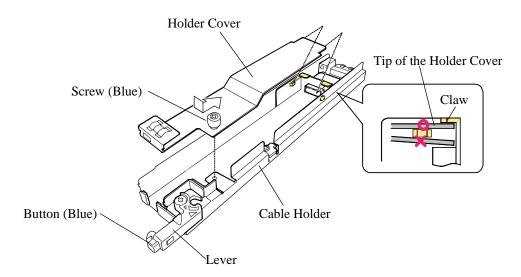


Fig. 4.1.4.5-14 Attachment of Cable Holder

e. Attach the cable holder to the Drive Box.

Open the lever of the cable holder toward you. Insert the cable holder until its lever is slightly closed, and then close the lever completely while pressing the button (blue), which fixes the lever.

- 3-5 Installing the cable routing bar
  - a. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
  - b. Install one side of the cable routing bar up to the place where the screw hole of the rail match, and fix it by pressing it in the direction ② while turning the screws 90 degrees.

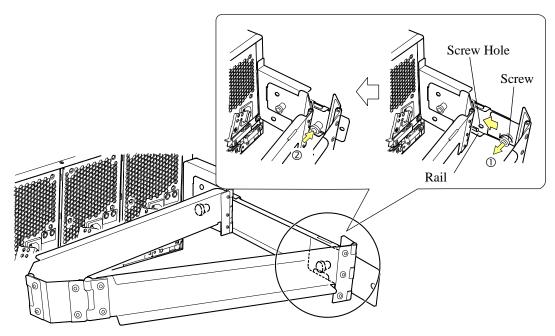


Fig. 4.1.4.5-15 Connection with Rail

- c. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
- d. Install the other side of the cable routing bar up to the place where the screw hole of the rail match, and fix it by pressing it in the direction ② while turning the screws 90 degrees.

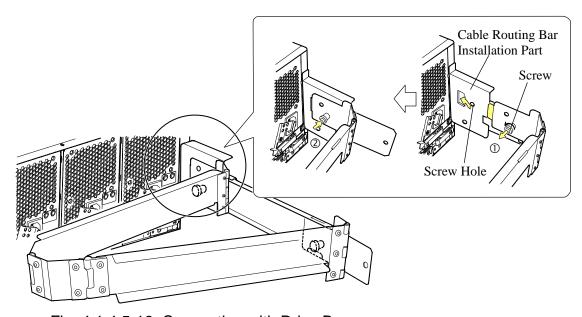


Fig. 4.1.4.5-16 Connection with Drive Box

### 3-6 Routing the Cables

Route the SAS cables and power cables.

The cable numbers to be routed are shown in Fig. 4.1.4.5-17.

NOTE: When bending the cable to connect it, give it a bend with a long radius (not less than 30 mm) so as not to apply the cable and the connector excessive stresses.

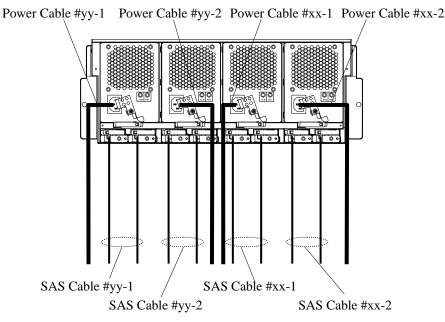


Fig. 4.1.4.5-17 Cable Number

- a. Open the cable routing bars toward you.
- b. Route the SAS cables (#xx-1, #xx-2) above the receptacles of the power supplies (#yy-1, #yy-2) and the SAS cables (#yy-1, #yy-2) above he receptacles of the power supplies (#xx-1, #xx-2) to be crossed and fasten them with a clamp tape. (The SAS cables around the cable holder slots are required to have extra length so as not to be stretched.)

NOTE: Keep the cables from hanging down below the Drive Box.

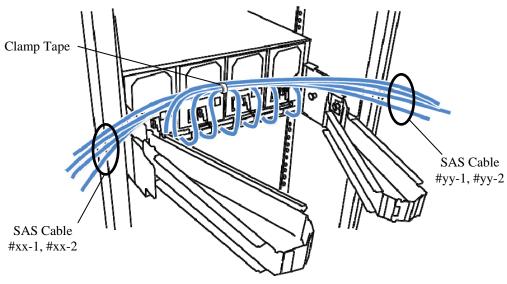


Fig. 4.1.4.5-18 Routing of SAS Cables

c. Route the power cable #xx-2 and the power cable #yy-1 and fold them back to overlap each other at the center.

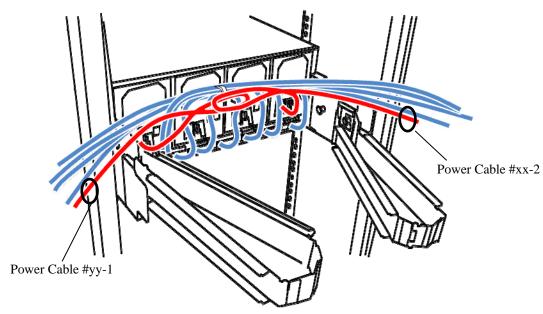


Fig. 4.1.4.5-19 Routing of Power Cables (#xx-2, #yy-1)

- d. Route the power cable #xx-1 and the power cable #yy-2 to be crossed so that they support the power cable #xx-2 and the power cable #yy-1 from below.
- e. Bundle the four power cables with the clamp tape at the center.

NOTE: Keep the cables from hanging down below the Drive Box.

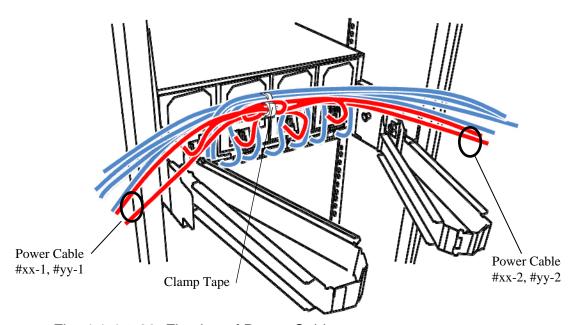


Fig. 4.1.4.5-20 Fixation of Power Cables

f. Fix the SAS cables (#xx-1, #xx-2) and the power cables (#xx-1, #yy-1) to the cable routing bar #1 with four clamp tapes.

The cables are required to have adequate extra length so as not to be stretched and be applied stress when the Drive Box is moved.

NOTE 1: Keep the cables from hanging down below the Drive Box.

NOTE 2: Be careful not to twist the cables.

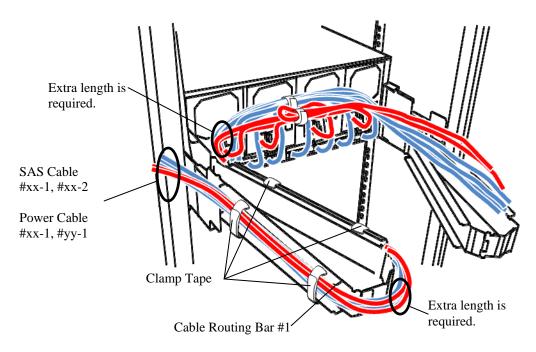


Fig. 4.1.4.5-21 Fixation of SAS Cables (#xx-1, #xx-2) and Power Cables (#xx-1, #yy-1)

g. Fix the SAS cables (#yy-1, #yy-2) and the power cables (#xx-2, #yy-2) to the cable routing bar #2 with four clamp tapes.

The cables are required to have adequate extra length so as not to be stretched and be applied stress when the Drive Box is moved.

NOTE 1: Keep the cables from hanging down below the Drive Box.

NOTE 2: Be careful not to twist the cables.

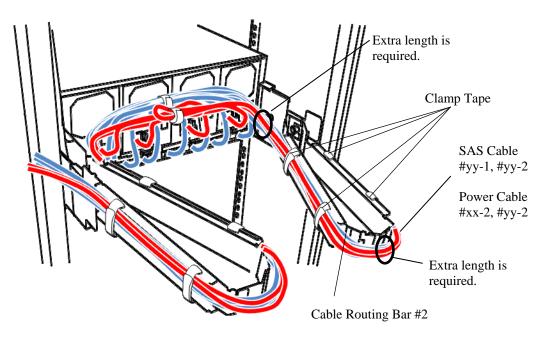


Fig. 4.1.4.5-22 Fixation of SAS Cables (#yy-1, #yy-2) and Power Cables (#xx-2, #yy-2)

h. Check that the cables are not stretched and are not applied stress by closing cable routing bars (#1, #2). If there is any problem, adjust cable routing.

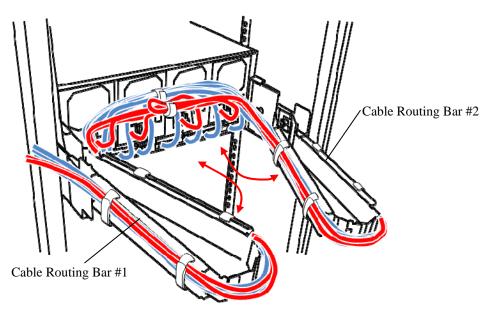


Fig. 4.1.4.5-23 Check of Routing of SAS Cables and Power Cables

### 3-7 Attaching the stopper

- a. Pull the right and left screws of the cable tray in the direction ①, and rotate them 90 degrees.
  - The screws are fixed with them opened.
- b. Press the cable tray in the direction ②.
- c. Push the stopper to the place where the right and left screws match the screw holes of the rails, and fix it by pressing it in the direction ③ while turning the screws 90 degrees.

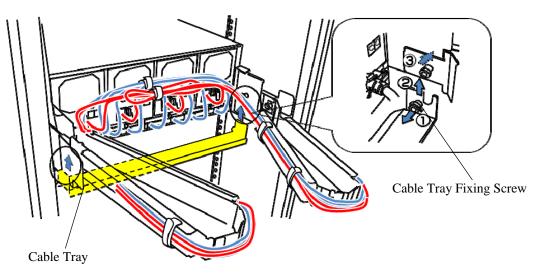


Fig. 4.1.4.5-24 Attachment of Cable Tray

- d. Pull the right and left screws in the direction ①, and rotate them 90 degrees. The screws are fixed with them opened.
- e. Press the stopper in the direction ② pushing the cables.
- f. Push the stopper to the place where the right and left screws match the screw holes of the rails, and fix it by pressing it in the direction ③ while turning the screws 90 degrees.

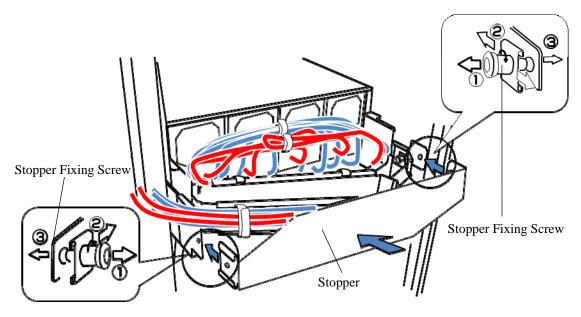


Fig. 4.1.4.5-25 Attachment of Stopper

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g. Pull out the Drive Box and check that the routing is performed correctly. Refer to "3.1.1 Bezel Opening-Closing Procedure" (INST03-01-10).

NOTE: Check that the routing is not performed with other cables.

h. Return the Drive Box on the rack. Refer to "3.1.1 Bezel Opening-Closing Procedure" (INST03-01-10).

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## INST04-01C-390

- 4. Removing the SAS cables
  - a. Remove the SAS cables from the Rack frame.

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#### INST04-01C-400

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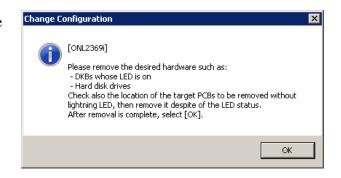
## 4.1.4.6 Making sure of completion of the hardware removal

(1) <Removing the hardware> In response to a message, "Please remove the desired hardware such as:

- DKBs whose LED is on
- Hard disk drives

Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status.

After removal is complete, select [OK].", select (CL) [OK].



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## 4.1.4.7 SVP post procedure (Making sure of completion of the removal)

(1) <Making sure of completion of the removal>
A message, "Renewal process has completed.
Please check storage system status." is
displayed. In response to the message, select
(CL) [OK].



(2)

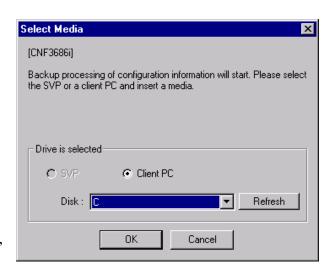
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

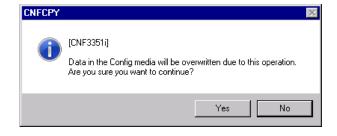
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(3)

If the configuration information is not saved in the selected media, go to step (4). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config

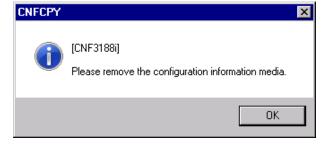


media is not necessary, select (CL) the [No] button and go to step (5).

(4)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, and select (CL) [OK].



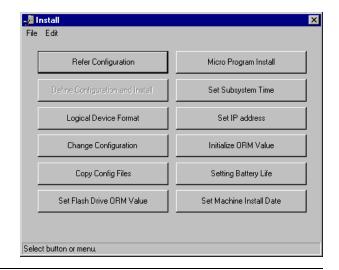
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(5)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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

## 4.2 De-Installation of Drive Box (DW-F700-DBL/DBS/DBX/DBF/RRDB)

Table 4.2-1 Parts List of DW-F700-DBL

Item No.	Part Name	Part No.	Quantity	Remarks
1	LFF Drive Box	3284410-В	1	
2	Bezel	3285062-A	1	
3	Accessory Packing	5548213-A	1	
4	Bracket (L)	3282470-1	1	(*1)
5	Bracket (R)	3285243-1	1	(*1)
6	Side Bezel (L)	2853845-1	1	(*1)
7	Side Bezel (R)	3282398-2	1	(*1)
8	Screw	SB510N	5	(*1)
9	Key		2	Key No. T750 (*1)
10	SAS Cable	3285194-A	2	1 m
11	Packing Work (ACC)	3287022-В	1	
12	Repeat Binder	5409042-1	2	100mm, Color: Black (*2)
13	Binder	5532297-1	2	292mm, Color: White (*2)
14	Label (SAS Cable)	3287020-1	1	For CL1 (*2)
15	Label (SAS Cable)	3287020-2	1	For CL2 (*2)

<sup>\*1:</sup> These parts are included in Accessory Packing (Item No.3).

<sup>\*2:</sup> These parts are included in Packing Work (ACC) (Item No.11).

Table 4.2-2 Parts List of DW-F700-DBS

Item No.	Part Name	Part No.	Quantity	Remarks
1	SFF Drive Box	3284410-A	1	
2	Bezel	3285062-A	1	
3	Accessory Packing	5548213-A	1	
4	Bracket (L)	3282470-1	1	(*1)
5	Bracket (R)	3285243-1	1	(*1)
6	Side Bezel (L)	2853845-1	1	(*1)
7	Side Bezel (R)	3282398-2	1	(*1)
8	Screw	SB510N	5	(*1)
9	Key		2	Key No. T750 (*1)
10	SAS Cable	3285194-A	2	1 m
11	Packing Work (ACC)	3287022-B	1	
12	Repeat Binder	5409042-1	2	100mm, Color: Black (*2)
13	Binder	5532297-1	2	292mm, Color: White (*2)
14	Label (SAS Cable)	3287020-1	1	For CL1 (*2)
15	Label (SAS Cable)	3287020-2	1	For CL2 (*2)

<sup>\*1:</sup> These parts are included in Accessory Packing (Item No.3).

<sup>\*2:</sup> These parts are included in Packing Work (ACC) (Item No.11).

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Table 4.2-3 Parts List of DW-F700-DBX

Item No.	Part Name	Part No.	Quantity	Remarks
1	Drive Box	2853983-В	1	
2	SAS Cable (3m)	3285194-B	4	
3	Bezel	3285129-A	1	
4	Cable Support	2853082-1	2	
5	Cable Bracket R	3282281-1	1	
6	Cable Bracket L	3282282-1	1	
7	Cable Tray	2853084-1	1	
8	Slide Rail Attachment Parts	3282120-C	1	
9	Cable Label2	3282126-1	2	Not used (*1)
10	Cable Label2	3282126-2	2	Not used (*1)
11	Screw	SB510N	10	2 spares are included. (*1)
12	Screw	SB406N	18	2 spares are included. (*1)
13	Rack Nut	5510146-1	14	4 spares are included. (*1)
14	Cage Nut	5528564-1	12	2 spares are included. (*1)
15	Socket Bolt	3261899-520	10	2 spares are included. (*1)
16	LL Washer	5513553-513	12	2 spares are included. (*1)
17	Clamp Tape	5544251-1	17	4 spares are included. (*1)
18	Rail R	2853095-D	1	
19	Rail L	2853095-В	1	
20	Stopper	3282300-В	1	
21	Packing Work (ACC)	3287022-C	1	
22	Repeat Binder	5409042-3	2	250mm, Color: Black (*2)
23	Binder	5532297-1	4	292mm, Color: White (*2)
24	Label (SAS Cable)	3287020-1	1	For CL1 (*2)
25	Label (SAS Cable)	3287020-2	1	For CL2 (*2)

<sup>\*1:</sup> These parts are included in Slide Rail Attachment Parts (Item No.8).

Table 4.2-4 Parts List of DW-F700-RRDB

Item No.	Part Name	Part No.	Quantity	Remarks
101	Slide Rail	2853847-В	1	
102	Repeat Binder	5409042-3	4	

Table 4.2-5 Parts List of DW-F700-DBF

Item No.	Part Name	Part No.	Quantity	Remarks
1	Flash Module Drive Box	3286590-A	1	Drive Box
2	Slide Rail (NF)	2854494-A	1	
3	Packing (BEZEL-PARTS)①	3286582-A	1	
4	Key		2	Key No. 225 (*1)
5	Side Cover	3286577-1	1	(*1)
6	Packing (BEZEL-PARTS)@	3286582-B	1	
7	Rack Nut	5510146-1	10	(*2)
8	Plate	5550593-1	1	(*2)
9	Screw	3261898-512	12	(*2)
10	SAS Cable	3285194-A	2	1 m
11	Packing Work (ACC)	3287022-В	1	
12	Repeat Binder	5409042-1	2	100mm, Color: Black (*3)
13	Binder	5532297-1	2	292mm, Color: White (*3)
14	Label (SAS Cable)	3287020-1	1	For CL1 (*3)
15	Label (SAS Cable)	3287020-2	1	For CL2 (*3)
16	Bezel	3286592-A	1	

<sup>\*1:</sup> These parts are included in Packing (BEZEL-PARTS)① (Item No.3).

<sup>\*2:</sup> These parts are included in Packing (BEZEL-PARTS)② (Item No.6).

<sup>\*3:</sup> These parts are included in Packing Work (ACC) (Item No.11).

#### INST04-02-40

#### 1. Confirmation of Removal Position

The following figure shows a configuration example of installing Drive Box in 40 units rack frame.

The mounting location of Drive Box is different according to the configuration.



Fig. 4.2-1 Mounting Location of Drive Box

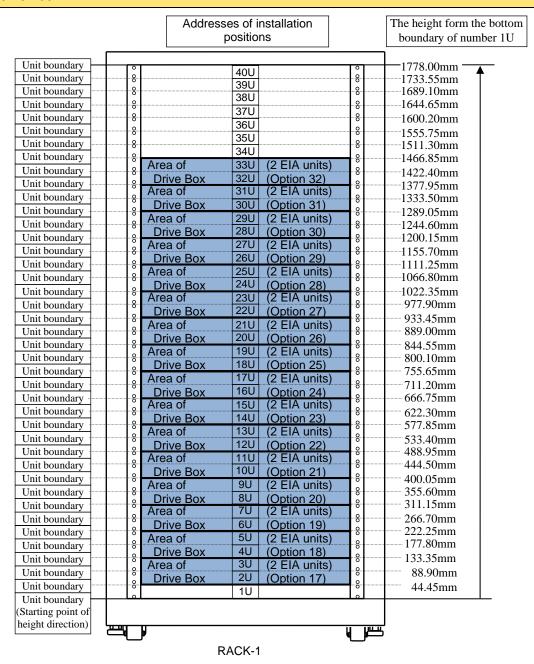


Fig. 4.2-2 Whole Layout of Installation Position Addresses (RACK-1)

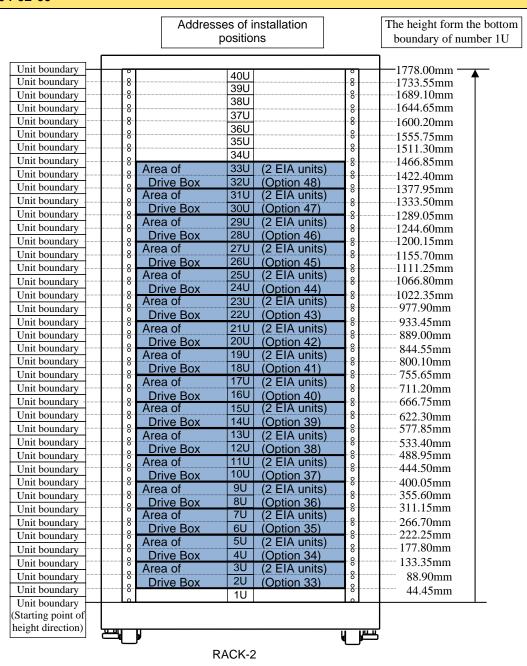


Fig. 4.2-3 Whole Layout of Installation Position Addresses (RACK-2)

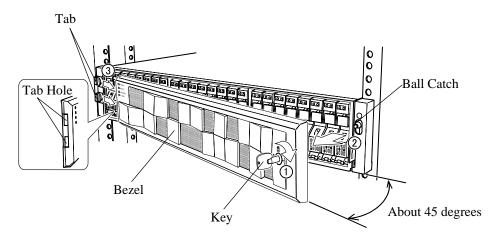
#### 4.2.1 De-Installation Procedure of Bezel kit

- 1. Removal of Bezel
  - a. Insert the key into the keyhole on the bezel and release the lock of the bezel (①).
  - b. Pull the key toward you while holding the lower right portion of the bezel, and then disengage the right side of the bezel from the ball catch (②).

NOTE: When disengaging the bezel, work with the opening angle between the bezel and the chassis of up to 45 degrees.

Do not force the bezel open too wide. Otherwise, a damage of bezel may be caused.

c. Disengage the bezel from the left tabs and then remove it (③).



The state in which the slit of the keyhole is aligned with the mark.

(The key can be inserted or pulled out in this state.)

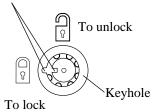


Fig. 4.2.1-1 Removal of Bezel

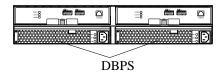
#### INST04-02-80

## 4.2.2 De-Installation Procedure of Drive Box (DW-F700-DBL/DBS)

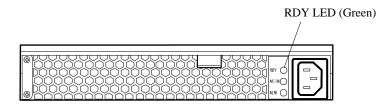
# **A** CAUTION

Perform this removal work in the state in which the Drive Box and all the parts in the Drive Box have been removed from the rack configuration after the work No.2 explained on page INST02-60 has been done. The system goes down if the Drive Box that should have been removed is left in the rack configuration.

- 1. Checking the PS Enable LEDs
  - a. Check that the RDY LEDs of the DBPS installed in the Drive Box are all off.



Rear View of DBL/DBS



**DBPS** 

Fig. 4.2.2-1 RDY LED on DBPS

- 2. Disconnection of Power Cables
  - a. Disconnect the two power cables from the PDUs.
  - b. Remove the two repeat binders from the rails.

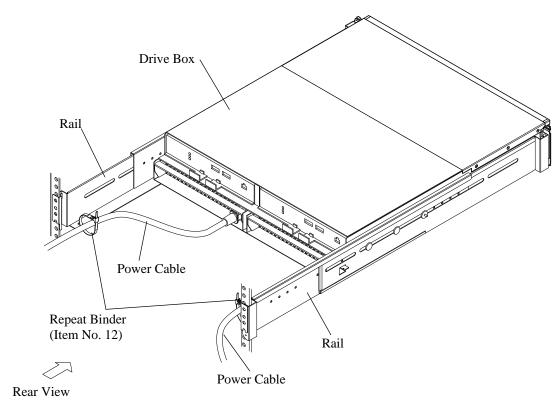


Fig. 4.2.2-2 Removal of Repeat Binders

- c. Pull and open the cable holders and disconnect the power cables from the DBPSs.
- d. Remove the power cables from the rack frame.

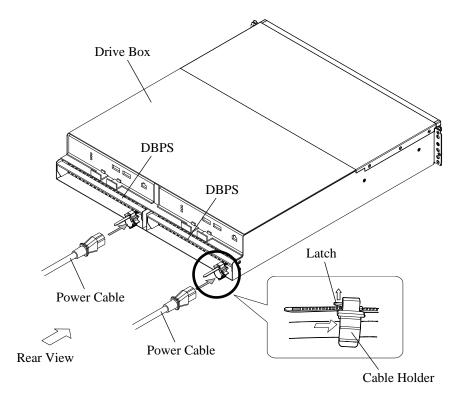


Fig. 4.2.2-3 Disconnection of Power Cables

#### 3. Removal of the DB-Address Label

a. Remove the label form the front side of the DBL/DBS and the rear side of the rail (two labels in total).

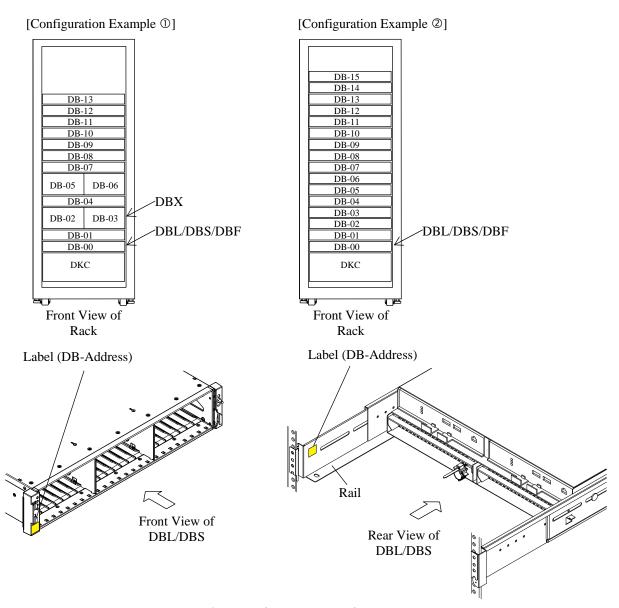


Fig. 4.2.2-4 Removal of Label (DB-Address)

#### 4. Removal of Side Bezels

a. Hold the bottom of the left side bezel (L) on the front side of the drive box while opening outward (①) and then tilt and remove (②, ③) the bottom of the left side bezel (L) by pulling it toward you.

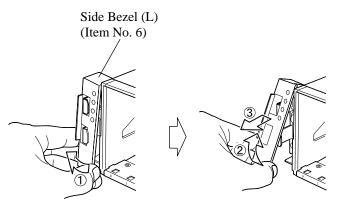


Fig. 4.2.2-5 Removal of Side Bezel (L)

b. Hold the bottom of the right side bezel (R) on the front side of the drive box while opening outward  $(\mathbb{O})$  and then tilt and remove  $(\mathbb{O}, \mathbb{O})$  the bottom of the right side bezel (R) by pulling it toward you.

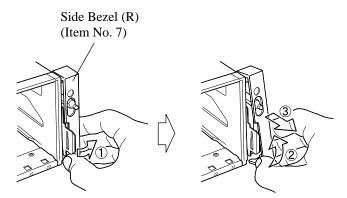


Fig. 4.2.2-6 Removal of Side Bezel (R)

# 5. Removal of Brackets

a. Remove the two screws and two brackets from the Drive Box.

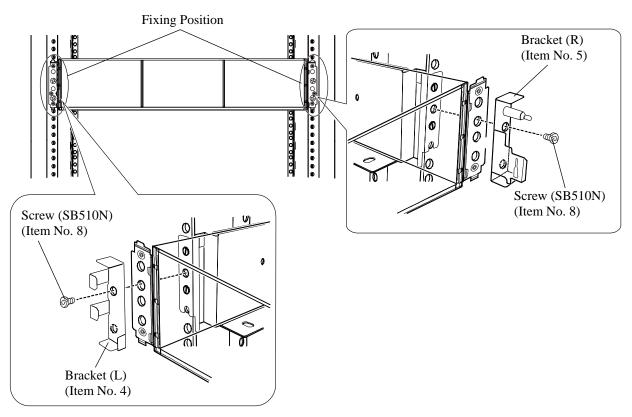


Fig. 4.2.2-7 Removal of Brackets

## 6. Removal of parts

If the Drive Box is removed at height below 1m or removed by using the special lifter, this procedure is not required because the Drive Box is removed from the rack frame with its parts mounted. (Go to procedure 7.)

If other than above, remove the parts first and then remove the Drive Box from the rack frame.

**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.

- a. Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the Drive Box.
- b. Pull the right and left levers and remove the ENC.
- c. Remove the other ENC in the same manner.

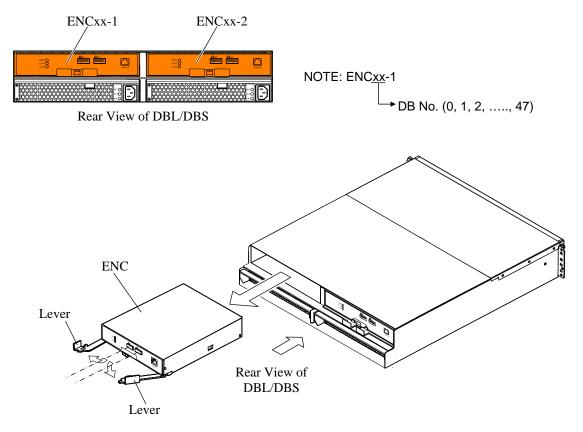


Fig. 4.2.2-8 Removal of ENC

- d. Bring the handle down and forward (②) while pushing the latch of the DBPS inward (①).
- e. Pull the DBPS and remove it from the Drive Box.
- f. Remove the other DBPS in the same manner.

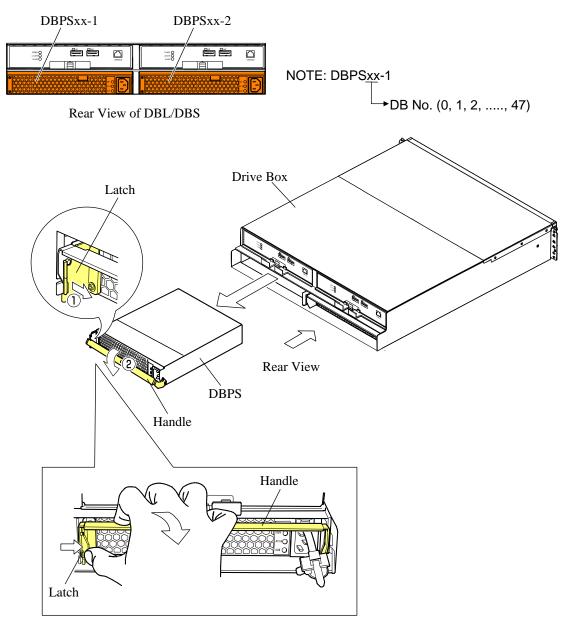


Fig. 4.2.2-9 Removal of DBPS

### 7. Removing the Drive Box



Paying attention to falls:

Work carefully because the mass of the single DBL is about 27 kg and DBS is about 23 kg.

Beware over turning and dropping:

To prevent Drive Box from over turning and dropping, the installation work must be done by two or more personnel.

a. Remove the Drive Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)

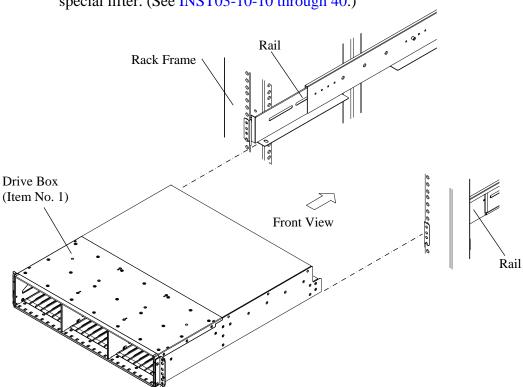


Fig. 4.2.2-10 Removal of Drive Box

8. Reinstalling removed parts

If parts were removed in procedure 6, reinstall the removed parts.

If parts were not removed, go to procedure 9.

- a. Make the handle of the DBPS completely fall down and forward. (See Fig. 4.2.2-9.)
- b. Insert the DBPS into the slot and push it to the full.
- c. Completely raise the handle and fix the DBPS.
- d. Install the other DBPS in the same manner.
- e. Make the right and left levers of the ENC open. (See Fig. 4.2.2-8.)
- f. Insert the ENC until the edge of the lever comes in contact with the Drive Box.
- g. Close the right and left levers to insert the ENC completely.
- h. Install the other ENC in the same manner.

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- 9. Removing the slide rails
  - a. Remove the screw from the rear side of right slide rail.
  - b. Remove the screw from the rear side of left slide rail in the same way.

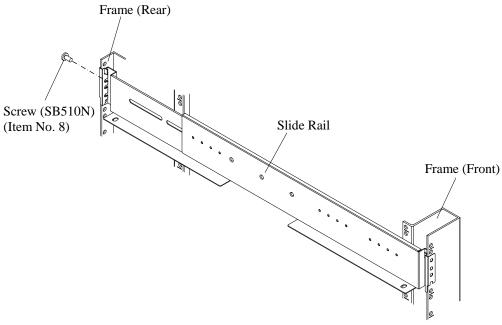


Fig. 4.2.2-11 Removal of Screw

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- Open two Clips in the front and rear side of the right slide rail. c.
- Push the right slide rail from the front toward the rear of the rack frame and remove the Positioning Pin on the front side of the rail. Then remove the rail from the rack frame.
- Remove the left slide rail from the rack frame in the same way as the procedures c to d.

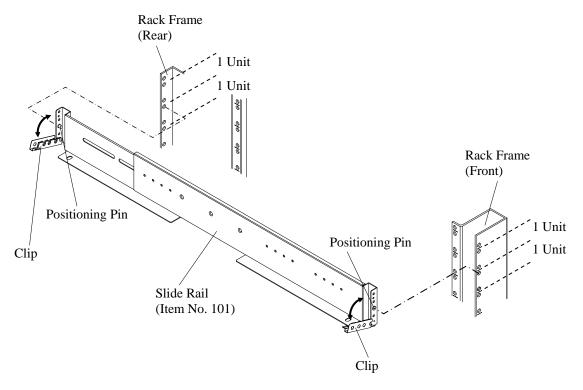


Fig. 4.2.2-12 Removal of Slide Rail

10. Return to the working table and do the rest of the work Non-Disruptive De-installation: INST02-60

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4.2.3 De-Installation Procedure of Drive Box (DW-F700-DBX)

# **A** CAUTION

Perform this removal work in the state in which the Drive Box and all the parts in the
Drive Box have been removed from the rack configuration after the work No.2 explained
on page INST02-60 has been done. The system goes down if the Drive Box that should
have been removed is left in the rack configuration.

#### 1. Confirmation of Removal Position

a. Confirm the de-installation positions of Drive Box.

The following figure shows a configuration example of installing Drive Box in 40 units rack frame.

The mounting location of Drive Box is different according to the configuration.

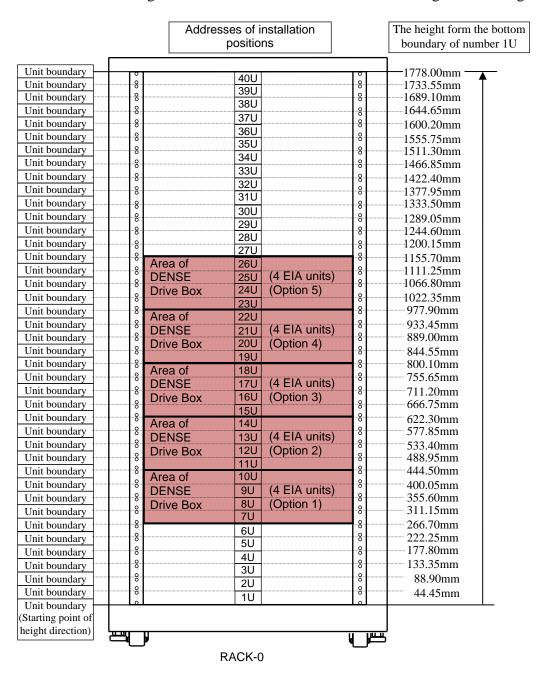


Fig. 4.2.3-1 Whole Layout of Installation Position Addresses (RACK-0)

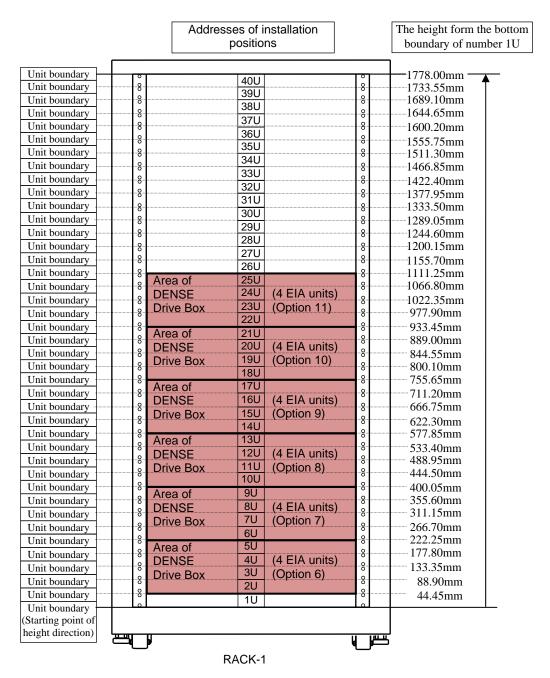


Fig. 4.2.3-2 Whole Layout of Installation Position Addresses (RACK-1)

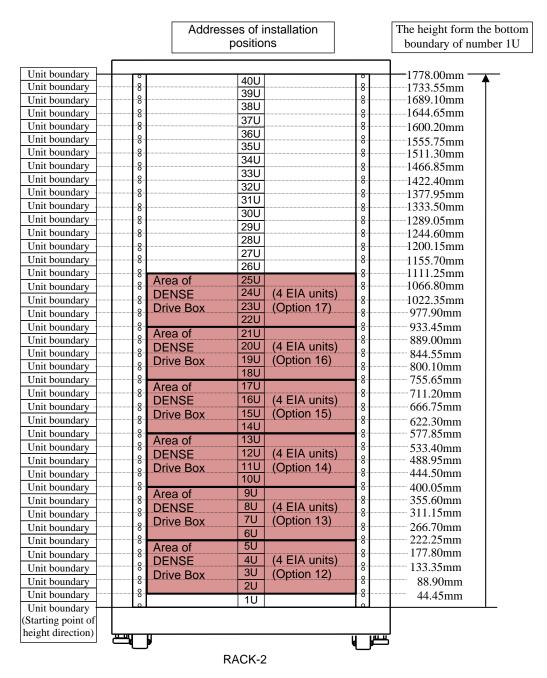


Fig. 4.2.3-3 Whole Layout of Installation Position Addresses (RACK-2)

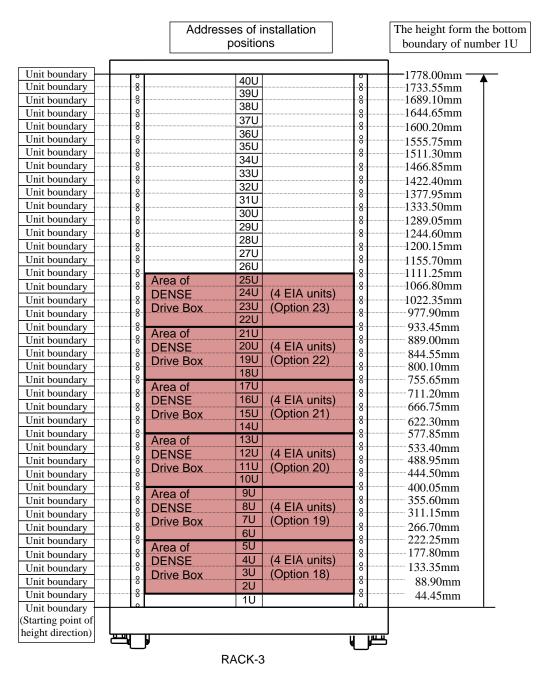


Fig. 4.2.3-4 Whole Layout of Installation Position Addresses (RACK-3)

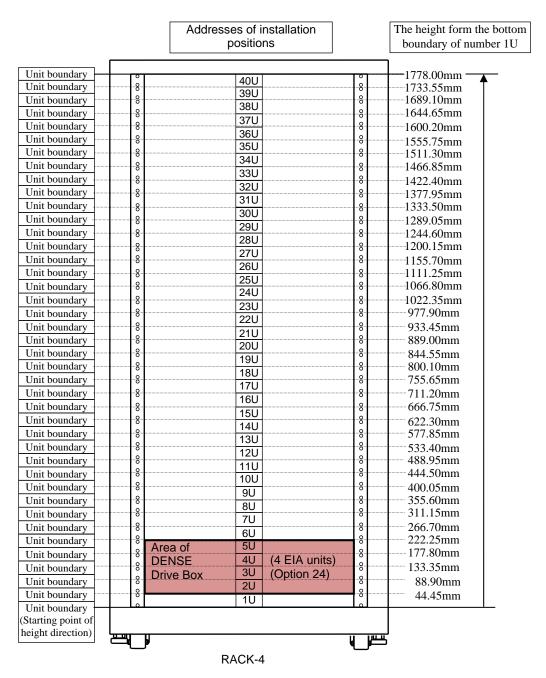


Fig. 4.2.3-5 Whole Layout of Installation Position Addresses (RACK-4)

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## 2. Removing the Bezel

- a. Remove the bezel from the front side of the Drive Box.
- 3. Disconnecting the Power Cables (PDU side)
  - a. Disconnect the four power cables from the PDUs.

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## 4. Removing the cables

a. Pull the right and left screws of the stopper in the direction ① and rotate them 90 degrees. The screws become open and fixed.

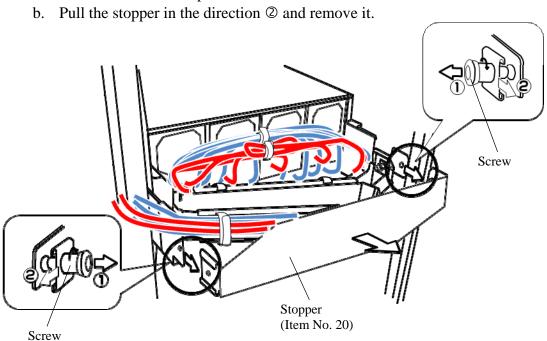


Fig. 4.2.3-6 Removal of Stopper

- c. Pull the right and left cable routing bars.
- d. Pull the right and left screws of the cable tray in the direction 1 and rotate them 90 degrees.
  - The screws become open and fixed.
- e. Pull the cable tray in the direction ② and remove it.

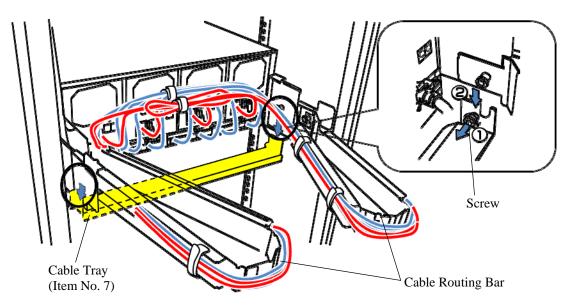


Fig. 4.2.3-7 Removal of Cable Tray

f. Remove the four clamp tapes from the cable routing bar #2.

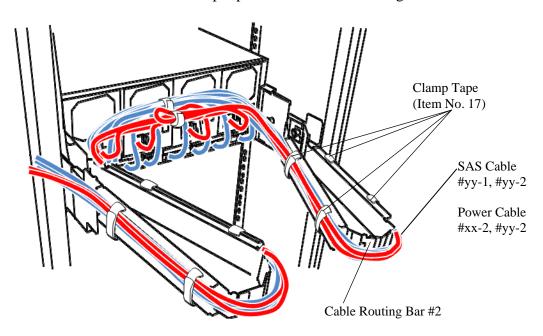


Fig. 4.2.3-8 Removal of Clamp Tapes

g. Remove the four clamp tapes from the cable routing bar #1.

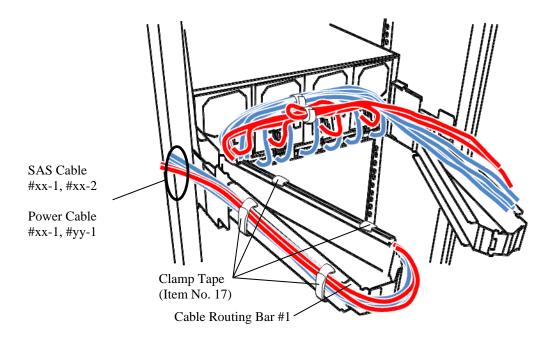


Fig. 4.2.3-9 Removal of Clamp Tapes

h. Remove the two clamp tapes which bind cables.

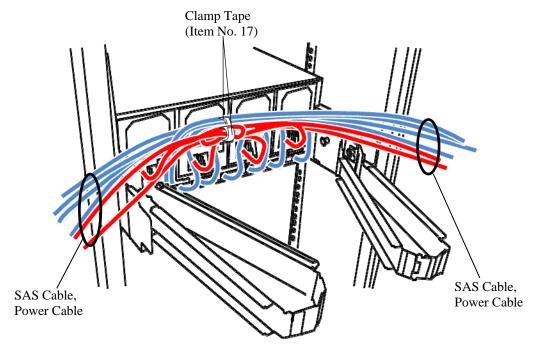
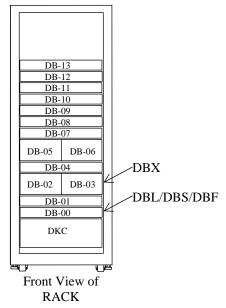
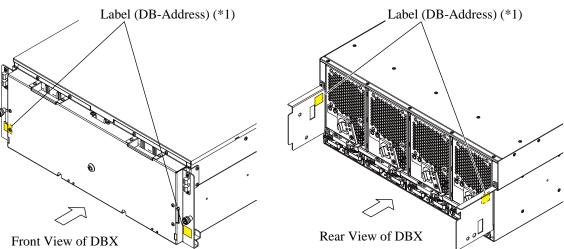


Fig. 4.2.3-10 Removal of Clamp Tapes in the Middle

- 5. Removing the DB Address label
  - a. Remove the four labels from the front and rear of the DBX.

# [Configuration Example]





\*1: Component of DW700-CBX

Fig. 4.2.3-11 Removal of Label (DB-Address)

- 6. Removing the Cable Routing Bar
  - a. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
  - b. Remove the cable routing bar from the rear left rail and push it in the direction ② while rotating the screw 90 degrees.

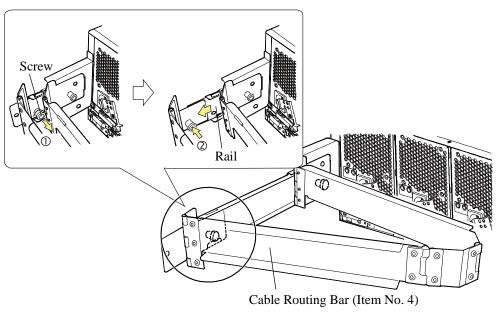


Fig. 4.2.3-12 Removal from Rail

- c. Pull the screw of the stopper in the direction ① and rotate it 90 degrees. The screw becomes open and fixed.
- d. Extract the cable routing bar from the cable routing bar installation part and push it in the direction ② while rotating the screw 90 degrees.
- e. Remove the cable routing bar from the right side of the Drive Box in the same way.

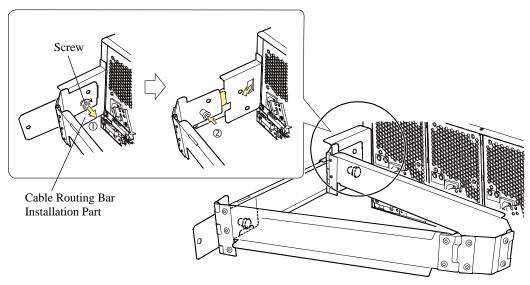


Fig. 4.2.3-13 Removal from Drive Box

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f. Remove the four screws from the right and left of the rear side of the Drive Box, and remove the two cable routing bar installation parts.

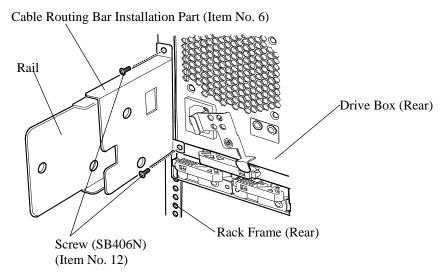
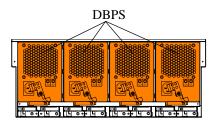


Fig. 4.2.3-14 Removal of Cable Routing Bar Installation Part

- 7. Disconnecting the Power Cables (DBPS side)
  - a. Disconnect the power cables from the DBPSs.



Rear View of Drive Box

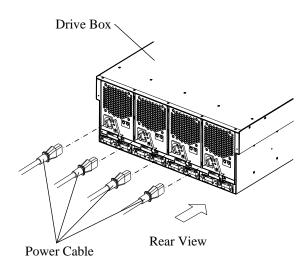


Fig. 4.2.3-15 Disconnection of Power Cables

# 8. Removing the SAS Cables

a. Remove the cable holder of the ENC to which the SAS cable is connected.
Open the lever and remove the SAS cable pressing the button (blue) which fixes the lever of the cable holder.

NOTE: When using the lever, be sure not to push the button (blue) of other cable holders.

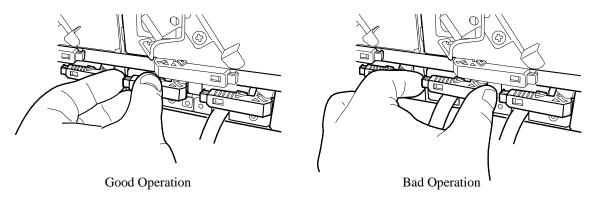


Fig. 4.2.3-16 Cable Holder Button (blue) Operation

b. Loosen the screw (blue) which fixes the holder cover, and remove it.

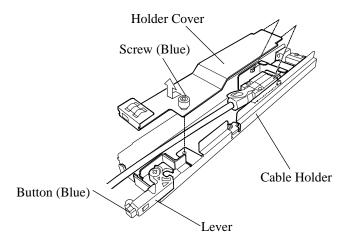


Fig. 4.2.3-17 Removing the Holder Cover

c. Disconnect the SAS cable from the cable holder.

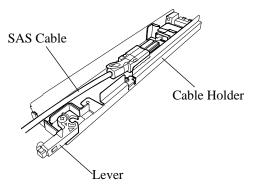


Fig. 4.2.3-18 Disconnecting SAS cable

d. Attach the holder cover to the cable holder, and tighten the screw (blue) to fix the cover.

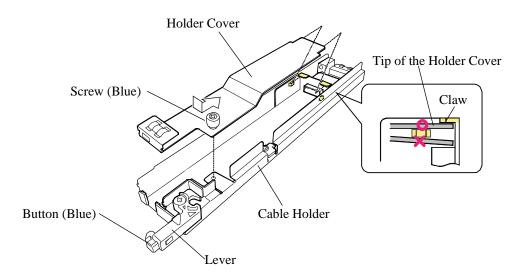


Fig. 4.2.3-19 Attaching Cable Holder

e. Attach the cable holder to the Drive Box.

Open the lever of the cable holder toward you. Insert the cable holder until its lever is slightly closed, and then close the lever completely while pressing the button (blue), which fixes the lever.

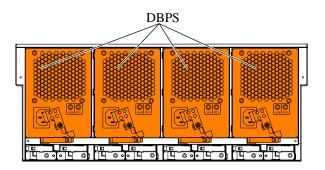
# 9. Removing parts

If the Drive Box is removed at height below 1m or removed by using the special lifter, this procedure is not required because the Drive Box is removed from the rack frame with its parts mounted. (Go to procedure 10.)

If other than above, remove the parts first and then remove the Drive Box from the rack frame.

**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.

- a. Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the Drive Box.
- b. Open the lever toward you while pressing the button (blue) which fixes the lever of the DBPS.
  - When the lever is completely opened, the DBPS comes out forward.
- c. Pull and remove the DBPS.
- d. Remove the other DBPSs in the same manner.



Rear View of Drive Box

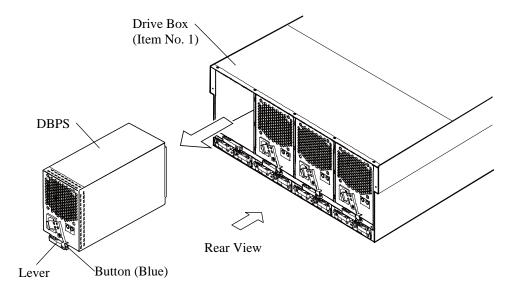


Fig. 4.2.3-20 Removal of DBPS

# 10. Removing the Drive Box



Paying attention to falls:

Work carefully because the mass of the single DBX is about 50 kg.

Beware over turning and dropping:

To prevent Drive Box from over turning and dropping, the installation work must be done by two or more personnel.

- a. Move the lifter at the removal position of the Drive Box referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)
- b. Insert the key into the keyhole on the front side, and release the lock.
- c. Loosen the front fixing screws. (blue) (one place each at right and left)
- d. Pull out the Drive Box slowly holding the handle on the front side until the latch of the rail clicks.

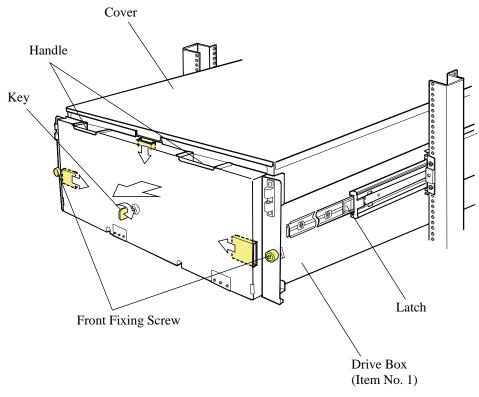


Fig. 4.2.3-21 Removal of Drive Box

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e. Release the locks by sliding the latch releasing lever in the front end of the right and left rack rail, and then draw the Drive Box on the lifter.

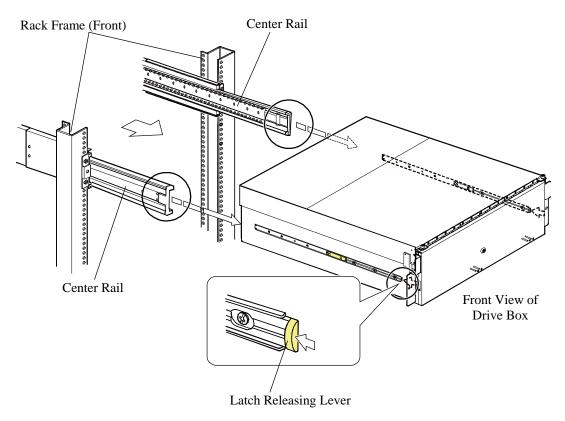


Fig. 4.2.3-22 Removal of Drive Box

# 11. Removing the Rails

- a. Remove the four screws from the rail.
- b. Remove the rack nut for fixing the chassis from the front side of the rail.
- c. Remove the four rack nuts from the rack frame.
- d. In the same way, remove the rail from to the left side of the rack frame.

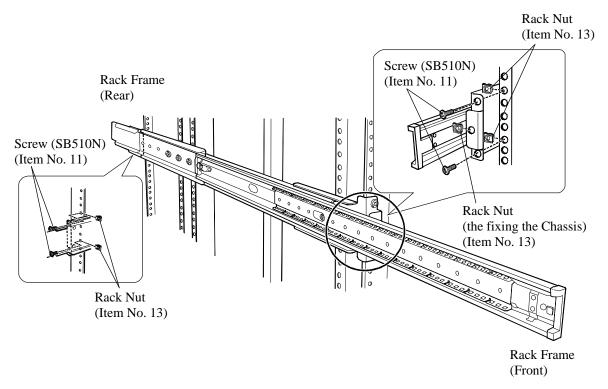


Fig. 4.2.3-23 Removal of Rail

# 12. Removing the Inners

a. Remove the twelve screws and two Inners from the both sides of DBX.

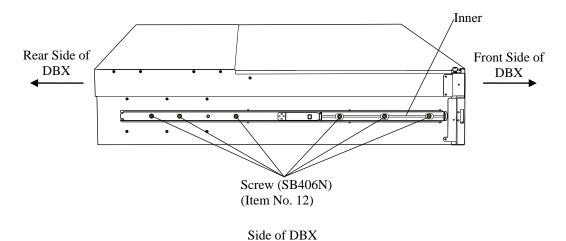


Fig. 4.2.3-24 Removal of Inner

b. Install the Inners to the Inters of the rails. Install the Inner of two rails respectively.

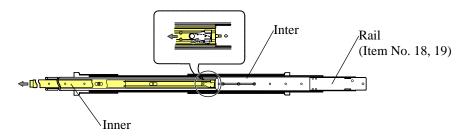


Fig. 4.2.3-25 Installation of Inner

# 13. Reinstalling removed parts

If parts were removed in procedure 8, reinstall the removed parts.

If parts were not removed, go to procedure 14.

- a. Open the lever of the DBPS. (See Fig. 4.2.3-20.)
- b. Insert the DBPS until the lever leans a little and bring down the lever completely until the button (blue) which fixes the lever clicks.
- c. Install the other DBPSs in the same manner.

# 14. Removing labels

- a. Remove the labels from the SAS cables.
- b. Remove the labels from the other SAS cables in the same manner.

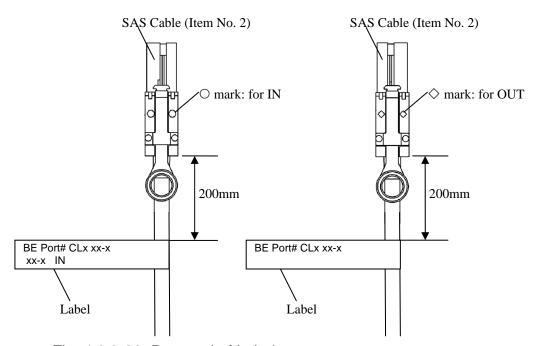


Fig. 4.2.3-26 Removal of Labels

15. Return to the working table and do the rest of the work Non-Disruptive De-installation: INST02-60

# 4.2.4 De-Installation Procedure of Flash Module Drive Box (DW-F700-DBF)

# **A** CAUTION

Perform this removal work in the state in which the Drive Box and all the parts in the Drive Box have been removed from the rack configuration after the work No.2 explained on page INST02-60 has been done. The system goes down if the Drive Box that should have been removed is left in the rack configuration.

## 1. Confirmation of Removal Position

The following figure shows a configuration example of installing Flash Module Drive Box in 40 units rack frame.

The mounting location of Flash Module Drive Box is different according to the configuration.

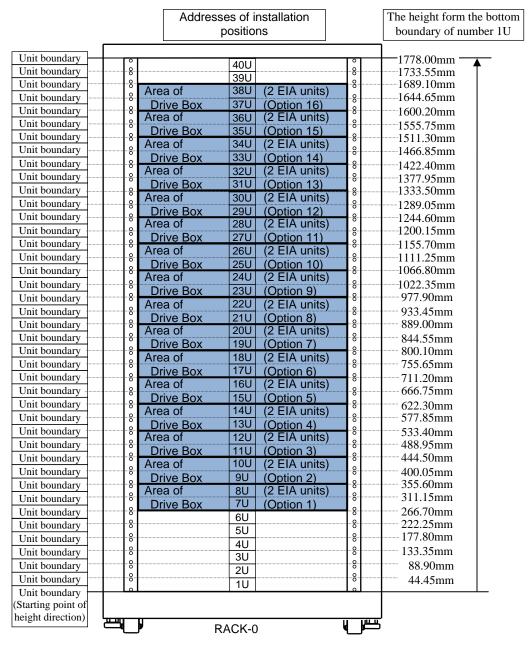


Fig. 4.2.4-1 Mounting Location of Drive Box

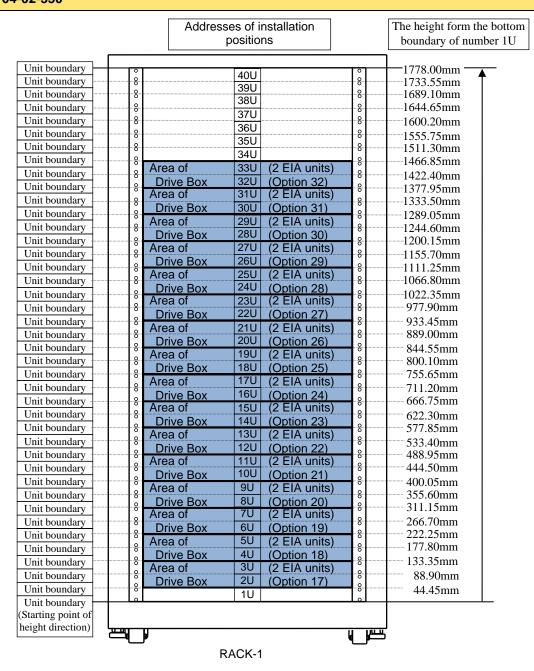


Fig. 4.2.4-2 Whole Layout of Installation Position Addresses (RACK-1)

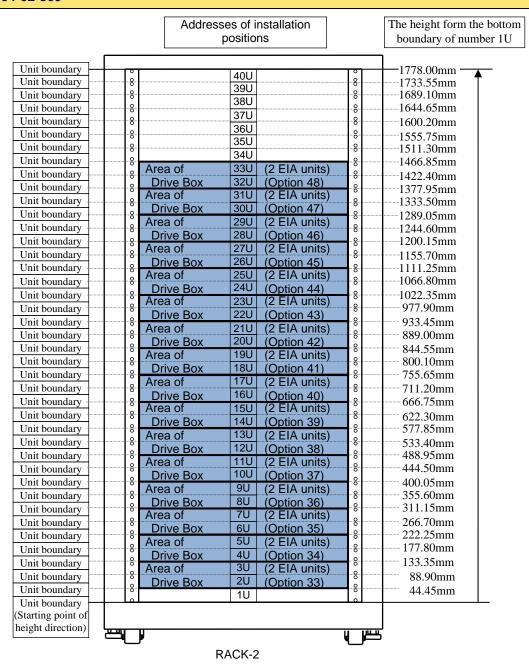


Fig. 4.2.4-3 Whole Layout of Installation Position Addresses (RACK-2)

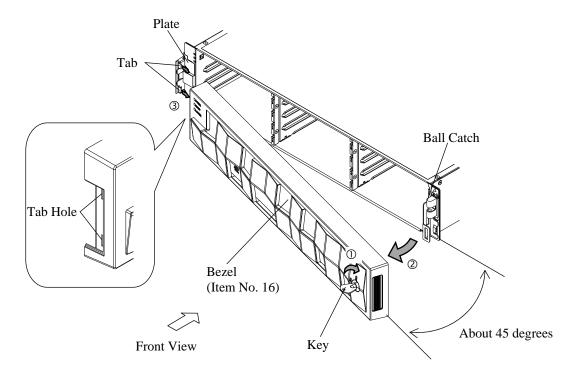
## 2. Removal of Bezel

- a. Insert the key into the keyhole on the bezel and release the lock of the bezel (①).
- b. Pull the key toward you while holding the lower right portion of the bezel, and then disengage the right side of the bezel from the ball catch (②).

NOTE: When disengaging the bezel, work with the opening angle between the bezel and the chassis of up to 45 degrees.

Do not force the bezel open too wide. Otherwise, a damage of bezel may be caused.

c. Disengage the bezel from the left tabs and then remove it (③).



The state in which the slit of the keyhole is aligned with the mark.

(The key can be inserted or pulled out in this state.)

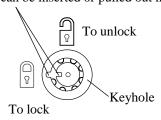


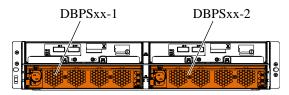
Fig. 4.2.4-4 Removal of Bezel

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- 3. Checking the PS Enable LEDs
  - a. Check that the RDY LEDs of the DBPS installed in the Drive Box are all off.



Rear View of DBF

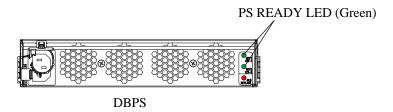


Fig. 4.2.4-5 RDY LED on DBPS

- 4. Disconnection of Power Cables
  - a. Disconnect the two power cables from the PDUs.
  - b. Pull and open the cable holders and disconnect the power cables from the DBPSs.
  - c. Remove the power cables from the rack frame.

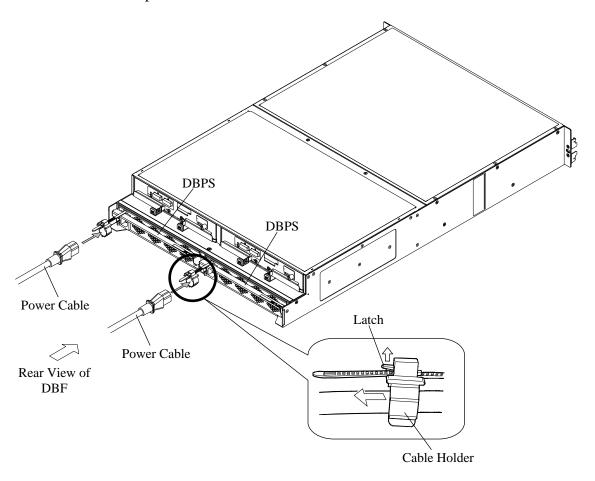


Fig. 4.2.4-6 Disconnection of Power Cables

## 5. Removal of DB-Address Labels

a. Remove the label from the front side of the DBF and the rear side of the rail (two labels in total).

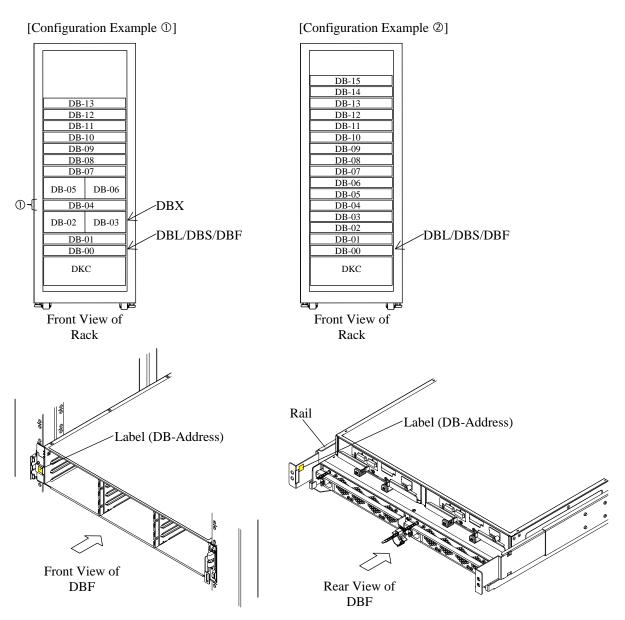


Fig. 4.2.4-7 Removal of Labels (DB-Address)

# 6. Removal of Plate

a. Remove the side cover from the left side of the front of the DBF.

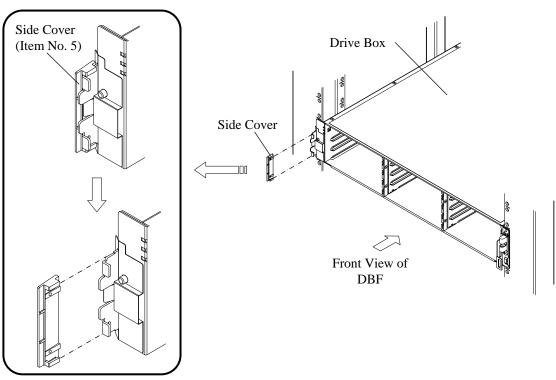


Fig. 4.2.4-8 Removal of Side Cover

b. Remove the plate from the left side of the front of the DBF.

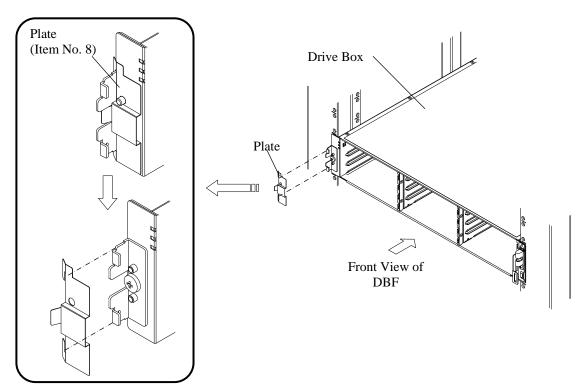


Fig. 4.2.4-9 Removal of Plate

## 7. Removal of Parts

If the Drive Box is removed at height below 1m or removed by using the special lifter, this procedure is not required because the Drive Box is removed from the rack frame with its parts mounted. (Go to procedure 8.)

If other than above, remove the parts first and then remove the Drive Box from the rack frame.

**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.

- a. Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the Drive Box.
- b. Press the latches of the ENC inward to unlock the levers.
- c. Pull the right and left levers and remove the ENC.
- d. Remove the other ENC in the same manner.

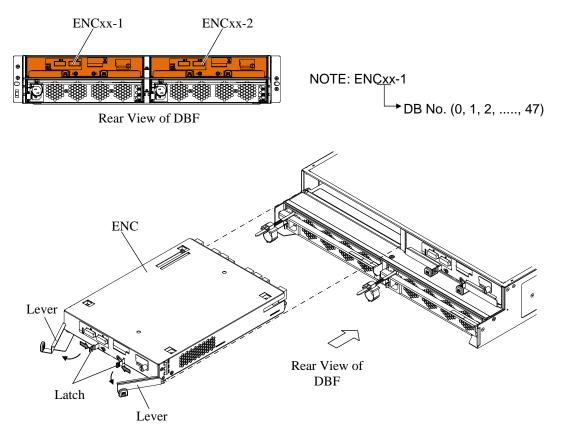


Fig. 4.2.4-10 Removal of ENC

## INST04-02-430

- e. Bring the handle down and forward (②) while pushing the latch of the DBPS inward (①).
- f. Pull the DBPS and remove it from the Drive Box.
- g. Remove the other DBPS in the same manner.

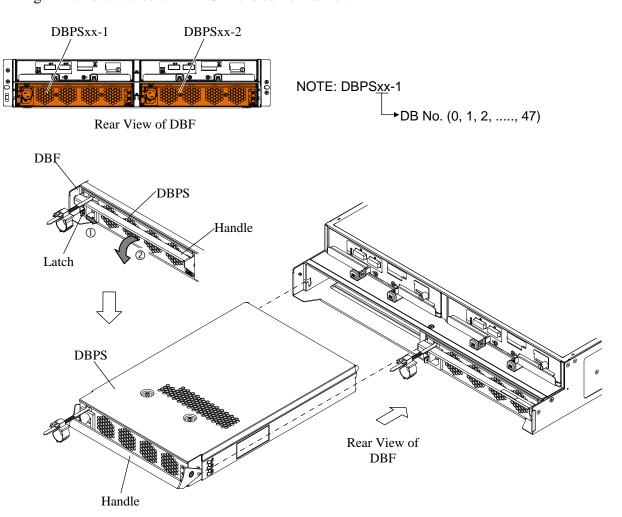


Fig. 4.2.4-11 Removal of DBPS

## 8. Removal of Drive Box



Paying attention to falls:

Work carefully because the mass of the single DBF is about 38 kg.

Beware over turning and dropping:

To prevent Drive Box from over turning and dropping, the installation work must be done by two or more personnel.

- a. Remove the two screws from the Drive Box.
- b. Remove the Drive Box on the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)

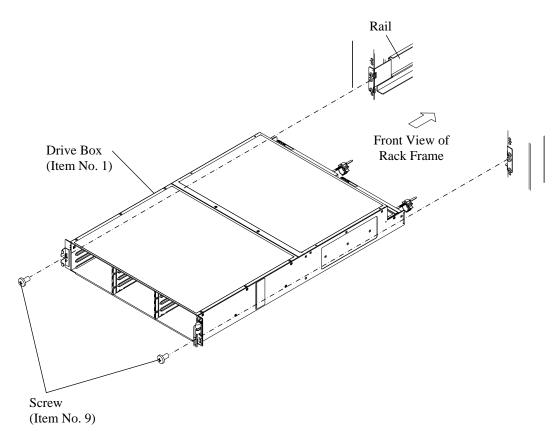


Fig. 4.2.4-12 Removal of Drive Box

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# 9. Reinstalling removed parts

If parts were removed in procedure 7, reinstall the removed parts.

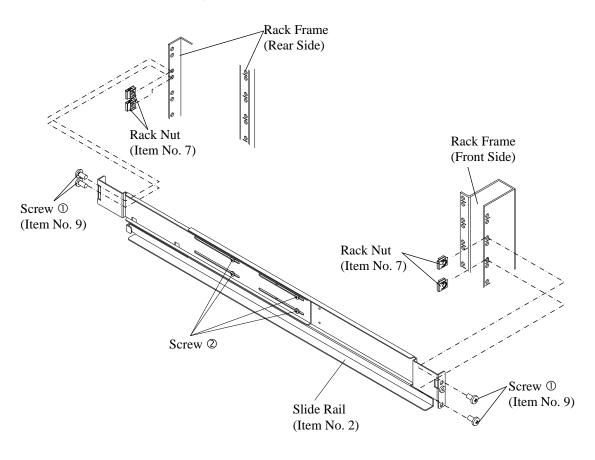
If parts were not removed, go to procedure 10.

- a. Make the handle of the DBPS completely fall down and forward. (See Fig. 4.2.4-11.)
- b. Insert the DBPS into the slot and push it to the full.
- c. Completely raise the handle and fix the DBPS.
- d. Install the other DBPS in the same manner.
- e. Make the right and left levers of the ENC open. (See Fig. 4.2.4-10.)
- f. Insert the ENC until the edge of the lever comes in contact with the Drive Box.
- g. Close the right and left levers to insert the ENC completely.
- h. Install the other ENC in the same manner.

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# 10. Removal of Slide Rails

- a. Remove the screws ① from the rack rail (four places in total at the front and rear).
- b. Loosen the four screws ② on the right slide rail and remove the slide rail from the rack
- c. Remove the rack nuts from the side of the rack frame (four places in total at the front and rear).
- d. In the same manner, remove the left slide rail.



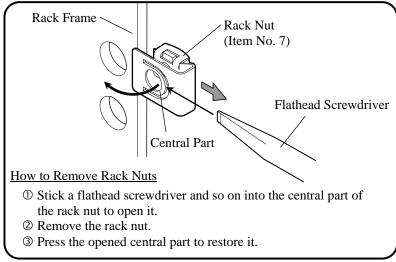


Fig. 4.2.4-13 Removal of Slide Rails

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11. Return to the working table and do the rest of the work Non-Disruptive De-installation: INST02-60

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# 4.3 De-Installation of Additional Cache Memory and Cache Flash Memory (DF-F850-4GB/8GB, DW-F700-16GB/BM160/BM256)

Table 4.3-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DF-F850-4GB	4GB DIMM	3285124-A	1	CM Module
2	DF-F850-8GB	8GB DIMM	3285126-A	1	CM Module
3	DW-F700-16GB	16GB DIMM	3284394-P	1	CM Module
4	DW-F700-BM160	CFM (80GB)	3284394-E	2	
5	DW-F700-BM256	CFM (128GB)	3284394-B	2	

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## INST04-03-20

Rough time of Cache memory and/or cache flash memory de-installation becomes addition of the following A, B, C and D.

Table 4.3-2 Rough time of De-installation

	process	Time	Remarks
Α	MAIN Blade blocking time	$5 \sim 60 \text{min} \times 2 (*1)$	
В	Cache memory, cache flash	5min × 2	
	memory equipment process		
С	MAIN Blade diagnosis time	10min × 2	
D	MAIN Blade recovering time	$5 \sim 60 \text{min} \times 2 \ (*1)$	

<sup>\*1:</sup> Standard processing time is indicated. The processing time depends on the use situation, especially, the influence of the amount of write pending is received. When the amount of write pending is large, time more than the indication value might be required.

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## INST04-03-30

- 1. Setting up the New Device Structure Information
- (1) <Set path offline or switch of channel path>

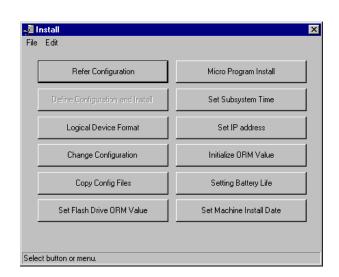
# **A** CAUTION

The switch to the alternate channel path or host shutdown is that connected with the CHB concerned.

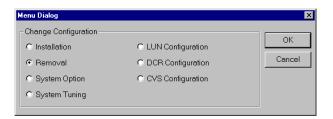
As for other channel path, switching to the alternate channel path or host shutdown is unnecessary.

However, the host must be shut down when the Pinned track in CHB connected port.

- (2) <Mode Change> Change the mode to Modify Mode. Select (CL) [Install].
- (3) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



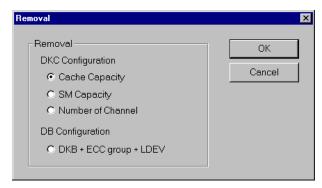
(4) <Start Device Structure Setup screen> Select (CL) [Removal] in the 'Menu Dialog' dialog box and select (CL) [OK].



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# INST04-03-31

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



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## INST04-03-40

(6) Select (CL) [No] in response to "Removal of features may cause fatal damage to storage

system. Check that any features be removed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



(7) <Input password> Enter the password and select (CL) [OK].



# **A** CAUTION

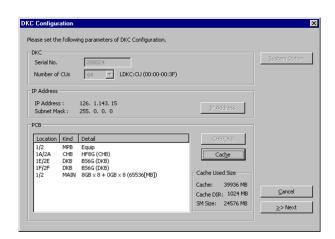
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(8) <Update Configuration Information> Select (CL) [Cache] in the 'DKC Configuration' window. (Go to step (8)-1.)

NOTE: It is not possible to install or deinstall plural parts at the same time.

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

Go to step (9).



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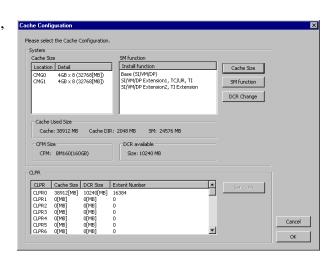
## (8)-1 < Define Cache>

Define each item in the 'Cache Configuration' window.

When the change of Cache setting or removal of the PCB is required, select (CL) [Cache Size].

Go to Step (8)-2.

When the change of SM setting is required, select (CL) [SM function]. Go to Step (8)-3.



If you want to change the DCR available size, select (CL) [DCR Change] to change it. Go to step (8)-4.

(See SSD Optional Function Section)

When a change in the CLPR setting is necessary, select (CL) the CLPR to be changed, and select (CL) the [Set CLPR]. (Go to step (8)-5.)

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

Refer to INST01-50 for the SVP screen display and the conversion of the option type names.

NOTE: The capacity reduced by the [Cache Size] operation is reduced from the Cache capacity of CLPR0.

The setting that Cache capacity of CLPR0 becomes less than 4096[MB] (minimum Cache capacity) is prevented by a [DEF3124W] message in this case.

Please confirm that the Cache capacity of CLPR0 to be reduced is larger than 4096[MB].

The change of SM and DCR can be changed only within the range of the reduced Cache capacity.

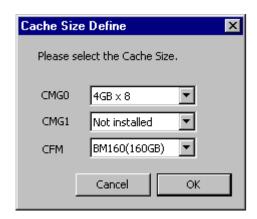
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#### INST04-03-60

(8)-2 < Cache Size Define screen>

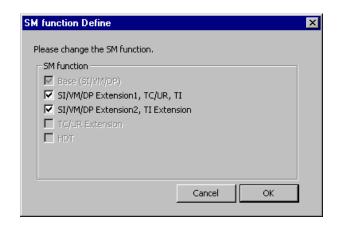
Set the CMG/CFM in the 'Cache Size Define' screen, select (CL) [OK].

Go back to Step (8)-1.



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(8)-3 <SM function Define screen>
Set the SM function in the 'SM function
Define' screen, select (CL) [OK].
Go back to Step (8)-1.

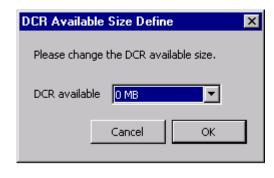


(8)-4 < Define DCR Available Size>

Define the DCR Available size in the 'DCR Available Size Define' dialog box.

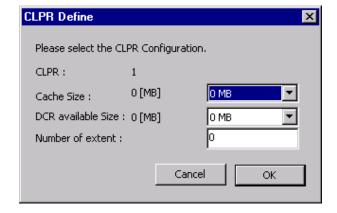
And select (CL) [OK].

Return to step (8)-1.



(8)-5 < Setting CLPR>

Set the Cache Size/DCR available Size/ Number of extent in the 'CLPR Define' window and select (CL) the [OK]. Return to step (8)-1.

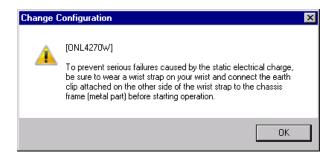


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#### INST04-03-70

# (9) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation.".



# (9)-1 < Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist. Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (9)-2.



## (9)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear." When [Yes] is selected (CL), the routine is returned to Step (3) on page INST04-03-30.

When [No] is selected (CL), returned to Step (9).



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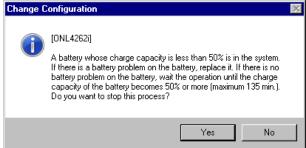
INST04-03-80

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- 2. SVP pre procedure (Confirmation of amount of battery charge)
  - (1) < Confirmation of amount of battery charge >

• When there is PCB whose amount of charge of the battery is less than 50%:

"A battery whose charge capacity is less than 50% is in the system. If there is a battery problem on the battery, replace it. If there is no battery problem on the battery, wait the operation until the charge capacity of the battery becomes 50% or more (maximum 135 min.). Do you want to stop this process?"



When [Yes] is selected (CL), returned to INST04-03-30 step (2). When [No] is selected (CL),go to step (2)

- When there is no PCB whose amount of charge of the battery is less than 50%: go to step 3.
- (2) <Input password>
  Enter the password and select (CL) [OK].



# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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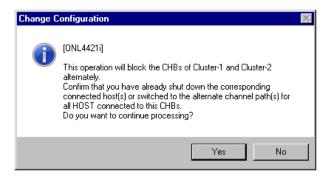
INST04-03-90

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## 3. SVP pre procedure on the cluster 1

(1) <Start de-installation> Select (CL) [Yes] in response to following message.

"This operation will block the CHBs of Cluster-1 and Cluster-2 alternately. Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST connected to this CHBs. Do you want to continue processing?"



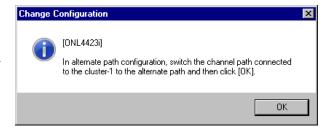
(2) <Start de-installation>
Select (CL) [Yes] in response to "After you select [Yes], you cannot cancel this operation.
Are you sure you want to continue this operation? (Note) Do not remove the components when downgrading the system at this time.".

When [Not is selected (CL) returns to

When [No] is selected (CL), returns to INST04-03-30 step (3).

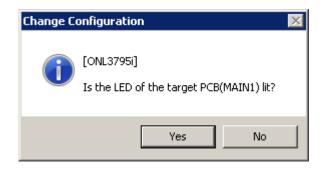


(3) Select (CL) [OK] in response to "In alternate path configuration, switch the channel path connected to the cluster-1 to the alternate path and then click [OK].".



- (4) <Memory blocking on cluster 1> When blocking of cluster 1 of shared memory and Cache memory is completed, "The MAIN Blade is being blocked..." are displayed.
- (5) "Lighting LED of the PCB..." is displayed.

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

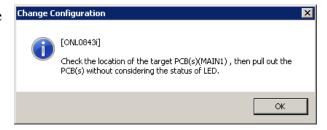


## If [No] is selected:

Select (CL) [OK] after response to "Check the location of the target PCB(s)(MAINn), then pull out the PCB(s) without considering the status of LED.".

(Refer INST04-03-90)

Go to step (7).

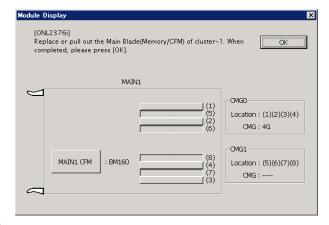


(7) <Perform hardware removal>

At this point refrain from pressing the [OK] button.

When "Replace or pull out the Main Blade(Memory/CFM) of cluster-1. When completed, please press [OK]." is displayed, perform the hardware removal steps according to the cache hardware removal procedure.

Make sure of the installation location of the module to be removed and remove the correct module.



(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

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4. Remove the Cache Memory on the cluster 1.

**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.

### 4-1 Remove the MAIN Blade.

a. Check the Shut Down LED on the MAIN1.

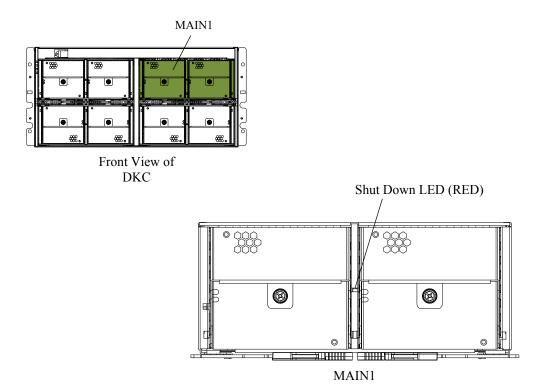


Fig. 4.3-1 Location of the Shut Down LED

Table 4.3-3 Location of the MAIN Blade

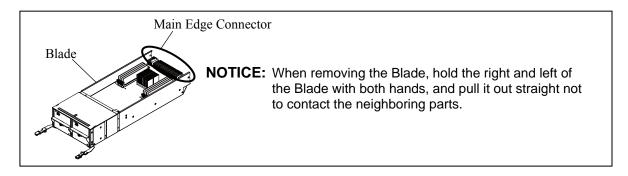
Cluster Location		Location No.	Remarks
1	Front of DKC	MAIN1	

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- b. Slide the lock on the levers of the MAIN1 outward and open the levers.
- c. Open the levers completely and remove the MAIN1.



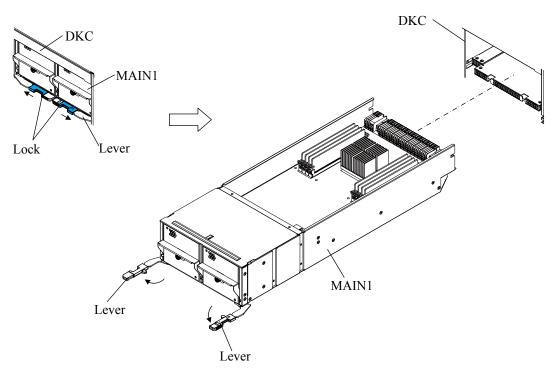


Fig. 4.3-2 Removal of MAIN1

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- 4-2 Remove the CM Modules.
  - Remove the extra CM Modules according to the required Cache Memory capacity referring to Fig. 4.3-3 and Fig. 4.3-4.
  - Insert the dust covers into the vacant sockets.

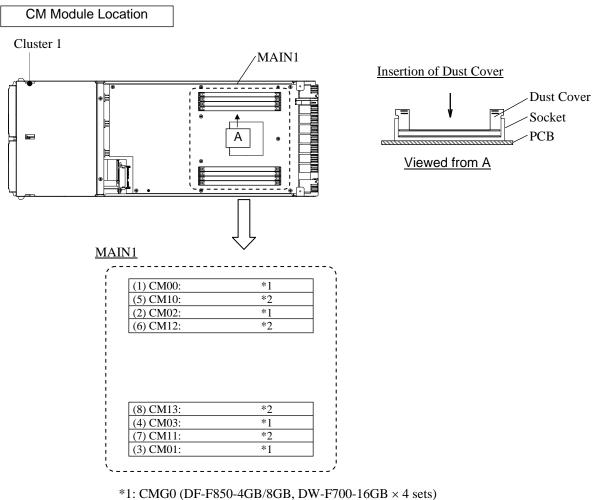
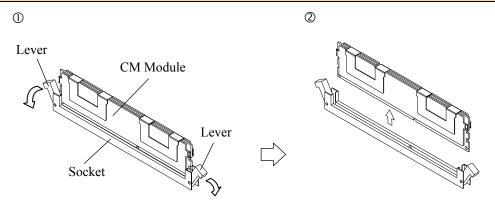


Fig. 4.3-3 Inserting Location of the CM Module

<sup>\*2:</sup> CMG1 (DF-F850-4GB/8GB, DW-F700-16GB × 4 sets)

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## Removal

- ① Pull the lever outward.
- ② Hold both ends of the CM Module by the fingers, and pull out the CM Module from the socket.

Fig. 4.3-4 Removal of CM Module

4-3 When you need to remove Cache Flash Memory (DW-F700-BM256), replace the CFM. When you do not need to remove Cache Flash Memory (DW-F700-BM256), go to step 4-4.

## **De-Installation Condition**

The Cache Flash Memory (DW-F700-BM256) is an indispensable option that is to be removed when the storage system configuration is as follows.

- When the cache memory capacity is 160GB or less, remove a set of the Cache Flash Memory (DW-F700-BM256).
- a. Loosen the screw on the front of the DKCFAN and make the handle fall down.
- b. Pull the handle and detach the DKCFAN from the MAIN1.

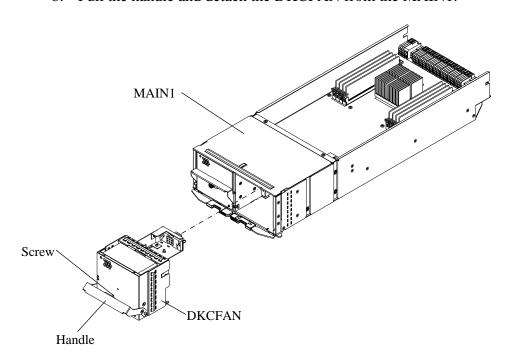


Fig. 4.3-4A Removal of DKCFAN

- c. Loosen the screw on the CFM and open the handle.
- d. Pull the handle and remove the CFM.
- e. Insert the CFM until its claw reaches the part to attach of the MAIN1.
- f. Push up the handle and fully insert the CFM.
- g. Tighten the screw and fix the CFM.
- h. Install the DKCFAN removed in procedures a to b. (See Fig. 4.3-4A.)

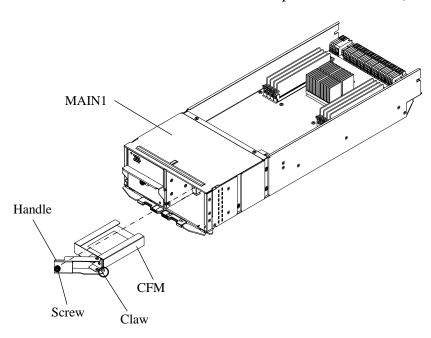
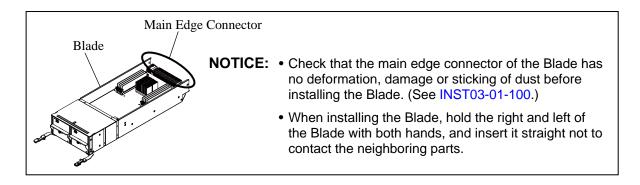


Fig. 4.3-4B Replacement of CFM

### 4-4 Insert the MAIN Blade.

- a. Insert the MAIN1 until its lever edges reach the DKC.
- b. Close the levers inward and fully insert the MAIN1. Then confirm that the lever locks are fastened to the DKC.



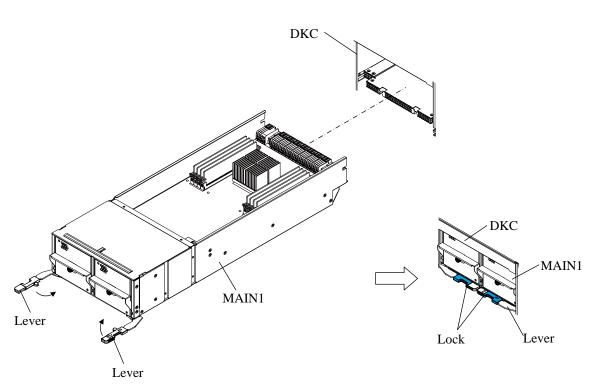
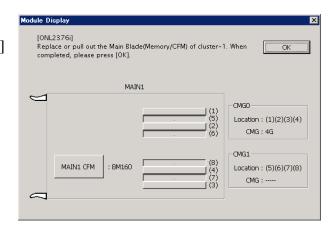


Fig. 4.3-5 Attachment of MAIN1

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### INST04-03-180

- 5. 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 Main Blade(Memory/CFM) of cluster-1. When completed, please press [OK].".



- (2) <Cache CUDG executes> "INLINE CUDG is running..." is displayed.
- When CUDG is completed, the recovery processing is automatically started with the messages.

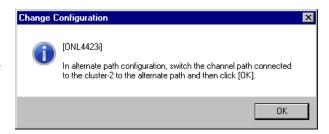
  "Restoring the MAIN Blade(Cluster-n)..."

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(4) Select (CL) [OK] in response to "In alternate path configuration, switch the channel path

path configuration, switch the channel path connected to the cluster-2 to the alternate path and then click [OK].".



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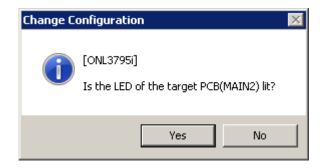
(5) <Memory blocking on cluster 2> When blocking of cluster 2 of shared memory and Cache memory is completed, "The MAIN Blade is being blocked..." is displayed.

(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(MAINn) lit?".



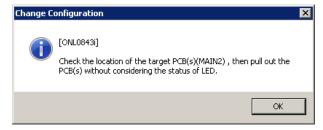
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## If [No] is selected:

Select (CL) [OK] after response to "Check the location of the target PCB(s)(MAINn), then pull out the PCB(s) without considering the status of LED.".

(Refer INST04-03-250)

Go to step (8).

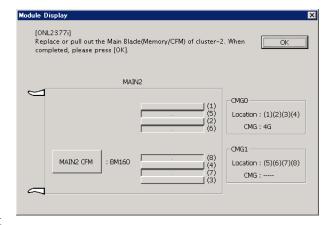


### (8) <Perform hardware removal>

At this point refrain from pressing the [OK] button.

When "Replace or pull out the Main Blade(Memory/CFM) of cluster-2. When completed, please press [OK]." is displayed, perform the hardware removal steps according to the cache hardware removal procedure.

Make sure of the installation location of the module to be removed and remove the correct module.



(The Shared Memory capacity may be changed at the same time, depending on the set Cache Memory capacity.)

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6. Remove the Cache Memory on the cluster 2.

**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.

### 6-1 Remove the MAIN Blade.

a. Check the Shut Down LED on the MAIN2.

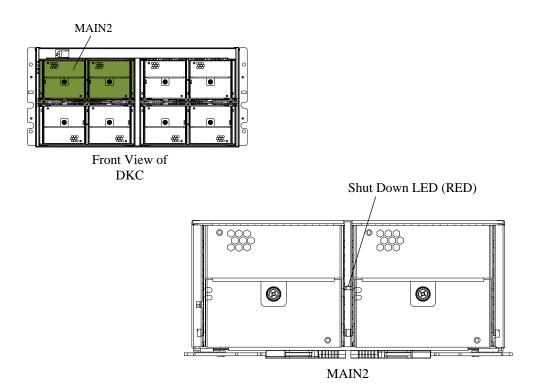


Fig. 4.3-6 Location of the Shut Down LED

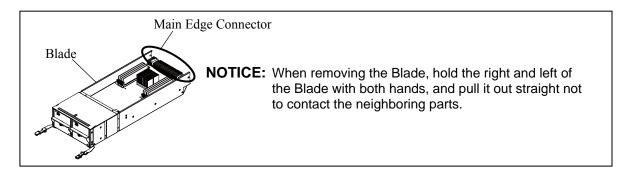
Table 4.3-4 Location of the MAIN Blade

Cluster Location		Location No.	Remarks
2	Front of DKC	MAIN2	

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- Slide the lock on the levers of the MAIN2 outward and open the levers.
- Open the levers completely and remove the MAIN2.



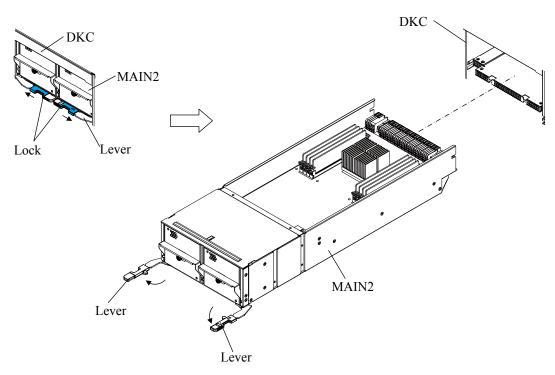


Fig. 4.3-7 Removal of MAIN2

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- 6-2 Remove the CM Modules.
  - Remove the extra CM Modules according to the required Cache Memory capacity referring to Fig. 4.3-8 and Fig. 4.3-9.
  - Insert the dust covers into the vacant sockets.

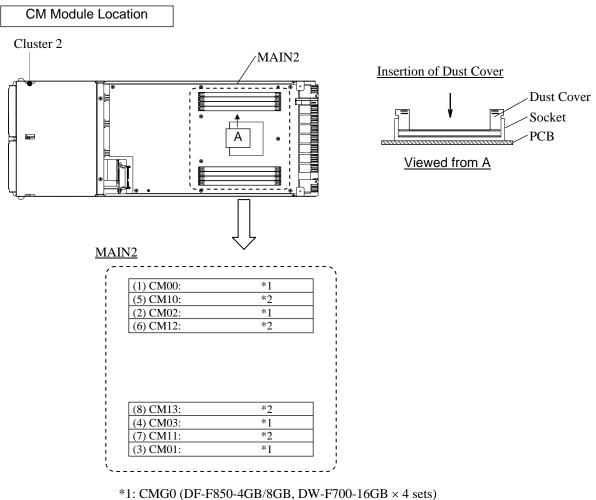


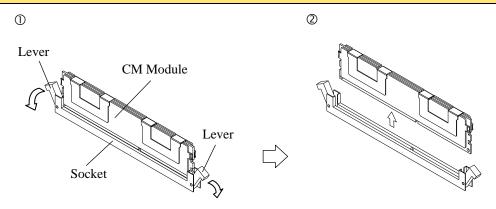
Fig. 4.3-8 Inserting Location of the CM Module

<sup>\*2:</sup> CMG1 (DF-F850-4GB/8GB, DW-F700-16GB × 4 sets)

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## Removal

- ① Pull the lever outward.
- ② Hold both ends of the CM Module by the fingers, and pull out the CM Module from the socket.

Fig. 4.3-9 Removal of CM Module

6-3 When you need to remove Cache Flash Memory (DW-F700-BM256), replace the CFM. When you do not need to remove Cache Flash Memory (DW-F700-BM256), go to step 6-4.

## **Installation Condition**

The Cache Flash Memory (DW-F700-BM256) is an indispensable option that is to be removed when the storage system configuration is as follows.

- When the cache memory capacity is 160GB or less, remove a set of the Cache Flash Memory (DW-F700-BM256).
- a. Loosen the screw on the front of the DKCFAN and make the handle fall down.
- b. Pull the handle and detach the DKCFAN from the MAIN2.

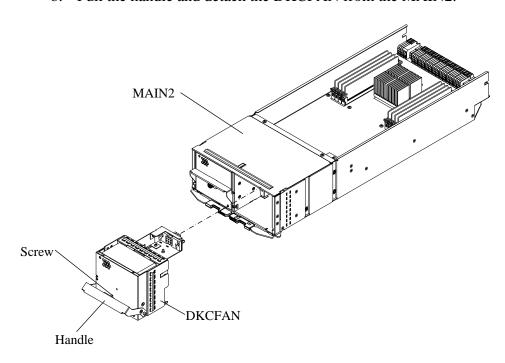


Fig. 4.3-9A Removal of DKCFAN

- c. Loosen the screw on the CFM and open the handle.
- d. Pull the handle and remove the CFM.
- e. Insert the CFM until its claw reaches the part to attach of the MAIN2.
- f. Push up the handle and fully insert the CFM.
- g. Tighten the screw and fix the CFM.
- h. Install the DKCFAN removed in procedures a to b. (See Fig. 4.3-9A.)

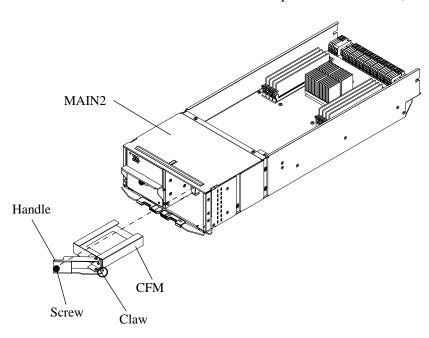
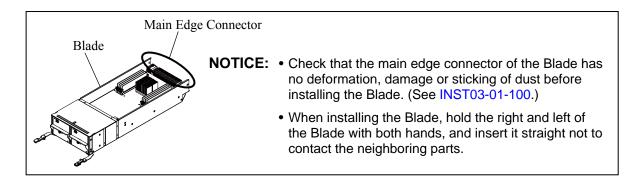


Fig. 4.3-9B Relacement of CFM

- 6-4 Insert the MAIN Blade.
  - a. Insert the MAIN2 until its lever edges reach the DKC.
  - b. Close the levers inward and fully insert the MAIN2. Then confirm that the lever locks are fastened to the DKC.



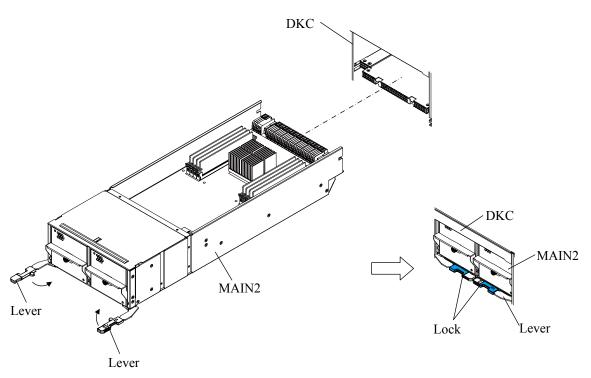


Fig. 4.3-10 Attachment of the MAIN2

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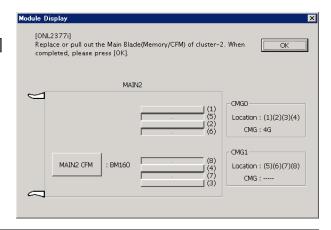
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## 7. SVP post procedure on the Cluster2

## (1) (A PCB to be added)

After the hardware procedure for one side of cache memory is completed, select (CL) [OK] in response to "Replace or pull out the Main Blade(Memory/CFM) of cluster-2. When completed, please press [OK]."

"INLINE CUDG is running..." is displayed.



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When CUDG is completed, the recovery processing is automatically started with the messages.

"Restoring the MAIN Blade(Cluster-n)..."

(3) <Check the end of removal procedure> "Renewal process has completed. Please check storage system status." shown in the right figure displayed. Select (CL) [OK] in response to this message.



**(4)** 

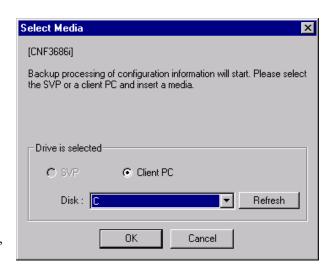
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

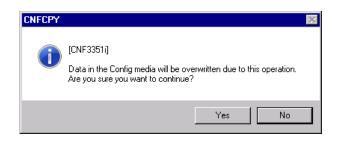
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(5)

If the configuration information is not saved in the selected media, go to step (6). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (7).

(6)

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



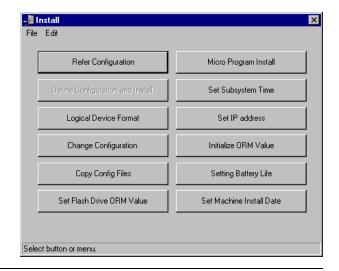
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(7)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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

(9) <Path online>

Set the stopped channel path online by your customer.

Return to the working table and do the rest of the work. (INST02-60)

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INST04-04-10

## 4.4 De-Installation of Channel Blades

# 4.4.1 De-Installation of Host I/O Module (DF-F850-HF8GR)

Table 4.4.1-1 Parts List

No.	Model Number	Part Name	Part No.	Quantity	Remarks
1	DF-F850-HF8GR	СНВ	3285153-E	1	

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Table 4.4.1-2 Working time

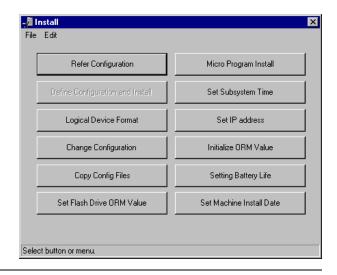
		Number of change (set)	Total (minutes)
CHB Removal		1	10
		2	15
		3	15
		4	20
		5	20

**NOTICE:** When there are paths that are used for TrueCopy, Universal Replicator and Universal Volume Manager on the Channel Blade, delete the paths before executing the operation. The operation cannot be executed before deleting the paths.

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### INST04-04-30

- 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) [Removal] in the 'Menu Dialog' dialog box and select (CL) [OK].

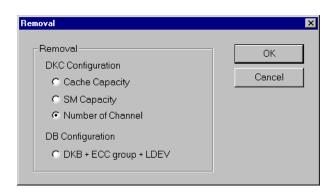


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(4) <Select a part to be changed> Select (CL) [Number of Channel], and select (CL) [OK].



Select (CL) [No] in response to "Removal of features may cause fatal damage to storage system. Check that any features be removed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



(6) <Input password> Enter a password and select (CL) the [OK].



# **A** CAUTION

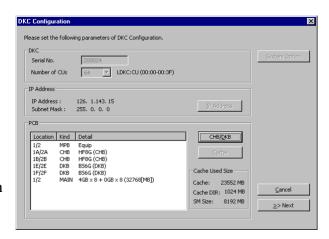
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

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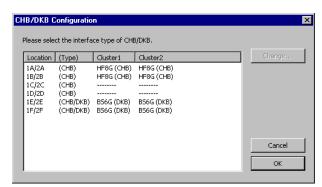
> (7) <DKC Configuration screen> Select (CL) [CHB/DKB] in the 'DKC Configuration' screen. Go to Step (8).

After setting the items, select (CL) [>>Next]. (Go to Step 2.)

If [Cancel] is selected (CL), this operation procedure terminates.

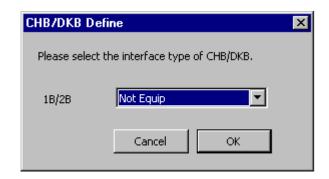


(8) <Updating the configuration information>
In the 'CHB/DKB Configuration'
window, select the location(s) where the
CHB is to be removed from, and select
(CL) the [Change...].
Advances the routine to Step (9).
Make sure that the entry that has been
made is correct and select (CL) the [OK].
The routine is returned to Step (7).



Refer to INST01-50 for the SVP screen display and the conversion of the option type names.

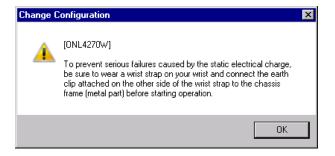
(9) <Select the CHB type>
In the 'CHB/DKB Define' window, select the [Not Equip].
After the setting is completed, select (CL) the [OK].
The routine is returned to Step (8).



## 2. SVP pre procedure

# (1) <Wear a wrist strap>

Select (CL) [OK] in response to "To prevent serious failures caused by the static electrical charge, be sure to wear a wrist strap on your wrist and connect the earth clip attached on the other side of the wrist strap to the chassis frame (metal part) before starting operation."



## (1)-1<Confirm wearing wrist strap>

In response to a message, "Did you put on a wrist strap on your wrist?".

Select [Yes] when wrist strap is on your wrist.

Select [No] when there is no wrist strap on your wrist.

When [No] is selected (CL), go to Step (1)-2.



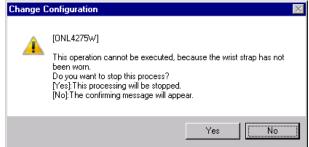
### (1)-2

In response to a message, "This operation cannot be excuted, because the wrist strap has not been worn. Do you want to stop this process?

[Yes]: This processing will be stopped. [No]: This confirming message will appear."

When [Yes] is selected (CL), the routine is returned to Step (2) on page INST04-04-30.

When [No] is selected (CL), returned to Step (1).

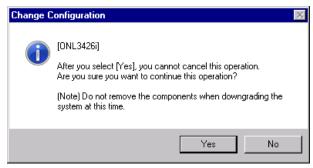


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(2) <Start installation>

Select (CL) [Yes] in response to "After you select [Yes], you cannot cancel this operation. Are you sure you want to continue this operation? (Note) Do not remove the components when downgrading the system at this time.".

When [No] is selected (CL), the routine is returned to Step (2) on page INST04-04-30.

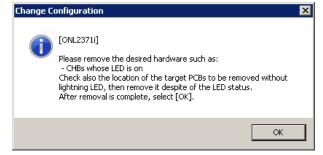


## (3) <Remove CHB>

At this point refrain from pressing the [OK] button.

"Please remove the desired hardware such as:

- CHBs whose LED is on Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED



status. After removal is complete, select [OK]." is displayed.

### 3. De-Installation Procedure of Host I/O Module

**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.

## 3-1 Confirmation of the Replace LED

a. While referring to Fig. 4.4.1-1 and Table 4.4.1-3, check the Replace LED on the CHB.

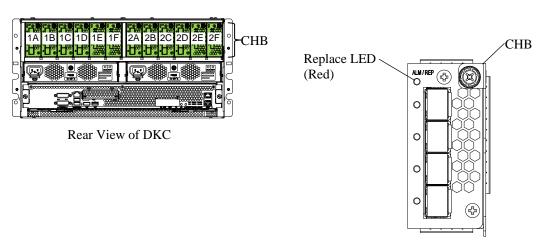


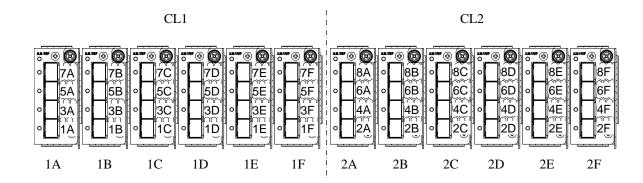
Fig. 4.4.1-1 Location of the Replace LED

Table 4.4.1-3 Inserting Location

Addition	Slot No.		Location No.		Remarks
No.	Cluster 1	Cluster 2	Cluster 1	Cluster 2	
Basic	1A	2A	CHB-1A	CHB-2A	
Option 1	1B	2B	CHB-1B	CHB-2B	
Option 2	1C	2C	CHB-1C	CHB-2C	
Option 3	1D	2D	CHB-1D	CHB-2D	
Option 4	1E	2E	CHB-1E	CHB-2E	
Option 5	1F	2F	CHB-1F	CHB-2F	

- 3-2 Disconnection of the optical fibre cables
  - a. Disconnect the optical fibre cables from the CHB.

## CHB Port Number



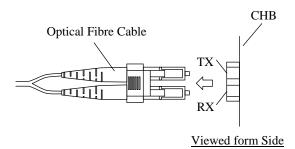


Fig. 4.4.1-2 Disconnection of Optical Fibre Cables

- b. Open the binders on the DKC side, and remove the optical fibre cables.
- c. Remove the optical fibre cable from the frame.

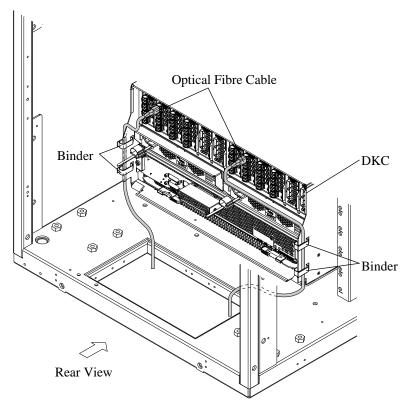
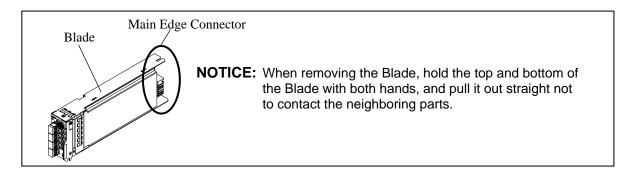


Fig. 4.4.1-3 Removal of Optical Fibre Cables

### 3-3 Removal of the CHB

Remove one CHB from one slot at a time.

- a. Loosen the screw that fastens the CHB and let the handle fall down. (Refer to Table 4.4.1-3 and Fig. 4.4.1-4)
- b. Push down the handle and remove the CHB.
- c. Insert the dummy cover until the claw on the lower part of the handle of the dummy cover reaches the front of the DKC.
- d. Push up the handle and fully insert the dummy cover.
- e. Tighten the screw and fasten the CHB.
- f. Repeat the procedures a to e each time you remove a CHB.



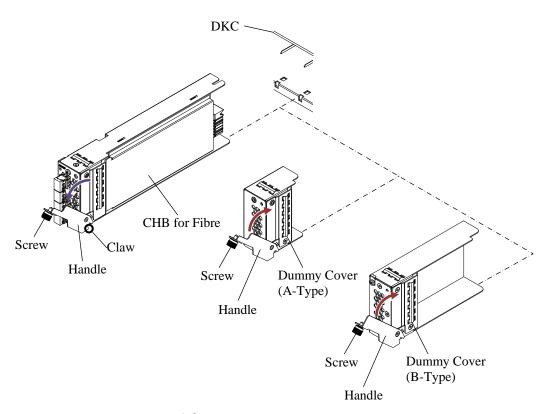


Fig. 4.4.1-4 Removal of CHB

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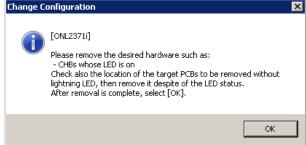
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## SVP procedure

(1) <Making sure of completion of the CHB removal>

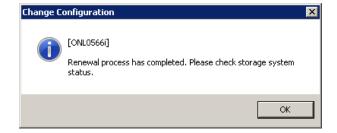
In response to a message, "Please remove the desired hardware such as:

- CHBs whose LED is on Check also the location of the target PCBs to be removed without lightning LED, then remove it despite of the LED status. After removal is complete, select [OK].", select (CL) [OK].



(2)

A message, "Renewal process has completed. Please check storage system status." is displayed. In response to the message, select (CL) [OK].



(3)

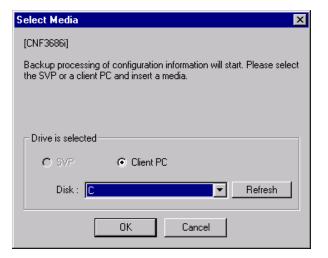
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

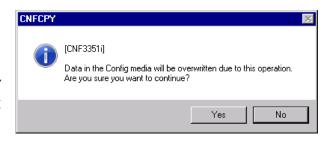
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(4)

If the configuration information is not saved in the selected media, go to step (5).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select



(CL) the [Yes] button. When the backup to the Config media is not necessary, select (CL) the [No] button and go to step (6).

(5)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

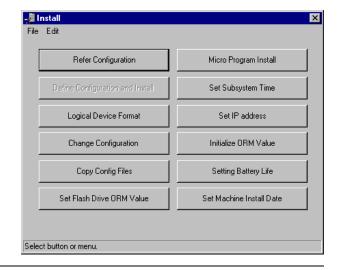
Remove the configuration information media, slect (CL) [OK].



(6)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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

Return to the working table and do the rest of the work. (INST02-60)

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INST04-05-10

## 4.5 De-Installation of Controller Chassis (DW700-CBX, DW-F700-RRCBR)

Table 4.5-1 Parts List of DW700-CBX

Item No.	Part Name	Part No.	Quantity	Remarks
1	Controller Chassis	1510093-A	1	DKC
2	CBX Bezel	3284394-J	1	Bezel
3	Bracket(R)	5547464-A	1	
4	Side Panel(5U)	3284248-1	1	
5	Screw	SB305N	4	
6	Clamp Tape	5544251-1	4	
7	LAN Cable	5533144-5	1	
8	EMI Core	5513535-1	3	
9	Label (DB-Address)	3287067-1	2	
10	Label (SAS Cable)	3287020-1	3	For CL1
11	Label (SAS Cable)	3287020-2	3	For CL2
12	Binder	5532297-A	10	292 mm
13	Key	_	2	Key No. T750

Table 4.5-2 Parts List of DW-F700-RRCBR

Item No.	Part Name	Part No.	Quantity	Remarks
101	Rail(HM)	3284479-A	1	
102	Rail(HM)	3284044-2	1	
103	Rack Nut	5510146-1	12	
104	WA Socket Bolt	3261959-516	8	
105	Screw	SB510N	4	

#### INST04-05-20

- 1. Confirmation of Removal Position
  - a. The following figure shows a configuration example of installing Controller Chassis (DW700-CBX) in 40 units rack frame. However, installing positions of Controller Chassis may differ according to the construction within the rack frame.

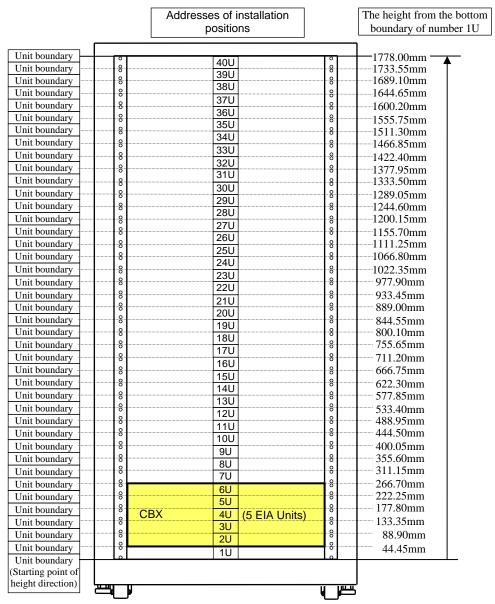


Fig. 4.5-1 Mounting Position of Controller Chassis

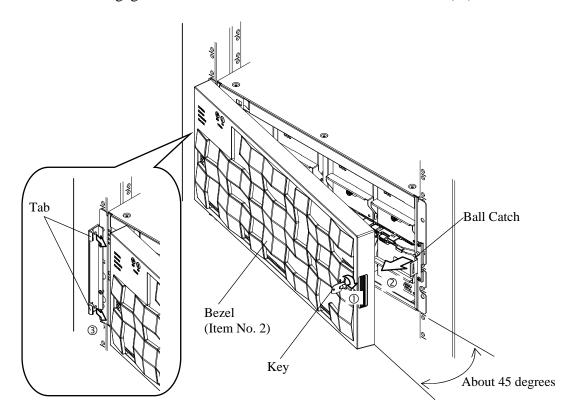
#### 4.5.1 De-Installation Procedure of Bezel

- 1. Removal of Bezel
  - a. Insert the key into the keyhole on the bezel and release the lock of the bezel (①).
  - b. Pull the key toward you while holding the lower right portion of the bezel, and then disengage the right side of the bezel from the ball catch (②).

NOTE: When disengaging the bezel, work with the opening angle between the bezel and the chassis of up to 45 degrees.

Do not force the bezel open too wide. Otherwise, a damage of bezel may be caused.

c. Disengage the bezel from the left tabs and then remove it (③).



The state in which the slit of the keyhole is aligned with the mark.

(The key can be inserted or pulled out in this state.)

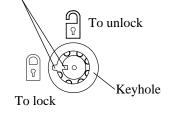


Fig. 4.5.1-1 Removal of Bezel

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#### Removal of Parts

- a. Remove the two screws and remove the bracket from the front side of the DKC.
- b. Remove the two screws and remove the side panel from the front side of the DKC.

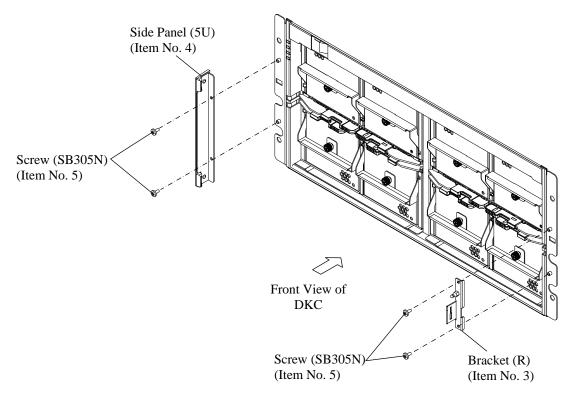


Fig. 4.5.1-2 Removal of Parts

#### INST04-05-50

## 4.5.2 De-Installation Procedure of Controller Chassis

- 1. Disconnection of Power Cables
  - a. Disconnect the two power cables from the PDUs.
  - b. Pull and open the cable holders and disconnect the power cables from the DKCPSs.
  - c. Remove the power cables from the rack frame.

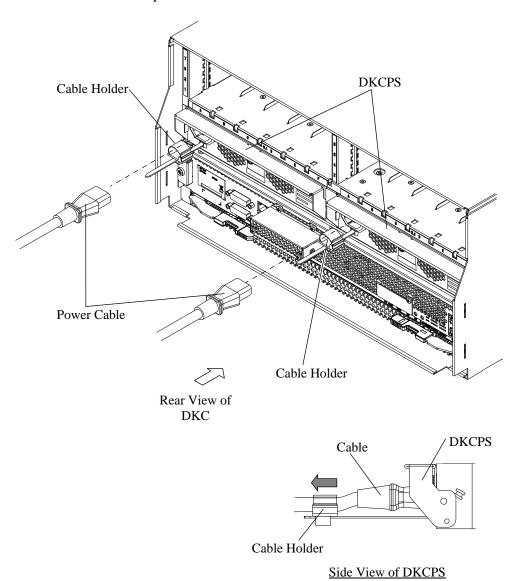


Fig. 4.5.2-1 Disconnection of Power Cables

#### INST04-05-60

#### 2. Removal of DKC



Paying attention to falls:

Work carefully because the mass of the single DKC is about 72 kg.

a. Remove the four screws and remove the DKC from the Rack frame referring to mounting procedure using the special lifter. (See INST03-10-10 through 40.)

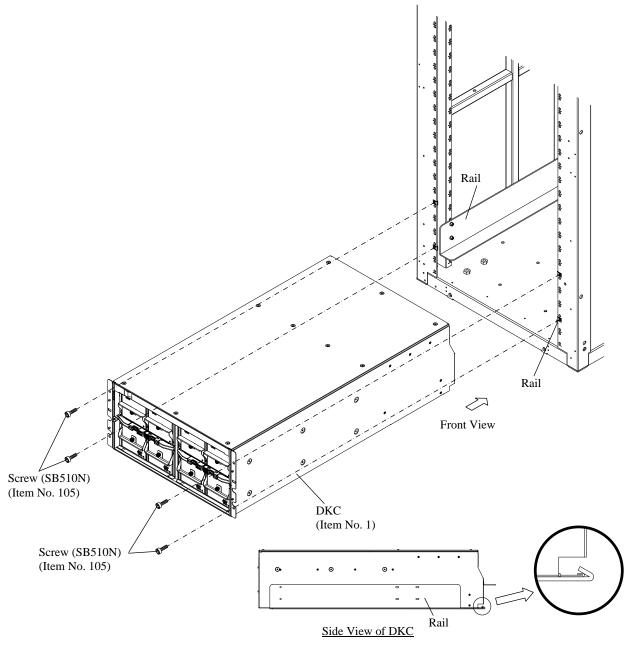
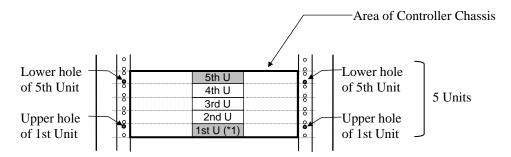


Fig. 4.5.2-2 Removal of DKC

#### INST04-05-70

- 3. Removal of rack nuts on the rack frame
  - a. Remove the two rack nuts from each of the right and left beams on the front side of the rack frame.



Front View of Rack Frame

\*1: Bottom Unit of Installation Position

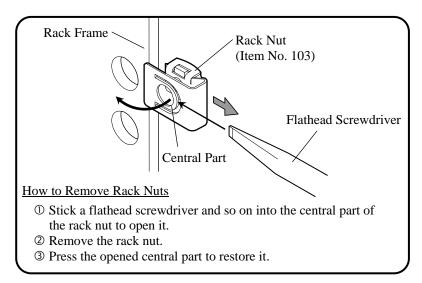


Fig. 4.5.2-3 Removal of Rack Nuts

#### INST04-05-80

#### 4. Removal of Rails

- a. Remove the four WA socket bolts and remove the rail from the right side of the rack frame.
- b. Remove the four rack nuts from the rack frame.
- c. Remove the rail from the left side of the rack frame in the same way.

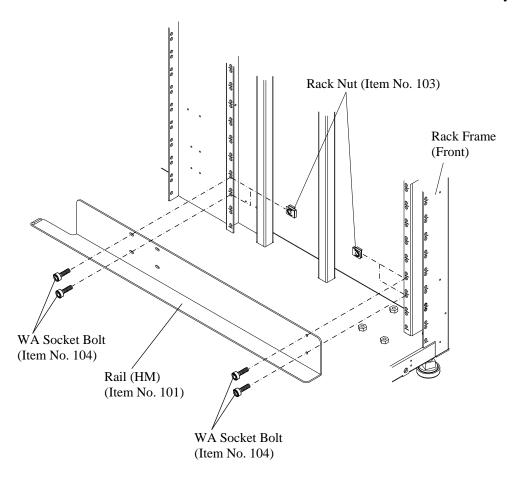


Fig. 4.5.2-4 Removal of Rail

#### INST04-06-10

## 4.6 De-Installation of SM Size without removing Cache Memory

**NOTICE:** In addition, as the CM capacity decreases if SM size is increased, make sure there will be no performance effect and so on in the configuration to be built.

Rough time of SM size de-installation becomes addition of the following A, B and C.

Table 4.6-1 Rough time of de-installation

	Process	Time	Remarks
A	MAIN Blade blocking time	$5 \sim 60 \min \times 2 (*1)$	
В	MAIN Blade diagnosis time	$10\min \times 2$	
C	MAIN Blade recovering time	$5 \sim 60 \min \times 2 (*1)$	

<sup>\*1:</sup> Standard processing time is indicated. The processing time depends on the use situation, especially, the influence of the amount of write pending is received. When the amount of write pending is large, time more than the indication value might be required.

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#### INST04-06-20

- 1. Setting up the New Device Structure Information
- (1) <Set path offline or switch of channel path>

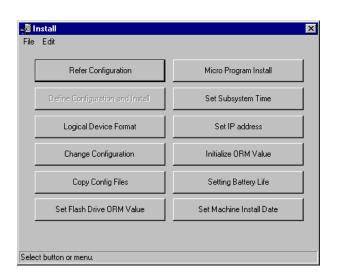
## **A** CAUTION

The switch to the alternate channel path or host shutdown is that connected with the CHB concerned.

As for other channel path, switching to the alternate channel path or host shutdown is unnecessary.

However, the host must be shut down when the Pinned track in CHB connected port.

- (2) <Mode Change> Change the mode to Modify Mode. Select (CL) [Install].
- (3) <Start the 'Menu Dialog' screen> Select (CL) [Change Configuration].



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

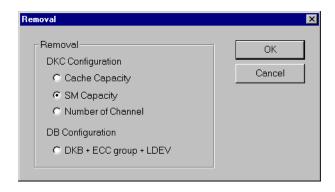


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(5) <Select a part to be changed>Select (CL) [SM Capacity], and select (CL) [OK].



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#### INST04-06-30

(6)

Select (CL) [No] in response to "Removal of features may cause fatal damage to storage system. Check that any features be removed are not required by host operations. Data will be lost from any ECC group that are removed. Do you want to stop this process?".



(7) <Input password>
Enter the password and select (CL) [OK].



## **A** CAUTION

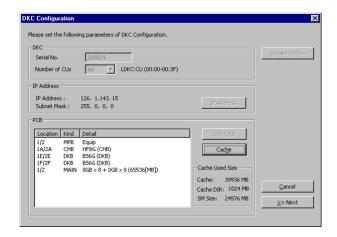
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if a wrong part to be removed is selected, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

(8) <Update Configuration Information> Select (CL) [Cache] in the 'DKC Configuration' window. (Go to step (8)-1.)

> NOTE: It is not possible to install or deinstall plural parts at the same time.

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

Go to step (9).



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#### INST04-06-40

(8)-1 < Define Cache>

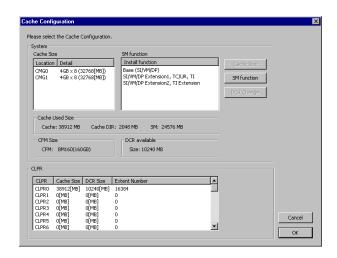
Select (CL) [SM function] in the 'Cache Configuration' window.

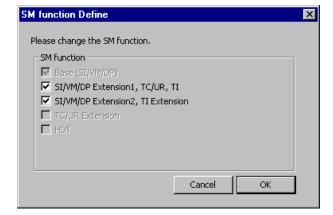
Go to Step (8)-2.

Make sure that all entered items are correct and select (CL) [OK].

Go back to step (8).

(8)-2 <SM function Define screen>
Set the SM function in the 'SM function
Define' screen, select (CL) [OK].
Go back to Step (8)-1.

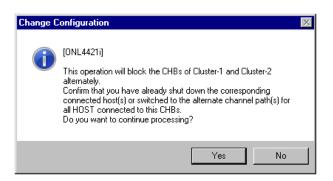




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(9) <Confirm Channel Path offline> Select (CL) [Yes] in response to following message.

"This operation will block the CHBs of Cluster-1 and Cluster-2 alternately. Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST connected to this CHBs. Do you want to continue processing?"



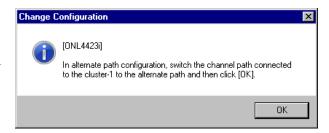
(10) <Start removal>

Select (CL) [Yes] in response to "Are you sure you want to renew storage system?". When [No] is selected (CL), returns to INST04-06-20 step (3).



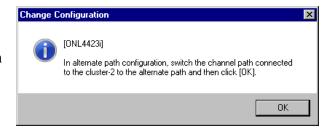
(11)

Select (CL) [OK] in response to "In alternate path configuration, switch the channel path connected to the cluster-1 to the alternate path and then click [OK].".

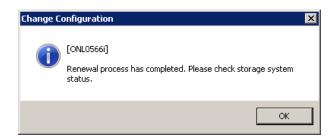


(12)

Select (CL) [OK] in response to "In alternate path configuration, switch the channel path connected to the cluster-2 to the alternate path and then click [OK].".



(13) <Check the end of removal procedure> "Renewal process has completed. Please check storage system status." shown in the right figure displayed. Select (CL) [OK] in response to this message.



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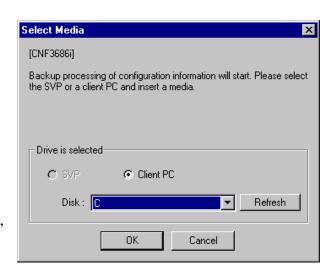
#### INST04-06-60

(14)

Execute an operation for backing up the configuration information. Prepare the removable media for backup and insert the media. Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(15)

If the configuration information is not saved in the selected media, go to step (16). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (17).

(16)

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



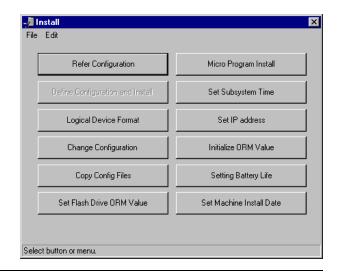
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#### INST04-06-70

(17)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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(18) < Mode Change>

Change the mode to View Mode.

(19) < Path online>

Set the stopped channel path online by your customer.

Return to the working table and do the rest of the work. (INST02-60)

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INST05-10

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## 5. SVP procedure

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5.2.2 Configuration Information Definition	INST05-90
5.2.3 Check Procedure	
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5.3 Change Configuration SVP Procedure	INST05-610
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5.3.1.2 DCR Configuration	INST05-640
5.3.1.3 CVS Configuration	INST05-700
5.3.1.4 LUN Management	INST05-1010
5.4 Procedure for connecting external servers	INST05-1550
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5.4.2 Configure DNS Setting of SVP	

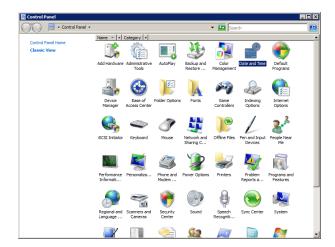
#### 5.2 New Installation SVP Procedure

## 5.2.1 TOD Setting and Set IP Address

- [1] TOD Setting (Turn on storage system power before TOD Setting)
- 1. <Open [Control Panel]>
  Select (DR) [Settings] and then [Control Panel] from [Start].

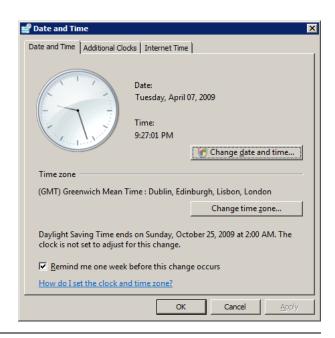


2. <Open [Date and Time]>
Select (DC) [Date and Time] from [Control Panel].

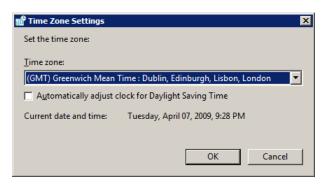


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3. <Select "Time zone">
Select (CL) [Change time zone...].



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 Time" is □
(without a check mark). Then, press [OK]
(CL).

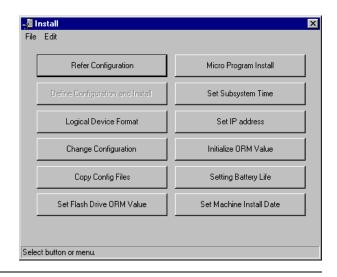


- 5. <Close [Control Panel]> Select (DR) [File] and then [Close] from [Control Panel].
- 6. Change the mode to [Modify Mode] from [View Mode] (CL).
- 7. Select (CL) [Install].

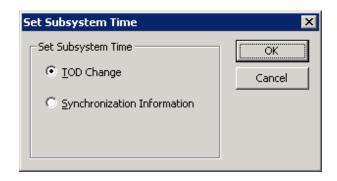
## INST05-40

8.

Select (CL) [Set Subsystem Time] in the 'Install' window.

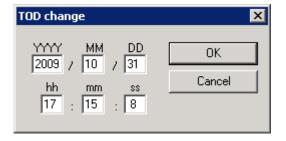


9.
Select (CL) [TOD Change] in the 'Set
Subsystem Time' window, and then select
(CL) [OK].



10.

Specify the date (year, month and day) and time (hour, minute and second) and select (CL) [OK].



11.

Close the 'Install' window.

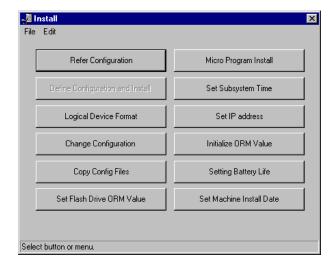
In case of New Installation, go to INST02-240 step (5).

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#### **INST05-50**

- [2] Set IP Address
- 1. Change the mode to [Modify Mode] from [View Mode] (CL).
- 2. Select (CL) [Install].
- 3. Select (CL) [Set IP address] in the 'Install' window.



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#### **INST05-60**

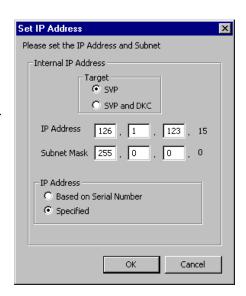
4. <Change the IP Address>

(1)

Select (CL) [SVP] and setting IP Address and Subnet Mask of an Internal IP Address.

NOTE: In case of setting Subnet Mask of internal IP Address, the previous address may be displayed if you set an address that is different than the value of DKC.

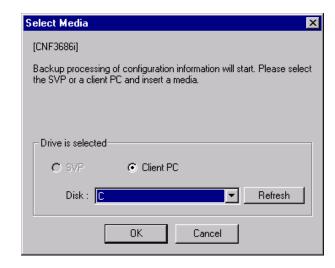
If the displayed address is different from what you have set, make the setting again to match the value of DKC.



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#### INST05-70

- (2) <Backup for configuration information>
  - ① The message "Backup processing of configuration information will start. Please select the SVP or a client PC and insert a media." is displayed. Set the Config media to the selected drive and select (CL) [OK].

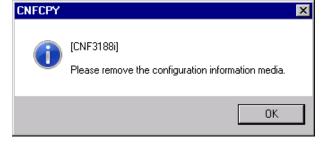


② If the configuration information is not saved in the selected media, go to step ③. If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup



to the Config media is not necessary, select (CL) the [No] button and go to step (3).

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



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#### INST05-80

(3)

In response to the message "This will reboot SVP.", select (CL) [OK].

Change the IP Address is abnormally terminated if the message "Failed to change the IP address." is displayed. Identify the error cause according to the procedure shown in TROUBLE SHOOTING SECTION. (Refer to TRBL04-530)



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## **A** CAUTION

If the remote connection to the Client PC is disconnected during the operation, reconnect by changed IP address it to continue the operation. Please perform a remote desktop reconnection after more than five minutes from pushing down the [OK] button of a [INS1105i] message. (Operation for connection to SVP, refer to SVP01-60.)

[3] Setting Web Console

Make a setting of the Web Console according to WEB CONSOLE SECTION. (WEB01-10)

#### INST05-90

### 5.2.2 Configuration Information Definition

## **A** CAUTION

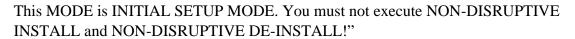
This operation is necessary only when a storage system is newly installed. It is not performed afterward. If it is performed by mistake, a system down or a data loss may be caused.

## 1. <Mode Change>

Change the mode to [Initial Setting]. Select "Shift" + "Ctrl" + "I".

Enter the password and select (CL) [OK].

Select (CL) [OK] in response to the confirmation message "<Important CAUTION>

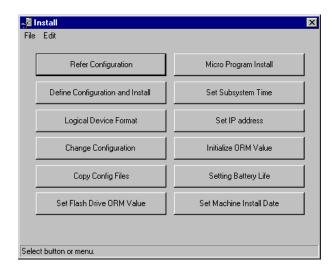


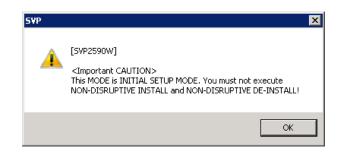
Please call Technical Support Division for asking the password. Select (CL) [Install].

NOTE: The mode changes to [Initial Setting (Unlocked)] when the storage system is in CE MODE.

2.

Select (CL) [Define Configuration and Install].





## **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other than the new storage system installation, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

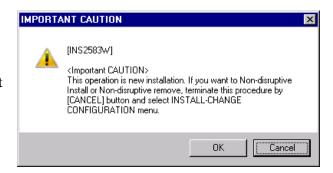
3.

(1)

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

"<Important CAUTION>

This operation is new installation. If you want to Non-disruptive Install or Non-disruptive remove, terminate this procedure by [CANCEL] button and select INSTALL-CHANGE CONFIGURATION menu.".

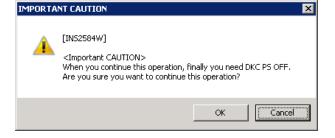


(2)

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

"<Important CAUTION>

When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



(3)

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

"<Important CAUTION>

When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".



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#### INST05-110

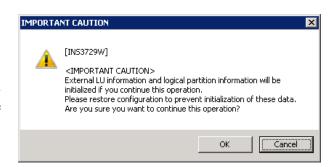
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(4)

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

#### "<IMPORTANT CAUTION>

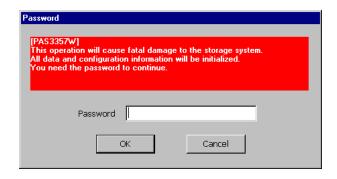
External LU information and logical partition information will be initialized if you continue this operation. Please restore configuration to prevent initialization of these data. Are you sure you want to continue this operation?".



(5)

Enter the password and select (CL) [OK]. Entering the password is required in this operation.

Please call Technical Support Division for asking it.



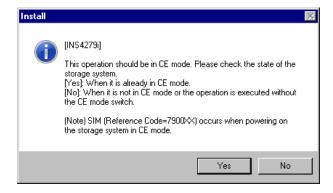
(6)

Response to the message "This operation should be in CE mode. Please check the state of the storage system.

[Yes]: When it is already in CE mode.

[No]: When it is not in CE mode or the operation is executed without the CE mode switch.

(Note) SIM (Reference Code=7900XX) occurs when powering on the storage system in CE mode.".



NOTE: Don't change the number of installed Hardware except for powering on the storage system with CE mode switch (CL1/CL2 MNT SW#1, 2) ON.

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(7)

Select (CL) [OK] in response to the confirmation message "Installation data of program product in the Configuration table will be initialized by this operation. After finishing this procedure, please set the product installation again.".

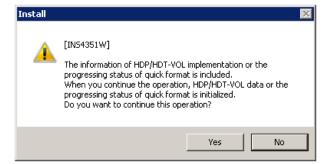


NOTE: When information of HDP/HDT-VOL implementation or progressing state of quick format is not included, go to Step 4.

(8)

Response to the message "The information of HDP/HDT-VOL implementation or the progressing status of quick format is included. When you continue the operation, HDP/HDT-VOL data or the progressing status of quick format is initialized.

Do you want to continue this operation?".



When you continue this operation, select (CL) [Yes].

When [No] is selected (CL), this processing will be stopped. Return to Step 2.

#### **INST05-130**

## 4. <DKC Configuration window>

Set the configuration information following the storage system configuration information worksheet.

#### [IP Address]:

The 'IP Address Configuration' window is displayed. (Refer to Step 4-1.)

#### [CHB/DKB]:

The 'CHB/DKB Configuration' window is displayed. (Refer to Step 4-2.)

#### [Cache]:

The 'Cache Configuration' window is displayed. (Refer to Step 4-3.) [System Option]:

The 'System Option' window is displayed. (Refer to Step 4-4.)

When the setting of all the entry items is completed, select (CL) the [>>Next] button. (The routine goes to Step 4-5.)

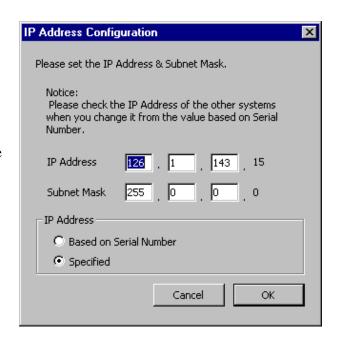
A selection (CL) of the [Cancel] button completes this operation procedure.

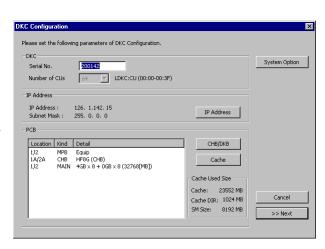
## 4-1 <IP Address Configuration window>

Set the configuration information following the storage system configuration information worksheet.

Set the IP address and the subnet mask.

After the setting is completed, select (CL) the [OK] button. (Return to Step 4.) Select (CL) the [Cancel] button. (Return to Step 4.)





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#### **INST05-140**

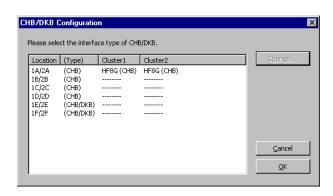
## 4-2 < CHB/DKB Configuration screen > Set the PCB type following the storage system configuration information worksheet.

#### [Change...]:

The 'CHB/DKB Define' screen is displayed. (Refer to Step 4-2-1.)

After setting the items, select (CL) [OK]. (Go back to Step 4.)

Select (CL) [Cancel]. (Go back to Step 4)



NOTE: If you want to change PCB type from CHB to DKB or change PCB type from DKB to CHB, Please set after making the PCB not equipped.

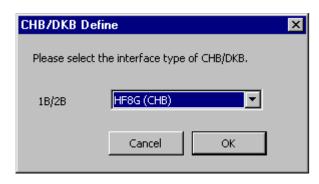
## 4-2-1 < CHB/DKB Define screen>

Select PCB types following the storage system configuration information worksheet.

And then select (CL) [OK].

(Go back to Step 4-2.)

NOTE: When encrypted environment has been set, only encryption DKB is selectable. If you want to change encryption DKB to unequipment or



standard DKB or CHB, please cancel this operation procedure and initialize encrypted environment, at first.

For initialization of the encrypted environment, refer to "Encryption License Key User Guide".

#### **INST05-150**

## 4-3 < Cache Configuration window>

Set the configuration information following the storage system configuration information worksheet.

Set the cache capacities/SM function. [Cache Size]:

The 'Cache Size Define' screen is displayed. (Refer to Step 4-3-1.)

#### [SM function]:

The 'SM function Define' screen is displayed. (Refer to Step 4-3-2.)

#### [DCR Change]:

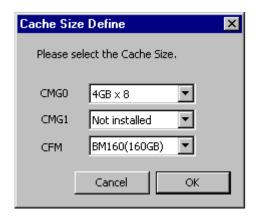
The 'DCR Available Size Define' window is displayed. (Refer to Step 4-3-3.) [Set CLPR]:

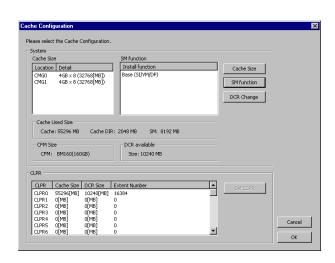
The 'CLPR Define' window is displayed. (Refer to Step 4-3-4.)

After the setting is completed, select (CL) the [OK] button. (Return to Step 4.) Select (CL) the [Cancel] button. (Return to Step 4.)

#### 4-3-1 < Cache Size Define screen>

Set the Cache Size in the 'Cache Size Define' screen, select (CL) [OK]. (Refer to Step 4-3.)

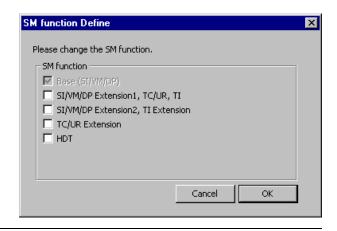




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# 4-3-2 <SM function Define screen> Set the SM function in the 'SM function Define' screen, select (CL) [OK]. (Refer to Step 4-3.)



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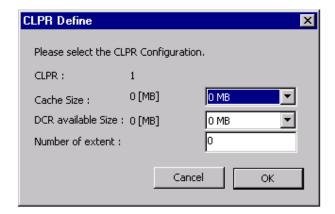
## 4-3-3 < DCR Available Size Define window>

Set the DCR available size in the 'DCR Available Size Define' window and select (CL) the [OK] button. (Return to Step 4-3.)



## 4-3-4 < CLPR Define window >

Set the Cache Size/DCR available Size/Number of extent in the 'CLPR Define' window and select (CL) the [OK] button. (Return to Step 4-3.)



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## 4-4 < System Option window>

Set the configuration information following the storage system configuration information worksheet.

Set the system option information.

If select (CL) [WR.Through], 'Synchronous Destage Mode Define' window is displayed. (Refer to Step 4-4-1.)

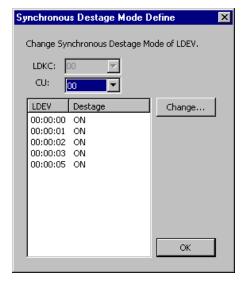
After setting all the items, select (CL) the [OK] button. (Return to Step 4.) Select (CL) the [Cancel] button. (Return to Step 4.)



Carry out the setting of the copy back mode in step 8-4.

4-4-1 <Synchronous Destage Mode Define Window>
Set the configuration information following the system configuration information worksheet.

After setting all the items, select (CL) [OK]. (Return to Step 4-4.)



#### **INST05-180**

## 5. <CHB Setting>

According to the types of setting CHB, screens are displayed.

Setting the Fibre: Go to Step 5-1.

When the setting of all CHBs is completed, go to Step 6.

## 5-1 < Fibre PCB Configuration window >

[I/T...]:

Makes a setting of the 'Initiator / External / Target / RCU Target'. (Refer to Step 5-1-1.)

[Speed...]:

Sets the channel speed. (Refer to Step 5-1-2.)

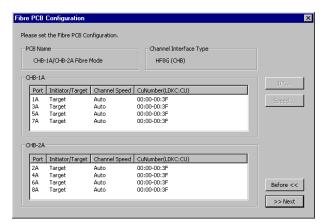
After the setting is completed, select (CL) the [>>Next] button.

Go to the window for setting the next CHB.

(For the Fibre PCB, refer to Step 5-1.)

When the setting of all the CHBs is completed, go to Step 6.

When the [Before<<] button is selected (CL), the window is returned to the preceding window.



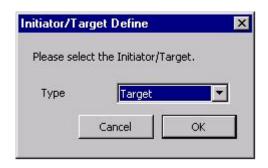
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#### **INST05-190**

## 5-1-1 < Initiator/Target Define window>

Make a setting of the 'Initiator / External / Target / RCU Target' and select (CL) the [OK] button. (Return to Step 5-1.)

Select (CL) the [Cancel] button. (Return to Step 5-1.)

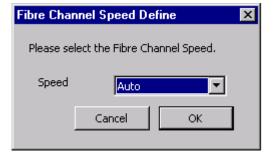


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## 5-1-2 < Fibre Channel Speed Define window >

Set the channel speed and select (CL) the [OK] button. (Return to Step 5-1.)

Select (CL) the [Cancel] button. (Return to Step 5-1.)



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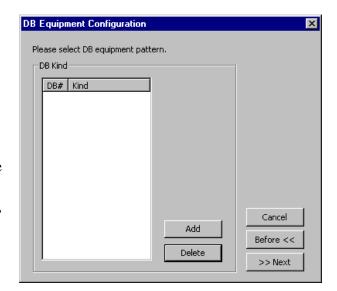
6. <DB Equipment Configuration window>
Set the configuration information following
the storage system configuration information
worksheet.

Select (CL) [Add]. Go to Step 6-1.

After the setting is completed, select (CL) the [>>Next] button. (Go to Step 7.)

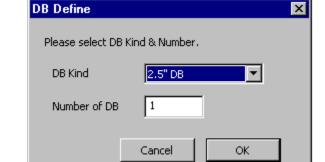
When the [Before<<] button is selected (CL), the window is returned to the preceding window.

This operation is completed when the [Cancel] button is selected (CL).



## 6-1 <DB Define window>

Set the DB type and the number of DBs, select (CL) the [OK] button. Return to Step 6.



7. <Physical Device Configuration window>
Set the configuration information following the storage system configuration information worksheet.

## [Detail...]:

Defines the parity group(s) or the spare disk in the specified DB. (Go to Step 7-1.)

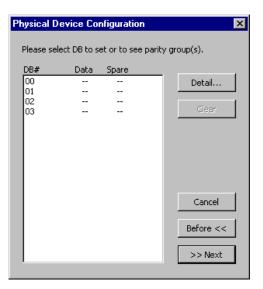
## [Clear]

Cancels the setting of the DB.

After setting all the items, select (CL) the [>>Next] button. (Go to Step 8.)

When the [Before<<] button is selected, return to Step 6.

This operation is completed when the [Cancel] button is selected (CL).



7-1 <Parity Group Configuration window>
Set the configuration information following the storage system configuration information worksheet.

[Detail...]: Refer the HDDs constituting the defined parity group or the spare drive.

See Step 7-1-1.

## [Group(Detail)...]:

Define the parity group which appointed the HDDs to constitute. See Step 7-1-2.

## [Group(Auto)...]:

Define the parity groups which

the HDDs to constitute are selected automatically. (The appointment of plural parity groups is possible)

See Step 7-1-3.

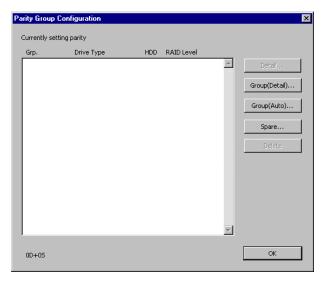
[Spare...]: Sets the spare drive.

(Refer to Step 7-1-4.)

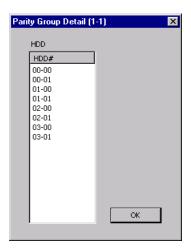
[Delete]: Deletes the item.

Grp.: A parity group for which the RAID connection has been set

After setting all the items, select (CL) the [OK] button. Return to Step 7.



7-1-1 < Parity Group Detail window> Select (CL) [OK].
Go back to Step 7-1-2.

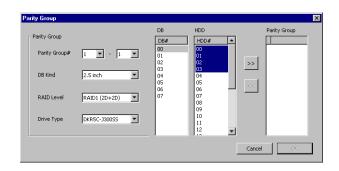


## 7-1-2

# 7-1-2-1 < Parity Group window>

Define the Parity Group#, the DB Kind, the RAID Level, and the Drive Type in the 'Parity Group' dialog box.

DBs to which the Parity Group can be constructed are displayed in DB List, then select (CL) DBs and HDDs to which you want to construct the Parity Group and select (CL) the [>>] button. Go to Step 7-1-2-2.



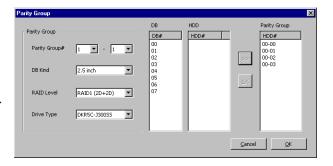
NOTE: The selection of plural DBs and the HDDs is possible. But cannot select (CL) [>>] when it does not match the constitution HDD number of an appointed parity group.

## 7-1-2-2

After Parity Group List is registered, select (CL) [OK].

Go back to Step 7-1.

NOTE: The [OK] button cannot be pressed if the HDDs do not meet a condition of the Parity Group. Adjust the number of the HDDs in the Parity Group List.



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## 7-1-3 < Parity Group (Auto) window >

Define the Parity Group#, the DB Kind, the DB#, the RAID Level, the Drive Type, the Num of Groups, the Select HDD in the 'Parity Group(Auto)' dialog box.

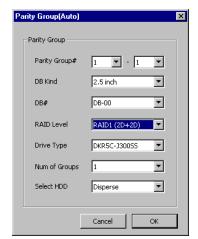
Go to Step 7-1-3-1.

• Parity Group# : Start parity group number

• DB Kind : DB Kind (2.5 inch/3.5 inch/FMD)

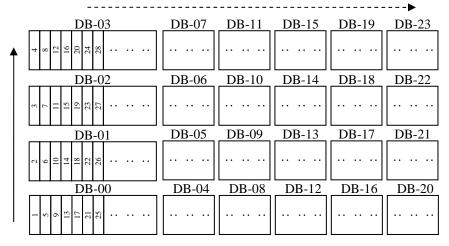
DB# : Start DB numberRAID Level : RAID LevelDrive Type : Drive Type

Num of Groups : Number of the definition Parity groups
 Select HDD : HDD Selection method (Disperse/Linear)



### <Disperse>

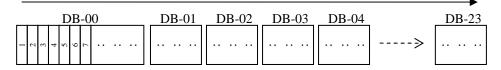
A parity group is composed of the HDDs which it is dispersed by 4 DBs unit and selected automatically. The HDDs are selected with the turn of the chart below.



The HDDs are selected to 4 DBs unit in the solid line direction and is repeated to the dashed line direction. But by the setting for the constitution that DB kind (2.5 inch DB/3.5 inch DB/DBX/DBF) is mixed and that HDDs have been already defined, the location that cannot be equipped is skipped, and HDDs are selected.

#### <Linear>

A parity group is comprised of automatic selected HDDs by DB order. The HDDs are selected with the turn of the chart below.

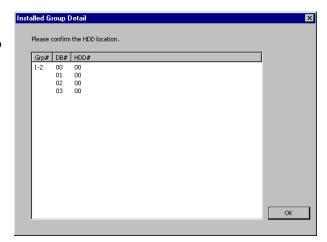


The HDDs of the solid line direction is selected. But by the setting for the constitution that DB kind (2.5 inch DB/3.5 inch DB/DBX/DBF) is mixed and that HDDs have been already defined, the location that cannot be equipped is skipped, and HDDs are selected.

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## 7-1-3-1 < Installed Group Detail window>

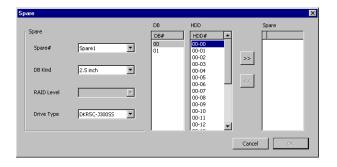
Confirm parity groups which were defined and constitution HDDs in the 'Installed Group Detail' dialog box, and select (CL) [OK]. Go back to Step 7-1.



## 7-1-4

# 7-1-4-1 < Spare window >

Define the Spare#, the DB Kind, the Drive Type in the 'Spare' dialog box.
DBs to which the Spare can be constructed are displayed in DB List, then select (CL)
DBs and HDDs to which you want to construct the Spare and select (CL) the [>>] button. Go to Step 7-1-4-2.

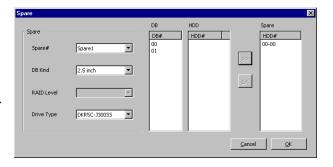


## 7-1-4-2

After Spare List is registered, select (CL) [OK].

Go back to Step 7-1.

NOTE: The [OK] button cannot be pressed if the HDDs do not meet a condition of the Spare. Adjust the number of the HDDs in the Spare List.



### 8. < Define Device Emulation>

After setting up all items corresponding to 8-1 to 8-4 for definition of Device Emulation, select (CL) [>>Next].

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

- If defining Device Emulation, go to Step 8-1.
- If setting RAID concatenation, go to Step 8-2.
- If defining of Customized Volume Size (CVS) and System Disk, go to Step 8-3.
- If setting copy back mode, go to Step 8-4.

## **8-1** < Define Device Emulation >

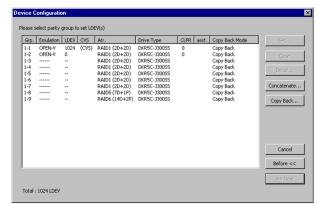
(1)

In the 'Device Configuration' window, select (CL) the parity group, and then select (CL) the [Set...] button. Go to Item (2).

This operation is completed when the [Cancel] button is selected (CL).

(CVS): A parity group for which the CVS has been set.

Grp\*: A parity group for which the RAID connection has been set.



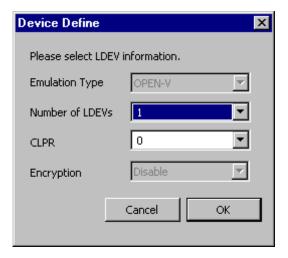
(2)

After setting all items in the 'Device Define' window, select (CL) the [OK] button. (Return to Step 8-1 (1).)

Select (CL) the [Cancel] button. (Return to Step 8-1 (1).)

NOTE: "0" can be set to the value of Number of LDEVs.

If you don't know the LDEV size you will use, set "0". You can save time by setting "0" because LDEV format will not run. When you set "0", please make LDEVs later using the CVS function.



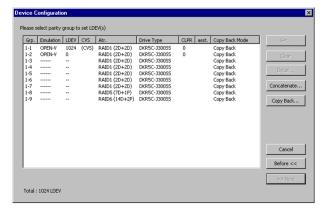
(3) <Canceling emulation>

Select (CL) the parity group and select (CL) the [Clear] button.

This operation is completed when the [Cancel] button is selected (CL).

(CVS): A parity group for which the CVS has

Grp\*: A parity group for which the RAID connection has been set.



# 8-2 < Setting RAID concatenation >

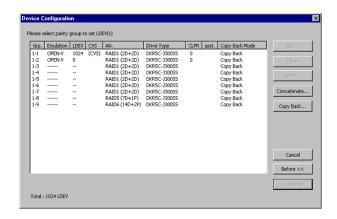
(1)

After setting the LDEV emulation type and a number of LDEVs, select (CL) the [Concatenate...].

This operation is terminated when the [Cancel] is selected (CL).

(CVS): A parity group where CVS is installed.

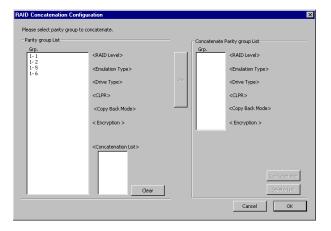
Grp\*: A parity group where RAID Concatenation is installed.



(2)

Parity groups to which the RAID concatenation can be applied are displayed in the Parity group List.

Select (CL) parity groups to which you want to apply the RAID concatenation and press (CL) the [>>] button.

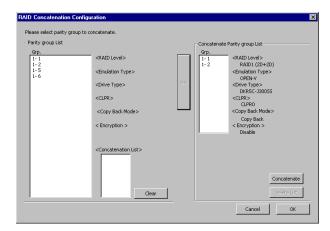


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(3)

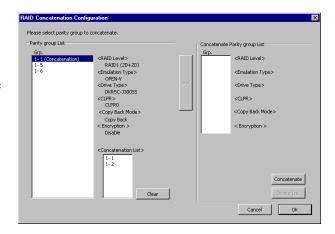
The selected parity groups are registered in the Concatenate Parity group List. Then press (CL) the [Concatenate] button.

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. Go back to Step 8-2 (1).

Pressing (CL) the [Cancel] button return to Step 8-2 (1).

# 8-3 < Defining of Customized Volume Size (CVS) and System Disk>

(1)

Select (CL) a parity group for which the LDEV emulation type and the number of LDEVs have been set on the 'Device Configuration' window and select (CL) [Detail...].

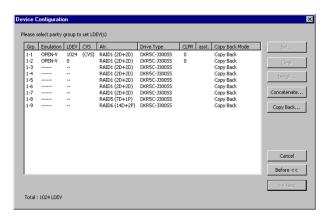
This procedure is terminated by selecting (CL) [Cancel].

(CVS): A parity group where CVS is installed.

Grp\*: A parity group where RAID Concatenation is installed.

asst.: A parity group where the Make Volume process cannot be performed because it includes the LDEV in which Path/LUSE/pool-VOL is set.

NOTE: Even if a parity group includes the LDEV in which the journal volume is set, "+" is not displayed.



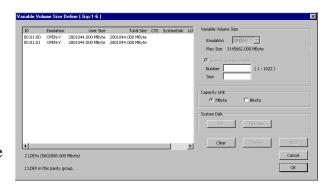
### (2) <Definition of OPEN-V>

Open-V can be defined in the "Variable Volume Size Define" window.

### • Delete of the Volume

The volume can be deleted by selecting (CL) [Delete] in the state (CL) of selecting (CL) the volume in the LDEV list box.

All the volumes in the LDEV list box can be deleted by selecting (CL) [Clear].



### • Add of the Volume

It can be added by selecting (CL) Variable Volume Size from the status "select (CL) 'empty'" or "no selection" in the LDEV list box and selecting (CL) [Add].

### • Set of the System Disk

The System Disk can be set by selecting (CL) the volume from the LDEV list box and selecting (CL) [Set].

The System Disk registered by mistake can be released by selecting (CL) the System Disk from the LDEV list box and selecting (CL) [Release].

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

NOTE: The two or more volumes can be selected and deleted or set System Disk.

### • Variable Volume Size

"Specify size & number" : Defines the specified number of the specified user size.

• Capacity Unit

"MByte": Makes data displayed or entered by [Mbyte].

"Blocks": Makes data displayed or entered by the [Blocks].

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• LUSE : When the LUSE is connected, "+" is displayed.

• asst. : When Path/LUSE/Pool-VOL is defined, "+" is displayed.

[Clear] : Deletes all the volumes.

[Delete] : Deletes all the selected volumes.

[Add] : Adds volumes.[Set] : Sets System Disk.[Release] : Release System Disk.

[Cancel] : Invalidates the setting, and returns to the preceding window.

The routine returns to Step (1).

[OK] : Confirms the setting, and returns to the preceding window.

The routine returns to Step (1).

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## 8-4 < Setting copy back mode>

Select (CL) [Copy Back...], go to Step 8-4-1. Selecting (CL) [Cancel] returns the routine to Step 8.

### 8-4-1

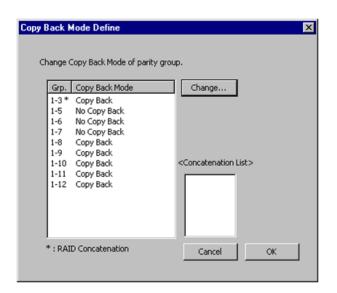
Select parity group changing the copy back mode, and press (CL) the [Change...] button.

• Copy Back: When a failed HDD recovered, the copy back will be performed. (default)

 No Copy Back: When a failed HDD recovered, the copy back will be not performed.

[OK]: Invalidates the setting, and returns to Step 8.

[Cancel]: Confirms the setting, and returns to Step 8.



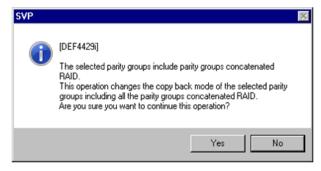
Grp\*: The top parity group where RAID Concatenation is installed.

Selecting the concatenated parity groups the concatenated parity groups in the Concatenation List.

If you selected the parity group where RAID Concatenation is installed, and press (CL) the [Change...] button, go to Step 8-4-2.

### 8-4-2

In response to a message, "The selected parity groups include parity groups concatenated RAID. This operation changes the copy back mode of the selected parity groups including all the parity groups concatenated RAID. Are you sure you want to continue this operation?".



When [Yes] is selected (CL), the copy back mode changes, and returns to Step 8-4-1. When [No] is selected (CL), returns to Step 8-4-1.

## 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. Refer to step 10-3.

### [Detail...]:

A screen to define LDEV in detail is displayed. Refer to step 10-2.

## [Clear]:

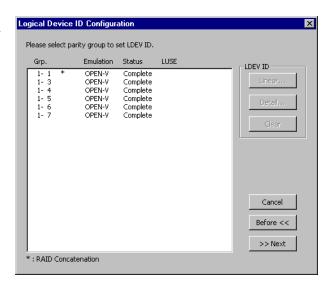
Select (CL) [Clear] to delete.

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned.
② "-----" : LDEV ID is not assigned.

③ "Error" : Invalid LDEV ID is assigned.

This procedure is terminated by selecting (CL) [Cancel].



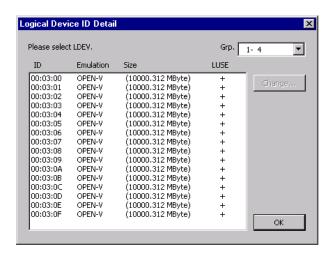
9-2 < Detailed Definition Screen for LDEV ID> LDEV ID is defined in detail for each LDEV

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>

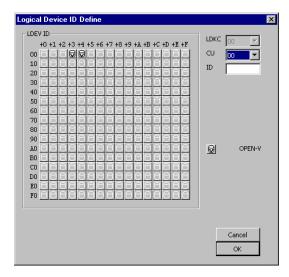
Select CU in the CU combo box.

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 the preceding window.



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INST05-330

# 10. < Defining DCR>

(1)

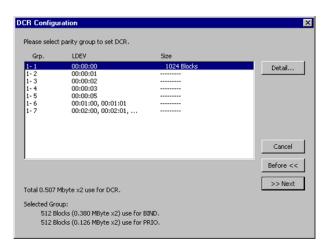
Select (CL) a parity group having LDEV(s) for which the DCR is to be set on the 'DCR Configuration' screen and press (CL) the [Detail...] button.

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].



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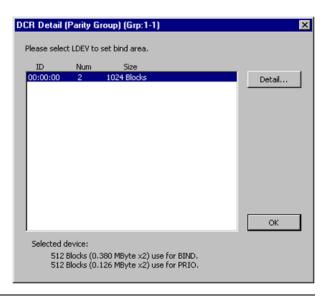
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## (2)

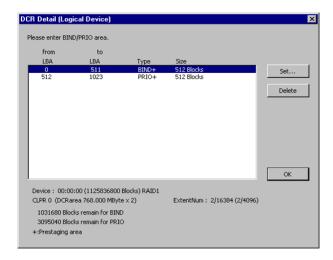
Select (CL) an LDEV where the DCR is to be set on the 'DCR Detail (Parity Group)' screen and press (CL) the [Detail...] button.

If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the 'DCR Detail (Parity Group)' screen.



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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.



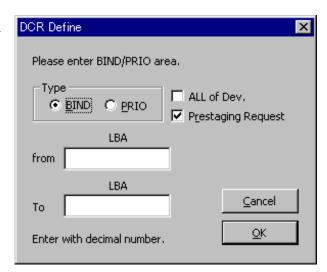
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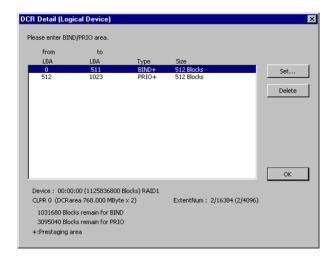
(4)

Enter the type, starting LBA, and ending LBA on the 'DCR Define' screen and select (CL) [OK].



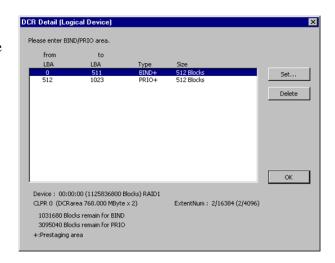
(5)

When the screen is returned to the 'DCR Detail (Logical Device)' screen, the entrance result is displayed.



(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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11. < Define Auto LDEV Assignment and Management MPU>

Set the Auto LDEV Assignment and Management MPU.

## [Change]:

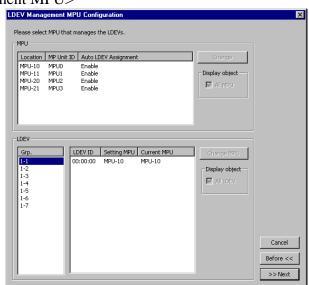
The 'Auto LDEV Assignment Define' window is displayed. (Refer to Step 11-1.)

### [Change MPU]:

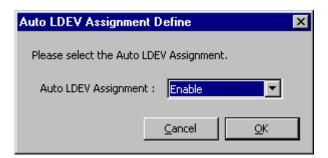
The 'Management MPU Define' window is displayed.

(Refer to Step 11-2.)

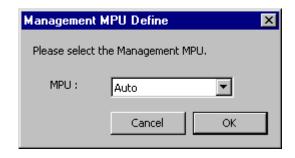
When the setting of all the entry items is completed, select (CL) the [>>Next] button. (The routine goes to Step 12)



11-1 < Define Auto LDEV Assignment>
Define Auto LDEV Assignment and select
(CL) [OK].
Go back to Step (11).



11-2 < Define Management MPU > Define Management MPU and select (CL) [OK]. Go back to Step (11).



ÖK

Cancel

### **INST05-380**

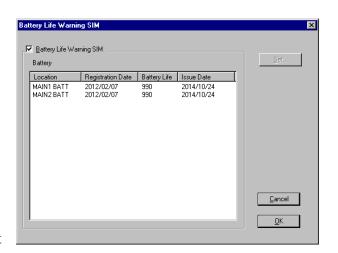
12. <Define Battery Life Warning SIM>
Select (CL) [Set...] applying the check to
[Battery Life Warning SIM] and select (CL)
the target Battery.

(Go to step 12-1.)

Make sure that the all input items are correct and select (CL) [OK].

(Go to step 13.)

NOTE: If the date is displayed as "\*\*\*\*/\*\*", follow step 12-1 to set the date.



Battery Life Warning SIM

Remained Battery life: 990

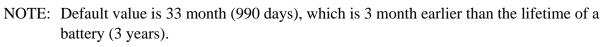
Current Date: 2011/03/29

12-1 < Define Battery Life Warning SIM>

Select (CL) [OK] after inputting the remainder days until Warning SIM is reported.

(Return to step 12.)

NOTE: After executing the periodical exchange of a battery, set 33 month (990 days).

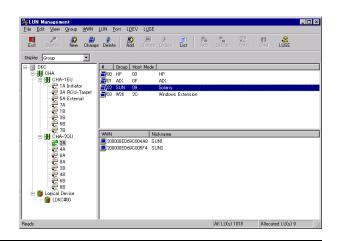


Determine the number of days remained based on your maintenance plan.

NOTE: The input ranges of "Remained Battery life" are from 1 to 3650. Please set [Battery Life Warning SIM] of step 12 to check off when not reporting on Warning SIM.

13. <LUN Management Screen>
LUN Management dialog to be displayed.

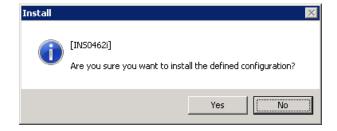
After setting LUN, and close the dialog. For the setting of LUN, see "5.3.1.4 LUN Management" (INST05-1010).



## 14. <Install configuration information>

(1)

Select (CL) [Yes] in response to the confirmation message "Are you sure you want to install the defined configuration?". Selecting (CL) [No] suppresses the configuration inclusion processing and terminates the installation procedure.

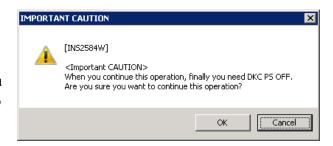


(2)

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

"<Important CAUTION>

When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".



(3)

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

"<Important CAUTION>

When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".



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#### INST05-400

(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?".



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 storage system be in UNRECOVERABLE SERIOUSLY DAMAGE.

ΟK

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(5)

Select (C

L) [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 storage system be in UNRECOVERABLE SERIOUSLY DAMAGE.".

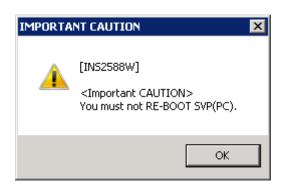
IMPORTANT CAUTION

[INS2587W]

<Important CAUTION>

(6)
Select (CL) [OK] in response to the confirmation message

"<Important CAUTION>
You must not RE-BOOT SVP(PC).".



15. < Compressing of the configuration information>

The configuration information is compressed. The dialog of Config Compressing... is displayed.

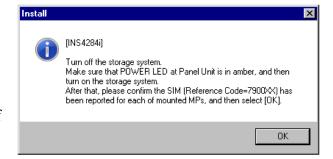
After the compressing is completed, go to Step 17.



NOTE: However, on page INST05-110 (6), it advances to Step 16 when [No] is selected (CL).

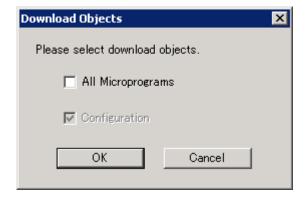
16.

Select (CL) [OK] in response to the message "Turn off the storage system. Make sure that POWER LED at Panel Unit is in amber, and then turn on the storage system. After that, please confirm the SIM (Reference Code=7900XX) has been reported for each of mounted MPs, and then select [OK].".

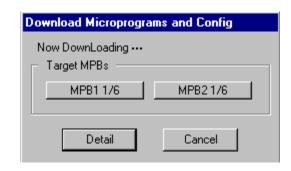


17. < Download Objects window>

If you want to download micro-programs, please select (CL) [All Microprograms], and select (CL) [OK].



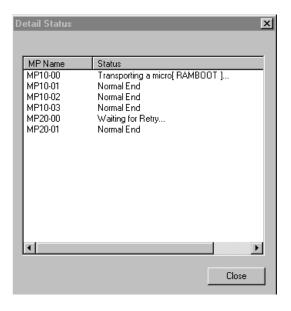
18. <Configuration information transfer>
The configuration information is forwarded.
After the forward is completed, go to Step 19.
Select (CL) [Detail]. Go to Step 18-1.



## 18-1

Details of transfer situation are confirmed on Detail Status window.

When you close the 'Detail Status' window, select (CL) [Close].



## 19.

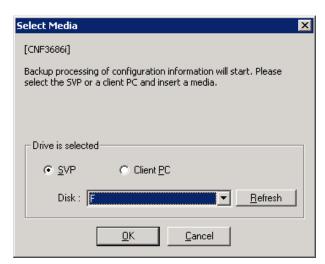
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) [Refresh], and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) [OK].

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



## 20.

If the configuration information is not saved in the selected media, go to step 21.

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config

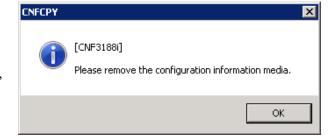


media is not necessary, select (CL) the [No] button and go to step 22.

## 21.

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, and then select (CL) [OK].



## 22.

'Reconstructing device information...' is displayed.

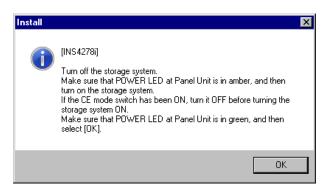


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## 23.

Select (CL) [OK] in response to the message "Turn off the storage system. Make sure that POWER LED at Panel Unit is in amber, and then turn on the storage system. If the CE mode switch has been ON, turn it OFF before turning the storage system ON. Make sure that POWER LED at Panel Unit is in green, and then select [OK].".



NOTE: When CE mode setup with the switch of the CE mode, turn off CL1/CL2 MNT SW#1 and CL1/CL2 MNT SW#2.

## 24.

Select (CL) [OK] in response to "This will reboot SVP.".



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### 5.2.3 Check Procedure

# **A** CAUTION

This operation is necessary only when a storage system 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.

(See INST03-09-10)

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 Path inline test>

Perform Path inline tests on all DKBs installed during the new installation procedure to check the validity of the drives.

Please carry out A3 routine after carrying out A0 routine.

See DIAGNOSIS SECTION for the test procedure. (DIAG04-140)

NOTE: Before carrying out the 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 storage system status and all MPs micro-version>
Check the storage system Status and all MPs micro-version.
(See SVP03-10 and SVP03-420)

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#### INST05-460

### 4. <Format LDEV>

# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other the new storage system installation, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

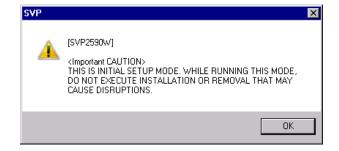
Change the mode to [INITIAL SETUP Mode].

Select "Shift" + "Ctrl" + "I".

Enter the password and select (CL) [OK].

Please call Technical Support Division for asking the password.

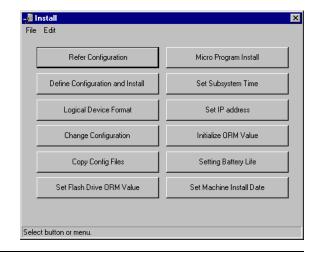
Select (CL) [OK] in response to the confirmation message "<Important CAUTION> THIS IS INITIAL SETUP MODE. WHILE RUNNING THIS MODE, DO NOT EXECUTE INSTALLATION OR REMOVAL THAT MAY CAUSE DISRUPTIONS.".



Select (CL) [Install].

Select (CL) [Logical Device Format].

NOTE: Execute Format Logical Device after confirming all Logical Device is blocked.



### 4-1

Select (CL) [Yes] in response to "This process will format all logical devices. Are you sure you want to continue this process?".



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4-2

# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss if executed in an occasion other than the new storage system installation, and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

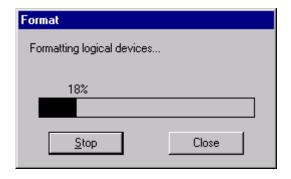
Enter the password and select [OK] (CL). Password is needed for this operation. Please call Technical Support Division to obtain a password and authorization.



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4-3

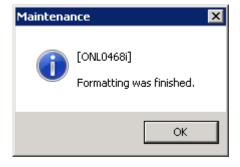
When LDEV Formatting is complete, "Formatting logical devices..." shown in the right figure disappears and "Formatting was finished." is displayed.



4-4

Select (CL) [OK] in response to "Formatting was finished.".

LDEV formatting is abnormally terminated if the message "Formatting logical devices rejected by DKC." or "Formatting the logical device is failed." is displayed. Identify the error cause according to the procedure shown in "TROUBLE SHOOTING SECTION".



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## 4-5 < Check logical device status>

Check if Logical Devices are normal by with referring to the 'Logical Device Status' display.

5. <Check storage system 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 storage system's interlocked operation with the host.

7. < Delete error log>

Power ON/OFF the storage system to make sure that the storage system starts normally (neither ALARM nor MESSAGE indicators should light).

Delete all error log information from the SVP and transfer the storage system to the user. See SVP02-180.

Go to INST02-280.

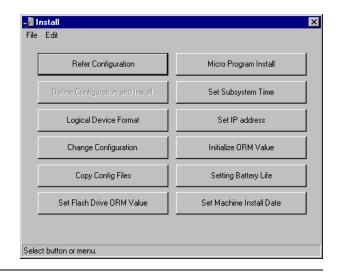
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### **INST05-490**

## 5.2.4 Refer Configuration

<Start [Install]>
 Select (CL) [Install] from 'SVP'.

2. Select (CL) [Refer Configuration].



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3. <DKC Configuration window>

[IP Address]: The 'IP Address

Configuration' window is displayed. (Refer to Step 3-

1.)

[Cache]: The 'Cache Configuration'

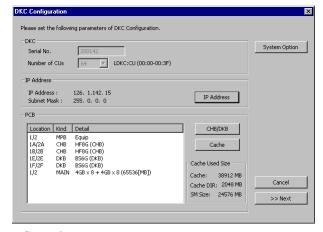
window is displayed. (Refer

to Step 3-2.)

[System Option]: The 'System Option'

window is displayed. (Refer

to Step 3-3.)



When the [>>Next] button is selected (CL), go to Step 4.

This procedure is completed when the [Cancel] button is selected (CL).

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### INST05-500

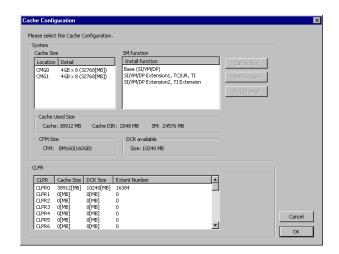
3-1 <IP Address Configuration window>
Select (CL) the [OK] button. (Return to Step 3.)



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3-2 < Cache Configuration window > Select (CL) the [OK] button. (Return to Step 3.)

Refer to INST01-50 for the SVP screen display and the conversion of the option type names.



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### INST05-510

## 3-3 < System Option window >

When the [Mode...] is selected (CL), the 'Mode' window is displayed. (Refer to Step 3-3-1.)

When the [WR.Through] is selected (CL), the 'Synchronous Destage Mode Define' window is displayed. (Refer to Step 3-3-2.)

When the [Copy Back...] is selected (CL), the 'Copy Back Mode Define' window is displayed. (Refer to Step 3-3-3.)

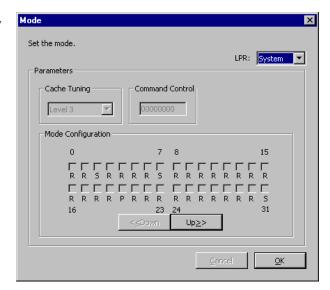
Selecting (CL) [OK] returns to Step 3.



## 3-3-1 < Mode window >

Change the display of Mode Configuration by pressing the [UP>>] or [<<Down] button or LPR.

Select (CL) the [OK] button. (Return to Step 3-3.)



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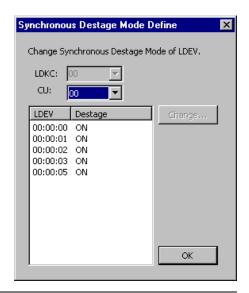
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### INST05-520

3-3-2 <Synchronous Destage Mode Define window>
Destage Status of LDEVs to the specified LDKC/CU is

displayed.

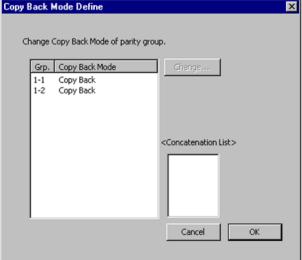
Select (CL) the [OK] button. (Return to Step 3-3.)



3-3-3 < Copy Back Mode Define window>
A copy back mode displayed.
Press (CL) the [OK] button, return to Step 3-3.

- Copy Back: When a failed HDD recovered, the copy back will be performed. (default)
- No Copy Back: When a failed HDD recovered, the copy back will be not performed.

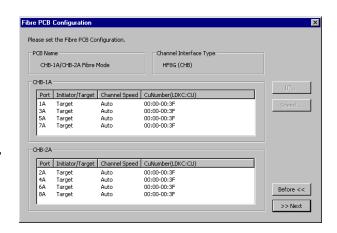
Grp\*: The top parity group where RAID
Concatenation is installed.
Selecting the concatenated parity
groups the concatenated parity groups in the Concatenation List.



4. <Fibre PCB Configuration window>
After checking the display, select (CL) the [>>Next] button.

Go to the window for setting the next CHB. (For the Fibre PCB, refer to Step 4.) When the setting of all the CHBs is completed, go to Step 5.

When the [Before<<] button is selected (CL), the window is returned to the preceding window.

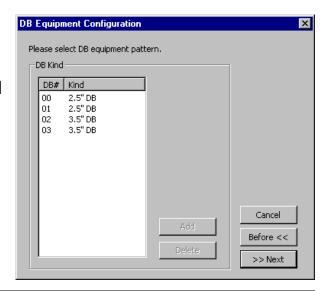


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### INST05-540

5. <DB Equipment Configuration window>
The DB equipment pattern is displayed.
Select (CL) the [>>Next] button. (Go to Step 6.)

This operation is completed when the [Cancel] button is selected (CL).



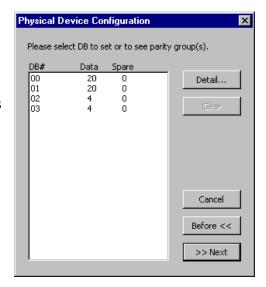
6. < Physical Device Configuration window>

[Detail...]: Refers to details of parity group(s) or the spare drive in the DB.

(Go to Step 6-1.)

Select (CL) the [>>Next] button. (Go to Step 7.)

This operation is completed when the [Cancel] button is selected (CL).

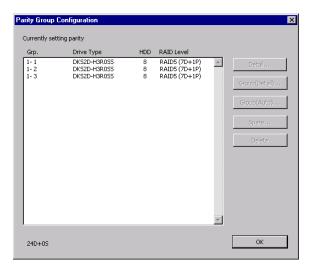


6-1 < Parity Group Configuration window>

[Detail...]: Refer the HDDs constituting the defined parity group or the spare drive.

(Go to Step 6-2.)

Select (CL) the [OK] button. (Return to Step 6.)

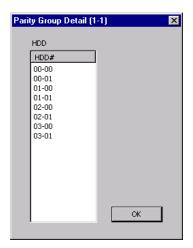


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DW700

## **INST05-550**

6-2<Parity Group Detail window> Select (CL) the [OK] button. (Return to Step 6-1.)



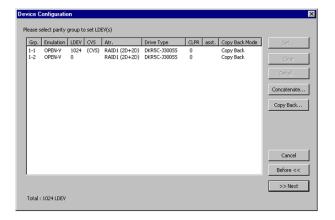
7. <Setting device emulation>

The 'Device Configuration' window is displayed.

Select (CL) the parity group and select (CL) the [Detail...] button. (Go to Step 7-1.) Select (CL) the [Concatenate...] button. (Go to Step 7-2.)

When the [Copy Back...] is selected (CL), the 'Copy Back Mode Define' window is displayed. (Go to Step 7-3.)

Select (CL) the [>>Next] button. (Go to Step 8.)



This operation is completed when the [Cancel] button is selected (CL).

(CVS): A parity group for which the CVS has been set.

Grp\*: A parity group for which the RAID connection has been set.

# Rev.2 / Feb.2013, Sep.2013 INST05-560

7-1 <Variable Volume Size Define window>
The 'Variable Volume Size Define' window is displayed.

• Capacity Unit

"MByte": Makes data displayed by the

Mbyte.

• LUSE : When the LUSE connection is

made, a symbol "+" and a number of the volume at the

top are displayed.

• asst. : When Path/LUSE/pool-VOL is defined, "+" is displayed.

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

[OK] : Fixes the setting and makes the preceding window return. Return to Step 7.

[Cancel] : Invalidates the setting and makes the preceding window return. Return to Step

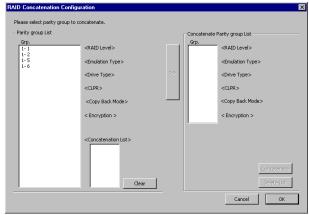
7.

7-2 < RAID Concatenation Configuration window >

The 'RAID Concatenation Configuration' window is displayed.

When the "(Concatenation)" displayed in the Parity group List is selected (CL), parity groups that have been concatenated are displayed in the Concatenation List.

Select (CL) the [OK]. Return to Step 7.



# Rev.1 / Jul.2012, Feb.2013 INST05-570

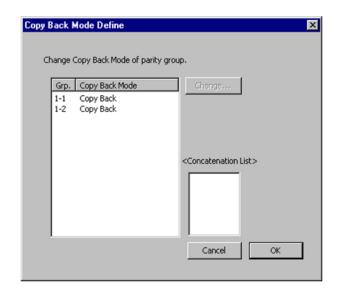
7-3 < Copy Back Mode Define window>
A copy back mode displayed.
Press (CL) the [OK] button, return to Step 7.

• Copy Back: When a failed HDD recovered, the copy back will be performed. (default)

 No Copy Back: When a failed HDD recovered, the copy back will be not performed.

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

Selecting the concatenated parity groups the concatenated parity groups in the Concatenation List.



8. <Logical Device ID Configuration window>
Logical Device ID Configuration is displayed.
Select (CL) a parity group and select (CL)
[Detail...]. Go to Step 8-1.
Select (CL) [>> Next]. Go to Step 9.

This procedure is terminated by selecting (CL) [Cancel].

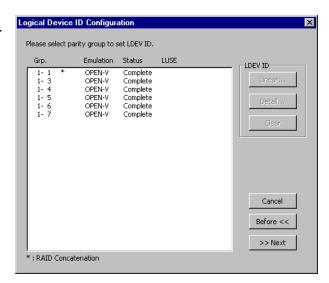
Grp\*: The top parity group where RAID Concatenation is installed.

Status: Status of LDEV ID.

① "Complete": LDEV ID is assigned.
② "-----": LDEV ID is not assigned.

③ "Error" : Invalid LDEV ID is

assigned.

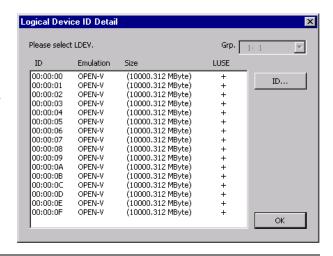


#### INST05-580

# 8-1

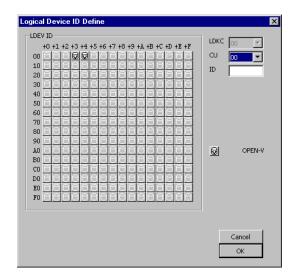
Logical Device ID Detail is displayed. Select (CL) [ID...]. Go to Step 8-2. Select (CL) [OK]. Return to Step 8.

NOTE: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



# 8-2

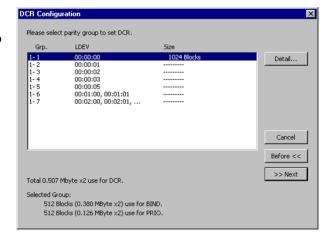
The status of usage of ID in the specified LDKC/CU is displayed in the LDEV ID panel. Select (CL) [OK] or [Cancel]. Return to Step 8-1.



# 9. <DCR Configuration window>

When the parity group is selected (CL), and then the [Detail...] button is selected (CL), go to Step 9-1.

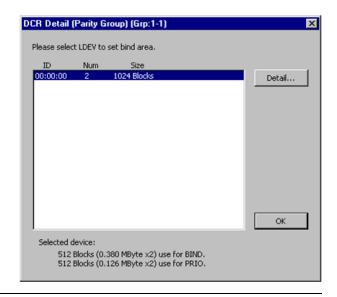
Select (CL) the [>>Next] button. This operation is completed when the [Cancel] button is selected (CL).



Rev.0 / Jul.2012

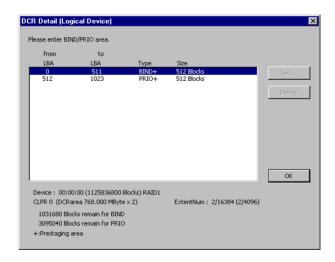
INST05-590

9-1 <DCR detail (Parity group) window>
DCR detail (Parity group) is displayed.
Select (CL) an LDEV and select [Detail...].
Go to Step 9-2.
Select (CL) [OK]. Return to Step 9.



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9-2 <DCR detail (Logical device) window> DCR detail (Logical device) is displayed. Select (CL) [OK]. Return to Step 9-1.

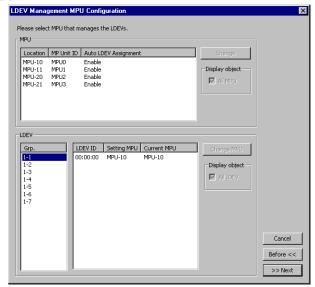


## **INST05-600**

10. <LDEV Management MPU Configuration window>

Auto LDEV Assignment and Management MPU is displayed.

Select (CL) [>>Next]. Go to Step 12.



11.

Select (CL) [OK]. Close the 'Install' window.



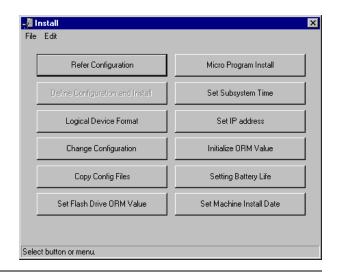
12.

Change the Mode from [Modify Mode] to [View Mode].

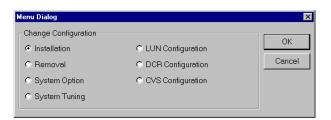
# Rev.1 / Jul.2012, Feb.2013 INST05-610

# 5.3 Change Configuration SVP Procedure

- 5.3.1 Setting up the New Device Structure Information
  - <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	(INST05-620)
• DCR Configuration	DCR Configuration	(INST05-640)
CVS Configuration	CVS Configuration	(INST05-700)
• LUN Management	LUN Configuration	(INST05-1010)

Rev.1 / Jul.2012, Feb.2013

# 5.3.1.1 System Option

<Definition of System Option>
 Define the system option information in the 'System Option' window.

When [WR.Through] is selected (CL), go to Step 2.

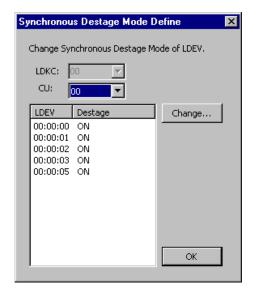
When [Copy Back...] is selected (CL), go to Step 3.

After all the items are set, select (CL) [OK]. Go to Step 4.



2. <Setting Destage Mode>
Set the destage mode in the 'Synchronous Destage Mode
Define' window.

When [OK] is selected (CL), return to Step 1.



#### INST05-621

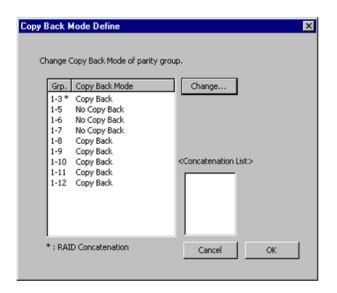
Setting copy back mode>
 Select parity group changing the copy back mode, and press (CL) the [Change...] button.

Copy Back: When a failed HDD recovered, the copy back will be performed. (default)

 No Copy Back: When a failed HDD recovered, the copy back will be not performed.

[OK]: Invalidates the setting, and returns to Step 1.

[Cancel]: Confirms the setting, and returns to Step 1.



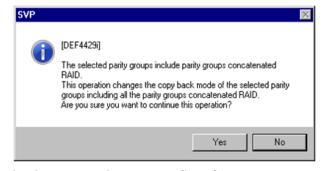
Grp\*: The top parity group where RAID Concatenation is installed.

Selecting the concatenated parity groups the concatenated parity groups in the Concatenation List.

If you selected the parity group where RAID Concatenation is installed, and press (CL) the [Change...] button, go to Step 3-1.

# 3-1

In response to a message, "The selected parity groups include parity groups concatenated RAID. This operation changes the copy back mode of the selected parity groups including all the parity groups concatenated RAID. Are you sure you want to continue this operation?".



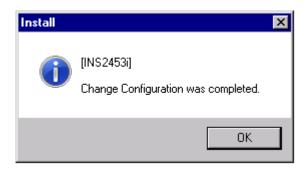
When [Yes] is selected (CL), the copy back mode changes, and returns to Step 3. When [No] is selected (CL), returns to Step 3.

Rev.1 / Jul.2012, Feb.2013

## INST05-630

4.

"Change Configuration was completed." is displayed.
Selection (CL) [OK].



5.

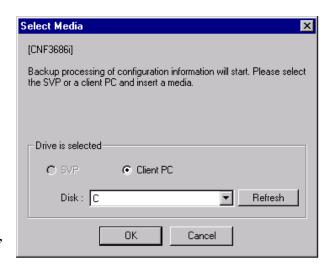
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



6.

If the configuration information is not saved in the selected media, go to step 7.

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step 8.

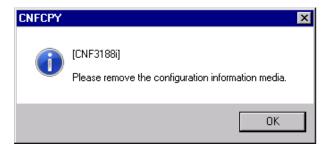
Rev.1 / Jul.2012, Feb.2013

## INST05-631

7.

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, select (CL) [OK].

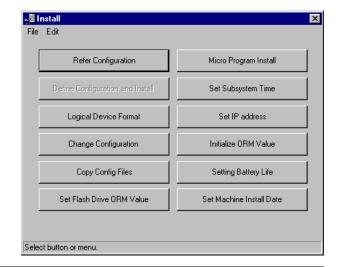


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8.

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



9.

Change the Mode from [Modify Mode] to [View Mode].

## **INST05-640**

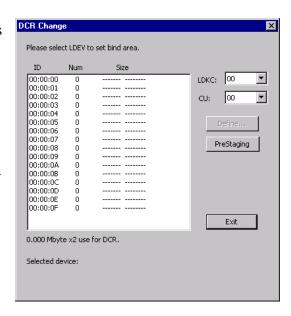
# 5.3.1.2 DCR Configuration

(1)

The "DCR Change" screen appears and the contents of the entered setting are displayed. When the CU is selected (DR) in the combo box, installed LDEV(s) and contents of the DCR definition are updated. Select (CL) LDEV to change the setting, then press (CL) the [Define...] button.

Total cache memory size occupied by the DCR area is displayed.

If the selected LDEV has a DCR area, the BIND size and the PRIO size are displayed under the "DCR Change" screen.

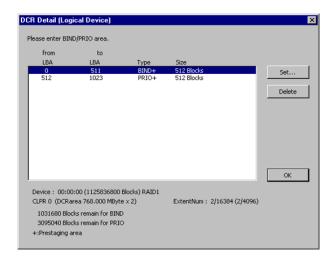


**NOTICE:** To use DCR function, you should install the program product.

(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.



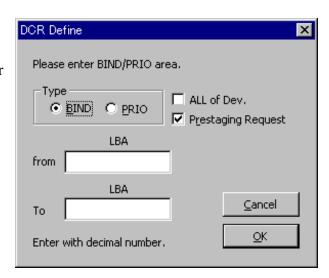
Rev.0 / Jul.2012

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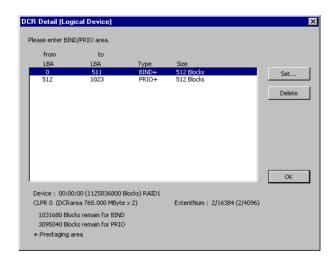
## INST05-650

(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 LBA, and ending LBA. 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.



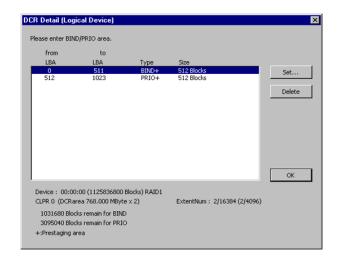
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## INST05-660

(5)

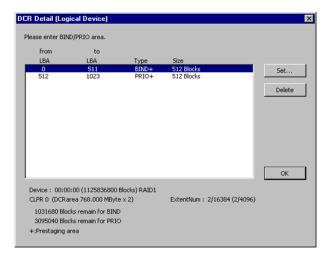
To delete a set item, select (CL) the DCR setting to be deleted and press (CL) the [Delete] button on the "DCR Detail (Logical Device)" screen.



(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.



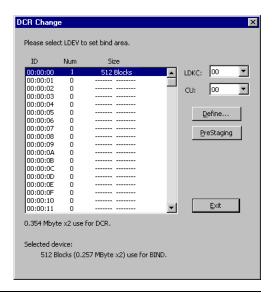
Rev.0 / Jul.2012

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## INST05-670

(7)

The screen returns to the "DCR Change" screen after the processing is completed. The changed setting is displayed in the list box.



- (8) Repeat steps (1) through (7) for the LDEV(s) of which you want to change the setting.
- (9)
  When you want to set DCR PreStaging, select (CL) [PreStaging].
  The [PreStaging] button begins the Pre-staging processing only for the "PreStaging Request" specified data.

Rev.0 / Jul.2012

#### INST05-680

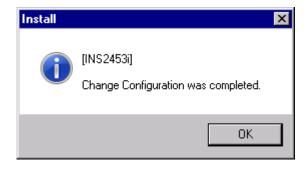
(10)

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].



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(12)

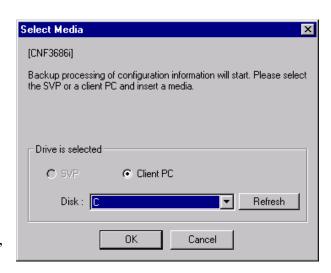
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

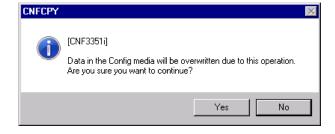
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(13)

If the configuration information is not saved in the selected media, go to step (14). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (15).

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# Rev.1 / Jul.2012, Feb.2013 INST05-690

(14)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

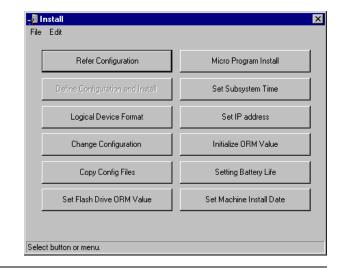
Remove the configuration information media, select (CL) [OK].



(15)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



(16)

Change the Mode from [Modify Mode] to [View Mode].

Rev.1 / Jul.2012, Aug.2012

# INST05-700

# 5.3.1.3 CVS Configuration

• Volume to Space	- Go to INST05-710 step 1
-------------------	---------------------------

- LDEV(CVS) Installation ----- Go to INST05-770 step 2.
- Volume Initialize ----- Go to INST05-880 step 3.

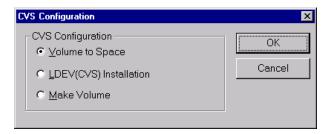
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Rev.0 / Jul.2012

INST05-710

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- 1. <Volume to Space>
- (1) Select (CL) [Volume to Space] and select (CL) [OK].



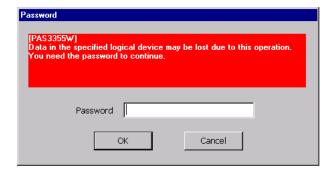
# **A** CAUTION

To use CVS function, you should install the program product.

# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password and select (CL) [OK].



Rev.1 / Jul.2012, Feb.2013

## INST05-720

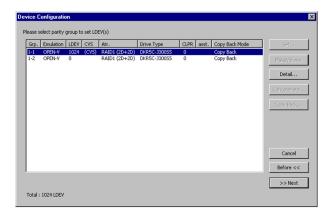
(2)

Select (CL) a parity group with Volume(s) to be changed on the 'Device Configuration' window and press (CL) the [Detail...] button. Go to Step (2-1).

When all the settings are completed, press (CL) [>>Next]. Go to Step (4).

(CVS): A parity group where CVS is installed.

Grp\*: A parity group where RAID Concatenation is installed.



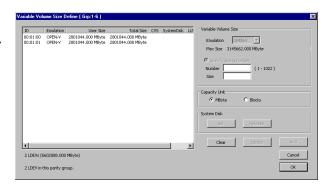
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#### INST05-730

# (3) < 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.
"Blocks": Makes data displayed or entered by the Blocks.

• LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume

at the top are displayed.

• asst. : When Path/LUSE/Pool-VOL/the journal volume is defined, "+" is displayed.

[Delete] : Deletes a selected volume.

[Cancel] : Invalidates the setting and makes the preceding window return. Return to Step

(2) or (2-1).

[OK] : Fixes the setting and makes the preceding window return. Return to Step (2) or

(2-1).

NOTE: In the following case, the [Delete] button is not available.

- ① Volume with SCSI path(s) ("+" indicated) is selected.
- ② Volume with LUSE ("+" indicated) is selected.
- ③ Volume with Pool-VOL ("+" indicated) is selected.
- 4 Volume with the journal volume ("+" indicated) is selected.

#### INST05-740

(4)

Select (CL) [Yes] in response to "The Volume To Space will be performed. Are you sure you want to renew storage system?".

When [No] is selected (CL), returns to INST05-610 step 2.



(5)

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



(6)

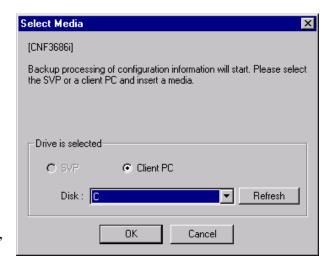
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

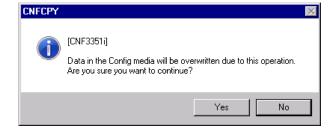
NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(7)

If the configuration information is not saved in the selected media, go to step (8).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (9).

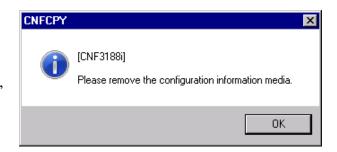
Rev.1 / Jul.2012, Feb.2013

# INST05-750

(8)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, select (CL) [OK].

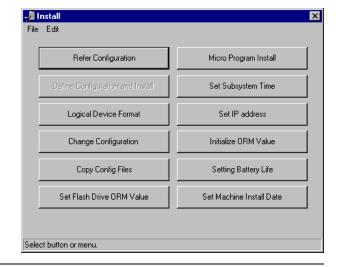


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(9)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



(10)

Change the mode to View Mode.

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INST05-760

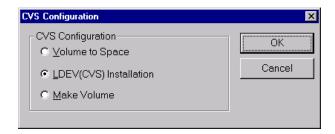
Blank Sheet

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## INST05-770

2. <LDEV(CVS) Installation>

(1) Select (CL) [LDEV(CVS) Installation] and select (CL) [OK].



(2)

Select (CL) a parity group to which the CV(s) is to be added on the "Device Configuration" screen and press (CL) the [Detail] button. Go to Step (2-1).

When all the settings are completed, press (CL) [>>Next]. Go to Step (4).

(CVS): A parity group where CVS is installed.

Grp\*: A parity group where RAID Concatenation is installed.



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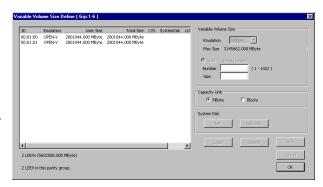
#### INST05-780

# (3) Definition of OPEN-V

Open-V can be defined in the 'Variable Volume Size Define' window.

• Add of CVS
Perform ① Add of the Volume.

 Set of the System Disk
 Perform ① Add of the Volume and ② Set of the System Disk.



# ① Add of the Volume

After entering user size and number of volumes to be added, register a volume by selecting (CL) the [Add].

(It can be added in the optional space "empty" by selecting (CL) "empty" from the LDEV list box.)

# ② Set of the System Disk

The System Disk can be set by selecting (CL) the volume from the LDEV list box and selecting (CL) [Set].

The System Disk registered by mistake can be released by selecting (CL) the System Disk from the LDEV list box and selecting (CL) [Release].

When the System Disk is set, check that "SystemDisk" is displayed in the LDEV list box.

The volume that have been registered are displayed in the list box. Only the added volume can be deleted.

## • Variable Volume Size

"Specify size & number" : Defines the specified number of the specified user size.

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## INST05-790

• Capacity Unit

"MByte": Makes data displayed or entered by the MByte.
"Blocks": Makes data displayed or entered by the Blocks.

• LUSE : When the LUSE connection is made, a symbol "+" and a number of the volume

at the top are displayed.

• asst. : When Path/LUSE/Pool-VOL/the journal volume is defined, "+" is displayed.

[Delete] : Deletes a selected volume.

[Add] : Adds a volume.[Set] : Sets System Disk.[Release] : Release System Disk.

[Cancel] : Invalidates the setting and makes the preceding window return. Return to Step

(2) or (2-1).

[OK] : Fixes the setting and makes the preceding window return. Return to Step (2) or

(2-1).

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DW700

## **INST05-800**

(4)

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.

[Linear...]: LDEV ID is assigned to LDEV

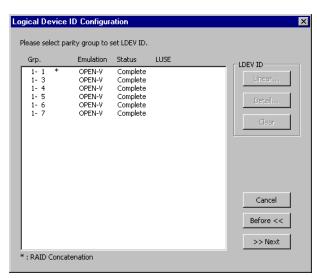
to Step (5).

[Detail...]: A screen to define LDEV in

detail is displayed. Go to Step

in the order of parity group. Go

(5)-1.



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

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned.

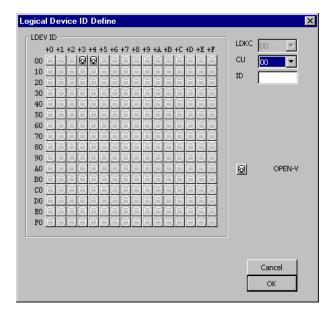
② "----": LDEV ID is not assigned.

③ "Error" : Invalid LDEV ID is assigned.

(5)

Press (CL) the [Linear...] button and enter an LDEV ID you want to allocate on the "Logical Device ID Define" screen.

Make sure that the entered item is correct and select (CL) [OK]. Go to Step (6).



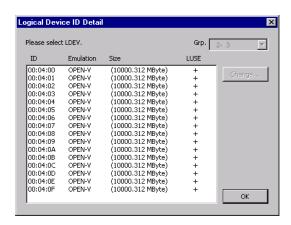
#### INST05-810

(5)-1

When the [Detail...] is pressed (CL), the 'Logical Device ID Detail' window is displayed. Select an emulation type for which the LDKC, CU and ID status are displayed as "--:--" and select (CL) [Change...]. Go to Step (5)-2.

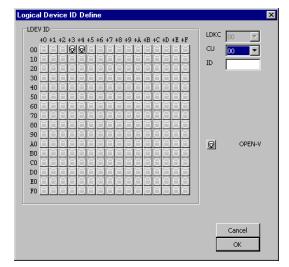
When you want to register successive IDs, you can select the two or more emulation types.

NOTE: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



(5)-2

Enter LDKC, a CU and LDEV ID you want to allocate on the 'Logical Device ID Define' window. Then, select (CL) [OK].
Go to Step (5)-3.

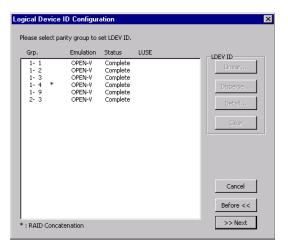


(5)-3

Make sure that the LDKC(s), the CU(s) and ID(s) have been registered.

If there is any emulation type for which the LDKC, CU and ID status are displayed as "--:--", return to Step (5)-1.

If all the settings have been made, select (CL) [OK]. Go to Step (6).



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INST05-820

(6)

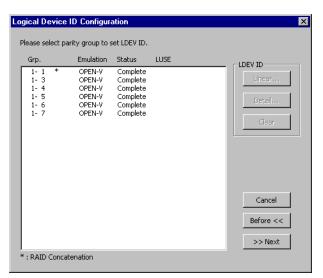
When the screen is returned to the 'Logical Device ID Configuration' window, the setting result is displayed.

If the status of a parity group shows other than "Complete", return to Step (4).
After all the settings are completed, select (CL) [Detail...] to check the settings, and then select (CL) [>>Next]. Go to Step (7).

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

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned.
② "-----" : LDEV ID is not assigned.
③ "Error" : Invalid LDEV ID is assigned.



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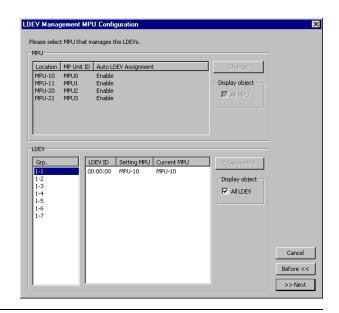
Rev.0 / Jul.2012

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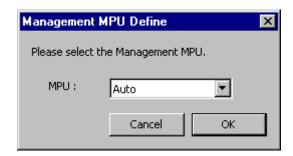
## INST05-830

(7)

In the 'LDEV Management MPU Configuration' window, select (CL) [Change MPU].
Go to Step (8).



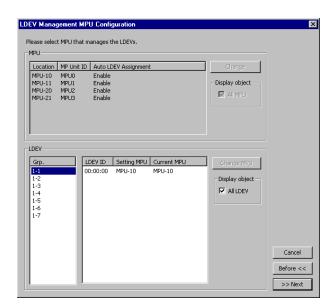
(8)
Define Management MPU and select (CL) [OK].
Go to Step (9).



(9)

When the screen is returned to the 'LDEV Management MPU Configuration' window, the setting result is displayed.

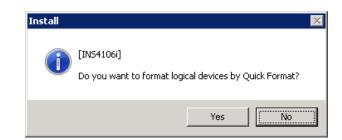
Make sure that the entered item is correct and select (CL) [>>Next]. Go to Step (10).



#### INST05-840

# (10) < Selection of format>

Select (CL) [Yes] in response to "Do you want to format logical devices by Quick Format?" when you execute Quick Format. When [No] is selected (CL), usual LDEV Format is executed.



NOTE: Next, Quick Format cannot be executed in the shown volume.

- external volume
- Volumes whose access attribute is not Read/Write
- Pool volumes (pool-VOLs)
- Journal volumes
- system disk

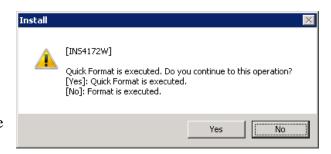
When [Yes] is selected Go to Step (11).
When [No] is selected Go to Step (12).

# (11) < Execution of Quick Format>

For the message "Quick Format is executed. Do you continue to this operation?

[Yes]: Quick Format is executed.

[No]: Format is executed.", select (CL) [Yes] when Quick Format is to be executed. Select (CL) [No] when normal LDEV format is to be executed.

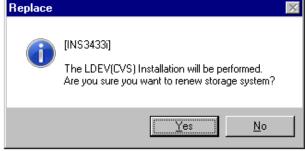


(12)

Select (CL) [Yes] in response to "The LDEV(CVS) Installation will be performed. Are you sure you want to renew storage system?".

When [No] is selected (CL), returns to INST05-610 Step 2.

NOTE: On page INST05-840 (11), it advances to (13)-1 when a Quick Format is selected (CL).



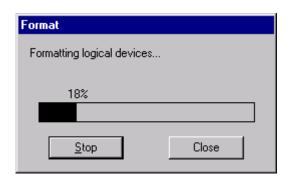
Rev.0 / Jul.2012

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## INST05-850

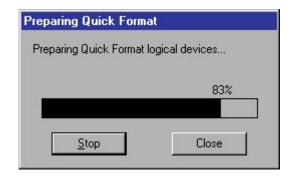
(13)

"Formatting logical devices..." is displayed.



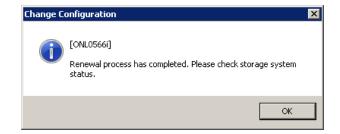
(13)-1

"Preparing Quick Format logical devices..." is displayed.



(14)

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



# (14)-1 < QUICK FORMAT>

Refer to the logical device window in the "Maintenance" window to check that the Quick Format is in progress. (SVP03-320 through 410)

## Rev.0 / Jul.2012 INST05-860

(15)

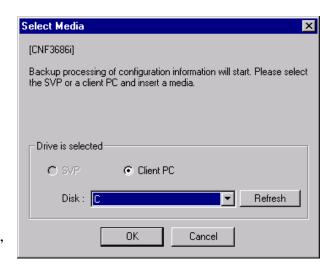
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.

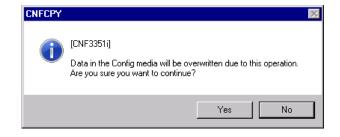


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(16)

If the configuration information is not saved in the selected media, go to step (17).

If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config

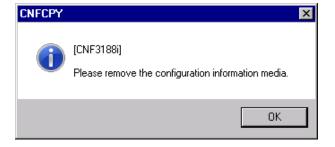


media is not necessary, select (CL) the [No] button and go to step (18).

(17)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

Remove the configuration information media, select (CL) [OK].



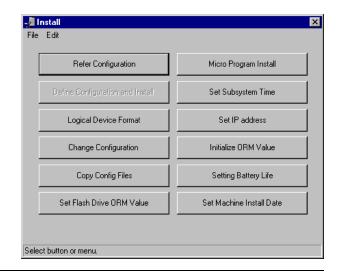
Rev.1 / Jul.2012, Feb.2013

# INST05-870

(18)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



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(19)

Change the mode to View Mode.

Rev.0 / Jul.2012

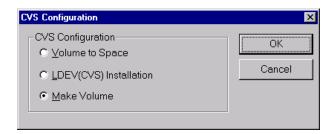
INST05-880

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# 3. <Volume Initialize>

(1)

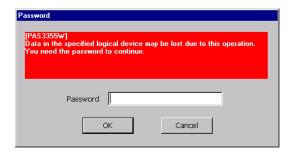
Select (CL) [Make Volume], then select (CL) [OK].



# **A** CAUTION

This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

Enter the password and select (CL) [OK].



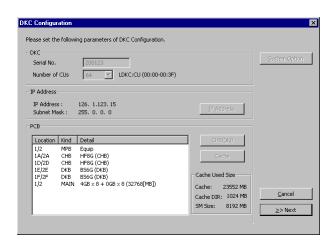
Rev.0 / Jul.2012

### INST05-890

(1-1)

Select (CL) [>>Next]. Go to Step (2).

Make sure that the entered item is correct and select (CL) [>>Next]. Go to Step (2).



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### **INST05-900**

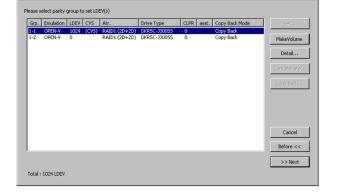
(2)

Rev.2 / Nov.2012, Feb.2013

A parity group can initialize of LDEV in the 'Device Configuration' window.

Select (CL) a parity group with Volume(s) to be initialized on the 'Device Configuration' window, and press (CL) the [MakeVolume] button. Go to Step (2-1).

When all the settings are completed, press (CL) [>>Next]. Go to Step (4).



(CVS): A parity group where CVS is installed.

Grp\*: A parity group where RAID Concatenation is installed.

asst.: A parity group where the Make Volume process cannot be performed because it includes the LDEV in which Path/LUSE/pool-VOL/the journal volumes is set.

(2-1)

A message, "The selected device(s) will be initialized. Are you sure you want to initialize the selected device(s)?" is displayed. Select (CL) [Yes].



Rev.0 / Jul.2012

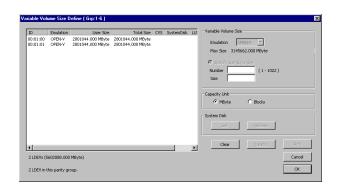
INST05-910

# (2-2) Definition of OPEN-V

Open-V can be defined in the 'Variable Volume Size Define' window.

### • Add of the Volume

After entering user size and number of volumes to be added, register a volume by selecting (CL) the [Add]. (It can be added in the optional space "empty" by selecting (CL) "empty" from the LDEV list.



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### • Set of the System Disk

The System Disk can be set by selecting (CL) the volume from the LDEV list box and selecting (CL) [Set].

The System Disk registered by mistake can be released by selecting (CL) the System Disk from the LDEV list box and selecting (CL) [Release].

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.

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#### INST05-920

• Capacity Unit

"MByte" : Makes data displayed or entered by the MByte.
"Blocks" : Makes data displayed or entered by the Blocks.

• LUSE : When the LUSE connection is made, a symbol "+" and a

number of the volume at the top are displayed.

• asst. : When Path/LUSE/Pool-VOL/the journal volume is

defined, "+" is displayed.

[Clear] : Deletes all the volumes.[Delete] : Deletes a selected volume.

[Add] : Adds a volume.[Set] : Sets System Disk.[Release] : Release System Disk.

[Cancel] : Invalidates the setting and makes the preceding window return. The routine is

returned to Step (2).

[OK] : Fixes the setting and makes the preceding window return. The routine is returned

to Step (2).

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### **INST05-930**

(3)

To return the volume(s) in other parity group(s) to the normal LDEV(s), repeat Step (2). Return to step (2).

(4)

Set LDEV ID(s) for the added LDEV(s). For the parity group having the added LDEV(s), the status which shows the ID allocation is indicated as "----". Therefore, select (CL) such a parity group.

[Linear...]: LDEV ID is assigned to LDEV in the

order of parity group. Go to step (5).

[Detail...]: A screen to define LDEV in detail is

displayed. Go to Step (5)-1.

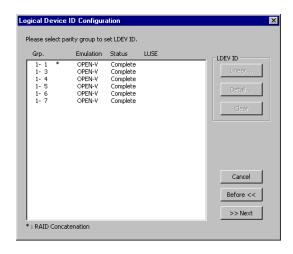
Grp\*: The top parity group where RAID Concatenation is installed.

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned.

② "-----" : LDEV ID is not assigned.

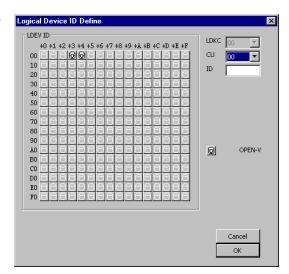
3 "Error" : Invalid LDEV ID is assigned.



(5)

Press (CL) the [Linear...] button and enter an LDEV ID you want to allocate on the "Logical Device ID Define" screen.

Make sure that the entered item is correct and select (CL) [OK]. Go to Step (6).



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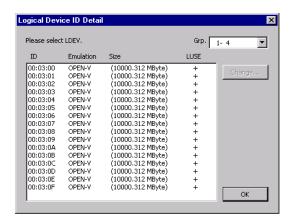
#### INST05-940

(5)-1

When the [Detail...] is pressed (CL), the 'Logical Device ID Detail' window is displayed. Select an emulation type for which the LDKC, CU and ID status are displayed as "--:--" and select (CL) [Change...]. Go to Step (5)-2.

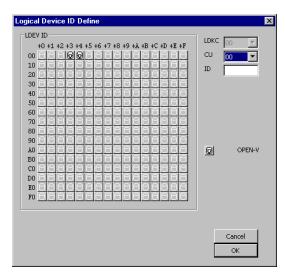
When you want to register successive IDs, you can select the two or more emulation types.

NOTE: In the case of a RAID Concatenation Group, LDEV of the parity group selected by the "Grp List" is displayed.



(5)-2

Enter LDKC, a CU and LDEV ID you want to allocate on the 'Logical Device ID Define' window. Then, select (CL) [OK].
Go to Step (5)-3.

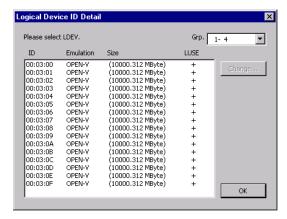


(5)-3

Make sure that the LDKC(s), CU(s) and ID(s) have been registered.

If there is any emulation type for which the LDKC, CU and ID status are displayed as "--:--", return to Step (5)-1.

If all the settings have been made, select (CL) [OK]. Go to Step (6).



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INST05-950

(6)

When the screen is returned to the 'Logical Device ID Configuration' window, the setting result is displayed.

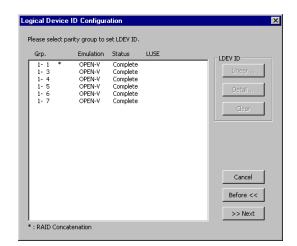
If the status of a parity group shows other than "Complete", return to Step (5).

When all the settings are completed, press (CL) [>>Next]. Go to Step (7).

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

Status: Status of LDEV ID.

① "Complete" : LDEV ID is assigned. ② "-----" : LDEV ID is not assigned. : Invalid LDEV ID is assigned. ③ "Error"



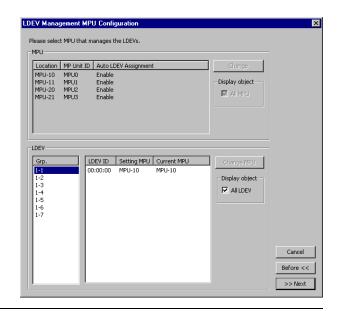
Rev.0 / Jul.2012

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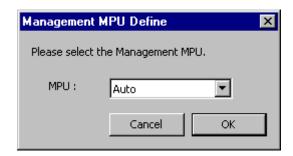
### INST05-960

(7)

In the 'LDEV Management MPU Configuration' window, select (CL) [Change MPU].
Go to Step (8).



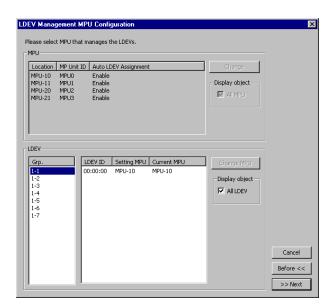
(8)
Define Management MPU and select (CL) [OK].
Go to Step (9).



(9)

When the screen is returned to the 'LDEV Management MPU Configuration' window, the setting result is displayed.

Make sure that the entered item is correct and select (CL) [>>Next]. Go to Step (10).

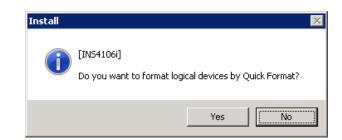


Rev.0 / Jul.2012

INST05-970

# (10) < Selection of format>

Select (CL) [Yes] in response to "Do you want to format logical devices by Quick Format?" when you execute Quick Format. When [No] is selected (CL), usual LDEV Format is executed.



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NOTE: Next, Quick Format cannot be executed in the shown volume.

- external volume
- Volumes whose access attribute is not Read/Write
- Pool volumes (pool-VOLs)
- Journal volumes

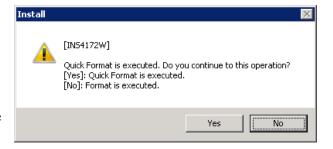
When [Yes] is selected Go to Step (10)-1. When [No] is selected Go to Step (11).

### (10)-1 < Execution of Quick Format>

For the message "Quick Format is executed. Do you continue to this operation?

[Yes]: Quick Format is executed.

[No]: Format is executed.", select (CL) [Yes] when Quick Format is to be executed. Select (CL) [No] when normal LDEV format is to be executed.



DW700

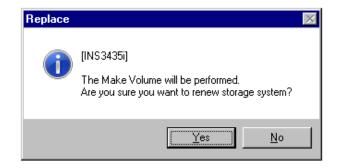
#### INST05-980

(11)

Select (CL) [Yes] in response to "The Make Volume will be performed. Are you sure you want to renew storage system?".

When [No] is selected (CL), returns to INST05-610 Step 2.

NOTE: When System Option 503 is set, LDEV Format is not executed and

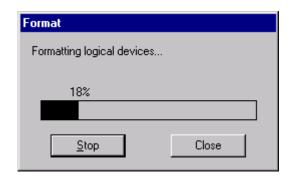


the message "The newly installed LDEV has not been formatted. Please format the newly installed LDEV after the maintenance operation has completed." is displayed. If [OK] is selected (CL) for this message, it goes to Step (10).

NOTE: On page INST05-970 (10)-1, it advances to (12)-1 when a Quick Format is selected (CL).

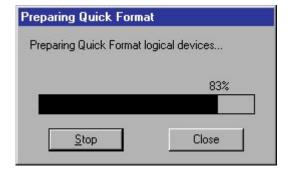
(12)

"Formatting logical devices..." is displayed when LDEV Format is necessary.



(12)-1

"Preparing Quick Format logical devices..." is displayed.



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#### INST05-990

(13)

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



(14)

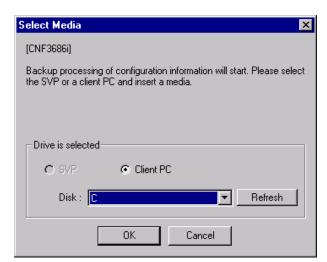
Execute an operation for backing up the configuration information.

Prepare the removable media for backup and insert the media.

Please select (CL) the [Refresh] button, and update drive information.

Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page MICRO07-180.



(15)

If the configuration information is not saved in the selected media, go to step (16). If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config



media is not necessary, select (CL) the [No] button and go to step (17).

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(16)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.

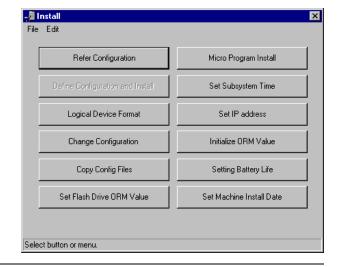
Remove the configuration information media, select (CL) [OK].



(17)

After the procedure is completed, return to 'Install'.

Select (CL) [File]-[Exit].



(18)

Change the mode to View Mode.

### 5.3.1.4 LUN Management

### (1) Outline

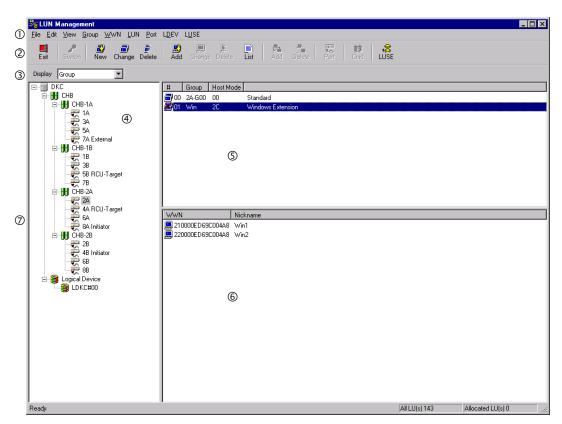


Figure 5.3.1.4-1-1 Main Window

The Main window consists of the following elements.

Table 5.3.1.4-1-1 Outline of Main Window Elements

No.	Item	Description		
1	Menu	Menu of items operable by this function.		
2	Tool bar	Part of the menu enabled to be operable by buttons.		
3	Switch	When "Switch" displayed in the tree view is selected (Port), the status of the switch is selectable. The setting of the groups or LUN is selectable.		
4	Tree	The structure that it is conscious of the hardware construction. (A port type is attached to a port.)		
(5)	Upper right list	Displays the details of an item selected from the tree.		
6	Lower right list	Displays the details of an item selected from the upper list, if any.		
7	Status bar	Displays outlined function of each item on the menu and tool bar when the mouse is positioned on it. Also it displays the all of the LU figures and the LU figures with the pass definition.		

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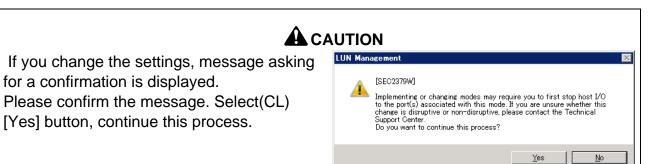
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for a confirmation is displayed.

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NOTE: If the error has occurred by the setting of LUN Management/LUSE that was started from Change Configuration, refer to "20. LUN Management/LUSE Error Recovery on SVP Change Configuration" (TRBL20-10) of the TROUBLE SHOOTING SECTION.



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Menu items and their details are shown below.

Table 5.3.1.4-1-2 List of Menu Items

Menu	Submenu	Description	Tool bar
File	Exit	• Closes the window. "Ex	
Edit	Сору	Copies group / WWN / LUN to the clip board.	None
	Paste	Pastes the information of the clip board.	None
View	Toolbar	Makes the tool bar displayed or not.	None
	Status Bar	Makes the status bar displayed or not.	None
	LDEV Size	• Changes the unit of LDEV size to be displayed to MB or GB.	None
	LUN Status	• Displays/does not display the LUN status (including the Host reserve status) in the LUN list.	None
Group	New	Creates a new group.	New"
	Change	Changes a group name or adds a member.	"Change"
	Delete	Deletes a group.	# "Delete"
	Host Mode	• Refers to the Host Mode and the Host Mode Option.	None
WWN	Add	Adds a WWN and its nickname.	"Add"
	Change	Changes a WWN and its nickname.	"Change"
	Delete	• Deletes a WWN.	"Delete"
	Login List	The hosts identified by the following WWN login to the DKC. (Only WWN has the deletion function.)	"List"
LUN	Add	• Adds a LUN.	"Add"
	Delete	• Deletes a LUN.	"Delete"
	Command Device	Changes command device and command device security information.	"Cmd"
	Force Reset	• Cancels the Host reserve status of the selected LUN.  (When the [View] – [LUN Status] menu cannot be selected, this menu does not exist.)	None

(To be continued)

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(Continued from the preceding page)

Menu	Submenu Description		Tool bar
Port	Parameter • Changes a port parameter.		"Port"
	Security Switch	• Sets whether to use the security function or not.	"Switch"
LDEV	Command Device	• Changes command device and command device security information.	"Cmd"
	Alternate	• Refers to LUN information from LDEV. Besides, it is possible to eliminate a LUN through the "Alternate" window started.	None
LUSE	LU Size Expansion	Activates the LU Size Expansion window.	"LUSE"

### Restriction item

1. LUN and Group Configuration executable check item

Table 5.3.1.4-1-3 System operating condition, and change of configuration

#	Item	Operation	Host I/O	Pair Status
1	Group	Add	_	_
2		Delete	A	_
3	Group Name	Modify	_	_
4	Host Mode	Modify	В	_
5	WWN	Add	_	_
6		Delete	_	_
7		Modify	_	_
8	LUN	Add	_	_
9		Delete	С	D

- 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 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.
- C: 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.
- D: When the pair volume of TrueCopy/ShadowImage(including the reserve volume of ShadowImage) has no LUN by deleting LUN, the specified LUN cannot be deleted.

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# 2. Port parameter check item

Table 5.3.1.4-1-4 System operating condition, and change of configuration

#	Item	Operation	Host I/O	Remaining pass MCU-RCU	Remaining Copy Volume
1	AL-PA	Modify	A	В	С
2	Topology	Modify	A	В	С
3	Channel Speed	Modify	A	_	_
4	Security Switch	Modify		_	_

- 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 TrueCopy is formed with the port of the CHB, the parameter cannot be modified.
- C: When the copy volume of RCU of the TrueCopy exists in the port, the parameter cannot be modified.

### 3. Command device check item

Table 5.3.1.4-1-5 System operating condition, and change of configuration

#	Item	Operation	Host I/O	Pair Status	Guard Status
1	Command	Set	A	В	D
2	Device	Clear	С		_
3	Command	Set	С	_	_
4	Device Security	Clear	С		
5	User	Set	С		
6	Authentication	Clear	С	_	
7	Device Group	Set	С	_	
8	Definition	Clear	С	_	

- 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 TrueCopy/ShadowImage volume, the Command Device cannot be set.
- C: R/W has to be stopped when this parameter is modified.
- D: A volume with an attribute other than R/W volume cannot be defined as a command device.

### (2) Setting Security Switch

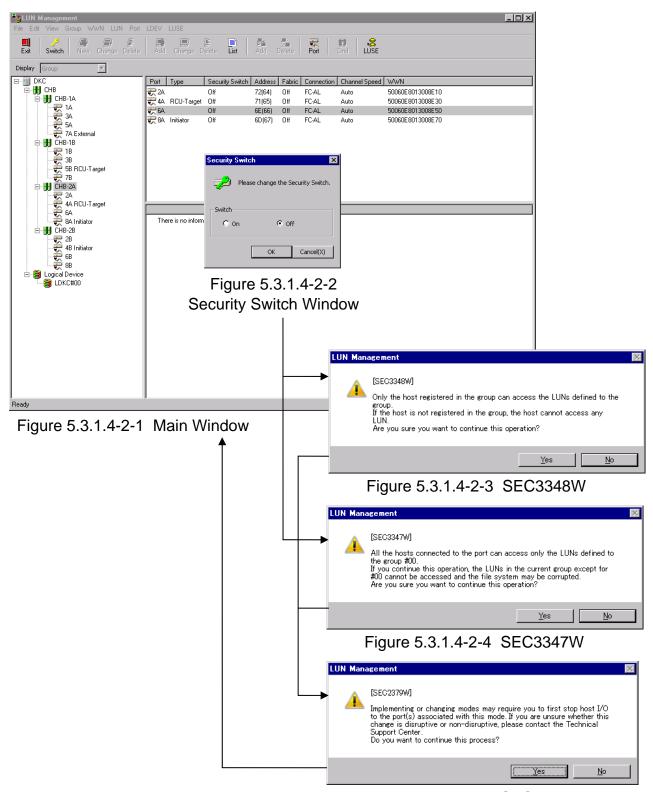


Figure 5.3.1.4-2-5 SEC2379W

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When each CHB location in the tree view is selected (CL), installed ports information supported by this function are displayed in the upper right list.

Setting of a Security Switch is made in the following procedure.

- ① Select (CL) a port for which you want to set the security switch from the upper right list.
- ② Select (DR) [Security Switch...] from the [Port] menu.
- ③ Since the Security Switch window (Figure 5.3.1.4-2-2) is displayed, check On or Off box and select (CL) the [OK] button.
  - When the Security Switch to On, message (Figure 5.3.1.4-2-3) is displayed, select (CL) the [Yes] button.
  - When the Security Switch to Off, message (Figure 5.3.1.4-2-4) is displayed, select (CL) the [Yes] button.
- 4 Message (Figure 5.3.1.4-2-5) is displayed, select (CL) the [Yes] button.
- ⑤ The status of the security switch that has been set is reflected in the Main window (Figure 5.3.1.4-2-1).

Details of the Main window (Figure 5.3.1.4-2-1) and the Security Switch window (Figure 5.3.1.4-2-2) are shown on the following page.

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# Table 5.3.1.4-2-1 Details and Operation of Main Window (Switch)

	,
Item	Description
Upper list	Displays statuses of the security switches that have been set.
	Provided with a sorting function.
Lower list	Displays nothing.
"Port – Security Switch" menu	Selectable when an item has been selected from the upper list. Displays the Security Switch window.
Pop-up menu	Enables a clicking of the right mouse button to select "Security Switch" provided that an item has been selected from the upper list.

# Table 5.3.1.4-2-2 Details and Operation of Security Switch Window

Item	Description	
On/Off radio button	Displays a status setting of the Security Switch that has been selected in the Main window. (If On and Off of the switch have been selected in the Main window, the radio buttons of ON and OFF are not selected in this window, and [OK] button cannot be selected.)	
OK button	Closes the window after reflecting the setting that has been made.	
	Not selectable when neither of the statuses has been selected.	
Cancel button	Closes the window without reflecting the setting that has been made.	

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- (3) Setting Group
- (3-1) Adding Group

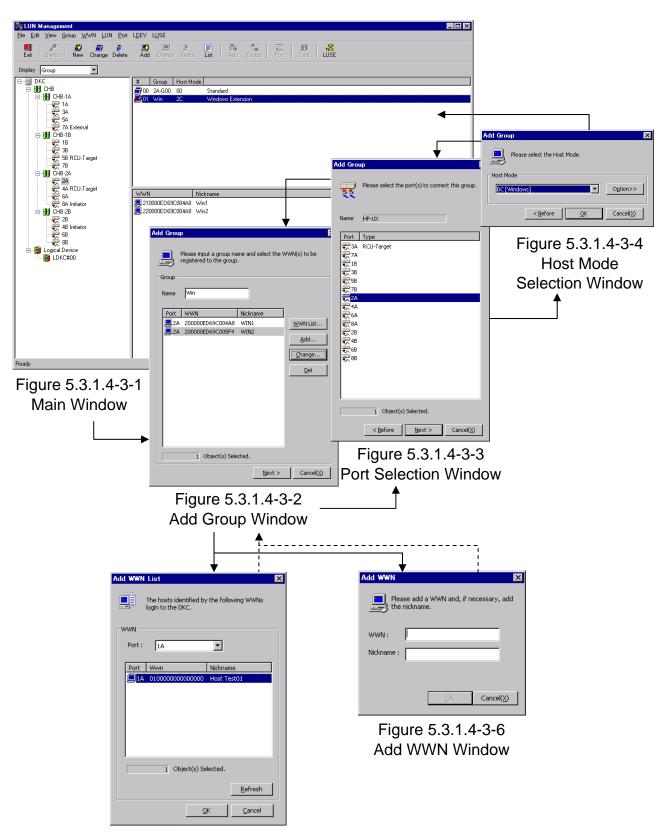


Figure 5.3.1.4-3-5 Add WWN List Window

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#### INST05-1120

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list.

Addition of a group is done in the following procedure.

- ① Select (DR) [New...] from the [Group] menu in the Main window (Figure 5.3.1.4-3-1).
- ② Since the Add Group window (Figure 5.3.1.4-3-2) is displayed, enter a group name.
- 3 Register a WWN, and select (CL) the [Next>] button.
  - a) If you select the [WWN List...] button. Since the Add WWN List window (Figure 5.3.1.4-3-5) is displayed, select (CL) a WWN in the list, and select (CL) the [OK] button.
  - b) If you select the [Add...] button.
    Since the Add WWN window (Figure 5.3.1.4-3-6) is displayed, input WWN and Nickname, and select (CL) the [OK] button.
- Since the Port Selection window (Figure 5.3.1.4-3-3) is displayed, select (CL) a port for connecting a new group and select (CL) the [Next>] button.
- ⑤ Set a host mode for the new group in the Host Mode Selection window (Figure 5.3.1.4-3-4). If you need to select an Option, see INST05-1190 and set the bit, and then select (CL) the [OK] button.
- © Information on the group that has been newly registered is reflected in the Main window (Figure 5.3.1.4-3-1).

Details of the Main window (Figure 5.3.1.4-3-1) and the other windows are shown on the following page.

# Table 5.3.1.4-3-1 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
"Group – New" menu	Selectable when "Port" has been selected from the tree.
	Displays the Add Group window.
Pop-up menu	Makes the "New" menu selectable when the right mouse button is clicked in the upper list.

# Table 5.3.1.4-3-2 Details and Operation of Add Group Window

Item	Description	
Name	Enter a name of a group to be added in this box (using up to 64 characters).	
List	Displays a list of WWNs to be registered.	
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.	
WWN List button	Selects a WWN wanted to be registered from the Login WWN List. Makes the registration to be reflected on the list after it is completed.	
Change button	Changes a selected WWN and its nickname. (Only one WWN can be selected.)	
Delete button	Deletes a selected WWN from the list.	
Next button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.	
Cancel button	Returns the window to the main window without doing anything.	

# Table 5.3.1.4-3-3 Details and Operation of Port Selection Window

Item	Description
Name	Displays the group name that has been entered in the preceding window.
List	To be used for selecting a port to be connected.
Before button	Returns you to the preceding window.
Next button	Closes the window and activates a window for selecting a host mode for the group concerned.
Cancel button	Returns you to the Main window without doing anything.

# Table 5.3.1.4-3-4 Details and Operation of Host Mode Window

	· • • • • • • • • • • • • • • • • • • •
Item	Description
Host Mode	Displays host modes that can be set. If System Option 847 is ON, "Reserve" are displayed and selectable.
Before button	Returns you to the preceding window.
OK button	Closes the window after registering the group and returns you to the Main window.
Cancel button	Returns you to the Main window without doing anything.
Option button	When this button is set to On, setting of the options from 0 to 95 becomes possible. When the Host Mode is changed, the setting of the option is cleared.

### (3-2) Changing Group

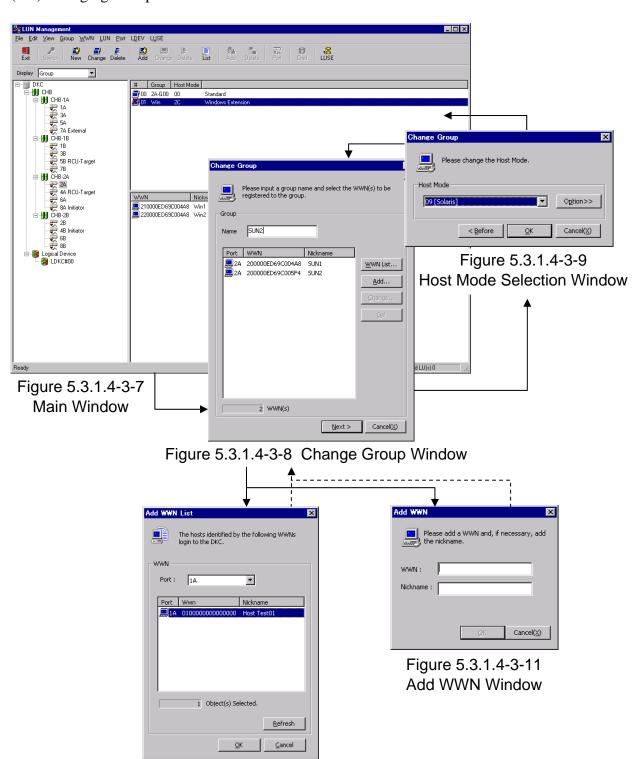


Figure 5.3.1.4-3-10 Add WWN List Window

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#### INST05-1150

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a group is made in the following procedure.

- ① Select (CL) one group you want to change from the upper right list.
- ② Select (DR) [Change...] from the [Group] menu in the Main window (Figure 5.3.1.4-3-7).
- ③ Since the Change Group window (Figure 5.3.1.4-3-8) is displayed, change the group name.
- 4 Register a WWN, and select (CL) the [Next>] button.
  - a) If you select the [WWN List...] button. Since the Add WWN List window (Figure 5.3.1.4-3-10) is displayed, select (CL) a WWN in the list, and select (CL) the [OK] button.
  - b) If you select the [Add...] button.
    Since the Add WWN window (Figure 5.3.1.4-3-11) is displayed, input WWN and Nickname, and select (CL) the [OK] button.
- © Set a host mode for the group to be changed in the Host Mode Selection window (Figure 5.3.1.4-3-9). If you need to select an Option, see INST05-1190 and set the bit, and then select (CL) the [OK] button.
- © Information on the group that has been changed is reflected in the Main window (Figure 5.3.1.4-3-7).

In case of changing the group against the port of the Security Switch off, the Change Group window (Figure 5.3.1.4-3-8) is not displayed.

Details of the Main window (Figure 5.3.1.4-3-7) and the other windows are shown on the following page.

# Table 5.3.1.4-3-5 Details and Operation of Main Window (Group)

Item	Description	
Upper list	Displays groups connected with the port that has been selected from the tree.	
	Provided with a sorting function.	
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list of more than one item has been selected.)	
	Provided with a sorting function.	
"Group – Change" menu	Selectable when a single group has been selected from the upper list.	
	Displays the Change Group window.	
Pop-up menu	Makes the "Change" menu selectable when a single group is selected from the upper list and the right mouse button is clicked there.	

# Table 5.3.1.4-3-6 Details and Operation of Change Group Window

Item	Description	
Name	Enter a name of a group to be added in this box (using up to 64 characters).	
List	Displays a list of WWNs to be registered.	
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.	
WWN List button	Selects a WWN wanted to be registered from the Login WWN List. Makes the registration to be reflected on the list after it is completed.	
Change button	Changes a selected WWN and its nickname. (Only one WWN can be selected.)	
Delete button	Deletes a selected WWN from the list.	
Next button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.	
Cancel button	Returns the window to the main window without doing anything.	

# Table 5.3.1.4-3-7 Details and Operation of Host Mode Selection Window

Item	Description	
Host Mode	Displays host modes that can be set. If System Option 847 is ON, "Reserve" are displayed and selectable.	
Before button	Returns you to the preceding window.	
OK button	Closes the window after changing the group and returns you to the Main window.	
Cancel button	Returns you to the Main window without doing anything.	
Option button	When this button is set to On, setting of the options from 0 to 95 becomes possible. When the Host Mode is changed, the setting of the option is cleared.	

### (3-3) Deleting Group

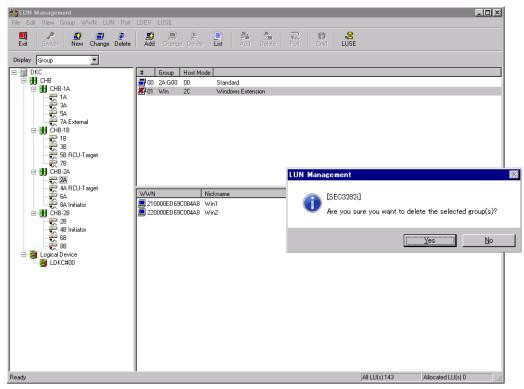


Figure 5.3.1.4-3-12 Main Window

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a group is done in the following procedure.

- ① Select (CL) a group you want to delete from the upper right list.
- ② Select (DR) [Delete] from the [Group] menu in the Main window (Figure 5.3.1.4-3-8).
- 3 Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
- ④ Information on the group that has been selected from the upper right list is deleted. Moreover, the details of the group information (WWN/LUN) is also deleted.

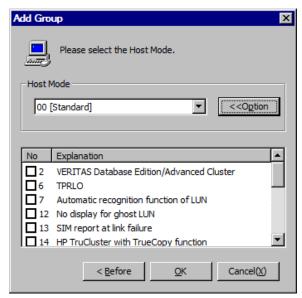
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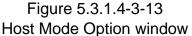
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# Table 5.3.1.4-3-8 Details and Operation of Main Window (Group)

Item	Description	
Upper list	Displays groups connected with the port that has been selected from the tree.	
	Provided with a sorting function.	
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)	
	Provided with a sorting function.	
"Group – Delete" tool bar	Selectable when a group has been selected from the upper list.	
	Displays a message asking for a confirmation.	
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the upper list.	

### (3-4) Set and Change Host Mode Options





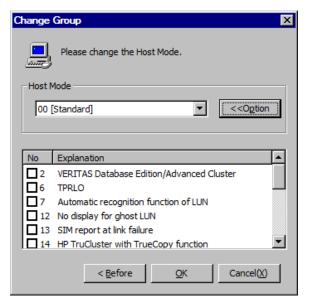


Figure 5.3.1.4-3-14 Host Mode Option window

When adding a new group, set options in the window shown in Figure 5.3.1.4-3-13. When changing a group, set options in the window shown in Figure 5.3.1.4-3-14.

Do not set the check mark to the numbers other than the host mode option in Table 5.3.1.4-3-13. If System Option 847 is ON, "Reserved" are displayed and selectable.

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Table 5.3.1.4-3-9 Names and details of bits for Host Mode Options

Host mode	Feature	Scope	Affected host mode	Criteria for Application
option				(*1)
2	For Veritas VCS	Apply this when Veritas DBE/AC for RAC and VCS4.0 or later (IO Fencing feature) are used.	Common	Mandatory
6	For Windows TPRLO	The Emulex FC adapter is used with SCSI Miniport driver on windows. And the driver parameter is set that TPRLO=2.	0C,2C	Mandatory
7	For automatic device discovery when adding LUN	Apply this for SUN StorEdge SAN Foundation Software Version 4.2 or later. It makes the host to recognize the increase and decrease of the devices automatically when a SUN generic HBA is connected.	00,09	Option
12	For deleting Ghost LUN when HP-UX is connected	Apply this when you want to prevent unmounted devices from creating device files in case where HP-UX is connected.	03,08 (*2)	Option
13	For reporting SIM when a link failure occurs	It reports SIM when a link failure occurs. However, do not set this unless instructed.	Common	Cannot be set (*3)
14	For HP TruCluster	Apply this when you want to use TruCluster to set a cluster to each of P-VOL and S-VOL for TrueCopy or Universal Replicator.	07	Mandatory
15	For HACMP	Apply this when HACMP are used. HACMP5.1 Version 5.1.0.4 or later/ HACMP4.5 Version 4.5.0.13 or later/ HACMP5.2 or later.	0F	Mandatory
22	For Veritas Cluster Server	Apply this when Veritas Cluster Server are used.	0F	Mandatory
23	REC command support	It is applied when shortening the host recovery time at the time of the data transfer failure.	Common	Cannot be set (*3)
33	For a nickname of the device with HP-UX hosts	Apply this when you want to enable commands to assign a nickname of the device with hosts, or to set UUID to identify a logical volume from host.	03,08 (*2) 05 (*4,*5)	Option
39	Change the nexus specified in the SCSI Target Reset	This option is used to reset a job and return UA to all the initiators connected to the host group when Target Reset is received.	Common	Option

(To be continued)

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(Continued from the preceding page)

Host	Feature	Scope	Affected	Criteria for
mode option			host mode	Application (*1)
41	Prioritized device recognition command	When you want to execute commands to recognize the device preferentially.	Common	Option
43	Queue Full Response	When you want to make your VSP storage system return a "queue full" response to the host when the command queue is full.	Common	Option
48	HAM S-VOL Read Option	When you do not want to generate the failover from MCU to RCU, and when the applications that issue the Read commands more than the threshold to S-VOL of the pair made with High Availability Manager are performed.	Common	Option
49	BB Credit Set Up Option1	When you hope for the TrueCopy performance gain by BB Credit virtualization, use by combining with Host Mode Option 50.	Common (*7)(*8)	Option
50	BB Credit Set Up Option2	When you hope for the TrueCopy performance gain by BB Credit virtualization, use by combining with Host Mode Option 49.	Common (*7)(*8)	Option
51	Round Trip Set Up Option	When you hope for the TrueCopy performance gain by Round Trip function.	Common (*8)	Option
52	HAM and Cluster Software for SCSI-2 Reserve	Apply this when a cluster software supporting SCSI-2 reserve is used with High Availability Manager environment.	Common	Option
54	Support option for the EXTENDED COPY command (*9)	Apply this for VMware ESX/ESXi 4.1 with VAAI function. Change the behavior of the EXTENDED COPY command that conforms to SCSI-4 so that the command corresponds to VMware ESX Server.	Common	Mandatory
57	HAM response change	Apply this for VMware ESX Server. Change the behavior of Sense Key response depending on OS.	Common	Option

(To be continued)

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(Continued from the preceding page)

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Host mode option	Feature	Scope	Affected host mode	Criteria for Application (*1)
60	LUN0 Change Guard	<ul> <li>When HP-UX Version 11.31 is used.</li> <li>When you want to guard adding or deleting LUN0.</li> </ul>	Common	Option
61	Expanded Persistent Reserve Key	Apply this when using over 128 Persistent Reserve Keys. (*6)	Common	Option
63	Support option for vStorage APIs based on T10 standards (*10)	Apply this for VMware ESXi 5.0 with VAAI function based on T10 standards.	Common	Option
67	Change of the ED_TOV value	When you want to change ED_TOV value on the target port which is direct connection of Fabric = OFF and FC-AL, this is applied.	Common	Mandatory
68	Support Page Reclamation for Linux	Apply this option when using page reclamation function for Linux.	Common	Option
69	Online LUSE expansion	Apply this option when the DKC reports to the host that the capacity of LUSE is expanded.	Common	Option
71	Change the Unit Attention for Blocked pool-VOLs	Apply this option for changing sense key from NOT READY to MEDIUM ERROR when a pool volume is blocked.	Common	Option
72	AIX GPFS Support	Apply this option when you use AIX with General Parallel File System (GPFS).	Common	Option
73	Support Option for WS2012	Apply this option when using thin provisioning function for Windows Server 2012 (WS2012).	Common	Option

- \*1: Set the option when the configuration satisfies the description in Scope.
- \*2: In the P9500 series, it is enabled by Host mode 08. In other models, it is enabled only by Host mode 03.
- \*3: Set this only when you are requested to do so.
  - NOTE: To obtain the latest detailed information including minimal microcode levels and any restrictions associated with these modes please acquire the latest copy of the Mode List from your support organization's database or contact the support organization directly.
- \*4: Please reboot OpenVMS when you make Host Mode Option No.33 from turning on to turning off.
- \*5: Please allocate UUID in all LU when you make Host Mode Option No.33 from turning off to turning on, and reboot OpenVMS.
- \*6: Once you set this option, the cancellation is not recommended.
  - Please cancel Host Mode Option No.61 when a version down procedure failed due to this option.
  - When you want to turn off Host Mode Option No.61, execute the following procedures. case1: When neither "PGR" nor "KEY" is displayed on the LUN Status.
    - (1) Turn on System Option 864
    - (2) Turn off Host Mode Option No.61
    - (3) Turn off System Option 864
    - case2: When either "PGR" or "KEY" is displayed on the LUN Status.
      - (1) Release the persistent reservation key of LUs that either "PGR" or "KEY" is displayed with the host operation.
      - (2) Confirm neither "PGR" nor "KEY" is displayed on the LUN Status.
      - (3) Turn on System Option 864
      - (4) Turn off Host Mode Option No.61
      - (5) Turn off System Option 864
- \*7: Please set both Host Mode Option No.49 and No.50 to use TrueCopy performance gain by BB Credit.
- \*8: Host Mode Option No.49, No.50, and No.51 are applicable only HF8GR.
- \*9: XCOPY command that copies from one DKC to another DKC does not supported. Therefore, turn off Host Mode Option 54 when you operate the cloning or Storage vMotion between multiple DKCs with the ESX host.
- \*10: XCOPY command that copies from one DKC to another DKC does not supported. Therefore, turn off Host Mode Option 63 when you operate the cloning or Storage vMotion between multiple DKCs with the ESX host.

- (4) Setting WWN
- (4-1) Adding WWN

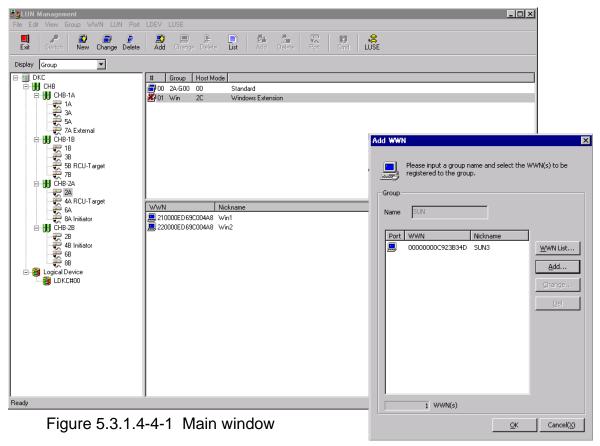


Figure 5.3.1.4-4-2 Add WWN Window

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a WWN is made in the following procedure.

- ① Select (CL) a group to which you want to add a WWN from the upper right list.
- ② Select (DR) [Add] from the [WWN] menu in the Main window (Figure 5.3.1.4-4-1).
- ③ Since the Add WWN window (Figure 5.3.1.4-4-2) is displayed, select(CL) "WWN" registering from the list, and select (CL) the [OK] button.
- The WWN that has been newly added is reflected in the lower right list.

Details of the Main Window (Figure 5.3.1.4-4-1) and the other windows are shown on the following page.

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INST05-1240

# Table 5.3.1.4-4-1 Details and Operation of Main Window (WWN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list.(Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN – Add" menu	Selectable when a single group has been selected from the upper list.
	Displays the Add WWN window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked in the lower list.

# Table 5.3.1.4-4-2 Detail and Operation of Add WWN Registration Window

Item	Description
Name	Displays a group name. (The name is not allowed to be changed.)
List	Displays a list of WWNs to be added. (WWNs that have been registered are not displayed.)
Add button	Activates a window for manually registering a WWN. Makes the registration to be reflected on the list after it is completed.
WWN List button	Selects a WWN wanted to be registered from the Login WWN List. Makes the registration to be reflected on the list after it is completed.
Change button	Changes a selected WWN and its nickname. (Only one WWN can be selected.)
Delete button	Deletes a selected WWN from the list.
Next button	Closes the window and activates a window for selecting a port to which the group concerned is to be connected.
Cancel button	Returns the window to the main window without doing anything.

#### (4-2) Changing WWN

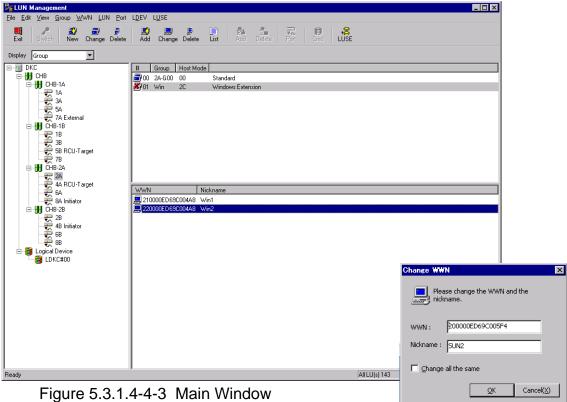


Figure 5.3.1.4-4-4 Change WWN Window

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

A change of a WWN is made in the following procedure.

- ① Select (CL) one WWN you want to change from the lower right list.
- ② Select (DR) [Change...] from the [WWN] menu in the Main window (Figure 5.3.1.4-4-3).
- 3 Since the Change WWN window (Figure 5.3.1.4-4-4) is displayed, change the "WWN" and its "Nickname", and select (CL) the [OK] button.
- 4 The WWN that has been changed is reflected in the lower right list.

Details of the Main Window (Figure 5.3.1.4-4-3) and the other windows are shown on the following page.

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INST05-1260

# Table 5.3.1.4-4-3 Details and Operation of Main Window (WWN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN – Change" menu	Selectable when a single group has been selected from the lower list.
	Displays the Change WWN window.
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.

# Table 5.3.1.4-4-4 Details and Operation of Change WWN Window

Item	Description
WWN	To be used for entering a WWN (16 hexadecimal digits).
Nick name	Used for entering a nickname (up to 64 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.

#### (4-3) Deleting WWN

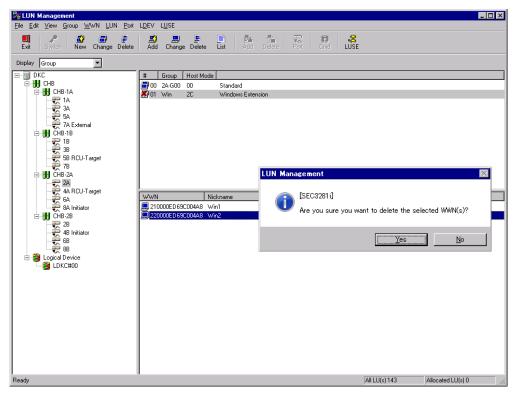


Figure 5.3.1.4-4-5 Main Window

When "Port" in the tree view is selected, "Group" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a WWN is done in the following procedure.

- ① Select (CL) a WWN you want to delete from the lower right list.
- ② Select (DR) [Delete] from the [WWN] menu in the Main window (Figure 5.3.1.4-4-5).
- ③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
- 4 The WWN that has been selected from the lower right list is deleted.

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INST05-1280

# Table 5.3.1.4-4-5 Details and Operation of Main Window (Group)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays details of a group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	Provided with a sorting function.
"WWN – Delete" menu	Selectable when a WWN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the upper list.

### (4-4) Deleting WWN of the host linked DKC

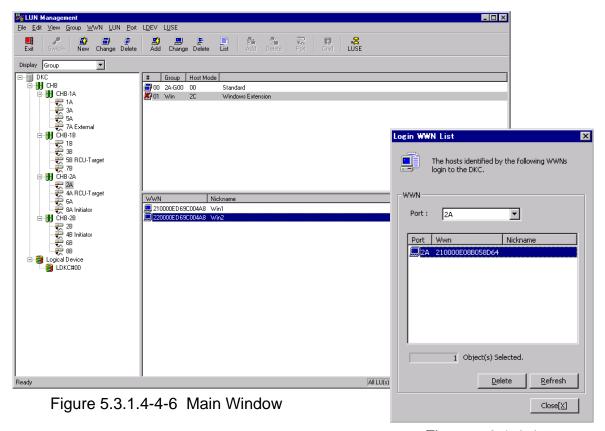


Figure 5.3.1.4-4-7 Login WWN List Window

Deletion of a WWN of the host linked to DKC is done in the following procedure.

- ① Select (DR) [Login List] form the [WWN] menu in the Main Window (Figure 5.3.1.4-4-6).
- ② Select (CL) the [Refresh] button is redraws the WWN list.
- ③ Since the Login WWN List window (Figure 5.3.1.4-4-7) is displayed, selected (CL) the WWNs and select (CL) the [Delete] button.
- 4 Select (CL) the [Close] button is close window returns you to the Main Window.

Table 5.3.1.4-4-6 Details and Operation Login WWN List window

T4	Description
Item	Description
Port	Specifies a port of the WWN to be displayed in the list. When "All Port" is selected, all WWNs in the list are displayed.
List	Displays a WWN list.
Delete button	Deletes a selected WWN.
Refresh button	Redraws the list.
Close button	Returns you the Main window.

#### INST05-1300

- (5) Setting LUN
- (5-1) Adding LUN

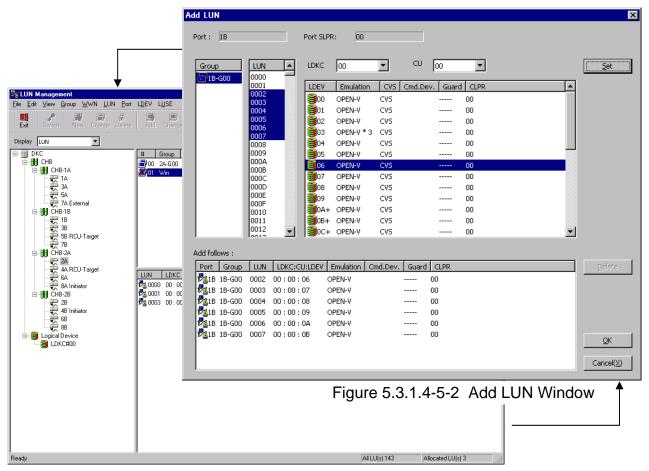


Figure 5.3.1.4-5-1 Main Window

When "Port" in the tree view is selected, "LUN" is set on the Display. Displays the group setting in the port that has been selected in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Addition of a LUN is done in the following procedure.

- ① Change the Display to "LUN."
- ② Select (CL) a group to which a LUN is to be added from the upper right list.
- 3 Select (DR) [Add] from the [LUN] menu in the Main window (Figure 5.3.1.4-5-1).
- § Since the LUN Registration window (Figure 5.3.1.4-5-2) is displayed, select (CL) the LUN and CU:LDEV and select (CL) the [SET] button. The LUN that has been set is displayed in the "Add follows list."
- ⑤ When the [OK] button is selected (CL), items displayed in the "Add follows" list is newly registered and the window is changed to the Main window (Figure 5.3.1.4-5-1).

Details of the Main Window (Figure 5.3.1.4-5-1) and the other windows are shown on the following page.

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#### INST05-1310

# Table 5.3.1.4-5-1 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined as being contained in the group that has been selected from the upper list.  (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	NOTE: The following symbols may be added to LDKC:CU:LDEV #.  Each meaning is shown.  '+': One LUN is set in other host groups.  '++': Two or more LUNs are set in other host groups.  '#': An external volume is shown.  'V': A virtual volume for Thin Image is shown.  'X': A Dynamic Provisioning volume is shown.
	Provided with a sorting function.
"LUN – Add" menu	Selectable when a port subordinate to the LUN has been selected from the tree.
	Displays the Add LUN window.
Pop-up menu	Displays the "Add" menu when the right mouse button is clicked on the item in the upper list.

# Table 5.3.1.4-5-2 Details and Operation of Add LUN Window

Item	Description
Port	Displays a name of a port that has been selected from the tree in the Main window.
Group list	Displays all groups registered as being connected with the port concerned.
LUN list	Displays unused LUN's in the group concerned according to the group selection that has been made.
LDKC	Displays LDKC numbers of all mounted CU's supported this function.
CU list	Displays CU numbers of all mounted LDEV's supported by this function.
LDEV list	Displays unused LDEV's in the group concerned according to the group selection that has been made.
	NOTE: The following symbols may be added to LDKC:CU:LDEV #.  Each meaning is shown.  '+': One LUN is set.  '++': Two or more LUNs are set.  '#': An external volume is shown.  'V': A virtual volume for Thin Image is shown.  'X': A Dynamic Provisioning volume is shown.
Add follows list	Displays a LUN (path) to be added.
Set button	Selectable only when the group, LUN, and CU:LDEV have been selected.
	The LUN that has been added is displayed in the "Add follows" list.
Delete button	Excepts a LUN from LUNs to be added.
OK button	Selectable only when the LUN'(s) is/are in the "Add follows" list.
	Closes the window after adding the LUN and returns you to the Main window.
Cancel button	Closes the window without doing anything and returns you to the Main window.

#### (5-2) Deleting LUN

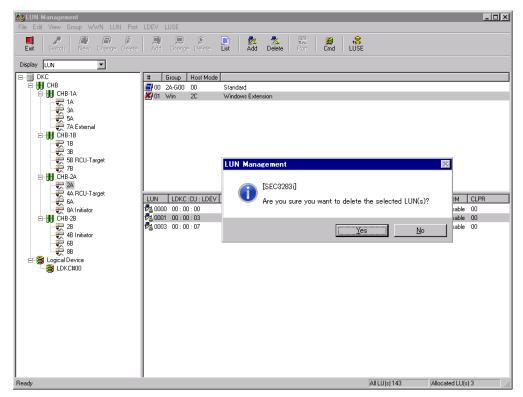


Figure 5.3.1.4-5-3 Main Window

When "Port" in the tree view is selected, groups connected with the port that has been selected from the tree are displayed in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Deletion of a LUN is done in the following procedure.

- ① Select (CL) a LUN from the upper right list.
- ② Select (DR) [Delete] from the [LUN] menu in the Main window (Figure 5.3.1.4-5-3).
- ③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
- 4 Information on the LUN that has been selected from the lower right list is deleted.

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INST05-1340

# Table 5.3.1.4-5-3 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined for a group selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	NOTE: The following symbols may be added to LDKC:CU:LDEV #. Each meaning is shown.  '+': One LUN is set in other host groups.  '++': Two or more LUNs are set in other host groups.  '#': An external volume is shown.  'V': A virtual volume for Thin Image is shown.  'X': A Dynamic Provisioning volume is shown.
	Provided with a sorting function.
"LUN – Delete" menu	Selectable when a LUN has been selected from the lower list.
	Displays a message asking for a confirmation.
Pop-up menu	Displays "Delete" menu when the right mouse button is clicked on the item in the lower list.

#### (5-3) Changing Command Device from the LUN list

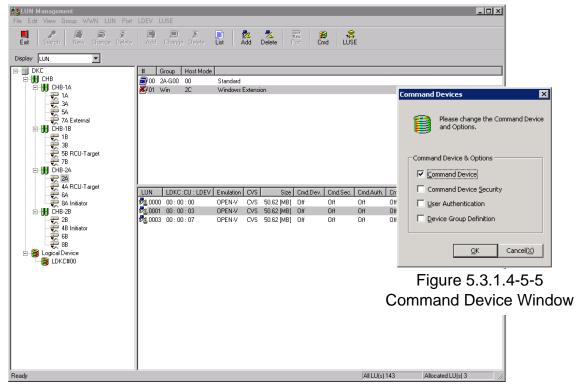


Figure 5.3.1.4-5-4 Main Window

When "Port" in the tree view is selected, groups connected with the port that has been selected from the tree are displayed in the upper right list. In the lower right list, details of a group that has been selected from the upper right list are displayed.

Setting of a Command Device form the LUN list is made in the following procedure.

- ① Select (CL) LUN from the lower right list.
- ② Select (DR) [Command Device] from the [LUN] menu in the Main window (Figure 5.3.1.4-5-4).
- ③ Change "Command Device" in the Command Device Window (Figure 5.3.1.4-5-5), and select (CL) the [OK] button.
- 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 INST05-1400.

NOTE: 'On\*' shows the remote command device.

It is possible to change for the remote command device.

# Table 5.3.1.4-5-4 Details and Operation of Main Window (LUN)

Item	Description
Upper list	Displays groups connected with the port that has been selected from the tree.
	Provided with a sorting function.
Lower list	Displays LUN's defined as being contained in the group that has been selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)
	NOTE: The following symbols may be added to LDKC:CU:LDEV#.  Each meaning is shown.  '+' : One LUN is set in other host groups.  '++': Two or more LUNs are set in other host groups.  '#' : An external volume is shown.  'V' : A virtual volume for Thin Image is shown.  'X' : A Dynamic Provisioning volume is shown.
	Provided with a sorting function.
"LUN – Command Device"	Selectable when a LUN has been selected from the lower list.
menu	Displays the Command Device window.
Pop-up menu	Displays the "Command Device" menu when the right mouse button is clicked on the item in the lower list.

# Table 5.3.1.4-5-5 Details and Operation of Add LUN Window

Item	Description
Command Device	Displays the command device of LUN selection.
	When it is checked, the command device is on.
Command Device 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.
User Authentication	When it is checked, the authentication command device is validated.
	Check is possible only when there is setting of Cmd.Dev.
Device Group Definition	When it is checked, the Device Group Definition device is validated.
	Check is possible only when there is setting of Cmd.Dev.
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.

### (6) Changing Port

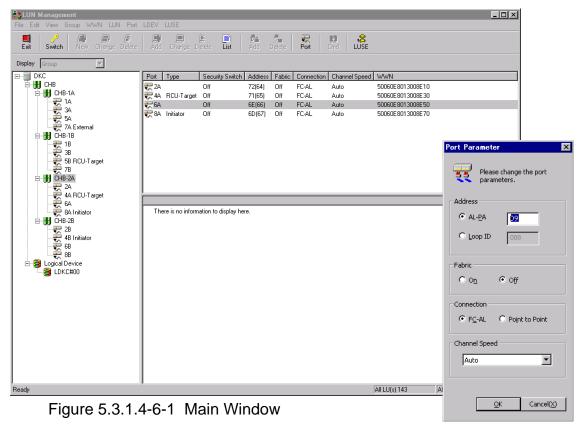


Figure 5.3.1.4-6-2
Port Parameter Window

When "Port" in the tree view is selected (CL), installed ports supported by this function are displayed in the upper right list.

A change of a Port Parameter is made in the following procedure.

- ① Select (CL) a port from the upper right list.
- ② Select (DR) [Parameter...] from the [Port] menu in the Main window (Figure 5.3.1.4-6-1).
- ③ Since the Port Parameter window (Figure 5.3.1.4-6-2) 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.

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## Table 5.3.1.4-6-1 Details and Operation of Main Window (Port)

	• • • • • • • • • • • • • • • • • • • •
Item	Description
Upper list	Displays installed ports supported by this function.
	Provided with a sorting function.
Lower list	Displays no item.
"Port – Change" menu	Selectable when a port has been selected from the upper list.
	Displays the Port Parameter window.
Pop-up menu	Displays the "Parameter" menu when the right mouse button is clicked on the item in the upper list.

## Table 5.3.1.4-6-2 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 2[Gbps], 4[Gbps], 8[Gbps], 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 CHB port as 2Gbps.

If 4Gbps HBA and Switch are used, please set the transfer speed of the CHB port as 4Gbps.

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 5.3.1.4-6-3 Fibre Port Addresses (AL-PA's and Loop ID's)

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	В9	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	В3	31	9B	47	73	63	56	79	3C	95	26	111		

#### (7) LDEV List

(7-1) Changing Command Device from LDEV list

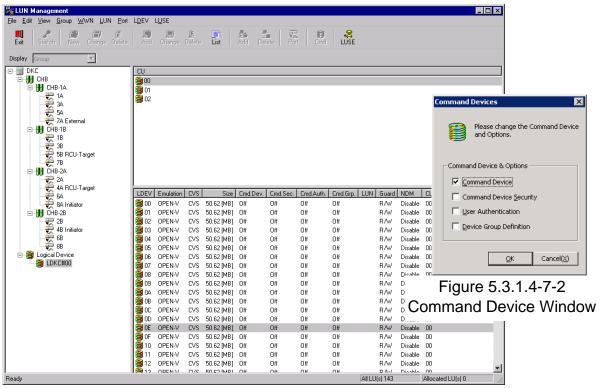


Figure 5.3.1.4-7-1 Main Window

When "Logical Device-LDKC#00" in the tree view is selected (CL), CU numbers of installed LDEV's supported by this function are displayed in the upper right list. In the lower right list, details of a CU selected from the upper right list are displayed.

A change of a command device is made in the following procedure.

- ① Select (CL) an LDEV you want to change from the lower right list.
- ② Select (DR) [Change...] from the [Device] menu in the Main window (Figure 5.3.1.4-7-1).
- ③ Since the Command Device window (Figure 5.3.1.4-7-2) is displayed, change the "Command Device" and select (CL) the [OK] button.
- Information that has been set is reflected in the LDEV that has been selected from the lower right list.

NOTE: 'On\*' shows the remote command device.

It is not possible to change for the remote command device.

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# Table 5.3.1.4-7-1 Details and Operation of Main Window (Command Device)

Item	Description		
Upper list	Displays CU numbers of installed LDEV's supported by this function.		
	Provided with a sorting function.		
Lower list	Displays details of a CU selected from the upper list. (Displays nothing when no item to be selected exists in the upper list or more than one item has been selected.)		
	NOTE: The following symbols may be added to LDEV#. Each meaning is shown.  '#': An external volume is shown.  'V': A virtual volume for Thin Image is shown.  'X': A Dynamic Provisioning volume is shown.		
	Provided with a sorting function.		
"Device – Change" menu	Selectable only when an LDEV that is given a definition of LUN has been selected from the lower list.		
	Displays the Command Device window.		
Pop-up menu	Displays the "Change" menu when the right mouse button is clicked on the item in the lower list.		

# Table 5.3.1.4-7-2 Details and Operation of Command Device Window

Item	Description
Command Device	Displays a status of a command device of the LUN that has been elected.
	When it is checked, the command device is on.
Command Device 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.
User Authentication	When it is checked, the authentication command device is validated.
	Check is possible only when there is setting of Cmd.Dev.
Device Group Definition	When it is checked, the Device Group Definition device is validated.
	Check is possible only when there is setting of Cmd.Dev.
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.

#### INST05-1420

#### (7-2) Deleting LUN from LDEV

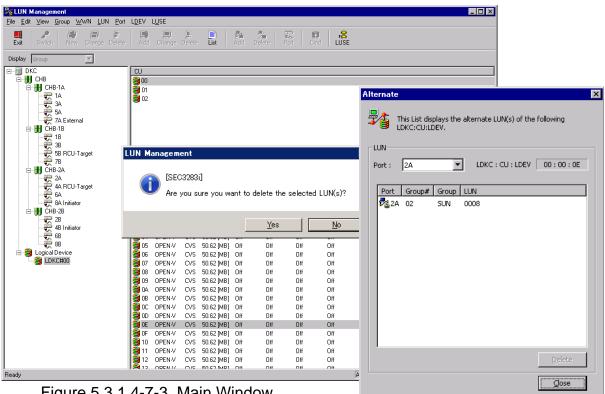


Figure 5.3.1.4-7-3 Main Window

Figure 5.3.1.4-7-4 Alternate LUN Window

When "Logical Device-LDKC#00" is selected (CL) from the tree, CU numbers of the installed LDEV conforming to this function are displayed in the upper right list. In the lower right list, detail of the CU selected from the upper right list is displayed.

Deletion of a LUN from the LDEV list is to be done in the following procedure.

- ① Select (CL) a single LDEV to which you want to refer for the set information on the LUN from the lower right list.
- ② Select (DR) [Alternate] from the [LDEV] menu in the main window (Figure 5.3.1.4-7-1).
- 3 Select the LUN you want to delete from the list in the Alternate window (Figure 5.3.1.4-7-2) and select (CL) the [Delete] button.
- Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
- ⑤ When the [Close] button is selected (CL) in the Alternate window (Figure 5.3.1.4-7-2), the window is returned to the main window (Figure 5.3.1.4-7-1).

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Table 5.3.1.4-7-3 Detail and Operation of Main Window (Logical Device)

Item	Description
Upper list	Displays CU numbers of the installed LDEV conforming to this function.
	This list has a sorting function.
Lower list	Displays detail of the CU selected from the upper list. (Nothing is displayed when no CU has been selected or two or more CUs have been selected.)
	NOTE: The following symbols may be added to LDEV #. Each meaning is shown.  '#': An external volume is shown.  'V': A virtual volume for Thin Image is shown.  'X': A Dynamic Provisioning volume is shown.
	This list has a sorting function.
"Device – Alternate LUN" menu	This menu is selectable only when a single LDEV has been selected from the lower list.
	Displays the Alternate LUN window.
Pop-up menu	Displays the "Alternate LUN" menu when an item in the lower list is clicked by the right mouse button.

# Table 5.3.1.4-7-4 Detail and Operation of Alternate LUN Window

Item	Description
Port combo box	Specify a port you want to display in the LUN list. When All Port is specified, all ports of the LUN are displayed in the LUN list.
LDKC:CU:LDEV	Displays the LDKC:CU:LDEV selected.
LUN ist	Displays LUNs assigned to the LDEV concerned.
Delete button	Deletes the LUN that as been selected from the list.
Cancel button	Returns the window to the main window.

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## (8) Setting an LUSE

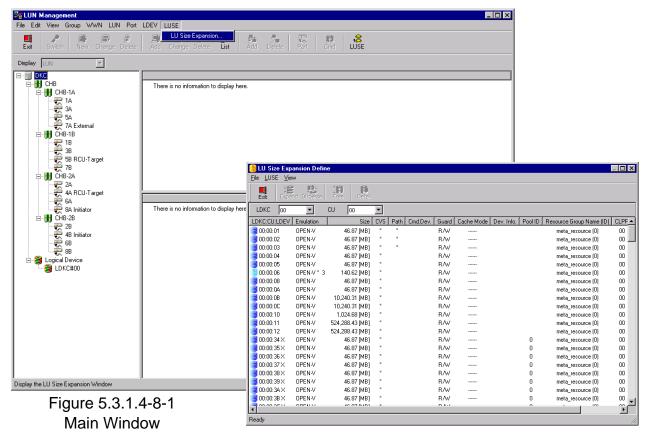


Figure 5.3.1.4-8-2 LU Size Expansion Define Window

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A change of an LUSE is to be done in the following procedure. For further details, refer to page INST05-1460.

- ① Select (DR) [LU Size Expansion...] from the [LUSE] menu in the main window (Figure 5.3.1.4-8-1).
- ② Since the 'LU Size Expansion Define' window is displayed, set the each item following the work sheet and select (CL) the [OK] button. (Because the [Close] button is displayed instead of the [OK] and [Cancel] buttons when the routine is started from the Change Configuration, select (CL) the [Close] button.
- ③ Information that has been set is reflected on the main window (Figure 5.3.1.4-8-1).

## A CAUTION

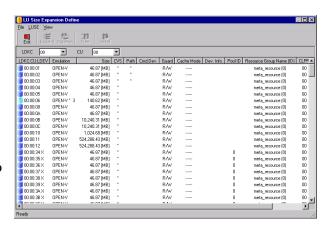
Connectable LUs satisfy the following conditions.

- (1) LU without path definition. (except for being the head of LUSE)
- (2) LU without command device definition.
- (3) LU with the same emulation type.
- (4) LU of which Data Retention Utility attribution is R/W. (for Change Configuration)
- (5) LU without remote copy pair definition.
- (6) LU of the internal volume of the own system if the selected LU is the internal volume of the own storage system.
- (7) LU of the internal volume mapping the external volume if the selected LU is the internal volume mapping the external volume.
- (8) LU in the same Cache Mode if the selected LU is the internal volume mapping the external volume.
- (9) LU with the same device type.
- (10) LU of the non-Virtual Volume.
- (11) LU of the non-Dynamic Provisioning Volume.
- (12) LU of the normal volume if the selected LU is a normal volume with path definition.
- (13) LU with Path definition in groups which Host Mode is not 01 or 0C if a head LU of LUSE is defined as a path.
- (14) The LDEV number of the connected volume must be larger than the first LDEV number when the first volume is LDEV.
- (15) The LDEV number of the connected volume must be larger than the last LDEV number of LUSE when the first volume is LUSE.
- (16) LU of same resource group ID.

## The LU Size Expansion Define window

There are two kinds of LUSE making depending on the form of LUs used: making of an LUSE using continuous LUs and that using dispersive LUs.

- When making an LUSE using continuous LUs, go to (8-1).
- When making an LUSE using dispersive LUs, go to (8-2).
- When dissolving an LUSE, go to (8-3).



The main window consists of the following elements.

Table 5.3.1.4-8-1 Outline of each item in LU Size Expansion Define window

Category	Description
Menu	Menu of items that can be operated with this function.
Tool bar	Consists of buttons for operating some of the functions in the menu.
LDKC list	A list of LDKCs having LUs to be used for an LUSE.
CU list	A list of CUs having LUs to be used for an LUSE.
LU list	A list showing statuses of LUSEs made under the CU selected from the CU list Menu items and their functions are shown below.

Menu items and their functions are shown below.

Table 5.3.1.4-8-2 List of Menu Items

Menu	Submenu	Description	Tool bar
File	Exit	Closes the window.	Exit "Exit"
LUSE	Expand	Makes an LUSE using continuous LUs.	## "Expand" Expand
	Expand (Disperse)	Makes an LUSE using dispersive LUs.	"Disperse"
	Free	Dissolves an LUSE.	Free "Free"
	Detail	Refers to status of connection of LUSEs.	Detail"
View	Toolbar	Displays/does not display the tool bar.	None
	Status Bar	Displays/ does not display the status bar.	None

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Explanation of each column in the LU list is shown below.

Table 5.3.1.4-8-3 Details of the LU List and Operation Method

Item	Description
LDKC:CU:LDEV	LDKC: CU: LDEVs, which are objects of the LUSE function, are displayed.
	NOTE: The following symbols may be added to LDKC:CU:LDEV #. Each meaning is shown.  '#': An external volume is shown.  'V': A virtual volume for Thin Image is shown.  'X': A Dynamic Provisioning volume is shown.
Emulation	An emulation type is displayed. When the LUs are connected, a number of the LUs connected is displayed as "[Emulation type]*n (n=2-36)".
Size	An LU size is displayed.
CVS	When a CVS is included, an asterisk (*) is displayed.
Path	When a path is defined, an asterisk (*) is displayed. Add "**" if Host Mode has path definition for 01 or 0C.
Cmd.Dev.	When a command device is defined, an asterisk (*) is displayed.
Guard	Display the LU Guard status. See Table 5.3.1.4-8-4 for description.
Cache Mode	Displays the Cache Mode of the LU of the internal volume mapping the external volume.
Dev. Info.	Display the device type.  ""(space) SAS Drive  "\$" SSD  "*" Drive Type other than SSD and SAS Drive
Pool ID	Displays the associated Pool ID if the LU is a Dynamic Provisioning Volume.
Resource Group Name (ID)	Displays the Resource Group Name (Resource Group ID).
CLPR	Displays the CLPR number.
RAID Level	Displays the RAID level.

Table 5.3.1.4-8-4 Details of LU Guard Status

Function	Displayed Character Line	Description
Define Configuration & Install Refer Configuration		Not displayed
Change Configuration	R/W	Read/Write
Maintenance	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

### (8-1) Making an LUSE ('LU Size Expansion' window)

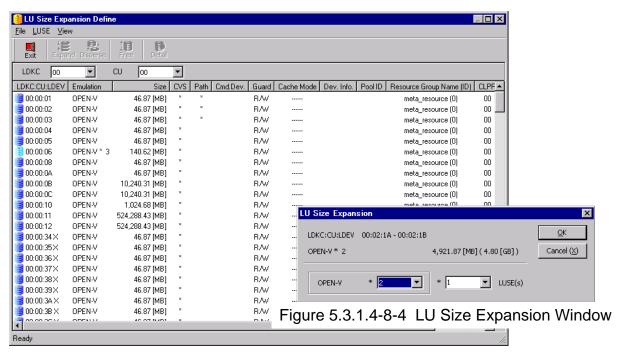


Figure 5.3.1.4-8-3 Main Window

Making of an LUSE using continuous LUs is done in the following procedure.

- ① Select LUs to be used to set an LUSE in the 'LU Size Expansion Define' window following the work sheet and select (DR) [Expand...] from the [LUSE] menu. Compose an LUSE setting the selected LU at the top.
- ② Since the 'LU Size Expansion' window (Figure 5.3.1.4-8-4) is displayed, select a number of LUSE to be connected and select (CL) the [OK] button.
- ③ A status of the LUSE that has been set is reflected on the main window (Figure 5.3.1.4-8-3).

Target LU according to this procedure satisfy the following requirement.

- LDKC:CU:LDEV number are continuous.
- LU are not LUSE volume.
- The size of LDEV are same.
- The setting of CVS are same.
- The setting of CLPR are same.

Detail of the 'LU Expansion' window (Figure 5.3.1.4-8-4) is shown on the following page.

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# Table 5.3.1.4-8-5 Detail and Operation of LU Size Expansion Window

Item	Description
LDKC: CU:LDEV	Displays the LU (LU to be set at the top) selected in the main window and the last LU of the LUSE to be produced.
"[Emulation type]*n"	Displays a status of the connection.
"xxxx.xx[MB](yy.yy[GB])"	Displays a size of an LUSE to be produced.
Combo box (left)	A number of LUs (2 through 36) to be connected is selected.
Combo box (right)	A number of LUSEs to be produced is selected. It is possible to enter the number directly.
OK button	Closes the window after reflecting the setting on it.
	This button cannot be selected if an illegal number of LUSEs has been entered.
Cancel button	Closes the window without reflecting the setting on it.

### (8-2) Making an LUSE ('LU Size Expansion (Disperse)' window)

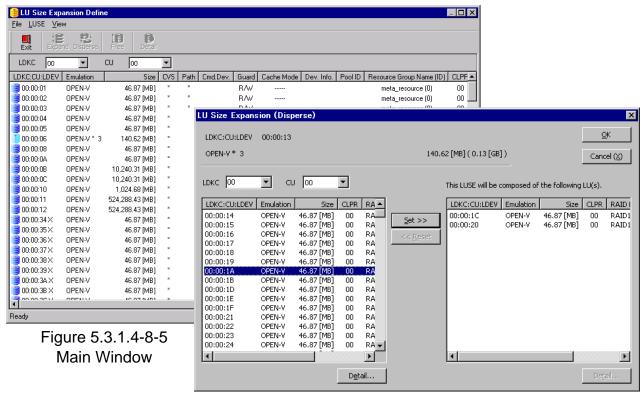


Figure 5.3.1.4-8-6 LU Size Expansion (Disperse) Window

Making of an LUSE using dispersive LUs is done in the following procedure.

- ① Select LUs to be used to make an LUSE in the 'LU Size Expansion Define' window following the work sheet and select (DR) [Expand (Disperse)...] from the [LUSE] menu. Compose an LUSE setting the selected LU at the top.
- ② Since the 'LU Size Expansion (Disperse)' window (Figure 5.3.1.4-8-6) is displayed, register Lus to be connected and select (CL) the [OK] button.
- ③ Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
- ④ A status of the LUSE that has been set is reflected on the main window (Figure 5.3.1.4-8-5).

Detail of the 'LU Size Expansion (Disperse)' window (Figure 5.3.1.4-8-6) is shown on the following page.

Item	Description
LDKC: CU:LDEV	Displays an LU (LU to be set at the top) selected in the main window.
"[Emulation type]*n"	Displays a status of the connection.
"xxxx.xx[MB](yy.yy[GB])"	Displays a size of an LUSE to be produced.
LDKC Combo box	A list of LDKCs having connectable LUs
CU Combo box	A list of CUs having connectable LUs
List (left)	Displays connectable LUs under the LDKC: CU selected in the combo box.
List (right)	Displays LUs to be connected.
Set button	Moves LUs selected from the list (left) to the list (right) to make them LUs to be connected.
Reset button	Moves LUs selected from the list (right) to the list (left) to remove them from LUs to be connected.
OK button	Closes the window after reflecting the setting on it.
	This button cannot be selected when no LU exists in the list (right).
Cancel button	Closes the window without reflecting the setting on it.
Detail button (left)	Can refer to a connection status of the LUs selected from the list (left).
	This button cannot be selected when two or more LUs have been selected.
Detail button (right)	Can refer to a connection status of the LUs selected from the list (right).
	This button cannot be selected when two or more LUs have been selected.

#### (8-3) Dissolving an LUSE

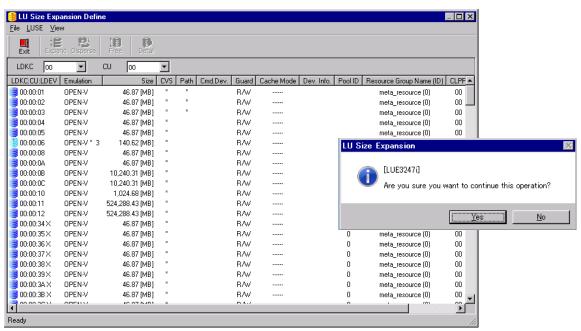


Figure 5.3.1.4-8-7 Main Window

An LUSE is dissolve in the following procedure.

- ① Select LU (or LUs) to be removed following the work sheet in the 'LU Size Expansion Define' window and select (DR) [Free] from the [LUSE] menu.
- ② Since a message asking for a confirmation is displayed, select (CL) the [Yes] button.
- ③ A status in which the selected LUSE has been dissolved is reflected on the main window (Figure 5.3.1.4-8-7).

A dissolvable LUSE is that satisfies all of the following conditions.

- An LUSE made through connection of two or more LDEVs
- An LUSE for which no path is defined
- An LUSE for which no command device is defined
- An LUSE whose attribute of the Data Retention Utility is R/W

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#### (8-4) Referring to a connection status of an LUSE

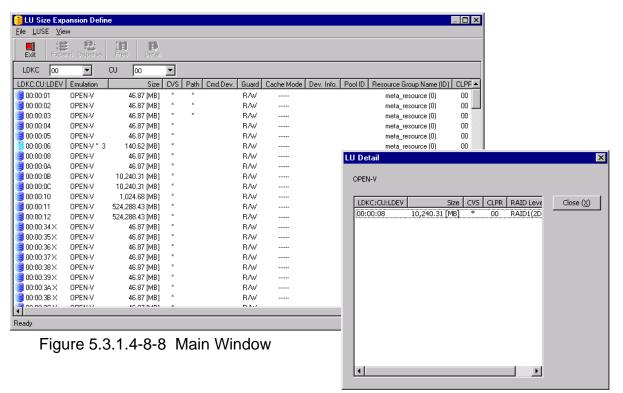


Figure 5.3.1.4-8-9 LU Detail Window

Reference to a connection status of an LUSE is done in the following procedure.

- ① Select an LUSE, whose connection status is to be referred to, in the 'LU Size Expansion Define' window or 'LU Size Expansion (Disperse)' window and select (DR) [Detail...] from the [LUSE] menu.
- ② Since the 'LU Detail' window (Figure 5.3.1.4-8-9) is displayed, refer to a status of the LU connection.

Detail of the 'LU Detail' window (Figure 5.3.1.4-8-9) is shown below.

Table 5.3.1.4-8-7	Detail and O	peration of LU	Detail Window
-------------------	--------------	----------------	---------------

	Item	Description	
"[Emulation	type]*n"	Displays a status of the LU connection.	
List	LDKC: CU: LDEV	Displays all the LDKC: CU: LDEV's composing an LUSE concerned.	
	Size	Display the size of LDEV which configures the LUSE concerned.	
	CVS	In the case of a CVS, displays an asterisk (*).	
	CLPR	Displays the CLPR number.	
	RAID Level	Displays the RAID level.	
Close button	1	Closes the window.	

#### (8-5) Changing of the unit for expressing an LU size

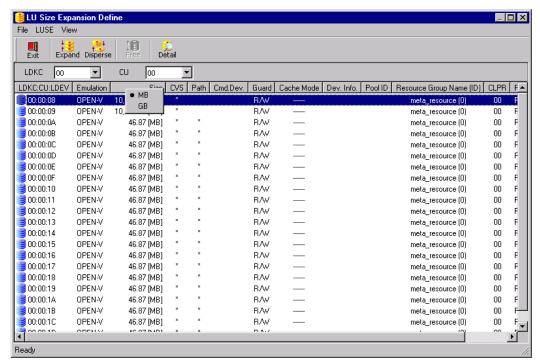


Figure 5.3.1.4-8-10 Main Window

Change of a unit for indicating an LU size is made in the following procedure.

- ① In the 'LU Size Expansion Define' window, 'LU Size Expansion (Disperse)' window, or 'LU Detail' window click on [Size] which is a heading in a list for changing the expression unit with the right mouse button.
- ② Since a pop-up menu is displayed, select (DR) a unit you want to use.
- 3 The LU size is displayed in the unit that has been selected.

### 5.4 Procedure for connecting external servers

The following describes the procedure for connecting external servers (eg. Authentication Server, Key Management Server) with SVP.

- 1. Connect SVP by remote desktop.
- 2. Configure DNS Setting of SVP.

## 5.4.1 Connect SVP by remote desktop

Connect to SVP from Console PC.

## Prerequisite

• It should be performed by a user who belongs to the Support Personnel Group.

#### Operation procedure

1.

In Console PC, select (CL) [Start]-[All Programs]-[Accessories]-[Remote Desktop Connection] to start the remote desktop connection.

2. Enter the IP address of SVP in [Computer].



3. Select (CL) [Local Resources] tab.

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4. Select (CL) [More...].

5. Select (CL) [Drives] and [OK].



- 6. Select (CL) [Connect]. The login window appears.
- 7. Enter the user name and the password to log into SVP.

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## 5.4.2 Configure DNS Setting of SVP

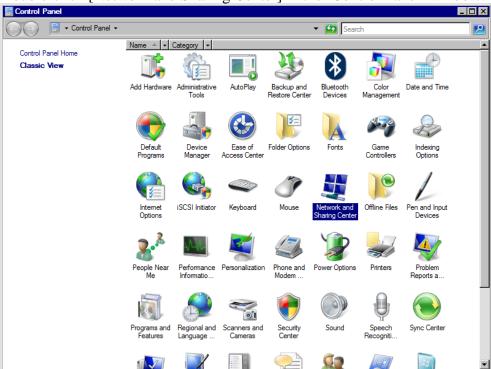
DNS setting of SVP is required for connecting external servers.

#### Prerequisite

• It should be performed by a user who belongs to the Support Personnel Group.

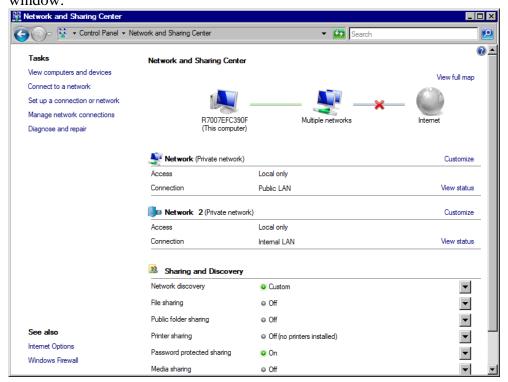
### Operation procedure

- 1. Opening the Control Panel window Select (CL) [Control Panel] from the [Start]-[Settings] menu.
- 2. Opening the Network and Sharing Center window Double-click [Network and Sharing Center] in the 'Control Panel' window.

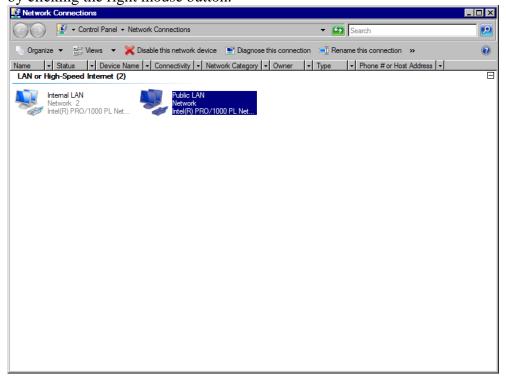


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## Opening the Manage network connections window Select (CL) [Manage network connections] in the left side of 'Network and Sharing Center' window.



Opening the Public LAN Properties window Select (CL) [Public LAN] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.

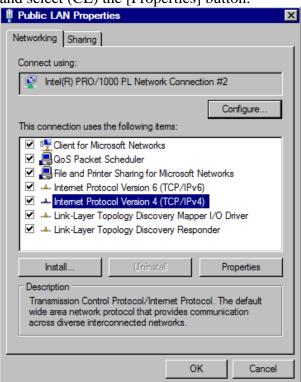


DW700

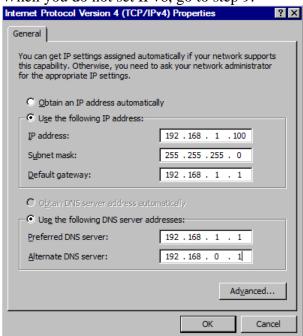
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5. Opening the Internet Protocol Version 4 (TCP/IPv4) Properties window Select (CL) [Internet Protocol Version 4 (TCP/IPv4)] in the 'Public LAN Properties' window and select (CL) the [Properties] button.



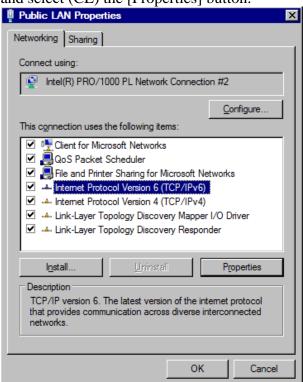
6. Setting the external IP address
Set the "Preferred DNS server" and "Alternate DNS server" and select (CL) the [OK] button.
When you do not set IPv6, go to step 9.



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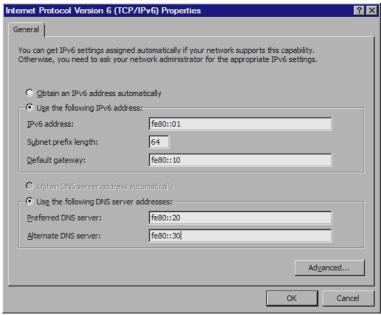
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Opening the Internet Protocol Version 6 (TCP/IPv6) Properties window Select (CL) [Internet Protocol Version 6 (TCP/IPv6)] in the 'Public LAN Properties' window and select (CL) the [Properties] button.



Setting the external IP address

Set the "Preferred DNS server" and "Alternate DNS server" and select (CL) the [OK] button.



9. Closing the window

After the setting is completed, select (CL) the [OK] button in the "Public LAN Properties" window.

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## 6. Cache Capacity, and the number of required options

## 6.1 Required CM Capacity

#### (1) SM Capacity

Required shared memory capacity is determined by the kind of program product to apply. Required shared memory capacity is determined with reference to the table indicated at the Table 6.1-1.

Table 6.1-1 Reference Table Shared Memory Capacity

	Judgment Factor of SM Capacity (*3)								
No.	Pr	ogram Pro	duct (*)	1)	SI/VM/DP Extension		TC/UR TI	TI	SM Capacity
	SI/VM/ DP	TC/UR	TI	DT	1	2	Extension	Extension	
1	0	×	×	×	×	×	×	×	8GB
2	0	0	0	×	0	×	×	×	16GB
3	0	×	×	0	×	×	×	×	16GB
4	0	0	0	0	0	×	×	×	24GB
5	0	0	0	×	0	0	×	0	24GB
6	0	0	0	×	0	×	0	×	24GB
7	0	0	0	×	0	0	0	0	32GB
8	0	0	0	0	0	0	×	0	32GB
9	0	0	0	0	0	×	0	×	32GB
10	0	0	0	0	0	0	0	0	40GB

\*1: TrueCopy : TC ShadowImage : SI
Universal Replicator : UR Volume Migration (\*2) : VM
Dynamic Provisioning : DP Dynamic Tiering : DT

Thin Image : TI

\*2: Volume Migration is a function in Hitachi Tiered Storage Manager.

\*3: Marks used in the columns of Judgment Factor of SM Capacity means as follows.

× (N?): Functions and Program Products described in the table are not available as the SM used by the functions and the Program Product is ineffective.

O (Y?): Functions and Program Products described in the table are available as the SM used by the functions and Program Products is effective. (To use the Program Products, performing installation operation separately is required (\*4))

Example: The SM capacity when TC is applied is 16GB or over.

(The SM becomes effective regardless of functional necessity of SI/VM/DP, SI/VM/DP Extension1, TI and UR, and they can be available to use by installation. Functions with × (N?) marked or more than described cannot be used)

\*4: For installation operation, refer to "Hitachi Storage Navigator User Guide".

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

Table 6.1-2 SVP Window and those in the Reference Table

Nie	SVP Window		Reference Table	
No.	Item	Check box	Reference Table	
1	SI/VM/DP Extension1, TC/UR, TI (*1)	OFF	SI/VM/DP Extension1, TC/UR, TI function not applied	
		ON	SI/VM/DP Extension1, TC/UR, TI function applied	
2	SI/VM/DP Extension2, TI Extension (*2)	OFF	SI/VM/DP Extension2, TI Extension function not applied	
		ON	SI/VM/DP Extension2, TI Extension function applied	
3	TC/UR Extension	OFF	TC/UR Extension function not applied	
		ON	TC/UR Extension function applied	
4	HDT	OFF	DT function not applied	
		ON	DT function applied	

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\*1, 2: When using ShadowImage/VolumeMigration, these calculations are used for deciding the correct selection of "Extension1 and Extention2".

The number of the maximum pairs that can be created is extended according to the addition condition of SM. When creating a pair, a resource called a difference table is required. This difference table is extended depending on the SM addition condition, and the number of pairs that can be created in the storage system is decided. Table 6.1-3 shows the total number of difference tables according to the addition condition of SM.

Table 6.1-3 Relation between the SM addition condition and the number of bitmap areas of the storage system

Addition condition of SM	Total number of bitmap areas of the storage system
Base (No additional shared memory)	26,176
Extension1 exists.	104,768
Extension1 and Extension2 exists.	209,600

## [ShadowImage/VolumeMigration]

■ Calculation method of the number of difference tables

The number of difference tables for one pair =  $\uparrow$  ((X)  $\div$  256)  $\div$  (Y)  $\uparrow$ 

X: Volume size (KB)

Y: 20,448 (the number of slots managed by one difference table)

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#### (2) Cache Capacity

The cache capacity is determined by the RAID level, the drives installed in the disk array system, whether Dynamic Provisioning (DP)/Dynamic Tiering (DT)/Dynamic Cache Residency (DCR)/Universal Volume Manager (UVM) is applied/not applied etc.

The recommended cache capacity is determined by the drives installed in the disk array system, whether DP/DT/DCR/UVM is applied/not applied etc. The calculation process of the recommended data cache capacity is shown below.

The recommended data cache capacity per CLPR = (CLPR capacity - DCR Extent setting capacity per CLPR)

(i) In case of CLPR to which DP/DT/DCR is not applied Install the recommended data cache capacity shown in the table below.

Table 6.1-6 Recommended data cache capacity in case DP/DT/DCR is not applied

Total logical capacity of External volumes + Internal volumes per CLPR	Recommended data cache capacity per CLPR
Less than 2,900GB	15GB or more
2,900GB or more	16GB or more
11,500GB or more	22GB or more
14,400GB or more	24GB or more
100,000GB or more	30GB or more
128,000GB or more	32GB or more
182,000GB or more	40GB or more
218,000GB or more	48GB or more
254,000GB or more	56GB or more
290,000GB or more	64GB or more
326,000GB or more	72GB or more

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(ii) In case of CLPR to which DP or DT is applied Install the recommended data cache capacity shown in the table below.

Table 6.1-7 Recommended data cache capacity in case DP or DT is applied

Total logical capacity of External volumes + Internal volumes per CLPR	Recommended data cache capacity per CLPR
Less than 14,400GB	22GB or more
14,400GB or more	24GB or more
100,000GB or more	32GB or more
182,000GB or more	42GB or more
218,000GB or more	48GB or more
254,000GB or more	56GB or more
290,000GB or more	64GB or more
326,000GB or more	72GB or more

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#### (iii) In case of CLPR for UVM

If the configuration of the CLPR meets the conditions described in Table 6.1-8, you can apply the recommended data cache capacity shown in Table 6.1-9.

#### Table 6.1-8 CLPR for UVM

#### Conditions of CLPR for UVM

- One CLPR consists of only external volumes
- Performance is not important
- The cache mode of the mapped volumes is "Disable"

Table 6.1-9 Recommended cache memory capacity of CLPR for UVM

Total logical capacity of external volumes in CLPR for UVM	Recommended cache capacity of CLPR for UVM
Less than 128,000GB	4GB
128,000GB or more	8GB

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## (3) Total CM Capacity

Required total CM capacity is determined by the sum of SM capacity, Data CM capacity and cache directory capacity. Relation between total CM capacity and installing location shown in Table 6.1-10.

Table 6.1-10 Reference Table Total CM Capacity

SM	Data CM	Cache	CM Capacity (GB)	
Capacity	Capacity	Directory Capacity	CMG0	CMG1
8GB	23GB	1GB	32	_
	55GB	1GB	64	_
	119GB	1GB	128	<u>—</u>
	54GB	2GB	32	32
	86GB	2GB	64	32
			32	64
	118GB	2GB	64	64
	150GB	2GB	128	32
			32	128
	182GB	2GB	128	64
			64	128
	246GB	2GB	128	128
16GB	15GB	1GB	32	_
	47GB	1GB	64	_
	111GB	1GB	128	_
	46GB	2GB	32	32
	78GB	2GB	64	32
			32	64
	110GB	2GB	64	64
	142GB	2GB	128	32
			32	128
	174GB	2GB	128	64
			64	128
	238GB	2GB	128	128

(To be continued)

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(Continued from the preceding page)

Capacity         Capacity           24GB         39GB           103GB         38GB           70GB         102GB           134GB         166GB           230GB         31GB           95GB         63GB	Directory Capacity	CMG0	CMG1
103GB 38GB 70GB 102GB 134GB 166GB 230GB 32GB 31GB 95GB			_
38GB 70GB 102GB 134GB 166GB 230GB 32GB 31GB 95GB	1GB	64	_
70GB  102GB 134GB 166GB  230GB 32GB 31GB 95GB	1GB	128	_
102GB 134GB 166GB 230GB 32GB 31GB 95GB	2GB	32	32
134GB  166GB  230GB  32GB  31GB  95GB	2GB	64	32
134GB  166GB  230GB  32GB  31GB  95GB		32	64
166GB  230GB  32GB  31GB  95GB	2GB	64	64
230GB 32GB 31GB 95GB	2GB	128	32
230GB 32GB 31GB 95GB		32	128
32GB 31GB 95GB	2GB	128	64
32GB 31GB 95GB		64	128
95GB	2GB	128	128
	1GB	64	_
COCD	1GB	128	_
62GB	2GB	64	32
94GB	2GB	64	64
126GB	2GB	128	32
158GB	2GB	128	64
		64	128
222GB	2GB	128	128
40GB 23GB	1GB	64	_
87GB	1GB	128	
54GB	2GB	64	32
86GB	2GB	64	64
118GB	2GB	128	32
150GB	2GB	128	64
		64	128
214GB	2GB	128	128