

2.14 Replacing a Disk Board (DKB)

2.14.1 Replacing a Disk Board for CBLH

NOTE: Both encrypted and unencrypted Disk Boards exist on CBLH. Check the Disk Boards to be replaced.

NOTE: In the Web Console, open the “Encryption Keys” window. If the attributes of the encryption keys are KEK and CEK or either of them, ask the customer to create the maximum number of free encryption keys before the replacement.

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the Disk Boards, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

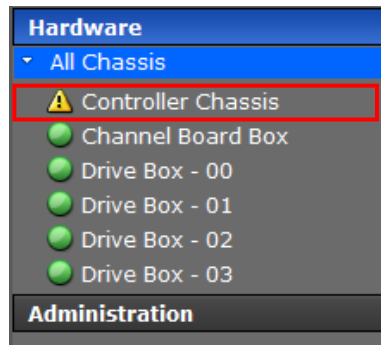
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

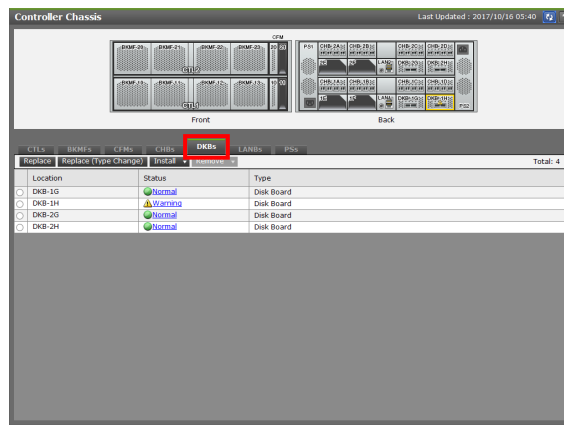
(1) <Main window>

Select [Controller Chassis] in the main window.



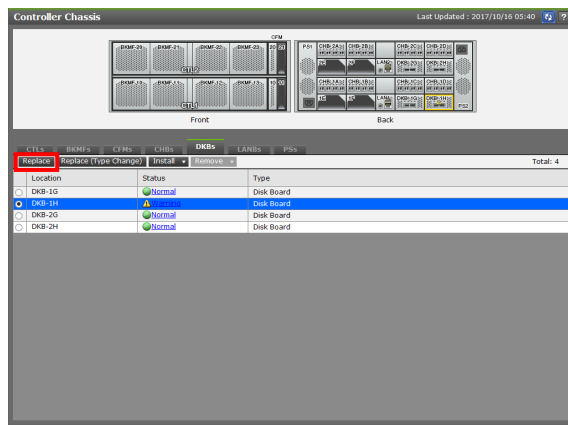
(2) <Controller Chassis window>

Click the [DKBs] tab in the “Controller Chassis” window to display a Disk Board status. See MAINTENANCE PC SECTION “3.22 Alert Display Related to FRU (Field Replacement Unit)” for the [Status].



(3) <Select Disk Board>

Select a Disk Board to be replaced. Click the [Replace] button.



(4) <Block Disk Board>

⚠ CAUTION

About "Forcibly run without safety checks":

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual.

About "Forcibly block":

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the contact described in the manual.

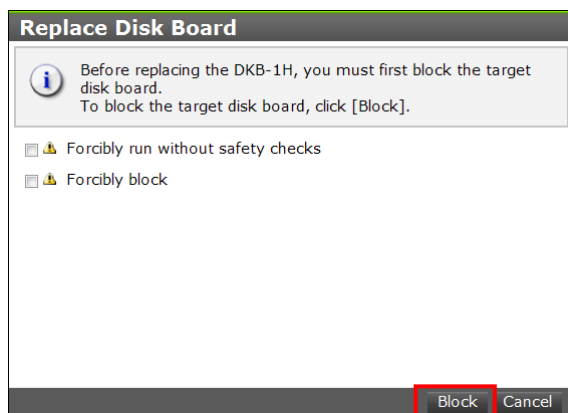
This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

Click the [Block] button after checking that the Disk Board to be replaced is correct.

If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".

NOTE : The error list window is displayed if multiple errors are detected by the prior check.

If it is displayed, click the test of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.



(5) <Check the beginning of Disk Board replacement>

Check that the Disk Board is blocked and becomes ready for replacing.

NOTE : Do not click the [Restore] button at this time.

Click the [Restore] button after completing the replacement work.

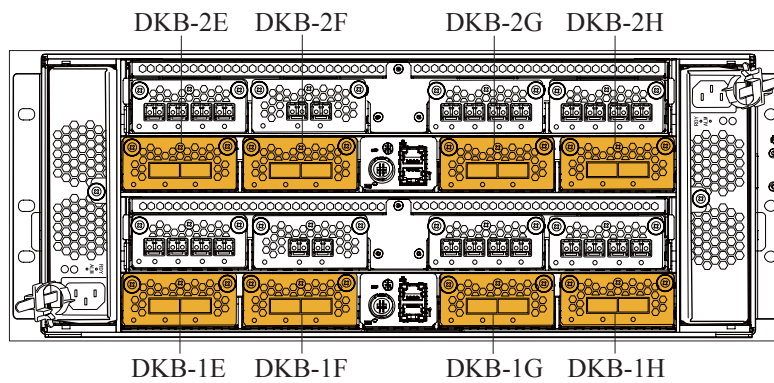


4. Disk Board for CBLH Replacement Processing

Location	Function Name of Component	Part Name
Rear View of CBLH	1 Disk Board	<ul style="list-style-type: none"> • DW-F800-BS12G • DW-F800-BS12GE

NOTE : Two types of Disk Boards exist.

Since you cannot install them by mixing the types, check the Disk Boards and replace them.

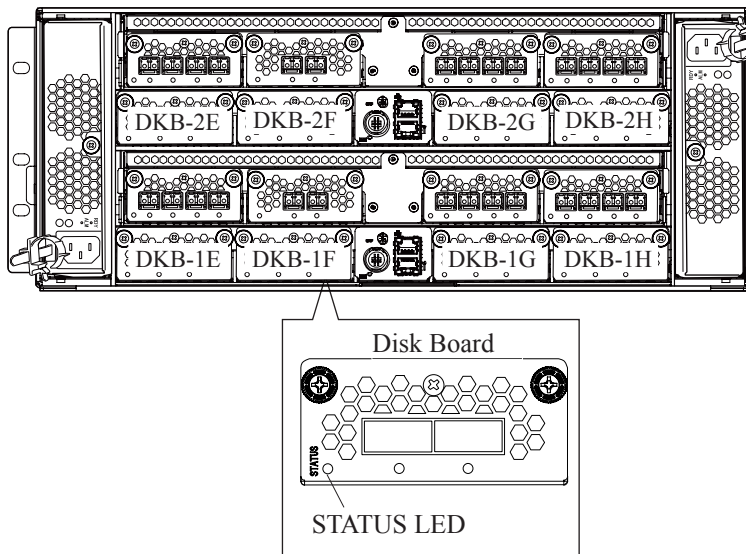


CBLH (Rear view)

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 Storage System before starting and do not take it off until you finish. Refer to [“1.1.3 Note on Installing and Removing Parts”](#).

- (1) Check that the STATUS LED (red) on the CBLH Disk Board to be replaced lights up. When the LED does not light up, check the location of the Disk Board to be replaced in the “Maintenance Utility” window.

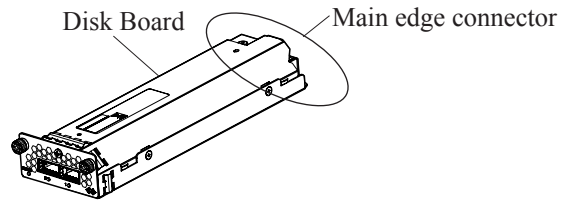
Figure 2-140 STATUS LED Location



- (2) Remove the SAS cables from the Disk Board to be replaced.

(3) Replace the Disk Board.

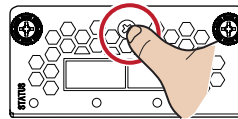
NOTICE: When removing the Disk Board, hold it with both hands and remove it straight not to apply a shock to with any components.



NOTICE: If Disk Boards are inserted randomly, malfunction may occur. Therefore, insert the Disk Boards in two steps, [Step \(c\)](#) and [Step \(d\)](#) shown below.

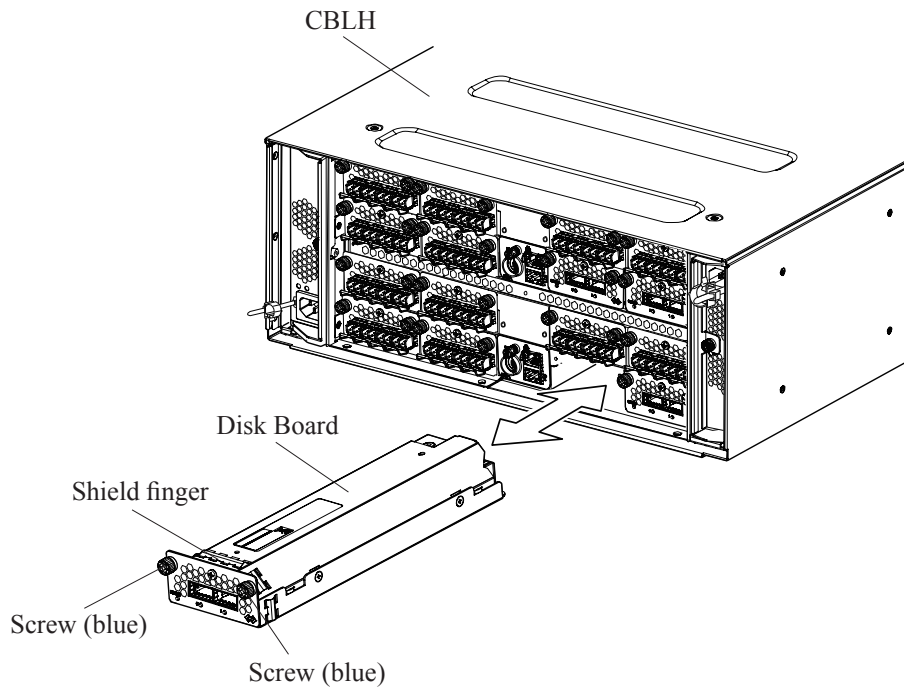
- (a) Loosen the two screws (blue) which fix the Disk Board.
- (b) Pull out and remove the Disk Board while holding the screws (blue).
- (c) Insert the Disk Boards to be added into the slots just before the shield finger.
- (d) Push the Disk Boards gently all the way in.

NOTICE: Push the front side of the Disk Board all the way to insert it to the end.



- (e) Tighten the two screws (blue) to fix the Disk Board.

Figure 2-141 Replacement of Disk Board



- (4) Clean the SAS cable connectors.
 - (a) Spray compressed gas to the connector part using an air spray (approx. five seconds).
 - (b) Wipe the connector part lightly with cut gauze soaked in ethyl alcohol.
 - (c) Spray compressed gas again and check the cleanliness. (Be sure that no dust, foreign substance or dirt is attached.)
 - (d) Connect the SAS cables to the replaced Disk Board.

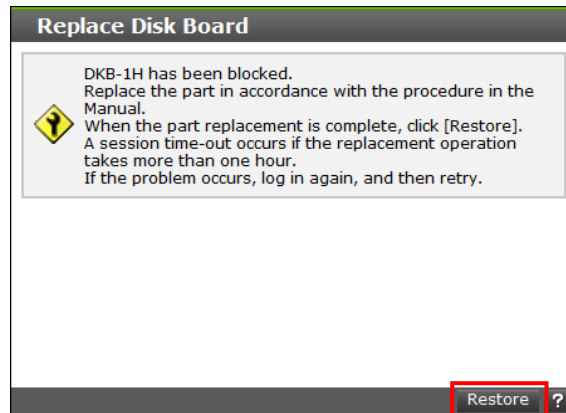
- (5) Connect the SAS cables to the replaced Disk Board.

When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION [“2.10.2.1 Precautions when Connecting SAS Cables”](#)).

5. Restoring replacement parts by Maintenance Utility

(1) <Restore replacement parts>

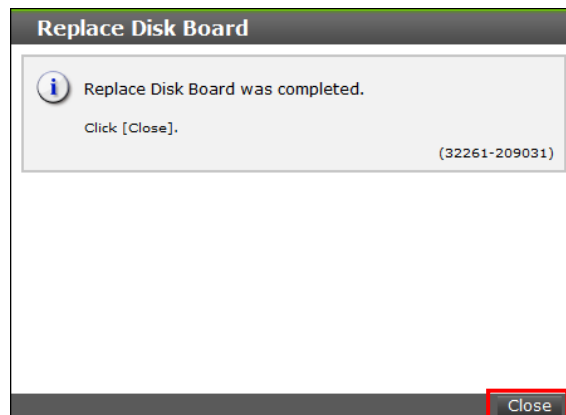
Click the [Restore] button.



(2) <Check replacement parts restoration>

Check that the following message is displayed and click the [Close] button.

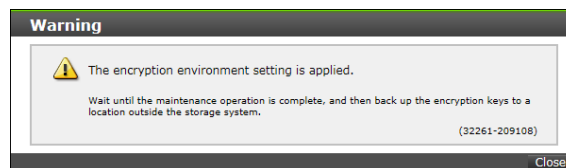
If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



(3) <Check back up the encryption key Messages>

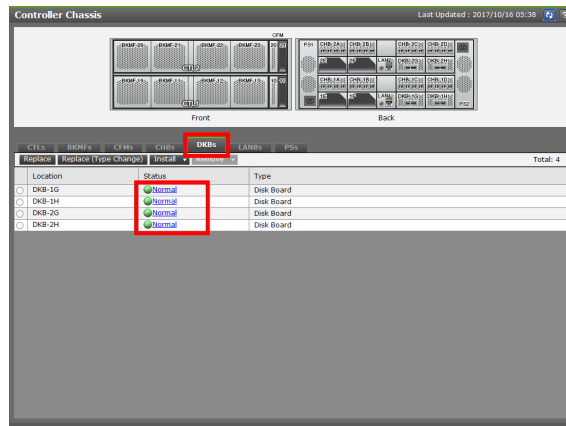
When the encryption environment is applied, the following message is displayed.

Check the message and click the [Close] button.



(4) <Check Disk Board restoration>

Click the [DKBs] tab in the “Controller Chassis” window and check that a Status of the replaced Disk Board is “Normal”.



(5) Click the [Logout] button to close the window.

(6) <Get the error information>

Collect small system dumps by referring to [“3.27 Acquiring Dumps using Maintenance Utility”](#) in MAINTENANCE PC SECTION.

(7) See MAINTENANCE PC SECTION [“7.1 Use of OnlineDumpTool”](#), please upload the error information.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION [“2.8.3 Disconnecting the Maintenance PC from the Storage System”](#).

7. Back up the encryption key

If the message is displayed in [Step 5\(3\)](#), ask your customer to back up the encryption key using Storage Navigator (refer to Encryption License Key User Guide).

NOTE: When a message is not displayed in [Step 5\(3\)](#), this procedure is not required.

2.15 Replacing a Power Supply

NOTICE: The Power Supply to be removed differs depending on the type of Controller Chassis or Drive Box. Check the Storage System to replace the Power Supply.

The window and the procedure differ according to Controller Chassis and Drive Boxes.

- When replacing the Power Supply of the CBXSS/CBXSL/CBSS/CBSL
“2.15.1 Replacing a Power Supply (DKCPS) for CBXSS/CBXSL/CBSS/CBSL”
- When replacing the Power Supply of the CBLH
“2.15.2 Replacing a Power Supply (DKCPS) for CBLH”
- When replacing the Power Supply of the DBS/DBL
“2.15.3 Replacing a Power Supply (DBPS) for DBS/DBL”
- When replacing the Power Supply of the DB60
“2.15.4 Replacing a Power Supply (DBPS) for DB60”
- When replacing the Power Supply of the DBF
“2.15.5 Replacing a Power Supply (DBPS) for DBF”
- When replacing the Power Supply of the CHBB
“2.15.6 Replacing a Power Supply (CHBBPS) for CHBB”

2.15.1 Replacing a Power Supply (DKCPS) for CBXSS/CBXSL/CBSS/CBSL

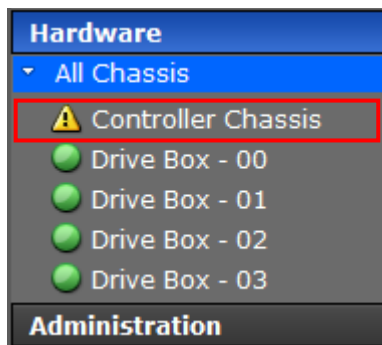
1. Connecting a maintenance PC
Connect the maintenance PC and the Storage System.
When replacing the Power Supplies, connect the maintenance PC and the Controller Board 1.
 - Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION “2.2 Connecting Maintenance PC to Storage System”.

2. Starting Maintenance Utility
Start Maintenance Utility (refer to MAINTENANCE PC SECTION “2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

Select [Controller Chassis] in the main window.



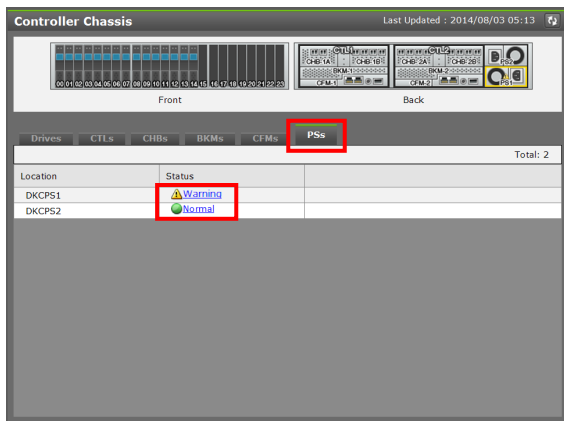
(2) <Controller Chassis window>

Click the [PSs] tab in the “Controller Chassis” window to display a DKCPS status.

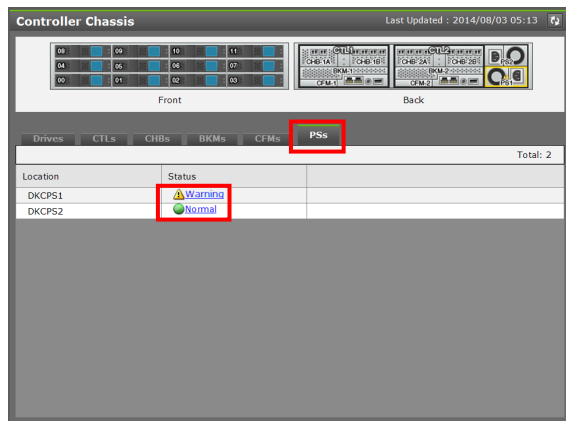
See MAINTENANCE PC SECTION “3.22 Alert Display Related to FRU (Field Replacement Unit)” for the [Status].

The status of the failed DKCPS is “Warning”.

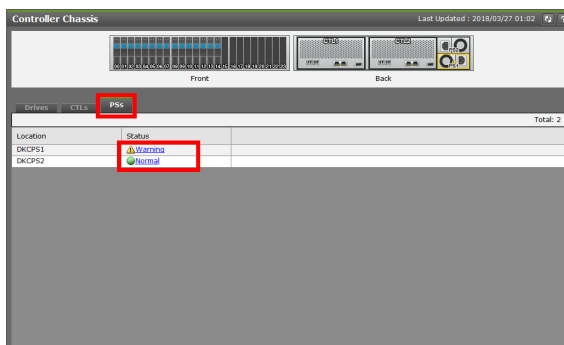
• In case of CBSS



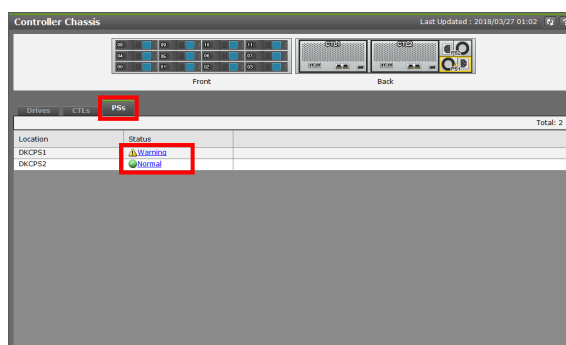
• In case of CBSL



• In case of CBXSS



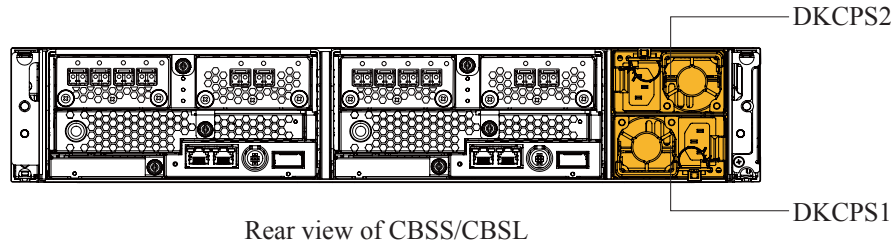
• In case of CBXSL



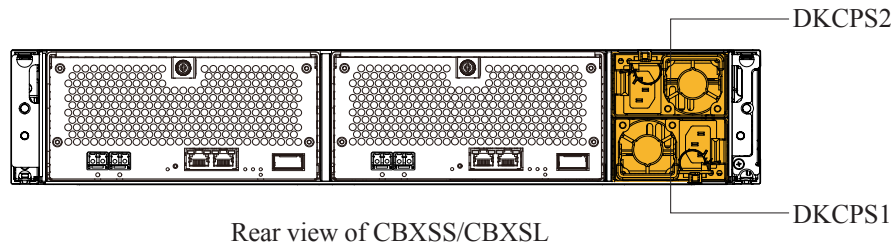
NOTE: When performing the preventive replacement of a DKCPS in which no error occurs, confirm that the status of the other DKCPS is Normal, and then replace the target DKCPS. If there is any error in the other DKCPS, resolve the error, and then replace the target DKCPS.

4. Power Supply for CBXSS/CBXSL/CBSS/CBSL Replacement Processing

Location	Function Name of Component		Part Name
Rear view of CBXSS/CBXSL/ CBSS/CBSL	1	DKCPS	DKCPS



Rear view of CBSS/CBSL



Rear view of CBXSS/CBXSL

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 Storage System before starting and do not take it off until you finish. Refer to ["1.1.3 Note on Installing and Removing Parts"](#).

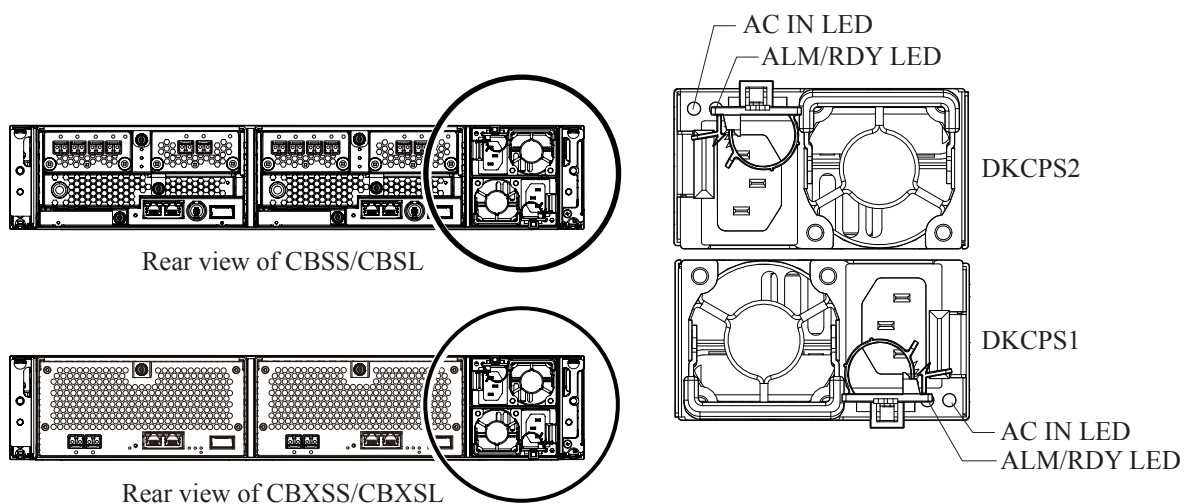
NOTICE: The insertion direction of DKCPS1 and DKCPS2 is opposite.(Refer to [Figure 2-142.](#))

- (1) Check that the ALM/RDY LED (red) on the CBXSS/CBXSL/CBSS/CBSL DKCPS to be replaced lights up. When the LED does not light up, check the location of the DKCPS to be replaced in the "Maintenance Utility" window.

⚠ CAUTION

If replacing the DKCPS not to be replaced, the system will be down. Check that the DKCPS is to be replaced.

Figure 2-142 ALM LED Location



- (2) Remove the power cables from the DKCPS to be replaced.

⚠ CAUTION

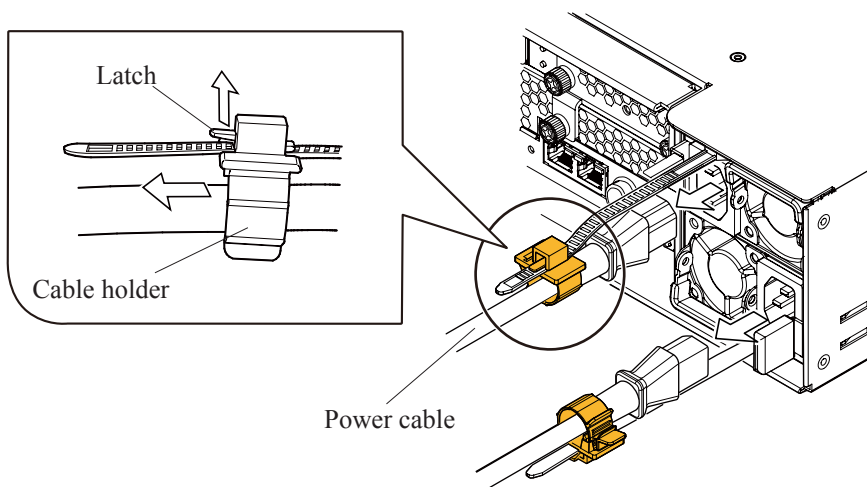
Watching for short-circuits:

A Short-circuit may cause a fire.

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

- (a) Remove the cable holder from the power cable and remove the power cable from the DKCPS.

Figure 2-143 Removing Power Cables



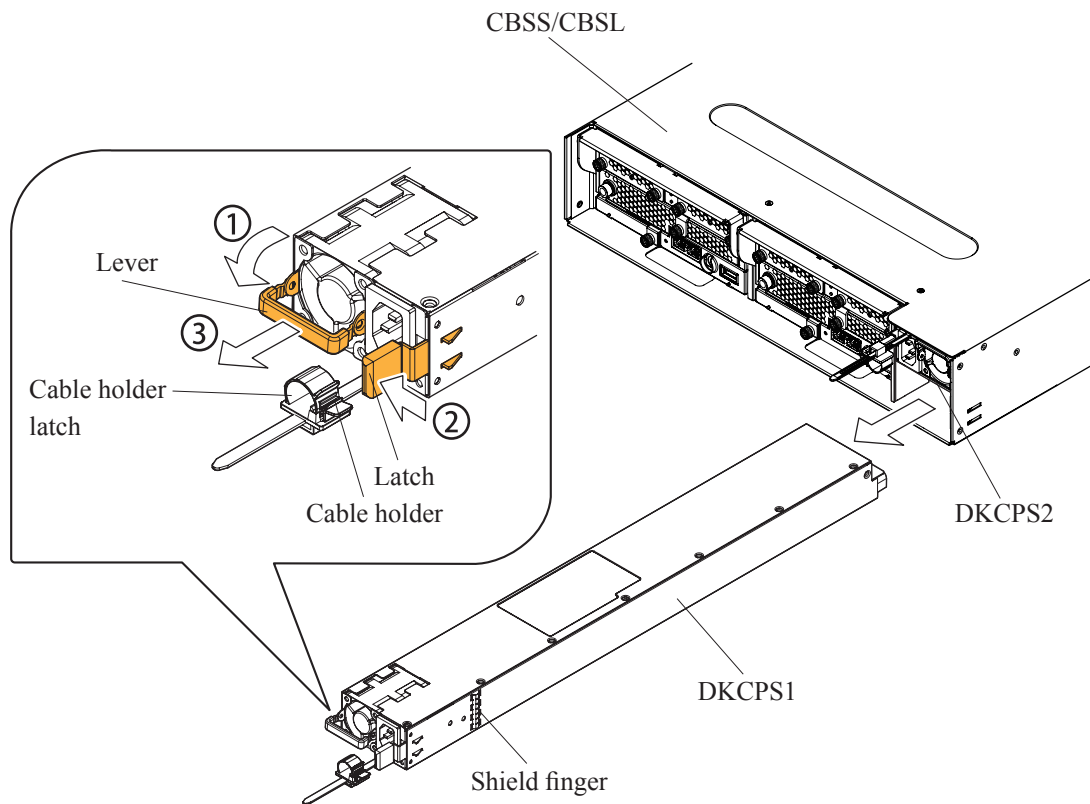
- (3) Replace the DKCPS.
 - (a) Pull the lever open (①).
 - (b) Pull the lever (③) while pressing the latch on the DKCPS inward (②).
 - (c) Pull out and remove the DKCPS while holding its body with both hands.

NOTICE:

- Wait for more than or equal to 20 seconds, and then insert the replacement DKCPS.
- If DKCPSs are inserted randomly, malfunction may occur. Therefore, insert the DKCPSs in two steps, [Step \(d\)](#) and [Step \(e\)](#) shown below.

- (d) Insert the new DKCPS to be added into the slots just before the shield finger.
- (e) Push the Power Supply gently until the latch of the DKCPS clicks and locks.

Figure 2-144 Replacement of DKCPS



*1: The figure shows CBSS/CBSL as an example. For CBXSS/CBXSL, the procedure is the same.

- (4) Connect the removed power cables to the DKCPS, and then fix a cable with a cable holder.
- (5) Check that the ALM/RDY LED on the DKCPS changes from red to green.

NOTE: If the ALM/RDY LED (red) does not go out for more than 30 minutes after replacing the DKCPS, redo the steps from [Step \(2\)](#).

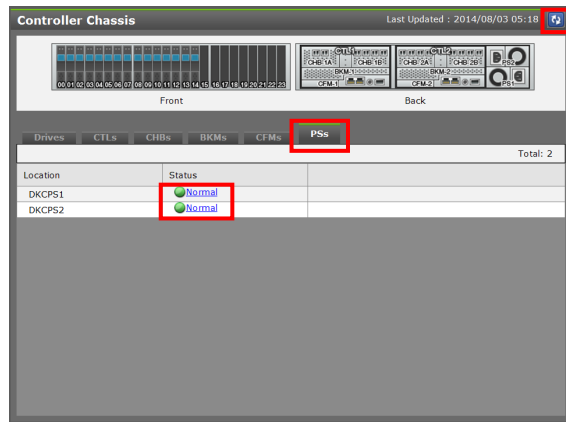
5. Restoring replacement parts by Maintenance Utility

(1) <Check DKCPS restoration>

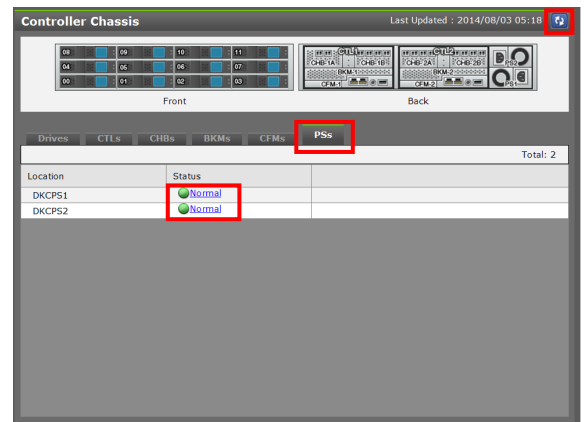
Click the [PSs] tab in the “Controller Chassis” window and check that a Status of the replaced DKCPS is “Normal”.

NOTE: Click the refresh button on the upper right of the window to update the window, and then check the status.

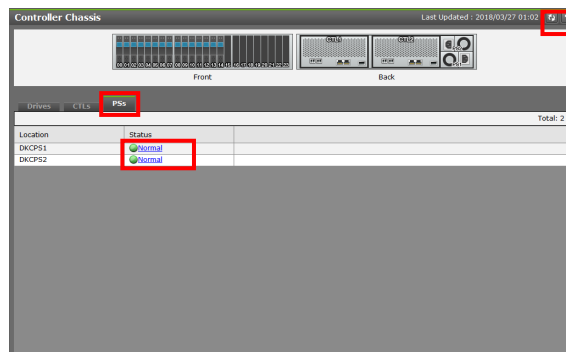
• In case of CBSS



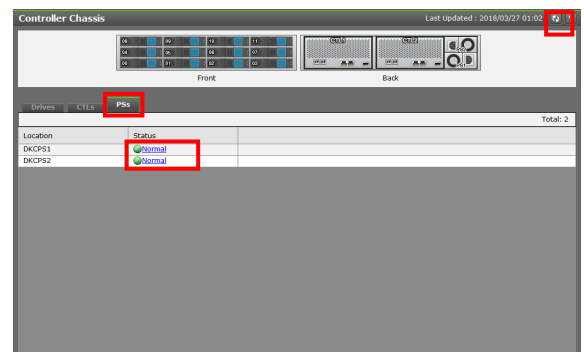
• In case of CBSL



• In case of CBXSS



• In case of CBXSL



(2) Click the [Logout] button to close the window.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION “2.8.3 Disconnecting the Maintenance PC from the Storage System”.

2.15.2 Replacing a Power Supply (DKCPS) for CBLH

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the Power Supplies, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

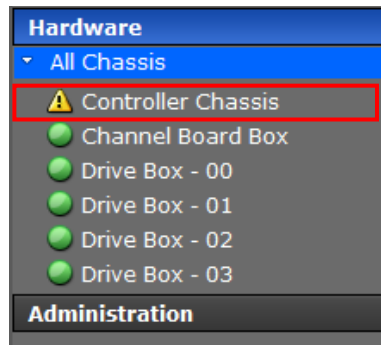
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

Select [Controller Chassis] in the main window.

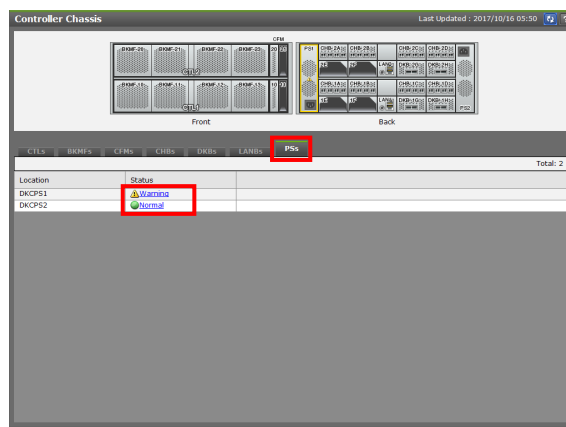


(2) <Controller Chassis window>

Click the [PSs] tab in the “Controller Chassis” window to display a DKCPS status.

See MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)” for the [Status].

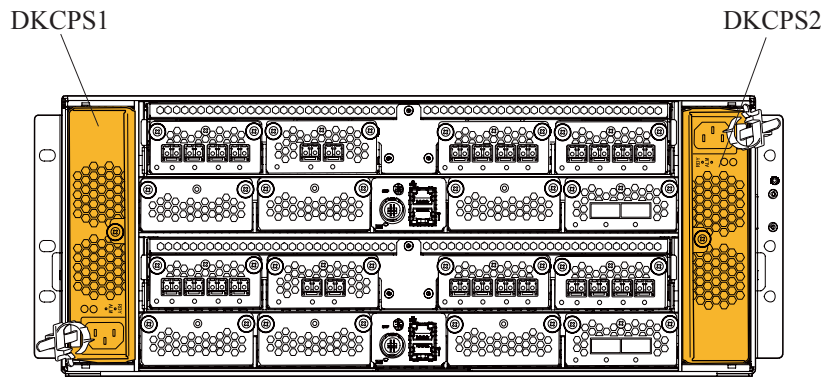
Replace a DKCPS whose Status is “Warning”.



NOTE: When performing the preventive replacement of a DKCPS in which no error occurs, confirm that the status of the other DKCPS is Normal, and then replace the target DKCPS. If there is any error in the other DKCPS, resolve the error, and then replace the target DKCPS.

4. Power Supply for CBLH Replacement Processing

Location	Function Name of Component	Part Name
Rear View of CBLH	1 DKCPS	DKCPS



Rear view of CBLH

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 Storage System before starting and do not take it off until you finish. Refer to “1.1.3 Note on Installing and Removing Parts”.

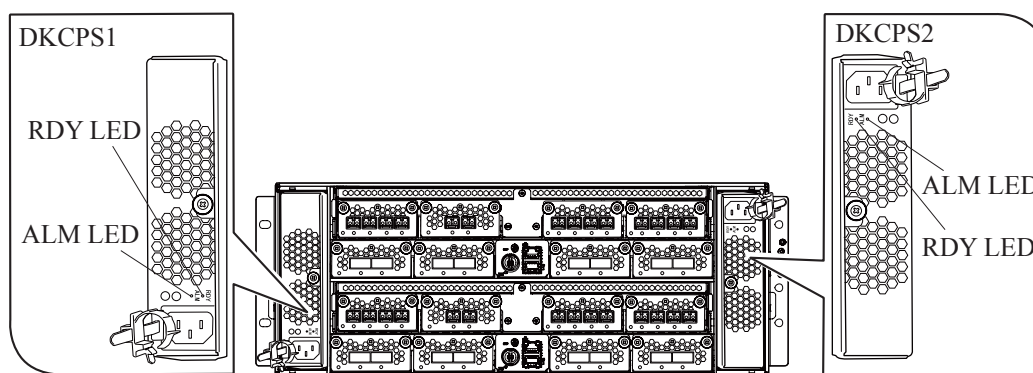
NOTICE: The insertion direction of DKCPS1 and DKCPS2 is opposite.

- (1) Check that the ALM LED (red) on the CBLH DKCPS to be replaced lights up. When the LED does not light up, check the location of the DKCPS to be replaced in the “Maintenance Utility” window.

CAUTION

If replacing the DKCPS not to be replaced, the system will be down. Check that the DKCPS is to be replaced.

Figure 2-145 ALM LED Location



Rear view of CBLH

- (2) Remove the power cables from the DKCPS to be replaced.
Remove the cable holder to remove the power cable from the DKCPS.

CAUTION

Watching for short-circuits:

A Short-circuit may cause a fire.

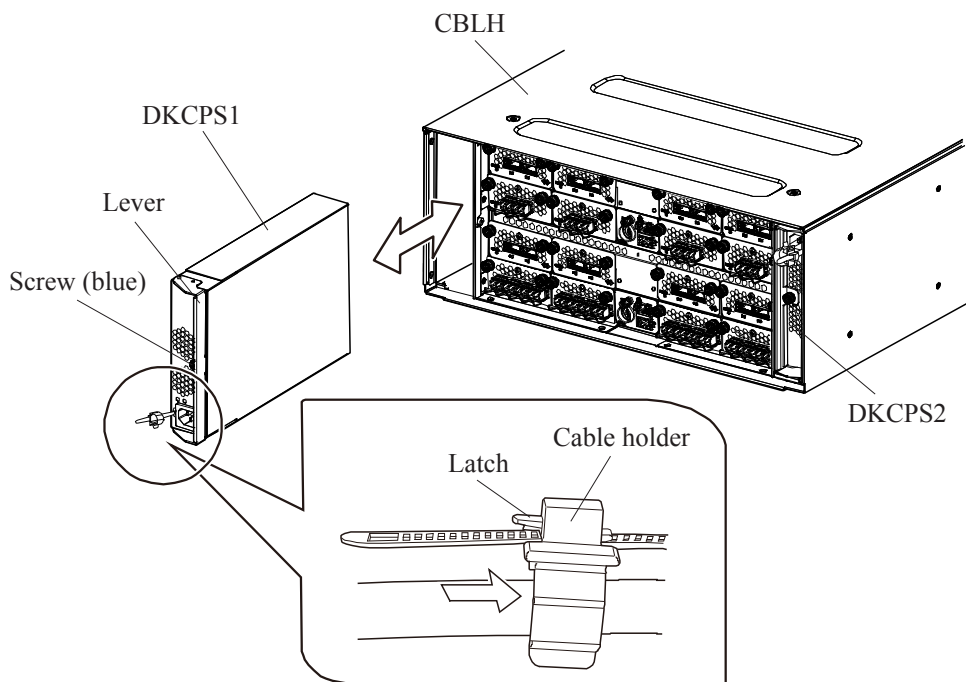
Never insert metal or the like into the cable connector or a short-circuit may occur.

- (3) Replace the DKCPS.
 - (a) Loosen the screw (blue) which fixed the DKCPS.
 - (b) Open the lever to pull out and remove the DKCPS.
When the lever is completely opened, the DKCPS comes out forward.
 - (c) Pull out and remove the DKCPS while holding its body with both hands.
 - (d) Hold up the latch on the cable holder of the new DKCPS to release the lock, and then slide the cable holder forward.

NOTICE: Wait for more than or equal to 20 seconds, and then insert the replacement DKCPS.

- (e) With the lever opened completely, insert the new DKCPS into the slot.
- (f) Push the new DKCPS all the way in.
- (g) Close the lever completely.
- (h) Tighten the screw (blue) to fix the DKCPS.

Figure 2-146 Replacement of DKCPS



- (4) Connect the removed power cable to the DKCPS, and then fix the cable by the cable holder.
Check that the ALM LED (red) on the DKCPS goes out and the RDY LED (green) lights up.

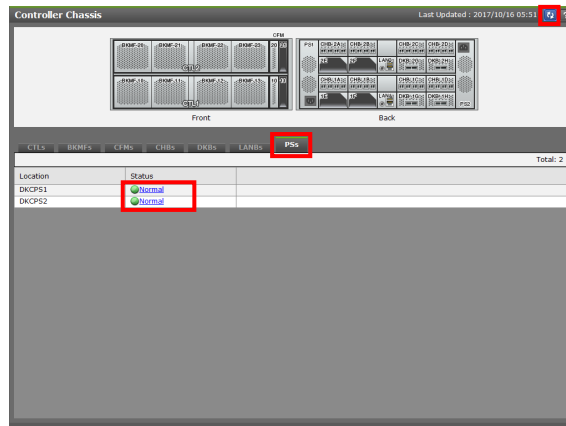
NOTICE: If the ALM LED (red) does not go out for more than or equal to 30 minutes after replacing the DKCPS, redo the steps from [Step \(2\)](#).

5. Restoring replacement parts by Maintenance Utility

(1) <Check DKCPS restoration>

Click the [PSs] tab in the “Controller Chassis” window and check that a Status of the replaced DKCPS is “Normal”.

NOTE : Click the refresh button on the upper right of the window to update the window, and then check the status.



(2) Click the [Logout] button to close the window.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION [“2.8.3 Disconnecting the Maintenance PC from the Storage System”](#).

2.15.3 Replacing a Power Supply (DBPS) for DBS/DBL

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the Power Supplies, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

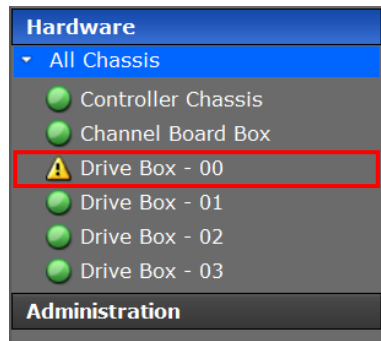
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

Select [Drive Box] in the main window.

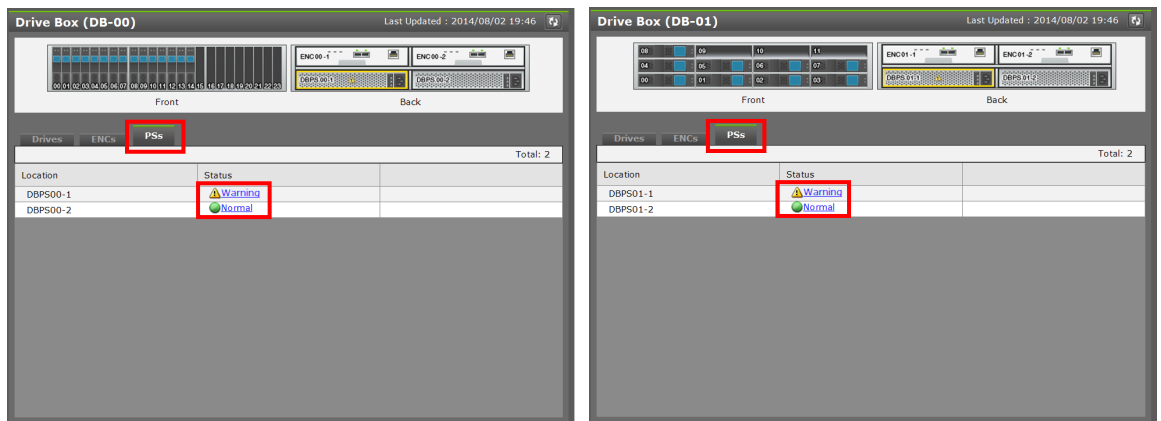


(2) <Drive Box window>

Click the [PSs] tab in the “Drive Box” window to display a DBPS status. See MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)” for the [Status]. The status of the failed DBPS is “Warning”.

• In case of DBS

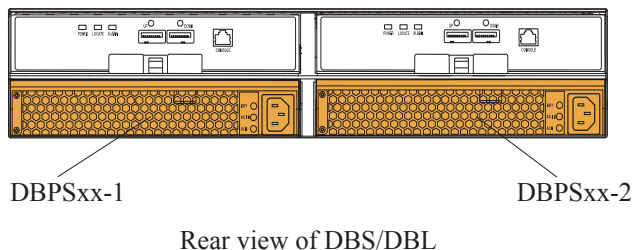
• In case of DBL



NOTE: When performing the preventive replacement of a DBPS in which no error occurs, confirm that the status of the other DBPS is Normal, and then replace the target DBPS. If there is any error in the other DBPS, resolve the error, and then replace the target DBPS.

4. Power Supply for DBS/DBL Replacement Processing

Location	Function Name of Component	Part Name
Rear View of DBS/DBL	1 DBPS	DBPS



*1 : DBPS_{xx}-1
 ↳ DB No. (00, 01, 02,, 47)

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 Storage System before starting and do not take it off until you finish. Refer to ["1.1.3 Note on Installing and Removing Parts"](#).

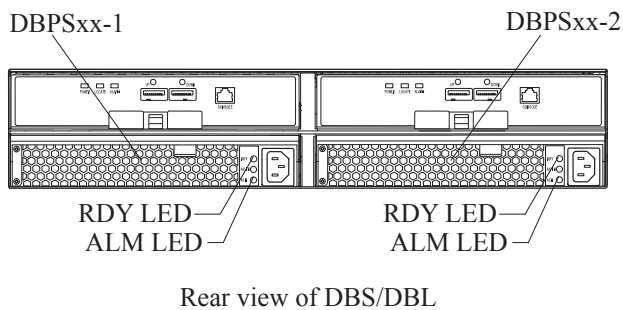
⚠ CAUTION

If replacing the DBPS not to be replaced, the system will be down. Check that the DBPS is to be replaced.

- (1) Check that the ALM LED (red) on the DBS/DBL DBPS to be replaced lights up. When the LED does not light up, check the location of the DBPS to be replaced in the "Maintenance Utility" window.

NOTICE: Even if the ALM LED (red) lights up, the DBPS status might be "Normal". In that case, follow TROUBLESHOOTING SECTION ["2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF"](#).

Figure 2-147 ALM LED Location



- (2) Remove the power cables from the DBPS to be replaced.

⚠ CAUTION

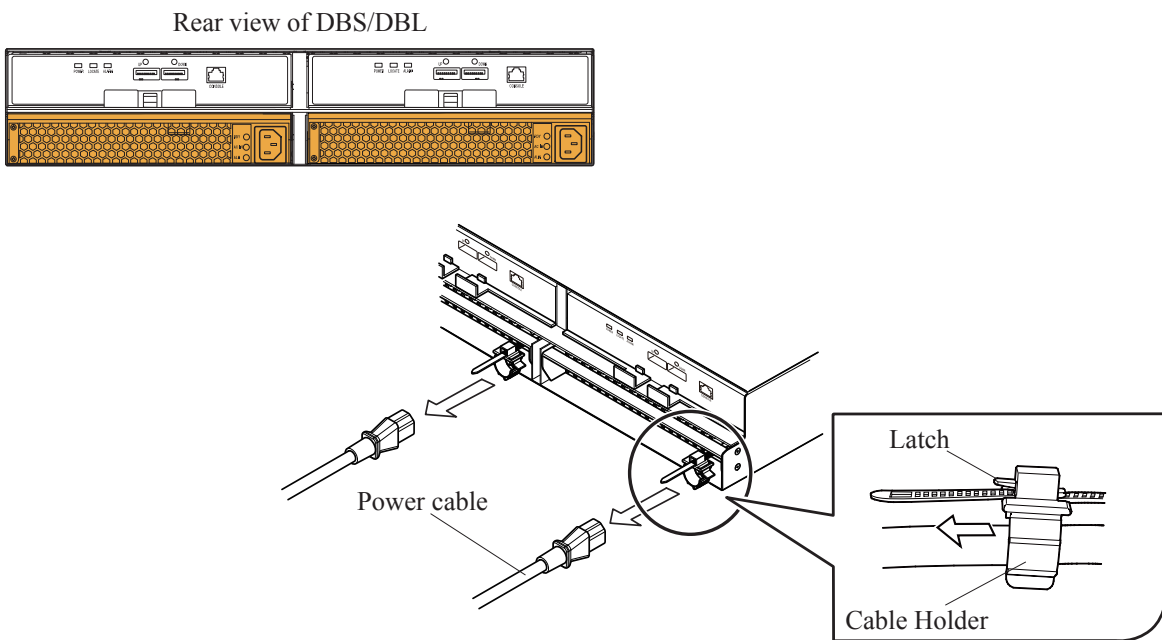
Watching for short-circuits:

A Short-circuit may cause a fire.

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

- (a) Remove the cable holder from the power cable and remove the power cable from the DBPS.

Figure 2-148 Removing Power Cables

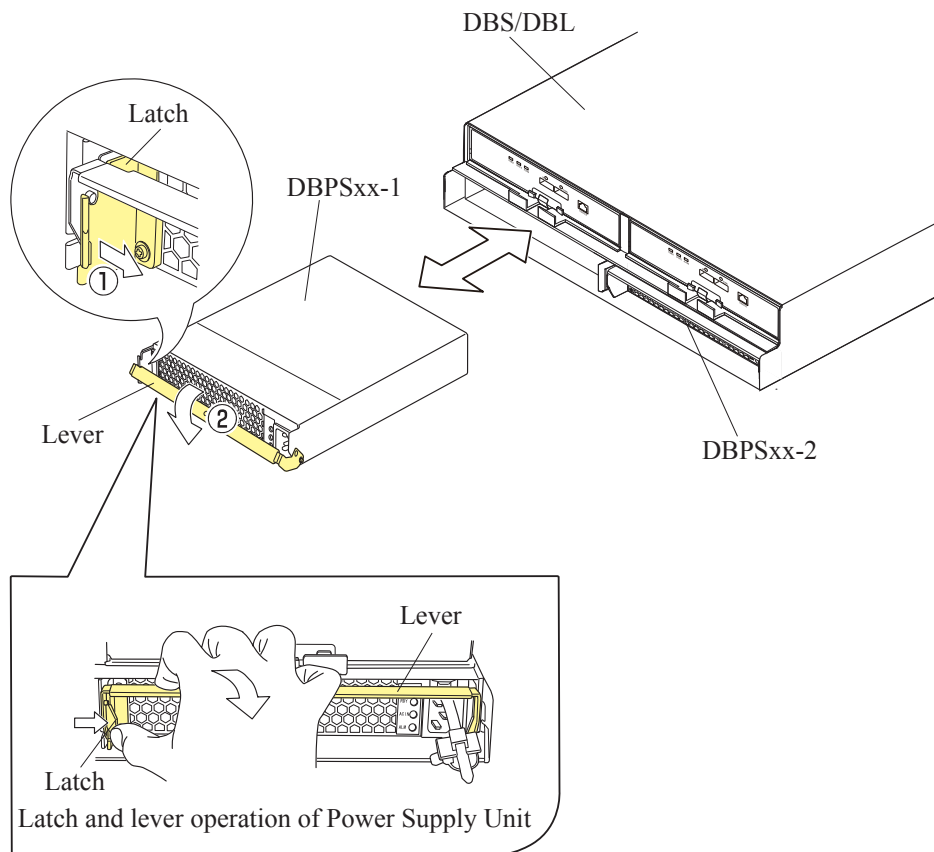


- (3) Replace the DBPS.
 - (a) Pull the lever open (②) while pressing the latch on the DBPS inward with right thumb (①).
When the lever is completely opened, the DBPS comes out forward.
 - (b) Pull out and remove the DBPS while holding its body with both hands.
 - (c) With the lever opened completely, insert the new DBPS into the slot.
If you cannot insert the DBPS into the slot easily, insert it after adjusting the position by slightly returning the lever.

NOTICE: Wait for more than 20 or equal to seconds, and then insert the replacement DBPS.

- (d) Push the new DBPS all the way in.
- (e) Close the lever completely and fix the DBPS.

Figure 2-149 Replacement of DBPS



- (4) Connect the removed power cables to the DBPS, and then fix a cable with a cable holder. (Refer to [Figure 2-148](#).)
- (5) Check that the RDY LED (green) on the DBPS lights up.

- NOTE:
- If the DBPS status is “Normal” and the RDY LED (green) does not light up, follow TROUBLESHOOTING SECTION “[2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF](#)”.
 - If the ALM LED (red) does not go out for more than 30 minutes after replacing the DBPS, redo the steps from [Step \(2\)](#).

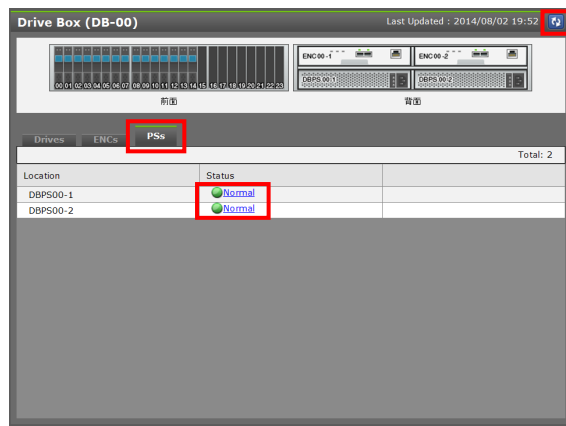
5. Restoring replacement parts by Maintenance Utility

(1) <Check DBPS restoration>

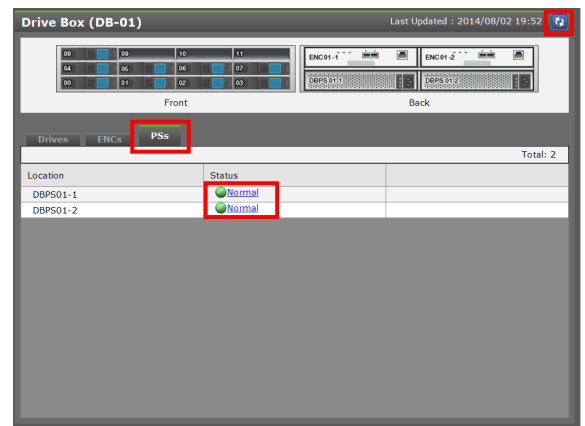
Click the [PSs] tab in the “Drive Box” window and check that a Status of the replaced DBPS is “Normal”.

NOTE: Click the refresh button on the upper right of the window to update the window, and then check the status.

• In case of DBS



• In case of DBL



(2) Click the [Logout] button to close the window.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION “[2.8.3 Disconnecting the Maintenance PC from the Storage System](#)”.

2.15.4 Replacing a Power Supply (DBPS) for DB60

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the Power Supplies, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

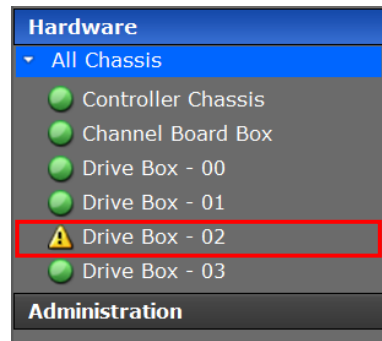
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

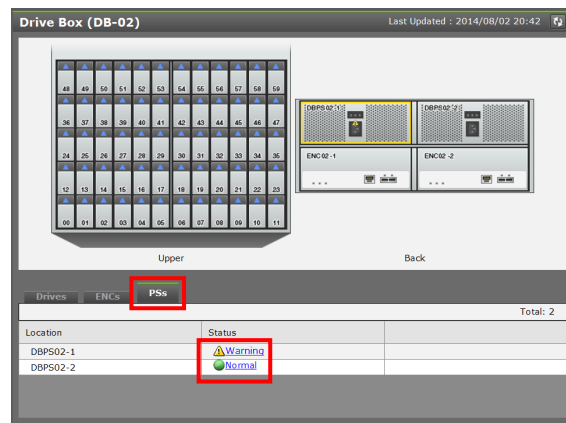
Select [Drive Box] in the main window.



(2) <Drive Box window>

Click the [PSs] tab in the “Drive Box window to display a DBPS status. See MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)” for the [Status].

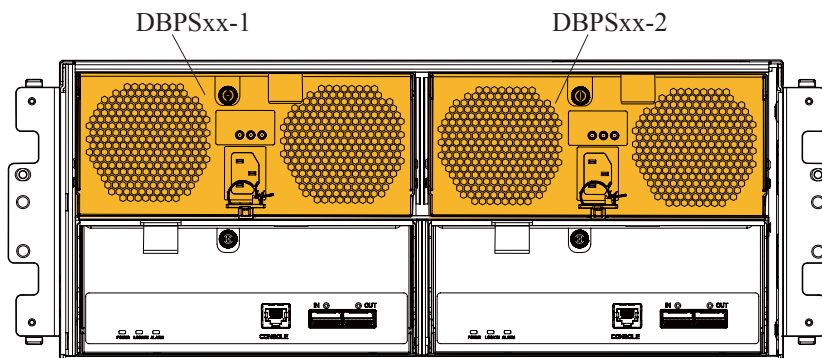
The status of the failed DBPS is “Warning”.



NOTE: When performing the preventive replacement of a DBPS in which no error occurs, confirm that the status of the other DBPS is Normal, and then replace the target DBPS. If there is any error in the other DBPS, resolve the error, and then replace the target DBPS.

4. Power Supply for DB60 Replacement Processing

Location	Function Name of Component	Part Name
Rear View of DB60	1 DBPS	DBPS



Rear view of DB60

*1 : DBPS_{xx}-1

↳ DB No. (00, 01, 02,, 47)

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 Storage System before starting and do not take it off until you finish. Refer to ["1.1.3 Note on Installing and Removing Parts"](#).

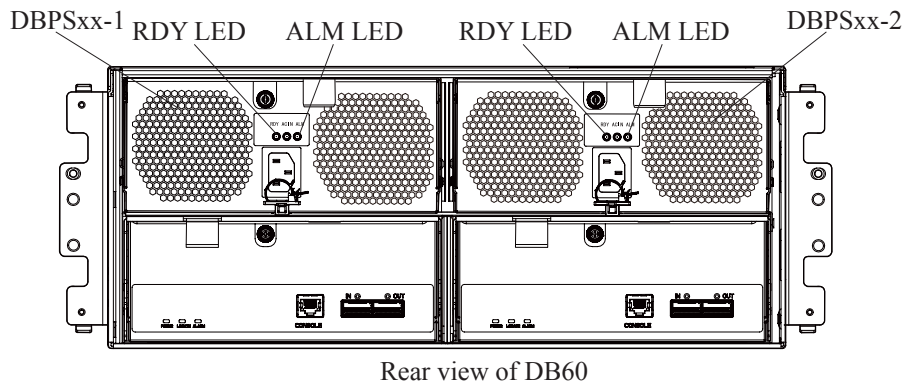
⚠ CAUTION

If replacing the DBPS not to be replaced, the system will be down. Check that the DBPS is to be replaced.

- (1) Check that the ALM LED (red) on the DB60 DBPS to be replaced lights up. When the LED does not light up, check the location of the DBPS to be replaced in the "Maintenance Utility" window.

NOTICE: Even if the ALM LED (red) lights up, the DBPS status might be "Normal". In that case, follow TROUBLESHOOTING SECTION ["2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF"](#).

Figure 2-150 ALM LED Location



- (2) Remove the power cables from the DBPS to be replaced.
 - (a) Unlock CMA1 and CMA2 and open them.
 - (b) Remove the cable holder from the power cable.
 - (c) Remove the clamp tapes fixed to the DBPS lever.
 - (d) Remove the power cable from DBPS.

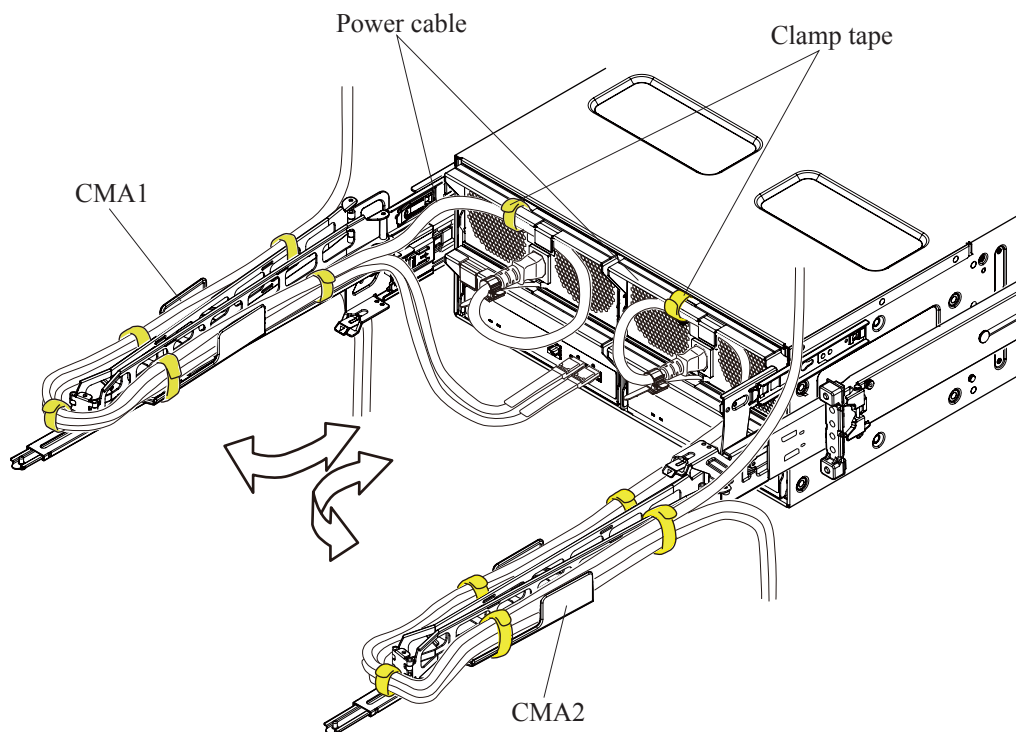
⚠ CAUTION

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.

Figure 2-151 Opening/Closing CMAs

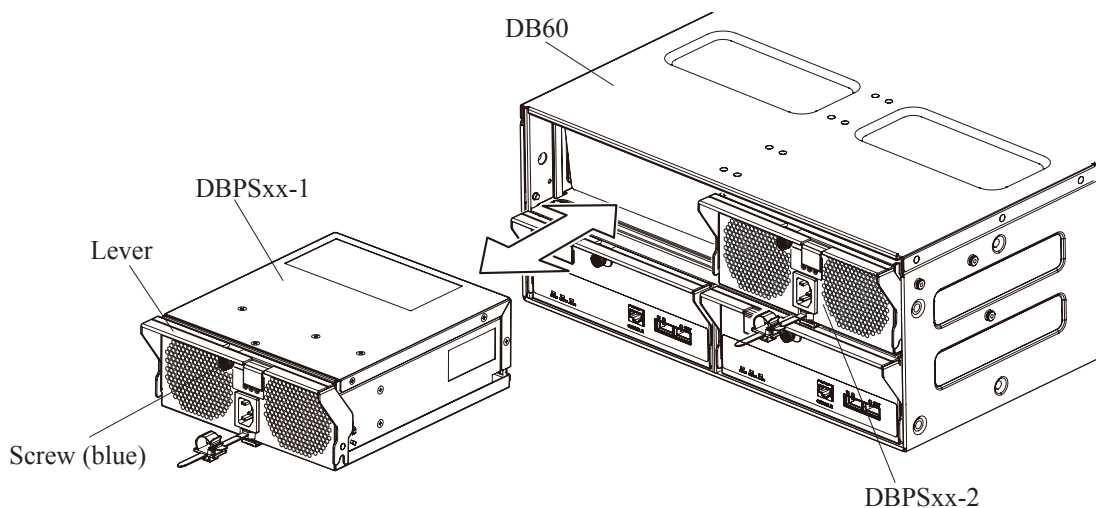


- (3) Replace the DBPS.
 - (a) Loosen the screw (blue) fixing the DBPS.
 - (b) Open the lever.
 - (c) Pull out and remove the DBPS while holding its body with both hands.
 - (d) With the lever opened completely, insert the new DBPS into the slot.
If you cannot insert the DBPS into the slot easily, insert it after adjusting the position by slightly returning the lever.

NOTICE: Wait for more than or equal to 20 seconds, and then insert the replacement DBPS.

- (e) Push the new DBPS all the way in.
- (f) Close the lever completely.
- (g) Tighten the screw (blue) to fix the DBPS.

Figure 2-152 Replacement of DBPS



- (4) Connect the removed power cable to the DBPS, and then fix the cable by the cable holder. Check that the RDY LED (green) on the DBPS lights up.

NOTE:

- If the DBPS status is “Normal” and the RDY LED (green) does not light up, follow TROUBLESHOOTING SECTION “[2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF](#)”.
- If the ALM LED (red) does not go out for more than or equal to 30 minutes after replacing the DBPS, redo the steps from [Step \(2\)](#).

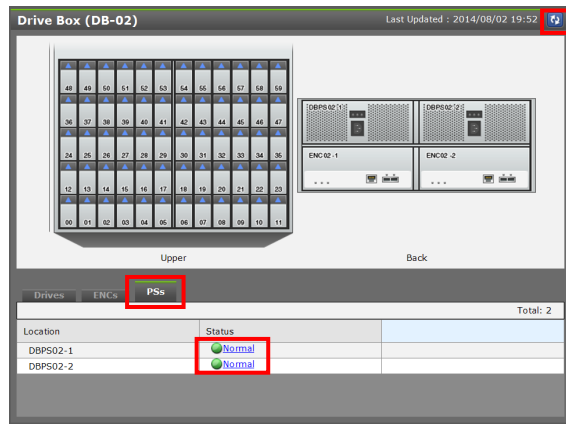
- (5) Route the power cable in the same configuration as before the replacement and fix it to the DBPS with clamp tapes.
- (6) Close CMA1 and CMA2 and lock them to fix.

5. Restoring replacement parts by Maintenance Utility

(1) <Check DBPS restoration>

Click the [PSs] tab in the “Drive Box” window and check that a Status of the replaced DBPS is “Normal”.

NOTE: Click the refresh button on the upper right of the window to update the window, and then check the status.



(2) Click the [Logout] button to close the window.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION “2.8.3 Disconnecting the Maintenance PC from the Storage System”.

2.15.5 Replacing a Power Supply (DBPS) for DBF

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the Power Supplies, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

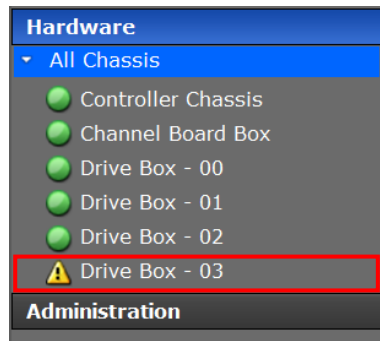
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

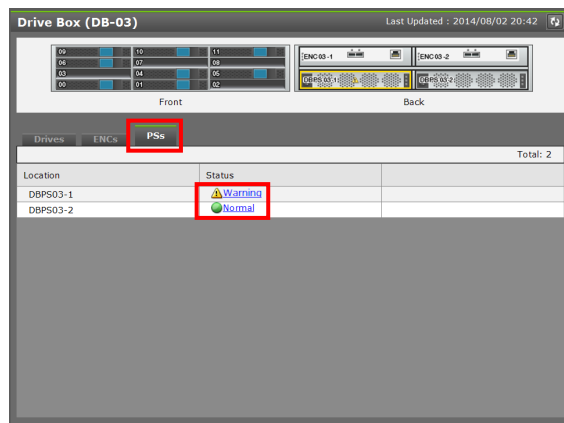
(1) <Main window>

Select [Drive Box] in the main window.



(2) <Drive Box window>

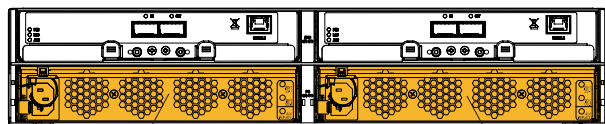
Click the [PSs] tab in the “Drive Box” window to display a DBPS status. See MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)” for the [Status]. The status of the failed DBPS is “Warning”.



NOTE: When performing the preventive replacement of a DBPS in which no error occurs, confirm that the status of the other DBPS is Normal, and then replace the target DBPS. If there is any error in the other DBPS, resolve the error, and then replace the target DBPS.

4. Power Supply for DBF Replacement Processing

Location	Function Name of Component	Part Name
Rear View of DBF	1 DBPS	DBPS



DBPSxx-1

DBPSxx-2

Rear view of DBF

*1 : DBPSxx-1

↳ DB No. (00, 01, 02,, 47)

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 Storage System before starting and do not take it off until you finish. See ["1.1.3 Note on Installing and Removing Parts"](#).

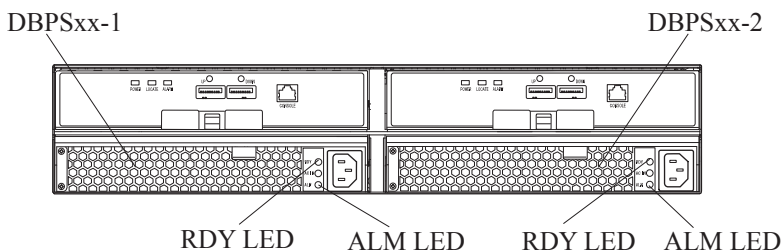
CAUTION

If replacing the DBPS not to be replaced, the system will be down. Check that the DBPS is to be replaced.

- (1) Check that the ALM LED (red) on the DBF DBPS to be replaced lights up. When the LED does not light up, check the location of the DBPS to be replaced in the "Maintenance Utility" window.

NOTICE: Even if the ALM LED (red) lights up, the DBPS status might be "Normal". In that case, follow TROUBLESHOOTING SECTION ["2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF"](#).

Figure 2-153 ALM LED Location



Rear view of DBF

- (2) Remove the power cables from the DBPS to be replaced.
Remove the cable holder to remove the power cable from the DBPS.

⚠ CAUTION

Watching for short-circuits:

A Short-circuit may cause a fire.

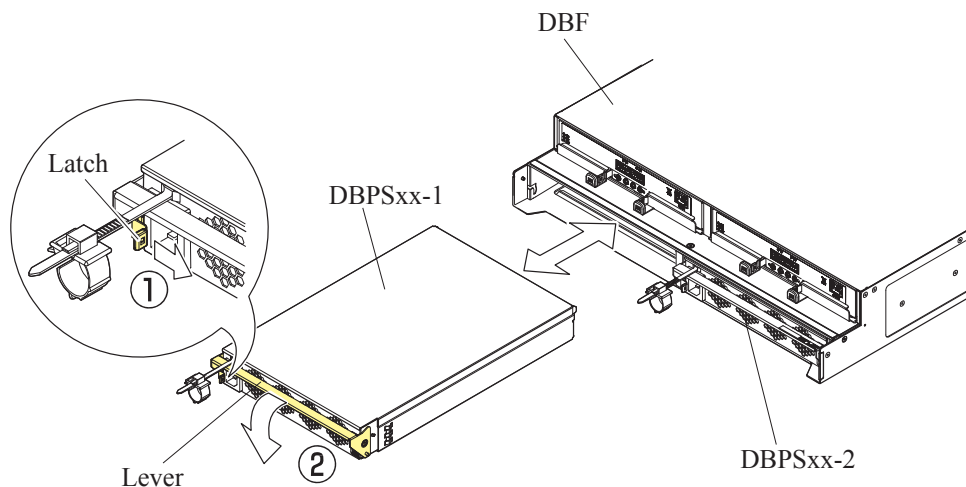
Never insert metal or the like into the cable connector or a short-circuit may occur.

- (3) Replace the DBPS.
 - (a) Pull the lever open (②) while pressing the latch on the DBPS inward with right thumb (①).
When the lever is completely opened, the DBPS comes out forward.
 - (b) Pull out and remove the DBPS while holding its body with both hands.
 - (c) With the lever opened completely, insert the new DBPS into the slot.
If you cannot insert the DBPS into the slot easily, insert it after adjusting the position by slightly returning the lever.

NOTICE: Wait for more than or equal to 20 seconds, and then insert the replacement DBPS.

- (d) Push the new DBPS all the way in.
- (e) Close the lever completely and fix the DBPS.

Figure 2-154 Replacement of DBPS



- (4) Connect the removed power cable to the DBPS, and then fix the cable by the cable holder.
Check that the RDY LED (green) on the DBPS lights up.

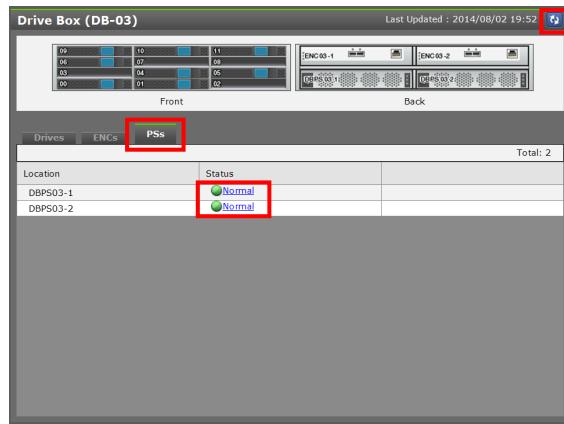
- NOTE:
- If the DBPS status is “Normal” and the RDY LED (green) does not light up, follow TROUBLESHOOTING SECTION “[2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF](#)”.
 - If the ALM LED (red) does not go out for more than or equal to 30 minutes after replacing the DBPS, redo the steps from [Step \(2\)](#).

5. Restoring replacement parts by Maintenance Utility

(1) <Check DBPS restoration>

Click the [PSs] tab in the “Drive Box” window and check that a Status of the replaced DBPS is “Normal”.

NOTE: Click the refresh button on the upper right of the window to update the window, and then check the status.



(2) Click the [Logout] button to close the window.

6. Disconnecting the maintenance PC and the Storage System

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION [“2.8.3 Disconnecting the Maintenance PC from the Storage System”](#).

2.15.6 Replacing a Power Supply (CHBBPS) for CHBB

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the CHBBPS, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

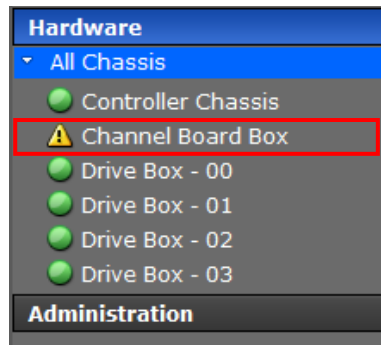
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

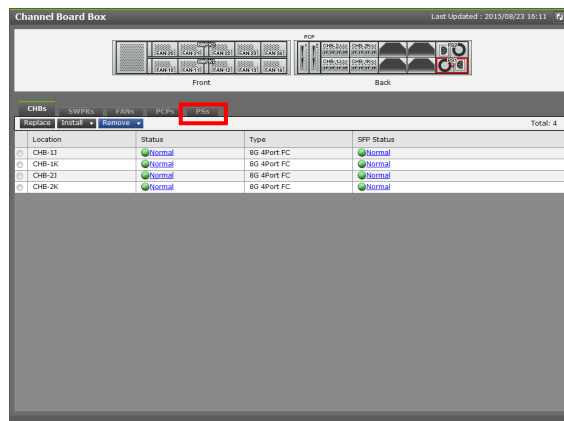
Select [Channel Board Box] in the main window.



(2) <Channel Board Box window>

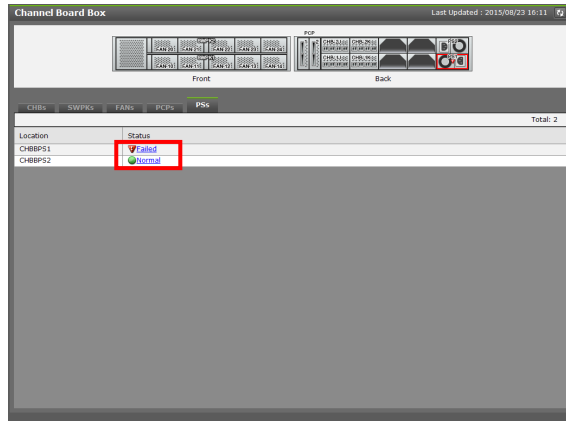
Click the [PSs] tab in the “Channel Board Box” window to display a CHBBPS status.

See MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)” for the [Status].



(3) <Check CHBBPS>

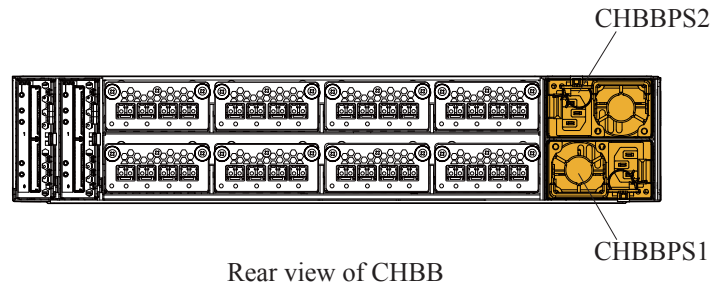
Check status of the CHBBPS to be replaced is “Warning”.



NOTE: When performing the preventive replacement of a CHBBPS in which no error occurs, confirm that the status of the other CHBBPS is Normal, and then replace the target CHBBPS. If there is any error in the other CHBBPS, resolve the error, and then replace the target CHBBPS.

4. CHBBPS Replacement Processing

Location	Function Name of Component		Part Name
Rear View of CHBB	1	CHBBPS	CHBBPS



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 Storage System before starting and do not take it off until you finish. Refer to “1.1.3 Note on Installing and Removing Parts”.

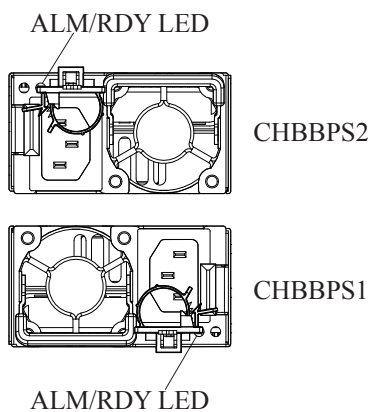
NOTICE: The insertion direction of CHBBPS1 and CHBBPS2 is opposite

- (1) Check that the ALM/RDY LED (red) on the CHBBPS to be replaced lights up. When the LED does not light up, check the location of the CHBBPS to be replaced in the “Maintenance Utility” window.

CAUTION

If replacing the CHBBPS not to be replaced, the system will be down. Check that the CHBBPS is to be replaced.

Figure 2-155 ALM/RDY LED Location



- (2) Remove the power cable from the CHBBPS to be replaced.
Remove the cable holder from the power cable and remove the power cable from the CHBBPS.

⚠ CAUTION

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.

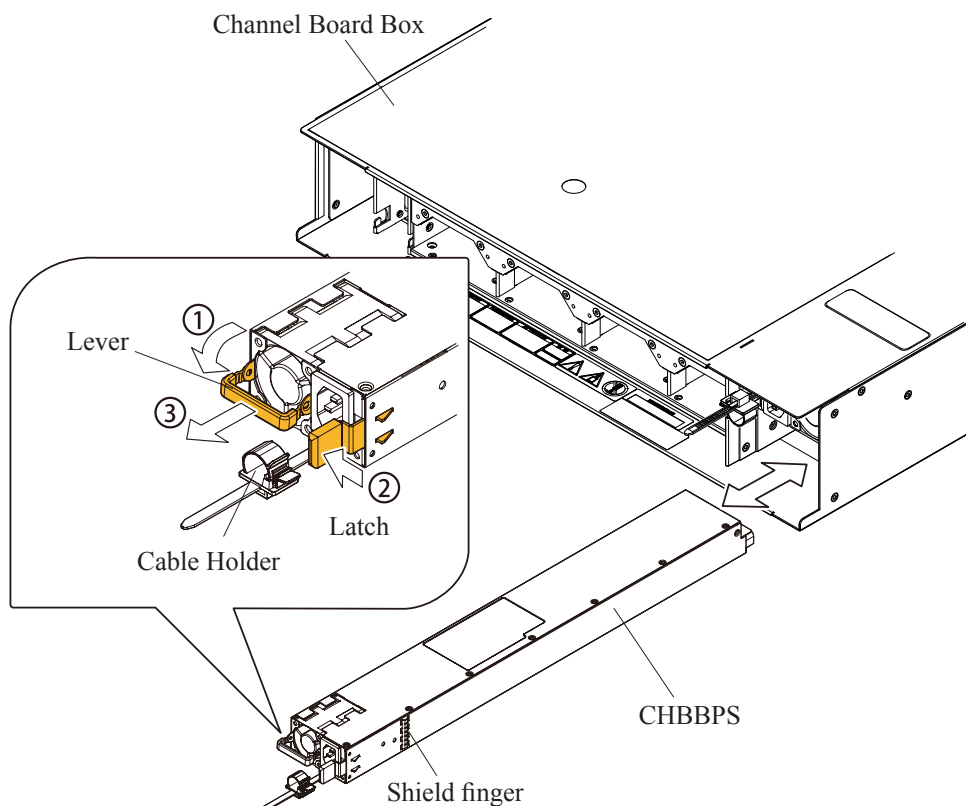
- (3) Replace the CHBBPS.
 - (a) Pull the lever open (①).
 - (b) Pull the lever (③) while pressing the latch (②) on the CHBBPS inward.
 - (c) Pull out and remove the CHBBPS while holding its body with both hands.

NOTICE:

- Wait for more than or equal to 20 seconds from removal of CHBBPS, and then insert the new CHBBPS.
- If CHBBPSs are inserted randomly, malfunction may occur. Therefore, insert the CHBBPSs in two steps, [Step \(d\)](#) and [Step \(e\)](#) shown below.

- (d) Insert the new CHBBPS to be added into the slots just before the shield finger.
- (e) Push the Power Supply gently until the latch of the CHBBPS clicks and locks.

Figure 2-156 Replacement of CHBBPS



- (4) Connect the removed power cable to the CHBBPS, and then fix the cable by the cable holder.
- (5) Check that the ALM/RDY LED on the CHBBPS changes from red to green.

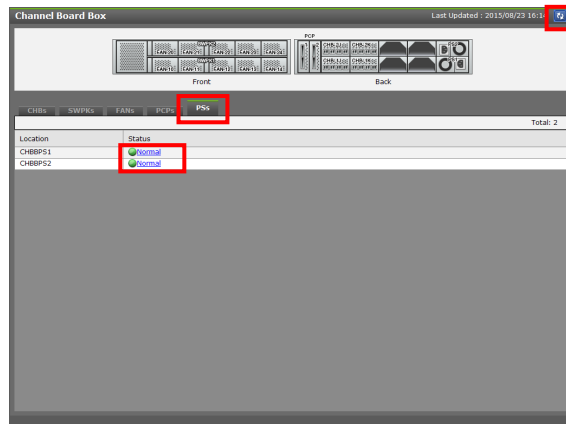
NOTICE: If the ALM/RDY LED (red) does not go out for more than 30 minutes after replacing the CHBBPS, redo the steps from [Step \(2\)](#).

5. Restoring replacement parts by Maintenance Utility

(1) <Check CHBBPS restoration>

Click the [PSs] tab in the “Channel Board Box” window and check that the status of the replaced CHBBPS is “Normal”.

NOTE : Click the refresh button on the upper right of the window to update the window, and then check the status.



(2) Click the [Logout] button to close the window.

6. Disconnecting the maintenance PC and the Storage System

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION [“2.8.3 Disconnecting the Maintenance PC from the Storage System”](#).

2.16 Replacing an ENC

The window and the procedure differ according to Drive Boxes.

- When replacing the ENC of the DBS/DBL
“[2.16.1 Replacing an ENC for DBS/DBL](#)”
- When replacing the ENC of the DB60
“[2.16.2 Replacing an ENC for DB60](#)”
- When replacing the ENC of the DBF
“[2.16.3 Replacing an ENC for DBF](#)”

2.16.1 Replacing an ENC for DBS/DBL

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the ENC, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION “[2.2 Connecting Maintenance PC to Storage System](#)”.

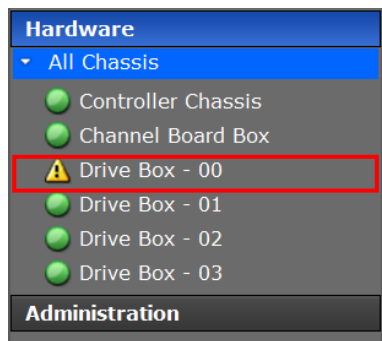
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION “[2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL](#)”).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

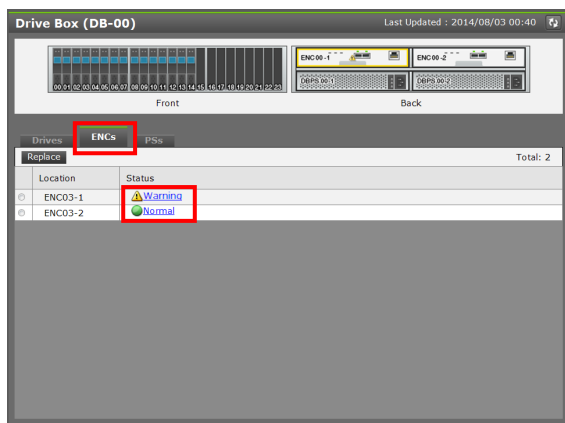
Select [Drive Box] in the main window.



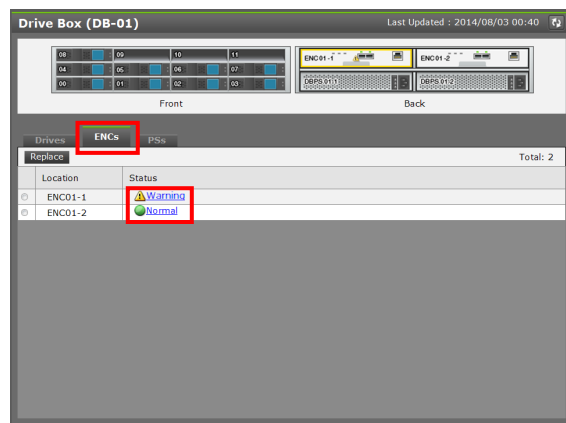
(2) <Controller Chassis window>

Click the [ENCs] tab in the "Drive Box" window to display an ENC status. See MAINTENANCE PC SECTION "3.22 Alert Display Related to FRU (Field Replacement Unit)" for the [Status]. The status of the failed ENC is "Warning".

• In case of DBS



• In case of DBL



NOTICE: Even if the ALM LED (red) lights up, the DBPS status might be "Normal". In that case, follow TROUBLESHOOTING SECTION "2.2.16 Recovery Procedure when ALM LED (red) is not Turned OFF".

(3) <Confirm the location of Drive Box>

Turn on the Locate LED on the Drive Box in which the ENC to be replaced is installed to check the chassis location.

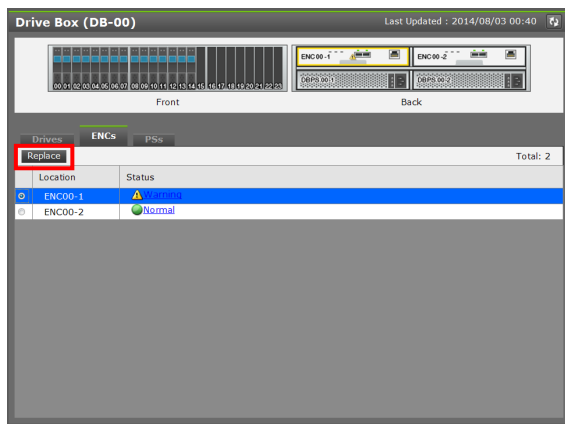
Refer to MAINTENANCE PC SECTION "3.9.1 Turn on Locate LED" for the operation to turn on the Locate LED.

When the Locate LED can't be turned on, refer to LOCATION SECTION "2.3 Drive Box (2U/4U)", and confirm the location of Drive Box.

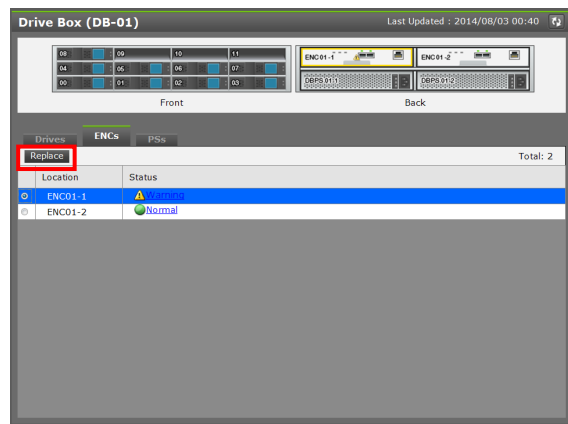
(4) <Select ENC>

Select an ENC to be replaced. Click the [Replace] button.

• In case of DBS



• In case of DBL



(5) <Block ENC>

CAUTION

About "Forcibly run without safety checks":

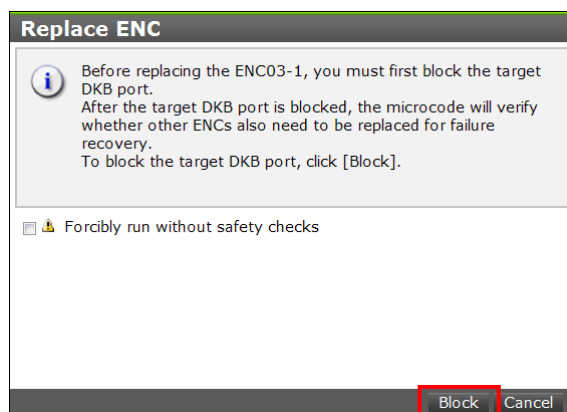
If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual. This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

Click the [Block] button after checking that the ENC to be replaced is correct.

If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".

NOTE : The error list window is displayed if multiple errors are detected by the prior check.

If it is displayed, click the test of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.

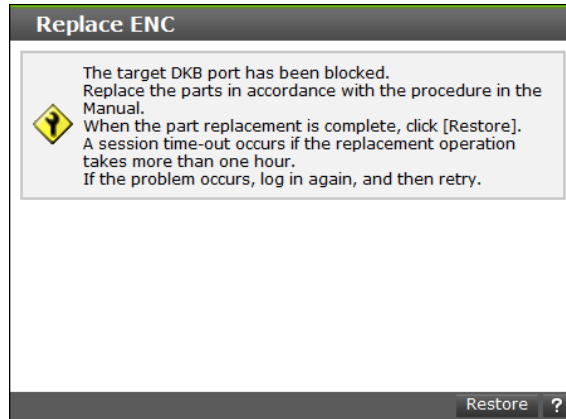


(6) <Check the beginning of ENC replacement>

Check that the ENC is blocked and becomes ready for replacing.

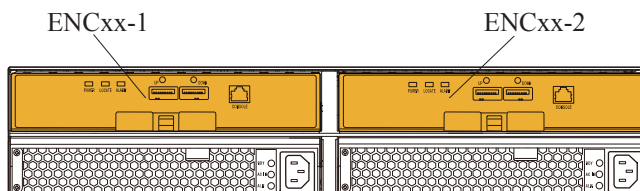
NOTE : Do not click the [Restore] button at this time.

Click the [Restore] button after completing the replacement work.



4. ENC for DBS/DBL Replacement Processing

Location	Function Name of Component	Part Name
Rear View of DBS/DBL	1 ENC	ENC



Rear view of DBS/DBL

*1 : ENC_{xx-1}
 ↳ DB No. (00, 01, 02,, 47)

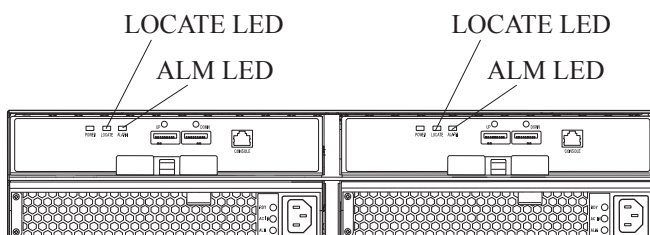
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. See [“1.1.3 Note on Installing and Removing Parts”](#).

- (1) Check that the ALM LED (red) on the DBS/DBL ENC to be replaced lights up. When the LED does not light up, check the location of the ENC to be replaced in the “Maintenance Utility” window.

⚠ CAUTION

If replacing the ENC not to be replaced, the system will be down. Check that the ENC is to be replaced.

Figure 2-157 ALM LED Location



Rear view of DBS/DBL

- (2) Remove the SAS cables from the ENC to be replaced.

 **CAUTION**

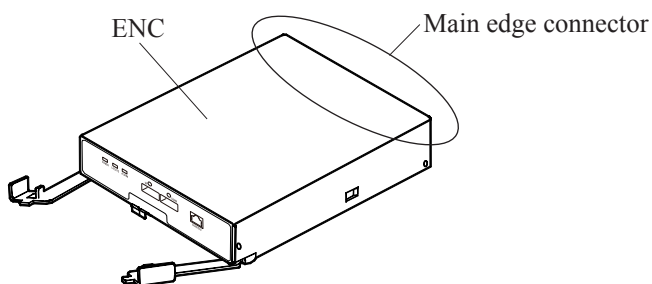
Watching for short-circuits:

A Short-circuit may cause a fire.

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

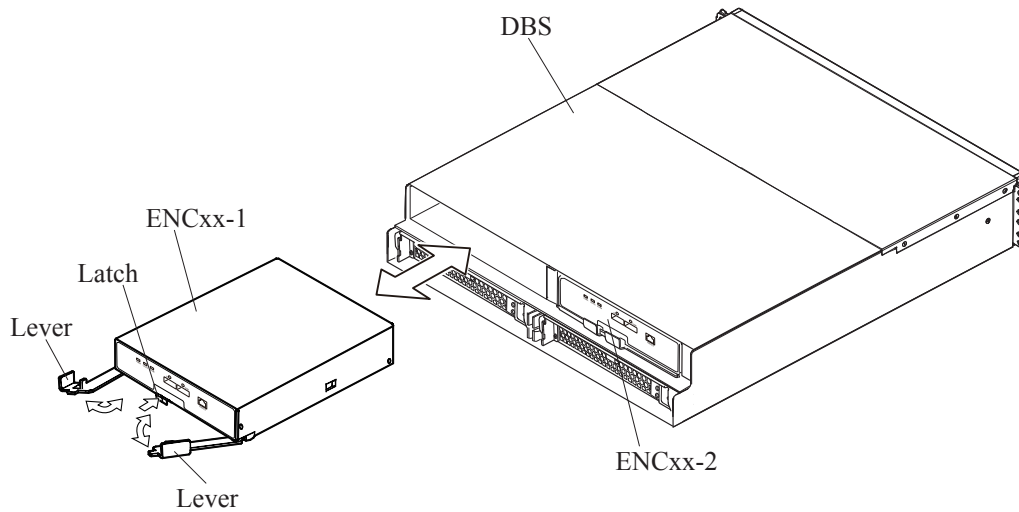
- (3) Replace the ENC.

- NOTICE:**
- When replacing the ENC, hold it with both hands and install it straight not to apply a shock to with any components.
 - Be careful not to hit the connector when placing the ENC temporarily.
 - Do not touch the main edge connector of the ENC directly because it is breakable.
 - Check that the main edge connector of the ENC has no deformation, damage or sticking of dust before installing the ENC.



- (a) Push the latch on the ENC toward the arrow direction to unlock the lever.
- (b) Open the right and left levers which fix the ENC.
When the levers are completely opened, the ENC comes out forward.
- (c) Pull out and remove the ENC while holding its body with both hands.
- (d) Open the right and left levers of the new ENC to be installed completely.
- (e) Insert the new ENC into the slot.
Push the right and left levers toward the ENC after inserting the ENC until its levers slightly opened.

Figure 2-158 Replacement of ENC

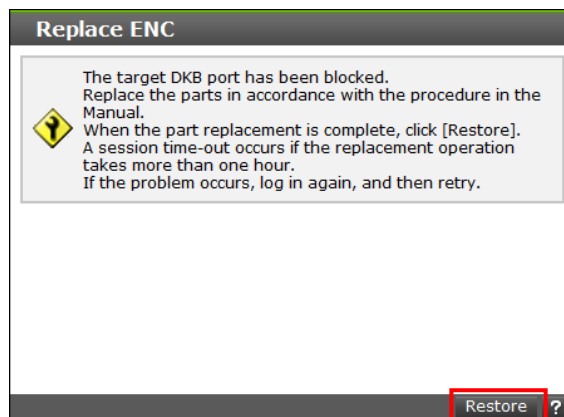


- (4) Connect the SAS cables to the replaced ENC.
When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION “[2.10.2.1 Precautions when Connecting SAS Cables](#)”).

5. Restoring replacement parts by Maintenance Utility

- (1) <Restore replacement parts>

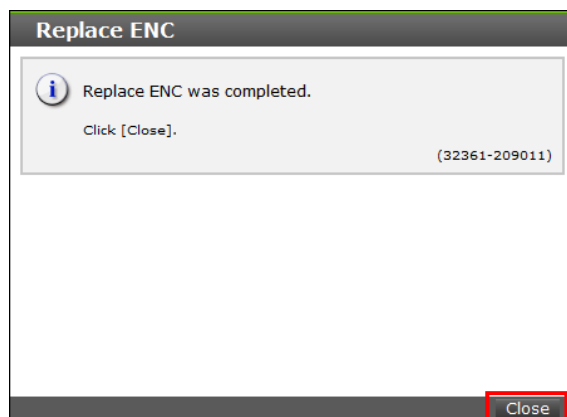
Click the [Restore] button.



(2) <Check replacement parts restoration>

Check that the following message is displayed and click the [Close] button.

If a message other than the described is displayed, refer to “Device Manager-Storage Navigator Messages”.

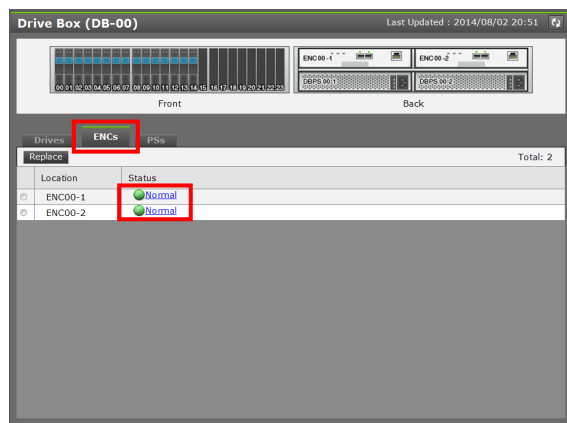


(3) <Check ENC restoration>

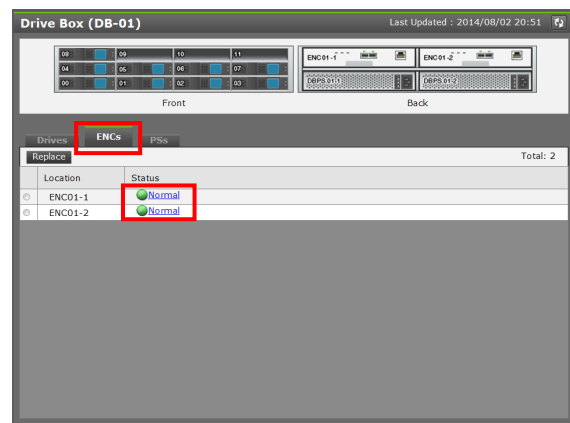
Click the [ENCs] tab in the “Drive Box” window and check that a Status of the replaced ENC is “Normal”.

NOTE: When the ENC status is “Normal” and the ALM LED (red) light up, follow TROUBLESHOOTING SECTION “2.2.16 Recovery Procedure when ALM LED (red) is not Turned OFF”.

• In case of DBS



• In case of DBL



(4) Turn off the Locate LED on the Drive Box in according with MAINTENANCE PC SECTION “3.9.2 Turn off Locate LED”.

(5) Click the [Logout] button to close the window.

- (6) <Get the error information>
Collect small system dumps by referring to “[3.27 Acquiring Dumps using Maintenance Utility](#)” in MAINTENANCE PC SECTION.
 - (7) See MAINTENANCE PC SECTION “[7.1 Use of OnlineDumpTool](#)”, please upload the error information.
-
6. Disconnecting the maintenance PC and the Storage System.
Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION “[2.8.3 Disconnecting the Maintenance PC from the Storage System](#)”.

2.16.2 Replacing an ENC for DB60

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the ENC, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

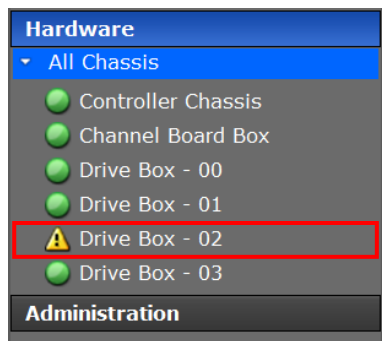
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

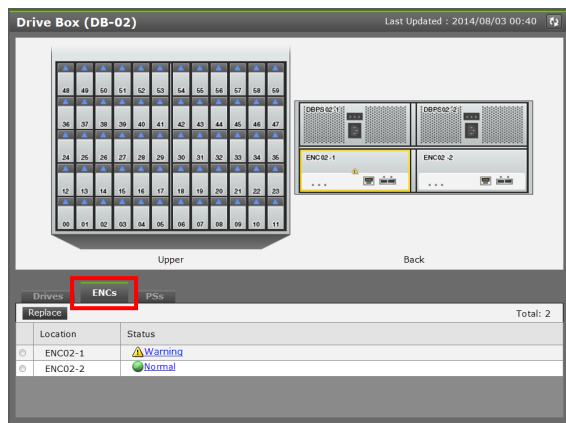
Select [Drive Box] in the main window.



(2) <Drive Box window>

Click the [ENCs] tab in the “Drive Box” window to display an ENC status. See MAINTENANCE PC SECTION “[3.22 Alert Display Related to FRU \(Field Replacement Unit\)](#)” for the [Status].

The status of the failed ENC is “Warning”.



NOTICE: Even if the ALM LED (red) lights up, the DBPS status might be “Normal”. In that case, follow TROUBLESHOOTING SECTION “[2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF](#)”.

(3) <Confirm the location of Drive Box>

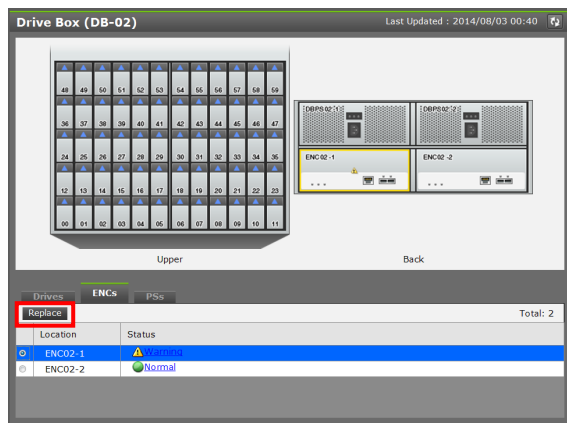
Turn on the Locate LED on the Drive Box in which the ENC to be replaced is installed to check the chassis location.

Refer to MAINTENANCE PC SECTION “[3.9.1 Turn on Locate LED](#)” for the operation to turn on the Locate LED.

When the Locate LED can't be turned on, refer to LOCATION SECTION “[2.3 Drive Box \(2U/4U\)](#)”, and confirm the location of Drive Box.

(4) <Select ENC>

Select an ENC to be replaced. Click the [Replace] button.



(5) <Block ENC>

⚠ CAUTION

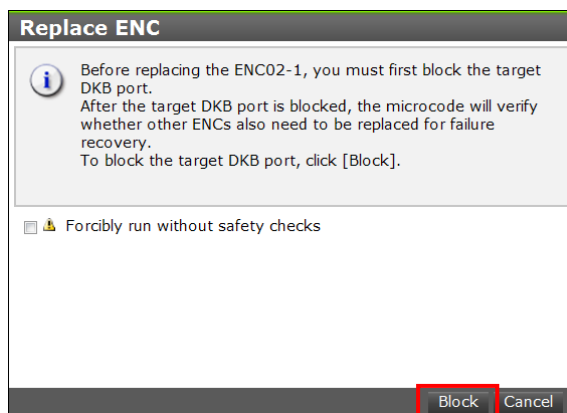
About "Forcibly run without safety checks":

If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual. This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

Click the [Block] button after checking that the ENC to be replaced is correct.

If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".

NOTE : The error list window is displayed if multiple errors are detected by the prior check. If it is displayed, click the test of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.

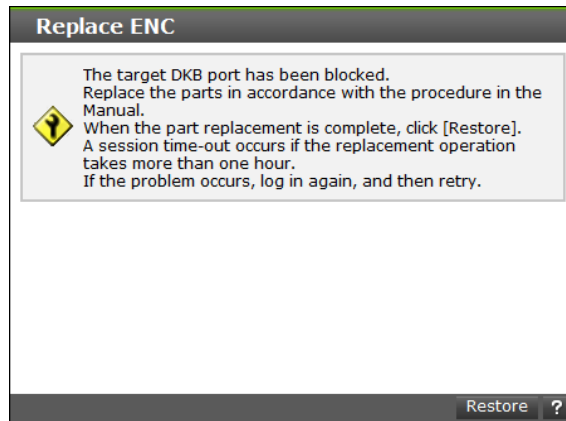


(6) <Check the beginning of ENC replacement>

Check that the ENC is blocked and becomes ready for replacing.

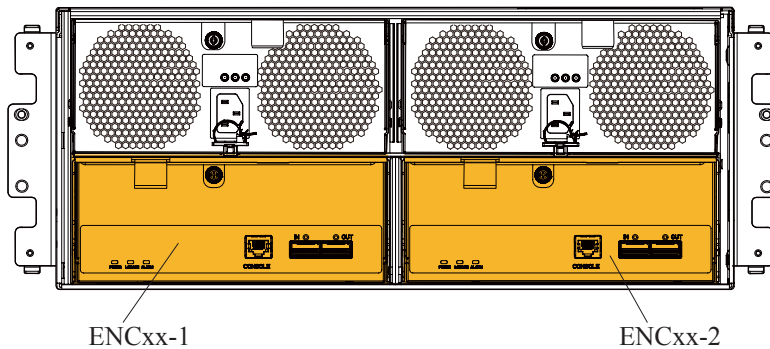
NOTE : Do not click the [Restore] button at this time.

Click the [Restore] button after completing the replacement work.



4. ENC for DB60 Replacement Processing

Location	Function Name of Component	Part Name
Rear View of DB60	1 ENC	ENC



Rear view of DB60

*1 : ENC_{xx-1}
 ↳ DB No. (00, 01, 02,, 47)

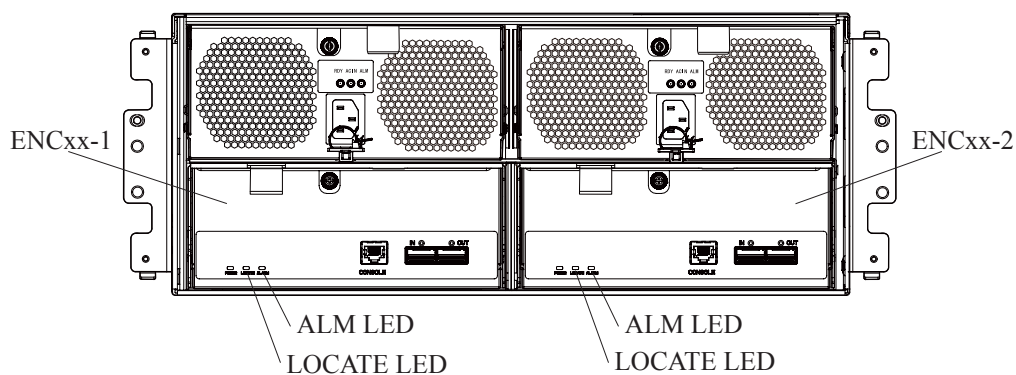
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. Refer to [“1.1.3 Note on Installing and Removing Parts”](#).

- (1) Check that the ALM LED (red) on the DB60 ENC to be replaced lights up. When the LED does not light up, check the location of the ENC to be replaced in the “Maintenance Utility” window.

⚠ CAUTION

If replacing the ENC not to be replaced, the system will be down. Check that the ENC is to be replaced.

Figure 2-159 ALM LED Location



Rear view of DB60

- (2) Remove the SAS cables from the ENC to be replaced.

⚠ CAUTION

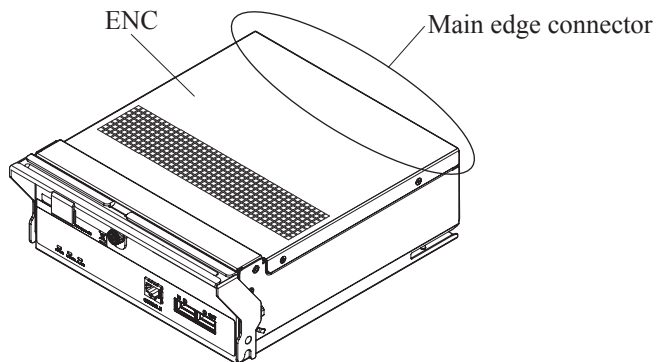
Watching for short-circuits:

A Short-circuit may cause a fire.

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

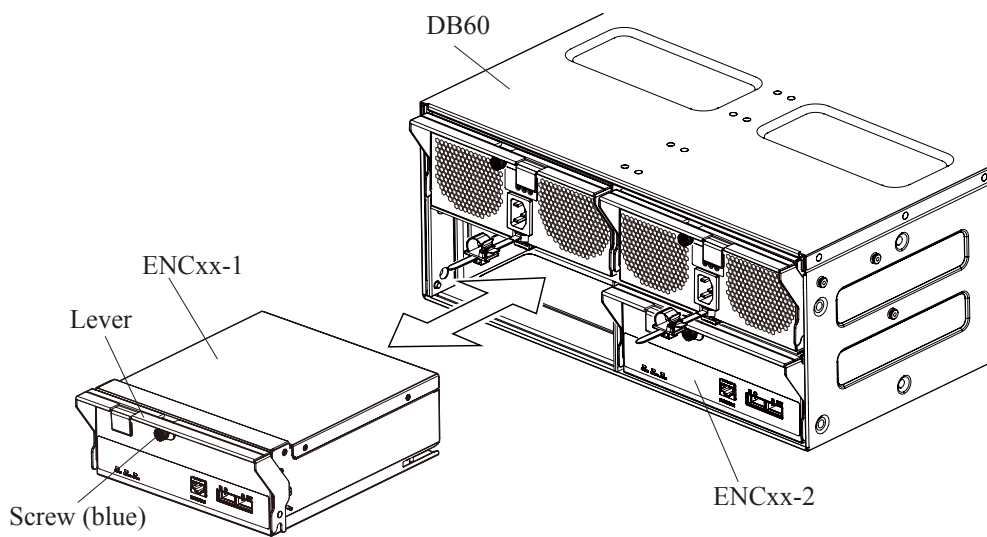
(3) Replace the ENC.

- NOTICE:**
- When replacing the ENC, hold it with both hands and install it straight not to apply a shock to with any components.
 - Be careful not to hit the connector when placing the ENC temporarily.
 - Do not touch the main edge connector of the ENC directly because it is breakable.
 - Check that the main edge connector of the ENC has no deformation, damage or sticking of dust before installing the ENC.



- Loosen the screw (blue) fixing the ENC.
- Open the lever.
- Pull out and remove the ENC while holding its body with both hands.
- Open the lever of a new ENC completely.
- Insert the new ENC into the slot.
- Tighten the screw (blue) to fix the ENC.

Figure 2-160 Replacement of ENC

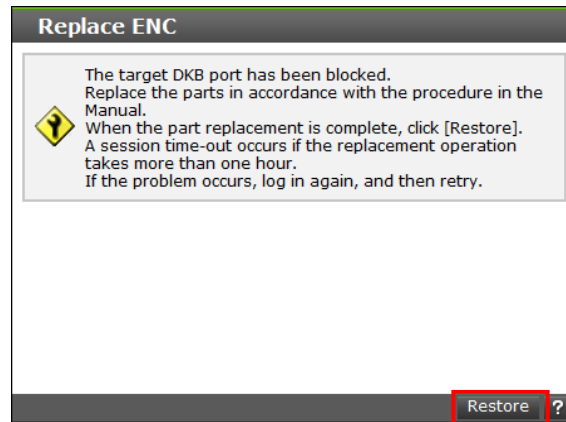


- Connect the SAS cables to the replaced ENC.
When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION [“2.10.2.1 Precautions when Connecting SAS Cables”](#)).

5. Restoring replacement parts by Maintenance Utility

(1) <Restore replacement parts>

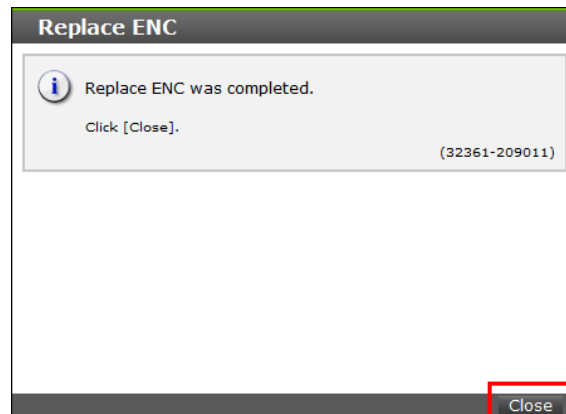
Click the [Restore] button.



(2) <Check replacement parts restoration>

Check that the following message is displayed and click the [Close] button.

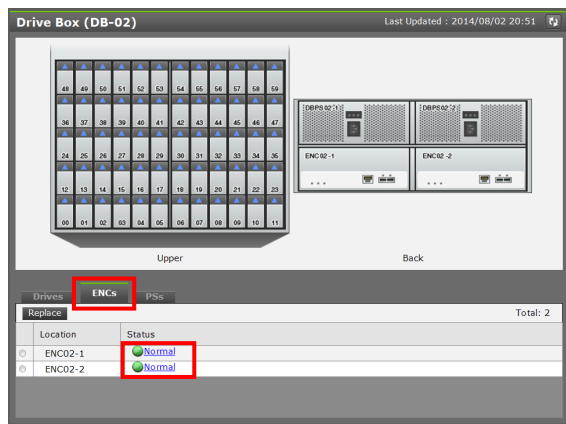
If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



(3) <Check ENC restoration>

Click the [ENCs] tab in the “Drive Box” window and check that a Status of the replaced ENC is “Normal”.

NOTE: When the ENC status is “Normal” and the ALM LED (red) light up, follow TROUBLESHOOTING SECTION “2.2.16 Recovery Procedure when ALM LED (red) is not Turned OFF”.



(4) Turn off the Locate LED on the Drive Box in according with MAINTENANCE PC SECTION “3.9.2 Turn off Locate LED”.

(5) Click the [Logout] button to close the window.

(6) <Get the error information>

Collect small system dumps by referring to “3.27 Acquiring Dumps using Maintenance Utility” in MAINTENANCE PC SECTION.

(7) See MAINTENANCE PC SECTION “7.1 Use of OnlineDumpTool”, please upload the error information.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION “2.8.3 Disconnecting the Maintenance PC from the Storage System”.

2.16.3 Replacing an ENC for DBF

1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the ENC, connect the maintenance PC and the Controller Board 1.

- Connect the maintenance PC and the Controller Board via LAN cable referring to MAINTENANCE PC SECTION [“2.2 Connecting Maintenance PC to Storage System”](#).

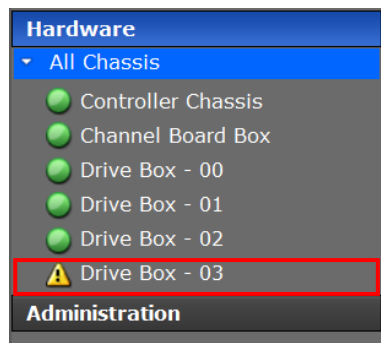
2. Starting Maintenance Utility

Start Maintenance Utility (refer to MAINTENANCE PC SECTION [“2.7.3 Starting the Maintenance Utility Window by Specifying IP Address of CTL”](#)).

3. Selecting replacement parts by Maintenance Utility.

(1) <Main window>

Select [Drive Box] in the main window.



(2) <Drive Box window>

Click the [ENCs] tab in the “Drive Box” window to display an ENC status. See MAINTENANCE PC SECTION [“3.22 Alert Display Related to FRU \(Field Replacement Unit\)”](#) for the [Status].

The status of the failed ENC is “Warning”.



NOTICE: Even if the ALM LED (red) lights up, the DBPS status might be “Normal”. In that case, follow TROUBLESHOOTING SECTION [“2.2.16 Recovery Procedure when ALM LED \(red\) is not Turned OFF”](#).

(3) <Confirm the location of Drive Box>

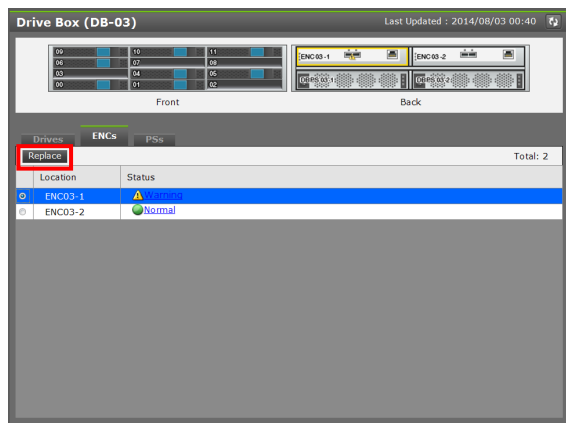
Turn on the Locate LED on the Drive Box in which the ENC to be replaced is installed to check the chassis location.

Refer to MAINTENANCE PC SECTION [“3.9.1 Turn on Locate LED”](#) for the operation to turn on the Locate LED.

When the Locate LED can't be turned on, refer to LOCATION SECTION [“2.3 Drive Box \(2U/4U\)”](#), and confirm the location of Drive Box.

(4) <Select ENC>

Select an ENC to be replaced. Click the [Replace] button.



(5) <Block ENC>

⚠ CAUTION

About "Forcibly run without safety checks":

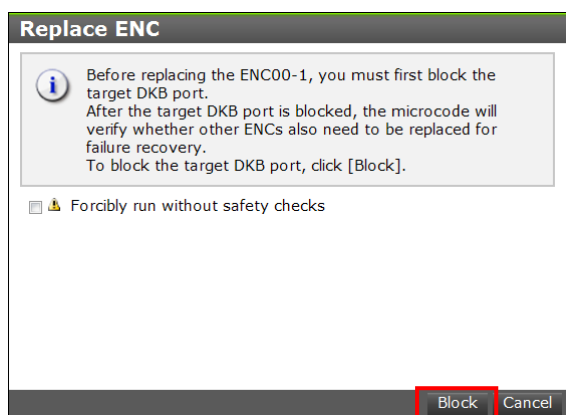
If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual. This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

Click the [Block] button after checking that the ENC to be replaced is correct.

If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".

NOTE : The error list window is displayed if multiple errors are detected by the prior check.

If it is displayed, click the test of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.

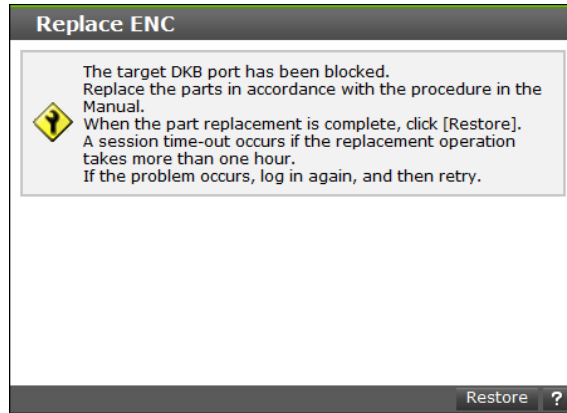


(6) <Check the beginning of ENC replacement>

Check that the ENC is blocked and becomes ready for replacing.

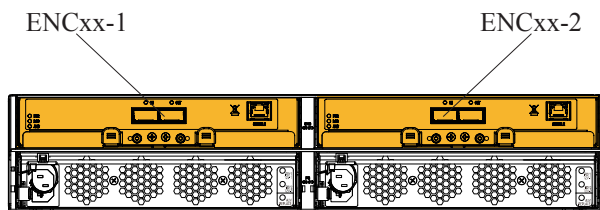
NOTE : Do not click the [Restore] button at this time.

Click the [Restore] button after completing the replacement work.



4. ENC for DBF Replacement Processing

Location	Function Name of Component		Part Name
Rear View of DBF	1	ENC	ENC (DBF)



Rear view of DBF

*1 : ENCxx-1

↳ DB No. (00, 01, 02,, 47)

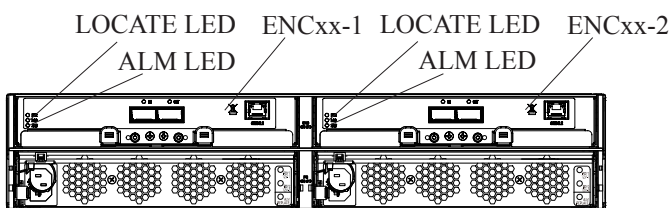
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. See [“1.1.3 Note on Installing and Removing Parts”](#).

- (1) Check that the ALM LED (red) on the DBF ENC to be replaced lights up. When the LED does not light up, check the location of the ENC to be replaced in the “Maintenance Utility” window.

⚠ CAUTION

If replacing the ENC not to be replaced, the system will be down. Check that the ENC is to be replaced.

Figure 2-161 ALM LED Location



Rear view of DBF

- (2) Remove the SAS cables from the ENC to be replaced.

⚠ CAUTION

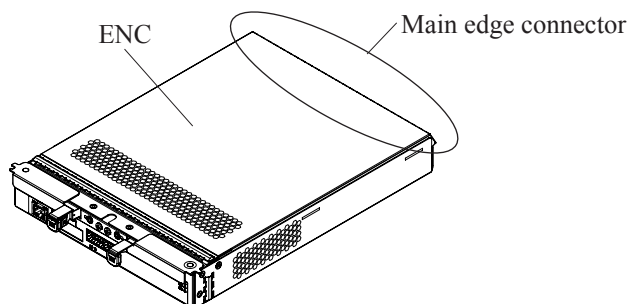
Watching for short-circuits:

A Short-circuit may cause a fire.

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

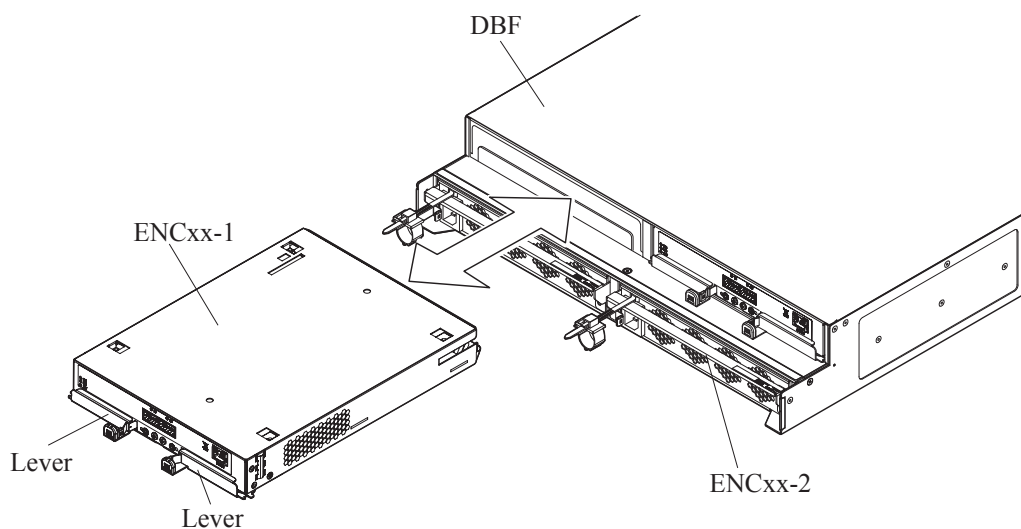
(3) Replace the ENC.

- NOTICE:**
- When replacing the ENC, hold it with both hands and install it straight not to apply a shock to with any components.
 - Be careful not to hit the connector when placing the ENC temporarily.
 - Do not touch the main edge connector of the ENC directly because it is breakable.
 - Check that the main edge connector of the ENC has no deformation, damage or sticking of dust before installing the ENC.



- Open the right and left levers which fix the ENC.
When the levers are completely opened, the ENC comes out forward.
- Pull out and remove the ENC while holding its body with both hands.
- Open the right and left levers of the new ENC to be installed completely.
- Insert the new ENC into the slot.
Push the right and left levers toward the ENC after inserting the ENC until its levers slightly opened.

Figure 2-162 Replacement of ENC

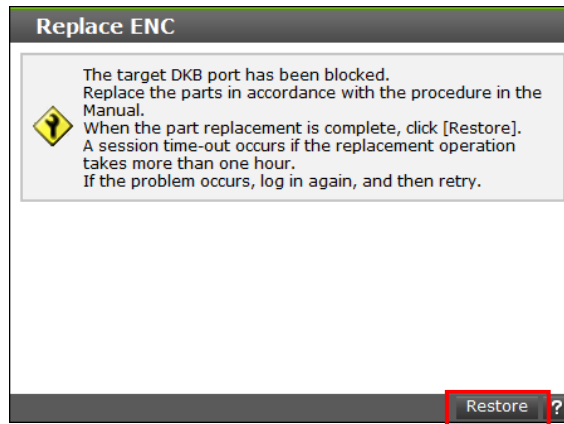


- Connect the SAS cables to the replaced ENC.
When connecting SAS cables, be careful not to damage the tips of the cables. (See INSTALLATION SECTION [“2.10.2.1 Precautions when Connecting SAS Cables”](#)).

5. Restoring replacement parts by Maintenance Utility

(1) <Restore replacement parts>

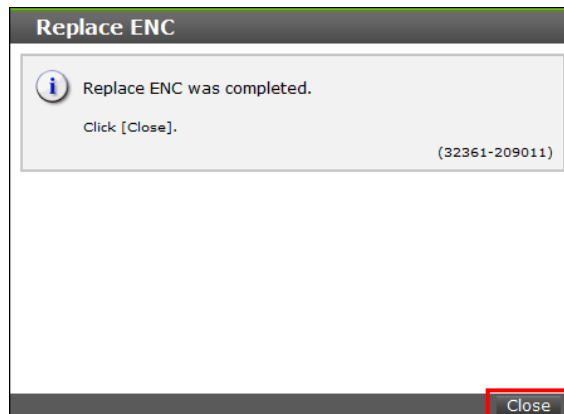
Click the [Restore] button.



(2) <Check replacement parts restoration>

Check that the following message is displayed and click the [Close] button.

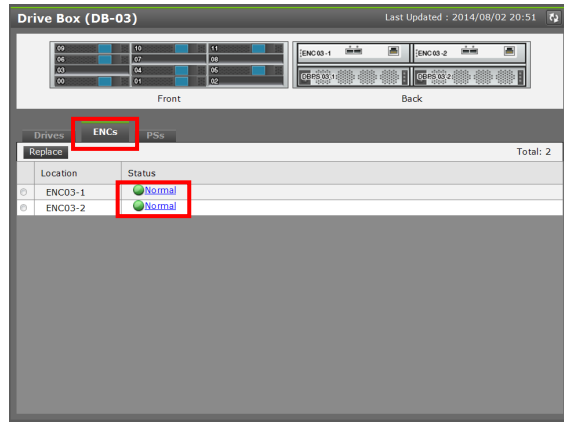
If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



(3) <Check ENC restoration>

Click the [ENCs] tab in the “Drive Box” window and check that a Status of the replaced ENC is “Normal”.

NOTE: When the ENC status is “Normal” and the ALM LED (red) light up, follow TROUBLESHOOTING SECTION “2.2.16 Recovery Procedure when ALM LED (red) is not Turned OFF”.



(4) Turn off the Locate LED on the Drive Box in according with MAINTENANCE PC SECTION “3.9.2 Turn off Locate LED”.

(5) Click the [Logout] button to close the window.

(6) <Get the error information>

Collect small system dumps by referring to “3.27 Acquiring Dumps using Maintenance Utility” in MAINTENANCE PC SECTION.

(7) See MAINTENANCE PC SECTION “7.1 Use of OnlineDumpTool”, please upload the error information.

6. Disconnecting the maintenance PC and the Storage System.

Remove the LAN cable from the Controller Board referring to MAINTENANCE PC SECTION “2.8.3 Disconnecting the Maintenance PC from the Storage System”.

2.17 Replacing a Controller Chassis/Drive Box

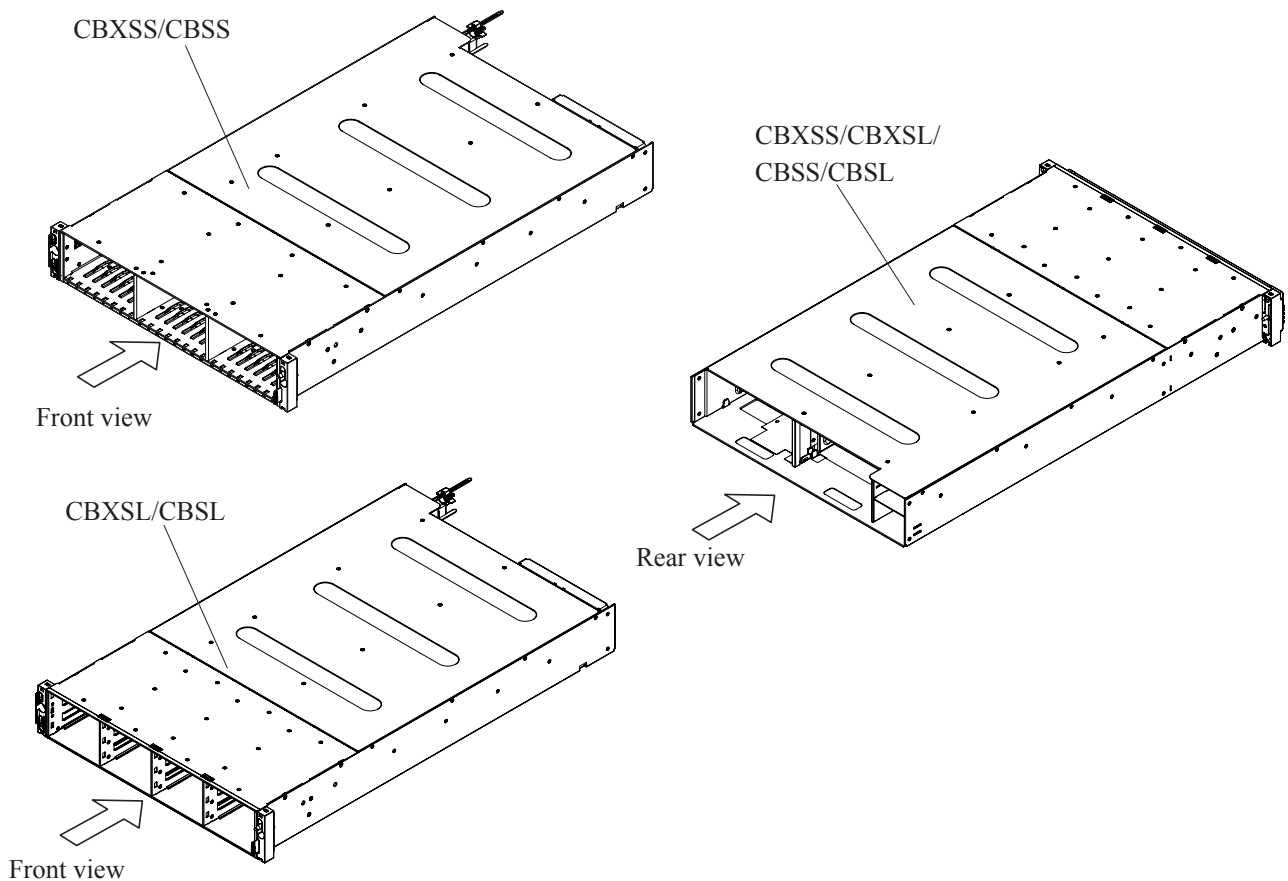
The procedure differs according to Controller Chassis/Drive Boxes.

- When replacing the CBXSS/CBXSL/CBSS/CBSL
“2.17.1 Replacing a CBXSS/CBXSL/CBSS/CBSL”
- When replacing the CBLH
“2.17.2 Replacing a CBLH”
- When replacing the DBS/DBL Drive Box
“2.17.3 Replacing a DBS/DBL Drive Box”
- When replacing the DB60 Drive Box
“2.17.4 Replacing a DB60 Drive Box”
- When replacing the DBF Drive Box
“2.17.5 Replacing a DBF Drive Box”

2.17.1 Replacing a CBXSS/CBXSL/CBSS/CBSL

1. Hardware Replacement Processing

Location	Function Name of Component	Part Name
Rack	1 CBXSS/CBSS CBXSL/CBSL	• DW800-CBSS • DW800-CBSL



- 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 Storage System before starting and do not take it off until you finish. Refer to “1.1.3 Note on Installing and Removing Parts”.
 - The PDU may connect to other devices. When replacing it, check the precautions for the connected devices before the replacement.

2.17.1.1 Replacement of Controller Chassis

1. Power off the rack.

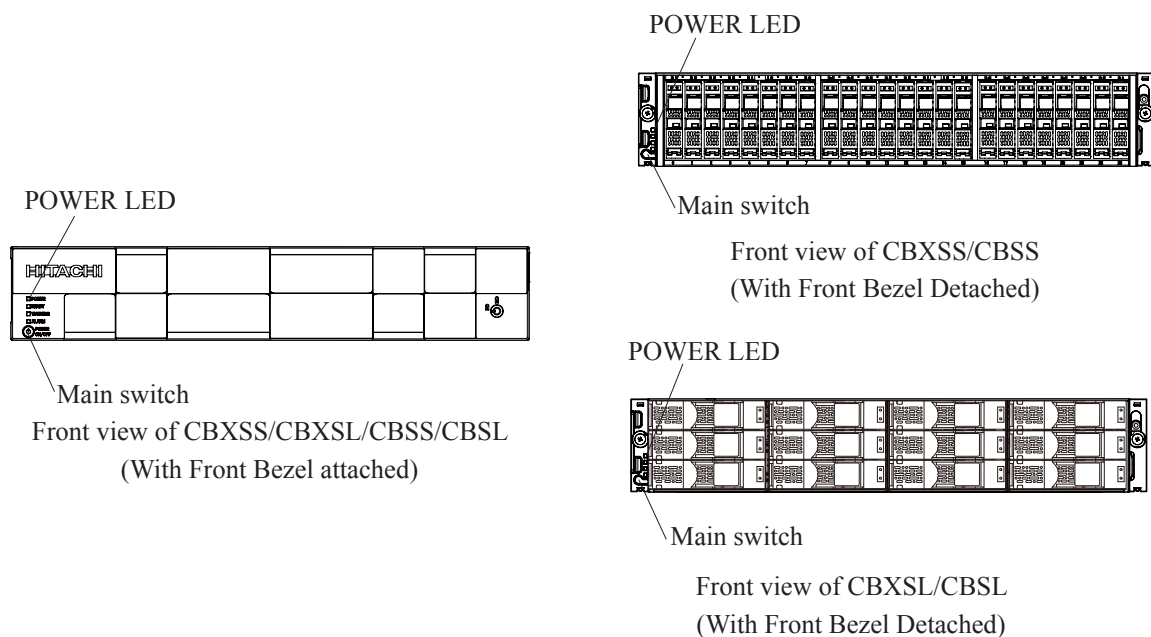
WARNING

Hazardous voltage:

Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

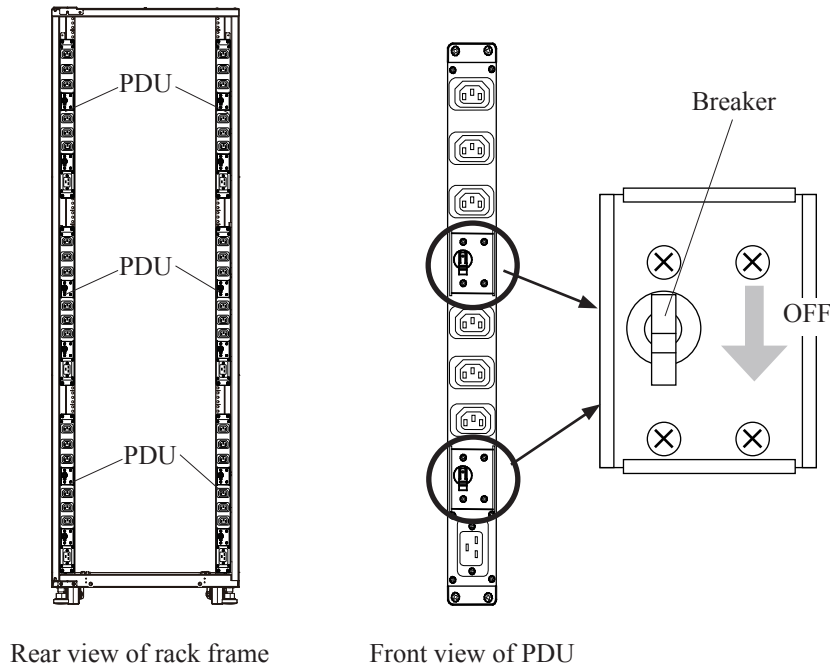
- (1) Press the Main Switch on the front of the CBXSS/CBXSL/CBSS/CBSL for three second to turn off.
- (2) Confirm that the POWER LED on the front side of the CBXSS/CBXSL/CBSS/CBSL lights in amber.

Figure 2-163 Main Switch and POWER LED on the front of CBXSS/CBXSL/CBSS/CBSL



- (3) Turn off the breaker at the PDU on the rack frame.

Figure 2-164 Turning-off Breakers



- (4) Turn off the breaker on the power distribution panel in the plant that is connected to the PDU.

NOTE : The circuit has residual voltage after turning off the breakers, so wait for one minute.

2. Remove the Front Bezel.

- (1) Remove the Front Bezel from the CBXSS/CBXSL/CBSS/CBSL. (Refer to [“2.2.1 How to Attach/Remove Front Bezel”](#).)

3. Attach a label.

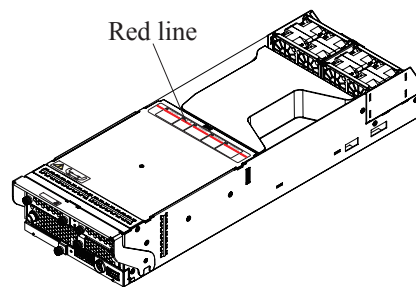
- (1) Attach a label or the like for identification of installation location to a removed part so that it can be installed in the same place in the spare Controller Chassis.

4. Remove the Controller Boards.

- (1) Remove all the cables connected to the Controller Board.
- (2) Loosen the screws (blue) fixing the Controller Board (①) and open the lever (②).
- (3) Hold the Controller Board with both hands and pull out it to remove.
- (4) Remove the other Controller Board in the same manner.

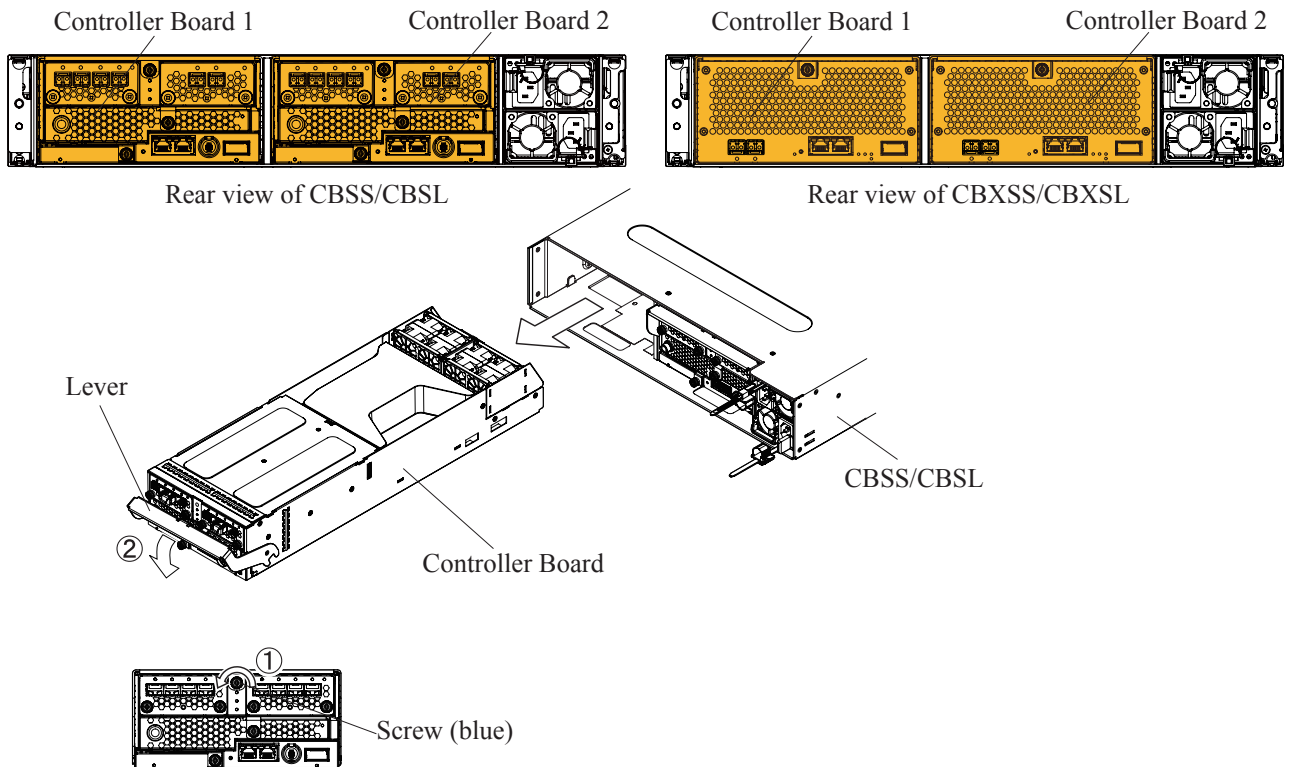
CAUTION

Dropping the Controller Board may cause injury. Keep hands securely on array. Be aware of the red line marked on the Controller Board top - when sliding the Controller Board out of the rail terminal past this mark, keep a firm hold on the Controller Board.



NOTICE: When removing the Controller Board, hold it with both hands and remove it straight not to apply a shock to with any components.

Figure 2-165 Removing Controller Boards

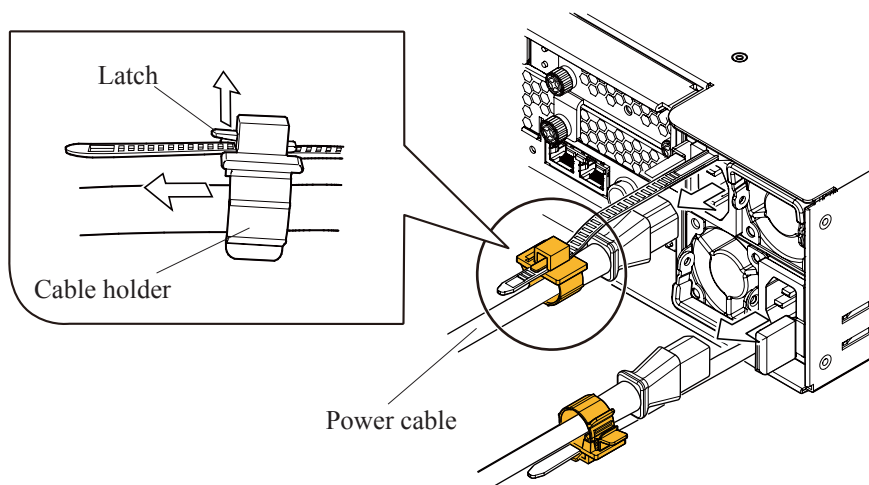


*1: The figure shows CBSS/CBSL as an example. For CBXSS/CBXSL, the procedure is the same.

5. Remove a DKCPS.

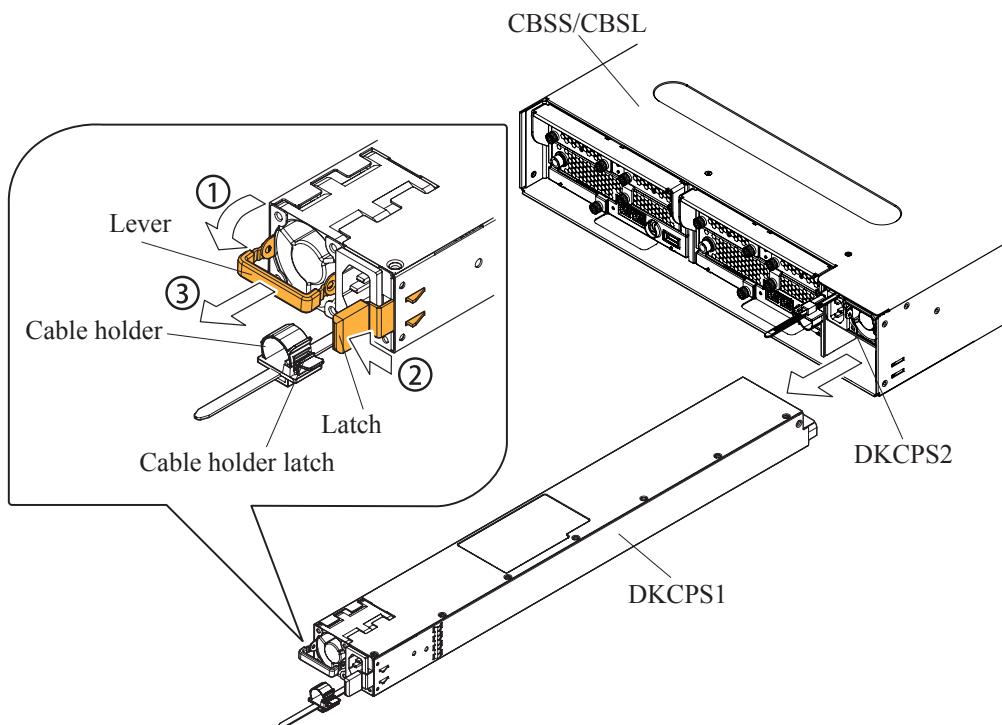
- (1) Remove all the power cables connected to the DKCPS.
 - (a) Remove the cable holder from the power cable and remove the power cable from the DKCPS.

Figure 2-166 Removing Power Cables



- (2) Pull the lever open (①).
- (3) Pull the lever (③) while pressing the latch on the DKCPS inward (②).
- (4) Pull out and remove the DKCPS while holding its body with both hands.
- (5) Remove the other DKCPS in the same manner.

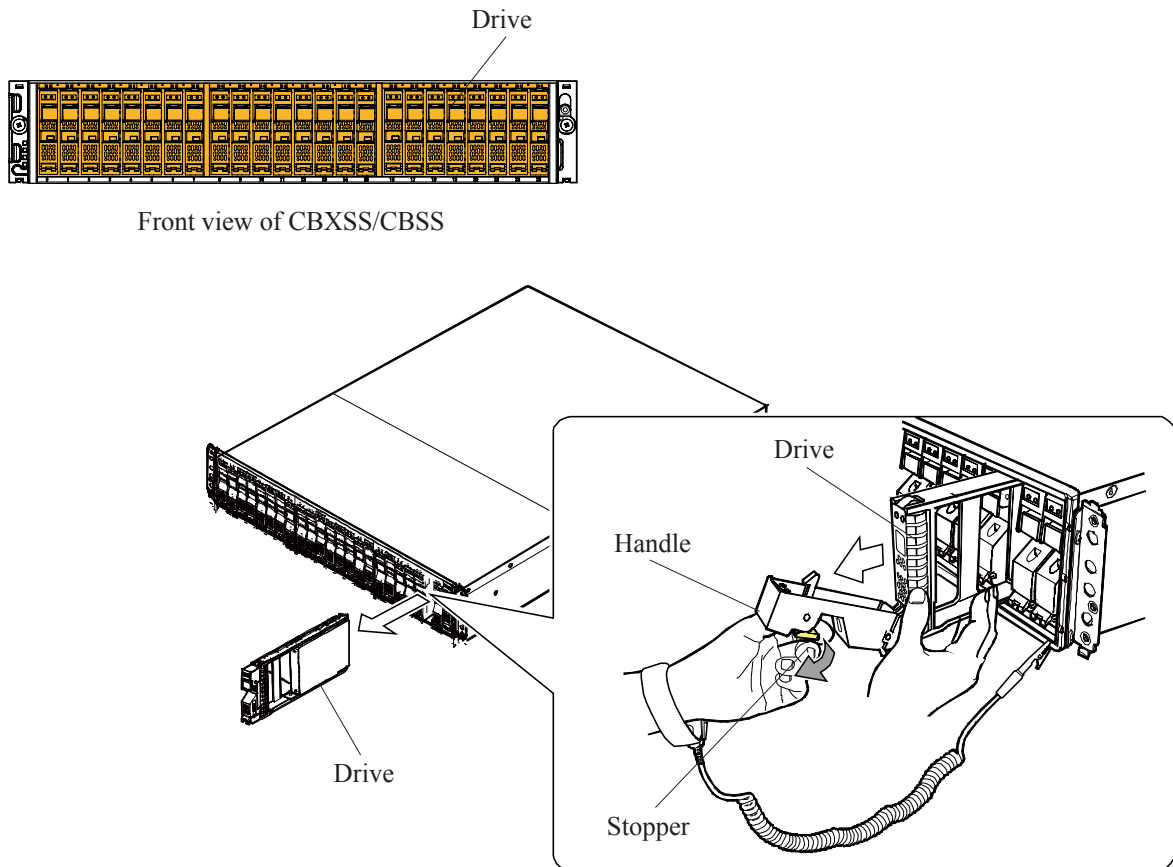
Figure 2-167 Removal of DKCPS



*1: The figure shows CBSS/CBSL as an example. For CBXSS/CBXSL, the procedure is the same.

6. Remove the Drive.
 - (1) In case of CBXSS/CBSS Drives
 - (a) Pull up the stopper of the Drive handle toward you to release the lock.
 - (b) Open the handle toward you, and pull out and remove the Drive to be replaced not to give a shock.
 - (c) Remove the other Drives in the same manner.

Figure 2-168 Removal of Drives (CBXSS/CBSS)

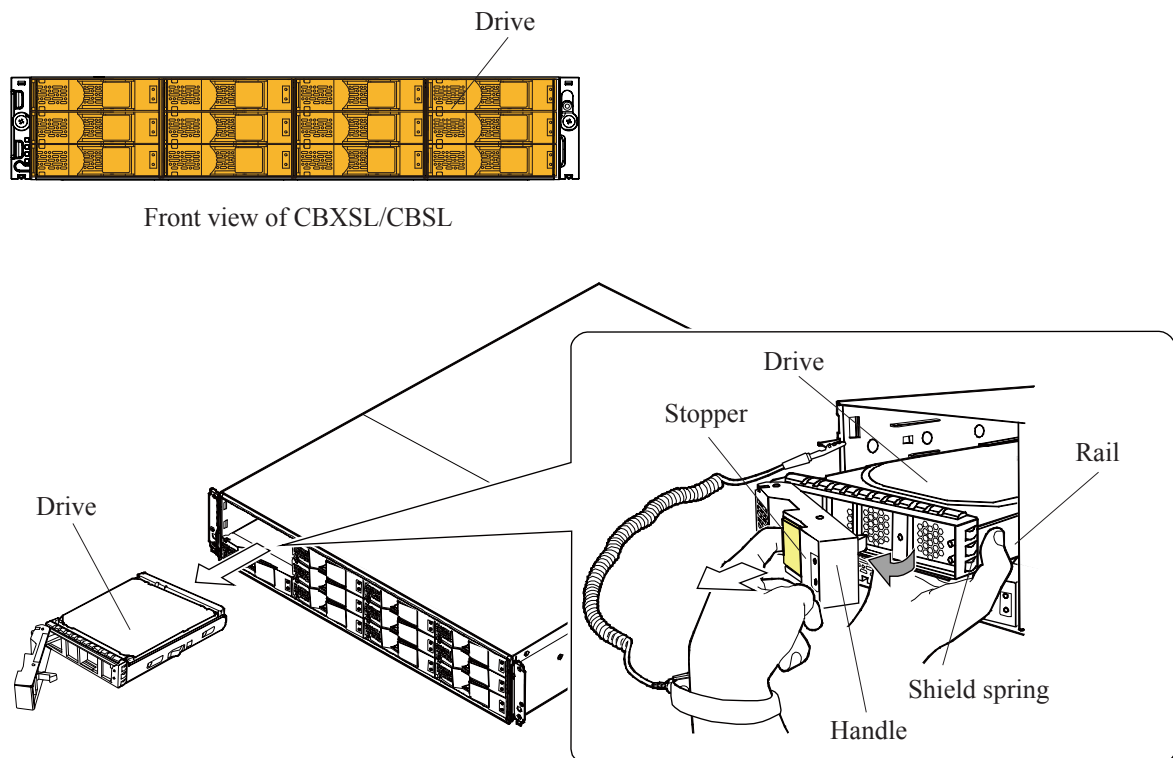


- (2) In case of CBXSL/CBSL Drives
 - (a) Pull up the stopper of the Drive handle toward you to release the lock.
 - (b) Open the handle toward you, and pull out and remove the Drive to be replaced not to give a shock.

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

- (c) Remove the other Drives in the same manner.

Figure 2-169 Removal of Drive (CBXSL/CBSL)



7. Replace the Controller Chassis

- (1) Remove the right and left screws (one each) fixing the CBXSS/CBXSL/CBSS/CBSL.

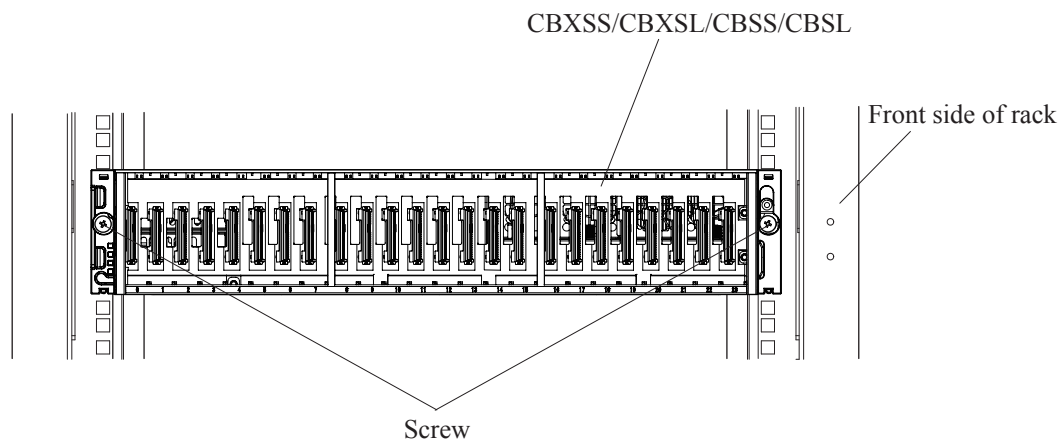
CAUTION

Be careful of the mass:

Work carefully because the mass of the Controller Chassis is about 29 kg.

- (2) Remove the Controller Chassis from the rack frame referring to mounting procedure using the special lifter. (Refer to “[2.2.3 Mounting Lifter on Rack Frame](#)”).
- (3) Install a new Controller Chassis from the front of the rack.
- (4) Fix the right and left of the CBXSS/CBXSL/CBSS/CBSL with screws (one each).

Figure 2-170 Removal of Controller Chassis



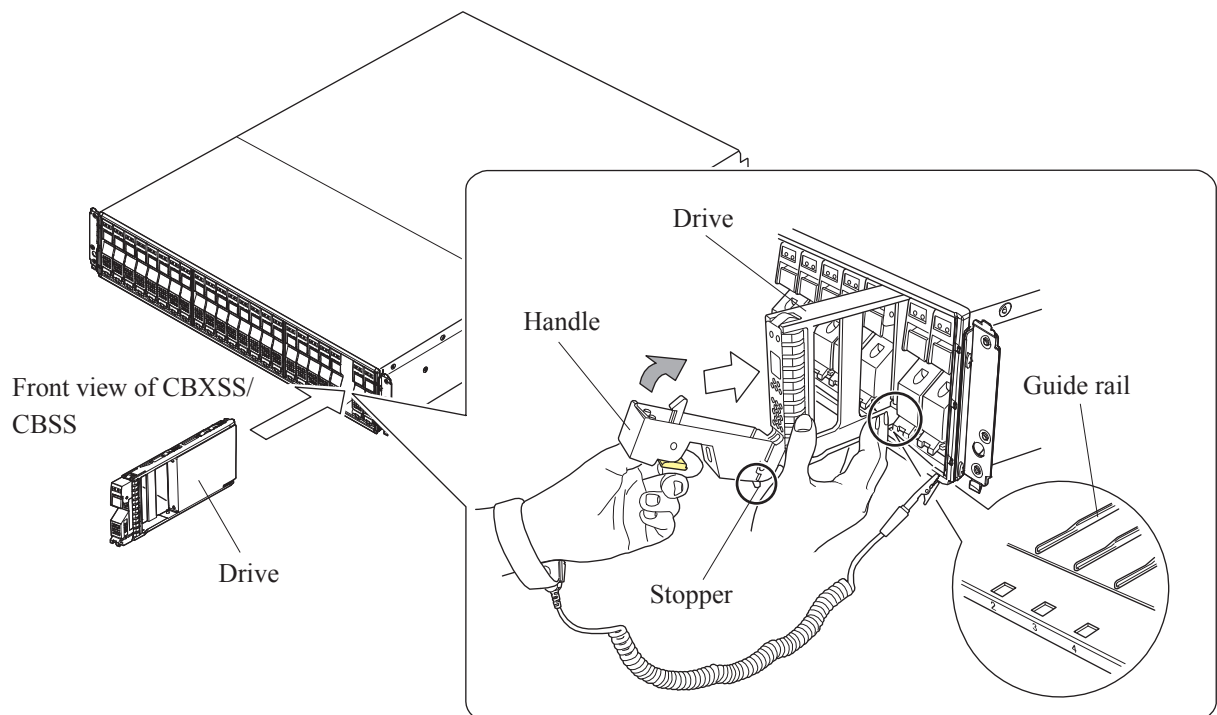
8. Install the Drives.

Install all the removed Drives in the same positions of the Drive Boxes of the maintenance parts referring to the attached label.

(1) In case of CBXSS/CBSS Drives

- (a) Fit the Drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- (b) 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.
- (c) 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 Storage System.
- (d) Install the other Drives in the same manner.

Figure 2-171 Installation of Drive (CBXSS/CBSS)

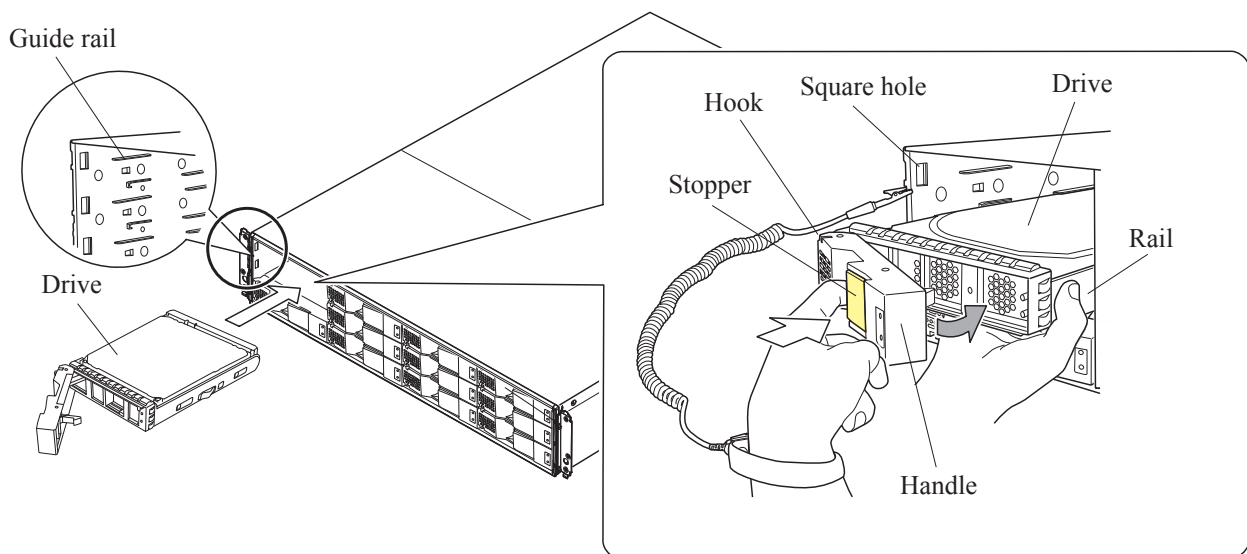


(2) In case of CBXSL/CBSL Drives

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

- (a) 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.
- (b) 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.
- (c) 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 Storage System.
- (d) Install the other Drives in the same manner.

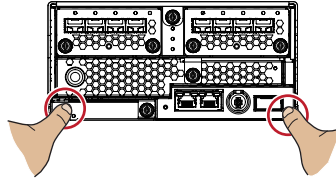
Figure 2-172 Installation of Drive (CBXSL/CBSL)



9. Install the Controller Board.

- (1) With the levers on the Controller Board opened completely, insert it into the slot of the CBXSS/CBXSL/CBSS/CBSL. (Refer to [Figure 2-165](#).)
- (2) Push the Controller Board in all the way and close the lever completely.

NOTICE: Push the bottom of the front side of the Controller Board all the way to insert it to the end.



- (3) Tighten the screw (blue) and fix the Controller Board.
- (4) Install the other Controller Board in the same manner.
- (5) Clean the cable connectors.
 - (a) Spray compressed gas to the connector part using an air spray (approx. five seconds).
 - (b) Wipe the connector part lightly with cut gauze soaked in ethyl alcohol.
 - (c) Spray compressed gas again and check the cleanliness. (Be sure that no dust, foreign substance or dirt is attached.)
- (6) Connect all the removed cables to the Controller Board.

When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION [“2.10.2.1 Precautions when Connecting SAS Cables”](#)).

10. Install the DKCPS.

- (1) In case of CBXSS/CBXSL/CBSS/CBSL, hold up the latch on the cable holder of the DKCPS to release the lock, and then slide the cable holder forward. (Refer to [Figure 2-167](#).)
- (2) With the lever completely opened, insert the DKCPS into the slot.
- (3) Push the DKCPS in until the latch is clicked.
- (4) Connect the power cable to the DKCPS, and then fix the cable by the cable holder.
- (5) Install the other DKCPS in the same manner.

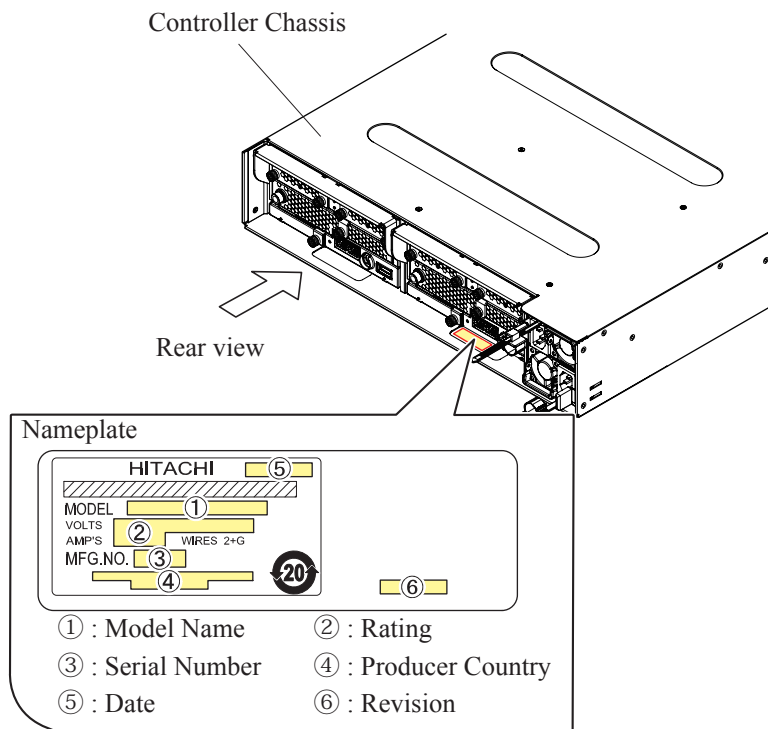
11. Attach the nameplate.

- (1) Take out the nameplate in which the same model name as the removed Controller Chassis is described from the nameplates attached to the spare Controller Chassis. Write down the same serial number as the removed Controller Chassis in the nameplate, and then affix the nameplate to the spare Controller Chassis.

When the nameplate in which the same model name as the removed Controller Chassis is described is not attached, take out the nameplate in which the same rating and producer country as the removed Controller Chassis are described and which the model name is not described. Write down the same model name and serial number as the removed Controller Chassis in the nameplate, and then affix it to the spare Controller Chassis.

To fill in the nameplate, use the RoHS-compliant marker pen.

Figure 2-173 Attachment of Nameplate



*1: The figure shows CBSS/CBSL as an example. For CBXSS/CBXSL, the procedure is the same.

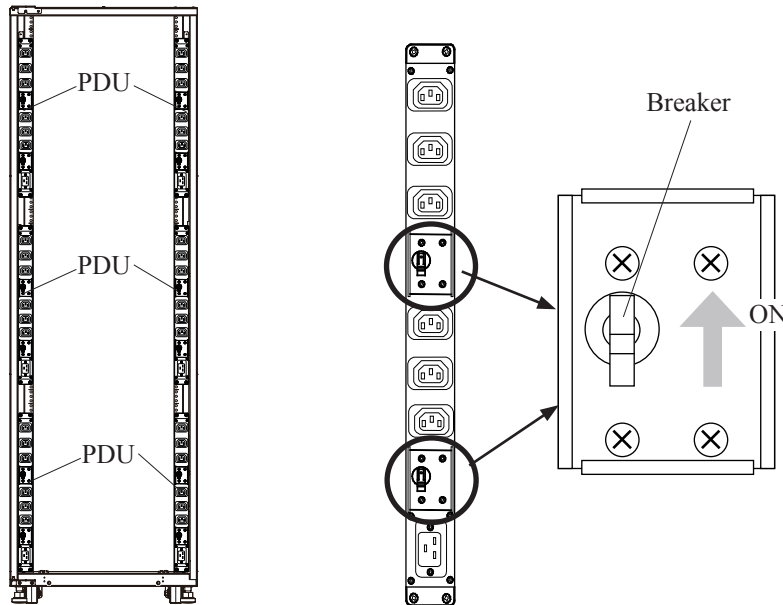
12. Attach the Front Bezel.

- (1) Attach the Front Bezel to the CBXSS/CBXSL/CBSS/CBSL. (Refer to [“2.2.1 How to Attach/Remove Front Bezel”](#).)

13. Powering on the rack frame

- (1) Turn on the breaker on the power distribution panel.
- (2) Turn on the breaker at the PDU on the rack frame.

Figure 2-174 Turning-on Breakers

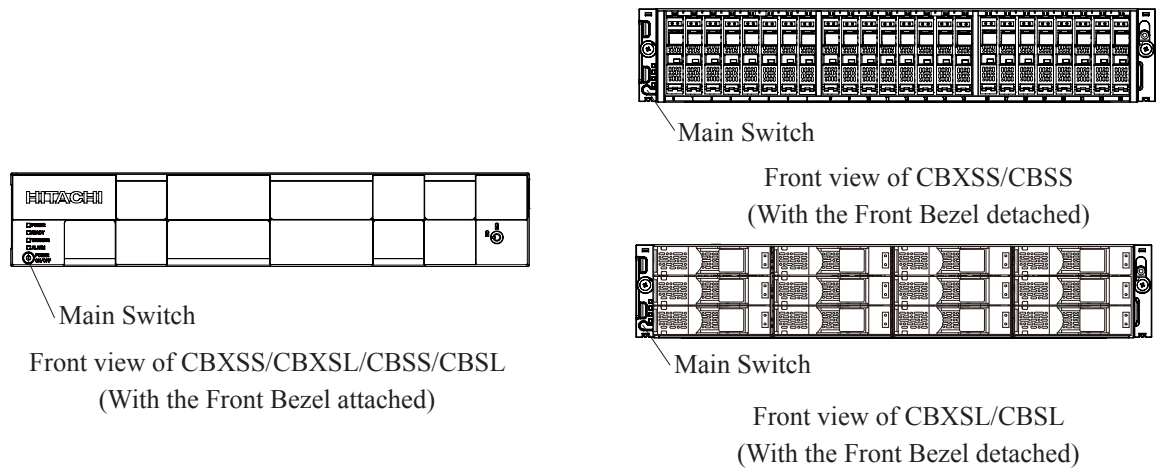


Rear view of rack frame

Front view of PDU

- (3) Press the Main Switch on the front of the CBXSS/CBXSL/CBSS/CBSL for three second to turn on.

Figure 2-175 Main Switch on CBXSS/CBXSL/CBSS/CBSL



Front view of CBXSS/CBXSL/CBSS/CBSL
(With the Front Bezel attached)

Main Switch

Front view of CBXSS/CBSS
(With the Front Bezel detached)

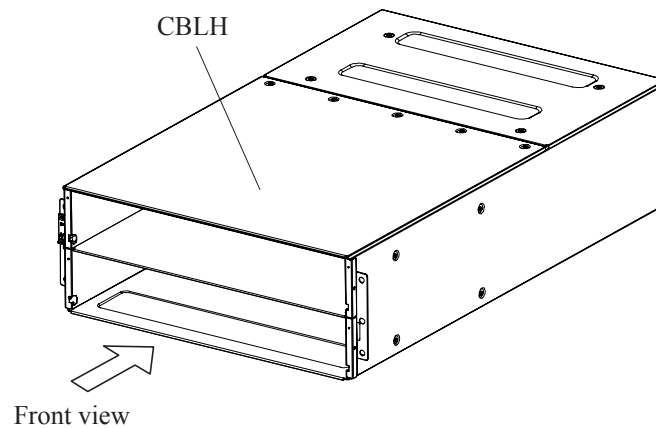
Main Switch

Front view of CBXSL/CBSL
(With the Front Bezel detached)

2.17.2 Replacing a CBLH

1. Hardware Replacement Processing

Location	Function Name of Component		Part Name
Rack	1	CBLH1 CBLH2	• DW850-CBLH1 • DW850-CBLH2



- 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 Storage System before starting and do not take it off until you finish. Refer to [“1.1.3 Note on Installing and Removing Parts”](#).
 - The PDU may connect to other devices. When replacing it, check the precautions for the connected devices before the replacement.

2.17.2.1 Replacement of Controller Chassis

1. Power off the rack.

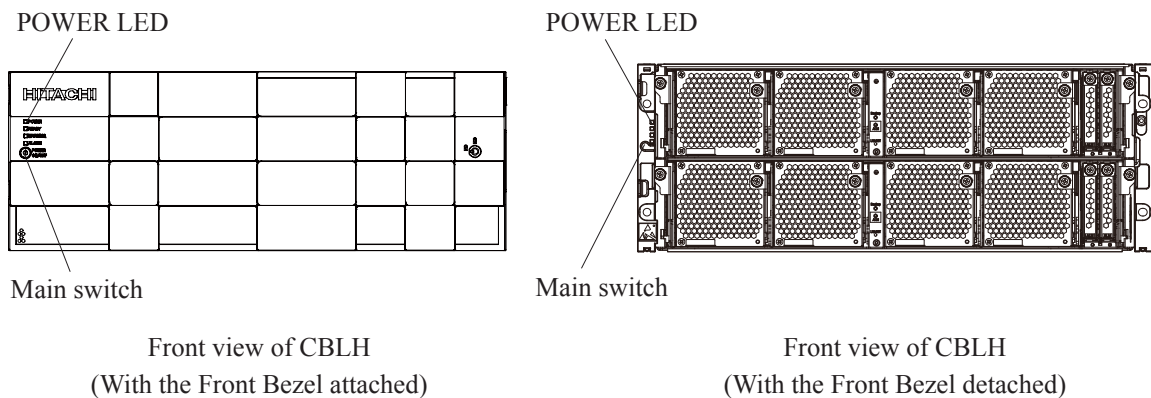
WARNING

Hazardous voltage:

Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

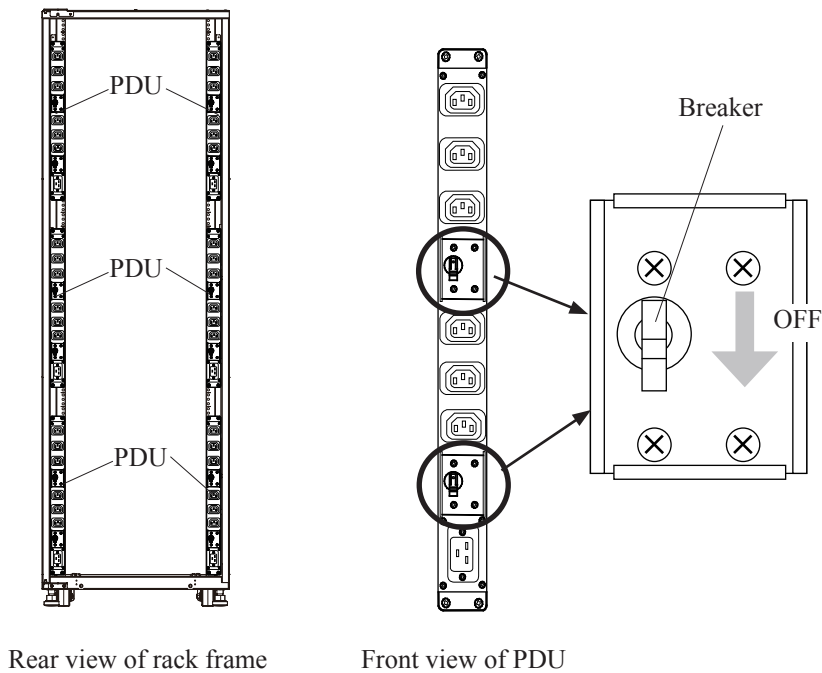
- (1) Press the Main Switch on the front of the CBLH for three second to turn off.
- (2) Confirm that the POWER LED on the front side of the CBLH lights in amber.

Figure 2-176 Main Switch and POWER LED on the front of CBLH



- (3) Turn off the breaker at the PDU on the rack frame.

Figure 2-177 Turning-off Breakers



- (4) Turn off the breaker on the power distribution panel in the plant that is connected to the PDU.

NOTE : The circuit has residual voltage after turning off the breakers, so wait for one minute.

2. Remove the Front Bezel.

- (1) Remove the Front Bezel from the CBLH. (Refer to [“2.2.1 How to Attach/Remove Front Bezel”](#).)

3. Attach a label.

- (1) 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 spare Controller Chassis.

4. Remove the BKMF.
 - (1) Loosen the screw (blue) fixing the BKMF.
 - (2) Open the lever and pull out the BKMF to remove.
 - (3) Remove the other BKMFs in the same manner.

NOTICE: When removing the Controller Board, hold it with both hands and remove it straight not to apply a shock to with any components.

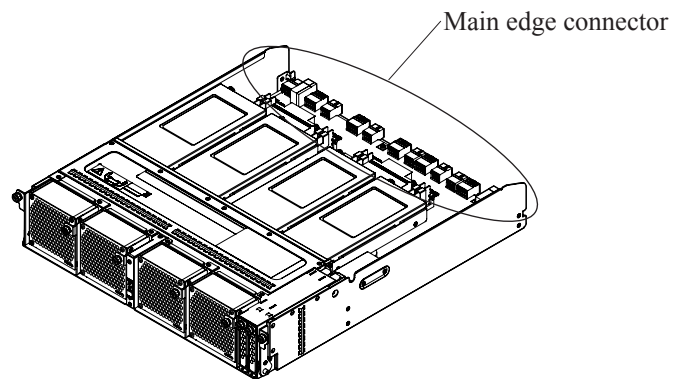
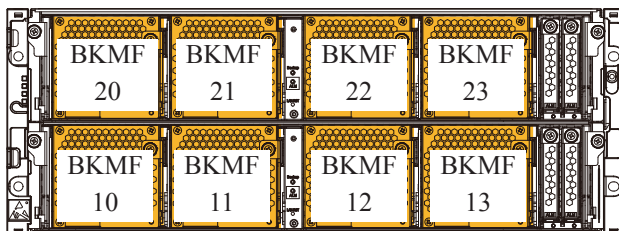
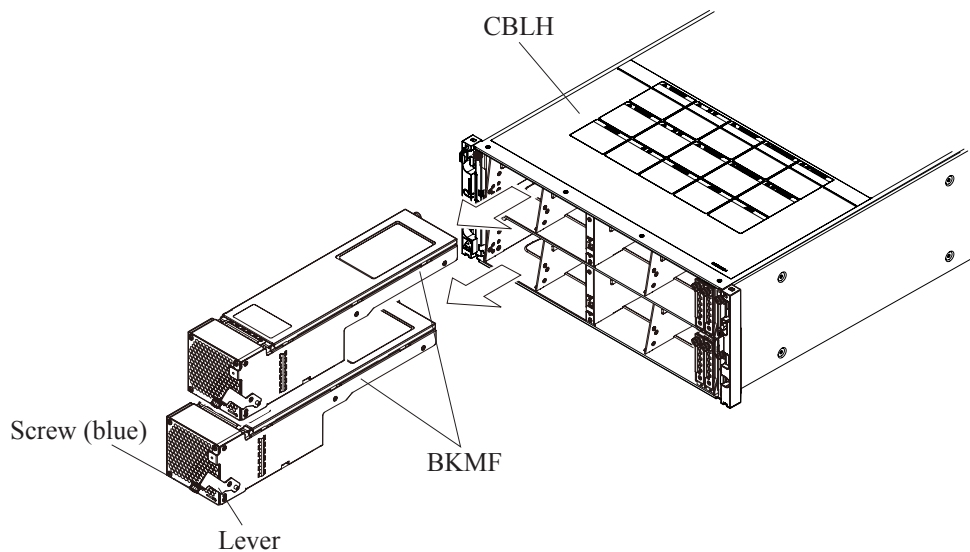


Figure 2-178 Removal of BKMF



Front view of CBLH

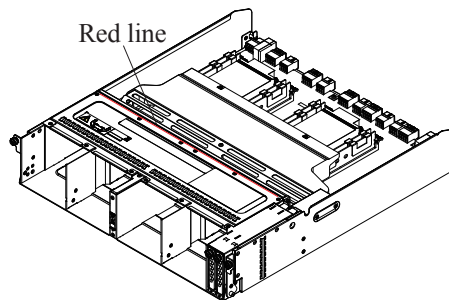


5. Remove a Controller Board.

- (1) Loosen the right and left screws (blue) on the lever of the Controller Board in the front of the CBLH and open the lever.
- (2) With the lever opened completely, pull out and remove the Controller Board.
- (3) Remove the other Controller Board in the same manner.

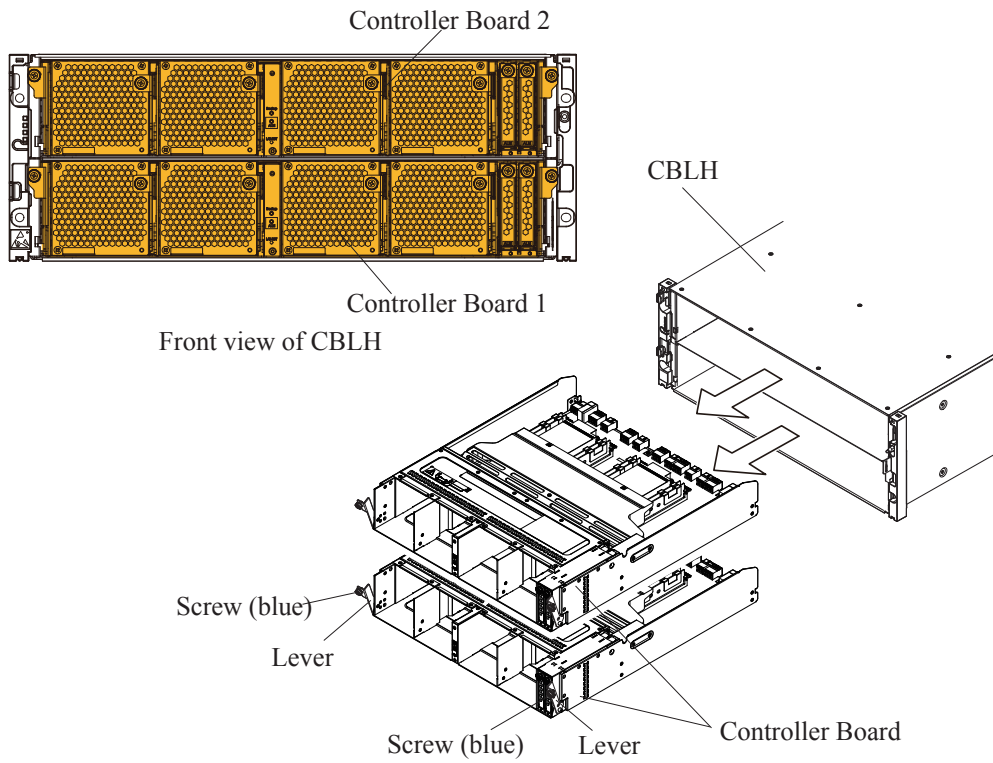
 **CAUTION**

Dropping the Controller Board may cause injury. Keep hands securely on array. Be aware of the red line marked on the Controller Board top - when sliding the Controller Board out of the rail terminal past this mark, keep a firm hold on the Controller Board.



NOTICE: When removing the Controller Board, hold it with both hands and remove it straight not to apply a shock to with any components.

Figure 2-179 Removal of Controller Board



6. Remove the Channel Board/Dummy.

Remove all the Channel Boards and dummies installed in the CBLH.

- (1) Remove all the cables connected to the Channel Board.
- (2) Loosen the two screws (blue) which fix the Channel Board/dummy.
- (3) Pull out and remove the Channel Board/dummy while holding the screws (blue).
- (4) Remove the other Channel Boards/dummies in the same manner.

NOTICE: When removing the Channel Board, hold it with both hands and remove it straight not to apply a shock to with any components.

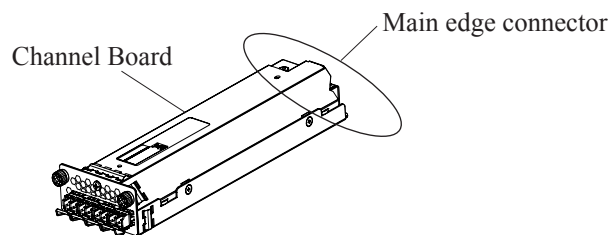
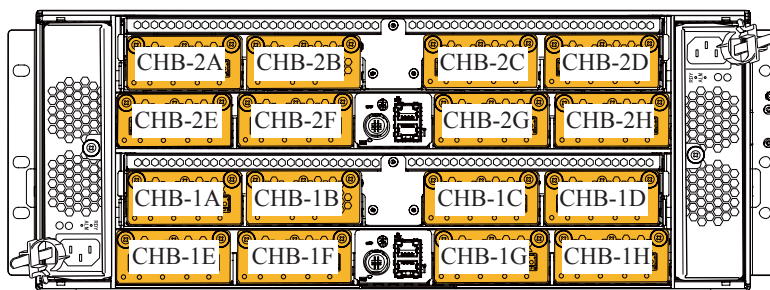
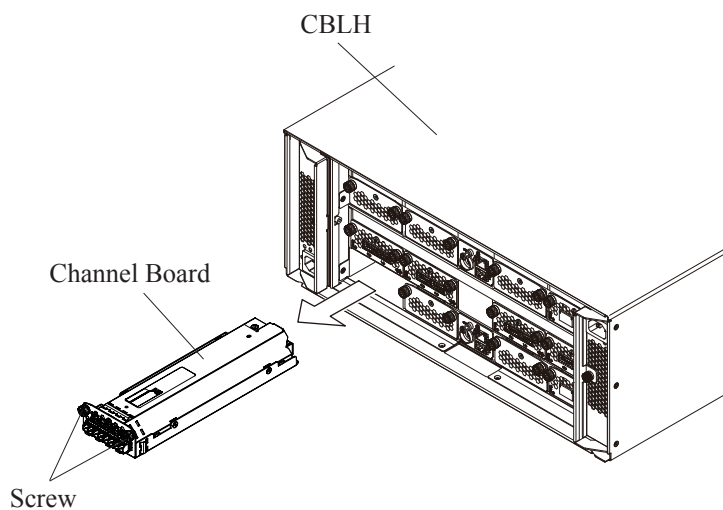


Figure 2-180 Removal of Channel Board/Dummy



Rear view of CBLH



7. Remove the Disk Board/Dummy.

Remove all the Disk Boards and dummies installed in the CBLH.

- (1) Remove all the SAS cables connected to the Disk Board.
- (2) Loosen the two screws (blue) which fix the Disk Board/dummy.
- (3) Pull out and remove the Disk Board/dummy while holding the screws (blue).
- (4) Remove the other Disk Boards/dummies in the same manner.

NOTICE: When removing the Disk Board, hold it with both hands and remove it straight not to apply a shock to with any components.

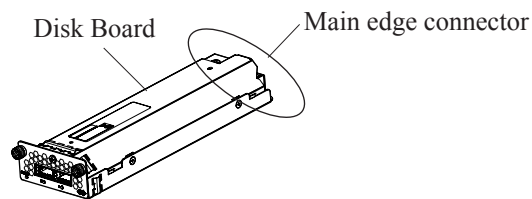
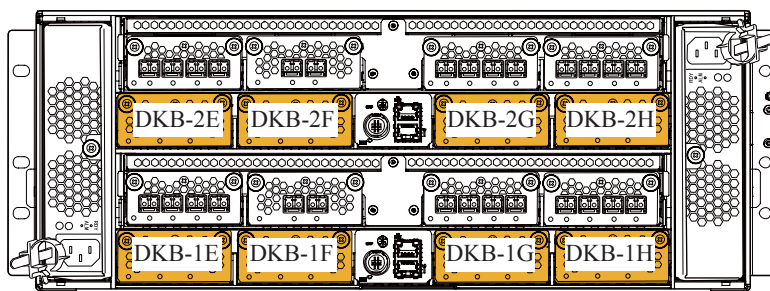
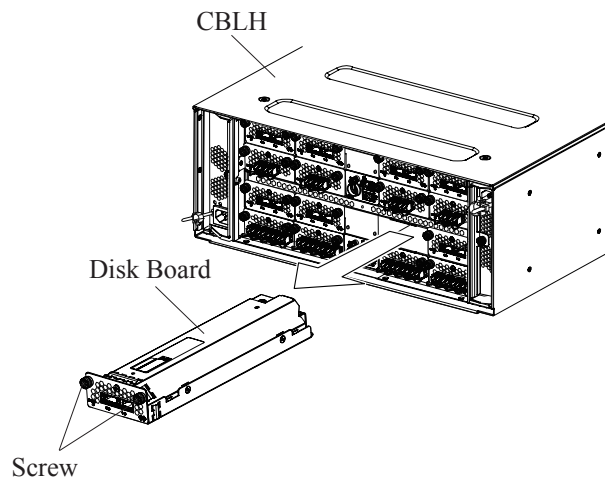


Figure 2-181 Removal of Disk Board/Dummy

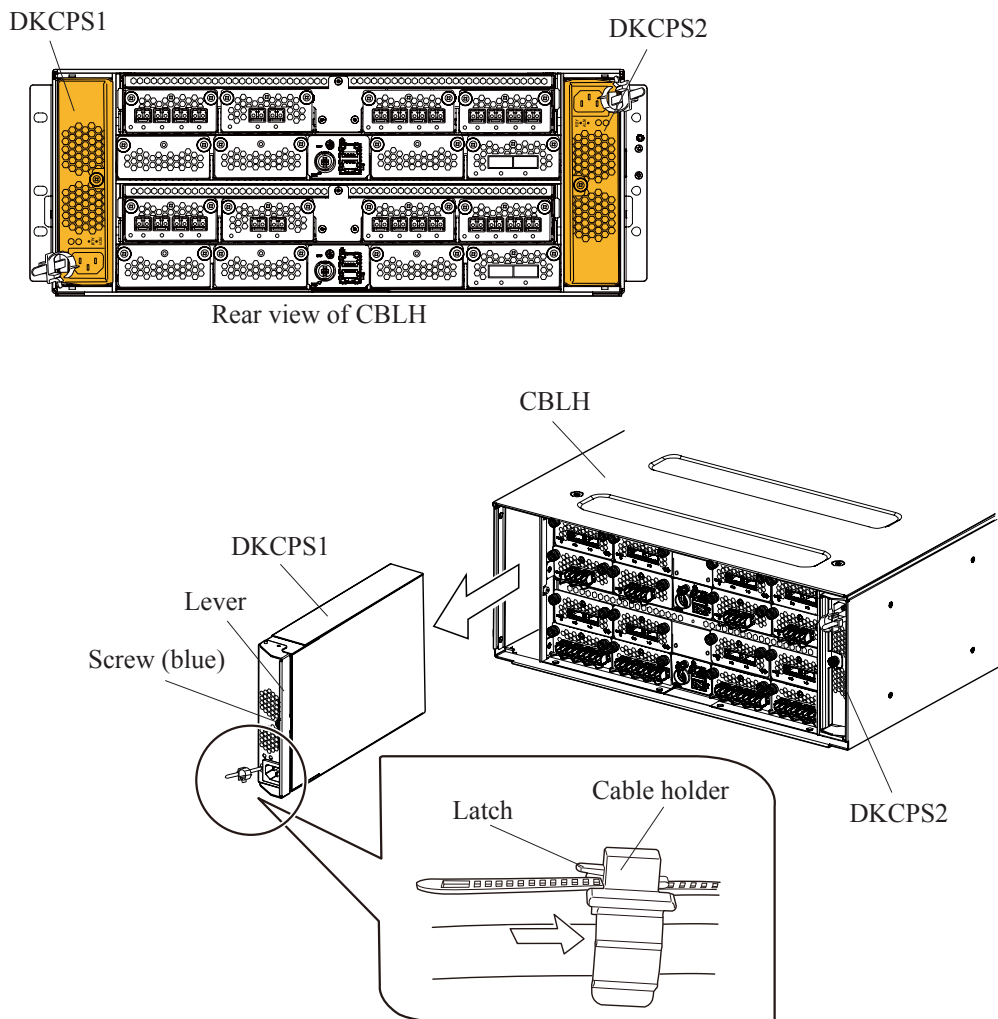


Rear view of CBLH



8. Remove the DKCPS.
 - (1) Remove all the power cables connected to the DKCPS.
 - (2) Loosen the screw (blue) which fixed the DKCPS.
 - (3) Open the lever and pull out and remove the DKCPS while holding its body with both hands.
 - (4) Remove the other DKCPS in the same manner.

Figure 2-182 Removal of DKCPS



9. Replace the Controller Chassis

- (1) Remove the right and left screws (two each) fixing the CBLH.

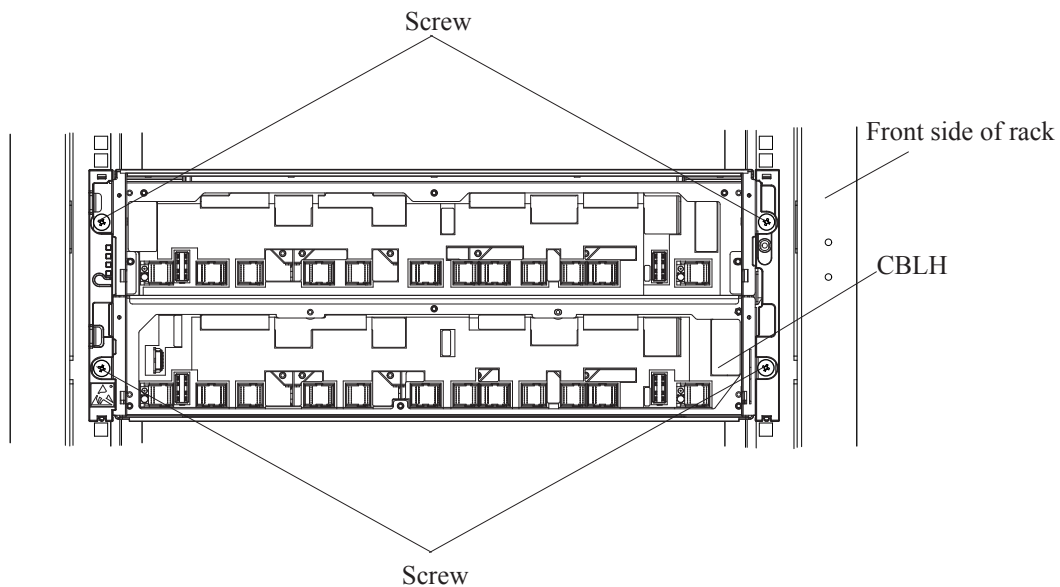
CAUTION

Be careful of the mass:

Work carefully because the mass of the Controller Chassis is about 29 kg.

- (2) Remove the Controller Chassis from the rack frame referring to mounting procedure using the special lifter. (Refer to “[2.2.3 Mounting Lifter on Rack Frame](#)”.)
- (3) Install a new Controller Chassis from the front of the rack.
- (4) Fix the right and left of the CBLH with screws (two each).

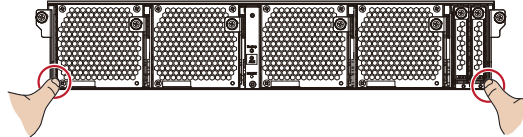
Figure 2-183 Removal of Controller Chassis



10. Install the Controller Board.

- (1) With the right and left levers on the Controller Board opened completely, insert it into the slot of the CBLH. (Refer to [Figure 2-179](#).)
- (2) Push the Controller Board in all the way and close the lever completely.

NOTICE: Push the bottom of the front side of the Controller Board all the way to insert it to the end.



- (3) Tighten the screw (blue) and fix the Controller Board.
- (4) Install the other Controller Board in the same manner.

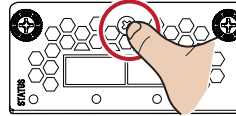
11. Install the BKMF.

- (1) Open the BKMF lever and insert the BKMF into the slot of the Controller Board (refer to [Figure 2-178](#)).
- (2) Push the BKMF in all the way, and close the lever completely.
- (3) Tighten the screw (blue) and fix the BKMF.
- (4) Install the other BKMF in the same manner.

12. Install the Disk Board/dummy.

- (1) Insert the Disk Board/dummy into the slot. (Refer to [Figure 2-181.](#))
- (2) Push the Disk Board/dummy in all the way.

NOTICE: Push the front side of the Disk Board all the way to insert it to the end.

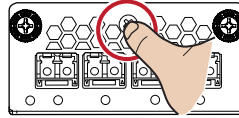


- (3) Tighten the two screws (blue) to fix the Disk Board/dummy.
- (4) Check “[1.1.5 Note on Cable Routing](#)”, and then connect the SAS cables to the Disk Board. When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION “[2.10.2.1 Precautions when Connecting SAS Cables](#)”).
- (5) Install the other Disk Boards in the same manner.

13. Install the Channel Board/dummy.

- (1) Insert the Channel Board/dummy into the slot. (Refer to [Figure 2-180.](#))
- (2) Push the Channel Board/dummy in all the way.

NOTICE: Push the front side of the Channel Board all the way to insert it to the end.



- (3) Tighten the two screws (blue) to fix the Channel Board/dummy.
- (4) Clean the cable connectors.
 - (a) Spray compressed gas to the cable connector part using an air spray (approx. five seconds).
 - (b) Wipe the connector part lightly with cut gauze soaked in ethyl alcohol.
 - (c) Spray compressed gas again and check the cleanliness. (Be sure that no dust, foreign substance or dirt is attached.)

- (5) Connect the cables to the Channel Board.

NOTE: Check that cable latch clicks and the cables are surely connected.

- (6) Install the other Channel Boards in the same manner.

14. Install the DKCPS.

- (1) Hold up the latch on the cable holder of the DKCPS to release the lock, and then slide the cable holder forward. (Refer to [Figure 2-182.](#))
- (2) With the lever completely opened, insert the DKCPS in to the slot.
- (3) Push the DKCPS in all the way.
- (4) Close the lever completely.
- (5) Tighten the screw (blue) to fix the DKCPS.
- (6) Connect the power cable to the DKCPS, and then fix the cable by the cable holder.
- (7) Install the other DKCPS in the same manner.

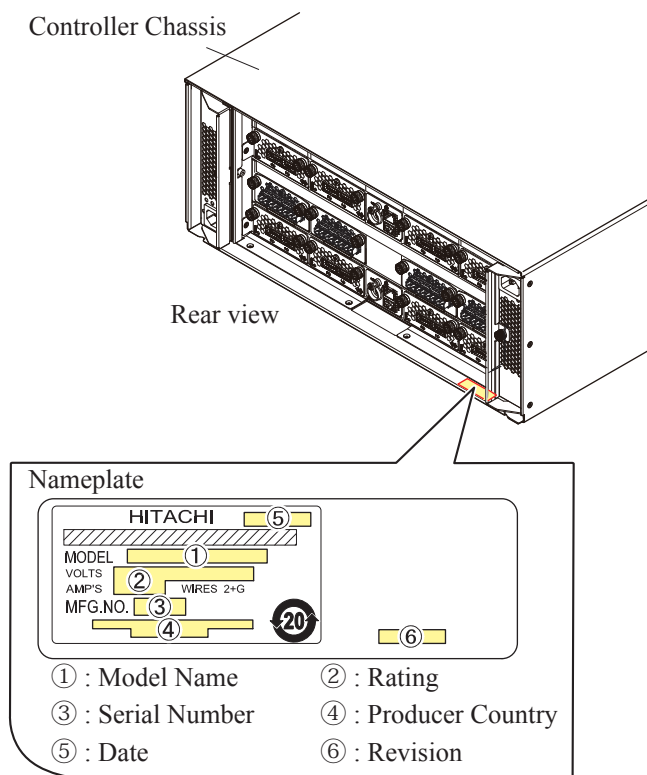
15. Attach the nameplate.

Take out the nameplate in which the same model name as the removed Controller Chassis is described from the nameplates attached to the spare Controller Chassis. Write down the same serial number as the removed Controller Chassis in the nameplate, and then affix the nameplate to the spare Controller Chassis.

When the nameplate in which the same model name as the removed Controller Chassis is described is not attached, take out the nameplate in which the same rating and producer country as the removed Controller Chassis are described and which the model name is not described. Write down the same model name and serial number as the removed Controller Chassis in the nameplate, and then affix it to the spare Controller Chassis.

To fill in the nameplate, use the RoHS-compliant marker pen.

Figure 2-184 Attachment of Nameplate



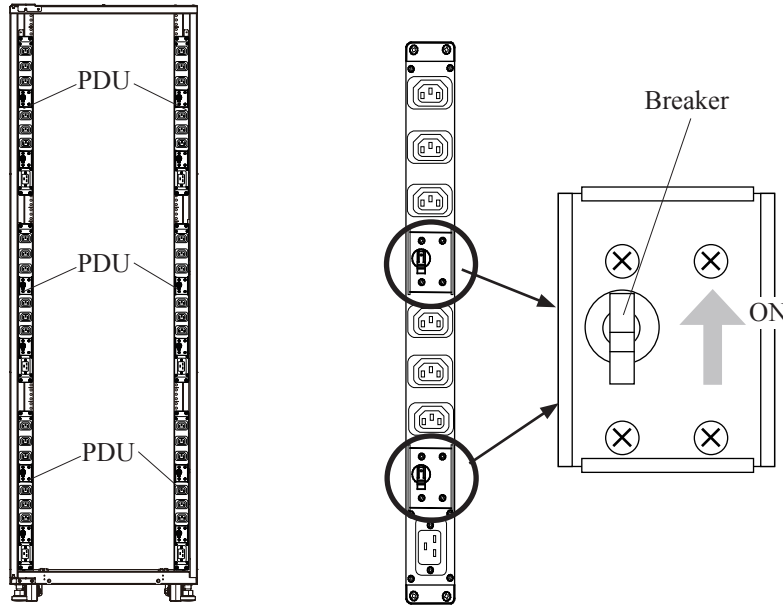
16. Attach the Front Bezel.

Attach the Front Bezel to the CBLH. (Refer to [“2.2.1 How to Attach/Remove Front Bezel”](#).)

17. Power On the component

- (1) Turn on the breaker on the power distribution panel.
- (2) Turn on the breaker at the PDU on the rack frame.

Figure 2-185 Turning on Breakers

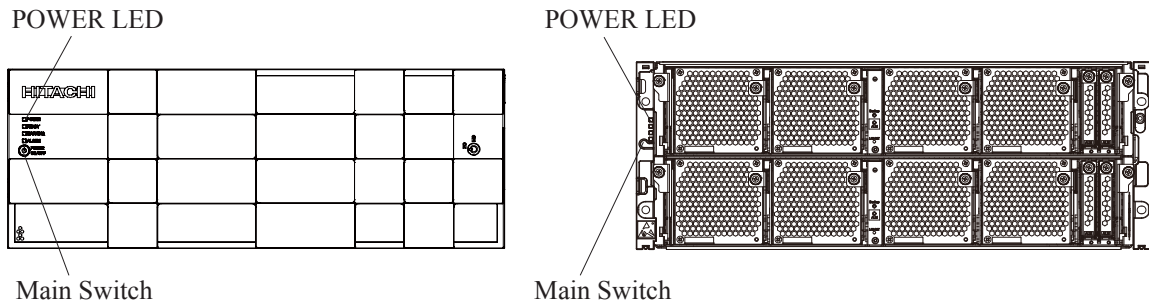


Rear view of rack frame

Front view of PDU

- (3) Press the Main Switch on the front of the CBLH for three second to turn on.

Figure 2-186 Main Switch on CBLH



Front view of CBLH
(With the Front Bezel attached)

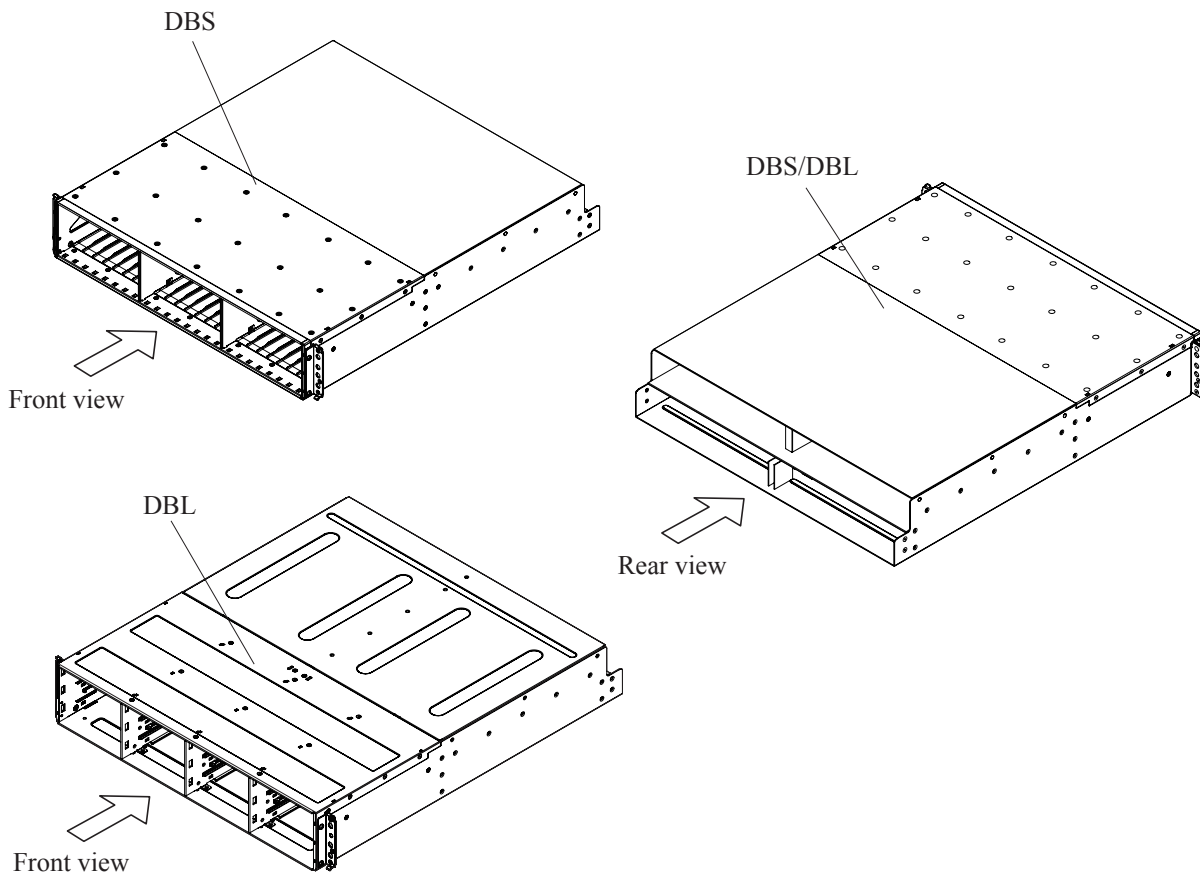
Front view of CBLH
(With the Front Bezel detached)

18. End

2.17.3 Replacing a DBS/DBL Drive Box

1. Hardware Replacement Processing


Location	Function Name of Component		Part Name
Rack	1	DBS DBL	• DW-F800-DBSC • DW-F800-DBLC



- 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 Storage System before starting and do not take it off until you finish. Refer to [“1.1.3 Note on Installing and Removing Parts”](#).
 - Replace the Drive Box while the Storage System is powered off. Do not replace the Drive Box while the Storage System is powered on.

2.17.3.1 Replacement of Drive Box

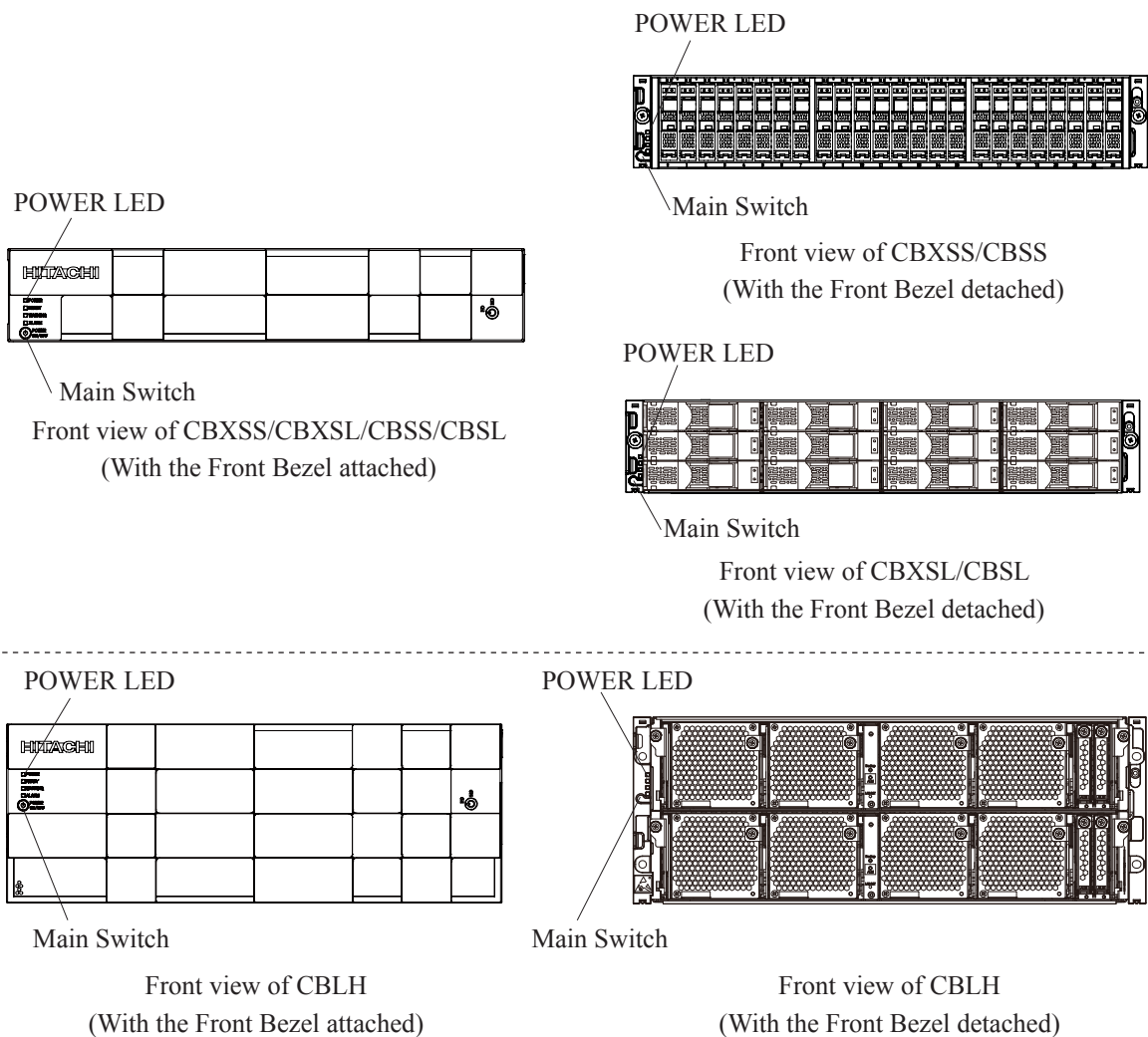
1. Power off the rack.

 **WARNING**

Hazardous voltage:
 Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

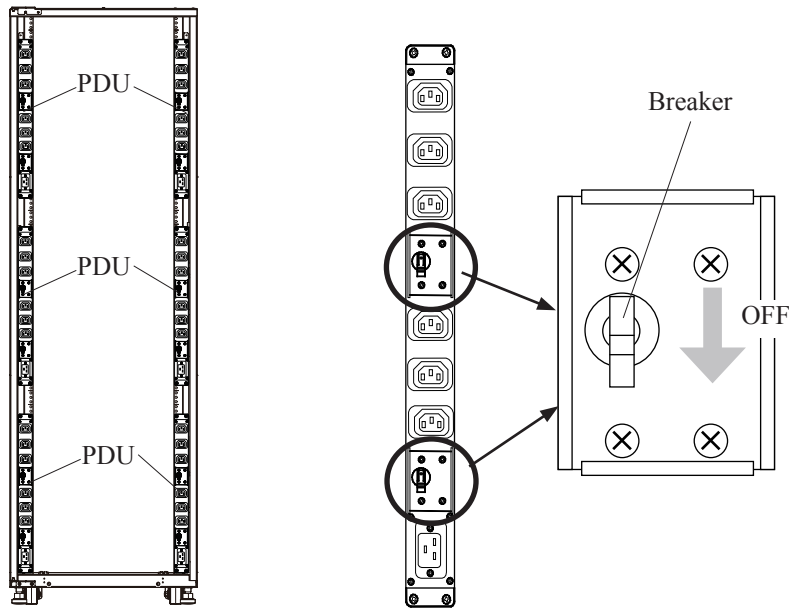
- (1) Press the Main Switch on the front of the CBXSS/CBXSL/CBSS/CBSL/CBLH for three second to turn off.
- (2) Confirm that the POWER LED on the front side of the CBXSS/CBXSL/CBSS/CBSL/CBLH lights in amber.

Figure 2-187 Main Switch and POWER LED on the Front of CBXSS/CBXSL/CBSS/CBSL/CBLH



- (3) Turn off the breaker at the PDU on the rack frame.

Figure 2-188 Turning-off Breakers



Rear view of rack frame

Front view of PDU

- (4) Turn off the breaker on the power distribution panel in the plant that is connected to the PDU.

NOTE: The circuit has residual voltage after turning off the breakers, so wait for one minute.

2. Remove the Front Bezel.

Remove the Front Bezel from the Drive Box. (Refer to “2.2.1 How to Attach/Remove Front Bezel”.)

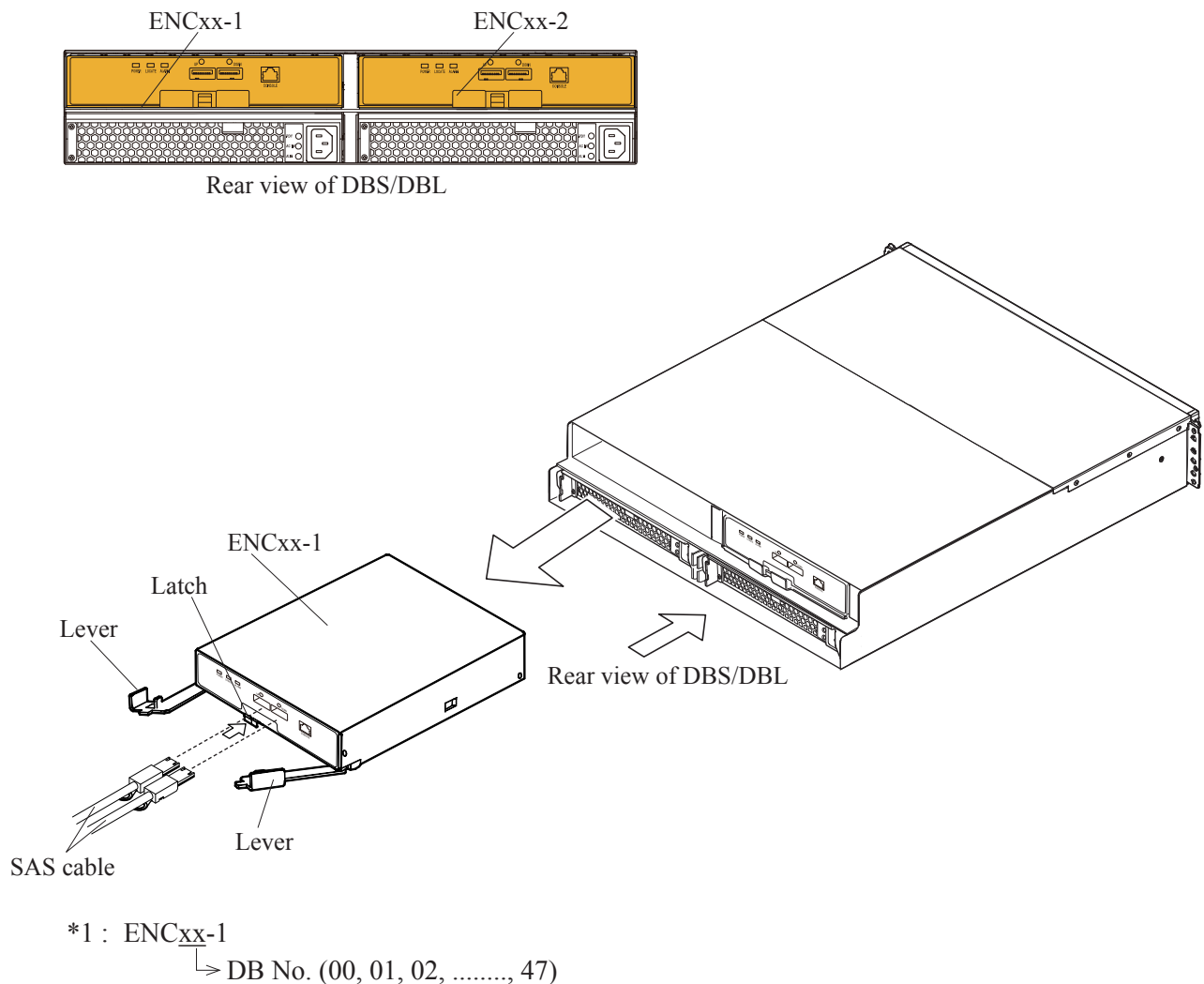
3. Attach a label.

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 spare Drive Box.

4. Remove the ENC.

- (1) Disconnect the SAS cable which connects to the ENC.
- (2) Push the latch on the ENC toward the arrow direction to unlock the lever.
- (3) Pull the right and left levers and remove the ENC.
- (4) Remove the other ENC in the same manner.

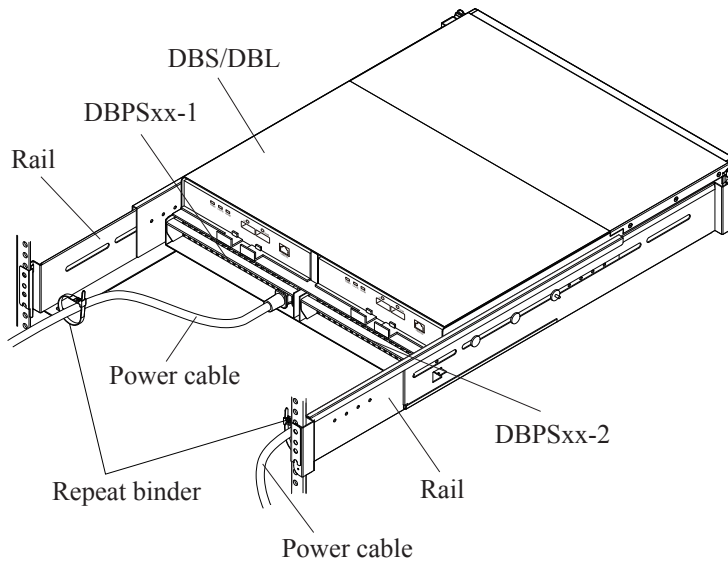
Figure 2-189 Removal of ENC (DBS/DBL)



5. Remove a DBPS.

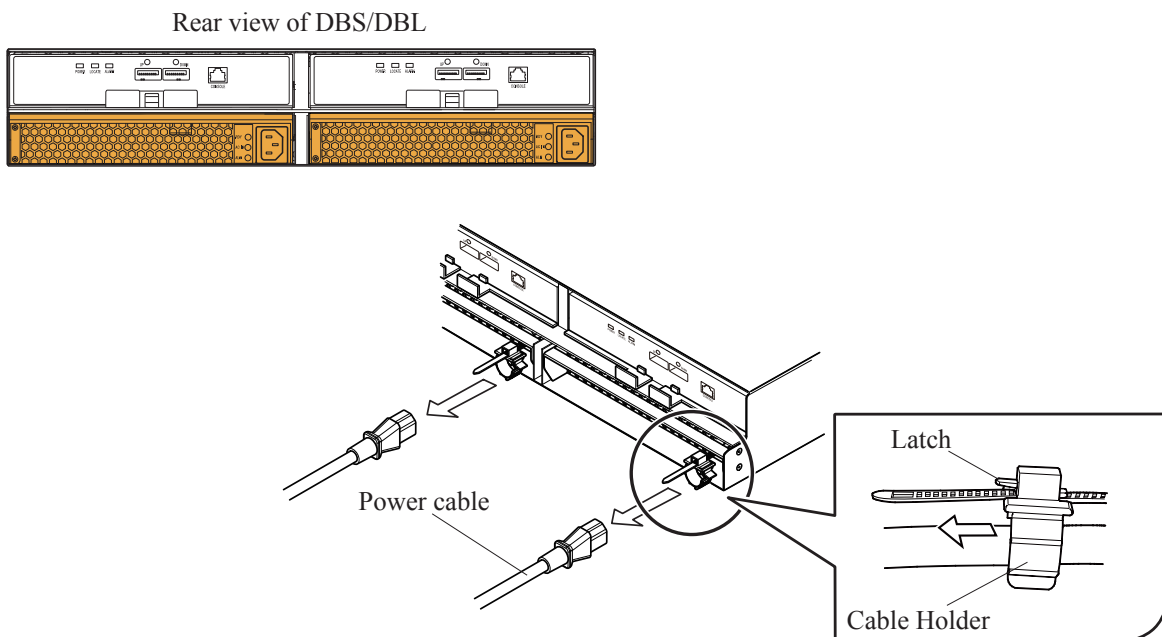
- (1) Remove the two repeat binders from the rail of the rear side of the Drive Box.

Figure 2-190 Removal of Repeat Binders



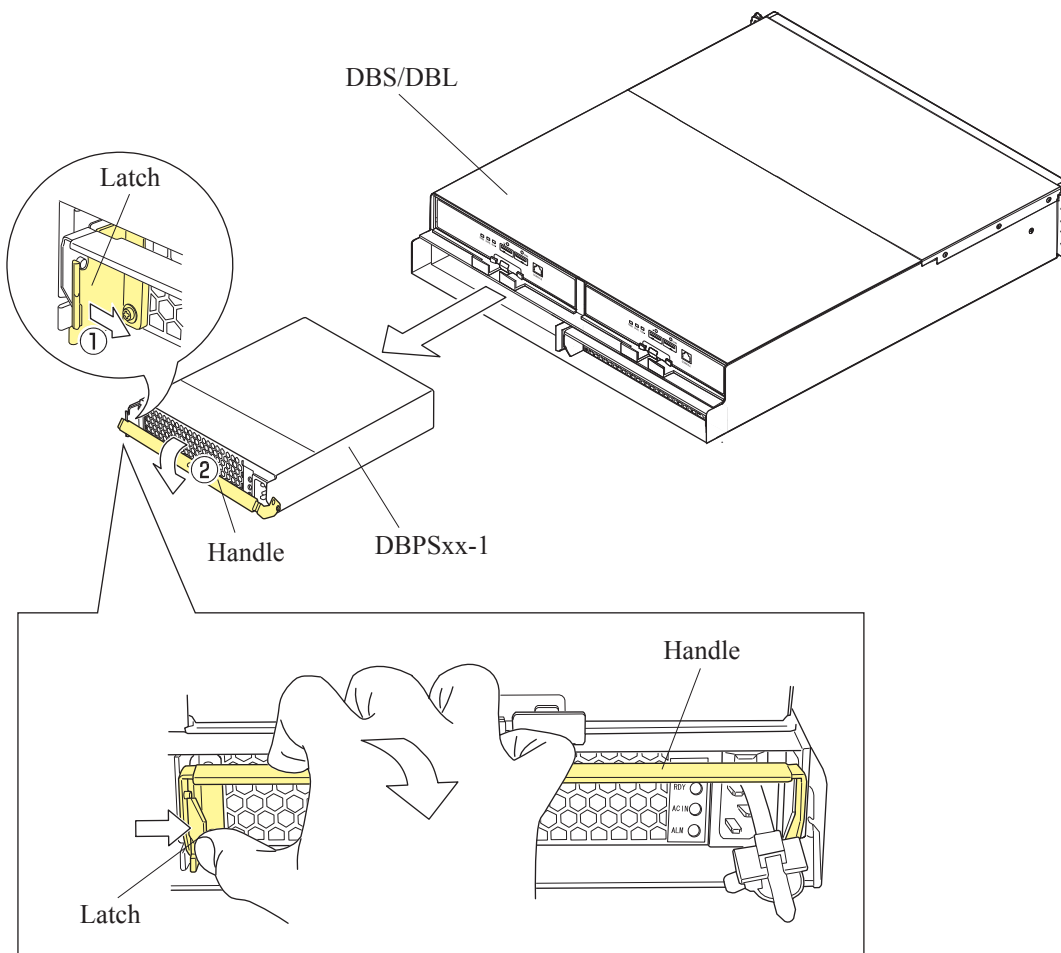
- (2) Remove the power cables.
 - (a) Pull and open the cable holder.
 - (b) Disconnect the power cable from the DBPS.

Figure 2-191 Removing Power Cables



- (3) Disconnect the power cable from the other DBPS in the same manner.
- (4) Bring the handle down and forward (②) while pushing the latch of the DBPS inward (①).
- (5) Pull the DBPS and remove it from the DBS/DBL.
- (6) Remove the other DBPS in the same manner.

Figure 2-192 Removal of DBPS

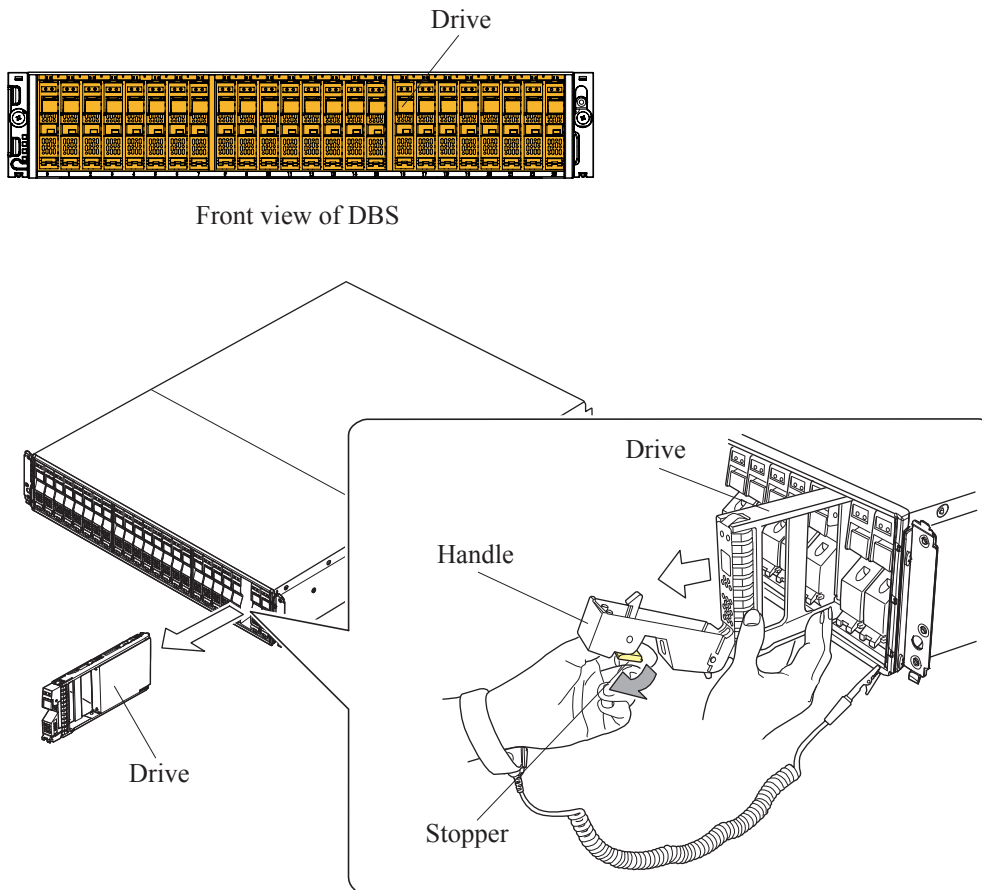


6. Remove the Drive.

(1) In case of DBS Drives

- (a) Pull up the stopper of the Drive handle toward you to release the lock.
- (b) Open the handle toward you, and pull out and remove the Drive to be replaced not to give a shock.
- (c) Remove the other Drives in the same manner.

Figure 2-193 Removal of Drive (DBS)

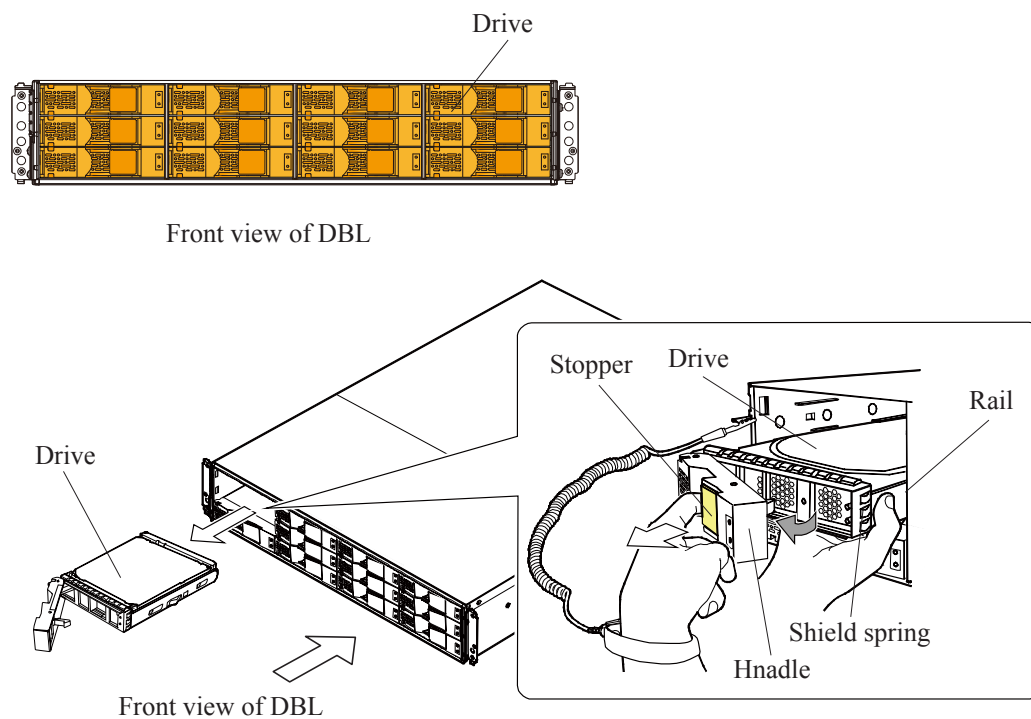


- (2) In case of DBL Drives
 - (a) Pull up the stopper of the Drive handle toward you to release the lock.
 - (b) Open the handle toward you, and pull out and remove the Drive to be replaced not to give a shock.

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

- (c) Remove the other Drives in the same manner.

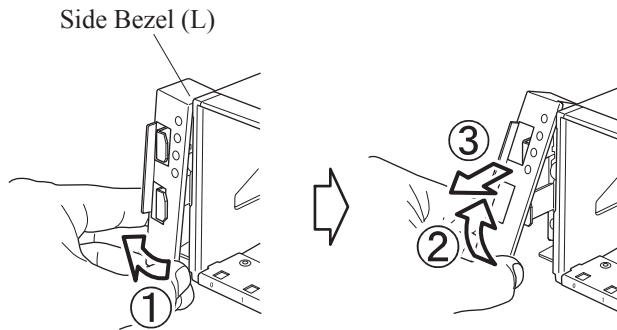
Figure 2-194 Removal of Drive (DBL)



7. Replace the Drive Box

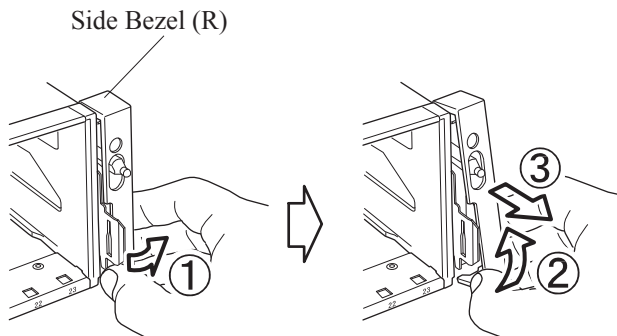
- (1) Hold the bottom of the left side bezel (L) on the front side of the Drive Box while opening outward (①) and then tilt and remove (②, ③) the bottom of the left side bezel (L) by pulling it toward you.

Figure 2-195 Removal of Side Bezel (L)



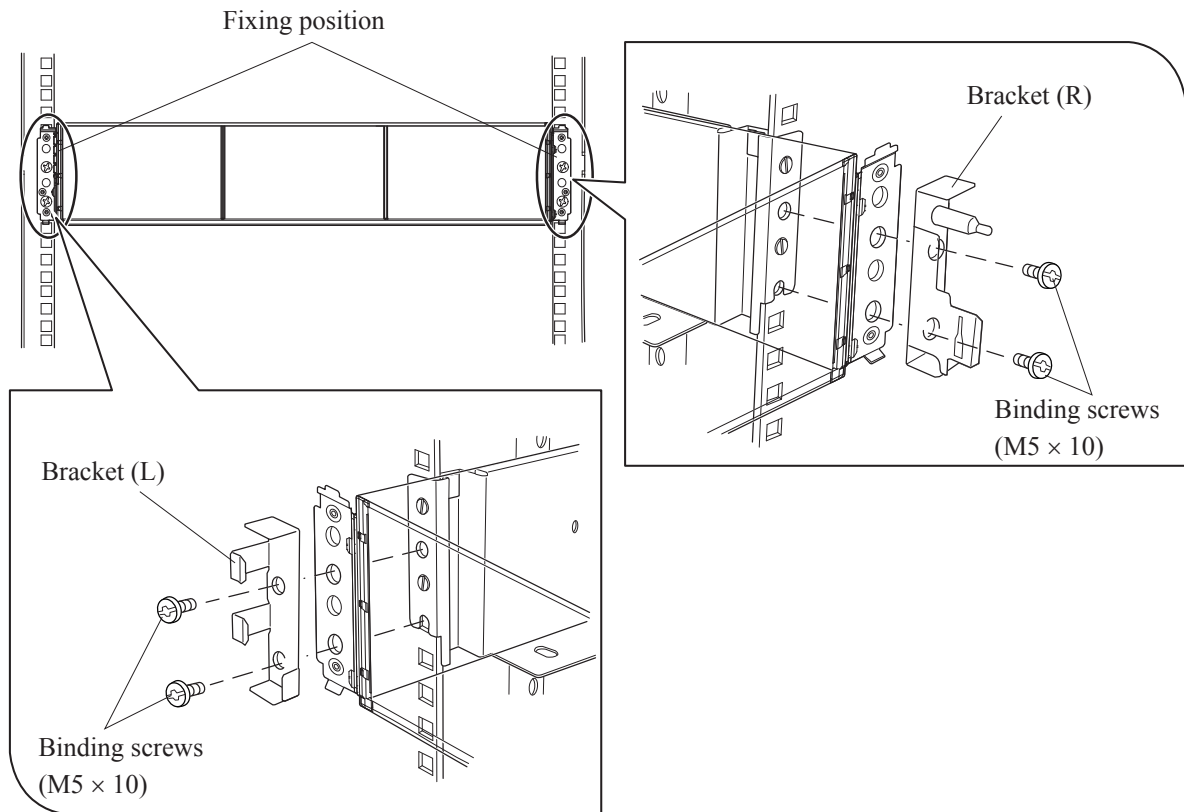
- (2) Hold the bottom of the right side bezel (R) on the front side of the drive box while opening outward (①) and then tilt and remove (②, ③) the bottom of the right side bezel (R) by pulling it toward you.

Figure 2-196 Removal of Side Bezel (R)



- (3) Remove the four Binding screws (M5 × 10) and two brackets from the Drive Box.

Figure 2-197 Removal of Brackets



 CAUTION

Be careful of the mass:

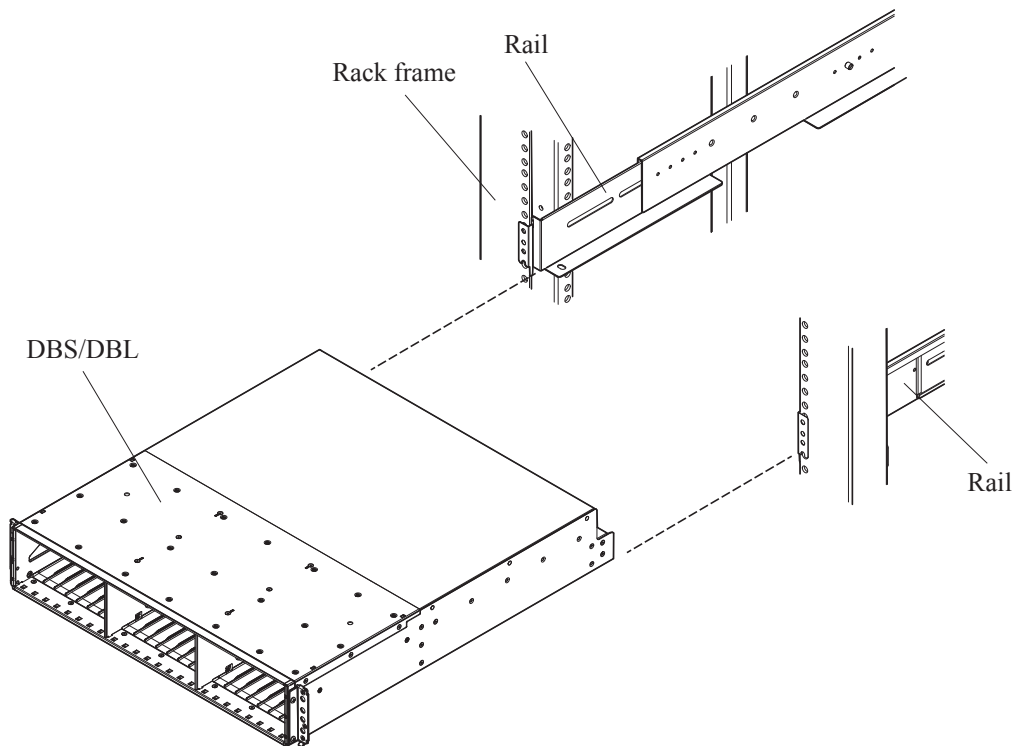
Work carefully because the mass of the Drive Box is about 13 kg.

Be careful of falling over and dropping:

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

- (4) Remove the Drive Box from the rack frame referring to mounting procedure using the special lifter. (Refer to “[2.2.3 Mounting Lifter on Rack Frame](#)”.)
- (5) Install the Drive Box on the front side of the Rack frame.

Figure 2-198 Replacement of DBS/DBL



- (6) Install the Drive Box with the brackets. Fasten the DBS/DBL to the rack frame with the Binding screws (M5 × 10). (Refer to [Figure 2-197](#).)
- (7) Attach the two side bezels to the front side of the DBS/DBL. (Refer to [Figure 2-195](#) and [Figure 2-196](#).)

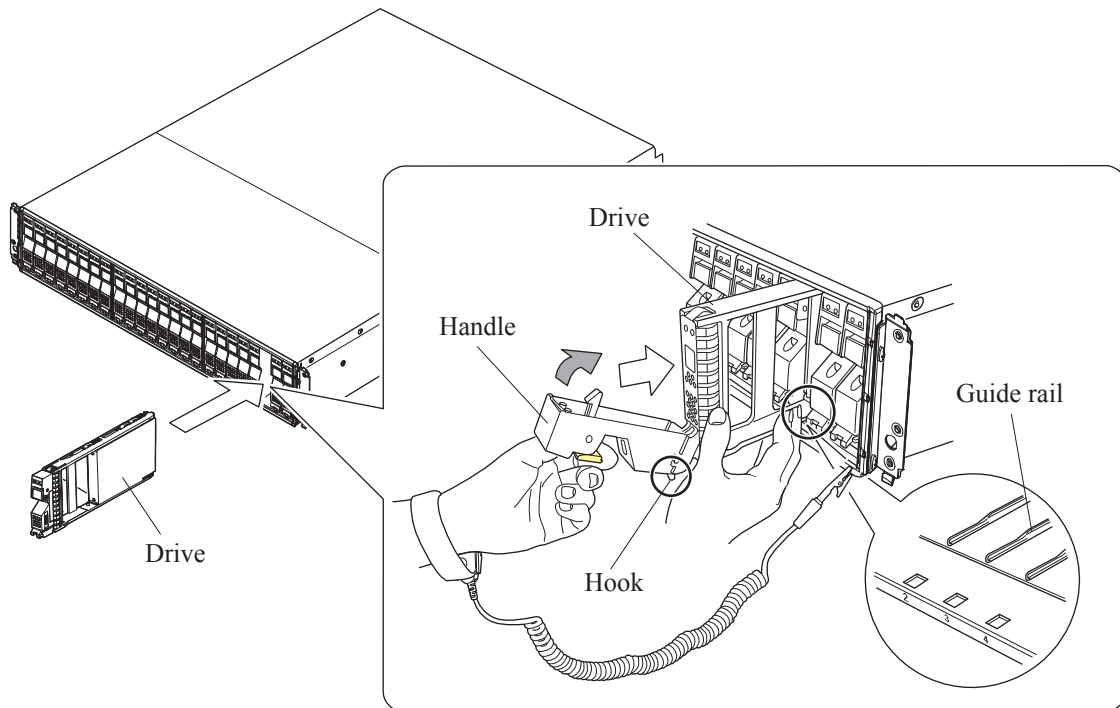
8. Install the Drive.

Install all the removed drives to the same place in the spare Drive Box according to the label attached to them.

(1) In case of DBS Drives

- (a) Fit the Drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- (b) 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.
- (c) 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 Storage System.
- (d) Install the other Drives in the same manner.

Figure 2-199 Installation of Drives (DBS)

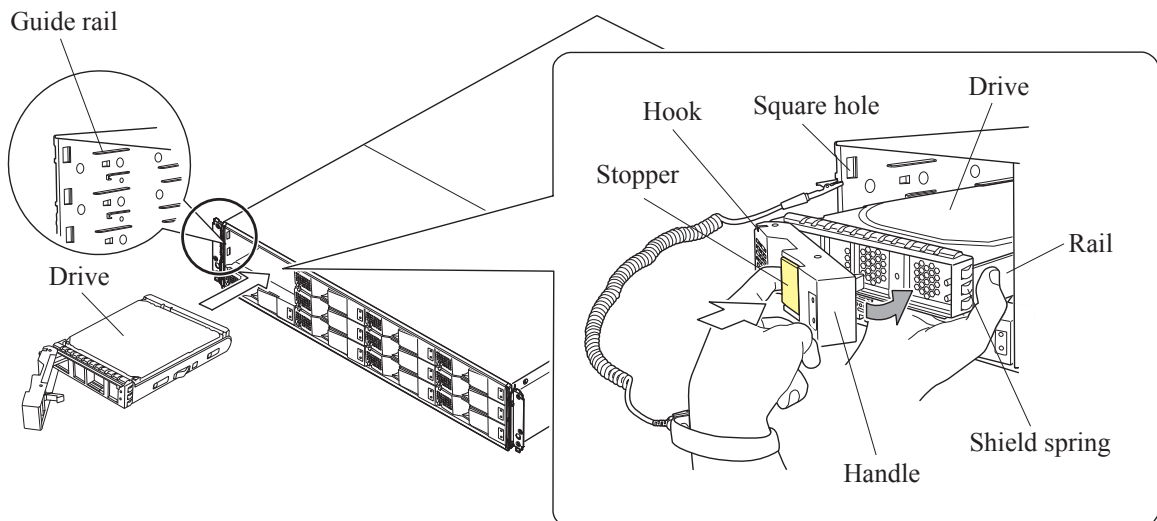


(2) In case of DBL

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

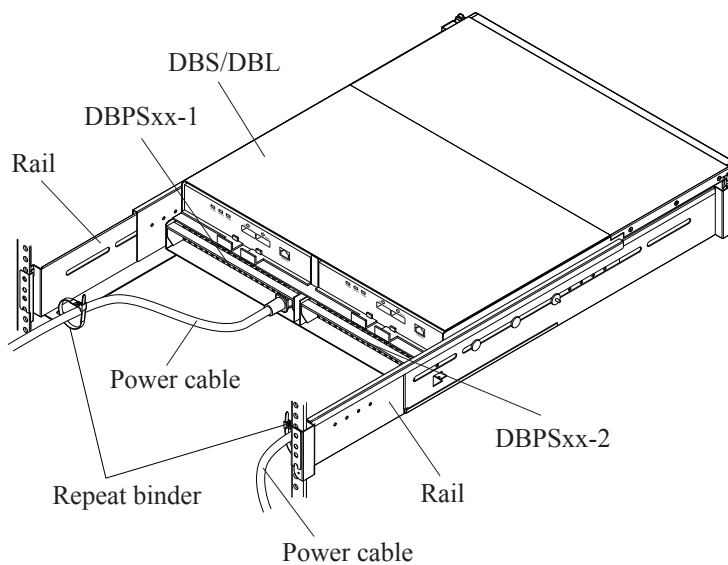
- (a) Open the handle fully and fit the Drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- (b) Push the Drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- (c) Pull the stopper lightly and close 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 Storage System.
- (d) Install the other Drives in the same manner.

Figure 2-200 Installation of Drive (DBL)



9. Install the DBPS.
 - (1) Make the handle of the DBPS completely fall down and forward. (Refer to [Figure 2-192.](#))
 - (2) Insert the DBPS into the slot and push it to the full.
 - (3) Completely raise the handle and fix the DBPS.
 - (4) Connect the power cable to the DBPS and fasten it with the cable holder.
 - (5) Install the other DBPS in the same manner.
 - (6) Attach the two repeat binders to the rail of the rear side of the Drive Box to fix the power cable.

Figure 2-201 Removal of Repeat Binders



10. Insert the ENC.

- (1) Make the right and left levers of the ENC open. (Refer to [Figure 2-189](#).)
- (2) Insert the ENC until the edge of the lever comes in contact with the Drive Box.
- (3) Close the right and left levers to insert the ENC completely.
- (4) Connect the cables to the ENC after checking "[1.1.5 Note on Cable Routing](#)".
When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION "[2.10.2.1 Precautions when Connecting SAS Cables](#)".)
- (5) Install the other ENC in the same manner.

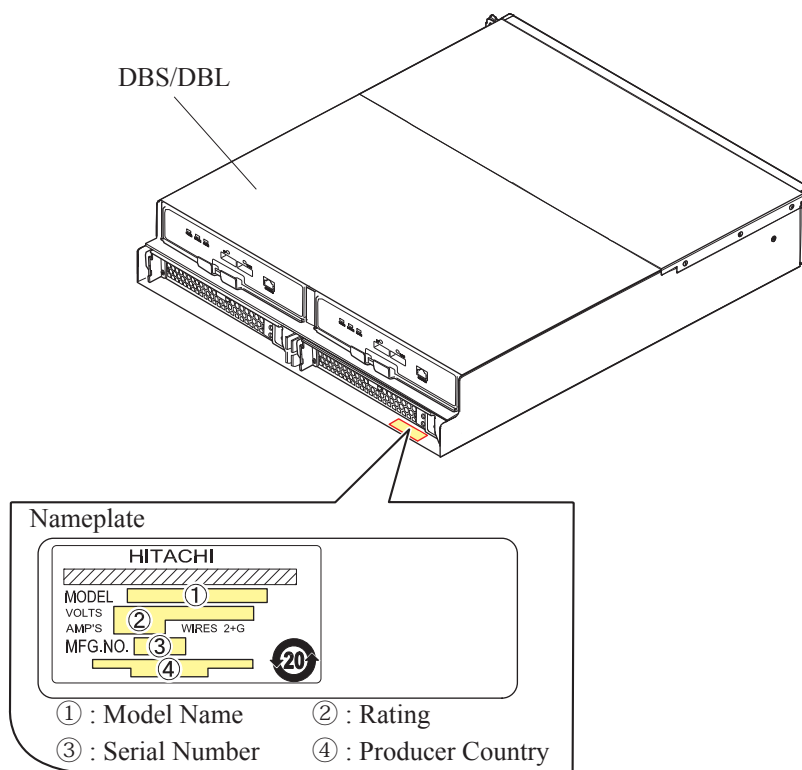
11. Attach the nameplate.

Take out the nameplate in which the same model name as the removed DBS/DBL is described from the nameplates attached to the spare DBS/DBL. Write down the same serial number as the removed DBS/DBL in the nameplate, and then affix the nameplate to the spare DBS/DBL.

When the nameplate in which the same model name as the removed DBS/DBL is described is not attached, take out the nameplate in which the same rating and producer country as the removed DBS/DBL are described and which the model name is not described. Write down the same model name and serial number as the removed DBS/DBL in the nameplate, and then affix it to the spare DBS/DBL.

To fill in the nameplate, use the RoHS-compliant marker pen.

Figure 2-202 Attachment of Nameplate



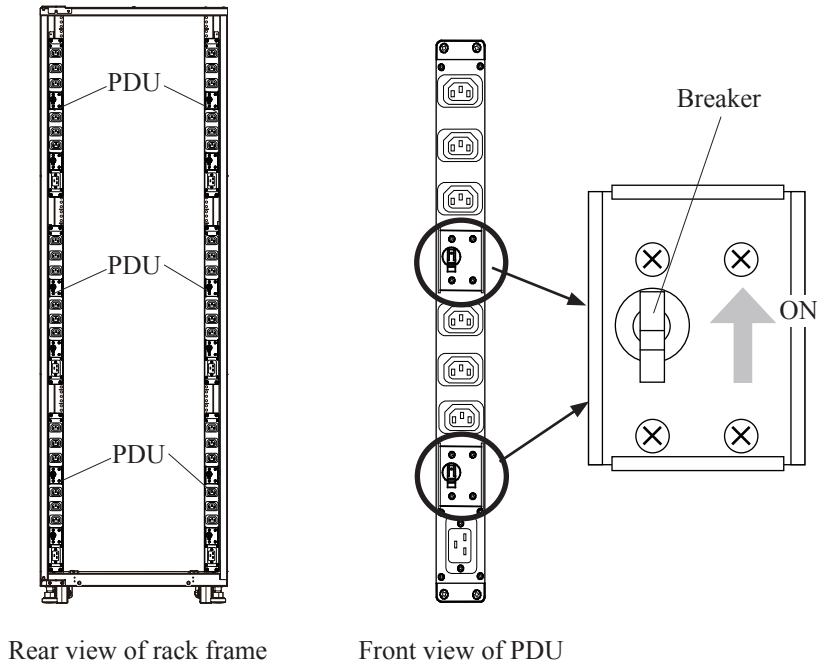
12. Attach the Front Bezel.

Attach the Front Bezel to the DBS/DBL. (Refer to [“2.2.1 How to Attach/Remove Front Bezel”](#).)

13. Power On the component

- (1) Turn on the breaker on the power distribution panel.
- (2) Turn on the breaker at the PDU on the rack frame.

Figure 2-203 Turning on Breakers

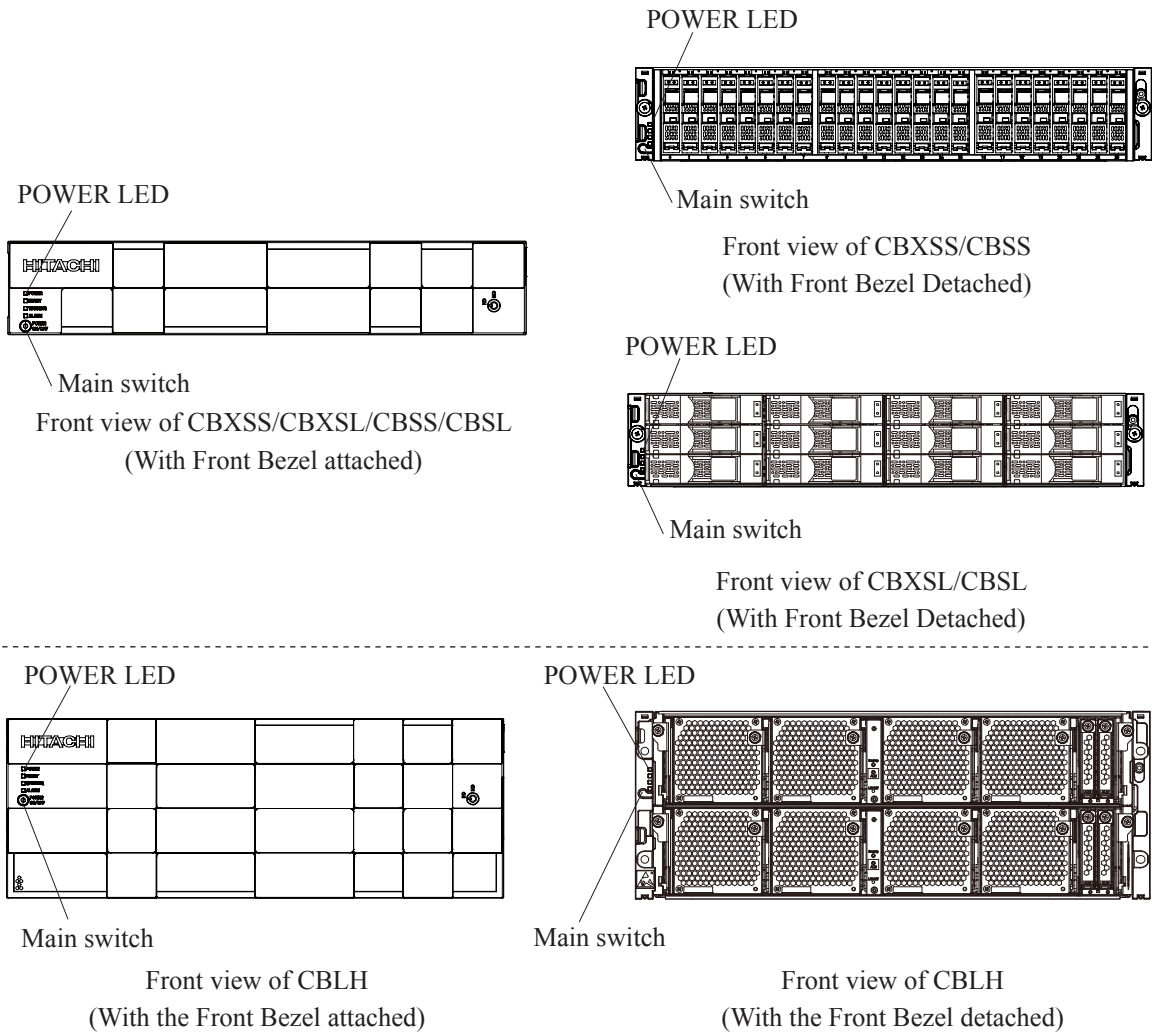


Rear view of rack frame

Front view of PDU

- (3) Press the Main Switch on the front of the CBXSS/CBXSL/CBSS/CBSL/CBLH for three second to turn on.

Figure 2-204 Main Switch on CBXSS/CBXSL/CBSS/CBSL/CBLH

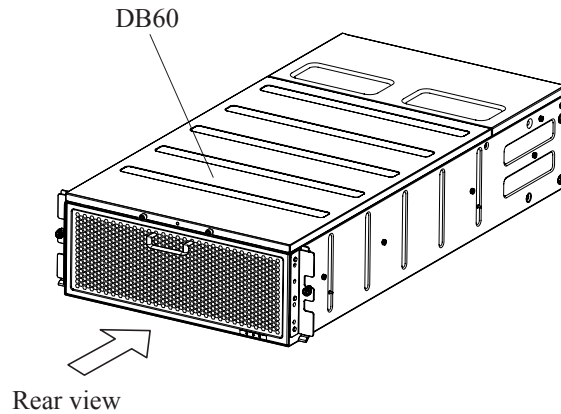


14. End

2.17.4 Replacing a DB60 Drive Box

1. Hardware Replacement Processing

Location	Function Name of Component	Part Name
Rack	1 DB60	• DW-F800-DB60C



- 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 Storage System before starting and do not take it off until you finish. See [“1.1.3 Note on Installing and Removing Parts”](#).
 - Replace the Drive Box while the Storage System is powered off. Do not replace the Drive Box while the Storage System is powered on.

2.17.4.1 Replacement of Drive Box

1. Power off the rack.

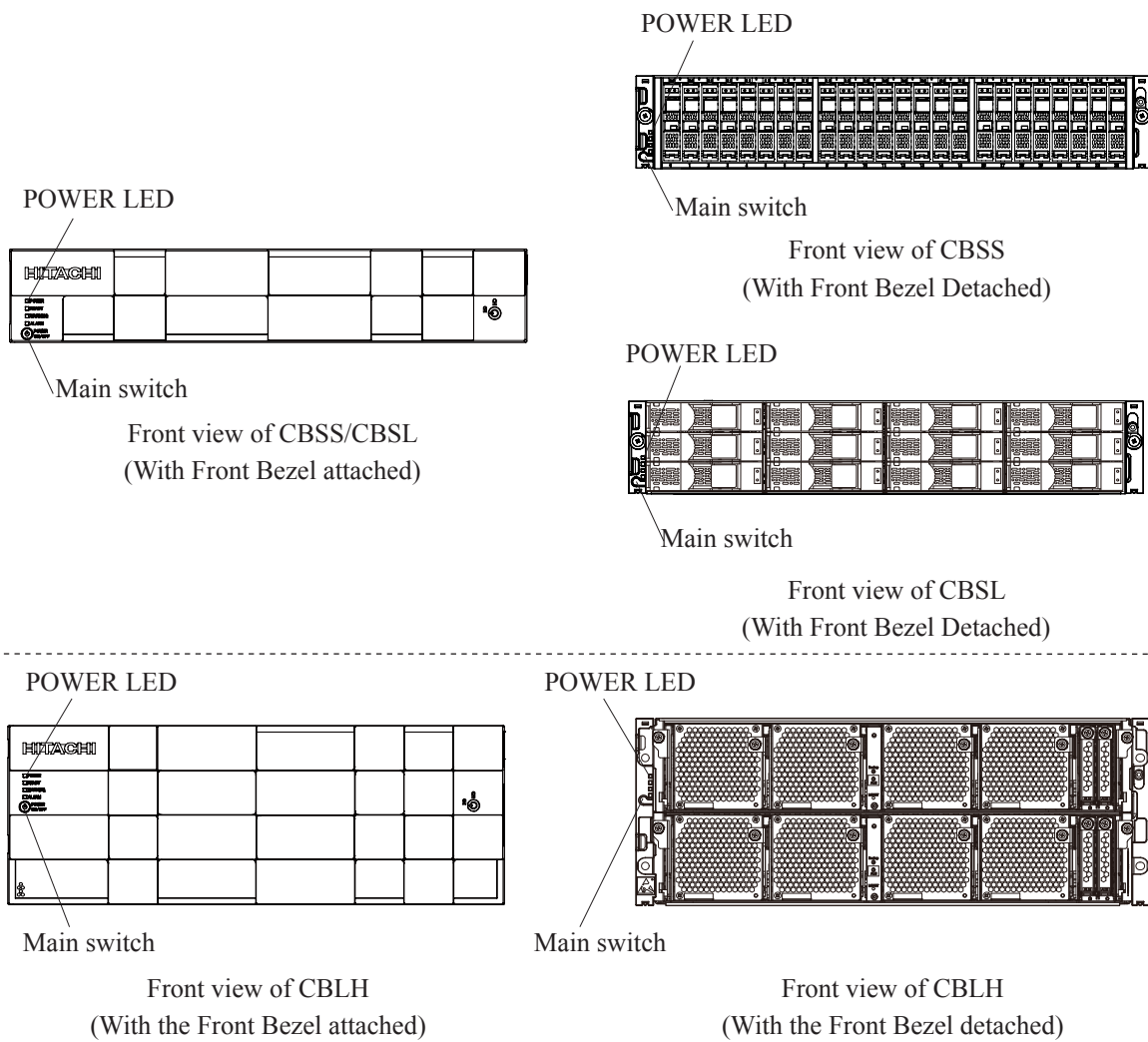
WARNING

Hazardous voltage:

Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

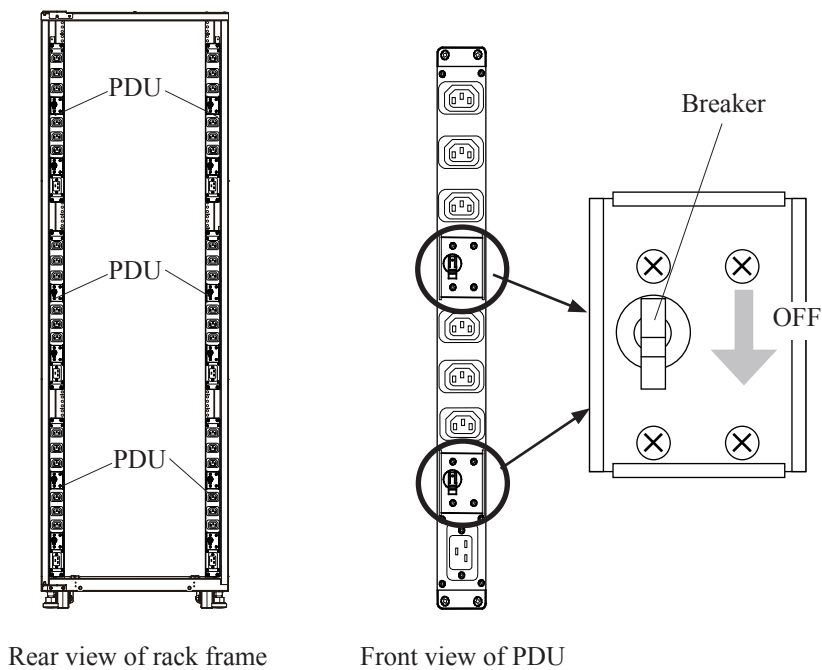
- (1) Press the Main Switch on the front of the CBSS/CBSL/CBLH for three seconds to turn off.
- (2) Confirm that the POWER LED on the front side of the CBSS/CBSL/CBLH lights in amber.

Figure 2-205 Main Switch and POWER LED on the Front of CBSS/CBSL/CBLH



- (3) Turn off the breaker at the PDU on the rack frame.

Figure 2-206 Turning-off Breakers

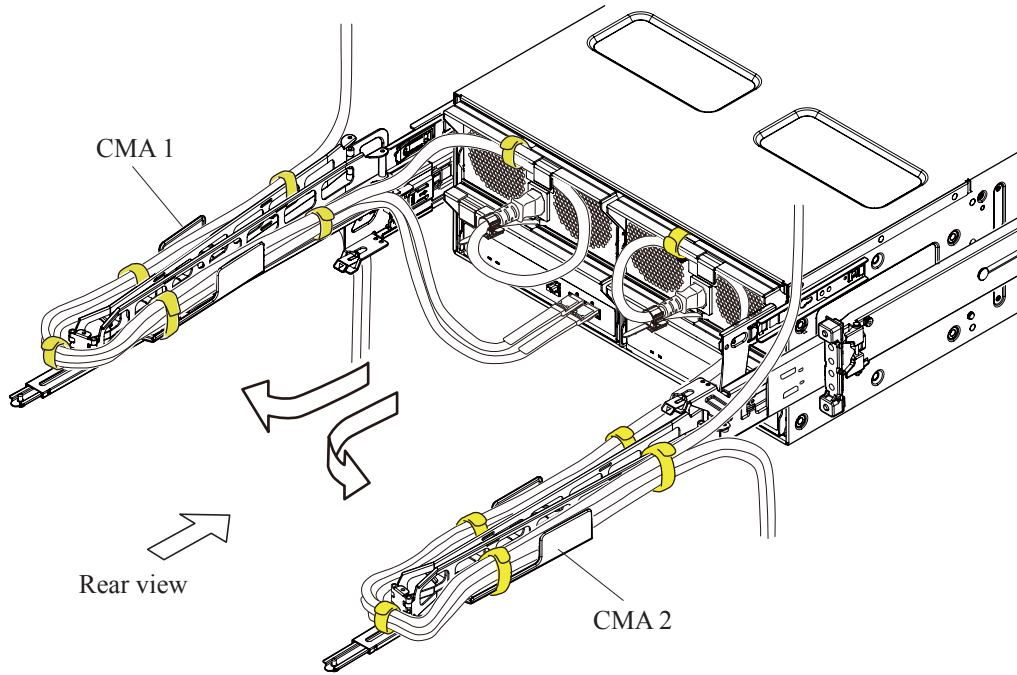


- (4) Turn off the breaker on the power distribution panel in the plant that is connected to the PDU.

NOTE: The circuit has residual voltage after turning off the breakers, so wait for one minute.

- 2. Remove the cables.
 - (1) Open CMA 1 and CMA 2 in the rear side of the Drive Box.

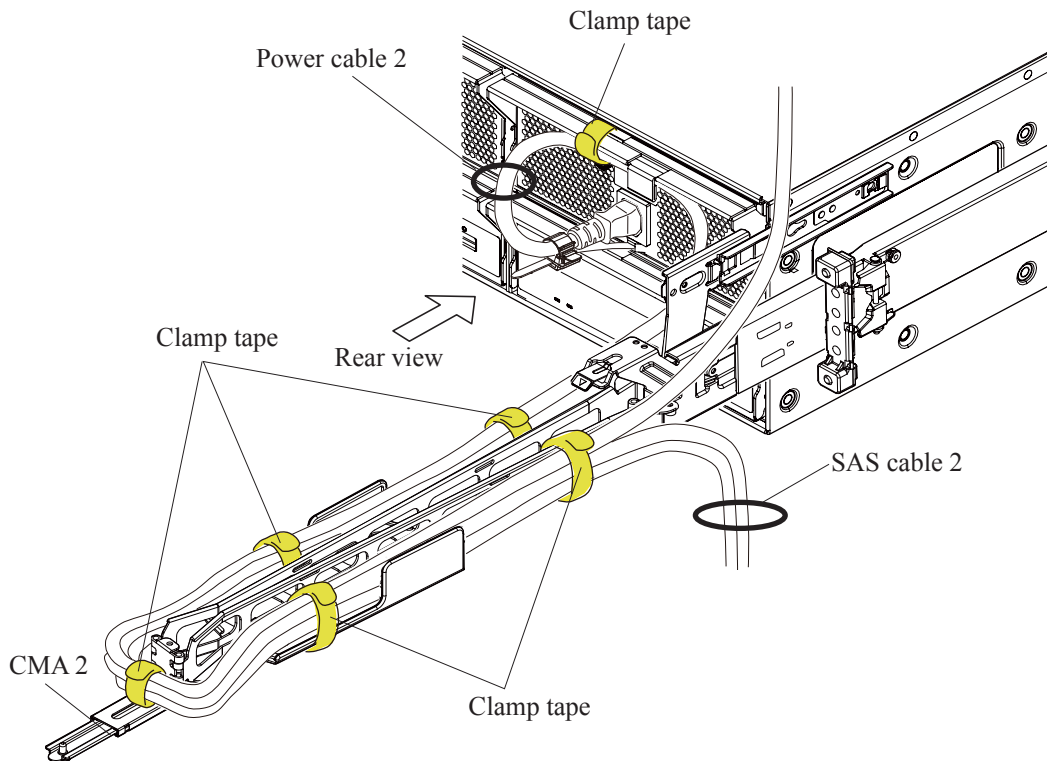
Figure 2-207 Moving CMAs



- (2) Detach the six clamp tapes of CMA 2 and remove the SAS cables and power cables.

NOTE : Place the cables so that they do not put loads on the cable connectors or disturb the work.

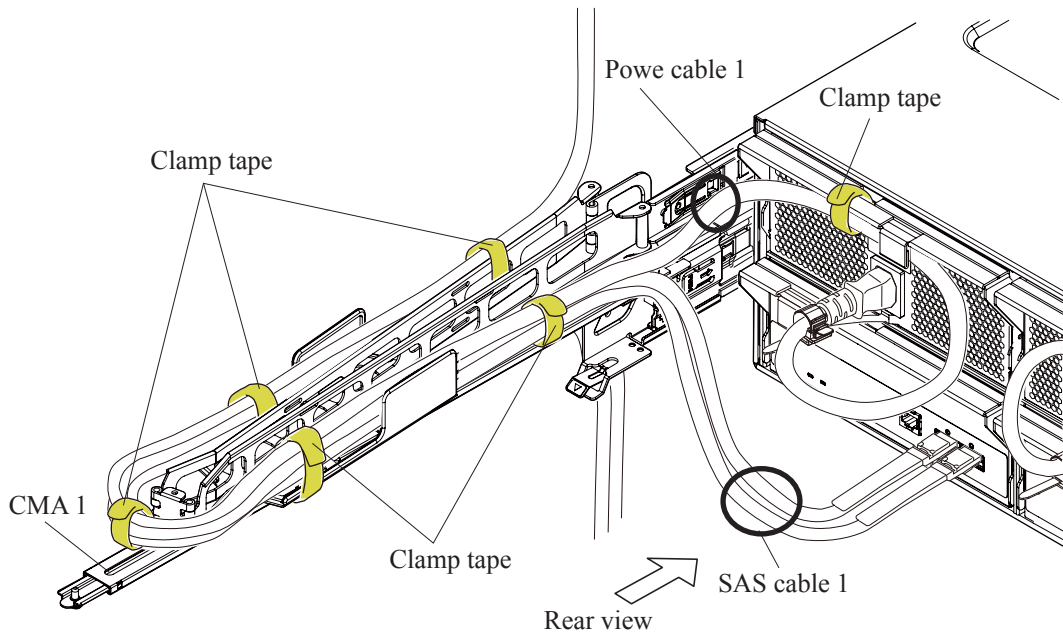
Figure 2-208 Removing SAS Cables and Power Cables



- (3) Detach the six clamp tapes of CMA 1 and remove the SAS cables and power cables.

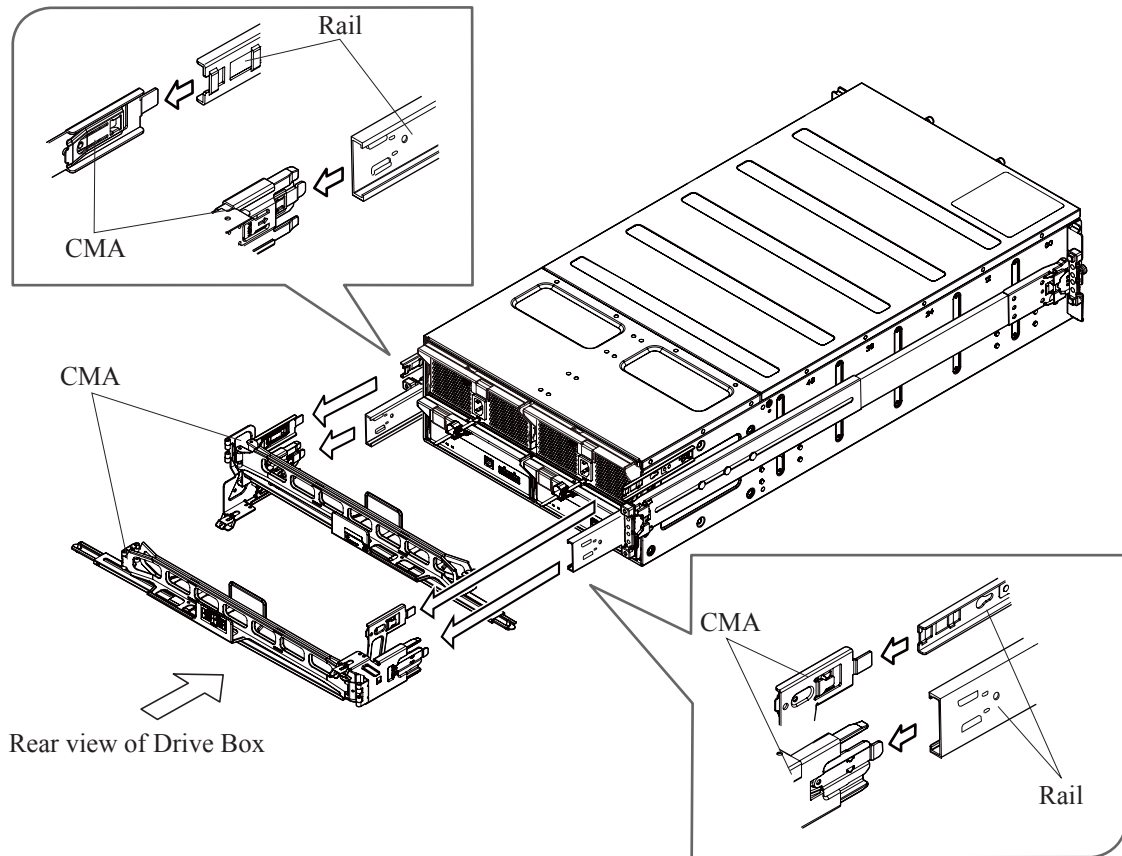
NOTE : Place the cables so that they do not put loads on the cable connectors or disturb the work.

Figure 2-209 Removing SAS Cables and Power Cables



- (4) Remove two CMAs from the rails.

Figure 2-210 Removing CMAs



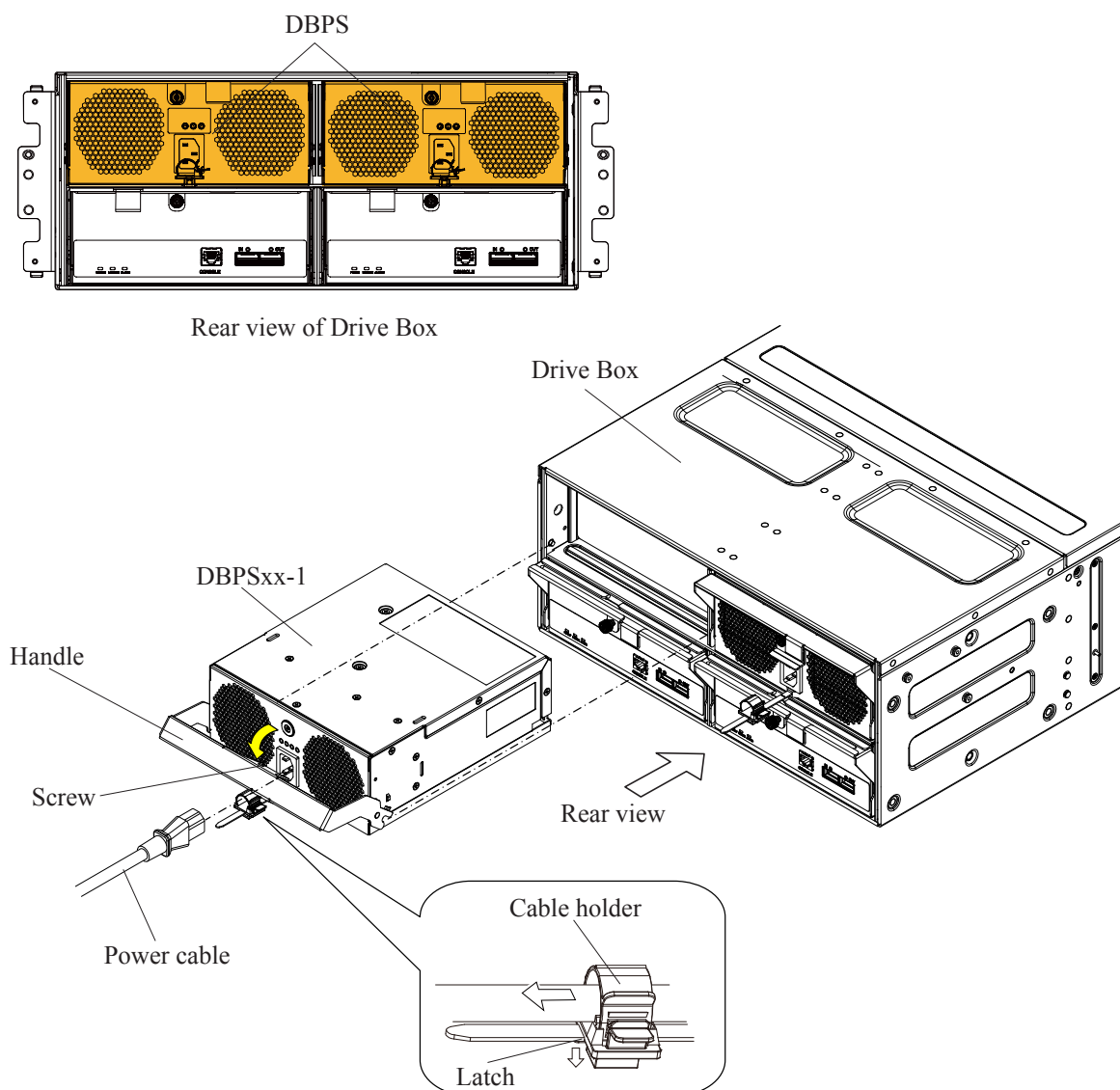
3. Attach a label.

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 spare Drive Box.

4. Remove a DBPS.

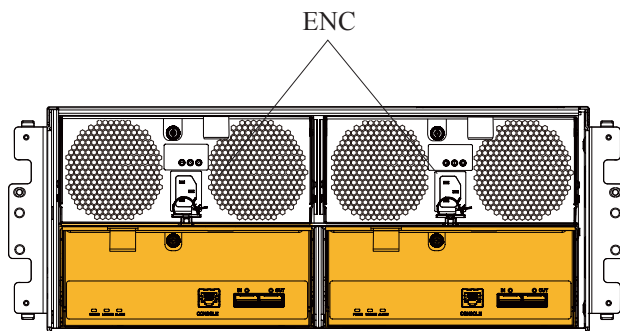
- (1) Push down the latch of the cable holder of the DBPS and pull out the cable holder.
- (2) Open the cable holder and remove the power cable from the DBPS.
- (3) Loosen the screw of the DBPS and open the handle.
- (4) Pull out the DBPS to remove.
- (5) Remove the other DBPS in the same manner.

Figure 2-211 Removing DBPSs

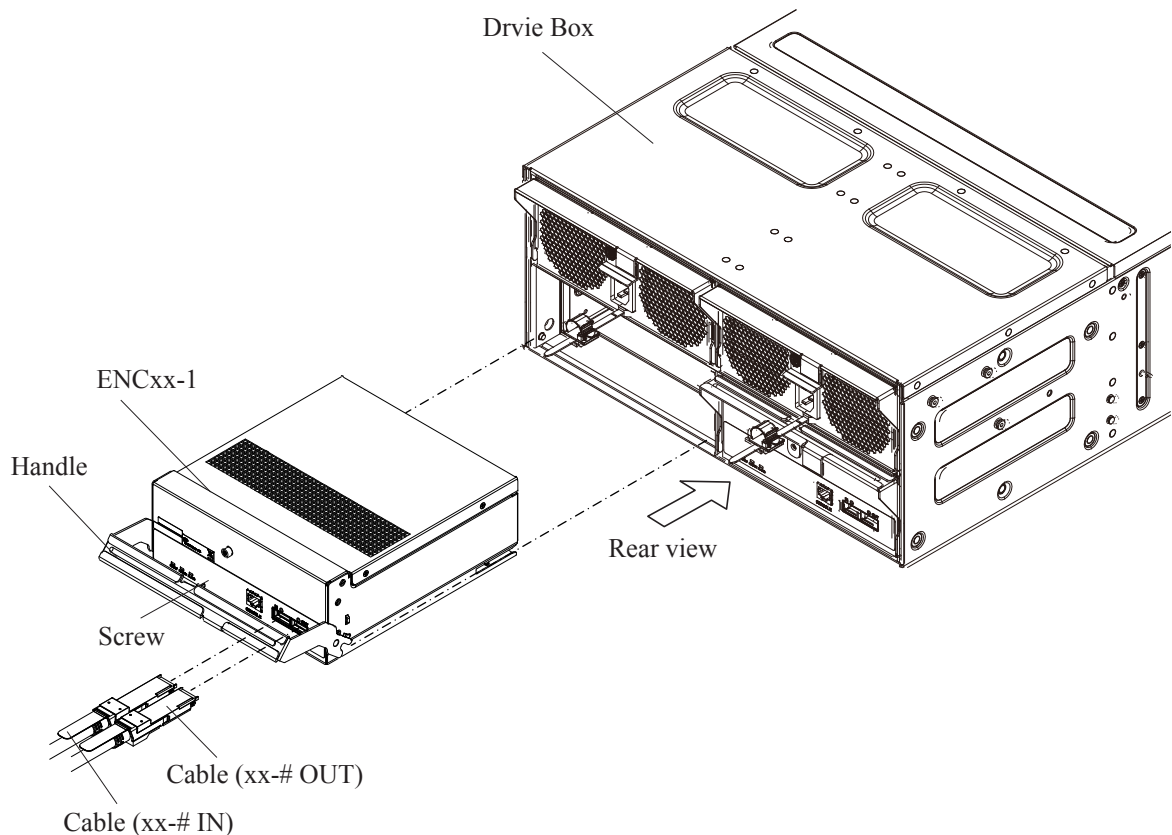


5. Remove an ENC.
 - (1) Remove the cable from the ENC.
 - (2) Loosen the screw of the ENC and open the handle.
 - (3) Pull out the ENC to remove.
 - (4) Remove the other ENC in the same manner.

Figure 2-212 Removing ENC's



Rear view of Drive Box

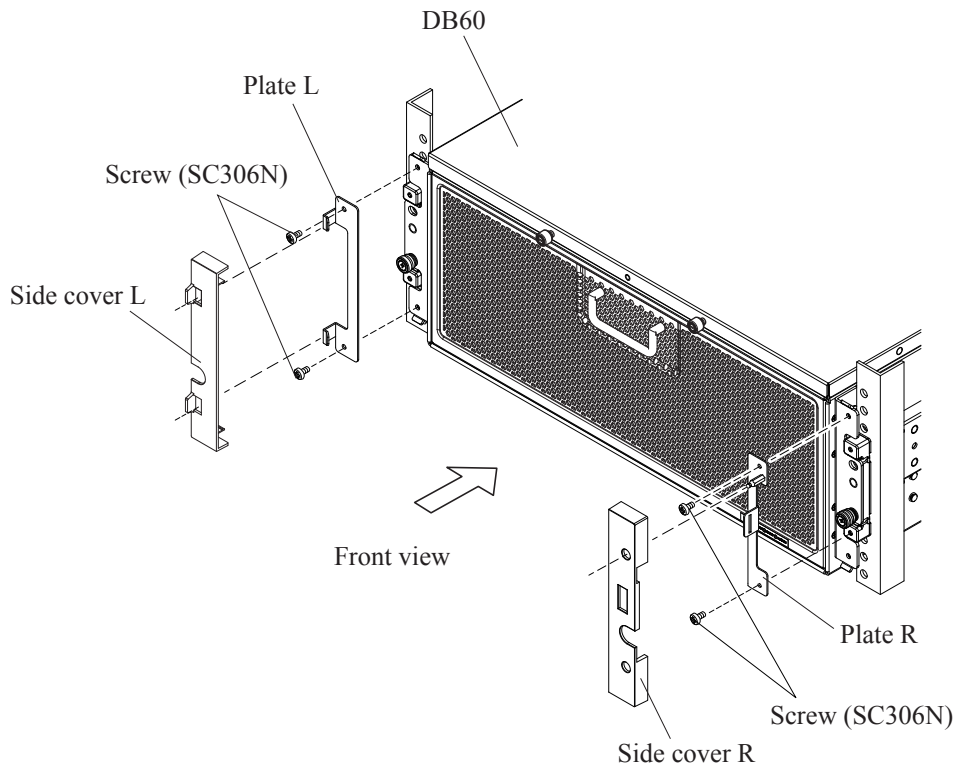


6. Pull out a DB60.
Pull the DB60 out of the rack, and remove the top cover. (Refer to “2.2.1.3 DB60”.)

7. Removing parts for Front Bezel

- (1) Remove the side cover L from the left front side of the Drive Box.
- (2) Remove the side cover R from the right front side of the Drive Box.
- (3) Remove two screws to remove the plate L.
- (4) Remove two screws to remove the plate R.

Figure 2-213 Removing Parts for Front Bezel



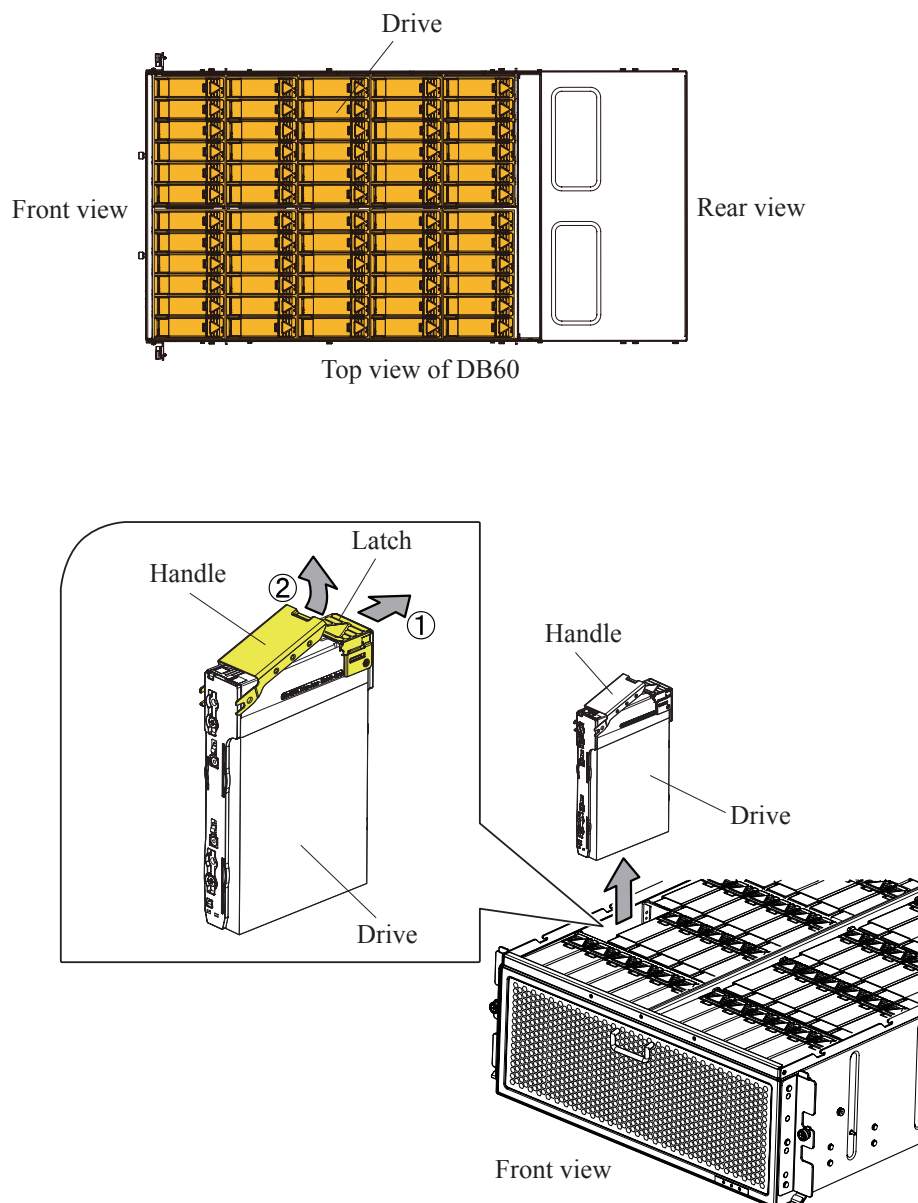
8. Attach a label.

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 spare Drive Box.

9. Remove the Drive.

- (1) Slide the latch of the Drive handle and raise the handle.
- (2) Pull out and remove the Drive to be replaced not to give a shock.
- (3) Remove the other Drives in the same manner.

Figure 2-214 Removal of Drives



10. Remove the Drive Box

 CAUTION

Be careful of the mass:

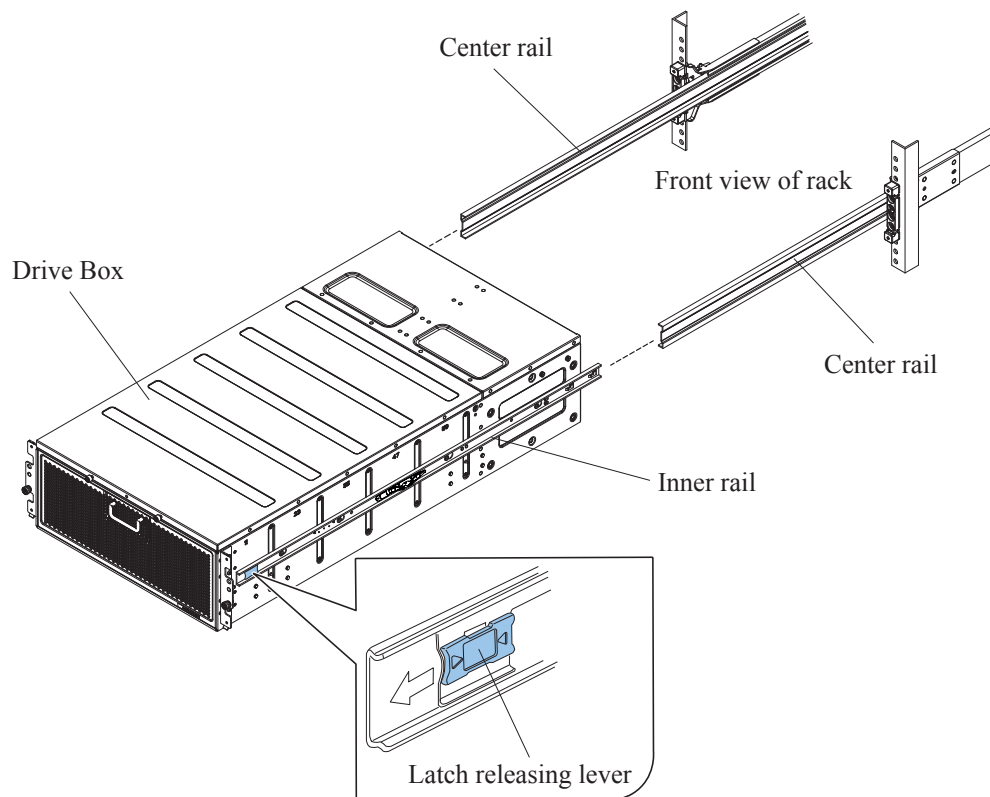
Work carefully because the mass of the DB60 is about 34 kg.

Be careful of falling over and dropping:

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

- (1) Remove the Drive Box from the rack frame referring to mounting procedure using the special lifter. (Refer to “[2.2.3 Mounting Lifter on Rack Frame](#)”.)
- (2) Release the lock by sliding the latch releasing lever which is located in the right and left rack rails, and pull out the DB60 on the lifter.

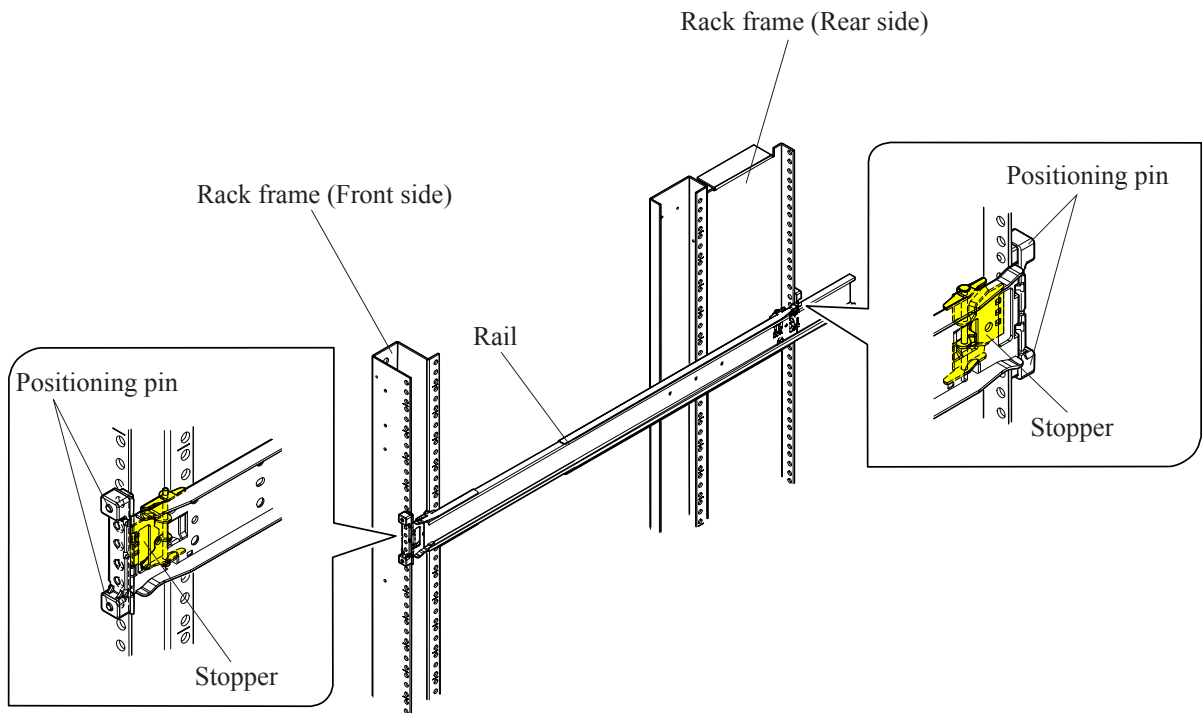
Figure 2-215 Removal of Drive Box



11. Replace the rails.

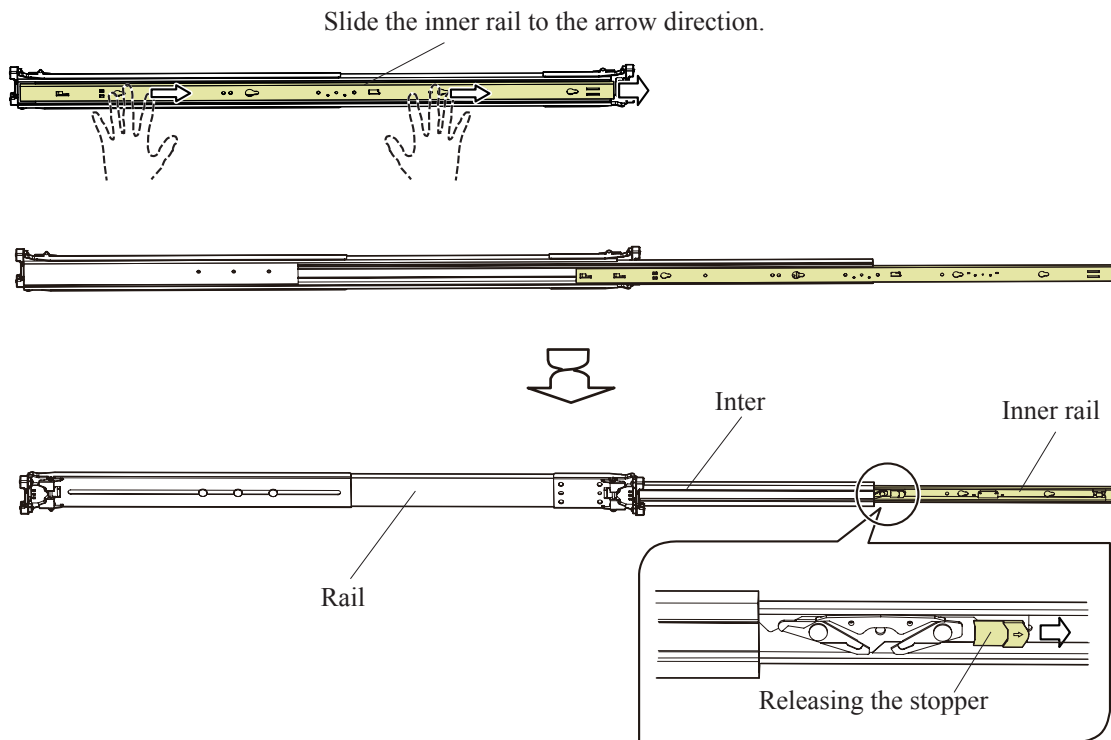
- (1) Push the stopper on the front of the rail to unlock and remove two positioning pins of the rail from the front of the rack frame.
- (2) Push the stopper on the rear of the rail to unlock and remove two positioning pins of the rail from the rear of the rack frame.
- (3) In the same way, remove the rail from the right front side of the rack frame.

Figure 2-216 Removing Rails



- (4) Remove the inner rails
Remove the inner rails of two rails respectively.
 - (a) Slide the inner rail to the front side until it stops while pressing the portions indicated by arrows in the figure below.
 - (b) Turn over the rail and release the stopper of the inner rail.
 - (c) Remove the inner rails.
 - (d) Remove the inner rail from the other rail in the same manner.

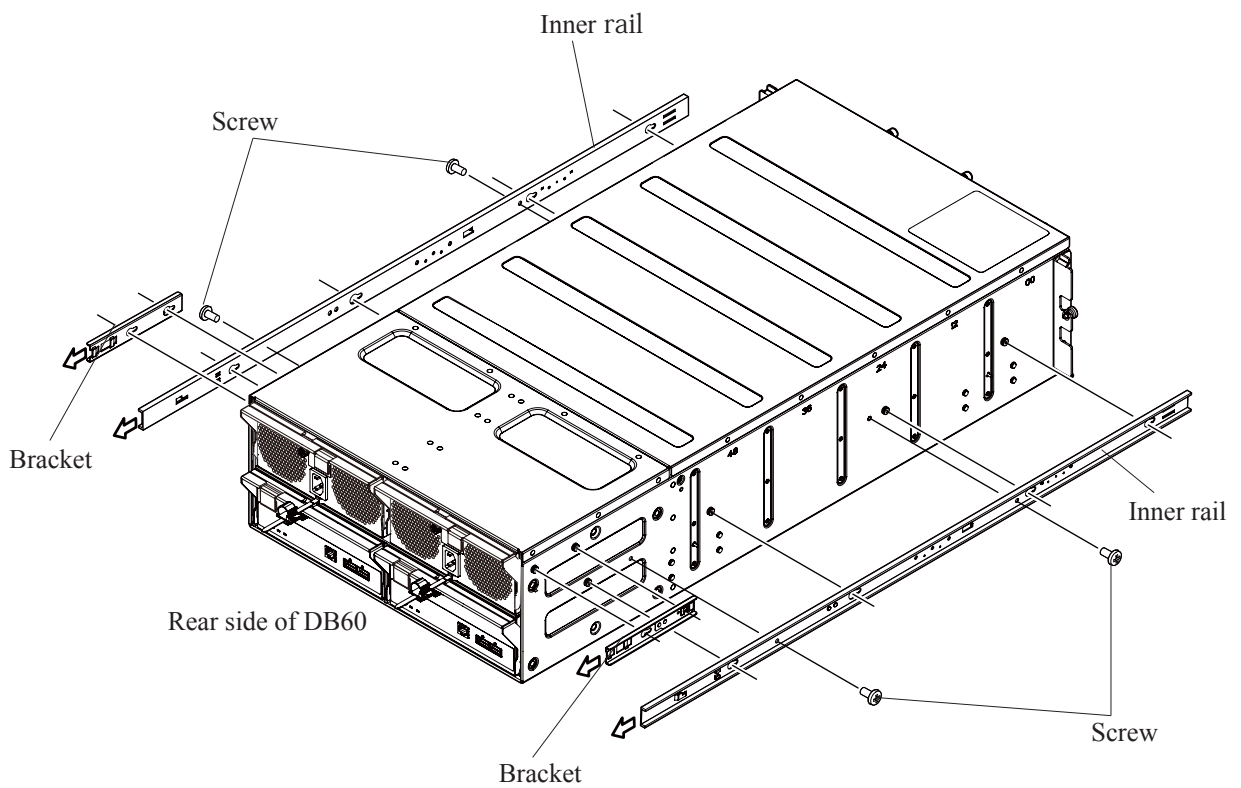
Figure 2-217 Removing Inner Rails



- (5) Install the inner rails.
 - (a) Fit the projections (four places) on the sides of the DB60 in the holes of the inner rail and slide the rail backward to fix.
 - (b) Fit the projections (four places) on the sides of the DB60 in the holes of the bracket and slide the rail backward to fix.
 - (c) Fix the inner rail with screws (two places).

NOTE : • Check that the inner rails and brackets are surely installed.
• Install the inner rails and brackets in the right and left of the DB60.

Figure 2-218 Installing the Inner Rails



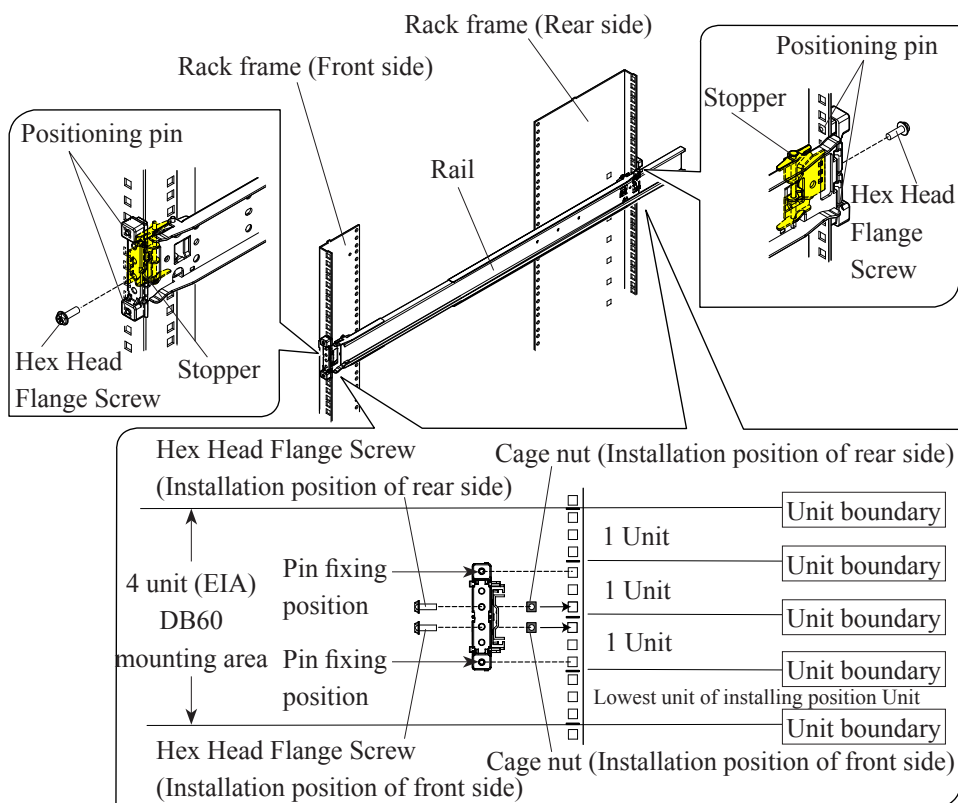
- (6) Install the rails in the rack.
- Install rack nuts in the sixth holes from the bottom unit separation line on the front side of the rack to install the rails.
 - Install rack nuts in the seventh holes from the bottom unit separation line on the rear side of the rack to install the rails.
 - Fit the positioning pins (two places each) on the front and rear side of the rails to the fourth and ninth holes from the bottom unit separation line on the rack to install the pins with the stopper.

NOTE : When the rails are installed normally, the stopper on the rear of the positioning pins clicks and locks.

Check that the rails are surely fixed.

- Fix the front side with screws. The fixing position is the sixth hole from the bottom of the unit boundary line.
- Fix the rear side with screws. The fixing position is the seventh hole from the bottom of the unit boundary line.
- Install the rails in the right and left.

Figure 2-219 Fixing the Rails to the Rack Frame

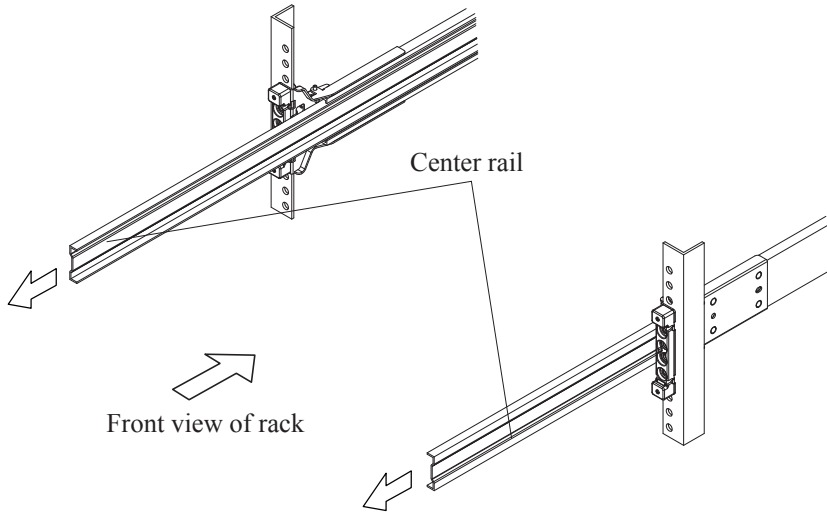


*1: One EIA unit is approximately 44.45 mm.

*2: This figure shows the rail is installed in the left side of the rack frame.

- 12. Install the DB60.
 - (1) Pull out the right and left center rails until they lock.

Figure 2-220 Pulling out the Center Rail



 **CAUTION**

Be careful of the mass:

Work carefully because the mass of the DB60 is about 34 kg.

Be careful of falling over and dropping:

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

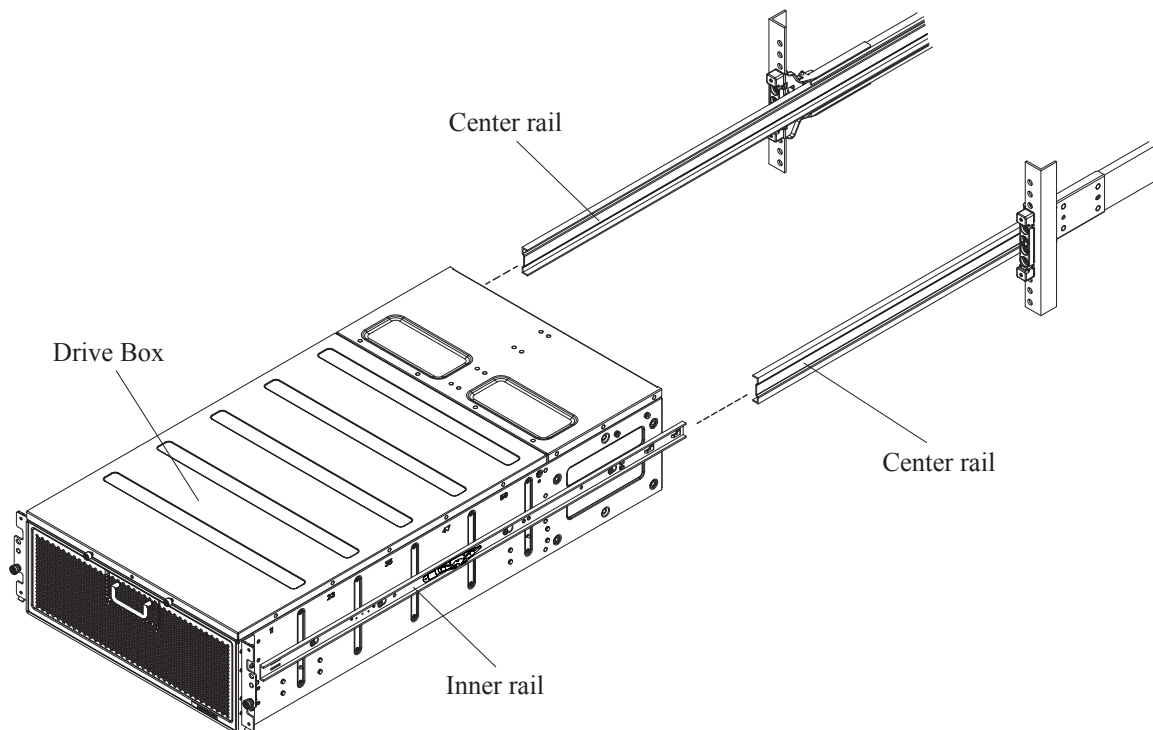
- (a) Move the Drive Box to the mounting position.

NOTE : Use the handle in front of the Drive Box to pull out the Drive Box.

Do not hold this handle when lifting the Drive Box.

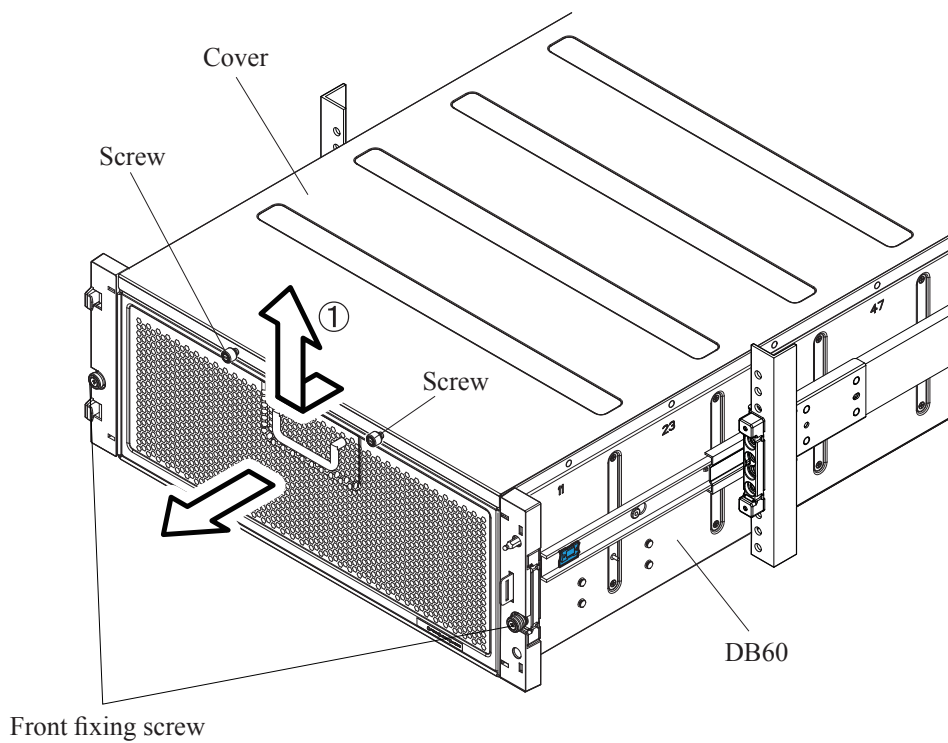
- (b) Adjust the position of the inner rails by pushing the right and left center rails inward by hand, and then insert the Drive Box.
- (c) Slide the latches (blue) of the inner rails toward you to unlock.
- (d) Push the inner rails in about 2 cm, leave your fingers from the latches and push the Drive Box.

Figure 2-221 Inserting Inner Rails



- (2) Push the Drive Box gently all the way.
- (3) Hold the handle in the front of the Drive Box and pull out slowly until it stops.
NOTE : Be careful not to hit your head on the Storage System which was pulled out.
- (4) Loosen two screws and slide the cover on the top of the DB60 to the direction shown by the arrow ① and remove it.

Figure 2-222 Removing Cover



13. Install the Drives.

Install all the removed drives to the same place in the spare Drive Box according to the label attached to them.

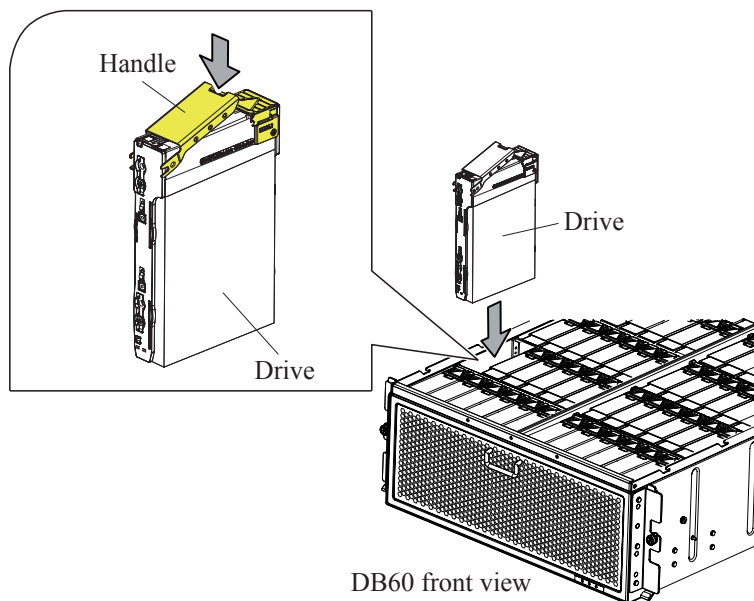
- (1) Open the handle, and insert the Drive holding it with both hands.

NOTE : Check that there is no foreign substance near the connector and in the Storage System before inserting the Drive.

- (2) Close the handle, and push the handle until it clicks and locks.

- (3) Install the other Drives in the same manner.

Figure 2-223 Installing Drives



14. Installing parts for Front Bezel

- (1) Install the plate L in the left front side of the Drive Box and fix it with two screws (refer to [Figure 2-213](#)).
- (2) Install the plate R in the right front side of the Drive Box and fix it with two screws.
- (3) Attach the side cover L to the plate L.
- (4) Attach the side cover R to the plate R.

15. Storing the Drive Box

Attach the top cover to the Drive Box, and store it in the rack. (Refer to [“2.2.1.3 DB60”](#).)

NOTE : Do not install a Front Bezel.

16. Insert the ENC.

- (1) Make the handle of the ENC completely fall down and forward. (Refer to [Figure 2-212.](#))
- (2) Insert the ENC into the slot and push it to the full.
- (3) Open the DBPS handle completely and fix it with screws.
- (4) Connect the optical cable to the ENC.
NOTE: Check that optical cable latch clicks and the cables are surely connected.
- (5) Install the other ENC in the same manner.

17. Install the DBPS.

- (1) Make the handle of the DBPS completely fall down and forward. (Refer to [Figure 2-211.](#))
- (2) Insert the DBPS into the slot and push it to the full.
- (3) Open the DBPS handle completely and fix it with screws.
- (4) Connect the power cable to the DBPS and fasten it with the cable holder.
- (5) Push the cable holder to the DBPS side until it stops.
- (6) Route the power cable and fix it to the handle with a clamp tape.
- (7) Install the other DBPS in the same manner.

18. Install parts.

Install CMAs of the maintenance parts. (Refer to [Figure 2-210.](#))

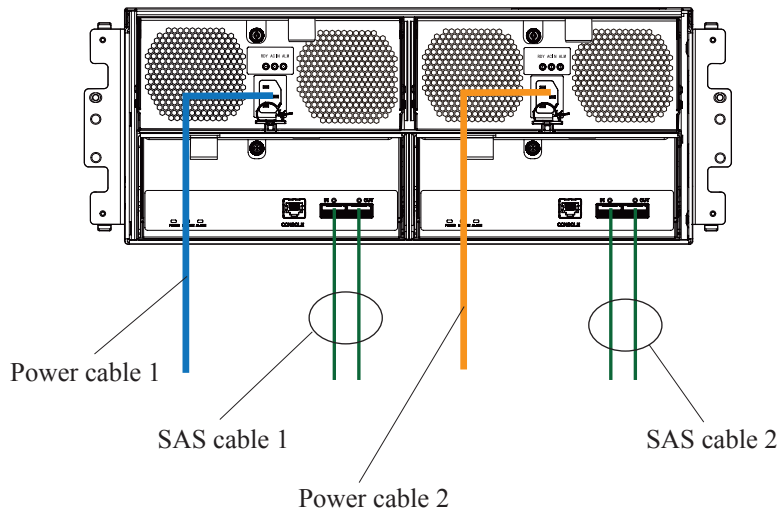
19. Route the Cables.

Route the SAS cables and power cables.

The following figure shows routing cable numbers.

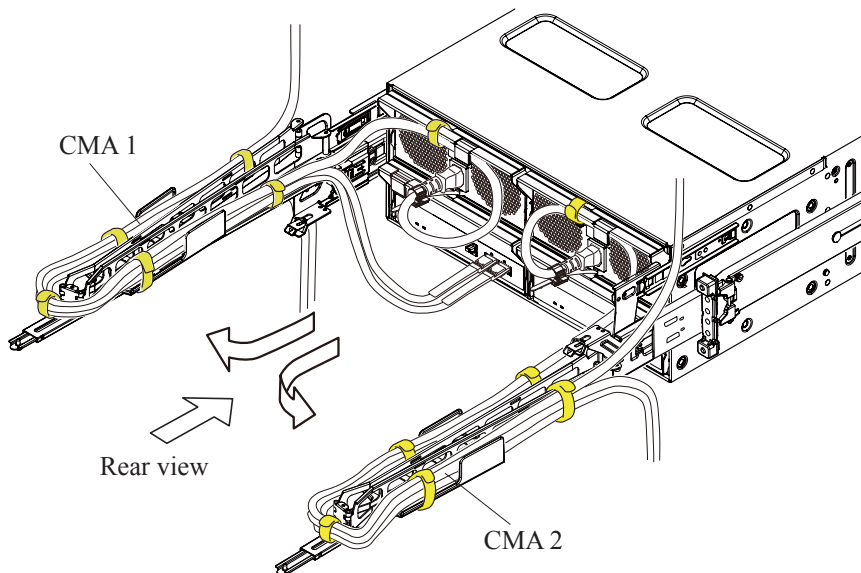
NOTE : When bending the cable to connect it, give it a bend with a long radius (not less than 40 mm) so as not to apply the cable and the connector excessive stresses.

Figure 2-224 Cable Number



(1) Open the CMA 1 and CMA 2.

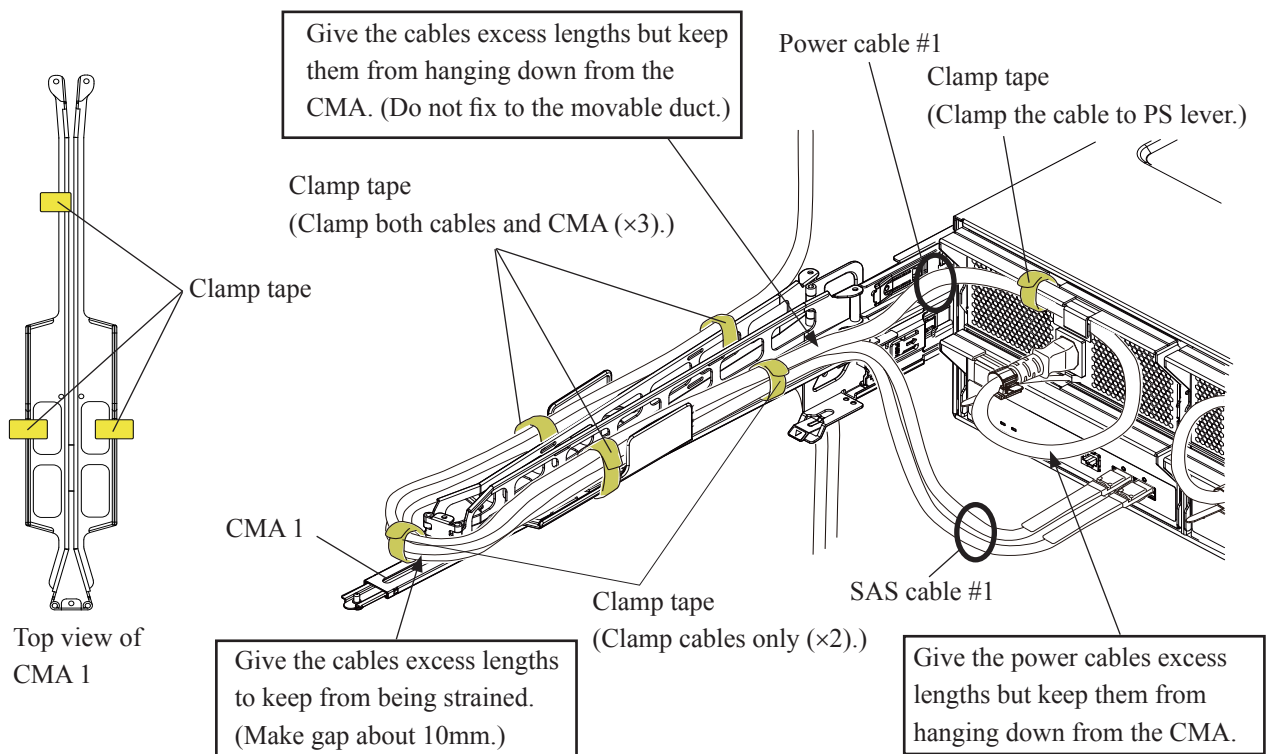
Figure 2-225 Moving CMAs



- (2) Route SAS cable 1 and power cable 1 for CMA 1 and fix the cables with six clamp tapes.

- NOTE :
- Give the cables excess lengths to keep from strain or load when pulling out the DB60.
 - Keep the cables from hanging down below the DB60.
 - Do not give excessive twists to the cables.
 - Route and clamp cables with CMA1 (upper) and CMA2 (lower) are fully opened.
 - Do not route another chassis cables inside CMA.

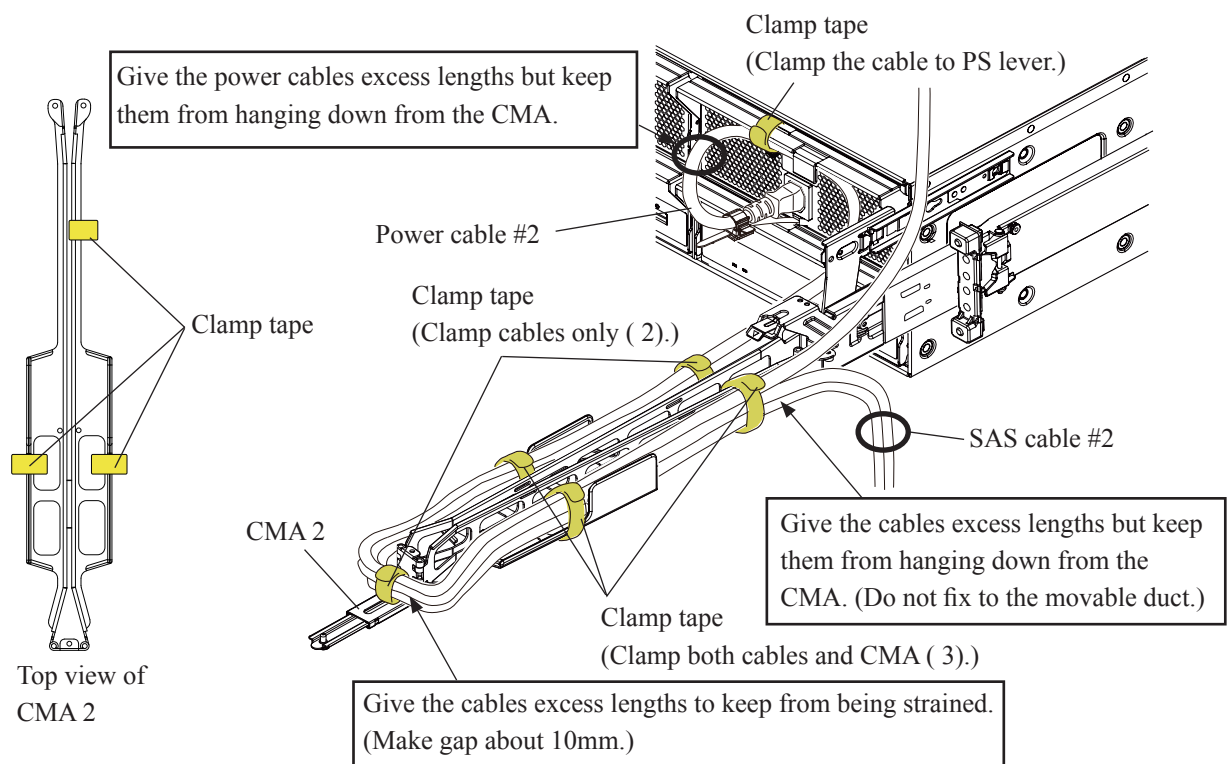
Figure 2-226 Routing of the SAS Cable 1 and Power Cable 1



- (3) Route SAS cable 2 and power cable 2 for CMA 2 and fix the cables with six clamp tapes.

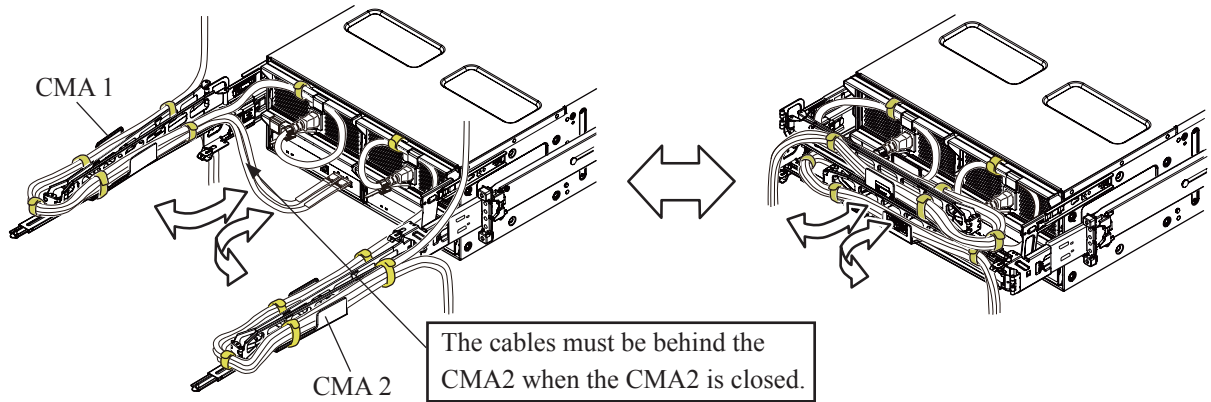
- NOTE :
- Give the cables excess lengths to keep from strain or load when pulling out the DB60.
 - Keep the cables from hanging down below the DB60.
 - Do not give excessive twists to the cables.
 - Route and clamp cables with CMA1 (upper) and CMA2 (lower) are fully opened.
 - Do not route another chassis cables inside CMA.

Figure 2-227 Routing of the SAS Cable 2 and Power Cable 2



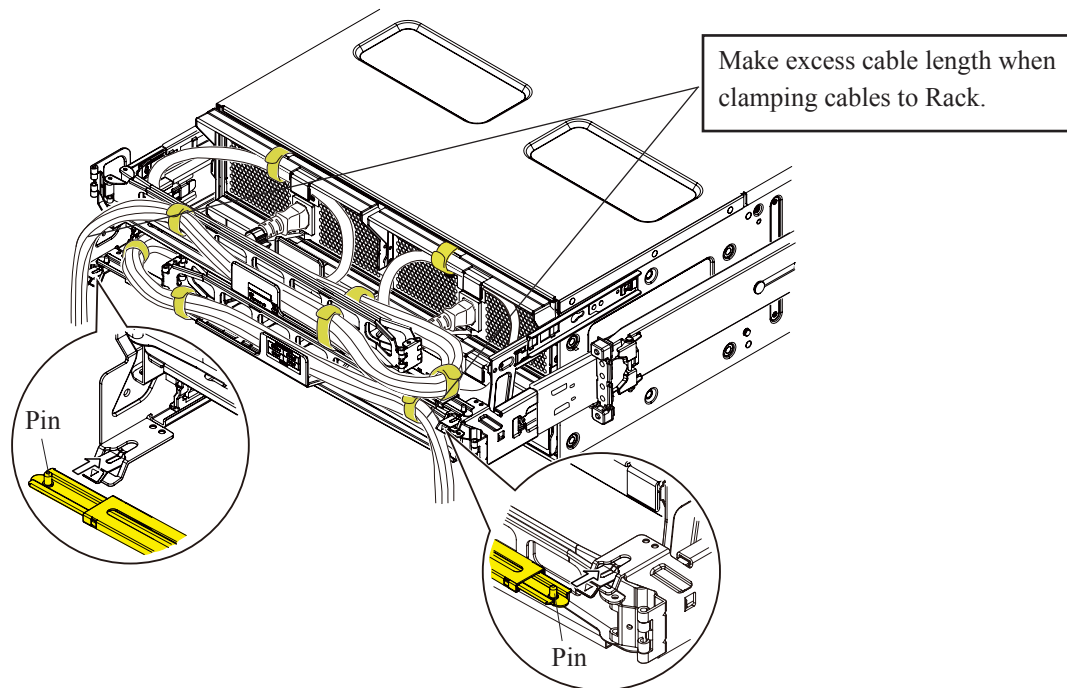
- (4) Move CMA 1 and CMA 2 to the storage position and check that the cables do not have strain or load. Adjust the excess lengths, routes and others.

Figure 2-228 Checking the Routing of SAS Cables and Power Cables



- (5) Close CMA 1 and CMA 2 and fit the right and left pins in the CMAs to lock.

Figure 2-229 Locking CMA 1 and CMA 2



20. Check the routing.

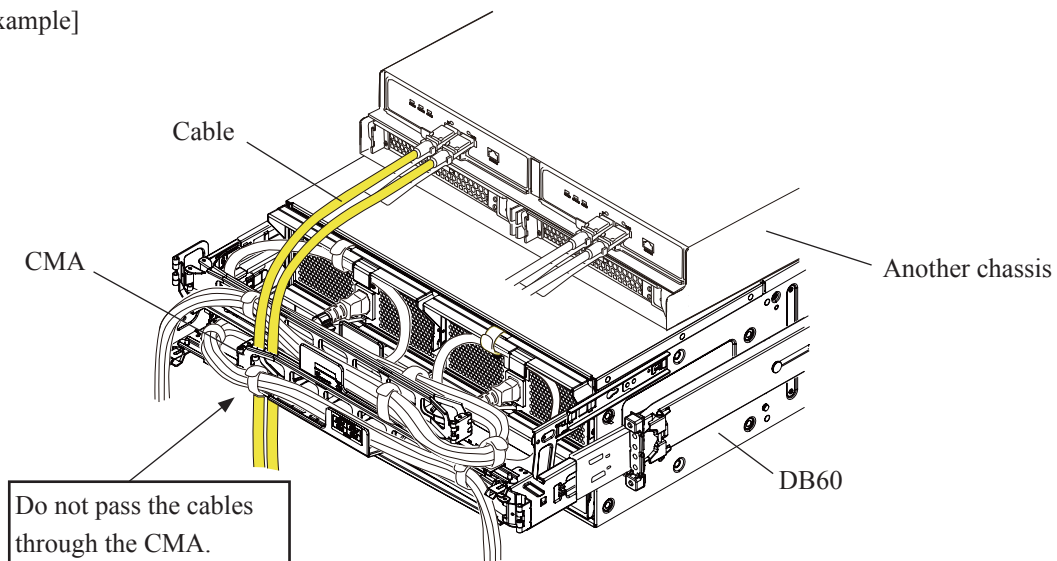
- (1) Pull out the Drive Box and check that the routing is performed correctly.

NOTE :

- Check that the routing is not performed with other cables.
- Confirm that cables are not caught in CMA1 (upper)/CMA2 (lower).

Figure 2-230 Checking Cable Routing

[Example]



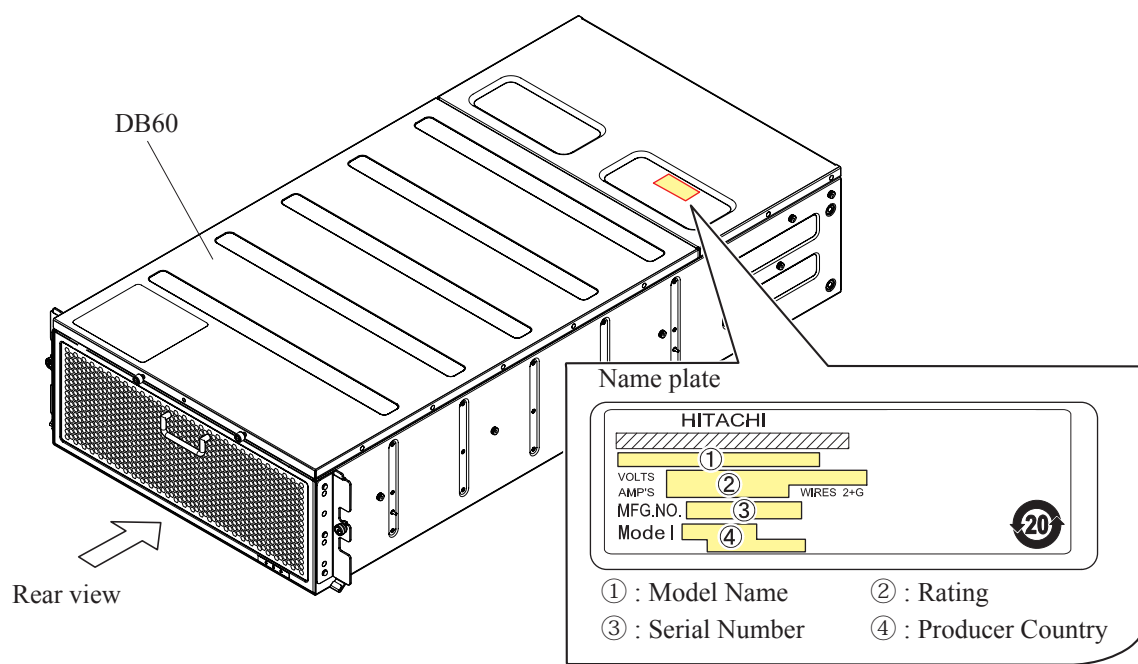
21. Attach the nameplate.

Take out the nameplate in which the same model name as the removed DB60 is described from the nameplates attached to the spare DB60. Write down the same serial number as the removed DB60 in the nameplate, and then affix the nameplate to the spare DB60.

When the nameplate in which the same model name as the removed DB60 is described is not attached, take out the nameplate in which the same rating and producer country as the removed DB60 are described and which the model name is not described. Write down the same model name and serial number as the removed DB60 in the nameplate, and then affix it to the spare DB60.

To fill in the nameplate, use the RoHS-compliant marker pen.

Figure 2-231 Attachment of Nameplate



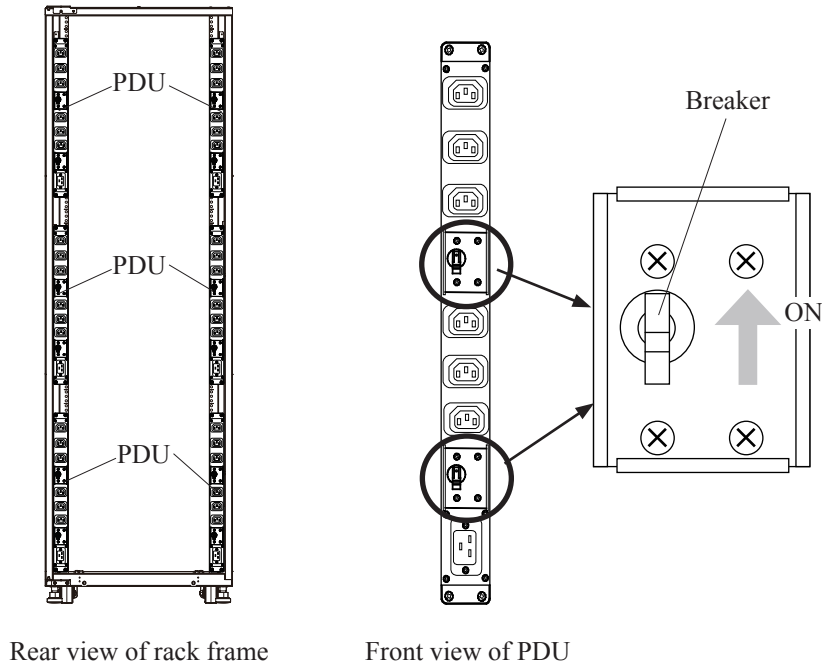
22. Store the Drive Box and attach the Front Bezel.

Return the Drive Box on the rack, and then attach the front Front Bezel. (Refer to [“2.2.1 How to Attach/Remove Front Bezel”](#).)

23. Turning on Breakers

- (1) Turn on the breaker on the power distribution panel.
- (2) Turn on the breaker at the PDU on the rack frame.

Figure 2-232 Turning-on Breakers

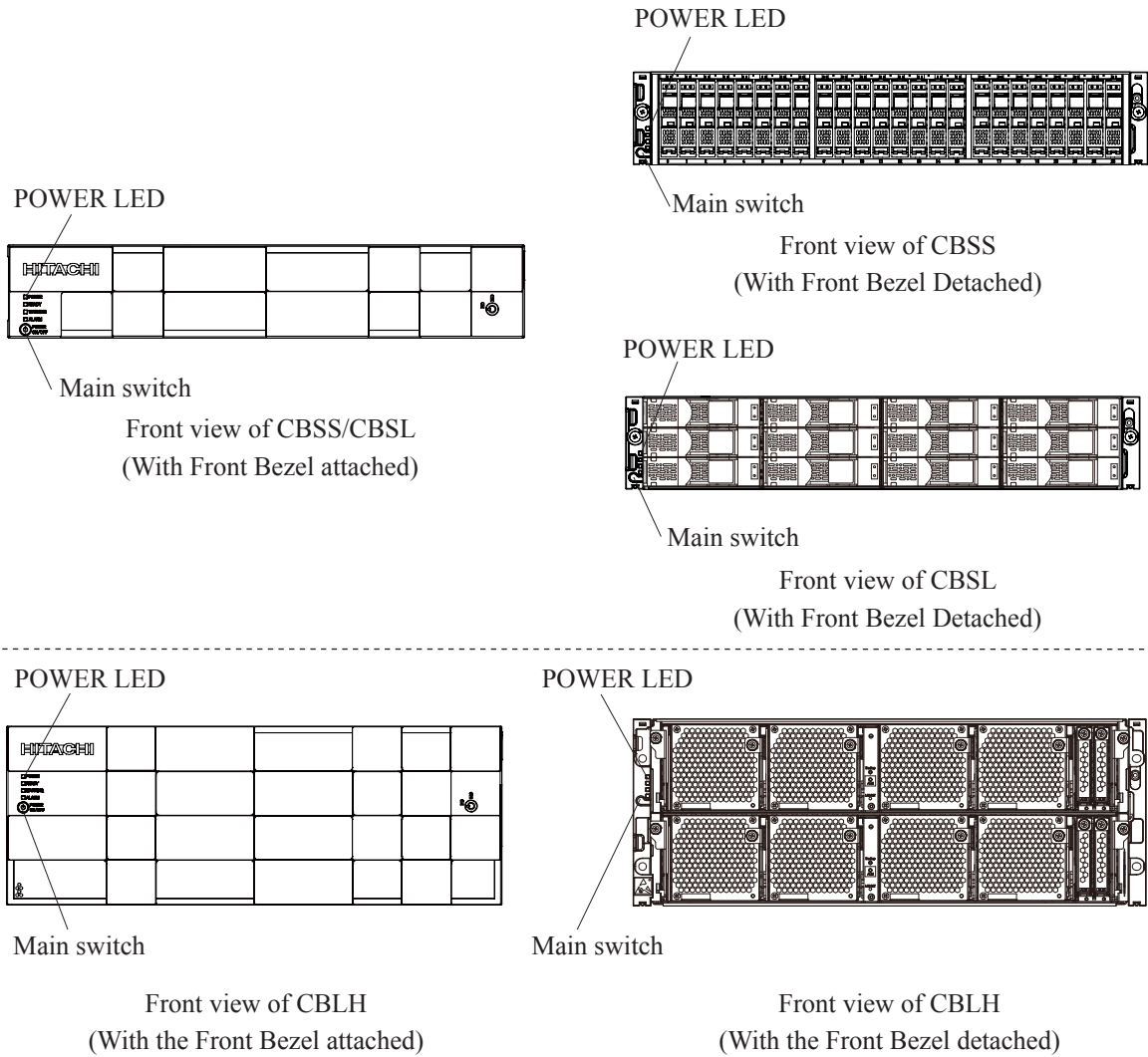


Rear view of rack frame

Front view of PDU

- (3) Turn on the Main Switch on the front of the CBSS/CBSL/CBLH.

Figure 2-233 Main Switch on CBSS/CBSL/CBLH

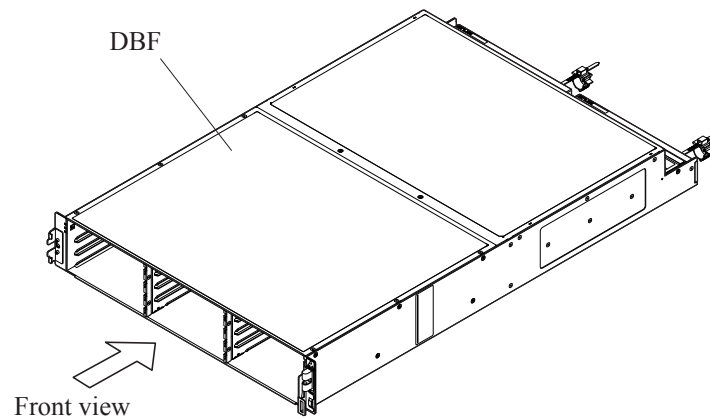


24. End

2.17.5 Replacing a DBF Drive Box

1. Hardware Replacement Processing

Location	Function Name of Component		Part Name
Rack	1	DBF	• DW-F800-DBF



- 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 Storage System before starting and do not take it off until you finish. See [“1.1.3 Note on Installing and Removing Parts”](#).
 - Replace the Drive Box while the Storage System is powered off. Do not replace the Drive Box while the Storage System is powered on.

2.17.5.1 Replacement of Drive Box (DBF)

1. Power off the rack.

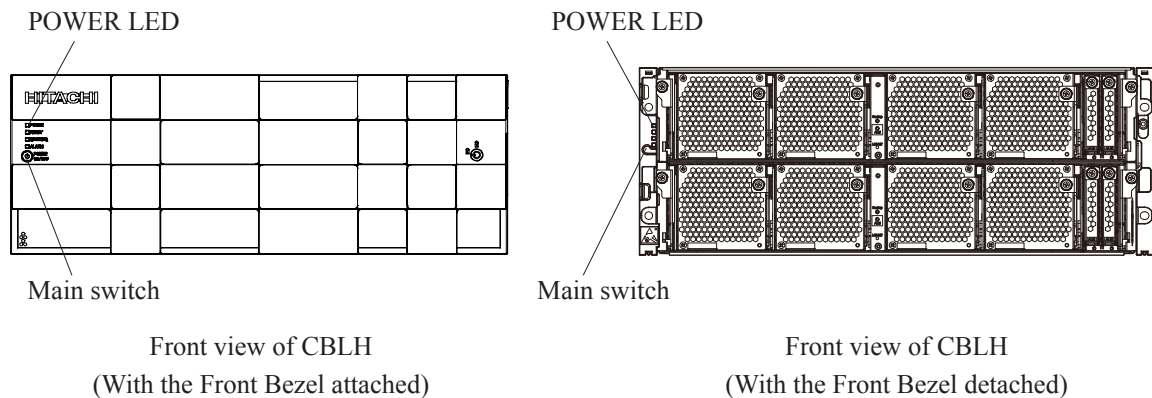
 **WARNING**

Hazardous voltage:

Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

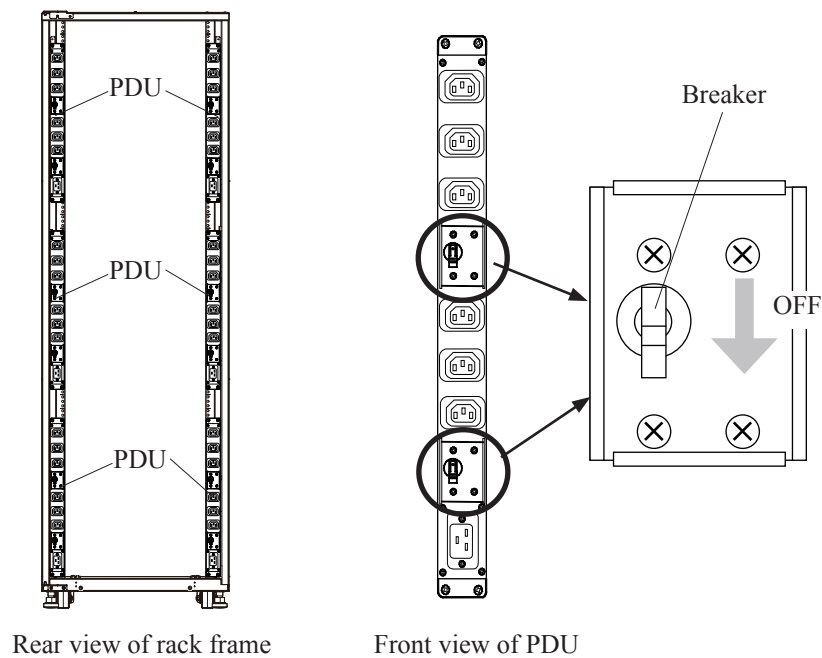
- (1) Press the Main Switch on the front of the CBLH for three second to turn off.
- (2) Confirm that the POWER LED on the front side of the CBLH lights in amber.

Figure 2-234 Main Switch and POWER LED on the Front of CBLH



- (3) Turn off the breaker at the PDU on the rack frame.

Figure 2-235 Turning-off Breakers



- (4) Turn off the breaker on the power distribution panel in the plant that is connected to the PDU.

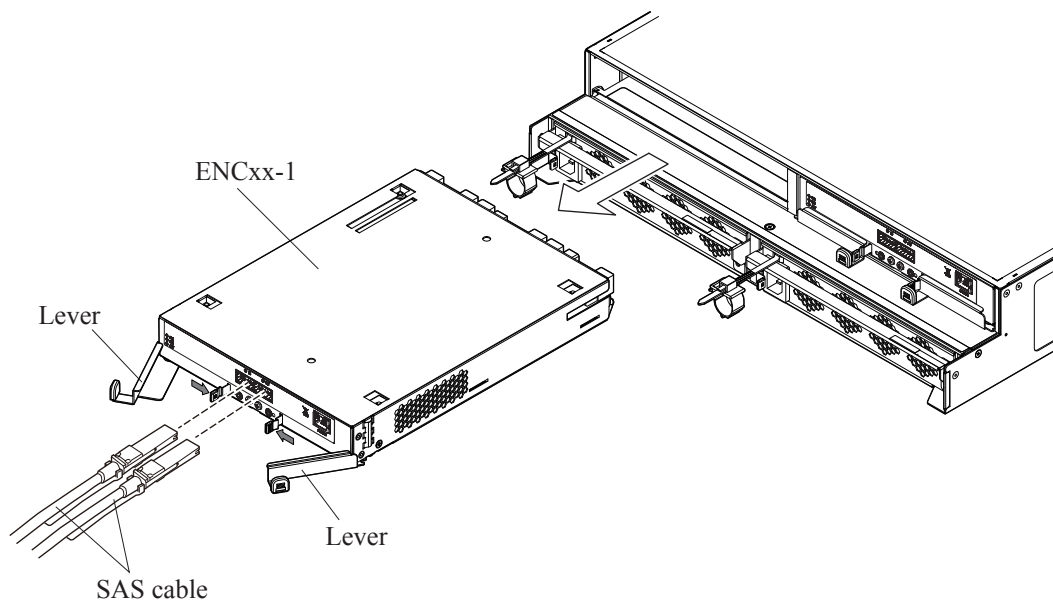
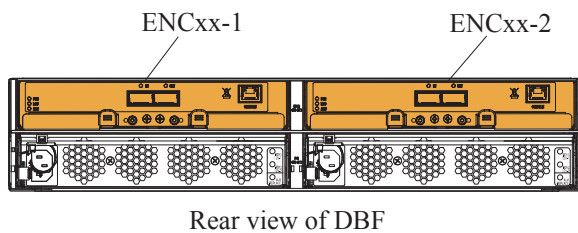
NOTE: The circuit has residual voltage after turning off the breakers, so wait for one minute.

2. Remove the Front Bezel.
Remove the Front Bezel from the Drive Box. (See “2.2.1 How to Attach/Remove Front Bezel”.)

3. Attach a label.
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 spare Controller Chassis.

4. Remove the ENC.
 - (1) Disconnect the SAS cable which connects to the ENC.
 - (2) Press the latches of the ENC inward to unlock the levers.
 - (3) Pull the right and left levers and remove the ENC.
 - (4) Remove the other ENC in the same manner.

Figure 2-236 Removal of ENC (DBF)

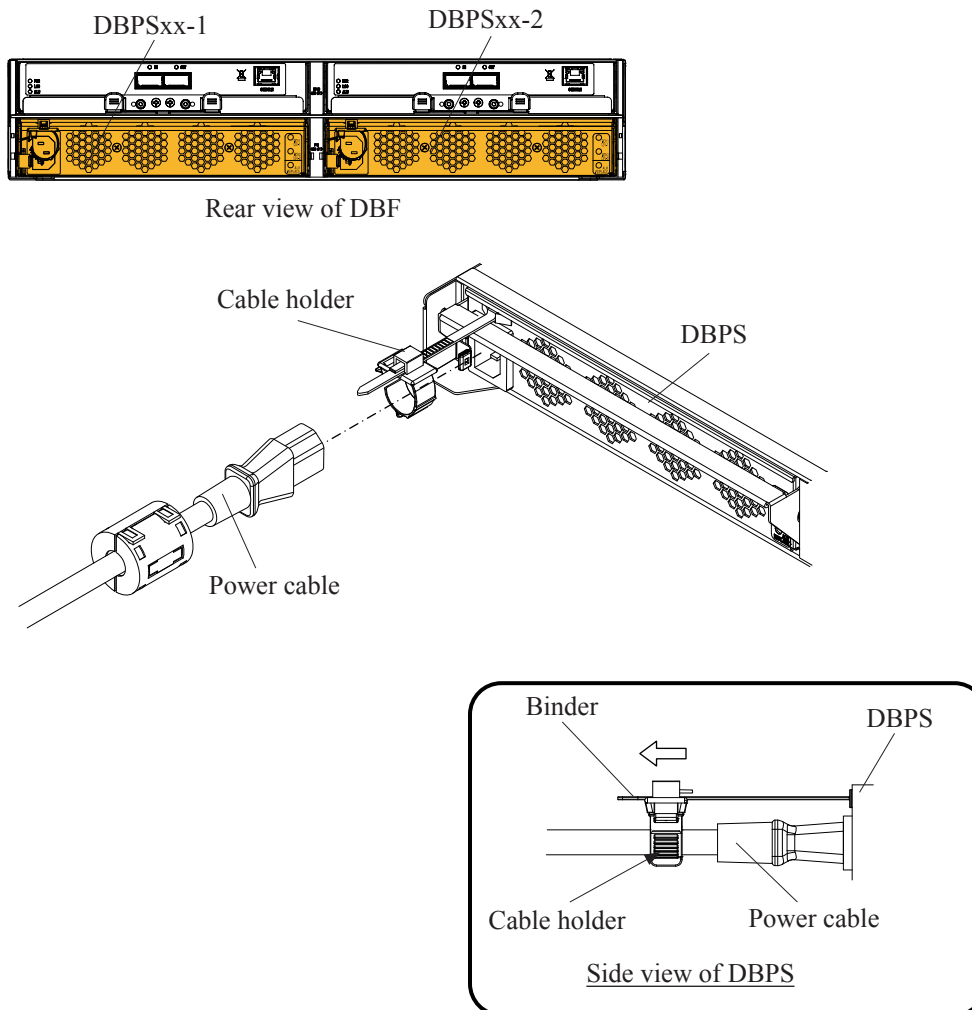


*1 : ENC_{xx-1}
↳ DB No. (00, 01, 02,, 47)

5. Remove a DBPS.

- (1) Pull and open the cable holder.
- (2) Disconnect the power cable from the DBPS.
- (3) Disconnect the power cable from the other DBPS in the same manner.

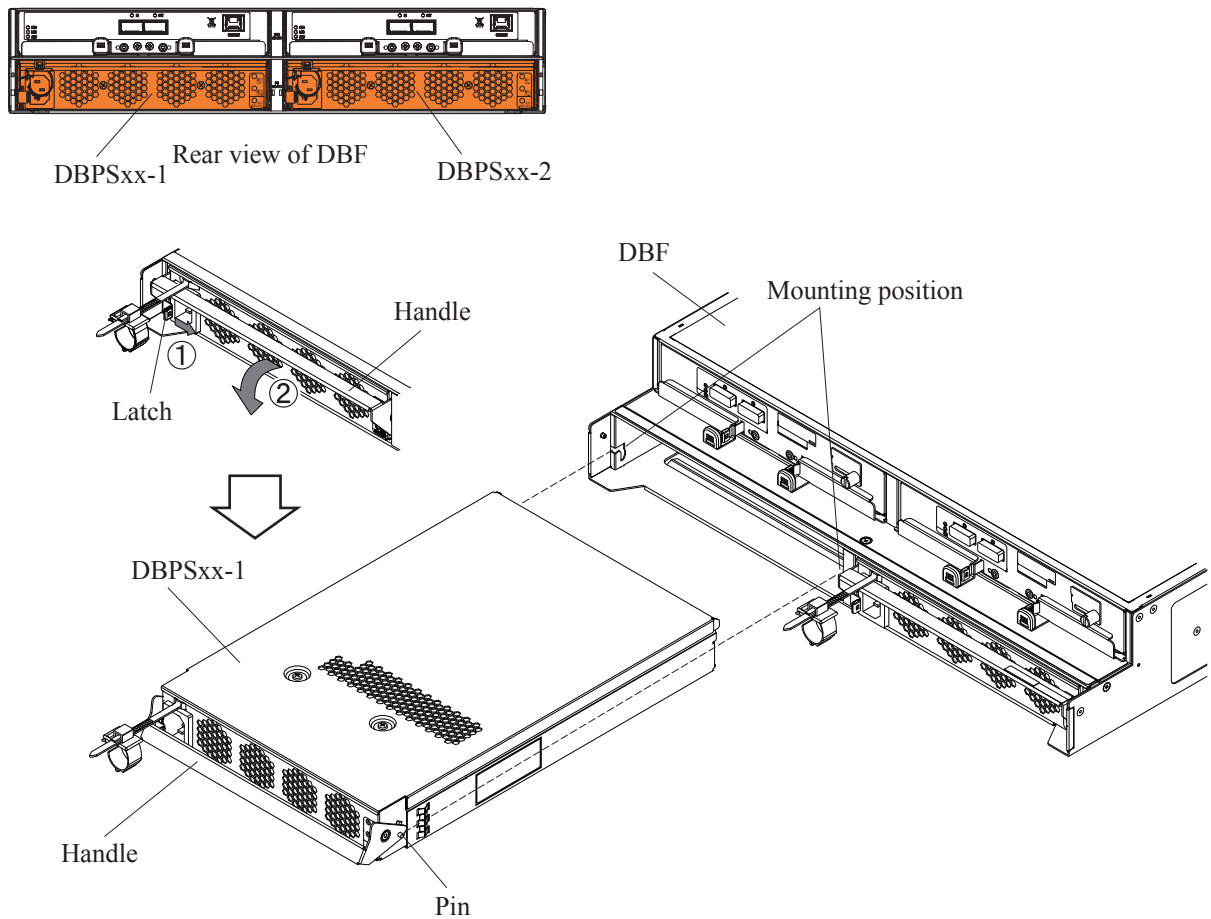
Figure 2-237 Disconnection of Power Cables



*1 : DBPS_{xx-1}
 ↳ DB No. (00, 01, 02,, 47)

- (4) Bring the handle down and forward (②) while pushing the latch of the DBPS inward (①).
- (5) Pull the DBPS and remove it from the DBF.
- (6) Remove the other DBPS in the same manner.

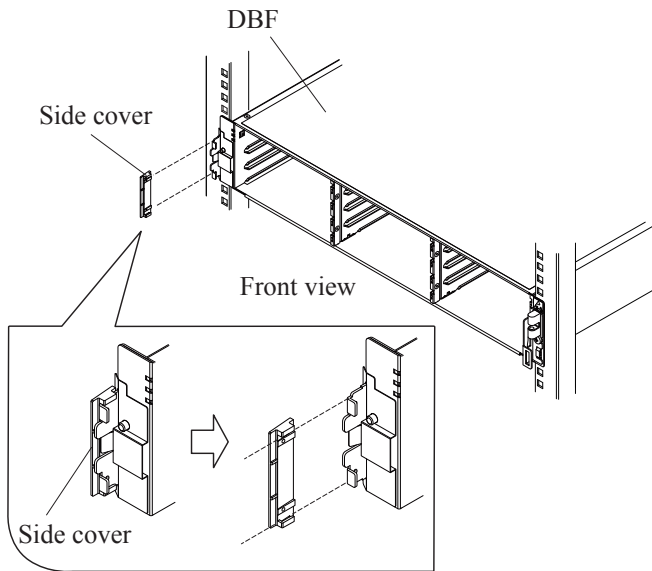
Figure 2-238 Removal of DBPS



7. Replace the DBF

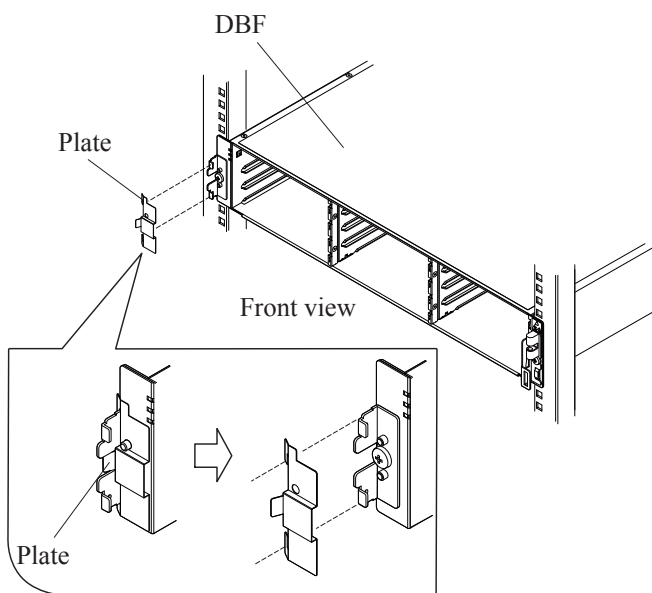
- (1) Remove the side cover from the left side of the front of the DBF.

Figure 2-240 Removal of Side Cover



- (2) Remove the plate from the left side of the front of the DBF.

Figure 2-241 Removal of Plate



 CAUTION

Be careful of the mass:

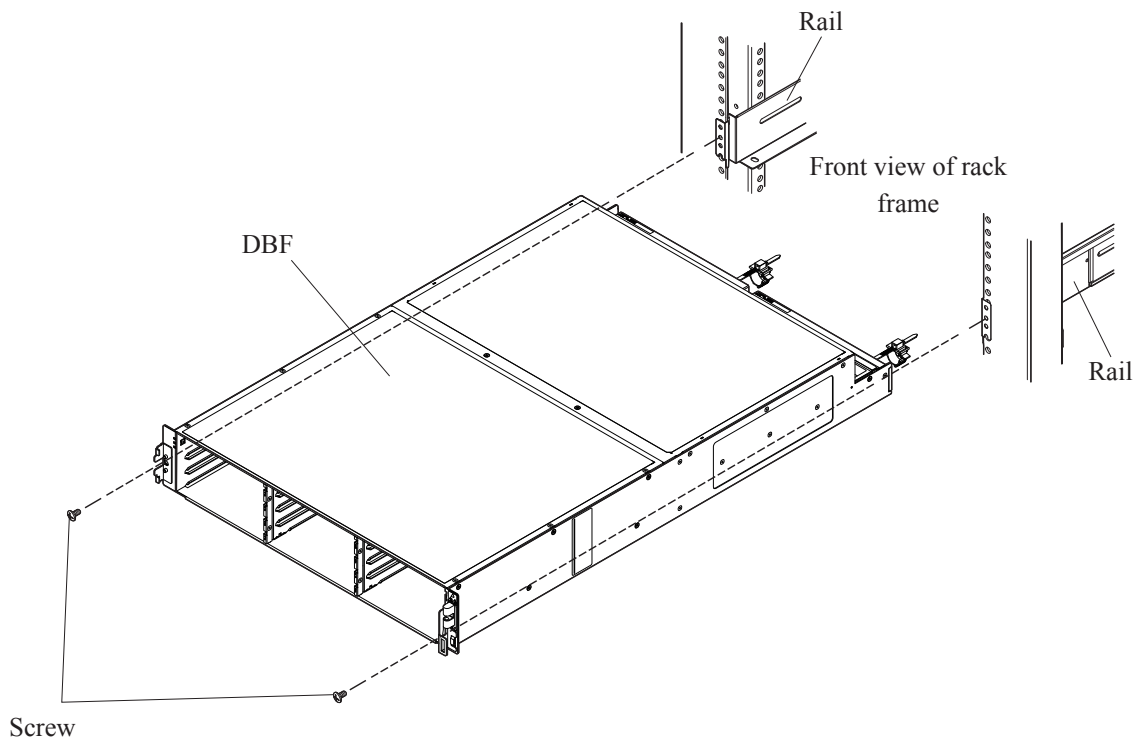
Work carefully because the mass of the DBF is about 10 kg.

Be careful of falling over and dropping:

To prevent DBF from falling over and dropping, the installation work must be done by two or more personnel.

- (3) Remove the two screws from the DBF.
- (4) Remove the DBF from the Rack frame referring to mounting procedure using the special lifter. (Refer to “[2.2.3 Mounting Lifter on Rack Frame](#)”.)
- (5) Install the spare DBF on the front side of the Rack frame.
- (6) Fix the DBF with the two screws.
- (7) Attach the plate to the left side of the front of the DBF. (See [Figure 2-241](#).)
- (8) Attach the side cover to the left side of the front of the DBF. (See [Figure 2-240](#).)

Figure 2-242 Replacement of DBF



8. Install the Drives.

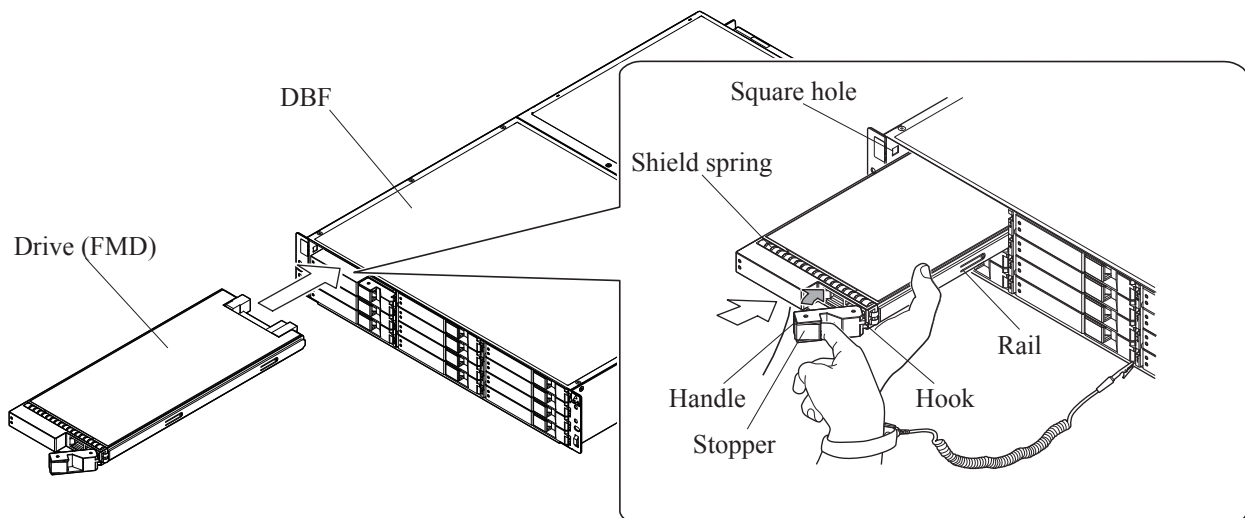
Install all the removed drives to the same place in the spare Drive Box according to the label attached to them.

- (1) 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.
- (2) 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.

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

- (3) Push it in until it reaches the position where a hook of the handle can be entered into the square hole on the frame
- (4) 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 Storage System.
- (5) Install the other Drives in the same manner.

Figure 2-243 Installation of Drive (DBF)



9. Insert the DBPS.
 - (1) Make the handle of the DBPS completely fall down and forward. (Refer to [Figure 2-238](#).)
 - (2) Insert the DBPS into the slot and push it to the full.
 - (3) Completely raise the handle and fix the DBPS.
 - (4) Connect the power cable to the DBPS and fasten it with the cable holder. (Refer to [Figure 2-237](#).)
 - (5) Push the cable holder toward the DBPS until it stops.
 - (6) Install the other DBPS in the same manner.

10. Insert the ENC.
 - (1) Make the right and left levers of the ENC open. (Refer to [Figure 2-236](#).)
 - (2) Insert the ENC until the edge of the lever comes in contact with the Drive Box.
 - (3) Close the right and left levers to insert the ENC completely.
 - (4) Connect the cables to the ENC after checking "[1.1.5 Note on Cable Routing](#)".
When connecting SAS cables, be careful not to damage the tips of the cables. (Refer to INSTALLATION SECTION "[2.10.2.1 Precautions when Connecting SAS Cables](#)".)
 - (5) Install the other ENC in the same manner.

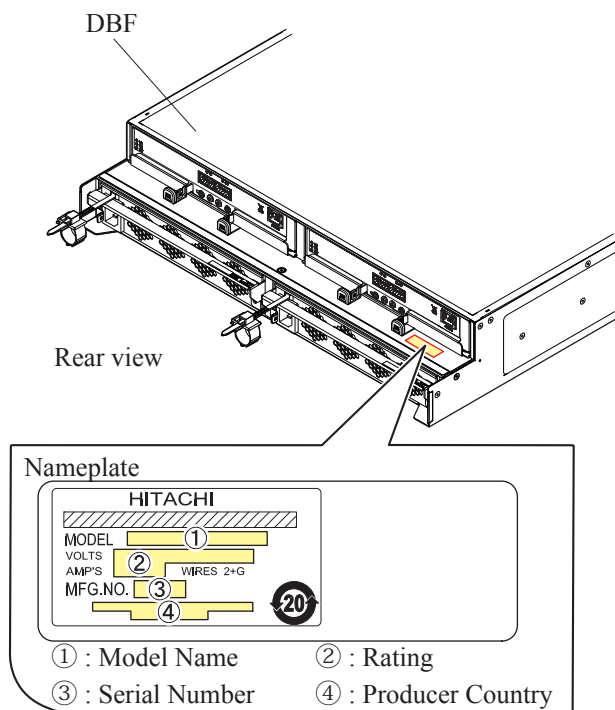
11. Attach the nameplate.

Take out the nameplate in which the same model name as the removed DBF is described from the nameplates attached to the spare DBF. Write down the same serial number as the removed DBF in the nameplate, and then affix the nameplate to the spare DBF.

When the nameplate in which the same model name as the removed DBF is described is not attached, take out the nameplate in which the same rating and producer country as the removed DBF are described and which the model name is not described. Write down the same model name and serial number as the removed DBF in the nameplate, and then affix it to the spare DBF.

To fill in the nameplate, use the RoHS-compliant marker pen.

Figure 2-244 Attachment of Nameplate



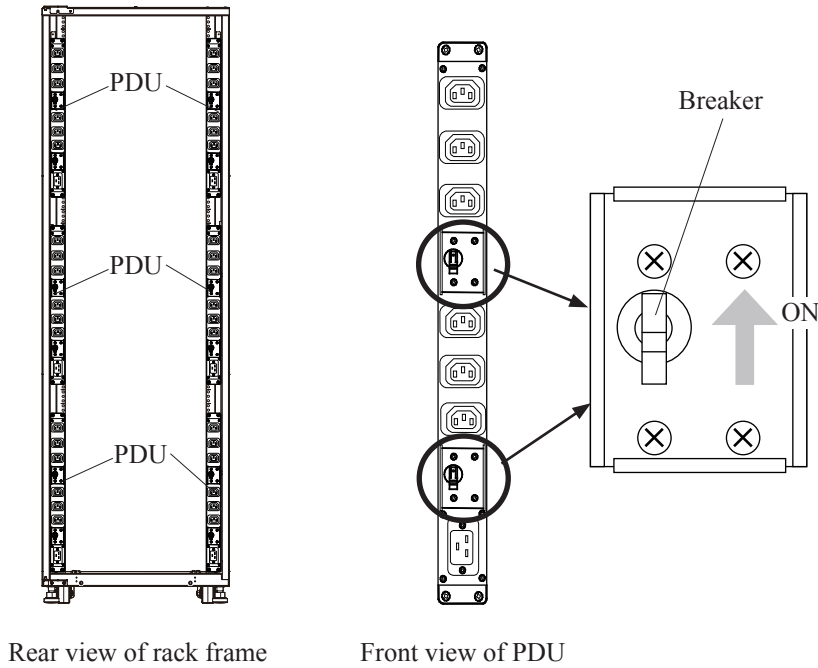
12. Attach the Front Bezel.

Attach the Front Bezel to the DBF. (See [“2.2.1 How to Attach/Remove Front Bezel”](#).)

13. Powering on the rack frame

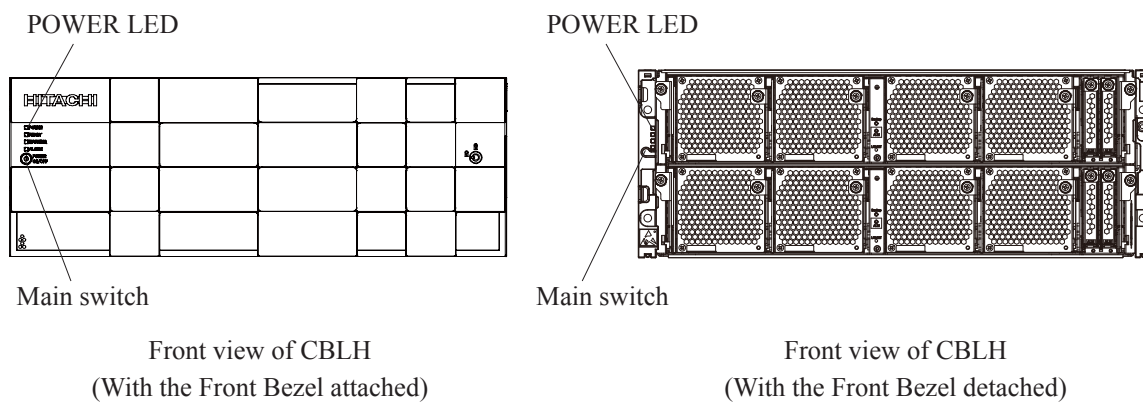
- (1) Turn on the breaker on the power distribution panel.
- (2) Turn on the breaker at the PDU on the rack frame.

Figure 2-245 Turning-on Breakers



- (3) Turn on the Main Switch on the front of the CBLH.

Figure 2-246 Main Switch and POWER LED on the front of CBLH



14. End