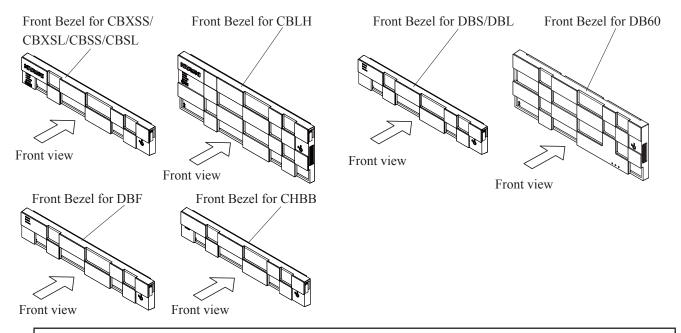
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2.18 Replacing the Front Bezel

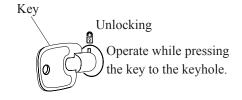
1. Hardware Replacement Processing

Location	Function Name of Component		Part Name
CBXSS/CBXSL/CBSS/CBSL	1	Front Bezel	• Front Bezel for CBXSS/CBXSL/CBSS/CBSL
CBLH	2	Front Bezel	• Front Bezel for CBLH
DBS/DBL	3	Front Bezel	• Front Bezel for DBS/DBL
DB60	4	Front Bezel	• Front Bezel for DB60
DBF	5	Front Bezel	• Front Bezel for DBF
СНВВ	6	Front Bezel	• Front Bezel for CHBB



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".
- When inserting and turning the key, have it inserted completely. If it is turned when it is inserted half way, a damage of it may be caused.
- When removing the key after locking up the Front Bezel, pull it off aligning its groove with the positioning mark on the lock.
 When the key is pulled off in the state where its groove is not aligned with the positioning mark on the lock, a damage of the lock may be caused.





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



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

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The procedure differs according to Controller Chassis/Drive Box.

- \bullet When replacing the Front Bezel of CBXSS/CBXSL/CBSL/CBSS
 - "2.18.1 Replacing the Front Bezel of CBXSS/CBXSL/CBSS/CBSL"
- When replacing the Front Bezel of CBLH
 - "2.18.2 Replacing the Front Bezel of CBLH"
- When replacing the Front Bezel of DBS/DBL
 - "2.18.3 Replacing the Front Bezel of DBS/DBL"
- When replacing the Front Bezel of DB60
 - "2.18.4 Replacing the Front Bezel of DB60"
- When replacing the Front Bezel of DBF
 - "2.18.5 Replacing the Front Bezel of DBF"
- When replacing the Front Bezel of CHBB
- "2.18.6 Replacing the Front Bezel of CHBB"

2.18.1 Replacing the Front Bezel of CBXSS/CBXSL/CBSS/CBSL

1. Replace the Front Bezel.

A key is necessary to attach or remove a Front Bezel.

- (1) Insert the key into the keyhole on the Front Bezel and release the Lock of the Front Bezel (①).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then disengage the right side of the Front Bezel from the ball catch (②).
 - NOTE: When disengaging the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

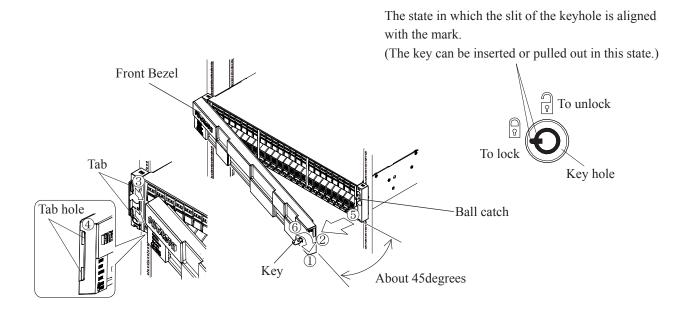
 Do not force the Front Bezel open too wide. Otherwise, a damage of Front Bezel may be caused
- (3) Disengage the spare Front Bezel from the left tabs and then remove it (③).
- (4) Unlock the spare Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (5) Insert the tabs on the left front side of the chassis into the tab holes on the spare Front Bezel (4).
- (6) Fix the Front Bezel by pressing the right side of the Front Bezel to engage it with the ball catch on the front side of the chassis (⑤).
- (7) Lock the Front Bezel with the key (6).

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Figure 2-247 Procedure for Replacing Front Bezel for CBXSS/CBXSL/CBSS/CBSL



2. End

2.18.2 Replacing the Front Bezel of CBLH

1. Replace the Front Bezel.

A key is necessary to attach or remove a Front Bezel.

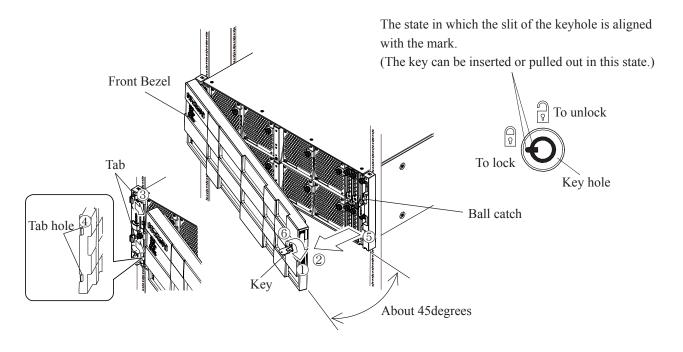
- (1) Insert the key into the keyhole on the Front Bezel and release the Lock of the Front Bezel (①).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then disengage the right side of the Front Bezel from the ball catch (②).

NOTE: When disengaging the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Disengage the spare Front Bezel from the left tabs and then remove it (③).
- (4) Unlock the spare Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (5) Insert the tabs on the left front side of the chassis into the tab holes on the spare Front Bezel (4).
- (6) Fix the Front Bezel by pressing the right side of the Front Bezel to engage it with the ball catch on the front side of the chassis (⑤).
- (7) Lock the Front Bezel with the key (6).

Figure 2-248 Procedure for Replacing Front Bezel for CBLH



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2.18.3 Replacing the Front Bezel of DBS/DBL

1. Replace the Front Bezel.

A key is necessary to attach or remove a Front Bezel.

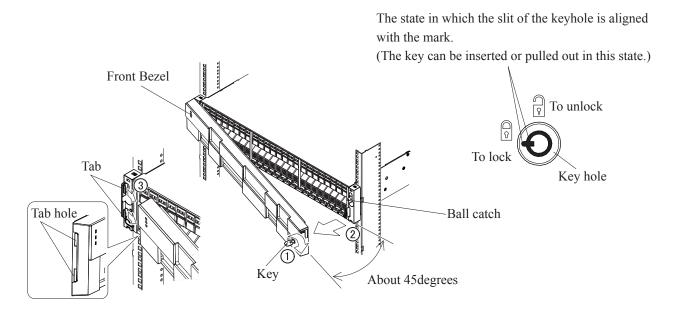
- (1) Insert the key into the keyhole on the Front Bezel and release the Lock of the Front Bezel (①).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then disengage the right side of the Front Bezel from the ball catch (②).

NOTE: When disengaging the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Disengage the spare Front Bezel from the left tabs and then remove it (③).
- (4) Unlock the spare Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (5) Insert the tabs on the left front side of the chassis into the tab holes on the spare Front Bezel (4).
- (6) Fix the Front Bezel by pressing the right side of the Front Bezel to engage it with the ball catch on the front side of the chassis (⑤).
- (7) Lock the Front Bezel with the key (6).

Figure 2-249 Procedure for Replacing Front Bezel for DBS/DBL



2. End

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2.18.4 Replacing the Front Bezel of DB60

1. Replace the Front Bezel.

A key is necessary to attach or remove a Front Bezel.

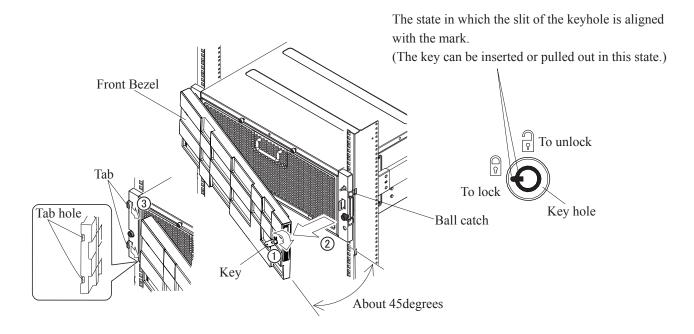
- (1) Insert the key into the keyhole on the Front Bezel and release the Lock of the Front Bezel (①).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then disengage the right side of the Front Bezel from the ball catch (②).

NOTE: When disengaging the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Disengage the spare Front Bezel from the left tabs and then remove it (③).
- (4) Unlock the spare Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (5) Insert the tabs on the left front side of the chassis into the tab holes on the spare Front Bezel (4).
- (6) Fix the Front Bezel by pressing the right side of the Front Bezel to engage it with the ball catch on the front side of the chassis (⑤).
- (7) Lock the Front Bezel with the key (6).

Figure 2-250 Procedure for Replacing Front Bezel for DB60



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2.18.5 Replacing the Front Bezel of DBF

1. Replace the Front Bezel.

A key is necessary to attach or remove a Front Bezel.

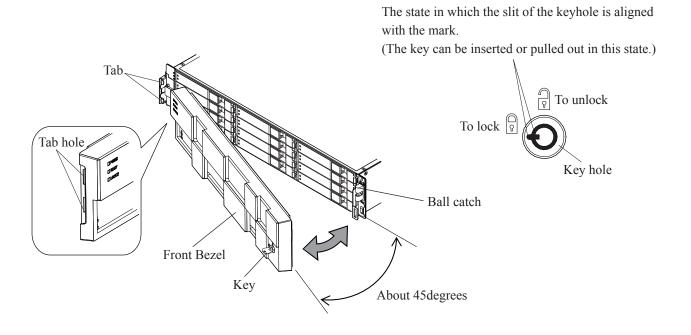
- (1) Insert the key into the keyhole on the Front Bezel and release the Lock of the Front Bezel (1).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then disengage the right side of the Front Bezel from the ball catch (②).

NOTE: When disengaging the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Disengage the spare Front Bezel from the left tabs and then remove it (3).
- (4) Unlock the spare Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (5) Insert the tabs on the left front side of the chassis into the tab holes on the spare Front Bezel (④) with the opening angle between the Front Bezel and the Storage System of 45 degrees.
 - NOTE: Be careful not to catch the Plate between the chassis and the Front Bezel when inserting the tabs on the chassis into the tab holes on the Front Bezel. The Plate may be damaged if catched.
- (6) Fix the Front Bezel by pressing the right side of the Front Bezel to engage it with the ball catch on the front side of the chassis (⑤).
- (7) Lock the Front Bezel with the key (6).

Figure 2-251 Procedure for Replacing Front Bezel for DBF



2. End

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2.18.6 Replacing the Front Bezel of CHBB

1. Replace the Front Bezel.

A key is necessary to attach or remove a Front Bezel.

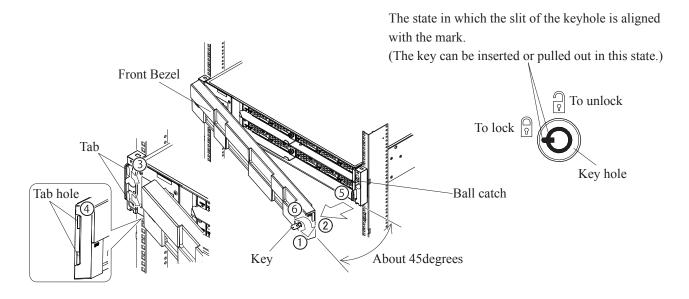
- (1) Insert the key into the keyhole on the Front Bezel and release the Lock of the Front Bezel (①).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then disengage the right side of the Front Bezel from the ball catch (②).

NOTE: When disengaging the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Disengage the spare Front Bezel from the left tabs and then remove it (③).
- (4) Unlock the spare Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (5) Insert the tabs on the left front side of the chassis into the tab holes on the spare Front Bezel (4).
- (6) Fix the Front Bezel by pressing the right side of the Front Bezel to engage it with the ball catch on the front side of the chassis (⑤).
- (7) Lock the Front Bezel with the key (6).

Figure 2-252 Procedure for Replacing Front Bezel for CHBB

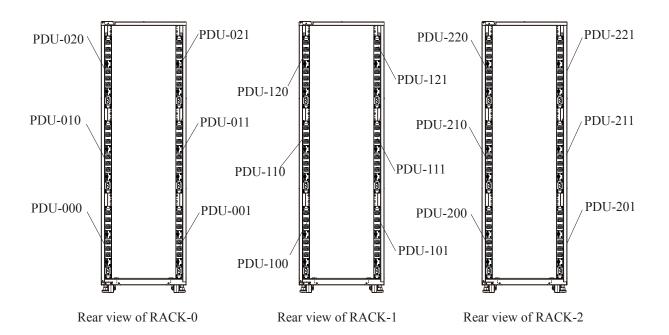


2. End

2.19 Replacing PDUs

1. Hardware Replacement Processing

Location	Function Name of Component		Part Name
Rear view of rack	1	PDU	



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.

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(1) Turning off the breakers of the replacement target parts



Hazardous voltage:

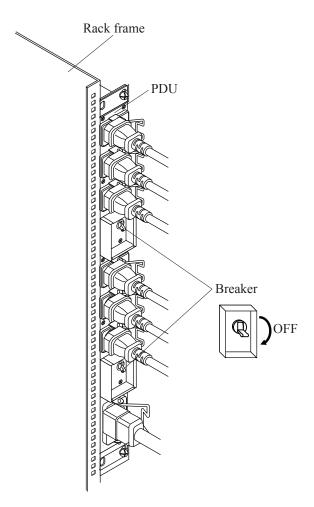
Contact could cause electric shock or burn. Turn off all related breakers and discharge residual voltage, as shown below. (Follow next procedures.)

A CAUTION

If turning off any other breakers than the following, the Power Supply of the entire Storage System may be turned off.

(a) Turn off the breaker of the PDU to be replaced.

Figure 2-253 Turning-off Breakers



(b) Turn off the breaker on the distribution board connected to the PDU to be replaced.

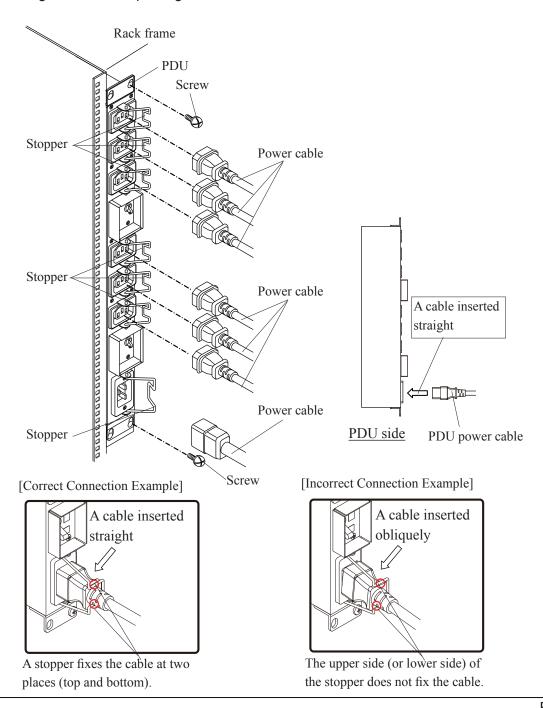
NOTE: The circuit has the residual voltage after turning off the breakers, so that wait for one minute before starting the work.

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- (2) Replacing PDUs
 - (a) Open the stopper and remove the power cable.
 - (b) Loosen the two screws and remove the failed PDU. The failed PDU may drop. Therefore, when removing the failed PDU, do not remove the screws completely.
 - (c) Install a new PDU and fix it with screws.
 - (d) Insert the power cable into the PDU straight and fix it with a stopper.

NOTE: Check that the stopper fixes the cable at two places (top and bottom).

Figure 2-254 Replacing PDU

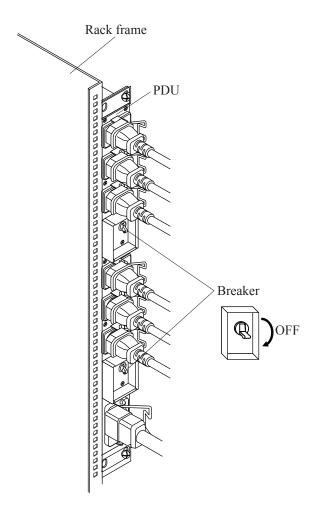


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- (3) Turning on the Power Supply after the replacement
 - (a) Turn on the breaker on the distribution panel after replacing the PDUs.
 - (b) Turn on the PDU circuit breaker.

Figure 2-255 Turning-on Power Supply



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2.20 Replacing a SAS Cable

For the DW-F800-SCQ1HA cable, replace the SAS adapter first. If it is not recovered even after replacing the SAS adapter, replace the cable.

- When replacing the SAS cable of the DBS/DBL "2.20.1 Replacing a SAS Cable of DBS/DBL"
- When replacing the SAS cable of the DB60
 - "2.20.2 Replacing a SAS Cable of DB60"
- When replacing the SAS cable of the DBF
 - "2.20.3 Replacing a SAS Cable of DBF"

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2.20.1 Replacing a SAS Cable of DBS/DBL

NOTE: • When replacing the SAS cable connected to the CBXSS/CBXSL/CBSS/CBSL/CBLH, it is necessary to block the ENC on the Drive Box.

• When replacing the SAS cable between the Drive Boxes, it is necessary to block the ENC on the Drive Box nearer to the Controller Chassis.

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1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the SAS cable connected to 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").

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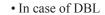
3. Selecting replacement parts by Maintenance Utility.

(1) <Main window> Select the [Drive Box] to which the SAS cable to be replaced is connected 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].

• In case of DBS







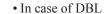
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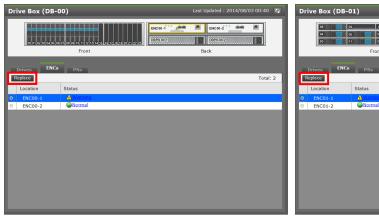
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(3) <Select ENC>

Select an ECN to which the SAS cable to be replaced is connected, and click the [Replace] button.

• In case of DBS







(4) <Block ENC>

A CAUTION

About "Forcibly run without safety checks":

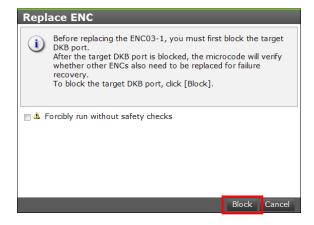
If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the message, the manual or the contact described in the manual. This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

Check that the ENC to replace the SAS cable is correct and click the [Block] button.

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.

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



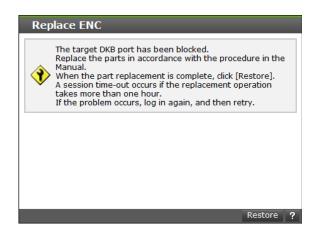
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(5) <Check the beginning of SAS cable replacement> Check that the ENC is blocked and becomes ready for replacing.

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

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

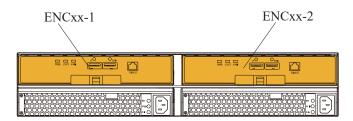


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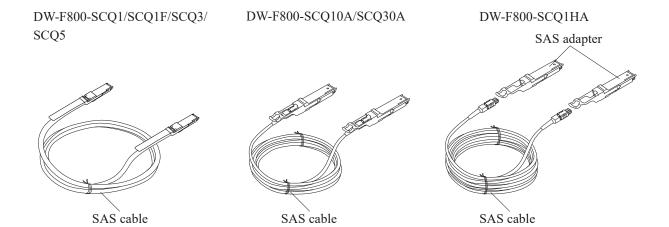
4. SAS Cable for DBS/DBL Replacement Processing

Location	Function Name of Component		Part Name
Rear View of DBS/DBL	1	SAS cable	• DW-F800-SCQ1
			• DW-F800-SCQ1F
			• DW-F800-SCQ3
			• DW-F800-SCQ5
			• DW-F800-SCQ10A
			• DW-F800-SCQ30A
			• DW-F800-SCQ1HA



Rear view of DBS/DBL

*1: $ENC\underline{xx}$ -1 DB No. (00, 01, 02,, 47)



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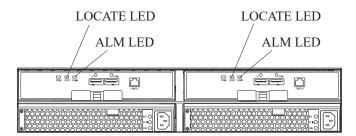
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. Refer to "1.1.3 Note on Installing and Removing Parts".

(1) Check that the ALM LED (red) on the ENC to replace the SAS cable of the DBS/DBL lights up.

A CAUTION

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

Figure 2-256 ALM LED Location



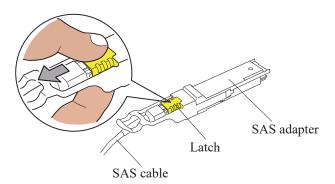
Rear view of DBS/DBL

- (2) Remove the SAS cable.
 - In the case of replacing the DW-F800-SCQ1/SCQ1F/SCQ3/SCQ5/SCQ10A/SCQ30A SAS cable:
 - (a) Release the routing of the SAS cable connected to the DBS/DBL in the reverse procedure of INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).
 - (b) Remove the SAS cable from DBS/DBL and any of CBXSS/CBXSL/CBSS/CBSL/CBLH/ Drive Box that is connected to DBS/DBL.
 - In the case of replacing the DW-F800-SCQ1HA SAS adapter:
 - (a) Remove the SAS cable from DBS/DBL and any of CBXSS/CBXSL/CBSS/CBSL/CBLH/ Drive Box that is connected to DBS/DBL.
 - (b) Pull the latch of the SAS cable to remove from the SAS adapter.
 - In the case of replacing the DW-F800-SCQ1HA SAS cable:
 - (a) Release the routing of the SAS cable connected to the DBS/DBL in the reverse procedure of INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).
 - (b) Remove the SAS cable from DBS/DBL and any of CBXSS/CBXSL/CBSS/CBSL/CBLH/ Drive Box that is connected to DBS/DBL.
 - (c) Pull the latch of the SAS cable to remove from the SAS adapter.

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Figure 2-257 Removing DW-F800-SCQ1HA

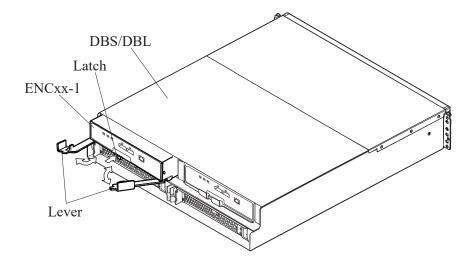


(3) Perform the dummy replacement of the blocked ENC.

Remove the ENC once, and then install it again.

- (a) Push the latch on the ENC toward the arrow direction to unlock the lever.
- (b) Open the lever fixing the ENC. If the lever opens completely, the ENC is pulled out.
- (c) Wait for 20 seconds or more.
- (d) Insert the ENC until the right and left levers close slightly, and then push the lever into the ENC side.

Figure 2-258 Dummy Replacement of the ENC (DBS/DBL)



CAUTION

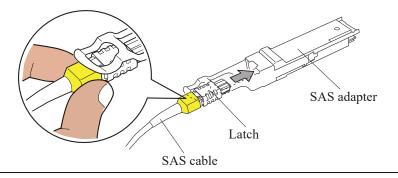
Watching for short-circuits:

A Short-circuit may cause a fire.

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

- (4) Connect the SAS cable.
 - In the case that the DW-F800-SCQ1/SCQ1F/SCQ3/SCQ5/SCQ10A/SCQ30A SAS cable was replaced:
 - (a) Connect the new SAS cable to DBS/DBL and any of CBXSS/CBXSL/CBSS/CBSL/CBLH/ Drive Box that is connected to DBS/DBL. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - (b) Route the SAS cable. (Refer to INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).)
 - In the case that the DW-F800-SCQ1HA SAS adapter was replaced:
 - (a) Attach the new SAS adapter to the SAS cable.
 - NOTE: When connecting the DW-F800-SCQ1HA cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the SAS cable to DBS/DBL and any of CBXSS/CBXSL/CBSS/CBSL/CBLH/Drive Box that is connected to DBS/DBL. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - In the case that the DW-F800-SCQ1HA SAS cable was replaced:
 - (a) Attach the SAS adapter to the new SAS cable.
 - NOTE: When connecting the DW-F800-SCQ1HA cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the new SAS cable to DBS/DBL and any of CBXSS/CBXSL/CBSS/CBSL/CBLH/ Drive Box that is connected to DBS/DBL. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - (c) Route the SAS cable. (Refer to INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).)

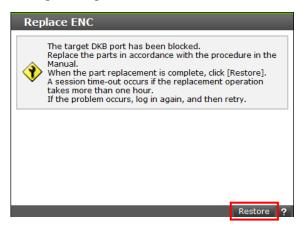
Figure 2-259 How to Install DW-F800-SCQ1HA



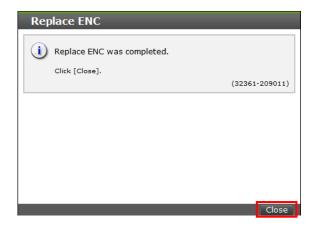
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- 5. Restoring replacement parts by Maintenance Utility
 - (1) <Restore replacement parts> Click the [Restore] button.



(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".



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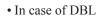
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(3) <Check ENC restoration> Click the [ENCs] tab in the "Drive Box" window to check that the status of the ENC with the

• In case of DBS

replaced SAS cables is "Normal".







- (4) 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".

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2.20.2 Replacing a SAS Cable of DB60

NOTE: • When replacing the SAS cable connected to the CBSS/CBSL/CBLH, it is necessary to block the ENC on the Drive Box.

- When replacing the SAS cable between the Drive Boxes, it is necessary to block the ENC on the Drive Box nearer to the Controller Chassis.
- 1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the SAS cable connected to 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").

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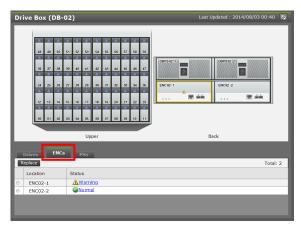
- 3. Selecting replacement parts by Maintenance Utility.
 - (1) <Main window>

Select the [Drive Box] to which the SAS cable to be replaced is connected in the main window.



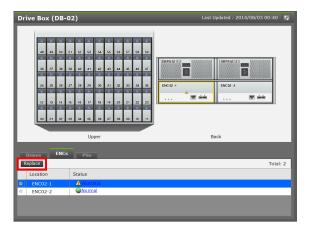
(2) <Drive Box window>

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].



(3) <Select ENC>

Select an ECN to which the SAS cable to be replaced is connected, and click the [Replace] button.



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(4) <Block ENC>

A CAUTION

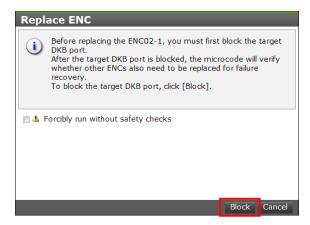
About "Forcibly run without safety checks":

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.

Check the ENC to replace the SAS cable is correct and click the [Block] button.

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.

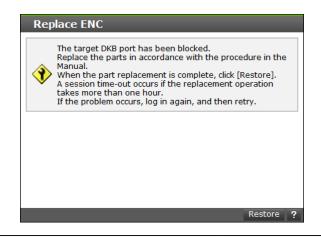
If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



(5) <Check the beginning of SAS cable 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.

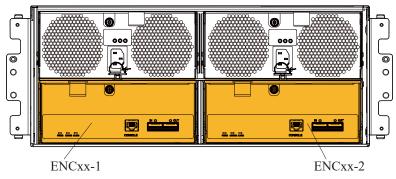


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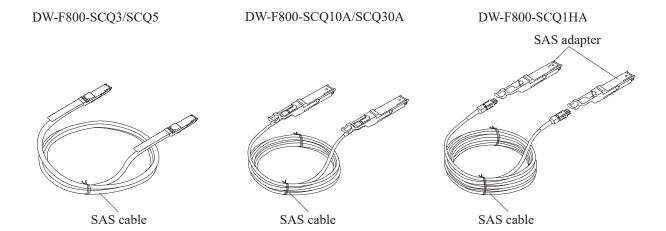
4. SAS Cable for DB60 Replacement Processing

Location	Function Name of Component		Part Name
Rear View of DB60	1	SAS cable	• DW-F800-SCQ3
			• DW-F800-SCQ5
			• DW-F800-SCQ10A
			• DW-F800-SCQ30A
			• DW-F800-SCQ1HA



Rear view of DB60

*1:
$$ENC\underline{x}x$$
-1 DB No. (00, 01, 02,, 47)



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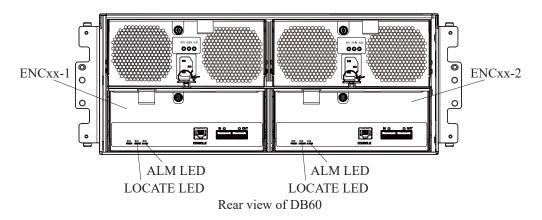
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. Refer to "1.1.3 Note on Installing and Removing Parts".

(1) Check that the ALM LED (red) on the DB60 ENC to be replaced lights up.

A CAUTION

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

Figure 2-260 ALM LED Location



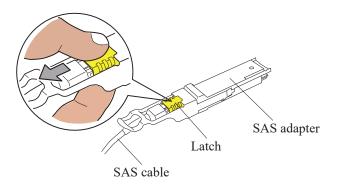
- (2) Remove the SAS cable.
 - In the case of replacing the DW-F800-SCQ3/SCQ5/SCQ10A/SCQ30A SAS cable:
 - (a) Release the routing of the SAS cable connected to the DB60 in the reverse procedure of INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).
 - (b) Remove the SAS cable from DB60 and any of CBSS/CBSL/CBLH/Drive Box that is connected to DB60.
 - In the case of replacing the DW-F800-SCQ1HA SAS adapter:
 - (a) Remove the SAS cable from DB60 and any of CBSS/CBSL/CBLH/Drive Box that is connected to DB60.
 - (b) Pull the latch of the SAS cable to remove from the SAS adapter.
 - In the case of replacing the DW-F800-SCQ1HA SAS cable:
 - (a) Release the routing of the SAS cable connected to the DB60 in the reverse procedure of INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).
 - (b) Remove the SAS cable from DB60 and any of CBSS/CBSL/CBLH/Drive Box that is connected to DB60.
 - (c) Pull the latch of the SAS cable to remove from the SAS adapter.

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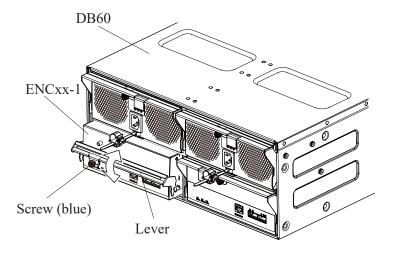
Rev.2

Figure 2-261 Removing DW-F800-SCQ1HA



- (3) Perform the dummy replacement of the blocked ENC. Remove the ENC once, and then install it again.
 - (a) Loosen the screw (blue) fixing the ENC.
 - (b) Open the lever.
 - (c) Wait for 20 seconds or more.
 - (d) Push the ENC and close the lever.
 - (e) Tighten the screw (blue) to fix the ENC.

Figure 2-262 Dummy Replacement of the ENC (DB60)



REP02-20-180



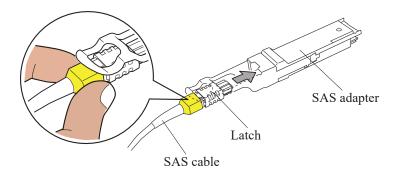
Watching for short-circuits:

A Short-circuit may cause a fire.

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

- (4) Connect the SAS cable.
 - In the case that the DW-F800-SCQ3/SCQ5/SCQ10A/SCQ30A SAS cable was replaced:
 - (a) Connect the new SAS cable to DB60 and any of CBSS/CBSL/CBLH/Drive Box that is connected to DB60. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - (b) Route the SAS cable. (Refer to INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).)
 - In the case that the DW-F800-SCQ1HA SAS adapter was replaced:
 - (a) Attach the new SAS adapter to the SAS cable.
 - NOTE: When connecting the DW-F800-SCQ1HA cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the SAS cable to DB60 and any of CBSS/CBSL/CBLH/Drive Box that is connected to DB60. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - In the case that the DW-F800-SCQ1HA SAS cable was replaced:
 - (a) Attach the SAS adapter to the new SAS cable.
 - NOTE: When connecting the DW-F800-SCQ1HA cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the new SAS cable to DB60 and any of CBSS/CBSL/CBLH/Drive Box that is connected to DB60. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - (c) Route the SAS cable. (Refer to INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).)

Figure 2-263 How to Install DW-F800-SCQ1HA

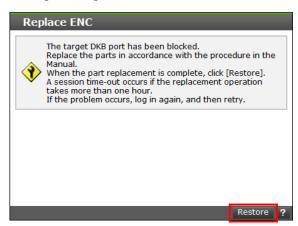


DW850

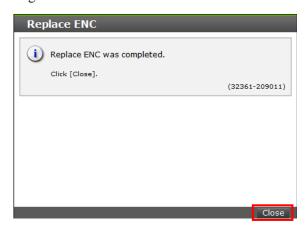
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- 5. Restoring replacement parts by Maintenance Utility
 - (1) <Restore replacement parts> Click the [Restore] button.



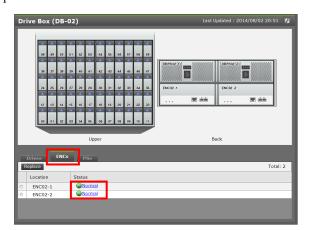
(2) <Check replacement parts restoration> Check that the following message is displayed and click the [Close] button. If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



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(3) <Check ENC restoration>
Click the [ENCs] tab in the "Drive Box" window to check that the status of the ENC with the replaced SAS cables is "Normal".



- (4) 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".

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2.20.3 Replacing a SAS Cable of DBF

NOTE: • When replacing the SAS cable connected to the CBLH, it is necessary to block the ENC on the Drive Box.

- When replacing the SAS cable between the Drive Boxes, it is necessary to block the ENC on the Drive Box nearer to the Controller Chassis.
- 1. Connecting a maintenance PC

Connect the maintenance PC and the Storage System.

When replacing the SAS cable connected to 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").

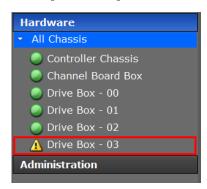
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3. Selecting replacement parts by Maintenance Utility.

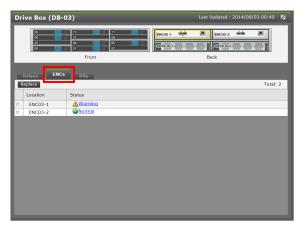
(1) <Main window>

Select the [Drive Box] to which the SAS cable to be replaced is connected in the main window.



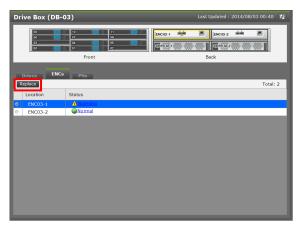
(2) <Drive Box window>

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].



(3) <Select ENC>

Select an ECN to which the SAS cable to be replaced is connected, and click the [Replace] button.



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(4) <Block ENC>

A CAUTION

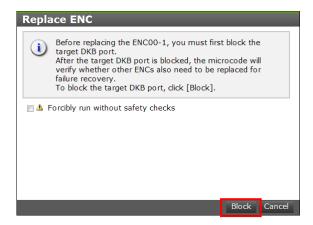
About "Forcibly run without safety checks":

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.

Check that the ENC to replace the SAS cable is correct and click the [Block] button.

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.

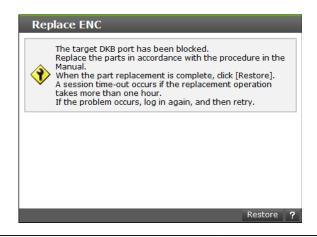
If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



(5) <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.

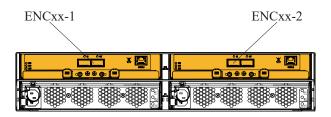
Click the [Restore] button after completing the replacement work.



REP02-20-240

4. SAS Cable for DBF Replacement Processing

Location	F	unction Name of Component	Part Name
Rear View of DBF	1	SAS Cable	• DW-F800-SCQ1
			• DW-F800-SCQ1F
			• DW-F800-SCQ3
			• DW-F800-SCQ5
			• DW-F800-SCQ10A
			• DW-F800-SCQ30A
			• DW-F800-SCQ1HA



Rear view of DBF

*1: $ENC\underline{xx}$ -1 DB No. (00, 01, 02,, 47)



DW-F800-SCQ1/SCQ1F/SCQ3/

SCQ5

SAS cable



DW-F800-SCQ10A/SCQ30A

SAS cable



SAS cable

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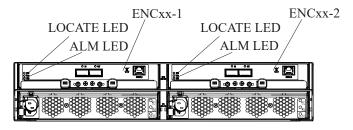
NOTICE: To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. See "1.1.3 Note on Installing and Removing Parts".

(1) Check that the ALM LED (red) on the DBF ENC to be replaced lights up.

A CAUTION

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

Figure 2-264 ALM LED Location



Rear view of DBF

- (2) Remove the SAS cable.
 - In the case of replacing the DW-F800-SCQ1/SCQ1F/SCQ3/SCQ5/SCQ10A/SCQ30A SAS cable:
 - (a) Release the routing of the SAS cable connected to the DBF in the reverse procedure of INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).
 - (b) Remove the SAS cable from DBF and any of CBSS/CBSL/CBLH/Drive Box that is connected to DBF.
 - In the case of replacing the DW-F800-SCQ1HA SAS adapter:
 - (a) Remove the SAS cable from DBF and any of CBSS/CBSL/CBLH/Drive Box that is connected to DBF.
 - (b) Pull the latch of the SAS cable to remove from the SAS adapter.
 - In the case of replacing the DW-F800-SCQ1HA SAS cable:
 - (a) Release the routing of the SAS cable connected to the DBF in the reverse procedure of INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).
 - (b) Remove the SAS cable from DBF and any of CBSS/CBSL/CBLH/Drive Box that is connected to DBF.
 - (c) Pull the latch of the SAS cable to remove from the SAS adapter.

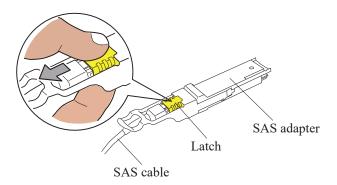
DW850

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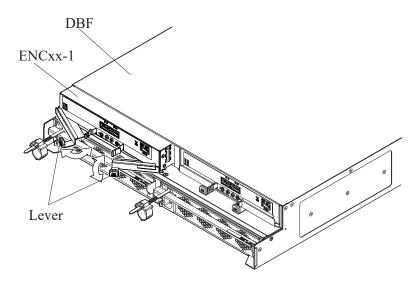
REP02-20-260

Figure 2-265 Removing DW-F800-SCQ1HA



- (3) Perform the dummy replacement of the blocked ENC.
 - Remove the ENC once, and then install it again.
 - (a) Open the lever fixing the ENC.If the lever opens completely, the ENC is pulled out.
 - (b) Wait for 20 seconds or more.
 - (c) Insert the ENC until the right and left levers close slightly, and then push the lever into the ENC side.

Figure 2-266 Dummy Replacement of the ENC (DBF)



REP02-20-270



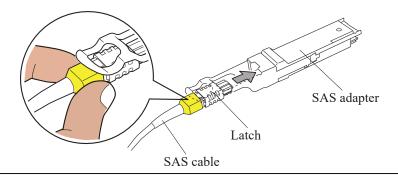
Watching for short-circuits:

A Short-circuit may cause a fire.

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

- (4) Connect the SAS cable.
 - In the case that the DW-F800-SCQ1/SCQ1F/SCQ3/SCQ5/SCQ10A/SCQ30A SAS cable was replaced:
 - (a) Connect the new SAS cable to DBF and any of CBSS/CBSL/CBLH/Drive Box that is connected to DBF. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - (b) Route the SAS cable. (Refer to INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).)
 - In the case that the DW-F800-SCQ1HA SAS adapter was replaced:
 - (a) Attach the new SAS adapter to the SAS cable.
 - NOTE: When connecting the DW-F800-SCQ1HA cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the SAS cable to DBF and any of CBSS/CBSL/CBLH/Drive Box that is connected to DBF. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - In the case that the DW-F800-SCQ1HA SAS cable was replaced:
 - (a) Attach the SAS adapter to the new SAS cable.
 - NOTE: When connecting the DW-F800-SCQ1HA cable to the SAS adapter, check that cable latch clicks and the cable is surely connected to the SAS adapter.
 - (b) Connect the new SAS cable to DBF and any of CBSS/CBSL/CBLH/Drive Box that is connected to DBF. (Refer to INSTALLATION SECTION "2.10 Connecting Cables" and "2.10.2 Connecting SAS Cables".)
 - (c) Route the SAS cable. (Refer to INSTALLATION SECTION "3. Routing of SAS cables" (INST02-10-300).)

Figure 2-267 How to Install DW-F800-SCQ1HA



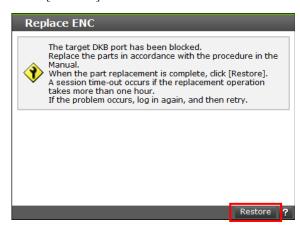
DW850

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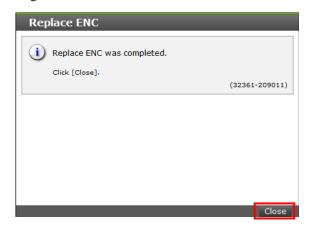
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5. Restoring replacement parts by Maintenance Utility

(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".

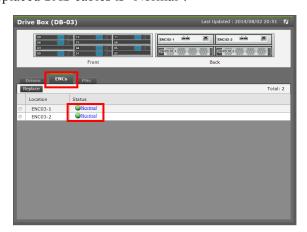


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(3) <Check ENC restoration>
Click the [ENCs] tab in the "Drive Box" window to check that the status of the ENC with the replaced SAS cables is "Normal".



- (4) 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".

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REP02-21-10

2.21 Replacing a SVP

1. Login to the SVP.

2. Shutdown the SVP

- (1) In the desktop, click Start.
- (2) From the displayed menu, click Windows Security.
- (3) In the Windows Security window, click the option in the power menu.
- (4) From the displayed menu, click Shutdown.

 The SVP power goes OFF. Check the power LED of the SVP goes OFF.

For Windows 10

- (1) Click the [Windows] button on the SVP desktop.
- (2) Select [Power] from the menu displayed and click [Shut Down]. The SVP power goes OFF. Check the power LED of the SVP goes OFF.
- 3. For removing and installing the SVP For information about the service processor used with HDS VSP storage systems, refer to the "Service Processor (SVP) Technical Reference" (FE-94HM8036).
- 4. Installing the storage management software

A CAUTION

There are the installation media for the Maintenance PC and the installation media for the SVP. Use the installation media corresponding to the PC (Maintenance PC/SVP) for the installation/ update.

If an incorrect installation media is used, the SVP does not operate correctly. In this case, uninstall the SVP software, then install it again using the correct installation media. (See MAINTENANCE PC SECTION "8.2 Maintenance PC Software Uninstallation" and "1.4 Maintenance PC Software Initial Installation/Update Installation". For the SVP software, procedures are the same.)

- (1) Login to the SVP.
- (2) Insert the installation media for SVP supplied with Storage System into the SVP.
- (3) Right-click Setup.exe immediately under the drive to select [Execute as Administrator].

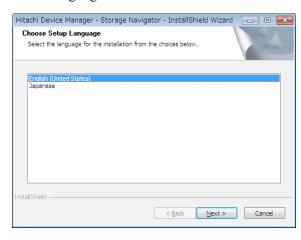
NOTE: If a DVD drive is not mounted on a PC, copy all the files of installation media for the SVP to "work folder". For a "work folder" name, do not use a double -byte character because Setup.exe might not start if a double-byte character is included in the name. Then, use the files in "work folder".

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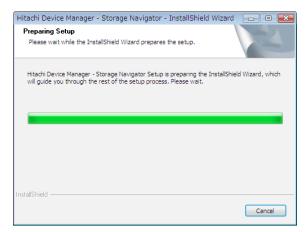
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(4) Select the language.



(5) Launch the Installation wizard.



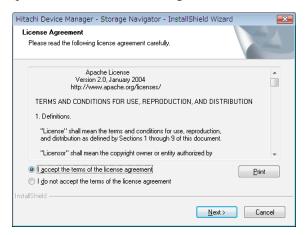
(6) The "InstallShield" window is displayed when the preparation is completed. Click the [Next >] button.



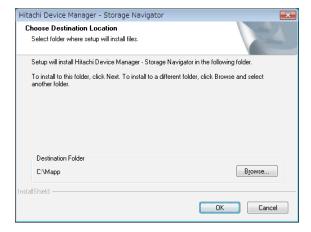
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(7) The License Agreement window of JRE, Perl, Apache, Jetty, Openssl and Flash appears. Click I accept the terms in the license agreement, and then click Next.



(8) Select a directory to be installed and click [OK]. Specify [C:\Mapp] for the directory.

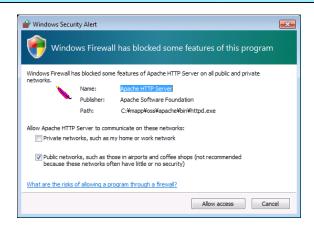


- NOTE: The directory selection is the procedure required at the time of initial installation only. When OSS is installed, the skip confirmation message is displayed. Click [Yes]. When the "Windows Security Alert" window is displayed, click [Allow Access].
 - If confirm the version of software that is installed in Maintenance PC, refer to MAINTENANCE PC SECTION "1.4.2 OSS That Is to Be Installed".
 - To change the default directory to a different one, available characters for the directory are one-byte alphanumeric characters, '-' (hyphen), and ' ' (underscore). The number of characters for a directory path is up to 22.

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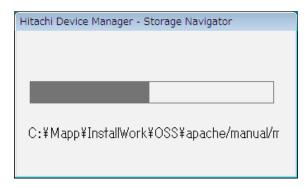
REP02-21-40

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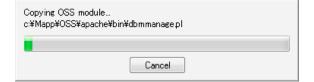


(9) Decompress the files in the media and copy them to the folder selected in Step 9. The following window is displayed during the processing. Wait until the decompression and copy are completed.

<Decompressing Files>



<Copying Files>



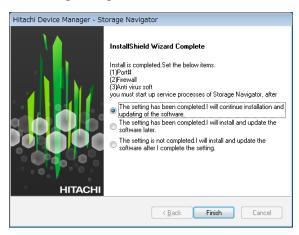
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(10) The installation completion message is displayed.

Select [The setting has been completed. I will continue installation and updating of the software.] and click the [Finish] button.



(11) The "Storage Device List" window is displayed. Register the storage system.

NOTE: If the customer backed up the SVP, register the storage system in the Storage Device List, and then restore the SVP.

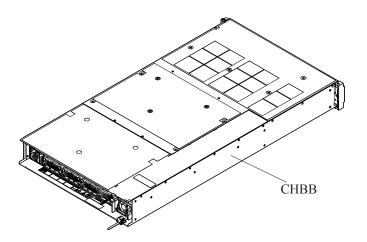
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2.22 Replacing a Channel Board Box

Location	Function Name of Component		Part Name
Rack	1	Channel Board Box (CHBB)	• DW-F800-CHBB



- 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.

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1. Power off the rack.

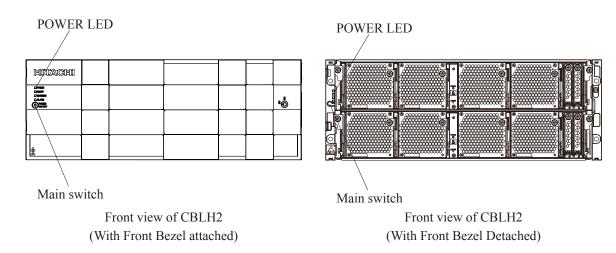


Hazardous voltage:

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 CBLH2 for three second to turn off.
- (2) Confirm that the POWER LED on the front side of the CBLH2 lights in amber.

Figure 2-268 Main Switch and POWER LED on the front of CBLH2



DW850

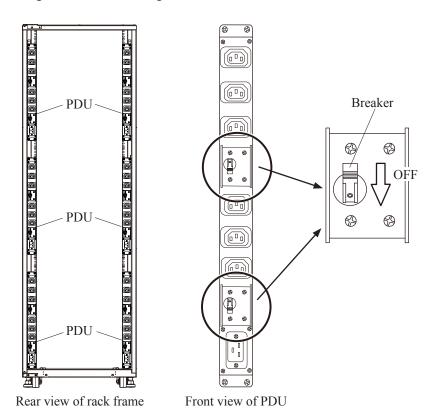
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(3) Turn off the breaker at the PDU on the rack frame.

Figure 2-269 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 Channel Board Box. (Refer to "2.2.1 How to Attach/Remove Front Bezel".)

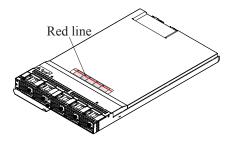
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3. Remove the Switch Package (SWPK)

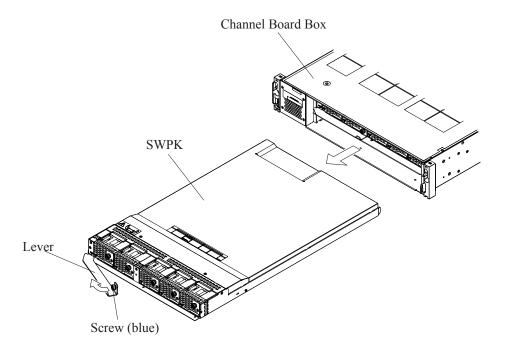


Dropping the Controller Board may cause injury. Keep hands securely on array. Be aware of the red line marked on the Controller Board top - when sliding the Controller Board out of the rail terminal past this mark, keep a firm hold on the Controller Board.



- (1) Loosen the screw (blue) which fixes the Switch Package and open the lever to pull out.
- When the levers are completely opened, the Switch Package comes out forward.
- (3) Pull out and remove the Switch Package while holding its body with both hands.
- (4) Remove the other Switch Package in the same manner.

Figure 2-270 Removing Switch Package (SWPK)

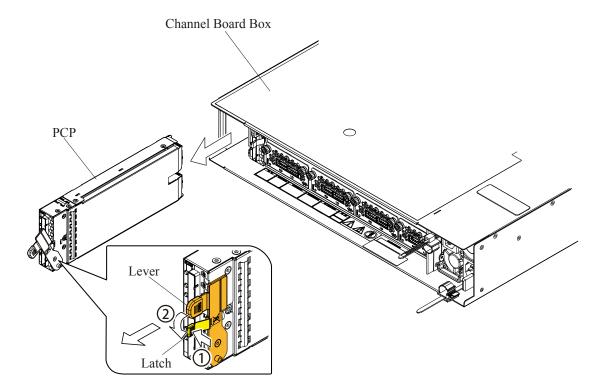


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- 4. Remove the PCIe-cable Connecting Package (PCP)
 - (1) Remove all the PCIe cables connected to the PCIe-cable Connecting Package.
 - (2) Open the lever toward you (②) while pressing the latch (①).
 - (3) Pull out and remove the PCIe-cable Connecting Package.
 - (4) Remove the other PCIe-cable Connecting Package in the same manner.

Figure 2-271 Removing PCle-cable Connecting Package (PCP)



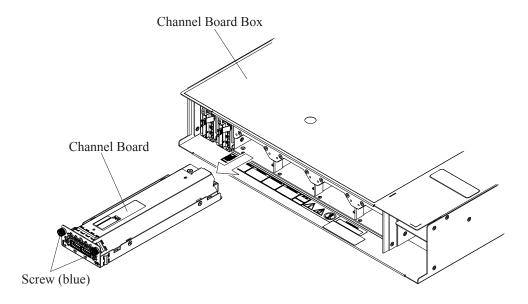
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- 5. Remove the Channel Board
 - (1) Remove all the cables connected to the Channel Board.
 - (2) Loosen the two screws (blue) which fix the Channel Board.
 - (3) Pull out and remove the Channel Board while holding the screws (blue).
 - (4) Remove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

Figure 2-272 Removing Channel Board



DW850

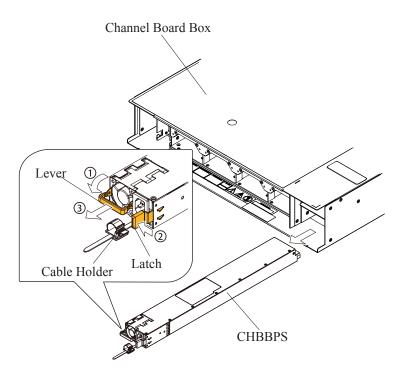
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6. Remove the CHBBPS

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

Figure 2-273 Removing CHBBPS



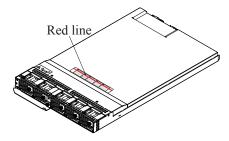
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7. Remove/Install the Channel Board Box

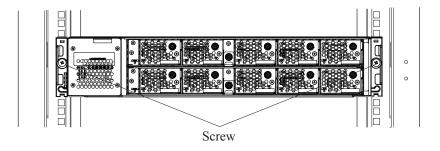


Dropping the Storage System may cause injury. Keep hands securely on array. Be aware of the red line marked on the Storage System top - when sliding the Storage System out of the rail terminal past this mark, keep a firm hold on the Storage System.



- (1) Remove the right and left screws (one each) fixing the Channel Board Box.
- (2) Remove the Channel Board Box from the rack frame.
- (3) Install a new Channel Board Box from the front of the rack.
- (4) Fix the right and left of the Channel Board Box with screws (one each).

Figure 2-274 Removing/Installing Channel Board Box



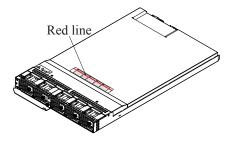
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8. Installing Switch Package (SWPK)

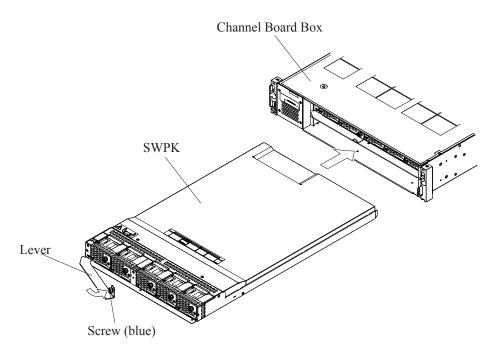


Dropping the Controller Board may cause injury. Keep hands securely on array. Be aware of the red line marked on the Controller Board top - when sliding the Controller Board out of the rail terminal past this mark, keep a firm hold on the Controller Board.



- (1) With the Switch Package lever opened completely, insert the Switch Package into the slot position of the Channel Board Box.
- (2) Insert the lever of the Switch Package is slightly closed, and then push the lever toward the Switch Package (SWPK).
- (3) Tighten the screw (blue) and fix the Switch Package.
- (4) Install the other Switch Package in the same manner.

Figure 2-275 Installing Switch Package (SWPK)

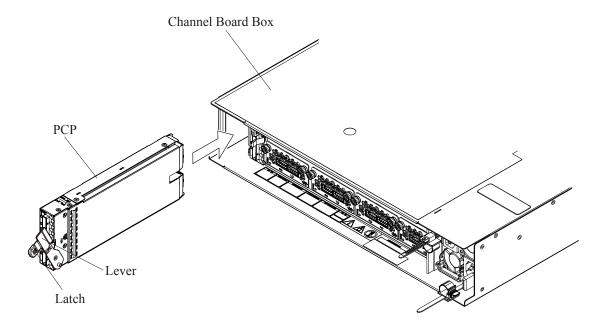


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- 9. Installing PCIe-cable Connecting Package (PCP)
 - (1) With the lever opened completely, insert the PCIe-cable Connecting Package into the slot.
 - (2) Push the PCIe-cable Connecting Package in all the way.
 - (3) Push the lever until the latch of PCIe-cable Connecting Package clicks.
 - (4) Install the other PCIe-cable Connecting Package in the same manner.
 - (5) Connect the PCIe cables to the replaced PCIe-cable Connecting Package.

Figure 2-276 Installing PCle-cable Connecting Package (PCP)



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10. Installing Channel Board

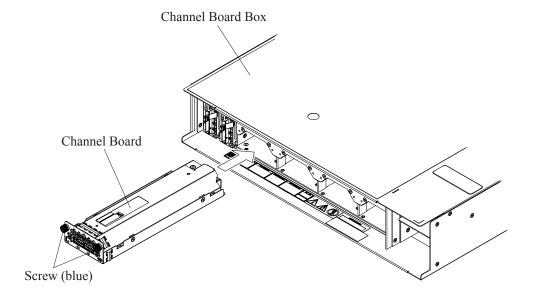
- (1) Insert the Channel Board into the slot.
- (2) Push the Channel Board in all the way.

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.
- (4) Install the other Channel Board in the same manner.
- (5) Connect the cables to the Channel Board.

Figure 2-277 Installing Channel Board



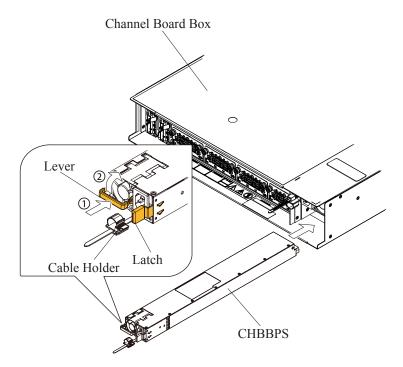
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11. Installing CHBBPS

- (1) Hold up the latch on the cable holder of the CHBBPS to release the lock, and then slide the cable holder forward.
- (2) With the lever completely opened, insert the CHBBPS into the slot.
- (3) Push the Power Supply until the latch of the CHBBPS clicks.
- (4) Close the lever completely to fix the CHBBPS.
- (5) Install the other CHBBPS in the same manner.
- (6) Connect the power cable to the CHBBPS, and then fix the cable by the cable holder.

Figure 2-278 Installing CHBBPS



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12. Attach the nameplate

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

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

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

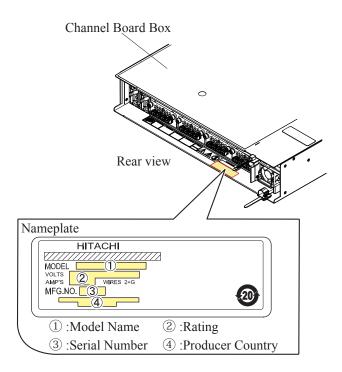


Figure 2-279 Attachment of Nameplate

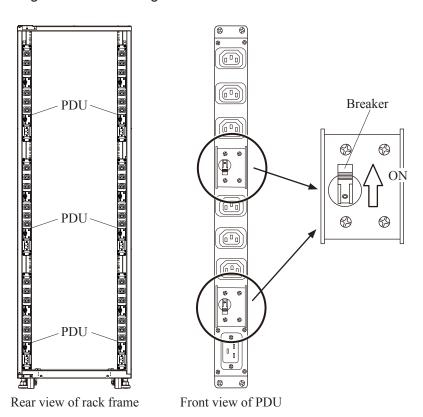
13. Attach the Front Bezel

Attach the Front Bezel referring to "2.2.1 How to Attach/Remove Front Bezel".

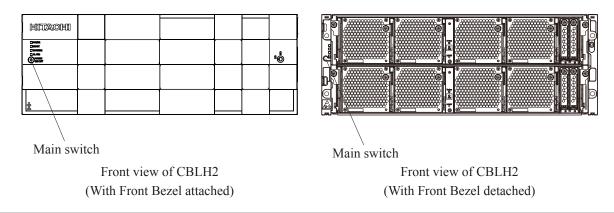
REP02-22-140

- 14. 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 2-280 Turning-on Breakers



(3) Press the Main Switch on the front of the CBLH2 for three second to turn on.



15. Check that the READY LED on the front of the CBLH2 lights up, and then the operation is complete.

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2.23 Replacing a PCle Channel Board

NOTE: The Controller Board is blocked by this maintenance work. Check that the alternate path of the path that uses the Channel Board in the Controller Board is set for the Channel Board in the other Controller Board. If the alternate path is not set, it is necessary to set the alternate path or stop host I/O. Consult with the customer and then perform the work.

1. Connecting a maintenance PC
Connect the maintenance PC and the Storage System.

When replacing the PCIe Channel Board, 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").

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- 3. Selecting replacement parts by Maintenance Utility.
 - (1) <Main window> Select [Controller Chassis] in the main window.

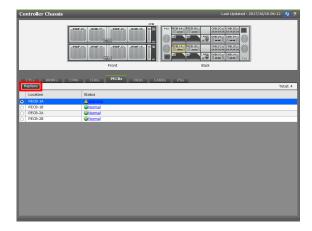


(2) <Controller Chassis window>
Click the [PECBs] tab in the "Controller Chassis" window to display a PCIe Channel Board status.

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



(3) <Select PCIe Channel Board> Select a PCIe Channel Board to be replaced. Click the [Replace] button.



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(4) <Block PCIe Channel Board>

A 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":

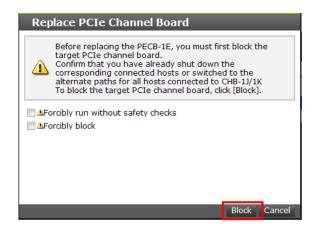
If you check this checkbox and execute the maintenance, the system may go down. Do not check it unless instructed by the contact described in the manual.

When the remote copy (True Copy, Universal Replicator, and global-active device) is used in the target storage system, see "1.1.11 Note on Deleting Remote Paths".

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 PCIe Channel 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.



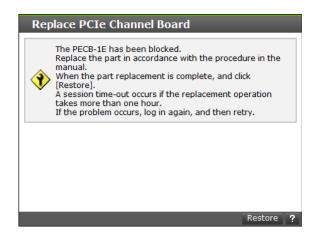
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(5) <Check the beginning of PCIe Channel Board replacement> Check that the PCIe Channel Board is blocked and becomes ready for replacing.

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

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



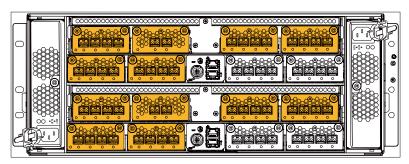
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4. PCIe Channel Board replacement processing

Location	Replacement parts name		Part Name
Rear side of CBLH2	1	PCIe Channel Board	• DW-F800-1HP8

Up to two PCIe Channel Boards are mounted on the slots A/B, C/D, and E/F for each Controller Board.

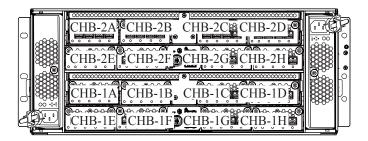


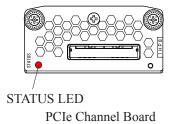
CBLH2 (Rear view)

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. See "1.1.3 Note on Installing and Removing Parts".

(1) Check that the STATUS LED (red) on the PCIe Channel Board to be replaced lights up. If the LED does not light up, check the location of the PCIe Channel Board to be replaced in the "Maintenance Utility" window.

Figure 2-281 STATUS LED Location





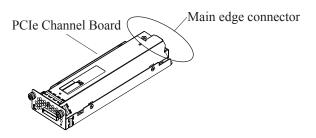
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(2) Remove the cables from the PCIe Channel Board to be replaced.

(3) Replace the PCIe Channel Board.

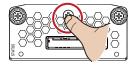
NOTICE: When removing the PCle Channel Board, hold it with both hands and remove it straight not to apply a shock to with any components.



NOTICE: If PCIe Channel Boards are inserted randomly, malfunction may occur. Therefore, insert the PCIe Channel Boards in two steps, Step (c) and Step (d) shown below.

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

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



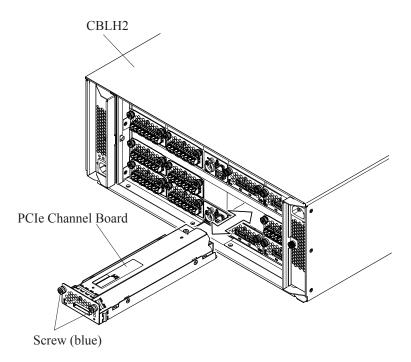
(e) Tighten the two screws (blue) to fix the PCIe Channel Board.

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Figure 2-282 Replacement of PCIe Channel Board



- (4) 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.)
- (5) Connect the cables to the replaced PCIe Channel Board.

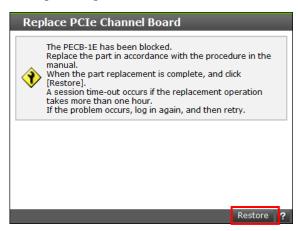
NOTE: Check that cable latch clicks and the cables are surely connected.

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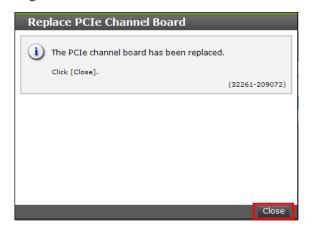
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- 5. Restoring replacement parts by Maintenance Utility
 - (1) <Restore replacement parts> Click the [Restore] button.



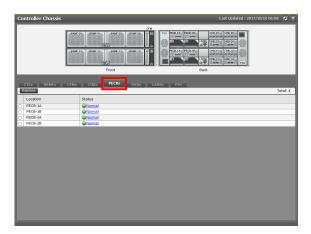
(2) <Check replacement parts restoration> Check that the following message is displayed and click the [Close] button. If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



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(3) <Check PCIe Channel Board restoration>
Click the [PECBs] tab in the "Controller Chassis" window and check that the status of the replaced PCIe Channel Board is "Normal".



- (4) Click the [Logout] button to close the window.
- (5) <Get the error information> Collect small system dumps by referring to "3.27 Acquiring Dumps using Maintenance Utility" in MAINTENANCE PC SECTION.
- (6) Refer to the 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".

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2.24 Replacing a PCle-cable Connecting Package

NOTE: The Controller Board is blocked by this maintenance work. Check that the alternate path of the path that uses the Channel Board in the Controller Board is set for the Channel Board in the other Controller Board. If the alternate path is not set, it is necessary to set the alternate path or stop host I/O. Consult with the customer and then perform the work.

Connecting a maintenance PC
 Connect the maintenance PC and the Storage System.

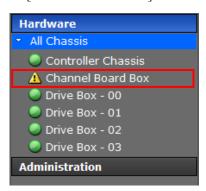
When replacing a PCIe-cable Connecting Package, connect the maintenance PC and the Controller Board 1.

- 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").

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- 3. Selecting replacement parts by Maintenance Utility.
 - (1) <Main window> Select [Channel Board Box] in the main window.



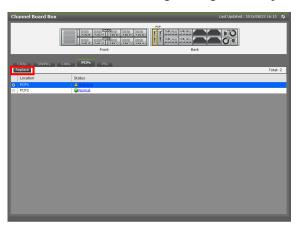
(2) <Channel Board Box window>
Click the [PCPs] tab in the "Channel Board Box" window to display a PCIe-cable Connecting
Package status. See MAINTENANCE PC SECTION "3.22 Alert Display Related to FRU (Field
Replacement Unit)" for the [Status].



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(3) <Select PCIe-cable Connecting Package> Select a PCIe-cable Connecting Package to be replaced. Click the [Replace] button.



(4) <Block PCIe-cable Connecting Package>

A 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.

When the remote copy (True Copy, Universal Replicator, and global-active device) is used in the target storage system, see "1.1.11 Note on Deleting Remote Paths".

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

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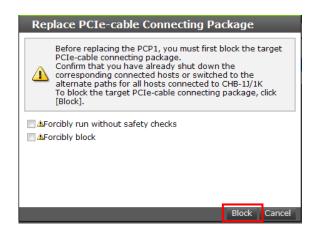
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Click the [Block] button after checking that the PCIe-cable Connecting Package to be replaced is correct.

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

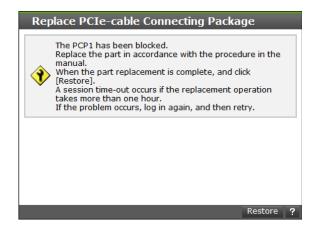
NOTE: The error list window is displayed if multiple errors are detected by the prior check. If it is displayed, click the test of "Error Code" and recover the failures or the blockade in accordance with the details of the displayed errors.



(5) <Check the beginning of PCIe-cable Connecting Package replacement> Check that the PCIe-cable Connecting Package 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.

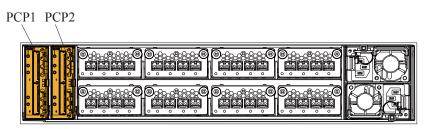


DW850

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4. PCIe Channel Board replacement processing

Location	Replacement parts name		Part Name
Rear side of CHBB	1	PCIe-cable Connecting	• PCP
		Package	

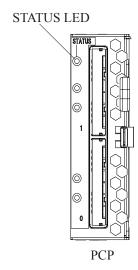


CHBB (Rear view)

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. See "1.1.3 Note on Installing and Removing Parts".

(1) Check that the STATUS LED (red) on the PCIe-cable Connecting Package on the Channel Board Box to be replaced lights up. If the LED does not light up, check the location of the PCIe-cable Connecting Package to be replaced in the "Maintenance Utility" window.

Figure 2-283 STATUS LED Location

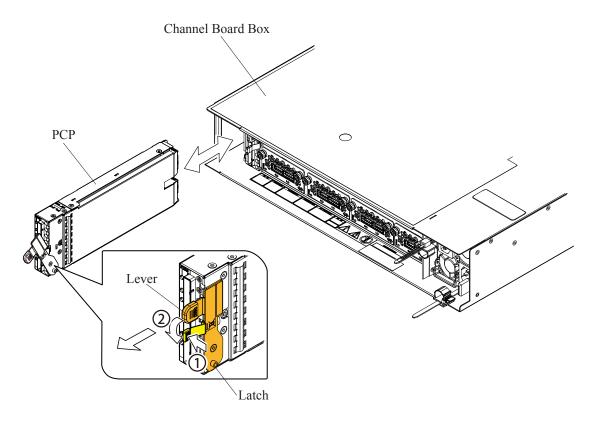


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- (2) Remove the cables from the PCIe-cable Connecting Package to be replaced.
- (3) Replace the PCIe-cable Connecting Package.
 - (a) Open the lever toward you (②) while pressing the latch (①).
 - (b) Pull out and remove the PCIe-cable Connecting Package.
 - (c) With the lever opened completely, insert the PCIe-cable Connecting Package into the slot.
 - (d) Push the PCIe-cable Connecting Package in all the way.
 - (e) Push the lever until the latch of PCIe-cable Connecting Package clicks.

Figure 2-284 Replacement of PCIe-cable Connecting Package (PCP)



(4) Connect the cables to the replaced PCIe-cable Connecting Package.

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

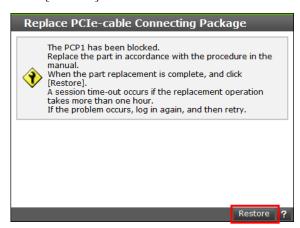
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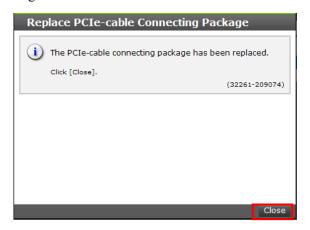
Rev.0

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".

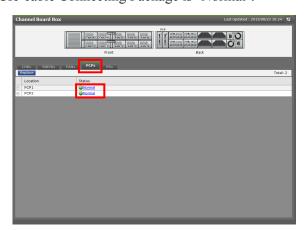


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(3) <Check PCIe-cable Connecting Package restoration>
Click the [PCPs] tab in the "Channel Board Box" window and check that the status of the replaced PCIe-cable Connecting Package is "Normal".



- (4) Click the [Logout] button to close the window.
- (5) <Get the error information> Collect small system dumps by referring to "3.27 Acquiring Dumps using Maintenance Utility" in MAINTENANCE PC SECTION.
- (6) Refer to the MAINTENANCE PC SECTION "7.1 Use of OnlineDumpTool", please upload the error information.
- 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".

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2.25 Replacing a Switch Package

NOTE: The Controller Board is blocked by this maintenance work. Check that the alternate path of the path that uses the Channel Board in the Controller Board is set for the Channel Board in the other Controller Board. If the alternate path is not set, it is necessary to set the alternate path or stop host I/O. Consult with the customer and then perform the work.

Connecting a maintenance PC
 Connect the maintenance PC and the Storage System.
 When replacing a Switch Package, 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").

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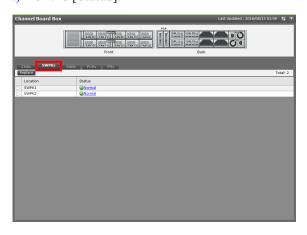
3. Selecting replacement parts by Maintenance Utility.

(1) <Main window> Select [Channel Board Box] in the main window.



(2) <Channel Board Box window>
Click the [SWPKs] tab in the "Channel Board Box" window to display a Switch Package status.

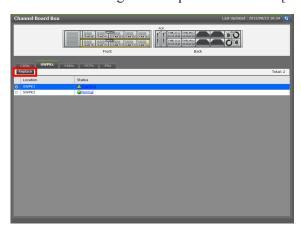
See MAINTENANCE PC SECTION "3.22 Alert Display Related to FRU (Field Replacement Unit)" for the [Status].



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(3) <Select Switch Package>
Select a Switch Package to be replaced. Click the [Replace] button.



(4) <Block Switch Package>

A 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.

When the remote copy (True Copy, Universal Replicator, and global-active device) is used in the target storage system, see "1.1.11 Note on Deleting Remote Paths".

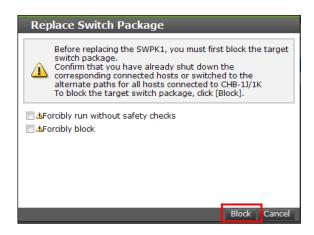
This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

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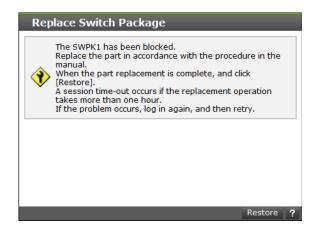
Click the [Block] button after checking that the Switch Package to be replaced is correct. If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".

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 Switch Package replacement> Check that the Switch Package 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.



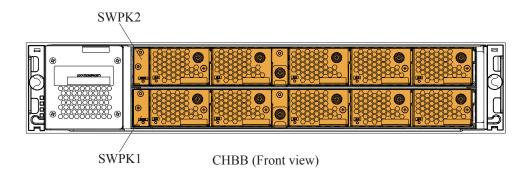
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4. Switch Package replacement processing

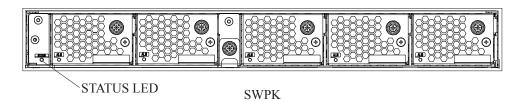
Location	Replacement parts name		Part Name
Front side of CHBB	1	Switch Package (SWPK)	• SWPK



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) Remove the Front Bezel from the Channel Board Box. (Refer to "2.2.1 How to Attach/Remove Front Bezel".)
- (2) Check that the STATUS LED (red) on the Switch Package on the Channel Board Box to be replaced lights up. If the LED does not light up, check the location of the Switch Package to be replaced in the "Maintenance Utility" window.

Figure 2-285 STATUS LED Location



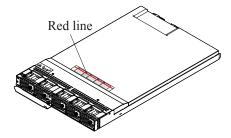
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(3) Replace the Switch Package (SWPK).

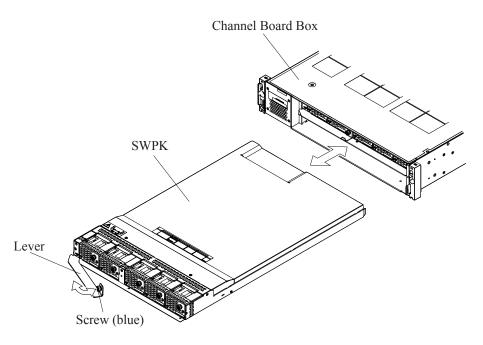


Dropping the Controller Board may cause injury. Be aware of the red line marked on the Controller Board top - when sliding the Controller Board out of the array past this mark, keep a firm hold on the Controller Board.



- (a) Loosen the screw (blue) which fixes the Switch Package and open the lever to pull out.
- (b) When the levers are completely opened, the Switch Package comes out forward.
- (c) Pull out and remove the Switch Package while holding its body with both hands.
- (d) With the new Switch Package lever opened completely, insert the Switch Package into the slot position of the Channel Board Box.
- (e) Insert the lever of the Switch Package is slightly closed, and then push the lever toward the Switch Package (SWPK).
- (f) Tighten the screw (blue) and fix the Switch Package.

Figure 2-286 Replacement of Switch Package (SWPK)

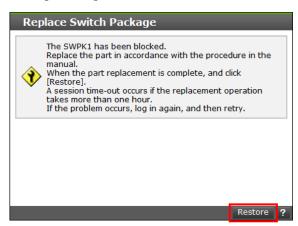


(4) Attach the Front Bezel to the Channel Board Box. (See "2.2.1 How to Attach/Remove Front Bezel".)

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- 5. Restoring replacement parts by Maintenance Utility
 - (1) <Restore replacement parts> Click the [Restore] button.



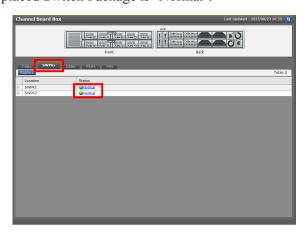
(2) <Check replacement parts restoration> Check that the following message is displayed and click the [Close] button. If a message other than the described is displayed, refer to "Device Manager-Storage Navigator Messages".



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(3) <Check Switch Package restoration>
Click the [SWPKs] tab in the "Channel Board Box" window and check that the status of the replaced Switch Package is "Normal".



When the SIM = afa0xx, afa1xx, or afa2xx is reported, perform the dummy replacement of the SWPK. (Refer to TROUBLESHOOTING SECTION "3.68 Recovery Procedure When the CHBB Firmware Update Occurs (SIM = afa0xx, afa1xx, afa2xx)".)

If the dummy replacement of the SWPK is not performed, a serious failure might occur while the storage system in which the CHBB is installed is operating.

- (4) Click the [Logout] button to close the window.
- (5) <Get the error information> Collect small system dumps by referring to "3.27 Acquiring Dumps using Maintenance Utility" in MAINTENANCE PC SECTION.
- (6) Refer to the MAINTENANCE PC SECTION "7.1 Use of OnlineDumpTool", please upload the error information.
- 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".

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2.26 Replacing a FAN (CHBBFAN)

Connecting a maintenance PC
 Connect the maintenance PC and the Storage System.
 When replacing a CHBBFAN, 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").

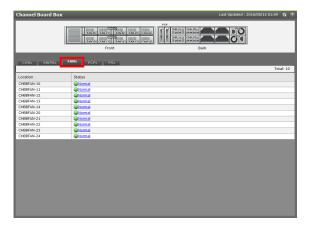
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- 3. Selecting replacement parts by Maintenance Utility.
 - (1) <Main window> Select [Channel Board Box] in the main window.



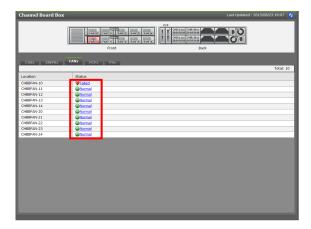
(2) <Channel Board Box window> Click the [FANs] tab in the "Channel Board Box" window to display a CHBBFAN status. See MAINTENANCE PC SECTION "3.22 Alert Display Related to FRU (Field Replacement Unit)" for the [Status].



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(3) <Check CHBBFAN> Check status of the CHBBFAN to be replaced is "Warning".

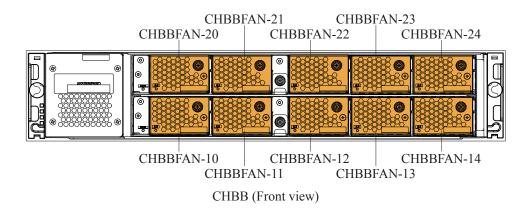


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4. CHBBFAN replacement processing

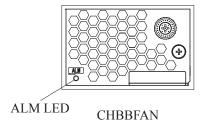
Location		Replacement parts name	Part Name
Front side of CHBB	1	CHBBFAN	• CHBBFAN



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) Remove the Front Bezel from the Channel Board Box. (Refer to "2.2.1 How to Attach/Remove Front Bezel".)
- (2) Check that the ALM LED (red) on the CHBBFAN on the Channel Board Box to be replaced lights up. If the LED does not light up, check the location of the Channel Board to be replaced in the "Maintenance Utility" window.

Figure 2-287 ALM LED Location

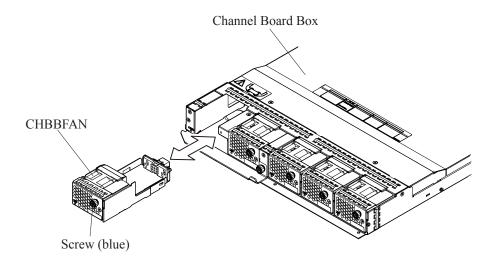


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- (3) Replace the CHBBFAN.
 - (a) Loosen the screw (blue) fixing the CHBBFAN whose ALM LED lights up. Pull out and remove CHBBFAN.
 - (b) Insert a new CHBBFAN into the slot and tighten the screw (blue).

Figure 2-288 Replacement of CHBBFAN



(4) Attach the Front Bezel to the Channel Board Box. (Refer to "2.2.1 How to Attach/Remove Front Bezel".)

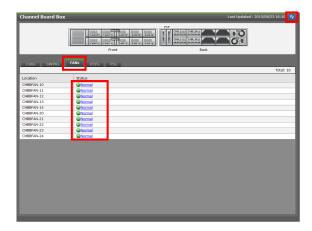
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5. Restoring replacement parts by Maintenance Utility

(1) <Check CHBBFAN restoration>
Click the [FANs] tab in the "Channel Board Box" window and check that the status of the replaced CHBBFAN 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.
- 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".

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2.27 Replacing a PCIe Cable

NOTE: The Controller Board is blocked by this maintenance work. Check that the alternate path of the path that uses the Channel Board in the Controller Board is set for the Channel Board in the other Controller Board. If the alternate path is not set, it is necessary to set the alternate path or stop host I/O. Consult with the customer and then perform the work.

Connecting a maintenance PC
 Connect the maintenance PC and the Storage System.
 When replacing a PCIe cable, 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").

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- 3. Selecting replacement parts by Maintenance Utility.
 - (1) <Main window> Select [Controller Chassis] in the main window.

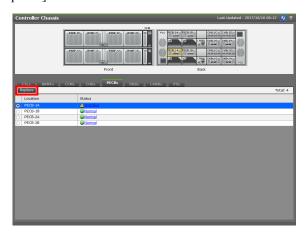


(2) <Controller Chassis window>
Click the [PECBs] tab in the "Controller Chassis" window to display a PCIe Channel Board status.

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



(3) <Select PCIe Channel Board>
Select an PCIe Channel Board to which the PCIe cable to be replaced is connected, and click the [Replace] button.



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(4) <Block PCIe Channel Board>

A 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.

When the remote copy (True Copy, Universal Replicator, and global-active device) is used in the target storage system, see "1.1.11 Note on Deleting Remote Paths".

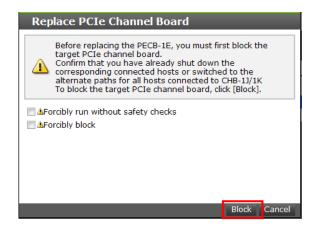
This checkbox is displayed only when Maintenance Utility is started from the "Web Console" window or the "MPC" window.

Click the [Block] button after checking that the PCIe Channel Board which is connected to the PCIe cable 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.



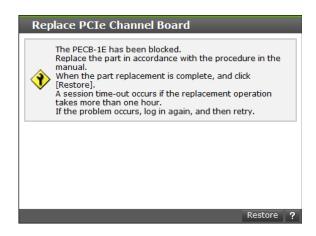
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(5) <Check the beginning of PCIe Channel Board replacement> Check that the PCIe Channel Board is blocked and becomes ready for replacing.

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

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



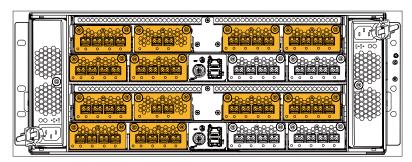
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4. PCIe cable replacement processing

Location	Replacement parts name		Part Name
Rear side of CBLH2	1	PCIe Cable	• DW-F800-PC1F

Up to two PCIe Channel Boards are mounted on the slots A/B, C/D, and E/F for each Controller Board.

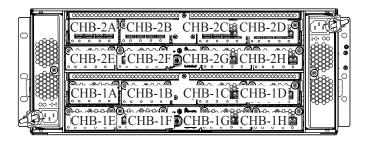


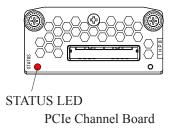
CBLH2 (Rear view)

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. See "1.1.3 Note on Installing and Removing Parts".

(1) Check that the STATUS LED (red) on the PCIe Channel Board which is connected to the PCIe cable to be replaced lights up. If the LED does not light up, check the location of the PCIe Channel Board which is connected to the PCIe cable to be replaced in the "Maintenance Utility" window.

Figure 2-289 STATUS LED Location





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(2) Remove the PCIe cable from the CBLH2 and the PCIe-cable Connecting Package of the Channel Board Box connected to CBLH2.

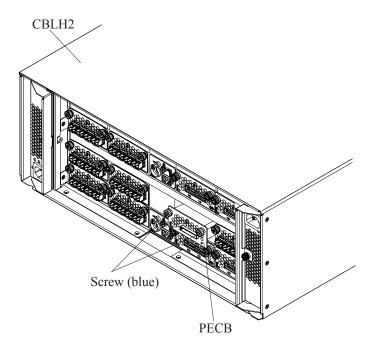
- (3) Perform the dummy replacement of the blocked PCIe Channel Board. Remove the PCIe Channel Board once, and then install it again.
 - (a) Loosen the two screws (blue) which fix PCIe Channel Board.
 - (b) Hold the screws (blue) and pull out and remove the PCIe Channel Board.
 - (c) Wait for 20 seconds or more.
 - (d) Push the PCIe Channel Board gently all the way in.

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



(e) Tighten two screws (blue) and fix the PCIe Channel Board.

Figure 2-290 Dummy Replacement of the PCIe Channel Board (PECB)



(4) Connect the new PCIe cable to the PCIe Channel Board and PCIe-cable Connecting Package. (Refer to INSTALLATION SECTION "2.10 Connecting Cables".)

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

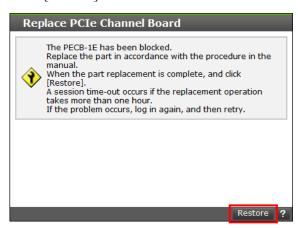
DW850

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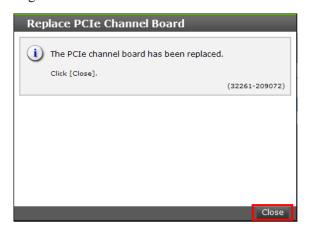
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5. Restoring replacement parts by Maintenance Utility

(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".

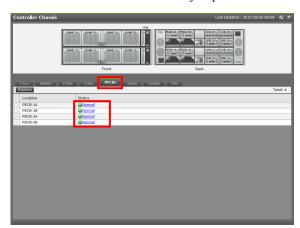


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(3) <Check PCIe cable restoration>
Click the [PECBs] tab in the "Controller Chassis" window and check the status of the PCIe
Channel Board that is connected by replaced PCIe cable is "Normal".



- (4) Click the [Logout] button to close the window.
- (5) <Get the error information> Collect small system dumps by referring to "3.27 Acquiring Dumps using Maintenance Utility" in MAINTENANCE PC SECTION.
- (6) Refer to the 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".