

INSTALLATION SECTION

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NOTICE: Unless otherwise stated, "firmware version" in this section indicates DKCMAIN firmware.

NOTICE: In the following cases, start the Maintenance Utility from the Web Console window. (See MAINTENANCE PC SECTION ["2.7.1 Starting the Maintenance Utility window from the Web Console window"](#).)

- The instruction to use the force execution option is provided.
- The instruction is specifically provided by factory.

1. Installation Outline

1.1 Before Starting Installation Work

The direction word "Note" indicates points to be checked on the work. Read and understand them well before performing the installation.

Take notice of the following when performing an installation work for the Storage System.

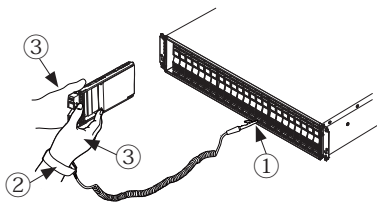
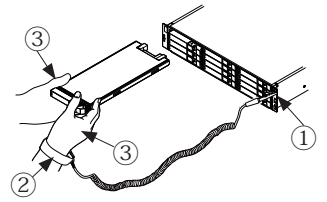
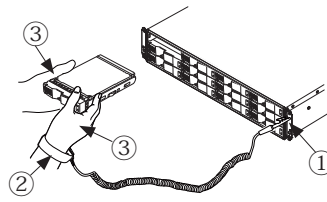
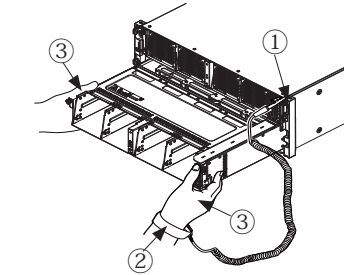
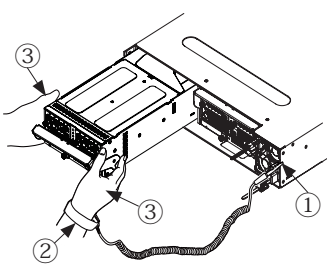
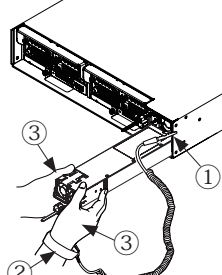
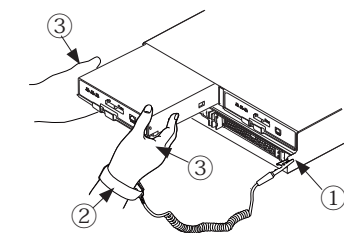
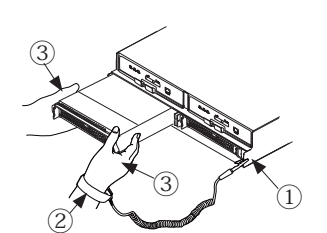
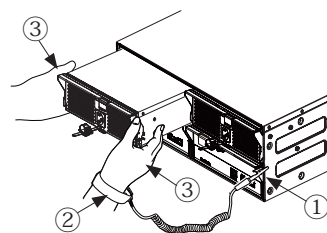
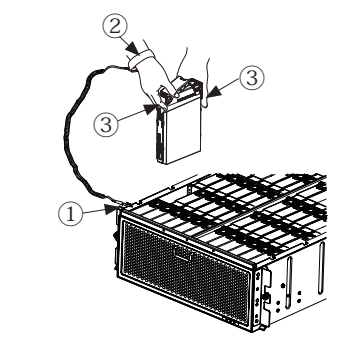
1.1.1 Note at the Time of the Unpacking

- Unpack it indoors.
Especially, do Unpack it indoors it in such places with the outdoor dust, the direct sunlight, and the infiltration of rainwater.
- Work on the unpacking in the place where a rapid difference of temperature does not occur. It may have dew condensation when it is unpacked in the place where a difference of temperature is extreme. Further, if the Storage System remains at high or low temperature in transport, it may not operate after turning on the power.
- Check that dummy parts are inserted firmly in the chassis. When they are not inserted firmly, re-tighten the fixing screws (blue) on metal dummies.
For plastic dummies, make sure the following points:
 - Dummy (Chanel Board/Disk Board): The dummy is inserted so that there is no gap between the board and the chassis.
 - Dummy (drive): The dummy is locked.
 - Dummy (cache flash memory): The dummy is set straight in the slot. If the dummy protrudes from the front face of the Controller Board, the dummy is not inserted properly. Remove and reinsert the dummy so that the springs on the dummy do not get caught in the slot.

1.1.2 Note when Installing and Removing Parts

- Generally, each part is equipped with high-precision components. Remove and install the part gently so as not to give it any shock.
- Be sure to put on the wrist strap before starting work in order to protect from electrostatic discharge.
- When you install parts support its metal part with your hand that has the wrist strap. You can discharge static electricity by touching the metal plate.

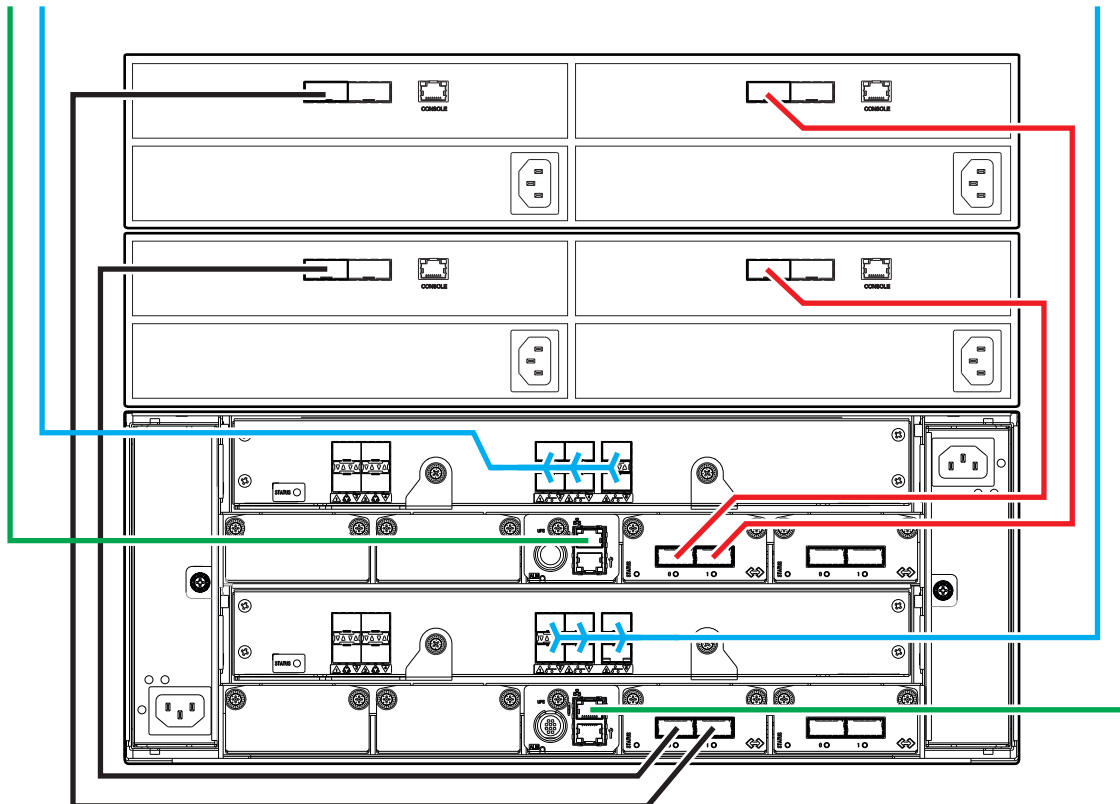
Table 1-1 Attaching the Wrist Strap

Front view		
		
Front view	Rear view	
		
Rear view		
		
Top view	① : The clip side of wrist strap: Connect this to the metal part on the frame of the Storage System ② : A wrist strap (Be sure to wear this before starting maintenance.) ③ : Support the part by touching its metal part (metal plate) with your fingers	
		

1.1.3 Note at the Time of Cable Routing

1. Handling of cables on the floor
 - Protect cables which cannot be accommodated by the Storage System and thus laid on the floor or cables which cross a passage with cable protecting, etc.
 - Do not make inter-Storage System cables apart from the floor but lay them on the floor.
2. Handling of under-floor cables when the Storage System is installed on the free access floor.
 - Give excess lengths to cables routed under the floor so that they can easily be laid on the slab. Do not make them to be hung dangling.
3. How to route cables
 - Give adequate margin of length to cables to withstand earthquakes, etc.
 - Route cables giving them excess lengths lest they should disturb replacement of part to be done for maintenance. (When full width modules are installed, see [Figure 1-1](#) as a routing example.)
 - When using cable protecting duct, be careful not to damage or break cables by catching them.
4. Be sure to insert or pull out a cable connector holding it with your hand. If you pull a cable, a trouble may be caused.
5. When bending the interface cable and SAS cable to connect it, give it a bend with a long radius (not less than 30 mm) so as not to apply the cable and the connector excessive stresses.

Figure 1-1 Routing Example when Full Width Modules are Installed



1.1.4 Installation of the Adaptable Firmware

It is required to install the adaptable firmware depending on the parts to be installed.

Check the adaptable firmware revision referring to OPTION & FIRMWARE VERSION SECTION “[1. Relationship between Option and Firmware Version](#)”.

1.1.5 Note at the Time Restarting

When restarting the Storage System, turn off the main switch (after the POWER LED lights off), and then turn on the main switch after waiting for one minute or more.

1.1.6 Note when Completing a Maintenance Work

- It is required to make all the external covers closed to operate the Storage System properly.
- The external covers have effect of preventing the release of radio waves and the noise of disturbance waves.

1.1.7 Notes while the Storage System is Being Started

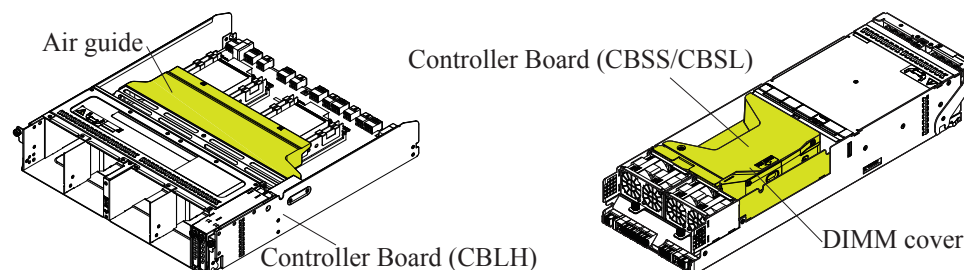
Because the status where the Storage System is being started is in the middle of the transition to the status of the Storage System power turned on (Ready status) from the status of the Storage System power turned off, do not perform the following work while the Storage System is being started.

- Installing or removing the parts
- Inserting or pulling out the cables
- Restarting the Storage System

Also, the setting function or the reference function using the Web Console cannot be executed to the Storage System which is being started.

1.1.8 Note at the Time of Installation Work

- Do not put anything on the air guide of the CBLH or the DIMM cover of the CBSS/CBSL or push the air guide or the DIMM cover during the work. It may cause breakage.

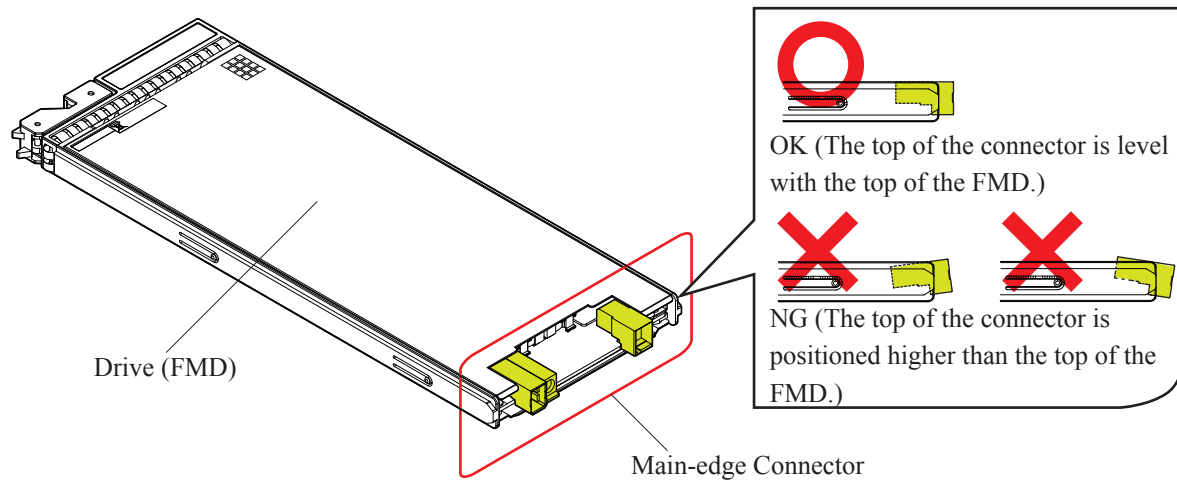


1.1.9 Notes when Handling the Flash Module Drive (FMD)

1. Be sure to check that the main edge connector of the drive (FMD) has no deformation, damage, float or sticking of dust before installing the drive (FMD).

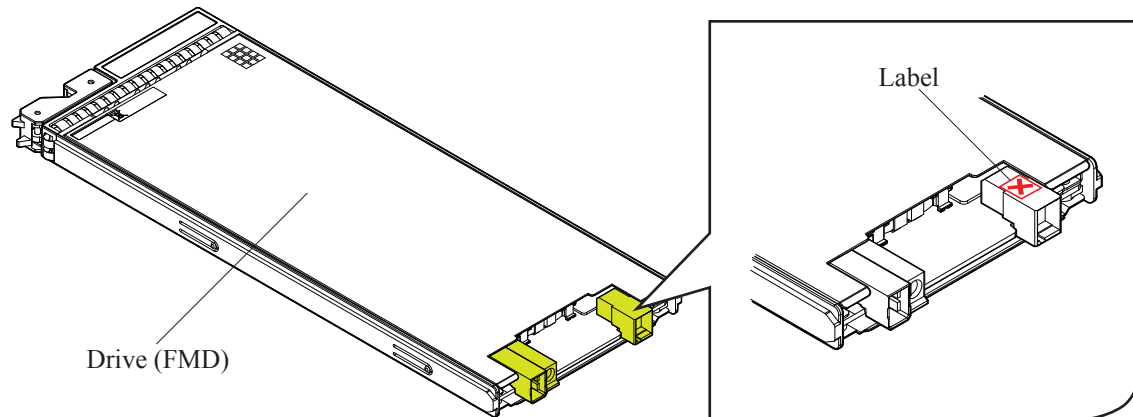
Figure 1-2 Checking connectors

How to check for float of the connector



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

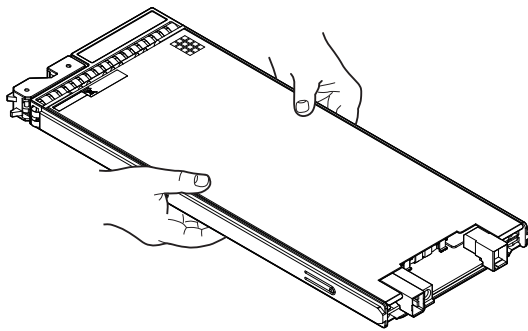
Figure 1-3 Marking of defective connectors



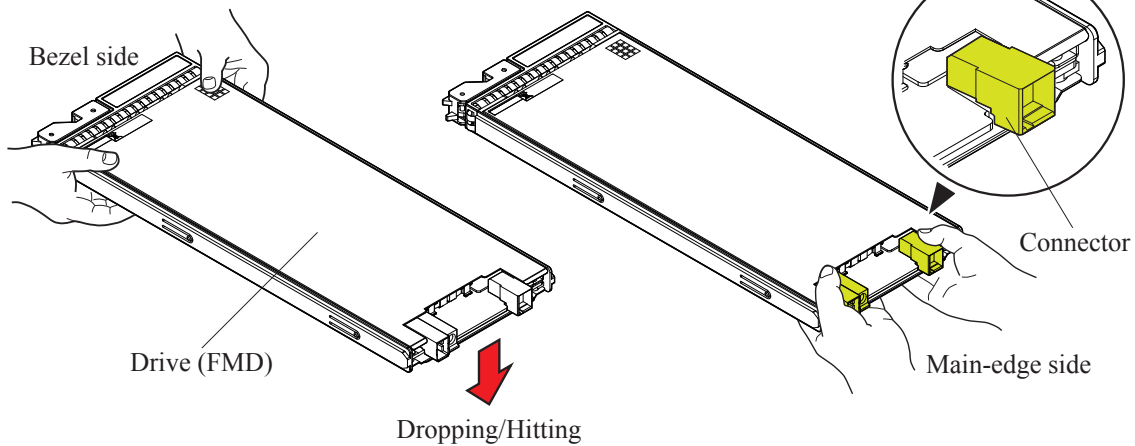
- When holding the drive (FMD), hold the middle part of the drive (FMD) with both hands. Holding the main-edge side or bezel side of the drive (FMD) may cause a breakdown of the drive (FMD) by dropping it under its weight or hitting it against something. Moreover, holding the main-edge side or bezel side of the drive (FMD) may cause a loosening or disconnecting of the connector.

Figure 1-4 Handling of the Drive (FMD) (at maintenance)

Right handling

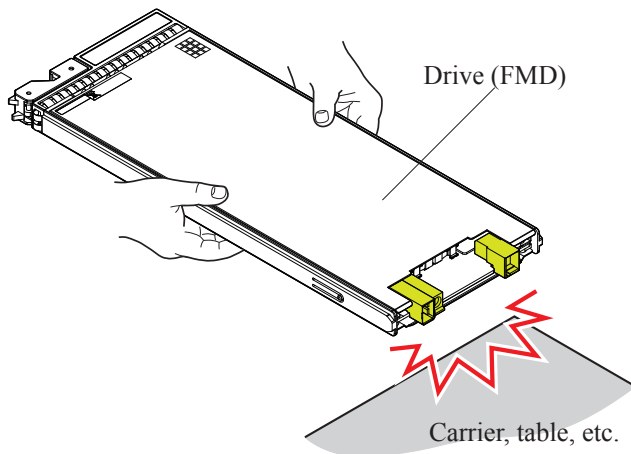


Wrong handling



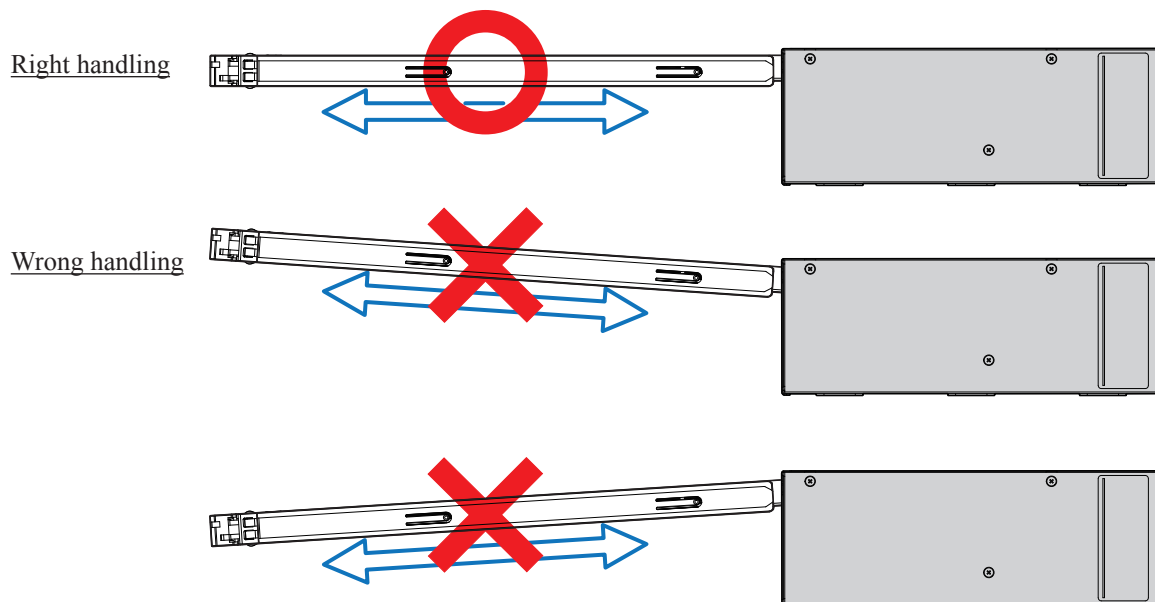
4. When moving the drive (FMD), be careful not to hit it against device or something.
Hitting the main-edge connector against the device or something may cause damage, distortion or float on the main edge connector.

Figure 1-5 Handling of the Drive (FMD) (at moving)



5. Installing and removing the drive (FMD) at an angle may damage the connector. When installing and removing the drive (FMD), install and remove it straight horizontally.

Figure 1-6 Handling of the Drive (FMD) (at Installation and Removal)



1.2 Model List

1.2.1 Model List of DW850

Table 1-2 through Table 1-6 show the model list of DW850.

Table 1-2 Model List of VSP G130

Name	Model		Parts Name	Numbers
Controller Chassis (CBXSS)	Components	DW800-CBSS	• Controller Chassis (CBSS) × 1 • Power Supply (AC) × 2 • Front Bezel (CBSx) × 1 • Binder (two types) × 4 • SAS cable label × 2 • Key × 2	1
	Options	DW-F850-CTLXSFA	• Controller Board (Fibre 16G) • Cache Memory (16 GB) • Cache Flash Memory 05 • Fan Module for CTLXS • Battery • SW SFP (16G)	2
		DW-F850-CTLXSSA	• Controller Board (iSCSI Optic) • Cache Memory (16 GB) • Cache Flash Memory 05 • Fan Module for CTLXS • Battery • SW SFP (10G)	2
		DW-F850-CTLXSCA	• Controller Board (iSCSI Copper) • Cache Memory (16 GB) • Cache Flash Memory 05 • Fan Module for CTLXS • Battery	2
		DKC-F810I-600JCMC	600 GB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-1R2JCMC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
	DKC-F810I-2R4JGM	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24	
	DKC-F810I-480MGM	480 GB SAS-SSD (*1)	0-24	
	DKC-F810I-960MGM	960 GB SAS-SSD (*1)	0-24	
	DKC-F810I-1R9MGM	1.9 TB SAS-SSD (*1)	0-24	
	DKC-F810I-3R8MGM	3.8 TB SAS-SSD (*1)	0-24	
	DKC-F810I-7R6MGM	7.6 TB SAS-SSD (*1)	0-24	
	DKC-F810I-15RMGM	15 TB SAS-SSD (*1)	0-24	

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Controller Chassis (CBXSL)	Components	DW800-CBSL	• Controller Chassis (CBSL) × 1 • Power Supply (AC) × 2 • Front Bezel (CBSx) × 1 • Binder (two types) × 4 • SAS cable label × 2 • Key × 2	1
	Options	DW-F850-CTLXSFA	• Controller Board (Fibre 16G) • Cache Memory (16 GB) • Cache Flash Memory 05 • Fan Module for CTLXS • Battery • SW SFP (16G)	2
		DW-F850-CTLXSSA	• Controller Board (iSCSI Optic) • Cache Memory (16 GB) • Cache Flash Memory 05 • Fan Module for CTLXS • Battery • SW SFP (10G)	2
		DW-F850-CTLXSCA	• Controller Board (iSCSI Copper) • Cache Memory (16 GB) • Cache Flash Memory 05 • Fan Module for CTLXS • Battery	2
		DKC-F810I-6R0H9M	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12
		DKC-F810I-10RH9M	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBS)	Components	DW-F800-DBSC	• Drive Box (DBS) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBS) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-600JCMC	600 GB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-1R2JCMC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-2R4JGM	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-480MGM	480 GB SAS-SSD (*1)	0-24
		DKC-F810I-960MGM	960 GB SAS-SSD (*1)	0-24
		DKC-F810I-1R9MGM	1.9 TB SAS-SSD (*1)	0-24
		DKC-F810I-3R8MGM	3.8 TB SAS-SSD (*1)	0-24
		DKC-F810I-7R6MGM	7.6 TB SAS-SSD (*1)	0-24
		DKC-F810I-15RMGM	15 TB SAS-SSD (*1)	0-24
Drive Box (DBL)	Components	DW-F800-DBLC	• Drive Box (DBL) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBL) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-6R0H9M	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12
		DKC-F810I-10RH9M	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

Table 1-3 Model List of VSP G350, G370

Name		Model	Parts Name	Numbers
Controller Chassis (CBSS)	Components	DW800-CBSS	• Controller Chassis (CBSS) × 1 • Power Supply (AC) × 2 • Front Bezel (CBSx) × 1 • Binder (two types) × 4 • SAS cable label × 2 • Key × 2	1
	Options	DW-F850-CTLS	Controller Board	2
		DW-F850-CTLSE	Controller Board (Encryption)	2
		DW-F850-CTLSH	Controller Board	2
		DW-F850-CTLSHE	Controller Board (Encryption)	2
		DW-F850-CM16G	Cache Memory (16 GB)	4
		DW-F850-CM32G	Cache Memory (32 GB)	4
		DW-F850-CM64G	Cache Memory (64 GB)	4
		DW-F850-BM15	Cache Flash Memory	2
		DW-F800-4HF32R	Optical 32 Gbps Channel Board	2-4
		DW-F800-2HS10S	iSCSI 10 Gbps Optic Channel Board	2-4
		DW-F800-2HS10B	iSCSI 10 Gbps Copper Channel Board	2-4
		DKC-F810I-1PL16	SFP for 16 Gbps Longwave	0-16
		DKC-F810I-1PS16	SFP for 16 Gbps Shortwave	0-16
		DKC-F810I-1PS32	SFP for 32 Gbps Shortwave	0-16
		DKC-F810I-600JCMC	600 GB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-1R2JCMC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-2R4JGM	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-480MGM	480 GB SAS-SSD (*1)	0-24
		DKC-F810I-960MGM	960 GB SAS-SSD (*1)	0-24
		DKC-F810I-1R9MGM	1.9 TB SAS-SSD (*1)	0-24
		DKC-F810I-3R8MGM	3.8 TB SAS-SSD (*1)	0-24
		DKC-F810I-7R6MGM	7.6 TB SAS-SSD (*1)	0-24
		DKC-F810I-15RMGM	15 TB SAS-SSD (*1)	0-24

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Controller Chassis (CBSL)	Components	DW800-CBSL	• Controller Chassis (CBSL) × 1 • Power Supply (AC) × 2 • Front Bezel (CBSx) × 1 • Binder (two types) × 4 • SAS cable label × 2 • Key × 2	1
	Options	DW-F850-CTLS	Controller Board	2
		DW-F850-CTLSE	Controller Board (Encryption)	2
		DW-F850-CTLSH	Controller Board	2
		DW-F850-CTLSHE	Controller Board (Encryption)	2
		DW-F850-CM16G	Cache Memory (16 GB)	4
		DW-F850-CM32G	Cache Memory (32 GB)	4
		DW-F850-CM64G	Cache Memory (64 GB)	4
		DW-F850-BM15	Cache Flash Memory	2
		DW-F800-4HF32R	Optical 32 Gbps Channel Board	2-4
		DW-F800-2HS10S	iSCSI 10 Gbps Optic Channel Board	2-4
		DW-F800-2HS10B	iSCSI 10 Gbps Copper Channel Board	2-4
		DKC-F810I-1PL16	SFP for 16 Gbps Longwave	0-16
		DKC-F810I-1PS16	SFP for 16 Gbps Shortwave	0-16
		DKC-F810I-1PS32	SFP for 32 Gbps Shortwave	0-16
		DKC-F810I-6R0H9M	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12
		DKC-F810I-10RH9M	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12

(To be continued)

*1: The drive capacity values are calculated as 1 G byte =1,000,000,000 bytes. This definition is different from that calculated as 1 k byte =1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte =1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBS)	Components	DW-F800-DBSC	• Drive Box (DBS) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBS) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-600JCMC	600 GB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-1R2JCMC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-2R4JGM	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-480MGM	480 GB SAS-SSD (*1)	0-24
		DKC-F810I-960MGM	960 GB SAS-SSD (*1)	0-24
		DKC-F810I-1R9MGM	1.9 TB SAS-SSD (*1)	0-24
		DKC-F810I-3R8MGM	3.8 TB SAS-SSD (*1)	0-24
		DKC-F810I-7R6MGM	7.6 TB SAS-SSD (*1)	0-24
		DKC-F810I-15RMGM	15 TB SAS-SSD (*1)	0-24

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBL)	Components	DW-F800-DBLC	• Drive Box (DBL) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBL) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-6R0H9M	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12
		DKC-F810I-10RH9M	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DB60)	Components	DW-F800-DB60C	• Drive Box (DB60) × 1 • ENC × 2 • Power Supply (AC) × 2 • SAS cable (SCQ3) (3 m) × 2 • Front Bezel (DB60) × 1 • Repeat binder (two types) × 6 • Hook and loop fastener × 12 • Rail kit (RRDB60) (including CMA) × 1 • Flange (L) × 1 • Flange (R) × 1 • Side cover (L) × 1 • Side cover (R) × 1 • Key × 2	1
	Options	DKC-F810I-1R2J7MC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-60
		DKC-F810I-2R4J8M	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-60
		DKC-F810I-6R0HLM	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-60
		DKC-F810I-10RHLM	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-60

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using. The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

Table 1-4 Model List of VSP G700

Name		Model	Parts Name	Numbers
Controller Chassis (CBLH1)	Components	DW850-CBL	• Controller Chassis (CBL-S) × 1 • Power Supply (AC) × 2 • LAN Board × 2 • Front Bezel (CBL) × 1 • Repeat binder (two types) × 4 • SAS cable label × 2 • Key × 2	1
	Options	DW-F850-CTL	Controller Board	2
		DW-F850-CM16G	Cache Memory (16 GB)	8-16
		DW-F850-CM32G	Cache Memory (32 GB)	8-16
		DW-F850-BM35	Cache Flash Memory	2
		DW-F800-4HF32R	Optical 32 Gbps Channel Board	0-16
		DW-F800-2HS10S	iSCSI 10 Gbps Optic Channel Board	0-16
		DW-F800-2HS10B	iSCSI 10 Gbps Copper Channel Board	0-16
		DKC-F810I-1PL16	SFP for 16 Gbps Longwave	0-64
		DKC-F810I-1PS16	SFP for 16 Gbps Shortwave	0-64
		DKC-F810I-1PS32	SFP for 32 Gbps Shortwave	0-64
		DW-F800-BS12G	Disk Board	0-2
		DW-F800-BS12GE	Disk Board (Encryption)	0-2
		DW-F800-BAT	Battery	0-6

(To be continued)

- *1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.
- The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBS)	Components	DW-F800-DBSC	• Drive Box (DBS) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBS) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-600JCMC	600 GB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-1R2JCMC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-2R4JGM	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-480MGM	480 GB SAS-SSD (*1)	0-24
		DKC-F810I-960MGM	960 GB SAS-SSD (*1)	0-24
		DKC-F810I-1R9MGM	1.9 TB SAS-SSD (*1)	0-24
		DKC-F810I-3R8MGM	3.8 TB SAS-SSD (*1)	0-24
		DKC-F810I-7R6MGM	7.6 TB SAS-SSD (*1)	0-24
		DKC-F810I-15RMGM	15 TB SAS-SSD (*1)	0-24

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBL)	Components	DW-F800-DBLC	• Drive Box (DBL) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBL) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-6R0H9M	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12
		DKC-F810I-10RH9M	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DB60)	Components	DW-F800-DB60C	• Drive Box (DB60) × 1	1
			• ENC × 2	
			• Power Supply (AC) × 2	
			• SAS cable (SCQ3) (3 m) × 2	
			• Front Bezel (DB60) × 1	
Drive Box (DB60)	Options		• Repeat binder (two types) × 6	
			• Hook and loop fastener × 12	
			• Rail kit (RRDB60) (including CMA) × 1	
			• Flange (L) × 1	
			• Flange (R) × 1	
Drive Box (DBF)	Components	DW-F800-DBF	• Side cover (L) × 1	1
			• Side cover (R) × 1	
			• Key × 2	
			• Drive Box (DBF) × 1	
			• ENC × 2	
Drive Box (DBF)	Options		• Power Supply (AC) × 2	
			• Front Bezel (DBF) × 1	
			• Repeat binder (two types) × 4	
			• Omega clip × 4	
			• Side cover × 1	
Drive Box (DBF)	Options		• Plate × 1	
			• Key × 2	
			DKC-F810I-1R2J7MC	
			1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	
			DKC-F810I-2R4J8M	
Drive Box (DBF)	Options		2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	
			DKC-F810I-6R0HLM	
			6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	
			DKC-F810I-10RHLM	
			10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	
Drive Box (DBF)	Options		DKC-F810I-3R2FN	
			3.5 TB (3.2 TiB) (FMD) (12 Gbps SAS) (*1)	
			DKC-F810I-7R0FP	
			7 TB (6.4 TiB) (FMD) (12 Gbps SAS) (*1)	
			DKC-F810I-14RFP	
			14 TB (12.8 TiB) (FMD) (12 Gbps SAS) (*1)	

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

Table 1-5 Model List of VSP G900

Name		Model	Parts Name	Numbers
Controller Chassis (CBLH2)	Components	DW850-CBL	• Controller Chassis (CBL-S) × 1 • Power Supply (AC) × 2 • LAN Board × 2 • Front Bezel (CBL) × 1 • Repeat binder (two types) × 4 • SAS cable label × 2 • Key × 2	1
	Options	DW-F850-CTLH	Controller Board	2
		DW-F850-CM32G	Cache Memory (32 GB)	8-16
		DW-F850-CM64G	Cache Memory (64 GB)	8-16
		DW-F850-BM35	Cache Flash Memory	2
		DW-F850-BM45	Cache Flash Memory	2
		DW-F800-4HF32R	Optical 32 Gbps Channel Board	0-20
		DW-F800-2HS10S	iSCSI 10 Gbps Optic Channel Board	0-20
		DW-F800-2HS10B	iSCSI 10 Gbps Copper Channel Board	0-20
		DKC-F810I-1PL16	SFP for 16 Gbps Longwave	0-80
		DKC-F810I-1PS16	SFP for 16 Gbps Shortwave	0-80
		DKC-F810I-1PS32	SFP for 32 Gbps Shortwave	0-80
		DW-F800-1HP8	PCIe Channel Board	2
		DW-F800-PC1F	PCIe cable (1.5 m)	2
		DW-F800-BS12G	Disk Board	0-8
		DW-F800-BS12GE	Disk Board (Encryption)	0-8
		DW-F800-BAT	Battery	0-6

(To be continued)

- *1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.
- The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBS)	Components	DW-F800-DBSC	• Drive Box (DBS) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBS) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-600JCMC	600 GB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-1R2JCMC	1.2 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-2R4JGM	2.4 TB/10 kmin ⁻¹ 2.5-inch (12 Gbps SAS) (*1)	0-24
		DKC-F810I-960MGM	960 GB SAS-SSD (*1)	0-24
		DKC-F810I-1R9MGM	1.9 TB SAS-SSD (*1)	0-24
		DKC-F810I-3R8MGM	3.8 TB SAS-SSD (*1)	0-24
		DKC-F810I-7R6MGM	7.6 TB SAS-SSD (*1)	0-24
		DKC-F810I-15RMGM	15 TB SAS-SSD (*1)	0-24

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DBL)	Components	DW-F800-DBLC	• Drive Box (DBL) × 1 • ENC × 2 • Power Supply (AC) × 2 • Front Bezel (DBL) × 1 • Repeat binder (two types) × 4 • Omega clip × 4 • Bracket (L) × 1 • Bracket (R) × 1 • Side bezel (L) × 1 • Side bezel (R) × 1 • Key × 2	1
	Options	DKC-F810I-6R0H9M	6 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12
		DKC-F810I-10RH9M	10 TB/7200 min ⁻¹ 3.5-inch (12 Gbps SAS) (*1)	0-12

(To be continued)

*1: The drive capacity values are calculated as 1 G byte = 1,000,000,000 bytes. This definition is different from that calculated as 1 k byte = 1,024 bytes, which are actually displayed on PCs that you are using.

The RAID group capacity values displayed in the Web Console are calculated as 1 k byte = 1,024 bytes.

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Drive Box (DB60)	Components	DW-F800-DB60C	• Drive Box (DB60) × 1	1
			• ENC × 2	
			• Power Supply (AC) × 2	
			• SAS cable (SCQ3) (3 m) × 2	
			• Front Bezel (DB60) × 1	
Drive Box (DB60)	Options	DKC-F810I-1R2J7MC	• Repeat binder (two types) × 6	1
			• Hook and loop fastener × 12	
			• Rail kit (RRDB60) (including CMA) × 1	
			• Flange (L) × 1	
			• Flange (R) × 1	
Drive Box (DB60)	Options	DKC-F810I-2R4J8M	• Side cover (L) × 1	0-60
			• Side cover (R) × 1	
			• Key × 2	
			• Drive Box (DB60) × 1	
			• ENC × 2	
Drive Box (DB60)	Options	DKC-F810I-6R0HLM	• Power Supply (AC) × 2	0-60
			• Front Bezel (DB60) × 1	
			• Repeat binder (two types) × 4	
			• Omega clip × 4	
			• Side cover × 1	
Drive Box (DB60)	Options	DKC-F810I-10RHLM	• Plate × 1	0-60
			• Key × 2	
			• Drive Box (DB60) × 1	
			• ENC × 2	
			• Power Supply (AC) × 2	
Drive Box (DBF)	Components	DW-F800-DBF	• Front Bezel (DBF) × 1	1
			• Repeat binder (two types) × 4	
			• Omega clip × 4	
			• Side cover × 1	
			• Plate × 1	
Drive Box (DBF)	Options	DKC-F810I-3R2FN	• Key × 2	0-12
			• Drive Box (DBF) × 1	
			• ENC × 2	
			• Power Supply (AC) × 2	
			• Front Bezel (DBF) × 1	
Drive Box (DBF)	Options	DKC-F810I-7R0FP	• Repeat binder (two types) × 4	0-12
			• Omega clip × 4	
			• Side cover × 1	
			• Plate × 1	
			• Key × 2	
Drive Box (DBF)	Options	DKC-F810I-14RFP	• Drive Box (DBF) × 1	0-12
			• ENC × 2	
			• Power Supply (AC) × 2	
			• Front Bezel (DBF) × 1	
			• Repeat binder (two types) × 4	

(Continued from the preceding page)

Name	Model		Parts Name	Numbers
Channel Board Box (CHBB)	Components	DW-F800-CHBB	• PCP × 2 • IOEXBX × 1 • Power Supply (AC) × 2 • SWPK × 2 (FAN × 10) • PCIe Channel Board × 2 • PCIe cable (1.5 m) × 2 • Front Bezel × 1 • Accessories kit × 1 • Binder × 2 • PCIe cable label × 2 • Key × 2	1

Table 1-6 List of Accessory Parts

No.	Classification	Model	Name	Constitution/Specification
1	Power cable	A-F6516-J1H	Power cable for AC Power Supply	2.5 m, 2-pole power cable with grounding terminal (AC 125 V, 13 A for Single-phase)
		A-F6516-J1K	Power cable for AC Power Supply	2.5 m, 2-pole power cable with grounding terminal (AC 125 V, 13 A for Single-phase)
		A-F6516-J2H	Power cable for Mounting chassis	2.5 m inlet type (AC 250 V, 10 A for Single-phase)
		A-F6516-J2H09	Power cable	0.9 m inlet type (AC 200 V for Single-phase)
		A-F6516-J2H5	Power cable	5.0 m inlet type (AC 200 V for Single-phase)
		A-F6516-J2H10	Power cable	10.0 m inlet type (AC 200 V for Single-phase)
		A-F6516-P620	Power cable	Power cable for PDU (1)
		A-F6516-P630	Power cable	Power cable for PDU (1)
2	Optical cable	A-6515-GM5L	LC-LC Optical Cable	LC-LC optical cable for Optical (5 m)
		A-6515-GM10L	LC-LC Optical Cable	LC-LC optical cable for Optical (10 m)
		A-6515-GM20L	LC-LC Optical Cable	LC-LC optical cable for Optical (20 m)
		A-6515-GM30L	LC-LC Optical Cable	LC-LC optical cable for Optical (30 m)
		A-6515-GM50L	LC-LC Optical Cable	LC-LC optical cable for Optical (50 m)
		A-6515-GM1JL	LC-LC Optical Cable	LC-LC optical cable for Optical (100 m)
		A-6515-HM5L	LC-LC Optical Cable	LC-LC optical cable for Optical (5 m)
		A-6515-HM10L	LC-LC Optical Cable	LC-LC optical cable for Optical (10 m)
		A-6515-HM20L	LC-LC Optical Cable	LC-LC optical cable for Optical (20 m)
		A-6515-HM30L	LC-LC Optical Cable	LC-LC optical cable for Optical (30 m)
		A-6515-HM50L	LC-LC Optical Cable	LC-LC optical cable for Optical (50 m)
		A-6515-HM100L	LC-LC Optical Cable	LC-LC optical cable for Optical (100 m)
		A-6515-HM200L	LC-LC Optical Cable	LC-LC optical cable for Optical (200 m)
		A-6515-HM300L	LC-LC Optical Cable	LC-LC optical cable for Optical (300 m)
		A-6515-JM5L	LC-LC Optical Cable	LC-LC optical cable for Optical (5 m)
		A-6515-JM10L	LC-LC Optical Cable	LC-LC optical cable for Optical (10 m)
		A-6515-JM20L	LC-LC Optical Cable	LC-LC optical cable for Optical (20 m)
		A-6515-JM30L	LC-LC Optical Cable	LC-LC optical cable for Optical (30 m)
		A-6515-JM50L	LC-LC Optical Cable	LC-LC optical cable for Optical (50 m)
		A-6515-JM100L	LC-LC Optical Cable	LC-LC optical cable for Optical (100 m)
		A-6515-JM200L	LC-LC Optical Cable	LC-LC optical cable for Optical (200 m)
		A-6515-JM300L	LC-LC Optical Cable	LC-LC optical cable for Optical (300 m)
		A-6515-GS10L	LC-LC Optical Cable	LC-LC optical cable for Optical (10 m)
		A-6515-GS20L	LC-LC Optical Cable	LC-LC optical cable for Optical (20 m)
		A-6515-GS30L	LC-LC Optical Cable	LC-LC optical cable for Optical (30 m)
		A-6515-GS50L	LC-LC Optical Cable	LC-LC optical cable for Optical (50 m)
		A-6515-GS1JL	LC-LC Optical Cable	LC-LC optical cable for Optical (100 m)

(To be continued)

(Continued from the preceding page)

No.	Classification	Model	Name	Constitution/Specification
3	SAS cable	DW-F800-SCQ1	SAS cable	SAS cable 1 m (including omega clips (2)) (*1)
		DW-F800-SCQ1F	SAS cable	SAS cable 1.5 m (including omega clips (2)) (*1)
		DW-F800-SCQ3	SAS cable	SAS cable 3 m (including omega clips (2)) (*1)
		DW-F800-SCQ5	SAS cable	SAS cable 5 m (including omega clips (2)) (*1)
		DW-F800-SCQ10A	SAS Optical cable	SAS Optical cable (10 m) (*2)
		DW-F800-SCQ30A	SAS Optical cable	SAS Optical cable (30 m) (*2)
		DW-F800-SCQ1HA	SAS Optical cable	SAS Optical cable (100 m) (*2)
4	Decoration panel	A-F6516-FIHT	Decoration panel	Panel to cover free space (1 EIA) of the RKU rack frame.
5	Stabilizer	A-F6516-STBL	Stabilizer (for RKU)	Installation to the DB60 is performed when mounting it on the RKU rack frame.
6	Rack frame	A-6516-RKU	Rack frame	Rack frame (It is necessary to order the rail.)
7	PDU for the Rack frame	A-F6516-PDU6	PDU for the Rack frame	Power distribution box for RKU rack. PDU (2)
		DW-F800-PDU6	PDU for the Rack frame	Power distribution box for rack frame. PDU (2), Bracket (2), Cable clamp (1)

*1: Neither plenum rated nor LSZH (Low Smoke Zero Halogen) rated.

*2: Plenum rated. Not LSZH rated.

1.2.2 Disk Drive Model

Table 1-7 MPC Window Display of Disk Type Name

Disk Drive Model	MPC Window	Drive Form Factor
DKR5D-J600SS	DKR5D-J600SS	2.5 inch SAS HDD
DKR5G-J600SS	DKR5G-J600SS	2.5 inch SAS HDD
DKS5E-J600SS	DKS5E-J600SS	2.5 inch SAS HDD
DKS5H-J600SS	DKS5H-J600SS	2.5 inch SAS HDD
DKS5K-J600SS	DKS5K-J600SS	2.5 inch SAS HDD
DKR5E-J1R2SS	DKR5E-J1R2SS	2.5 inch SAS HDD
DKR5G-J1R2SS	DKR5G-J1R2SS	2.5 inch SAS HDD
DKS5F-J1R2SS	DKS5F-J1R2SS	2.5 inch SAS HDD
DKS5H-J1R2SS	DKS5H-J1R2SS	2.5 inch SAS HDD
DKS5K-J1R2SS	DKS5K-J1R2SS	2.5 inch SAS HDD
DKS5K-J2R4SS	DKS5K-J2R4SS	2.5 inch SAS HDD
DKS2F-H6R0SS	DKS2F-H6R0SS	3.5 inch SAS HDD
DKS2H-H6R0SS	DKS2H-H6R0SS	3.5 inch SAS HDD
DKR2G-H6R0SS	DKR2G-H6R0SS	3.5 inch SAS HDD
DKS2J-H10RSS	DKS2J-H10RSS	3.5 inch SAS HDD
DKR2H-H10RSS	DKR2H-H10RSS	3.5 inch SAS HDD
SLB5F-M480SD	SLB5F-M480SS	2.5 inch SSD
SLB5G-M480SD	SLB5G-M480SS	2.5 inch SSD
SLB5F-M960SD	SLB5F-M960SS	2.5 inch SSD
SLB5G-M960SS	SLB5G-M960SS	2.5 inch SSD
SLB5E-M1R9SD	SLB5E-M1R9SS	2.5 inch SSD
SLB5G-M1R9SS	SLB5G-M1R9SS	2.5 inch SSD
SLB5F-M3R8SS	SLB5F-M3R8SS	2.5 inch SSD
SLB5G-M3R8SS	SLB5G-M3R8SS	2.5 inch SSD
SLR5E-M3R8SS	SLR5E-M3R8SS	2.5 inch SSD
SLB5G-M7R6SS	SLB5G-M7R6SS	2.5 inch SSD
SLR5E-M7R6SS	SLR5E-M7R6SS	2.5 inch SSD
SLB5H-M15RSS	SLB5H-M15RSS	2.5 inch SSD
NFHA E-Q3R2SS	NFHA E-Q3R2SS	Flash Module Drive
NFHAF-Q6R4SS	NFHAF-Q6R4SS	Flash Module Drive
NFHAH-Q6R4SS	NFHAH-Q6R4SS	Flash Module Drive
NFHAJ-Q6R4SS	NFHAJ-Q6R4SS	Flash Module Drive
NFHAF-Q13RSS	NFHAF-Q13RSS	Flash Module Drive
NFHAH-Q13RSS	NFHAH-Q13RSS	Flash Module Drive
NFHAJ-Q13RSS	NFHAJ-Q13RSS	Flash Module Drive

The following table shows recommended setting models on the Maintenance PC when different types of Disk Drives (same number of rotations and same capacity) to be added are mixed in the ECC.

Mixed Disk Type Name	Recommended Setting Model
DKR5x-J600SS	DKR5D-J600SS
DKS5x-J600SS	
DKR5x-J1R2SS	DKR5E-J1R2SS
DKS5x-J1R2SS	
DKS5x-J2R4SS	DKS5K-J2R4SS
DKS2x-H6R0SS	DKS2F-H6R0SS
DKR2x-H6R0SS	
DKR2x-H10RSS	DKR2H-H10RSS
DKS2x-H10RSS	
SLB5x-M480SD	SLB5F-M480SS
SLB5x-M960Sy	SLB5F-M960SS
SLB5x-M1R9Sy	SLB5E-M1R9SS
SLB5x-M3R8SS	SLB5F-M3R8SS
SLR5x-M3R8SS	
SLB5x-M7R6SS	SLB5G-M7R6SS
SLR5x-M7R6SS	
SLB5x-M15RSS	SLB5H-M15RSS
NFHAX-Q3R2SS	NFHAE-Q3R2SS
NFHAX-Q6R4SS	NFHAF-Q6R4SS
NFHAX-Q13RSS	NFHAF-Q13RSS

x : A, B, C, ...

y : S, D

The following table shows Drives compatible with the Drives to be replaced by Drive replacement.

Drives before replacement	Drives after replacement
DKR5x-J600SS	DKR5x-J600SS
	DKS5x-J600SS
DKS5x-J600SS	DKR5x-J600SS
	DKS5x-J600SS
DKR5x-J1R2SS	DKR5x-J1R2SS
	DKS5x-J1R2SS
DKS5x-J1R2SS	DKR5x-J1R2SS
	DKS5x-J1R2SS
DKS5x-J2R4SS	DKS5x-J2R4SS
DKS2x-H6R0SS	DKR2x-H6R0SS
	DKS2x-H6R0SS
DKR2x-H6R0SS	DKR2x-H6R0SS
	DKS2x-H6R0SS
DKR2x-H10RSS	DKR2x-H10RSS
	DKS2x-H10RSS
DKS2x-H10RSS	DKR2x-H10RSS
	DKS2x-H10RSS
SLB5x-M480SD	SLB5x-M480SD
SLB5x-M960Sy	SLB5x-M960Sy
SLB5x-M1R9Sy	SLB5x-M1R9Sy
SLB5x-M3R8SS	SLB5x-M3R8SS
	SLR5x-M3R8SS
SLR5x-M3R8SS	SLB5x-M3R8SS
	SLR5x-M3R8SS
SLB5x-M7R6SS	SLB5x-M7R6SS
	SLR5x-M7R6SS
SLR5x-M7R6SS	SLB5x-M7R6SS
	SLR5x-M7R6SS
SLB5x-M15RSS	SLB5x-M15RSS
NFHAx-Q3R2SS	NFHAx-Q3R2SS
NFHAx-Q6R4SS	NFHAx-Q6R4SS
NFHAx-Q13RSS	NFHAx-Q13RSS

x : A, B, C, ...

y : S, D

1.2.3 MPC Window Display and Conversion Table of Option Type Names

Table 1-8 Window Display of Channel Board (CHB)

Model Number	MPC Window
DW-F800-4HF32R	32 G Ready 4Port FC
DW-F800-2HS10S	10 G 2Port iSCSI (Optic)
DW-F800-2HS10B	10 G 2Port iSCSI (Copper)

Table 1-9 Window Display of Disk Board (DKB)

Model Number	MPC Window
DW-F800-BS12G	Disk Board
DW-F800-BS12GE	Encryption

Table 1-10 Window Display of Cache Memory

Model Number	MPC Window
DW-F850-CM16G	16 GB
DW-F850-CM32G	32 GB
DW-F850-CM64G	64 GB

1.3 Configuration of Installing Storage System

This Storage System is model that mounts CBXSS/CBXSL/CBSS/CBSL/CBLH1/CBLH2 of Controller Chassis, and DBS/DBL/DB60/DBF of Drive Boxes on the RKU rack frame.

CBXSS/CBXSL/CBSS/CBSL is a Storage System with Drives installed.

CBLH1/CBLH2 is a Storage System with no Drives installed.

Install CBLH1/CBLH2 and one or more Drive Boxes in combination.

Table 1-11 lists the Maximum Mountable Number of Drive Boxes for Controller Chassis.

For the installation mixing different types of Drive Boxes for the Controller Chassis, install Drive Boxes (DBS/DBL/DB60/DBF) in the range of the maximum number of Drives that the Controller Chassis can recognize.

Table 1-11 Maximum Mountable Number of Drive Boxes for Controller Chassis

Controller Chassis	Number of Mounted DBS	Number of Mounted DBL	Number of Mounted DB60	Number of Mounted DBF
CBXSS/CBXSL	3	7	-	-
CBSS1/CBSL1	7	7	4	-
CBSS2/CBSL2	11	11	6	-
CBLH1	36	36	20	36
CBLH2	48	48	24	48

Figure 1-7 Configuration (CBXSS_CBXSL_CBSS_CBSL+DBS/DBL/DB60)

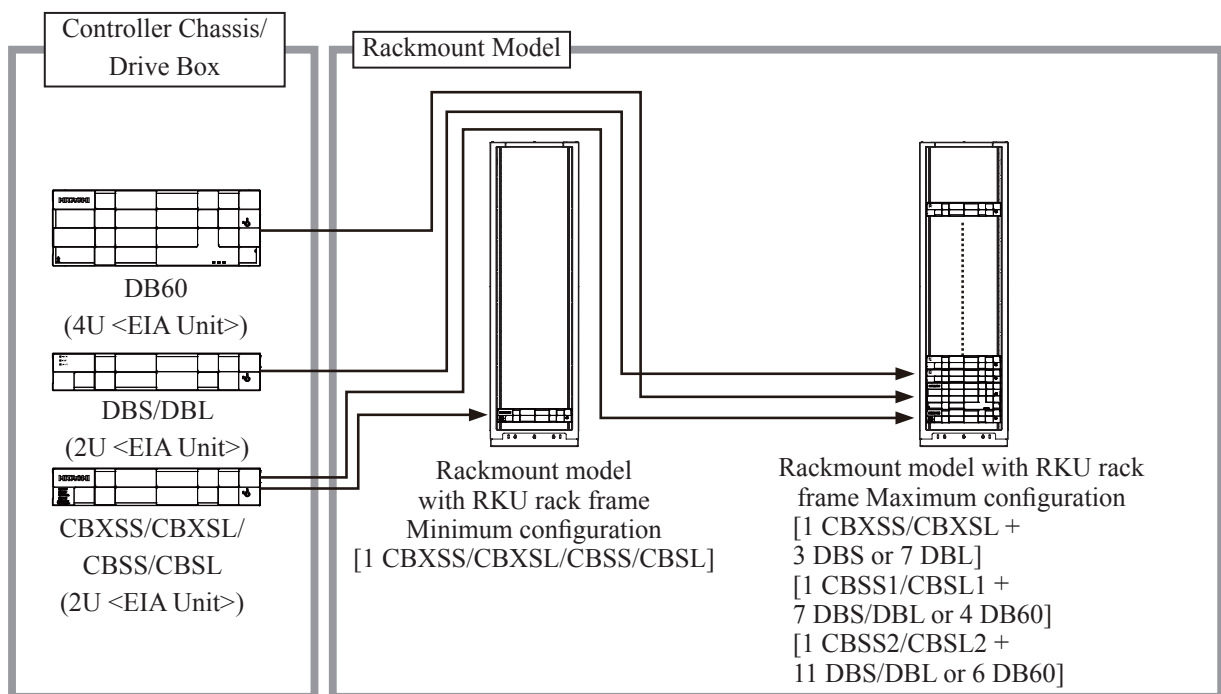
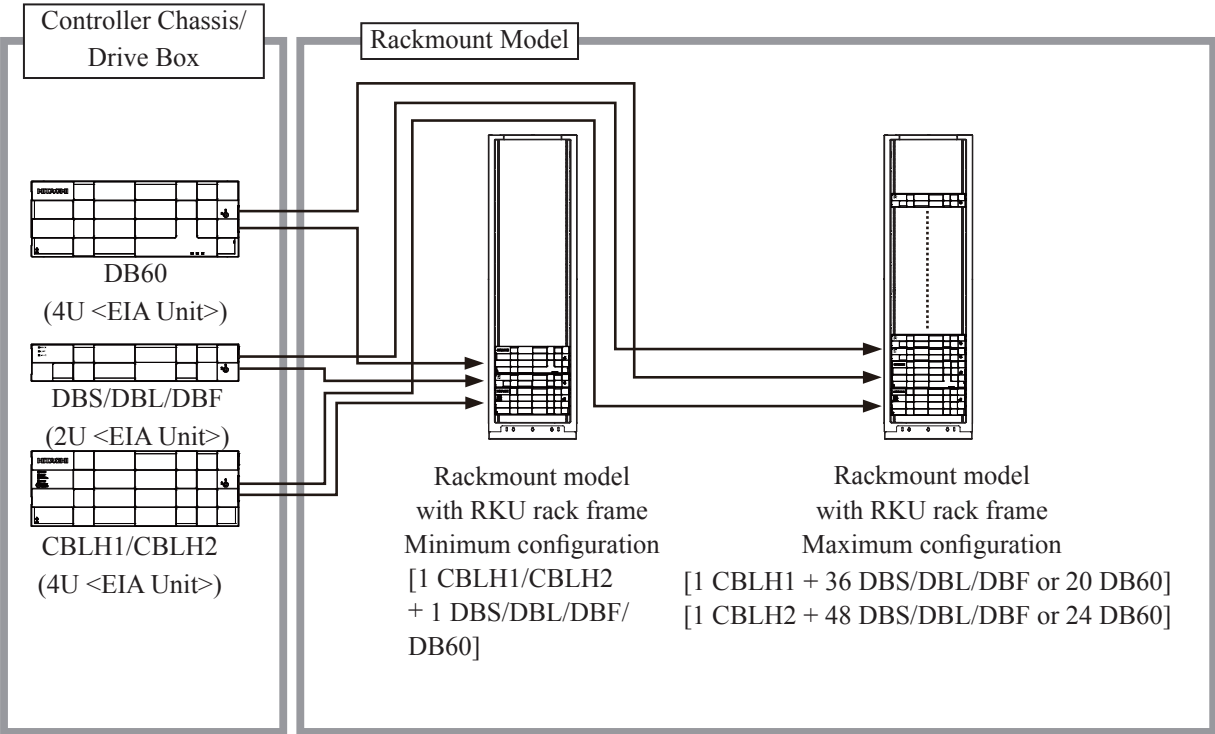


Figure 1-8 Configuration (CBLH1_CBLH2+DBS/DBL/DB60/DBF)



1.3.1 Channel Board, and Disk Board Option Installation Rule

The Channel Board options can be installed also in the Disk Board slots in addition to the Channel Board slots in CBLH1/CBLH2.

After the dedicated Channel Board slots are fully added, the Channel Board options can be added in the Disk Board slots.

In case of the CBLH2, you can expand the Channel Boards by mounting the Channel Board Box (CHBB).

The order of Channel Board installation is shown in [Table 1-12](#).

Table 1-12 Channel Board Installation Rule

Controller Chassis or Channel Board Box	Installation Order	Installation Slot Location	
		Diskless Model	Disk-in Model
CBSS/CBSL	1	—	1A/2A (CHB-1A/2A)
	2	—	1B/2B (CHB-1B/2B)
CBLH1	1	1A/2A (CHB-1A/2A)	1A/2A (CHB-1A/2A)
	2	1B/2B (CHB-1B/2B)	1B/2B (CHB-1B/2B)
	3	1C/2C (CHB-1C/2C)	1C/2C (CHB-1C/2C)
	4	1D/2D (CHB-1D/2D)	1D/2D (CHB-1D/2D)
	5	1E/2E (CHB-1E/2E)	1E/2E (CHB-1E/2E)
	6	1F/2F (CHB-1F/2F)	1F/2F (CHB-1F/2F)
	7	1G/2G (CHB-1G/2G)	—
	8	1H/2H (CHB-1H/2H)	—
CBLH2	1	1A/2A (CHB-1A/2A)	1A/2A (CHB-1A/2A)
	2	1B/2B (CHB-1B/2B)	1B/2B (CHB-1B/2B)
	3	1C/2C (CHB-1C/2C)	1C/2C (CHB-1C/2C)
	4	1D/2D (CHB-1D/2D)	1D/2D (CHB-1D/2D)
	5	1E/2E (CHB-1E/2E)	1E/2E (CHB-1E/2E)
	6	1F/2F (CHB-1F/2F)	1F/2F (CHB-1F/2F)
	7	1G/2G (CHB-1G/2G)	—
	8	1H/2H (CHB-1H/2H)	—
CHBB	1	1J/2J (CHB-1J/2J)	1J/2J (CHB-1J/2J)
	2	1K/2K (CHB-1K/2K)	1K/2K (CHB-1K/2K)
	3	1L/2L (CHB-1L/2L)	1L/2L (CHB-1L/2L)
	4	1M/2M (CHB-1M/2M)	1M/2M (CHB-1M/2M)

The order of Disk Board installation is shown in [Table 1-13](#).

Table 1-13 Disk Board Installation Rule

Controller Chassis	Installation Order	Installation Slot Location
CBLH1	1	1G/2G (DKB-1G/2G)
		1H/2H (DKB-1H/2H)
CBLH2	1	1G/2G (DKB-1G/2G)
		1H/2H (DKB-1H/2H)
	2	1E/2E (DKB-1E/2E)
		1F/2F (DKB-1F/2F)

1.3.2 Cache Memory Installation Rule

Cache Memory (DIMM) is installed in the Controller Boards of CBXSS/CBXSL/CBSS/CBSL/CBLH1/CBLH2.

The data of Shared Memory, to which the Storage System configuration information is written, is saved in the Cache Memory on the Controller Board. Shared Memory capacity plus Cache Memory capacity equals Total Cache Memory Capacity necessary for the Storage System. The Shared Memory capacity must be allocated to CMG0 (Cache Memory Group 0).

Refer to [Table 3-2](#) for the Cache Memory installation pattern of CBXSS/CBXSL/CBSS/CBSL and [Table 3-3](#) for that of CBLH1/CBLH2.

Figure 1-9 Cache Memory Location (CBXSS/CBXSL)

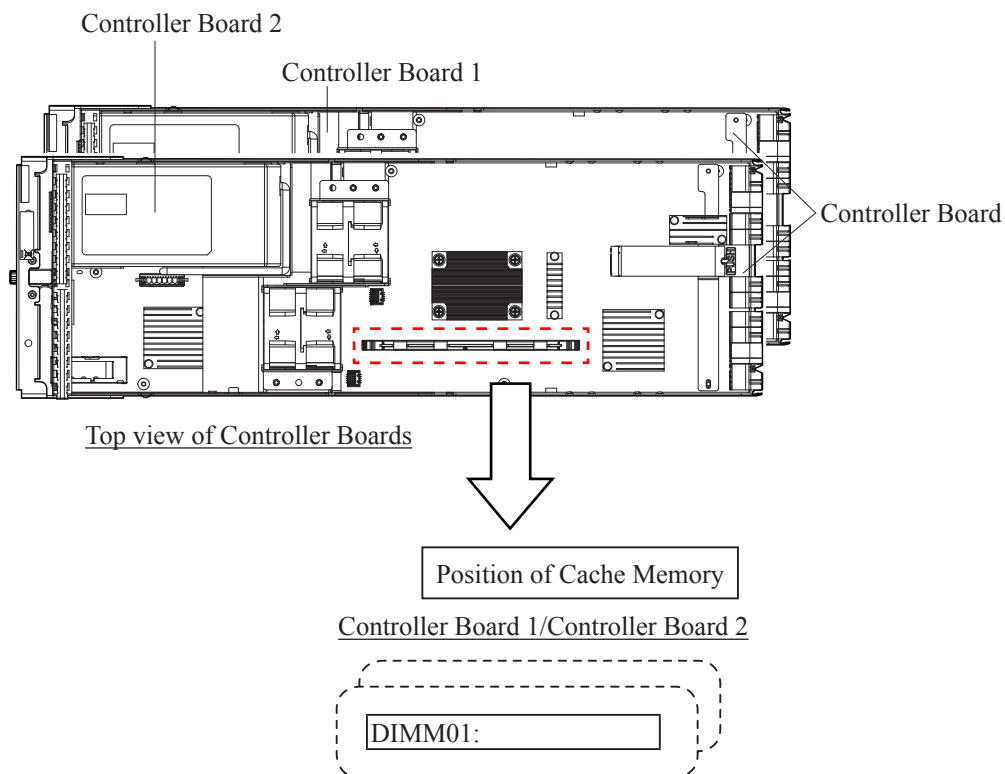


Figure 1-10 Cache Memory Location (CBSS/CBSL)

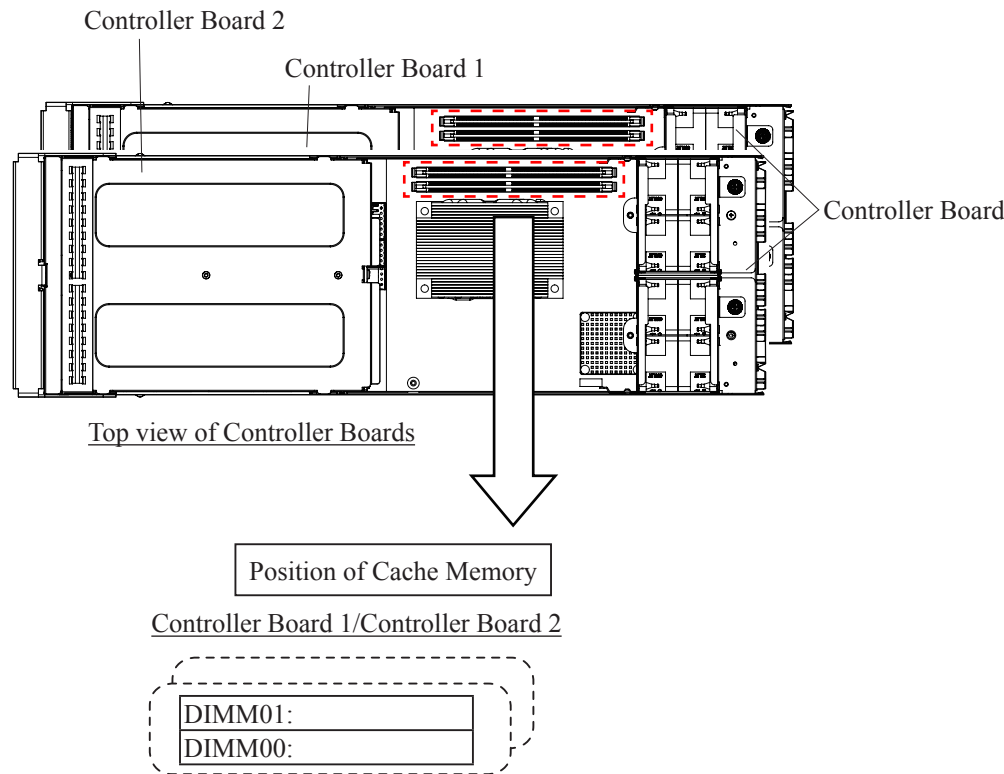
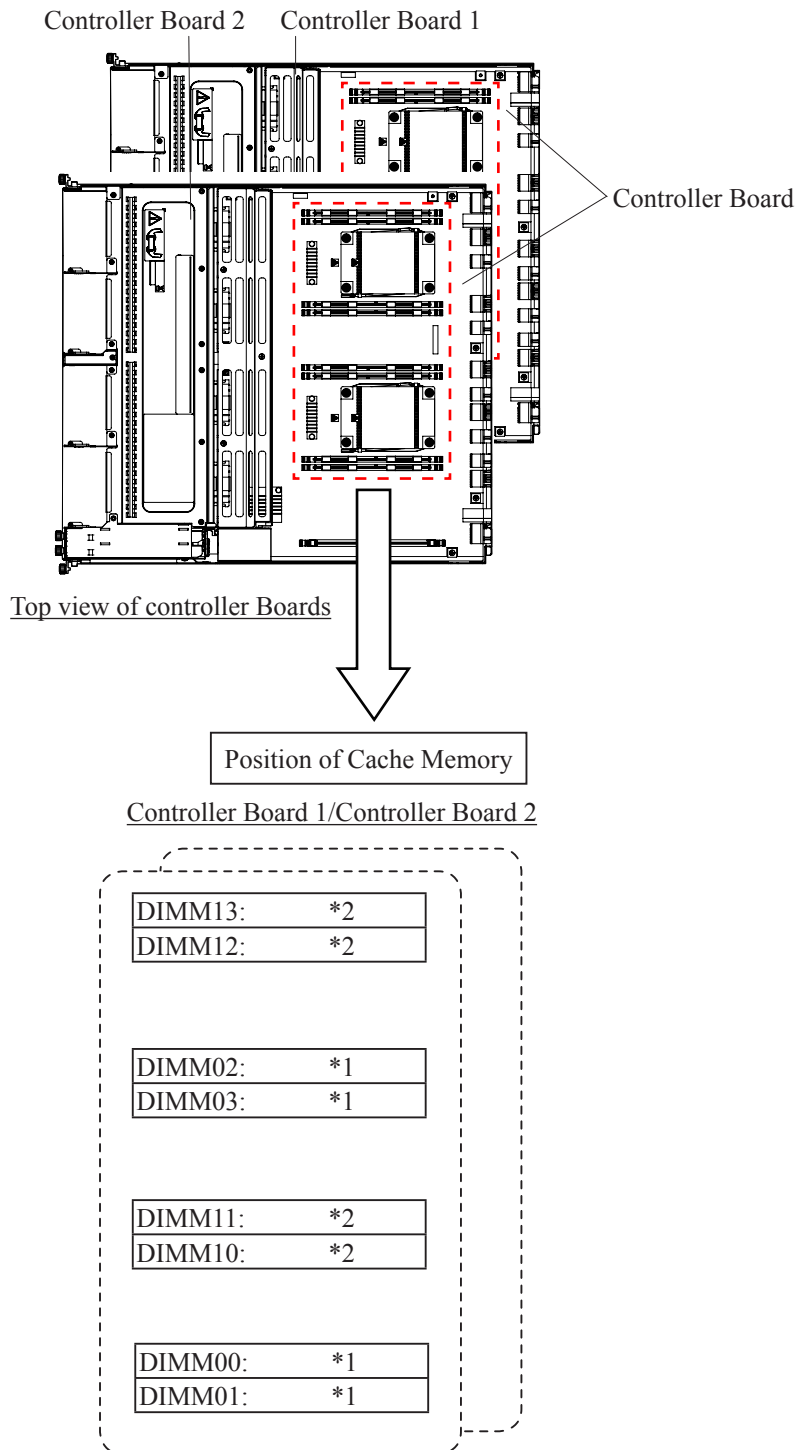


Figure 1-11 Cache Memory Location (CBLH1/CBLH2)



*1 : Belonging to CMG0 (Cache Memory Group 0).

*2 : Belonging to CMG1 (Cache Memory Group 1).

Be sure to install DIMM in CMG0.

CMG1 is an additional slot of DIMM.

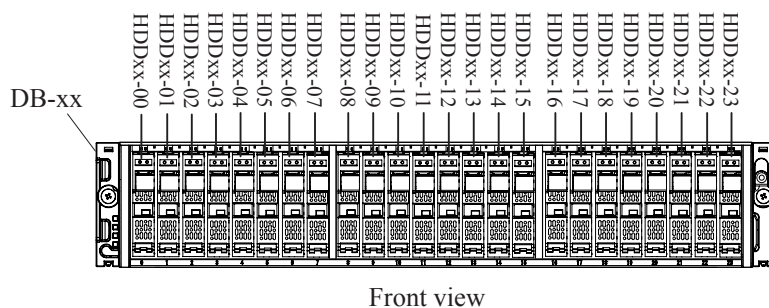
Install DIMM in sets of four.

1.3.3 Drive Installation Order

1. In case of CBXSS/CBSS/DBS

Drives are installed in 00 to 23 in order.

Figure 1-12 Drive Position of CBXSS/CBSS/DBS



*1 : The name in parentheses in the Maintenance PC messages shows HDDxx-yy here.

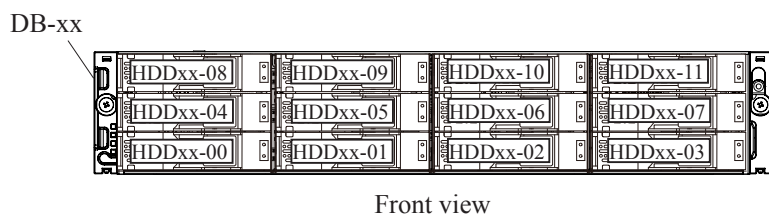
*2 : DB-xx

↳ DB No. (00, 01, 02, ..., 47)

2. In case of CBXSL/CBSL/DBL

Drives are installed in 00 to 11 in order.

Figure 1-13 Drive Position of CBXSL/CBSL/DBL



*1 : The name in parentheses in the Maintenance PC messages shows HDDxx-yy here.

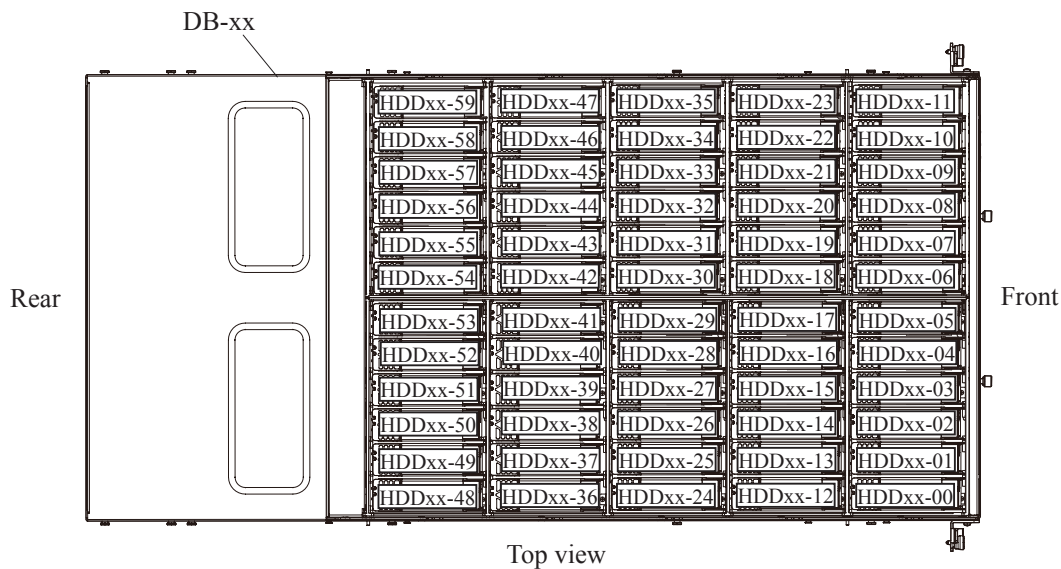
*2 : DB-xx

↳ DB No. (00, 01, 02, ..., 47)

3. In Case of Drive Box (DB60)

Drives are installed in 00 to 59 in order.

Figure 1-14 Drive Position of Drive Box (DB60)



*1 : The name in parentheses in the Maintenance PC messages shows HDDxx-yy here.

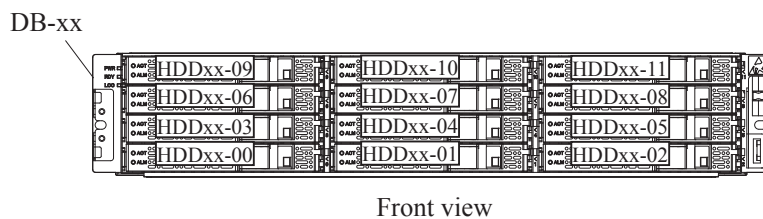
*2 : DB-xx

↳ DB No. (00, 01, 02, ..., 23)

4. In case of DBF

Drives are installed in 00 to 11 in order.

Figure 1-15 Drive Position of DBF



*1 : The name in parentheses in the Maintenance PC messages shows HDDxx-yy here.

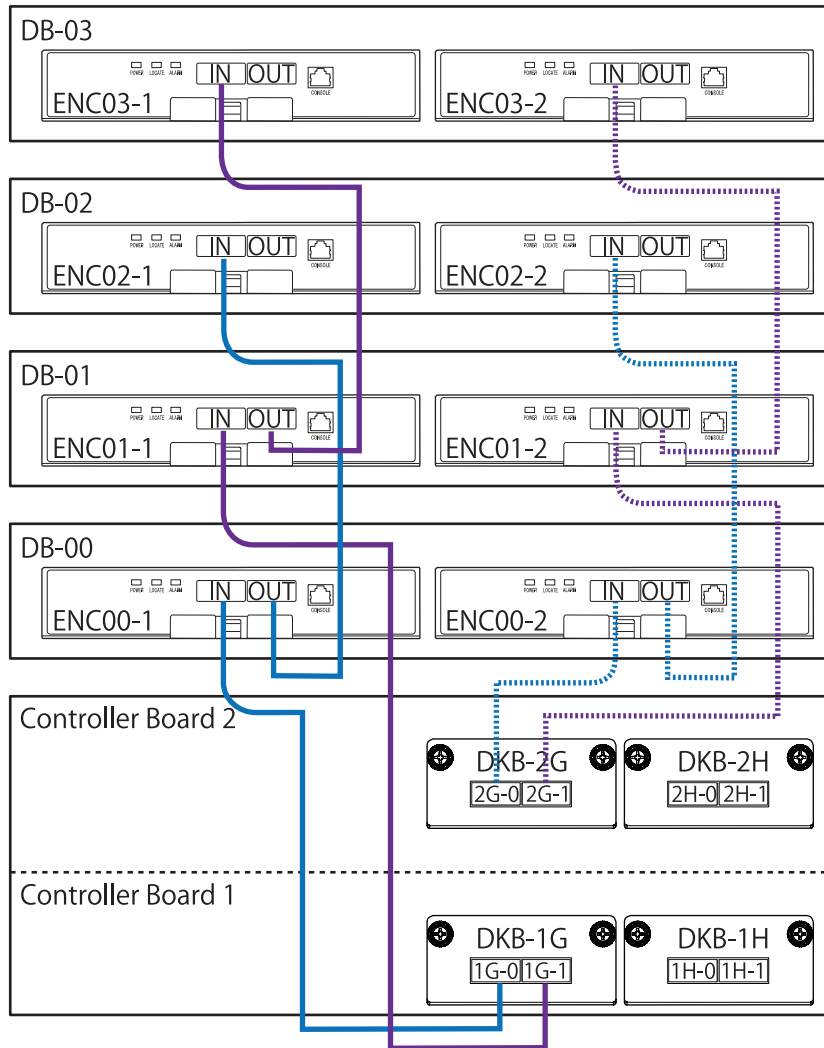
*2 : DB-xx

↳ DB No. (00, 01, 02, ..., 47)

5. Connection of Disk Board and Drive Box

The connection of the Disk Board and the Drive Box is shown below.

Figure 1-16 Connection Diagram of Disk Board and Drive Box (DBS/DBL/DB60)



1.3.4 Notes for Installing Flash Module Drive Boxes

Up to 48 DBFs (Flash Module Drive Boxes) can be connected to the Controller Chassis.

Table 1-14 Maximum Number of Installable DBFs and Flash Module Drives (FMDs)

Controller Chassis	Maximum number of installable DBFs	Maximum number of installable FMDs (including Spare Drives)
CBSS1/CBSL1	-	-
CBSS2/CBSL2	-	-
CBLH1	36	432
CBLH2	48	576

1.4 How to Open/Close Rear Door or Attach/Remove Front Bezel/Rear Door

1.4.1 How to Attach/Remove the Front Bezel

CAUTION

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

- NOTICE:**
- To prevent part failures caused by static electrical charge built up on your own body, be sure to wear a wrist strap connected to the Storage System before starting and do not take it off until you finish. See [“1.1.2 Note when Installing and Removing Parts”](#).
 - The Front Bezels of CBXSS/CBXSL/CBSS/CBSL/DBS/DBL/DBF/CHBB, CBLH and DB60 are different in size.
 - When installing or removing the Front Bezel, try not to operate the main switch incorrectly with the hook or the ON/OFF button of the Front Bezel.

1.4.1.1 In Case of CBXSS/CBXSL/CBSS/CBSL/DBS/DBL/DBF/CHBB

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

1. Procedure for removal

- (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 remove the right side of the Front Bezel from the ball catch (②).

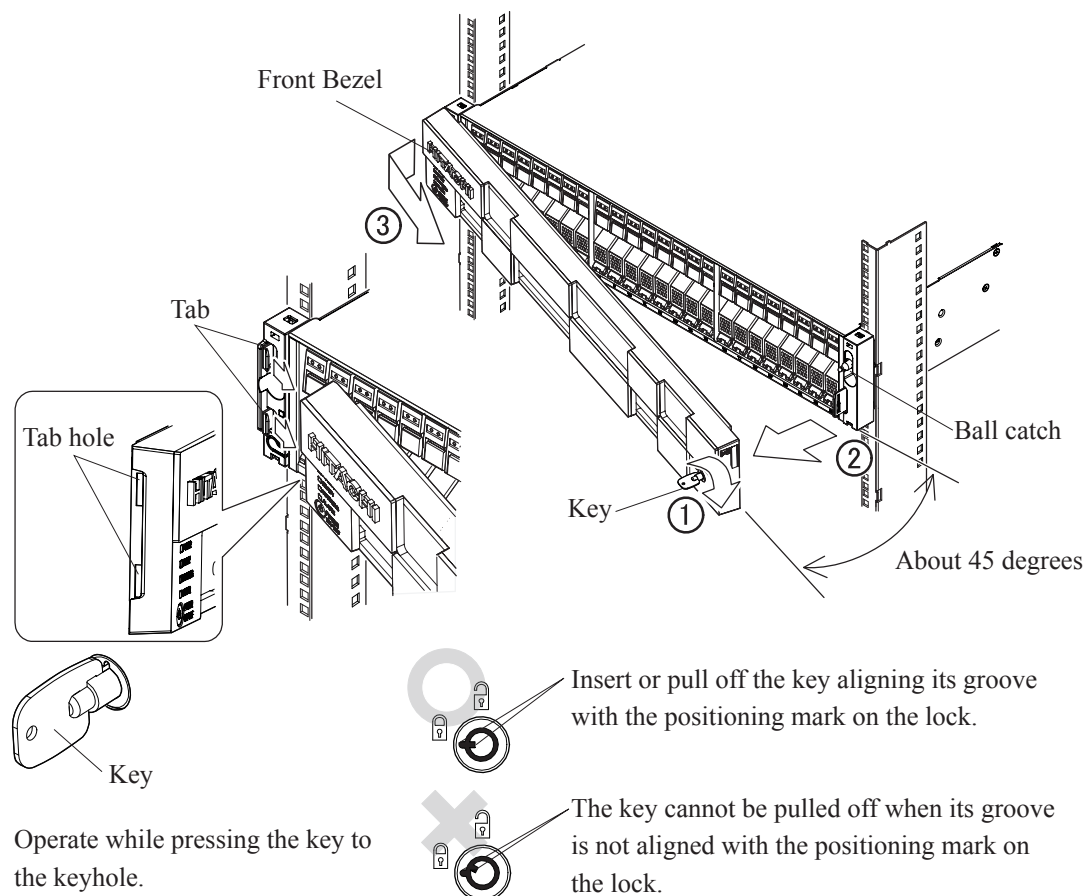
NOTE : When removing the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Remove the Front Bezel from the left tabs while pulling, and then remove it (③).

NOTE: When removing Front Bezel, don't push left side of Front Bezel.

Figure 1-17 Procedure for Removing Front Bezel (CBXSS/CBXSL/CBSS/CBSL/DBS/DBL/DBF/CHBB)



NOTE : • When inserting and turning the key, have it inserted completely. If you turn the key while pulling it towards you, 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.

2. Procedure for attachment

- (1) Unlock the Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (2) Insert the tabs on the left front side of the Storage System into the tab holes on the Front Bezel (①).

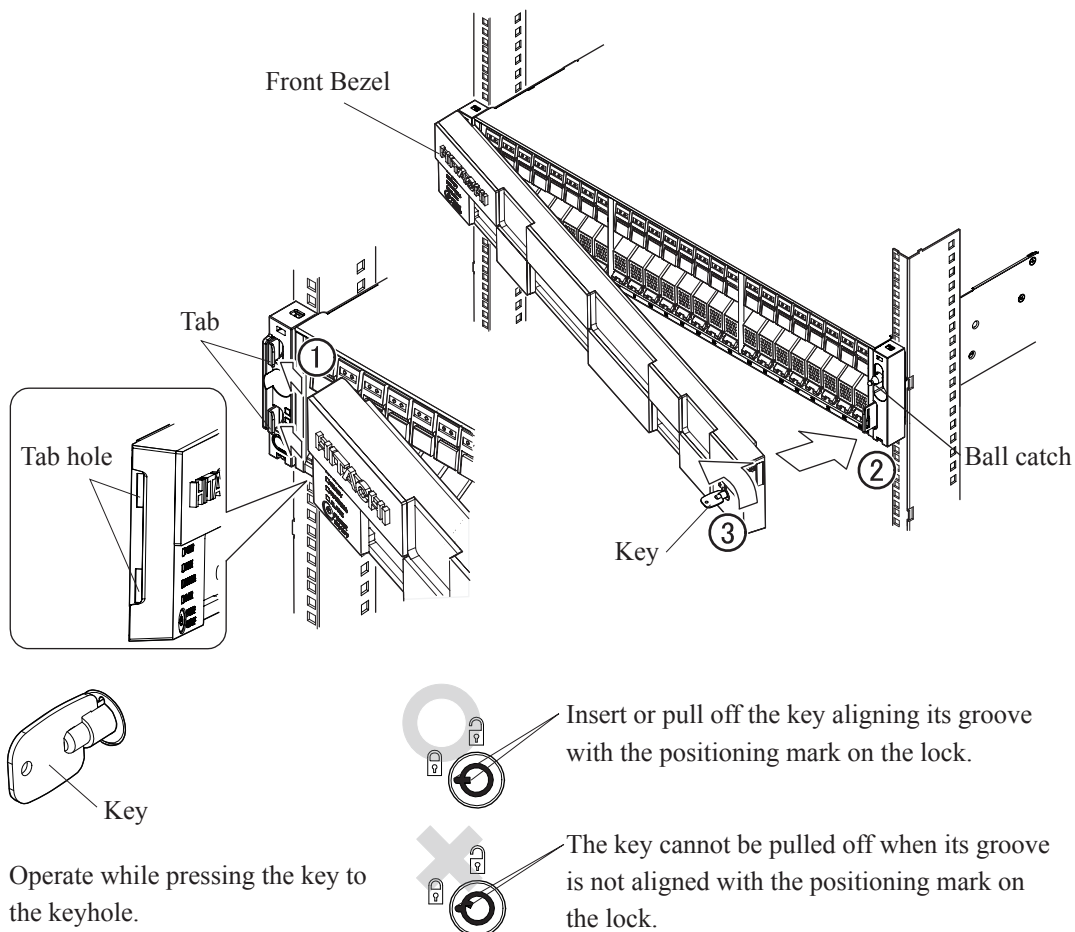
NOTE: When inserting Front Bezel, don't push left side of Front Bezel.

- (3) 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 Storage System (②).

NOTE: When fixing Front Bezel, don't push left side of Front Bezel.

- (4) Lock the Front Bezel with the key (③).

Figure 1-18 Procedure for Attaching Front Bezel (CBXSS/CBXSL/CBSS/CBSL/DBS/DBL/DBF/CHBB)



NOTE :

- When inserting and turning the key, have it inserted completely. If you turn the key while pulling it towards you, 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.

1.4.1.2 In Case of CBLH

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

1. Procedure for removal

- (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 part of the Front Bezel, and then remove the right side of the Front Bezel from the ball catch (②).

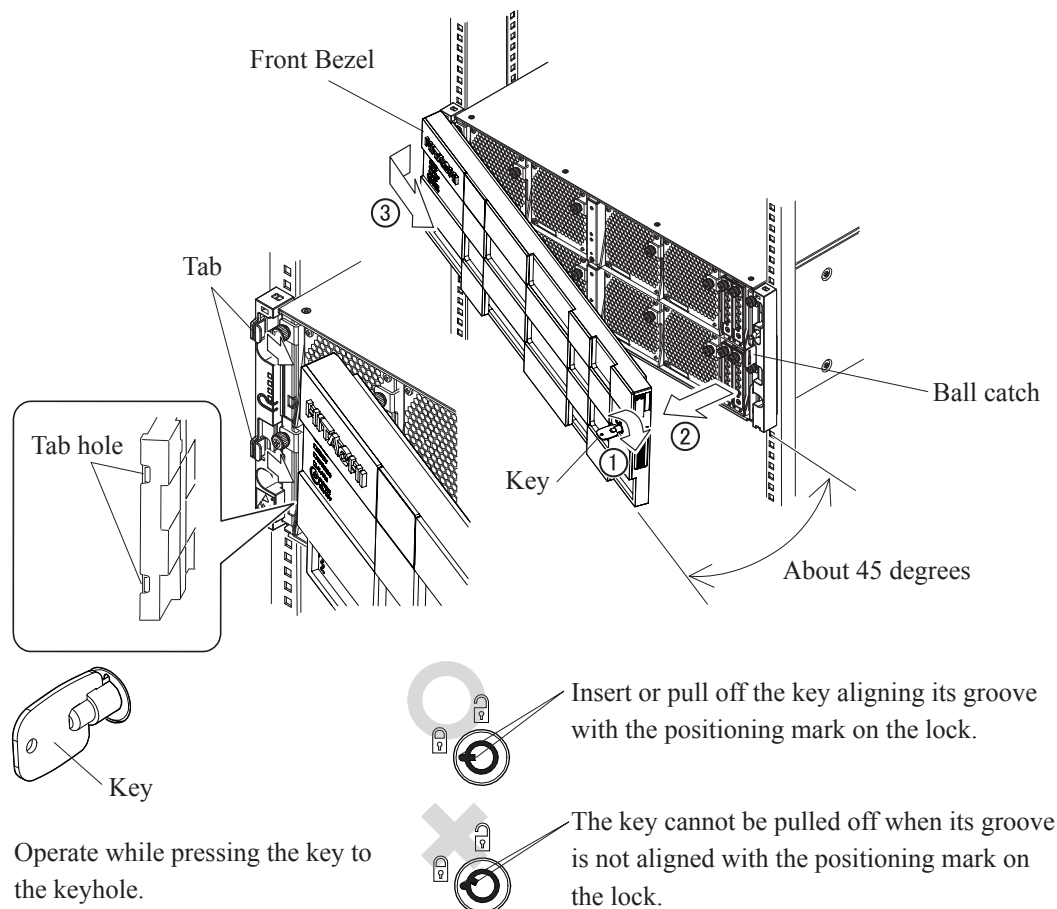
NOTE : When removing the Front Bezel, work with the opening angle between the Front Bezel and the Storage System of up to 45 degrees.

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

- (3) Remove the Front Bezel from the left tabs while pulling, and then remove it (③).

NOTE: When removing Front Bezel, don't push left side of Front Bezel.

Figure 1-19 Procedure for Removing Front Bezel (CBLH)



NOTE : • When inserting and turning the key, have it inserted completely. If you turn the key while pulling it towards you, 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.

2. Procedure for attachment

- (1) Unlock the Front Bezel with the key, and hold the key and bottom of Front Bezel with your both hands.
- (2) Insert the tabs on the left front side of the Storage System into the tab holes on the Front Bezel (①).

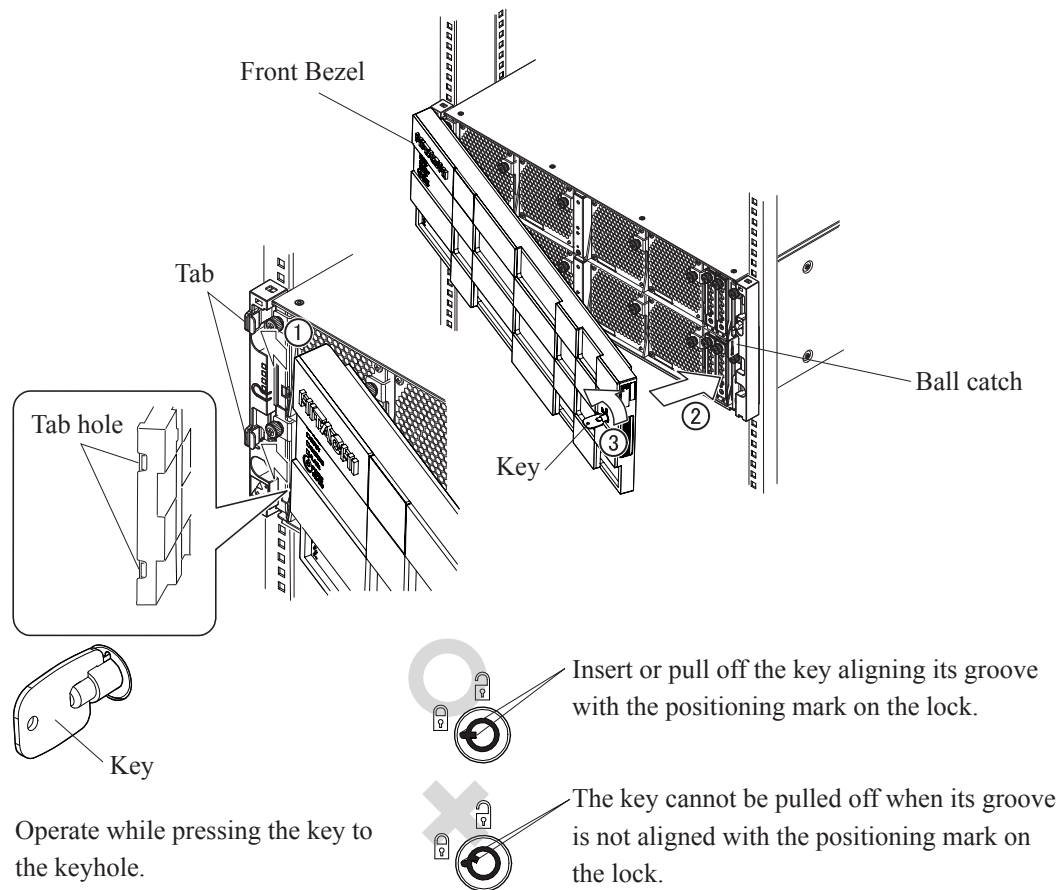
NOTE: When inserting Front Bezel, don't push left side of Front Bezel.

- (3) 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 Storage System (②).

NOTE: When fixing Front Bezel, don't push left side of Front Bezel.

- (4) Lock the Front Bezel with the key (③).

Figure 1-20 Procedure for Attaching Front Bezel (CBLH)



- NOTE :
- When inserting and turning the key, have it inserted completely. If you turn the key while pulling it towards you, 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.

1.4.1.3 In Case of DB60

CAUTION

- Be careful of the workers on the other side when pulling out or storing the DB60.
- Do not pull out multiple DB60s at a time because the rack may fall over.
- Do not put objects on the DB60 which has been pulled out of the rack or use it as working space because the rack may fall over.

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

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

1. How to pull out the DB60 from out of the rack frame

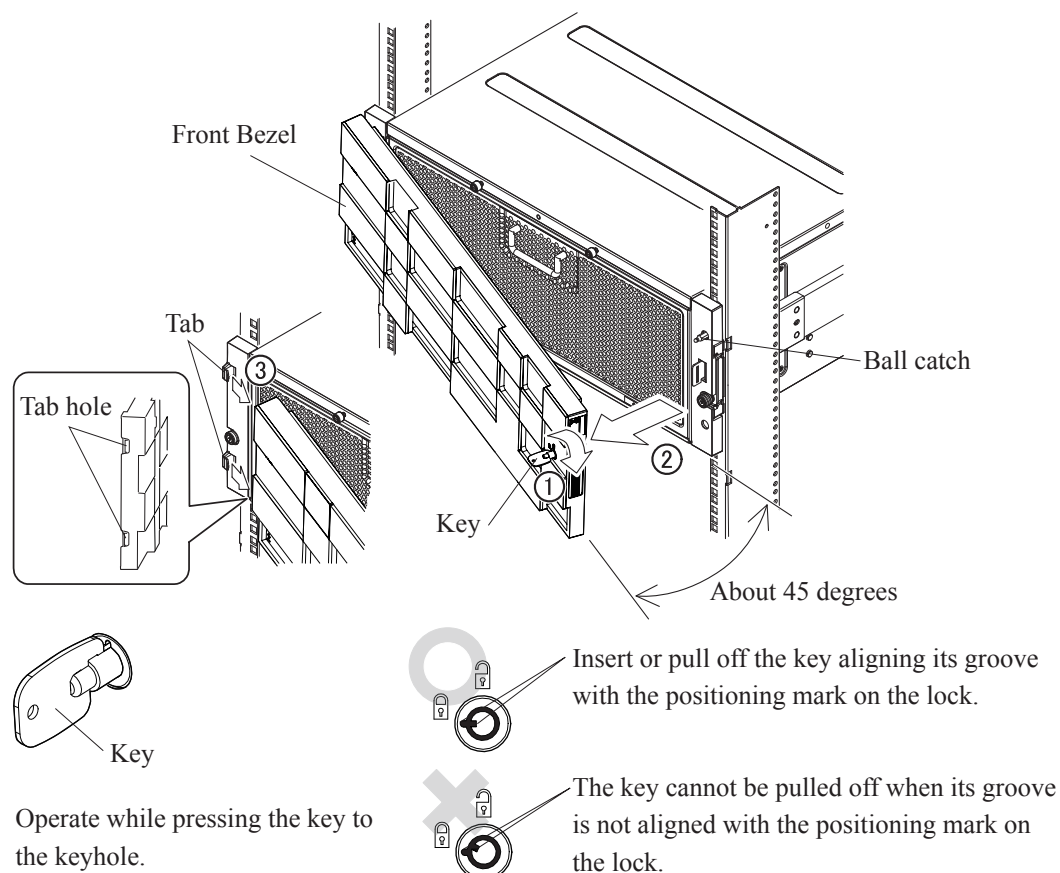
- (1) Insert the key into the keyhole on the Front Bezel and release the lock of the Front Bezel (①).
- (2) Pull the key toward you while holding the lower right portion of the Front Bezel, and then remove the right side of the Front Bezel from the ball catches (②).

NOTE : When removing 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) Remove the Front Bezel from the left tabs and then remove it (③).

Figure 1-21 Procedure for Removing Front Bezel (DB60)

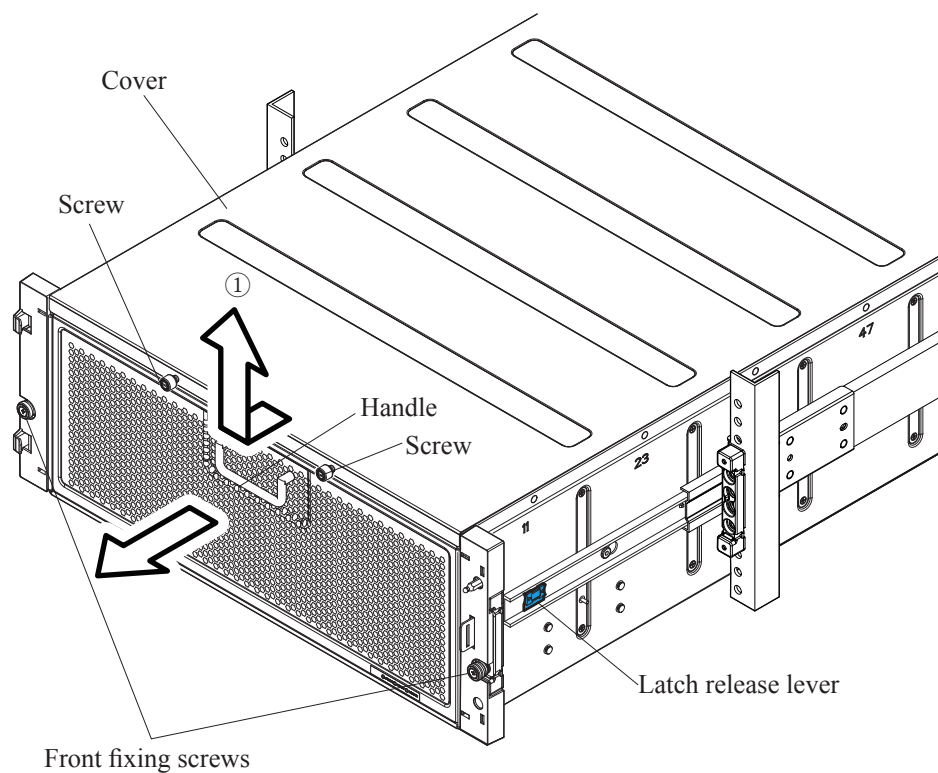


- (4) Loosen two front fixing screws.
- (5) Hold the handle in the front of the Drive Box and pull out slowly until it stops.

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

- (6) Loosen two screws and slide the cover on the top of the DB60 to the direction shown by the arrow ① and remove it.

Figure 1-22 How to Pull Out the DB60



2. How to store the DB60 in the rack frame.

- (1) Attach the top cover of DB60 by sliding it in the direction shown by the arrow (①) and tightening the two screws by hand.

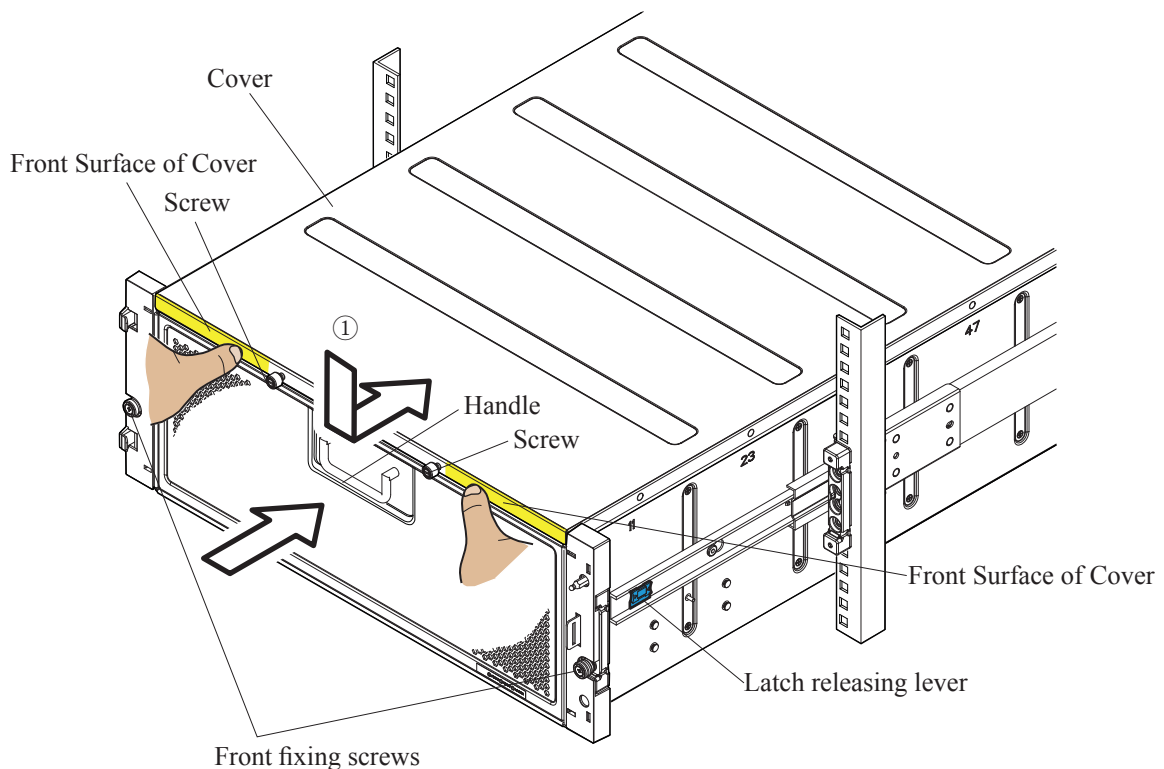
Press the front surface of the cover with your hands away from the top surface of the cover when attaching the cover.

NOTE : • Pressing the top surface of the cover might distort the cover.

- Do not drop a screw in the Storage System.
- If you dropped it, remove it immediately.
- If you leave it, the parts will short out and it will cause a fire or a failure.

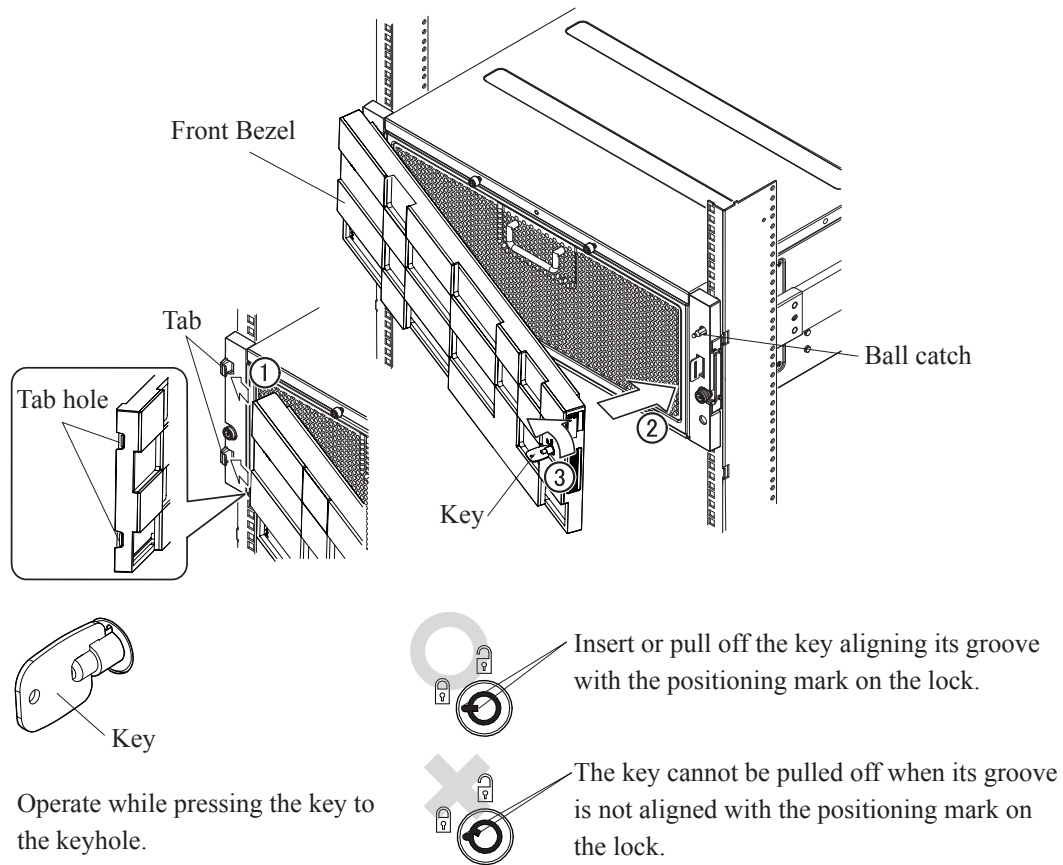
- (2) Release the lock by sliding the latch releasing lever which is located in the right and left rails, and push the front side of the DB60 gently all the way into the rack frame.
- (3) Tighten two front fixing screws by hand to fix it.

Figure 1-23 How to Store DB60



- (4) Unlock the 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 Storage System into the tab holes on the Front Bezel (①).
- (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 Storage System (②).
- (7) Lock the Front Bezel with the key (③).

Figure 1-24 Procedure for Attaching Front Bezel (DB60)



1.4.2 How to Open/Close the Door of the RKU Rack Frame

⚠ CAUTION

Open or close the door carefully following the procedure. Otherwise, you may hurt your fingers by pinching them.

For information about the Hitachi Universal V2 rack used with HDS VSP storage systems, refer to the Hitachi Universal V2 Rack Reference Guide, MK-97RK000-00.

For the procedure for removing and installing the Front Bezel, refer to [“1.4.1 How to Attach/Remove the Front Bezel”](#).

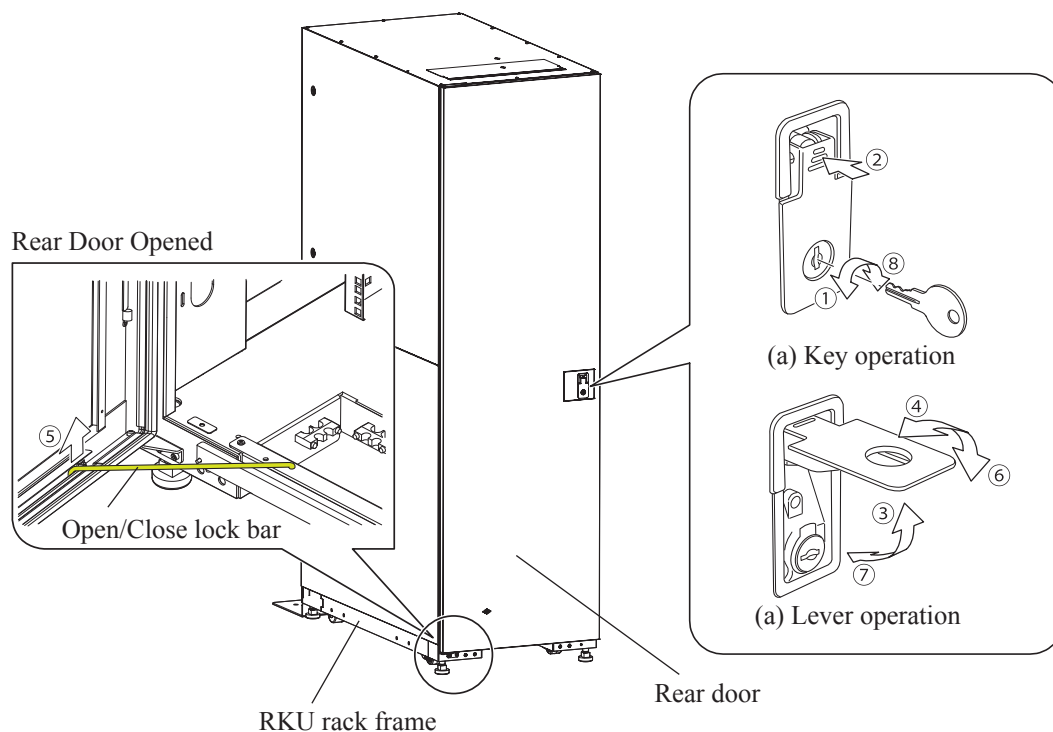
1. Procedure for opening the door

- (1) Insert the key to the keyhole on the rear door, and turn the key to the left to open lock (①).
- (2) Push the upper part of the lever, and raise the lower part of the lever toward (② , ③).
- (3) Turn the lever to the left and pull the lever toward to open the rear door (④).

2. Procedure for closing the door

- (1) Lift the open/close lock bar on the bottom of the back of the rear door to release the lock (⑤).
- (2) Close the door, and push and turn the lever to the right (⑥).
- (3) Push down the lever and push the lower part of the lever (⑦).
- (4) Insert the key to the keyhole on the door and turn the key to the right to lock (⑧).

Figure 1-25 Procedure for Opening/Closing the Rear Door



1.5 Power On/Off Procedure

The Drive may emit mechanical sound “click-clack” when the Drive is started (spun up) immediately after the Storage System powering on and when the Drive is powered off (spun down). However, since there is no problem if the WARNING LED (amber) on the Controller Chassis is not lighting up or blinking at low speed or the ALARM LED (red) on the Controller Chassis is not lighting up or blinking, use the Storage System as it is.

NOTICE: The profile data written by the profile tool is initialized by the power off procedure, so the external volume that performs the mapping of the external storage system connected by using the profile tool is blocked after the power on procedure. When SIM = efd000 is reported and the external volume is blocked by the power on/off procedure, perform the recovery procedure according to TROUBLESHOOTING SECTION “[11.2.1 Recovery Procedure for Path Failure While Device is Blocked \(SIM = 21d0-xy, efd000\)](#)”.

1.5.1 Storage System Power On

1. Turn on the main breakers at the PDUs on the Rack frames. (See [Figure 1-26](#))
The Storage System is in a standby mode when the PDU breaker is in a power-on state and the power of Storage System is off, therefore the FANs of the Storage System continue to operate. Execute this operation just before the power-on processing. When the standby electricity must be controlled, because the standby electricity exists in the equipment under this condition.

2. Turn on the main switch. (See [Figure 1-27](#), [Figure 1-28](#))
Press the main switch on the front of the Storage System to the ON position for approximately 3 seconds. When connecting a remote adapter (a power interlock mode is UPS interlock mode 3), the Storage System starts up interlocking with the power input of the remote adapter.

3. Check that the READY LED (green) on the Controller Chassis lights up. (See [Figure 1-27](#), [Figure 1-28](#))
See the following table for the standard time to turn on the LED.

Table 1-15 Standard Lighting Time

No.	Model name	Normal Time
1	VSP G130, G350, G370	About 16 minutes later
2	VSP G700	About 24 minutes later
3	VSP G900	About 33 minutes later

- NOTICE:**
- When turning off and then on the power, check that the same HDD firmware version is displayed in the Current pane and CFM Version pane after the READY LED lights solid. (See [MPC05-1130](#))
 - If the power is turned off during the HDD firmware update, the HDD firmware version might not be consistent.
If the HDD firmware version is not consistent, update the HDD firmware. (See [FIRM03-10](#))

Figure 1-26 PDU Breaker

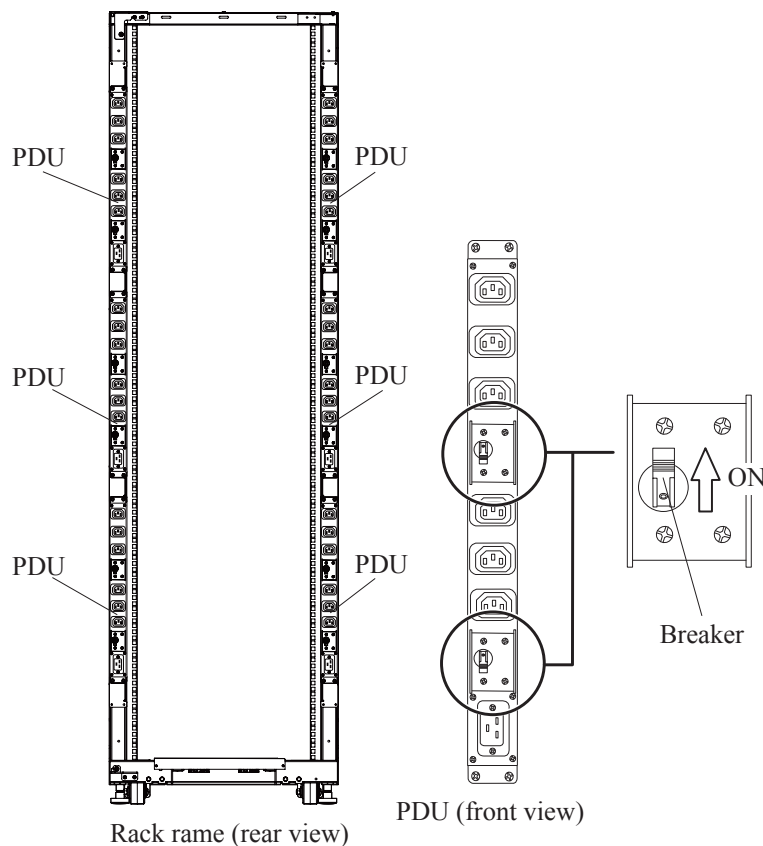


Figure 1-27 MAIN Switch on the Front Side of CBXSS/CBXSL/CBSS/CBSL

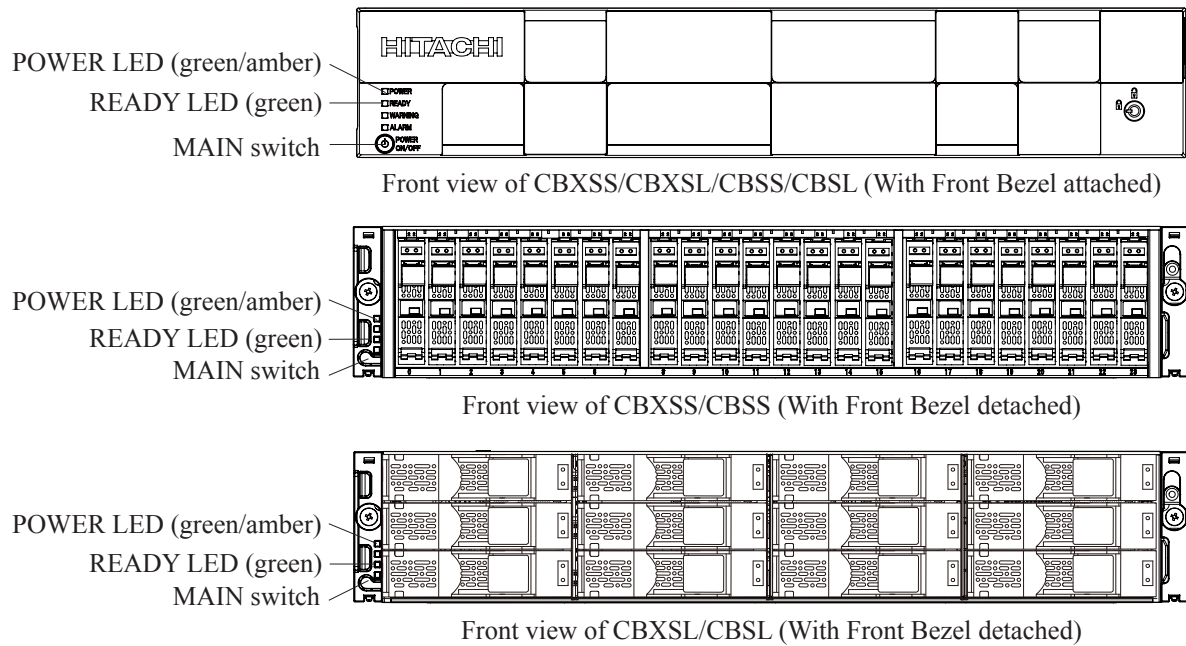
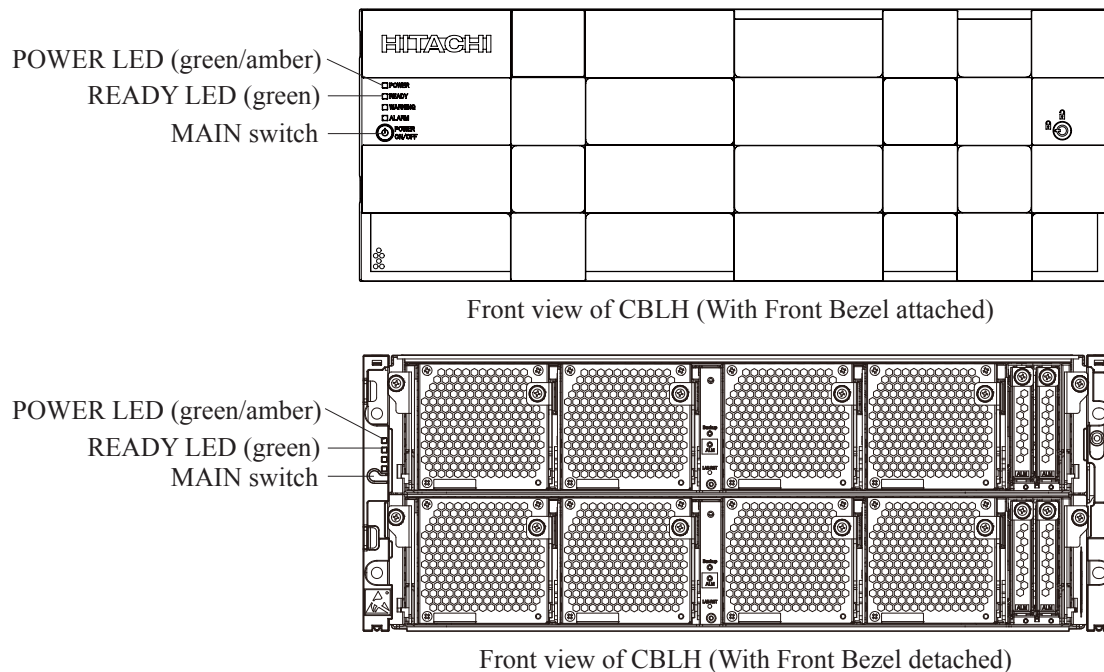


Figure 1-28 MAIN Switch on the Front Side of CBLH



1.5.2 Storage System Power Off (Planned Shutdown)

NOTICE: Confirm that maintenance operations (except for configuration information setting) have been completed before powering OFF the Storage System.
When turning the breaker off before or during a power-off operation, an emergency processing that transfers data to the SSD is performed with the battery.
Make sure the power is completely turned off after executing the following procedures because the emergency processing drains the batteries and prolongs the next power-on time according to the remaining battery charge.

1. Turn off the main switch.

Press the main switch of the Controller Chassis for about three seconds until the POWER LED on the front of the Controller Chassis changes from solid green to blinking.

-
2. Release the main switch and the POWER LED returns to solid green after blinking for about three seconds.

The POWER LED is lit solid green during power-off processing.

The POWER LED changes from green to amber when the power-off processing is completed.

The time required for the LED light to change to amber is shown in [Table 1-16](#).

Even after the POWER LED is lit in amber, the ACT LED (green) on the drive may blink, however it is acceptable.

-
3. Power off the Storage System in the following procedure (AC input completely turned off).

- (1) If the power cables of the Storage System are connected to the PDU, check if a power cable of other Storage System such as a switch is connected to the PDU.

If the power cable of other Storage System is not connected, power off the breakers of the PDU.

If the power cable of other Storage System is connected to the PDU, check whether the other Storage System can be powered off. If the other Storage System cannot be powered off, remove two power cables (four power cables for DB60) from the power supply of the Controller Chassis side and Drive Box side.

- (2) If power cables are connected to something other than PDU, remove two power cables of the Controller Chassis and Drive Box, or turn off the input power.

Table 1-16 Required Time for Completion of Power-off

Data cache capacity	Required time for power-off			
	(a) Power-off processing time	(b) Destage processing time		
		Write pending rate (0%) (*1)	Time to be added each time the write pending rate increases by 10% (*2)	Write pending rate (Maximum value of 70%)
32 GiB	13 minutes	5 minutes	+ 8 minutes	61 minutes
64 GiB	13 minutes	6 minutes	+ 16 minutes	122 minutes
96 GiB	13 minutes	7 minutes	+ 24 minutes	183 minutes
128 GiB	13 minutes	8 minutes	+ 32 minutes	244 minutes
160 GiB	13 minutes	9 minutes	+ 40 minutes	305 minutes
192 GiB	13 minutes	10 minutes	+ 48 minutes	366 minutes
256 GiB	13 minutes	12 minutes	+ 64 minutes	488 minutes
512 GiB	13 minutes	20 minutes	+ 128 minutes	976 minutes
1024 GiB	13 minutes	36 minutes	+ 256 minutes	1952 minutes

The above values are the estimated maximum time in the case that the write processing is concentrated on one RAID group for RAID5 and RAID6, and on one physical disk in one RAID group for RAID1. Distributing the write processing to multiple RAID groups reduces the processing time. When external storage systems are used, the values change depending on the processing abilities of the external storage systems.

*1: The time at the write pending rate of 0% is 5 minutes $\times$ (data cache amount $\div$ 32 GiB).

*2: The time to be added each time the rate increases by 10% is 8 minutes $\times$ (data cache capacity $\div$ 32 GiB).

Example of the operating storage system where the data cache capacity is 32 GiB and the write pending rate is 10% is as follows: (a) 13 minutes + (b) 5 minutes + 8 minutes $\times$ 1 = 26 minutes

The amount of time taken from the start of the power-off processing to the completion of the power-off is the sum of the power-off processing time and the destage processing time.

- (a) Power-off processing time: Required processing time regardless of the system configuration
- (b) Destage processing time: Depends on the data cache capacity and the amount of write pending data in the cache

When the destage processing time exceeds 240 minutes, powering off the storage system fails. (The SIM = 388f00 is issued.) To perform the power-off procedure, adjust the amount of write pending data so that the destage processing time becomes 240 minutes or less.

1.5.2.1 Planned Shutdown of the Storage System that GAD Uses

Planned shutdown of the storage system that GAD uses and startup operation after the planned shutdown are explained.

1. Planned shutdown of the storage system

Table 1-17 shows “Planned shutdown patterns of the storage system”.

And Figure 1-29 shows operation outline of planned shutdown patterns.

Table 1-17 Planned Shutdown Patterns of the Storage System

× : To be performed

— : Not performed

Planned shutdown patterns of the storage system	Storage system to be powered off (*1)			Storage system to continue I/O		Storage system in which a GAD pair is suspended		Disconnection of Quorum disk (*2)
	Primary site	Secondary site	External (*3)	Primary site	Secondary site	Primary site	Secondary site	
A	×	×	×	—	—	×	—	×
B	×	×	—	—	—	×	—	—
C	×	—	×	—	×	—	×	×
D	×	—	—	—	×	—	×	—
E	—	×	×	×	—	×	—	×
F	—	×	—	×	—	×	—	—
G (*4)	—	—	×	×	—	×	—	×
H (*5)	—	—	×	—	×	—	×	×

*1: The order of power off of the storage system is not regulated. Power off is available from wherever “ × ” is marked.

*2: SIM of Quorum disk blockade may be reported on storage system of primary and/or secondary site by disconnection of Quorum disk.

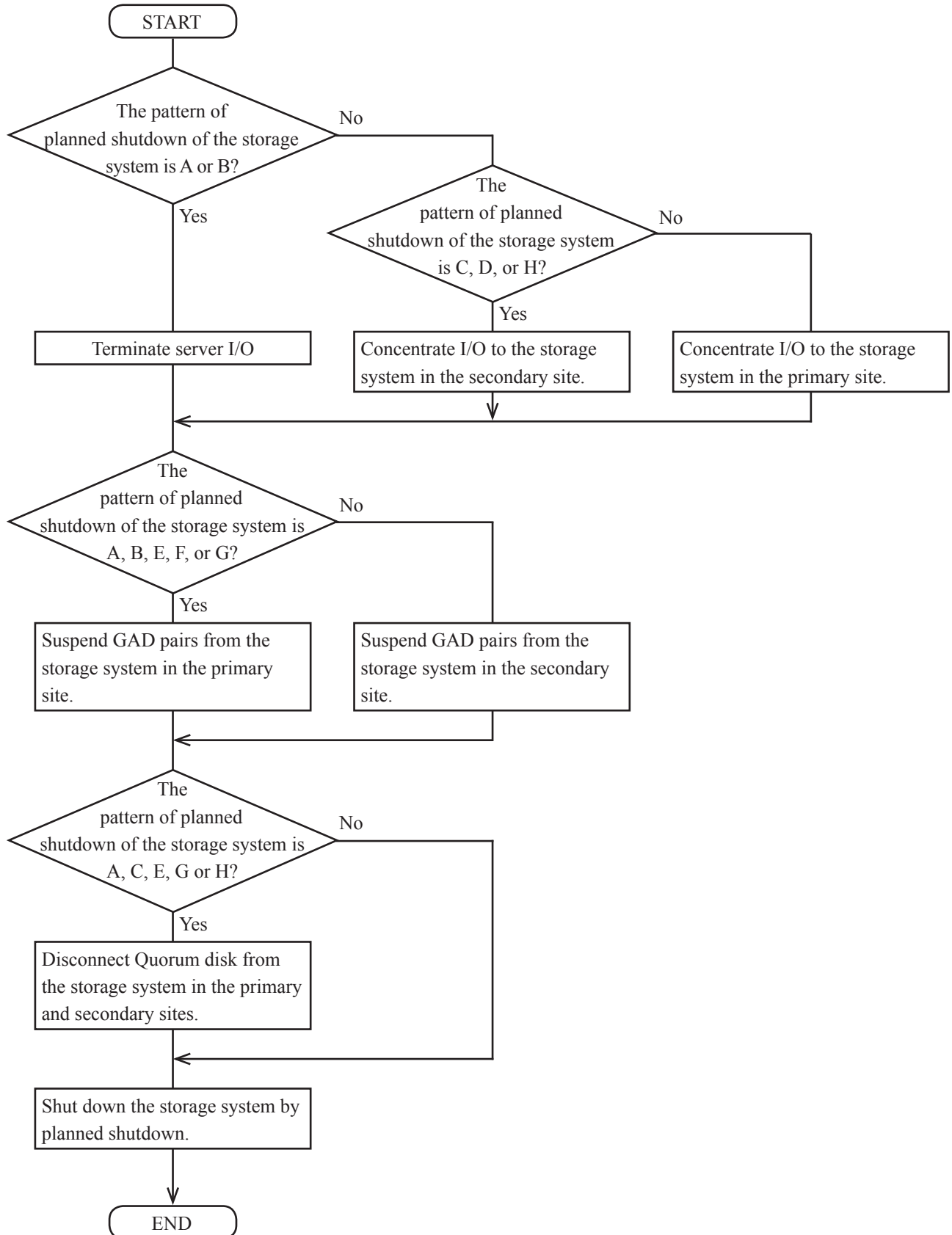
*3: External storage systems for Quorum disk.

*4: I/O continues in the storage system of the primary site when the external storage system is stopped.

*5: I/O continues in the storage system of the secondary site when the external storage system is stopped.

For operation procedures, refer to the description on planned shutdown of the storage system in the “Global-Active Device User Guide”.

Figure 1-29 Operation Outline of Planned Shutdown Patterns of the Storage System



2. Startup of the storage system after planned shutdown

Table 1-18 shows “Startup patterns of the storage system after planned shutdown”.

And Figure 1-30 shows operation outline (flow) of startup patterns of the storage system after planned shutdown”.

Table 1-18 Startup Patterns of the Storage System After Planned Shutdown

× : To be performed

— : Not performed

Startup patterns of the storage system after planned shutdown	Storage system to be powered on (*1)			Storage system to continue I/O		Storage system in which GAD pairs are resynchronized		Connect Quorum disk (*2)
	Primary site	Secondary site	External (*3)	Primary site	Secondary site	Primary site	Secondary site	
A	×	×	×	(*4)	(*4)	×	—	×
B	×	×	—	(*4)	(*4)	×	—	—
C	×	—	×	(*4)	×	—	×	×
D	×	—	—	(*4)	×	—	×	—
E	—	×	×	×	(*4)	×	—	×
F	—	×	—	×	(*4)	×	—	—
G (*6)	—	—	×	×	(*4)	×	—	×
H (*7)	—	—	×	(*4)	×	—	×	×

*1: The order of power on of the storage system is not regulated. Power on is available from wherever “ × ” is marked.

*2: In case of SIM of Quorum disk blockade was reported on storage system of primary or secondary site by disconnection of Quorum disk, please delete the SIM after connection of Quorum disk.

*3: External storage systems for Quorum disk.

*4: Storage system in which I/O restarts.

*5: A GAD pair is resynchronized in the storage system of the secondary site by swapping the primary volume for the secondary volume (Swap resync).

*6: I/O continues in the storage system of the primary site when the external storage system is stopped.

*7: I/O continues in the storage system of the secondary site when the external storage system is stopped.

For operation procedures, refer to the description on planned shutdown of the storage system in the “Global-Active Device User Guide”.

Figure 1-30 Operation Outline in Startup Patterns After Planned Shutdown of the Storage System

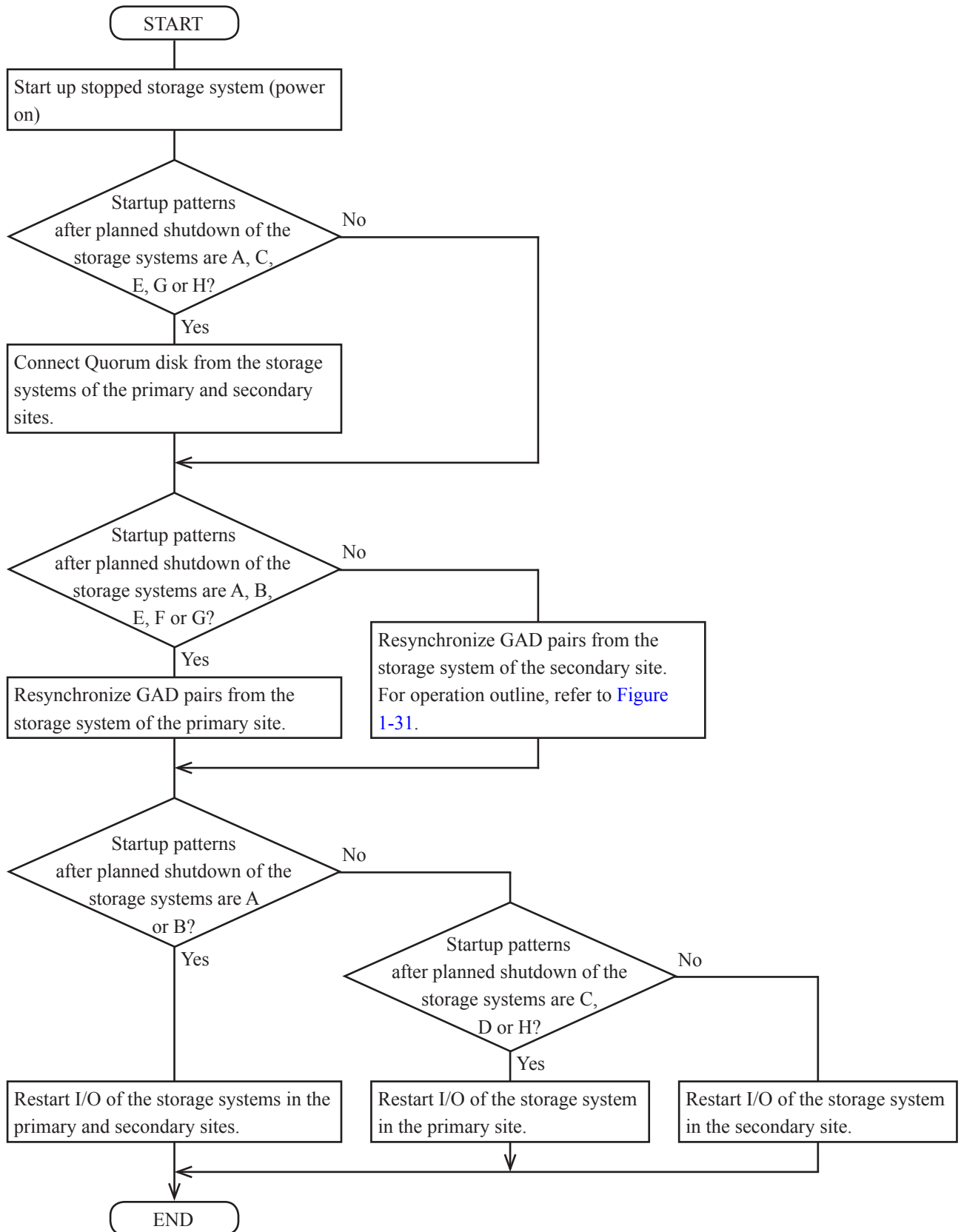
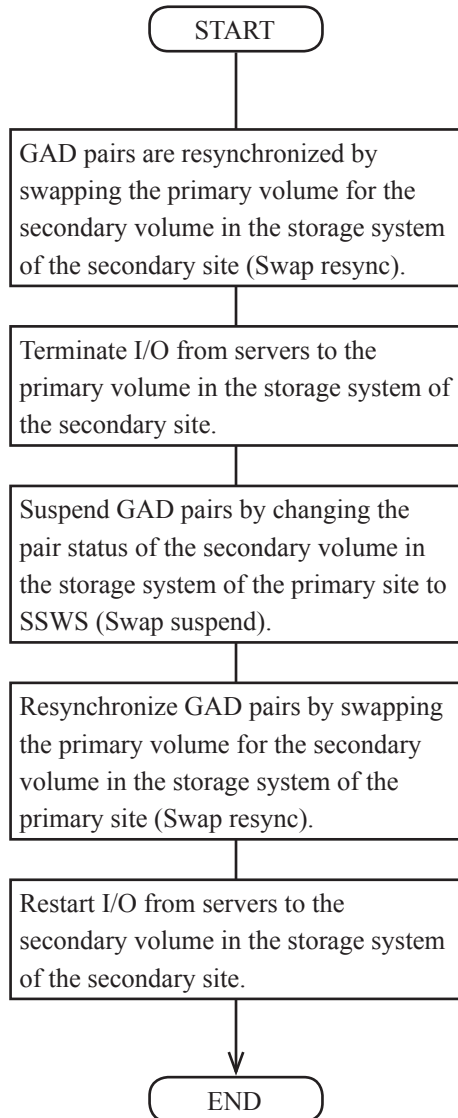


Figure 1-31 Resynchronization of GAD Pairs from the Storage System in the Secondary Site



1.6 Starting the Window for Maintenance Work

Set up the Maintenance PC, connect the Maintenance PC to the Storage System, and then start the window for maintenance work. For details, refer to the following workflows:

- MAINTENANCE PC SECTION [“1.2 Maintenance PC Setup Workflow”](#)
- MAINTENANCE PC SECTION [“2.1 Workflow of Settings and Operations of the Maintenance PC at Client’s Site”](#)