

REPLACE SECTION



SAFETY SUMMARY

Notes on the operation on the password inputting screen.

The password inputting screen is displayed on the SVP screen to arouse maintenance person's attention when the operation concerned can cause a serious failure such as a system down or a data loss.

- When the password inputting screen is displayed, be sure to observe the cautions given in the procedure concerned in the maintenance manual.
- When a confirmation by the technical support division is required in the maintenance manual, be sure to get it before executing the maintenance procedure concerned.
- Each PCB is operated by the microprogram owned by it individually.

If the PCB is replaced in the procedure that makes the version of the microprogram disagree with that of the PCB, the storage system cannot operate normally. Be sure to make the revisions consistent each other.

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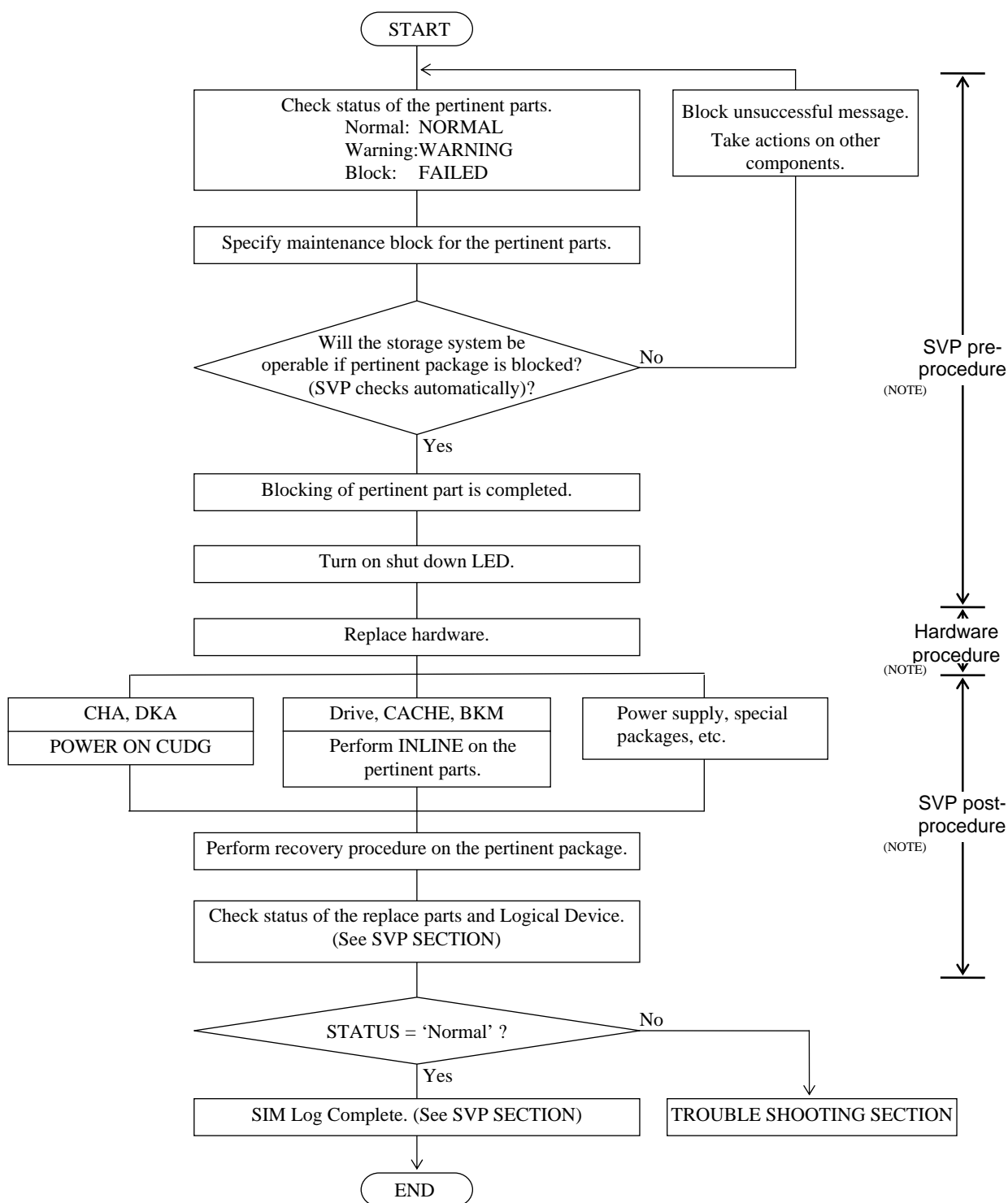
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1. Hot Replace

1.1 Hot Replace Flowchart



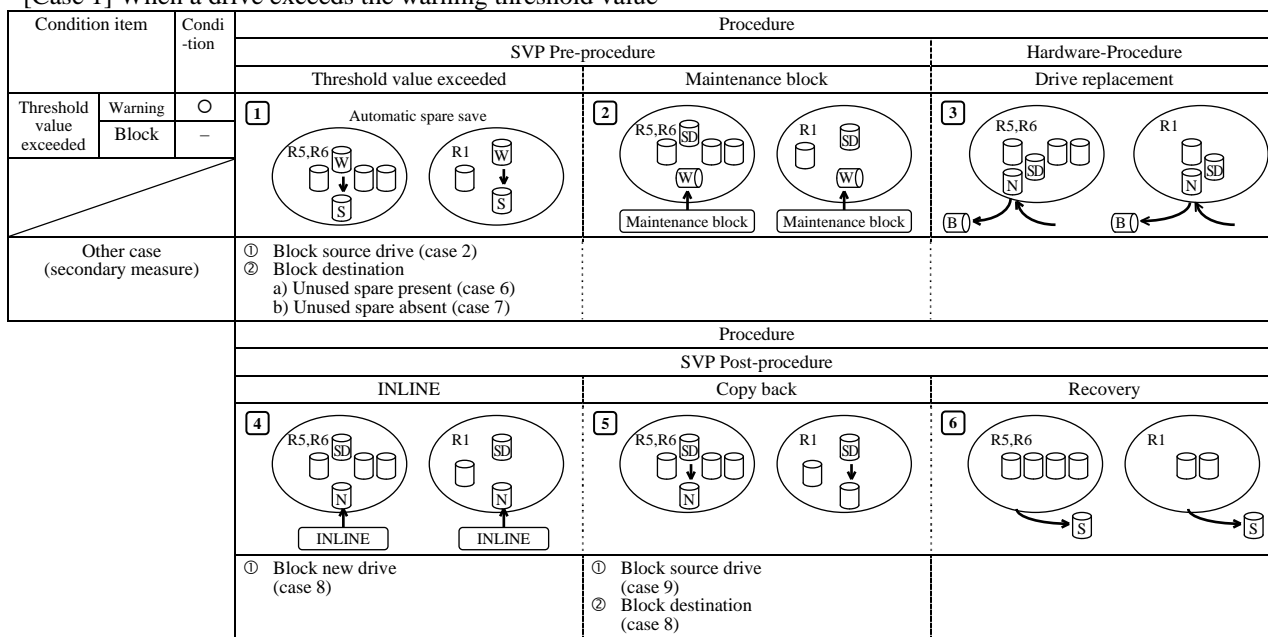
NOTE :

- SVP pre-procedure:** An SVP (PC) process of issuing a maintenance block instruction after checking the status of the parts to be replaced so that the live parts can be removed and replaced.
- Hardware procedure:** A process of removing a parts to be replaced (shut down LED on) and installing a maintenance package.
Be sure to wear your wrist strap, and attach to ground, prior to performing the following work.
This will insure that the IC and LSI on the PCB, are protected from static electricity.
- SVP post-procedure:** An SVP (PC) process of making functional checks (CUDG and INLINE) on the replacement package and building it into the storage system.

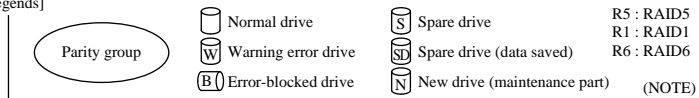
1.2 Concept of Drive Maintenance

[Spare drive present]

[Case 1] When a drive exceeds the warning threshold value



[Legends]



NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Spare drive present]

[Case 2] A case where the one drive is blocked

When a spare drive exists, a correction copy from the blocked drive is started automatically.

In this case, go to Case 2.1 when the blocked drive is to be replaced during the correction copy from it and a copy back that follows is to be made automatically, or go to Case 2.2 when the blocked drive is to be replaced after the correction copy is completed.

[Case 2.1] A case where the one drive is blocked and it is replaced during an automatic correction copy is made from it

Condition item		Condi- tion	Procedure		
			SVP Pre-procedure		Hardware-procedure
			Block one drive	Maintenance block	Drive replacement
Threshold value exceeded	Warning Block	— ○	1 Automatic correction copy 	2 A blocked drive is replaced during an automatic correction copy. 	3 A blocked drive is replaced during an automatic correction copy.
Other case (secondary measure)			① When a copy destination drive is blocked a) Unused spare present (case 10) b) Unused spare absent (case 11)	NOTE: When the blocked drive is replaced while the automatic correction copy is being made from it, the copy back written in Item [5] is started automatically. When you replace the drive after the automatic correction copy is completed, refer to Case 2.2.	
			Procedure		
			SVP Post-procedure		
			INLINE	Automatic copy back	Recovery
			4	5 The copy back is started automatically after the correction copy is completed. 	6
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

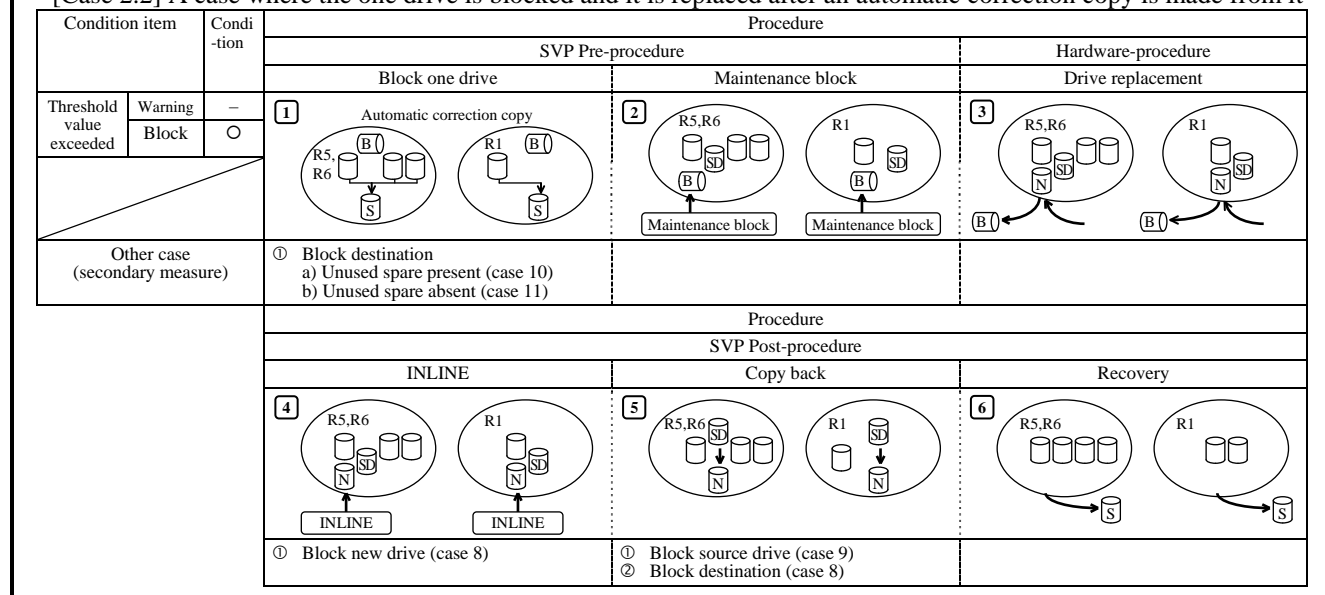
[Legends]

Parity group	Normal drive	Spare drive	R5 : RAID5
	Warning error drive	Spare drive (data saved)	R1 : RAID1
	Error-blocked drive	New drive (maintenance part)	R6 : RAID6
			(NOTE)

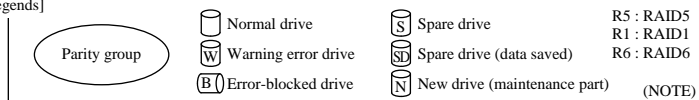
NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Spare drive present]

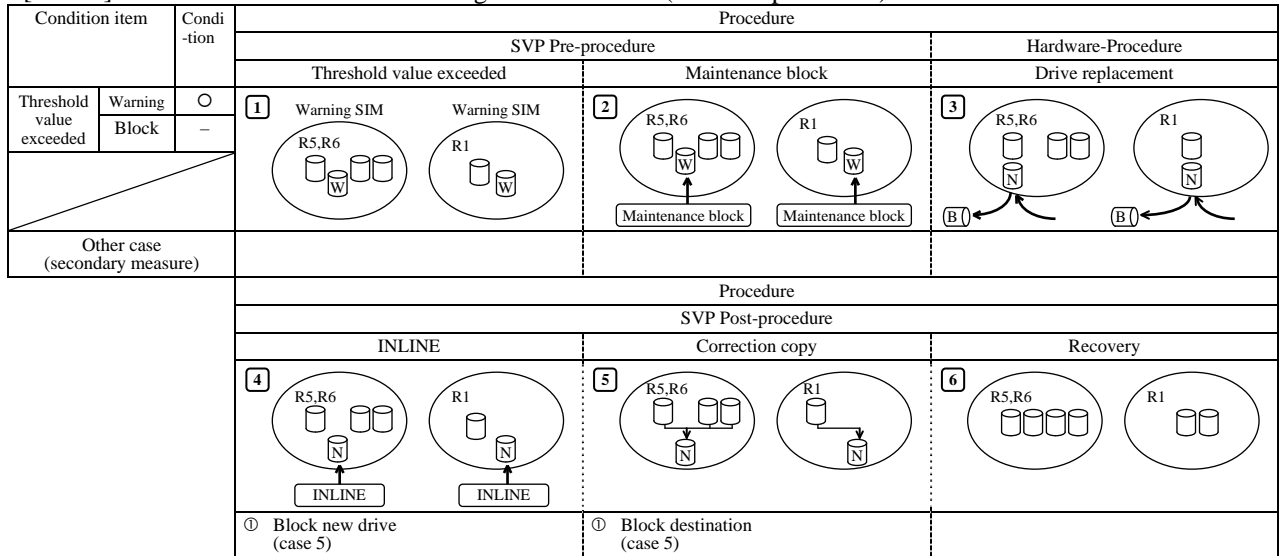
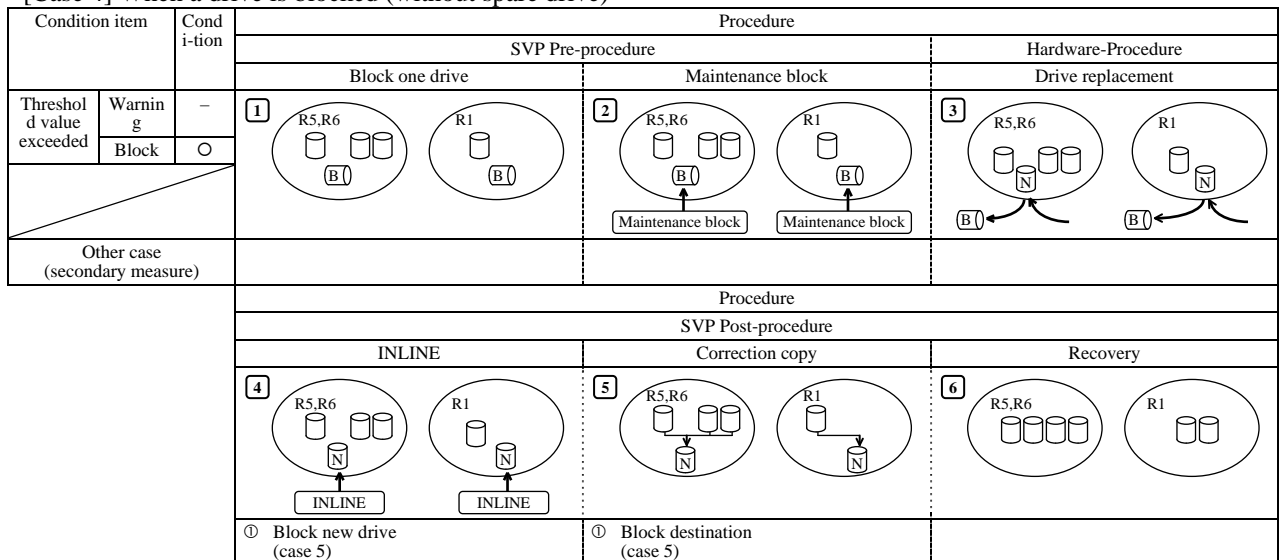
[Case 2.2] A case where the one drive is blocked and it is replaced after an automatic correction copy is made from it



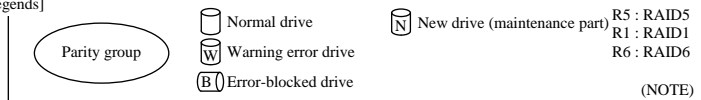
[Legends]



NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Spare drive absent]**[Case 3] When a drive exceeds the warning threshold value (without spare drive)****[Case 4] When a drive is blocked (without spare drive)**

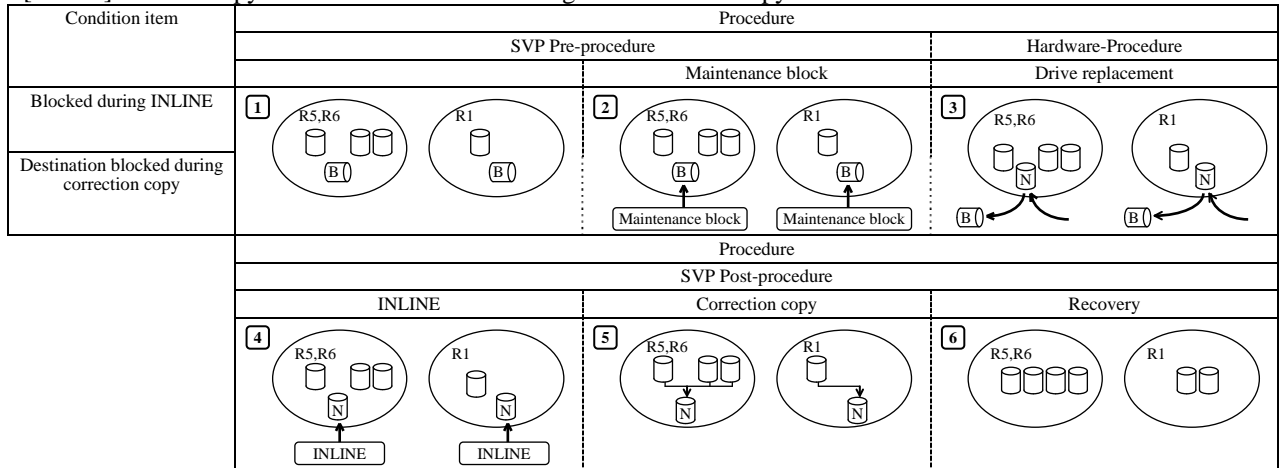
[Legends]



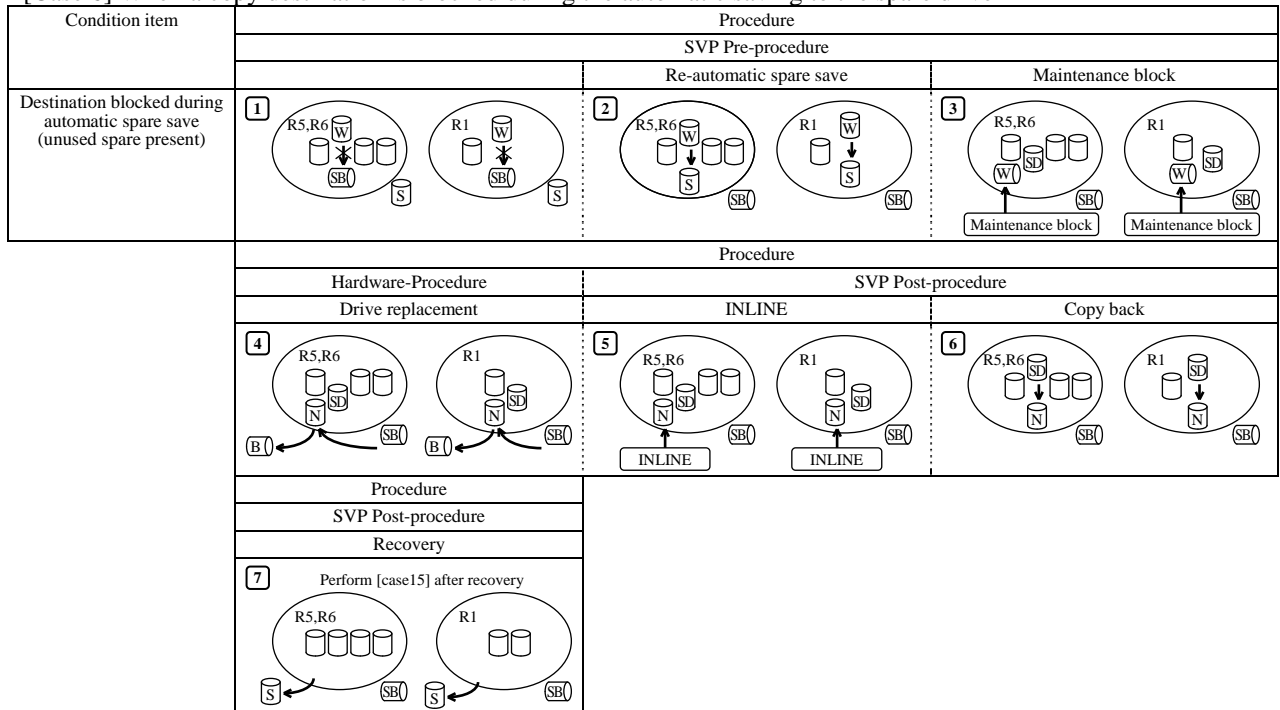
NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Case in which a secondary error occurred during error]

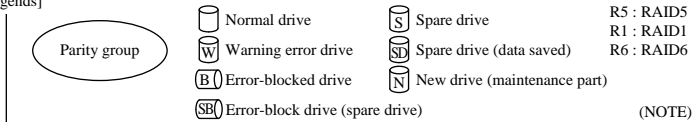
[Case 5] When a copy destination is blocked during the correction copy



[Case 6] When a copy destination is blocked during the automatic saving to the spare drive



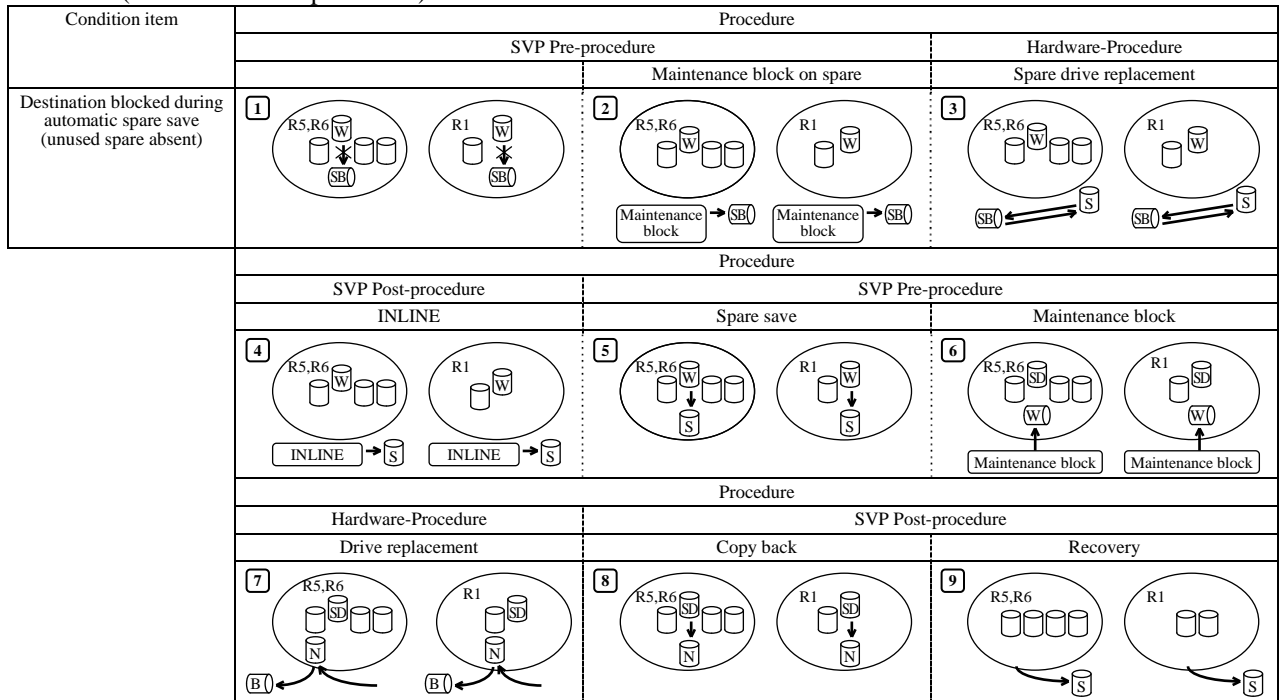
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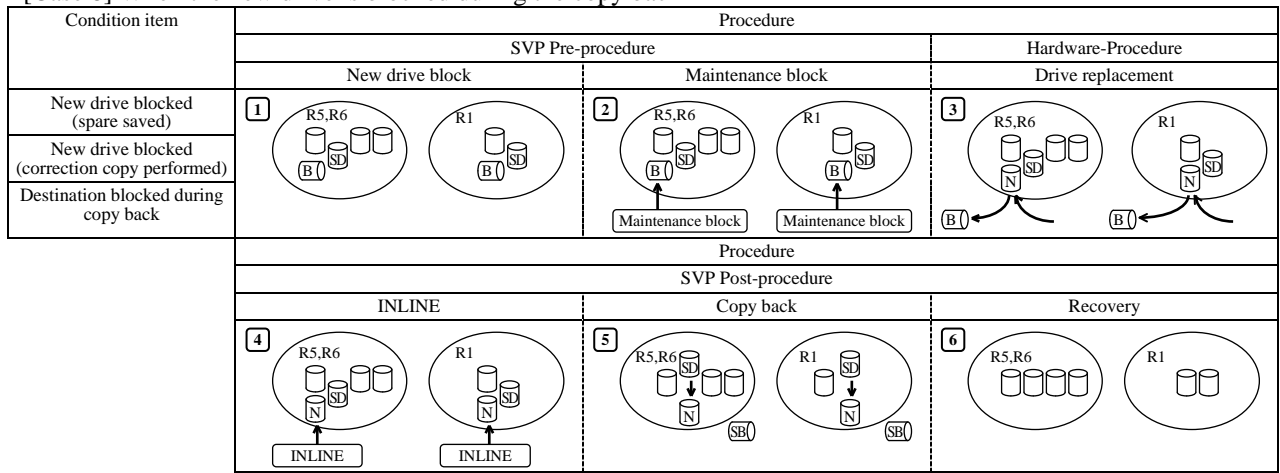
NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Case in which a secondary error occurred during error recovery]

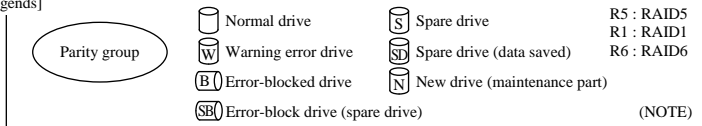
[Case 7] When a copy destination drive is blocked during the automatic saving to the spare drive
(without unused spare drive)



[Case 8] When the new drive is blocked during the copy back



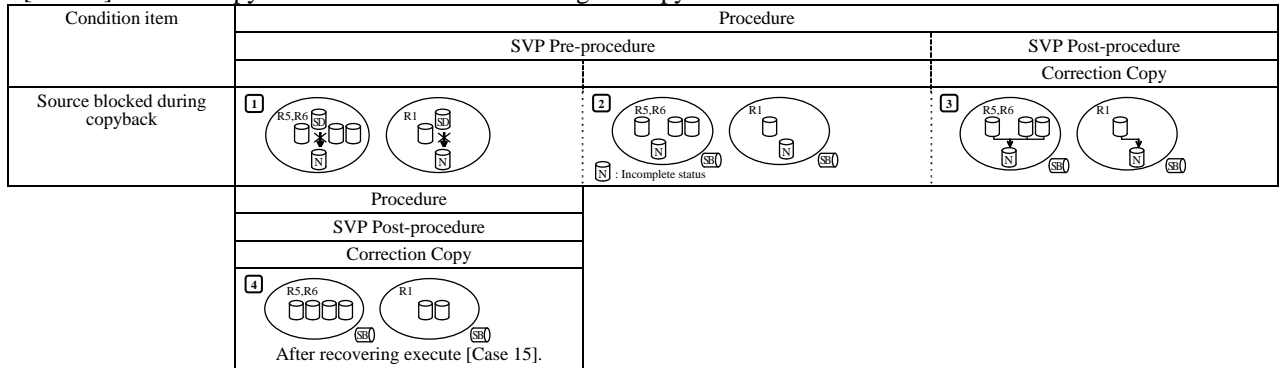
[Legends]



NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Case in which a secondary error occurred during error recovery]

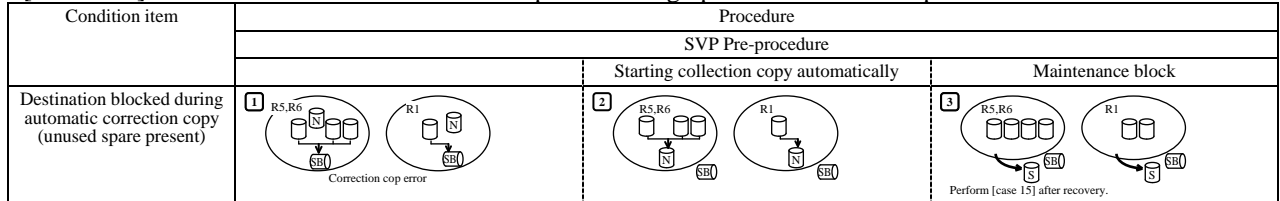
[Case 9] When a copy source drive is blocked during the copy back



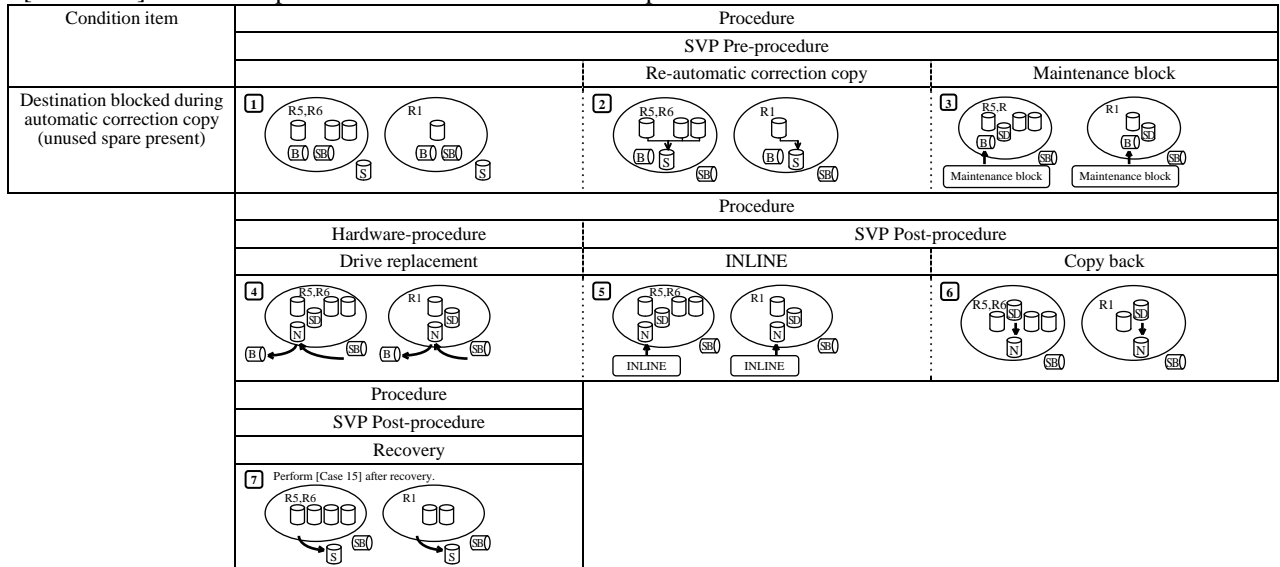
[Case 10] A case where the copy destination drive is blocked during the automatic correction copy (and a unused spare drive exists)

When the blocked drive has been replaced through performance of the operation for Case 2.1, go to Case 10.1 or otherwise, go to Case 10.2.

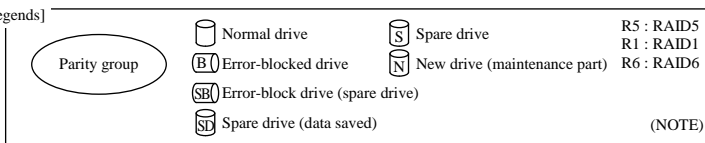
[Case 10.1] When the blocked drive has been replaced through performance of the operation for Case 2.1



[Case 10.2] When the operation for Case 2.1 has not been performed



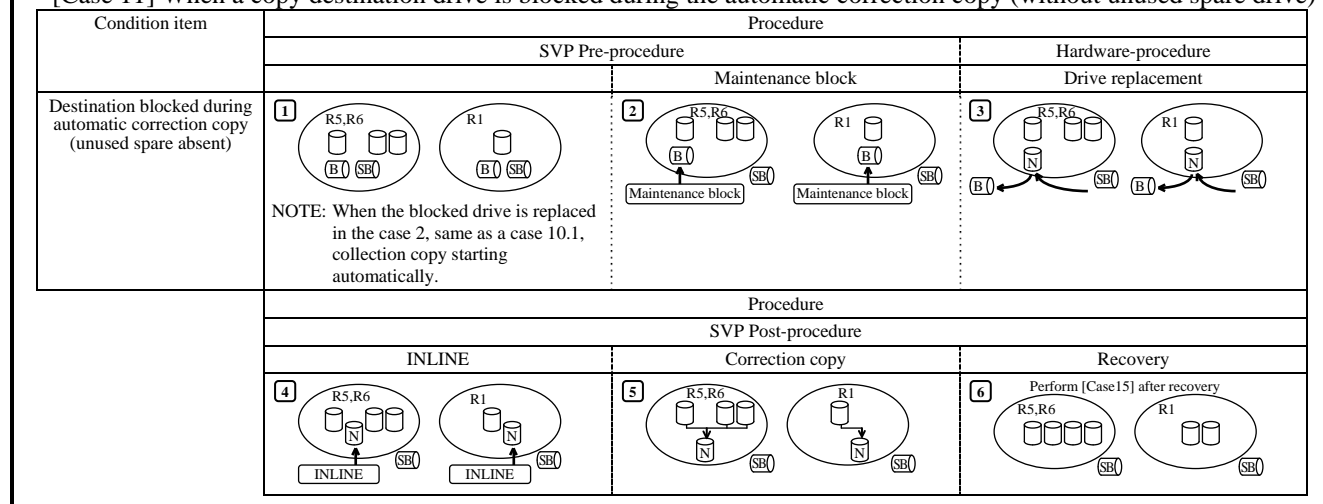
[Legends]



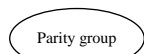
NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Case in which a secondary error occurred during error recovery]

[Case 11] When a copy destination drive is blocked during the automatic correction copy (without unused spare drive)



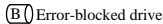
[Legends]



Normal drive



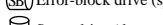
Spare drive



Error-blocked drive



New drive (maintenance part)



Error-block drive (spare drive)



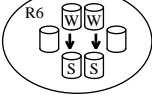

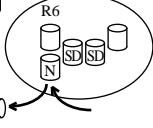
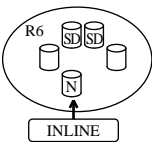
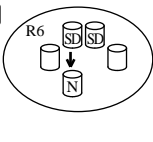
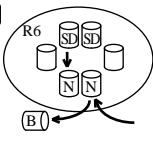
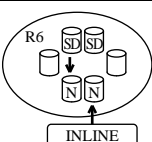
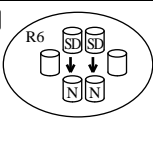
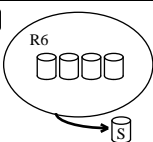
Spare drive (data saved)

R5 : RAID5
R1 : RAID1
R6 : RAID6

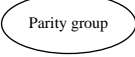






(NOTE)

NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Spare drive present]**[Case 12] RAID6 When two drives exceed the warning threshold value**

Condition item		Condition	Procedure		
Threshold value exceeded	Warning Block	○ —	SVP Pre-procedure		Hardware-Procedure
			Threshold value exceeded	Maintenance block	Replacement of the first drive
Other case (secondary measure)			1 Automatic saving(s) to the spare drive allowed to be made up to twice 	2  Proceed the drive to the next step when the copying from it is completed. It is not necessary to wait until the copying from the two drives is completed.	3 
			① Block source drive (case 2) ② Block destination (a) Unused spare present (case 6) (b) Unused spare absent (case 7)		
			Procedure		
			SVP Post-procedure		Hardware-procedure
			INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
			4 	5 	6 
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	
			Procedure		
			SVP Post-procedure		Recovery
			INLINE test of the second drive	Copy back to the second drive	
			7 	8 	9 
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

			R6 : RAID6
			
			(NOTE)

[Spare drive present]

[Case 13] RAID6 When two drives are blocked

- When you replace the two blocked drives while making an automatic correction copy from them, go to Case 13.1.
- When you replace the two blocked drives after making an automatic correction copy from them, go to Case 13.2.
- When you replace one of the two blocked drives from each of which an automatic correction copy is being made, go to Case 13.3.

[Case 13.1] RAID6 A case where the two drives is blocked and it is replaced while an automatic correction copy is made from it

Condition item			Procedure		
			SVP Pre-procedure		Hardware-procedure
			Detachment of the two drives		Replacement of the first drive
Threshold value exceeded	Warning	Block	<p>① Automatic correction copy (allowed to be made up to twice)</p>	<p>② A blocked drive is replaced during an automatic correction copy.</p>	<p>③ A blocked drive is replaced during an automatic correction copy.</p>
Other case (secondary measure)			<p>① Block destination (a) Unused spare present (case 10) (b) Unused spare absent (case 11)</p> <p>NOTE: When the blocked drive is replaced while an automatic correction copy is being made from it, the copy-back written in Item [5] is started automatically. When you replace the drive after the automatic correction copy is completed, refer to Case 13.2.</p>		
			<p>Procedure</p> <p>SVP Post-procedure</p> <p>INLINE test of the first drive</p> <p>Copy back to the first drive</p> <p>Recovery</p> <p>④</p> <p>⑤ The copy-back is started automatically after the correction copy is completed.</p> <p>⑥</p> <p>① Block new drive (case 8)</p> <p>① Block source drive (case 9) ② Block destination (case 8)</p>		

[Legends]

			R6 : RAID6
		(NOTE)	

[Spare drive present]

[Case 13.2] RAID6 A case where the two drives is blocked and it is replaced after an automatic correction copy is made from it

Condition item			Procedure		
			SVP Pre-procedure		Hardware-procedure
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	—	1 Automatic correction copy or copies allowed to be made up to twice 	2	3
	Block	○			
Other case (secondary measure)			① Block destination (a) Unused spare present (case 10) (b) Unused spare absent (case 11)		
			Procedure		
			SVP Post-procedure		Hardware-procedure
			INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
			4	5	6
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	
			Procedure		
			SVP Post-procedure		Recovery
			INLINE test of the second drive	Copy back to the second drive	
			7	8	9
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

			R6 : RAID6
		(NOTE)	

[Spare drive present]

[Case 13.3] RAID6 A case where the two drives is blocked and it is an automatic correction copy from one of the drives is in progress and that from the other drive is completed

Condition item			Procedure		
			SVP Pre-procedure		Hardware-procedure
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	—	1 Automatic correction copy or copies allowed to be made up to twice. 	2 Maintenance block Select the drive which is completed automatic collection copy.	3
	Block	○			
Other case (secondary measure)			① Block destination (a) Unused spare present (case 10) (b) Unused spare absent (case 11)		
			Procedure		
			SVP Post-procedure		Hardware-procedure
			INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
			4	5	6 Make a copy-back to the first drive, and then replace the second drive while an automatic correction copy is being made from the second drive.
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	
			Procedure		
			SVP Post-procedure		Recovery
			INLINE test of the second drive	Copy back to the second drive	
			7	8 When an automatic correction copy from the second drive is completed, a copy-back to the second drive is started automatically in the same way as Case 2.1.	9
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

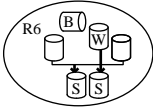
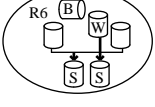
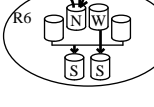
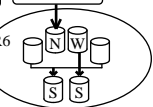
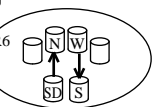
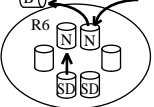
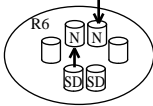
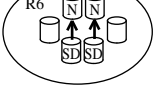
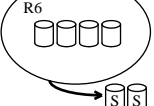
			R6 : RAID6
		(NOTE)	

[Spare drive present]

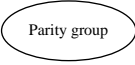






[Case 14] RAID6 When a drive is blocked and another drive exceeds the warning threshold value

- When replacing a blocked drive while an automatic correction copy is being made from it, go to Case 14.1.
- When replacing a blocked drive after the automatic correction copy from it is completed, go to Case 14.2.

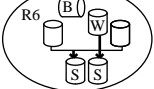

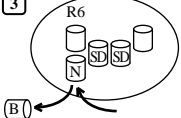
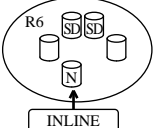

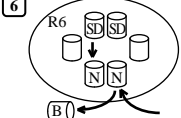
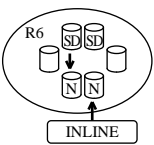
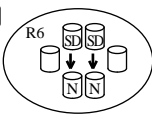
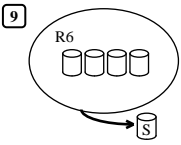
[Case 14.1] When replacing a blocked drive while an automatic correction copy is being made from it

Condition item		Condition	Procedure		
			SVP Pre-procedure		Hardware-procedure
			Detachment of the two drives		Replacement of the first drive
Threshold value exceeded	Warning	○	1 Automatic correction copy + Automatic saving to the spare disk 	2 Maintenance block  A blocked drive is replaced during an automatic correction copy.	3 
	Block	○			
Other case (secondary measure)			① Block destination (a) Unused spare present (case 10) (b) Unused spare absent (case 11)	NOTE: When an automatic saving to a spare drive is completed before this operation is performed, the following: Items [6] and [7] may be executed in advance.	
			Procedure		
			SVP Post-procedure		Hardware-procedure
			INLINE test of the first drive		Replacement of the second drive during the copy back to the first drive
			4 	5  A blocked drive is replaced during an automatic correction copy.	6 
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	
			Procedure		
			SVP Post-procedure		Recovery
			INLINE test of the second drive		
			7 	8 	9 
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

[Legends]

			R6 : RAID6
			
			(NOTE)

[Spare drive present]**[Case 14.2] When replacing a blocked drive after the automatic correction copy from it is completed**

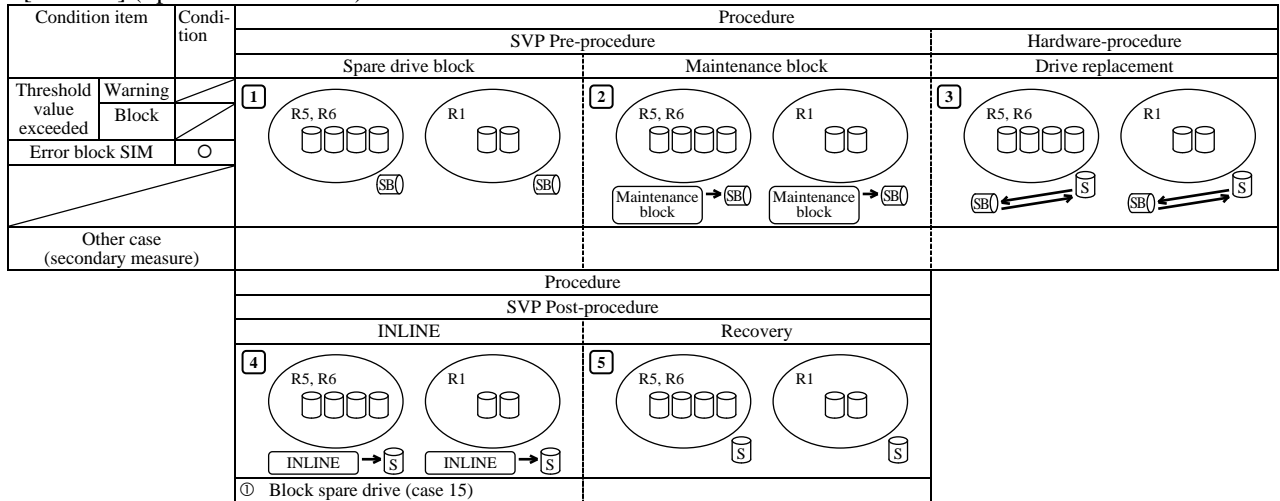
Condition item		Condition	Procedure		
			SVP Pre-procedure		Hardware-procedure
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	○	1 Automatic correction copy + Automatic saving to the spare disk 	2  Proceed the drive to the next step when the copying from it is completed. It is not necessary to wait until the copying from the two drives is completed.	3 
	Block	○			
Other case (secondary measure)			① Block destination (a) Unused spare present (case 10) (b) Unused spare absent (case 11)		
			Procedure		
			SVP Post-procedure		Hardware-procedure
			INLINE test of the first drive	Copy back to the first drive	Replacement of the second drive during the copy back to the first drive
			4 	5 	6 
			Procedure		
			SVP Post-procedure		Recovery
			INLINE test of the second drive	Copy back to the second drive	
			7 	8 	9 

[Legends]

			R6 : RAID6
		(NOTE)	

[Other Cases]

[Case 15] (Spare drive blocked)

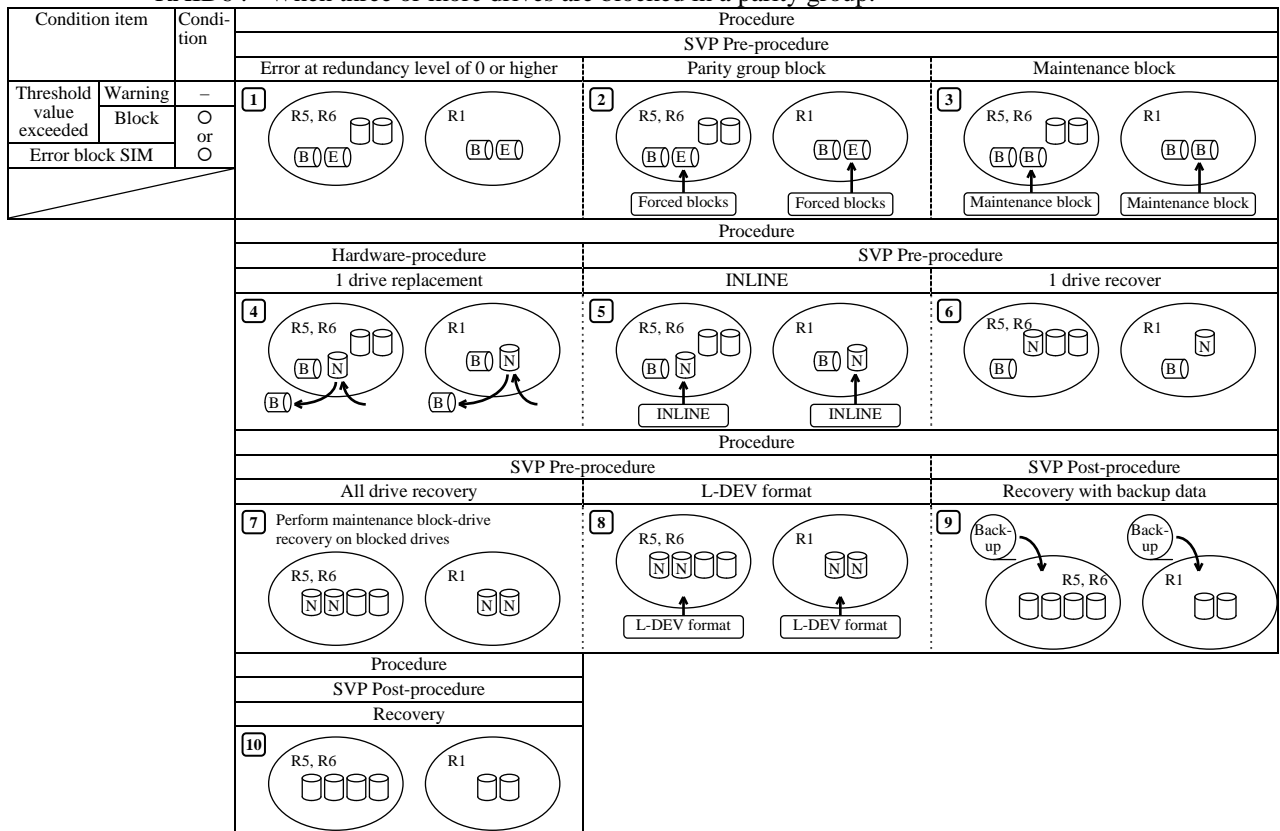


[Case 16] (Case in which a block level error occurred in a normal drive with a redundancy level of 0)

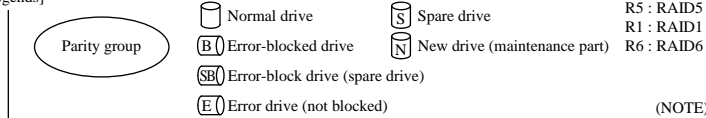
RAID5 : When two or more drives are blocked in a parity group.

RAID1 : When two drives are blocked in a Mirroring pair.

RAID6 : When three or more drives are blocked in a parity group.



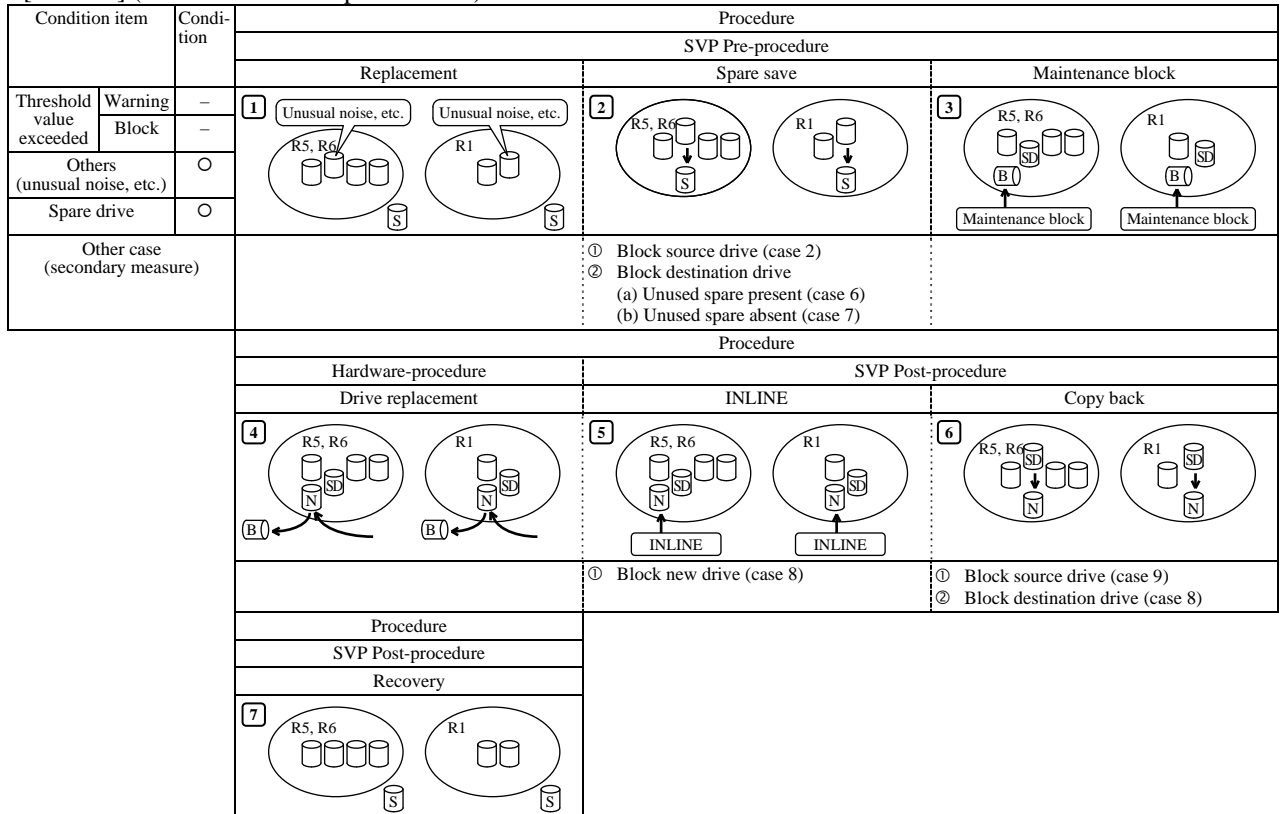
[Legends]



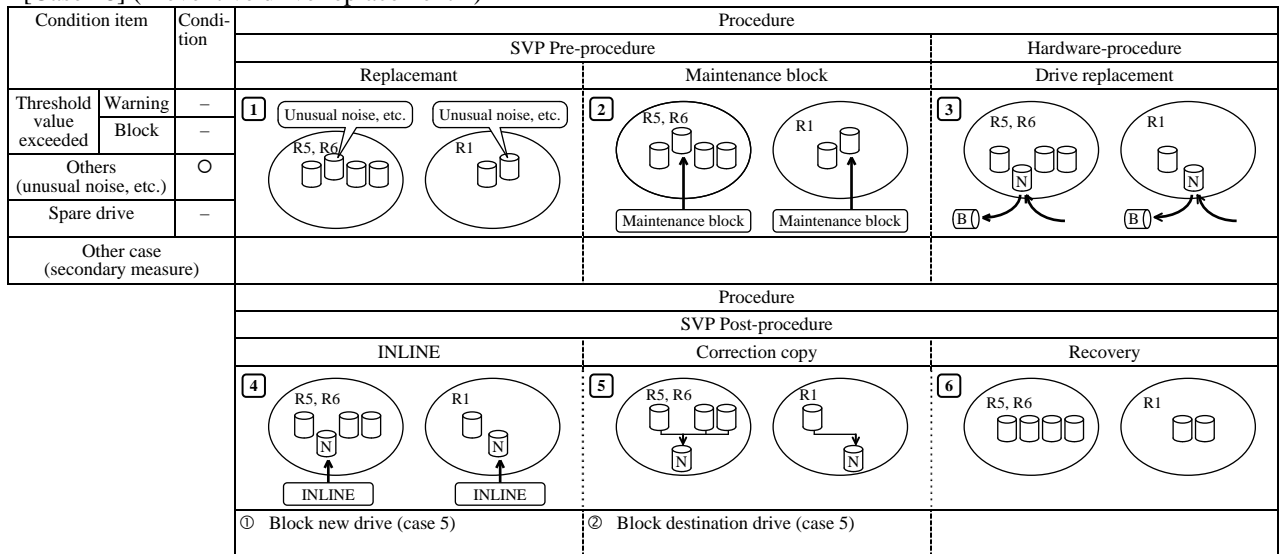
NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

[Other Cases]

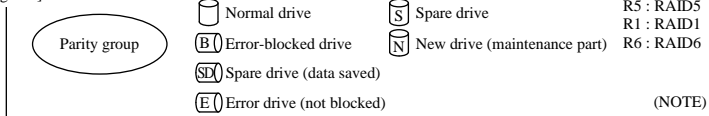
[Case 17] (Preventive drive replacement 1)



[Case 18] (Preventive drive replacement 2)

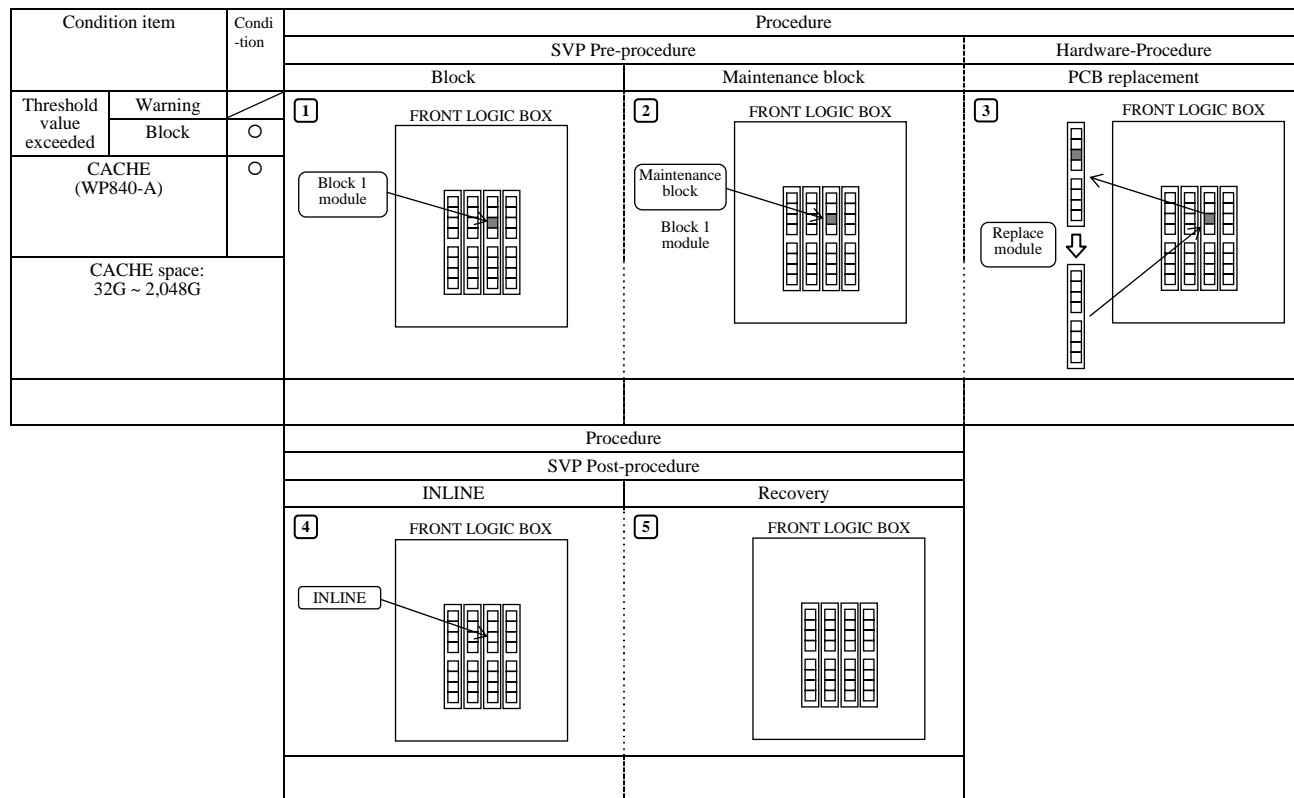


[Legends]



NOTE: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown.

1.3 Concept of Cache Maintenance



1.4 How to Interpret the Hot Replace Procedure

[In case of replacement when SIM was reported]

- (1) Search a work ID which coincides with the work ID corresponding to SIM ACC (refer to ACC list on page [ACC04-10](#)) from Parts Replacement Process Table on page [REP01-250](#).

Search a work ID corresponding to the pertinent condition if “Condition Item” is described in Parts Replacement Process Table.

- (2) If the work ID is found,

- Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

If no work ID is found,

- Search a work ID corresponding to SIM error details and ACC from Parts Replacement Process Table on page [REP01-250](#).
- Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

NOTE : See page [REP01-230](#) for the procedure for searching a work ID to replace a drive.
When replacing a drive, be sure to see page [REP01-210](#) and [REP01-220](#).

[In case of replacement when SIM was not reported]

- (1) Search a work ID corresponding to the part to be replaced from Parts Replacement Process Table on page [REP01-250](#).
- (2) Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

NOTE: See page [REP01-230](#) for the procedure for searching the work ID to replace a drive.
When replacing a drive, be sure to see page [REP01-210](#) and [REP01-220](#).

-----<Example>-----

Condition to replace

SIM was reported

Work ID corresponding to SIM ACC is RCA1

- * Search an applicable Work ID identified by shaded area in the following sample of Parts Replacement Process Table under the above conditions.

<Cache Memory>

Work ID	Part Name	Procedure			Replacing Time (*1) (*2)
		Pre-procedure	Replacement processing	Post-procedure	
RCA1	Cache Memory Cache Memory Module	PRE-PROCEDURE A (REP02-01-10)	CACHE REPLACEMENT PROCESSING - RCA1 (REP03-10-10)	POST-PROCEDURE (REP04-01-10)	20 min

PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY

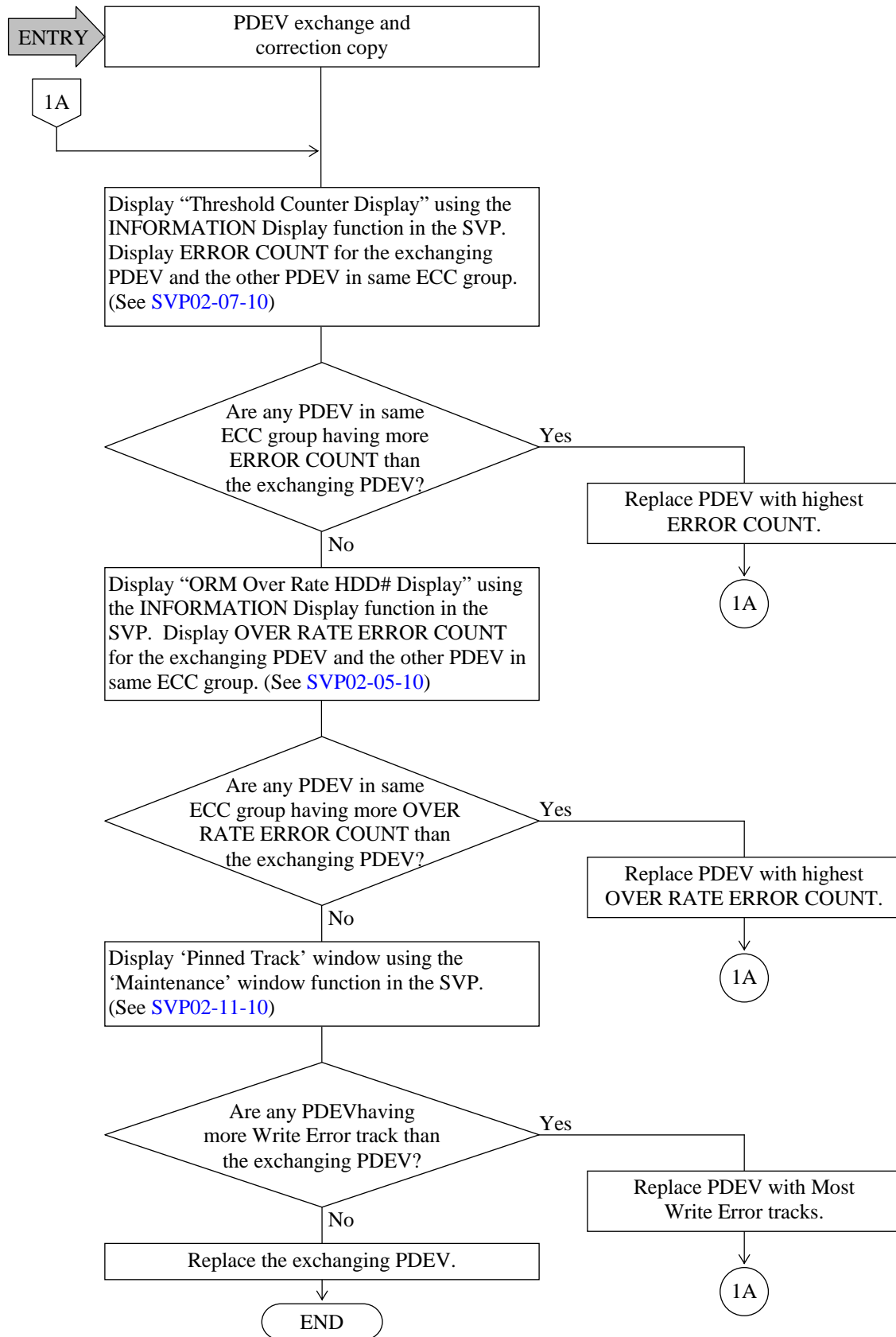
Instructions before blocking and exchanging PDEV with a drive failure error is listed below:

NOTICE: When exchanging unblocked PDEV, redundancy in the ECC group is lost. Therefore, during PDEV exchange, the other PDEV in the same ECC group is fenced by a drive failure error, all the LDEV in the ECC group is fenced. Accordingly, to prevent the above problem from occurring, the status of PDEV. When there is a PDEV in the same ECC group having more drive failure errors than the exchanging PDEV exists, replace the PDEV with highest drive failure errors.

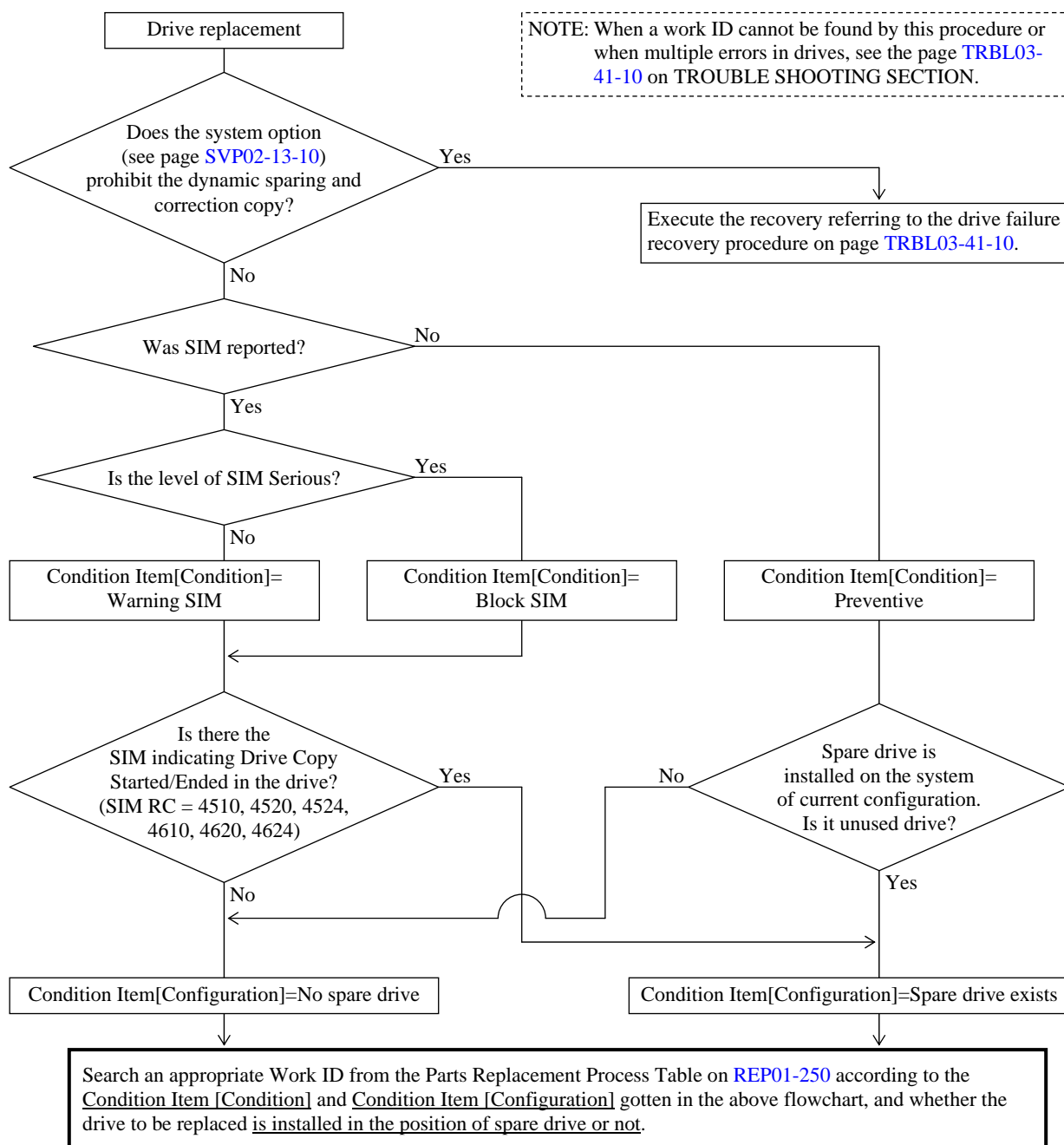
Table 1.4-1 Before PDEV exchange, following items are checked.

#	Items checked	Procedure
1	Error Count	“Threshold Counter Display” (See SVP02-07-10)
2	ORM Over Rate	“ORM Over Rate HDD# Display” (See SVP02-05-10)
3	Write Error	“Pinned Track Display” (See SVP02-11-10)

PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY



How to search a Work ID to replace a drive



-----<<Example>>-----

- SIM was reported.
- Level of the SIM is not “Serious”. = Condition Item[Condition] is “Warning SIM”.
- There is the SIM that RC is 4510 in the drive. = Condition Item[Configuration] is “Unused spare drive exists”.
- The drive to be replaced is not a spare drive. = “Data Drive”

NOTE: Under the above conditions, the shaded area is searched from Parts Replacement Process Table. Therefore, in this example Work ID should be RDK1.

<Data Drive, Spare Drive>

Work ID	Parts Name	Condition Item				Procedure			Reference information		
		Condition		Config-uration	Unused Spare drive	Pre-procedure	Replacement processing	Post-procedure	Replacing time	Outline	Case
		Failure	Preventive								
		Warning SIM	Block SIM								
RDK1	Data Drive	×	×	—	Yes	PRE-PROCEDURE A (REP02-01-10)	DRIVE REPLACEMENT PROCESSING - RDK1 (REP03-01-10)	POST-PROCEDURE (REP04-01-10)	20 min	Drive replace ~ Copy back	Case 1 Case 2

1.5 Parts Replacement Process Table

NOTE: If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

<Data Drive, Spare Drive>

Work ID	Parts Name	Condition Item				Procedure			Reference information		
		Condition		Config-uration	Unused Spare drive	Pre-procedure	Replacement processing	Post-procedure	Replacing time *2 *8 *9	Outline	Case *1
		Failure									
		Warning SIM	Block SIM								
RDK1	Data Drive *3	×	×	—	Yes	PRE-PROCEDURE A (REP02-01-10)	DRIVE REPLACEMENT PROCESSING - RDK1 (REP03-01-10)	POST-PROCEDURE (REP04-01-10)	20 min	Drive replace ~ Copy back	Case 1 Case 2
RDK2	Data Drive *3	—	—	×	Yes	PRE-PROCEDURE A (REP02-01-10)	DRIVE REPLACEMENT PROCESSING - RDK2 (REP03-02-10)	POST-PROCEDURE (REP04-01-10)	—	Copy to Spare drive ~ Drive replace ~ Copy back	Case 17
RDK3	Data Drive *3, *6	×	×	×	No	PRE-PROCEDURE A (REP02-01-10)	DRIVE REPLACEMENT PROCESSING - RDK3 (REP03-03-10)	POST-PROCEDURE (REP04-01-10)	20 min	Drive replace ~ Correction copy	Case 3 Case 4 Case 18
RDK4 *4, *5	Data Drive *3	*4				PRE-PROCEDURE A (REP02-01-10)	DRIVE REPLACEMENT PROCESSING - RDK4 (REP03-04-10)	POST-PROCEDURE (REP04-01-10)	—	LDEV formatting after replacing all the HDDs blocked in a parity group *5	Case 16
RDK5	Spare Drive *3	—				PRE-PROCEDURE A (REP02-01-10)	DRIVE REPLACEMENT PROCESSING - RDK5 (REP03-05-10)	POST-PROCEDURE (REP04-01-10)	20 min	Spare drive replace	Case 15

NOTE: If a Work ID cannot be found or if multiple drive error is occurring, see page [TRBL03-41-10](#) on TROUBLE SHOOTING SECTION.

- *1: Refer to “1.2 Concept of Drive Maintenance” ([REP01-30](#)).
- *2: This time does not include copy back time of data in HDD. Refer to *9 for the HDD copy time.
- *3: Parts Name indicates attribute of a drive.
Data Drive: The drive is installed in the position for a drive except spare drive (Data Drive).
Spare Drive: The drive is installed in the position for a spare drive.
- *4: RDK4 is a Work ID for a work which is applicable to a case that two or more drives in a same parity group are blocked. As to RAID 6, when three or more drives are blocked. When the procedures instructed by RDK7 are executed, data will be lost. Ask the technical support division about the appropriateness of the operation. When you want to restore LDEV status for the purpose of data backup, please go to [TRBL03-20-10](#).
- *5: Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See pages [SVP03-04-230](#), [250](#) for the procedure for referring to SVP STATUS.
- *6: See “PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY” ([REP01-210](#)).
- *7: In case of RAID6, when two HDDs were blocked in the parity group, you can start the replacement from either of two HDDs.
- *8: The drive copy to the spare drive of the RAID1 is copied from the drive (normal drive) of the pair of which the failure occurred.
However, the copy back (copy from the spare drive to the data drive) is copied from the spare drive.

***9: HDD copy time**

- When CVS is used, the copy time is proportional to the amount of LDEV assigned in the parity group.
(Eg: If the amount of LDEV assigned is 50%, the copy time is half the above-mentioned values.)
- When the parity group is used for HTI/HDP/HDT-POOL, depending on the POOL used amount, the copy time becomes shorter than the above-mentioned values.
- When the copy is executed while executing the Quick Format, the copy might be completed earlier than the above-mentioned values because the area under the format is not copied.
- Copy time may become about 30% slower compared with the value in the table by machine configuration.
- The described copy time is a standard. The real format time may be different by RAID GROUP, an emulation type the generation and a drive type.

(1) No I/O, Other than OPEN-V Copy Mode = Interleave Medium

HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)	RAID6 (14D+2P)
H3R0 (7.2krpm)	Drive copy	10h00m	←	←	←	←
	Correction copy	9h00m	←	←	←	←
H4R0 (7.2krpm)	Drive copy	13h20m	←	←	←	←
	Correction copy	12h00m	←	←	←	←
J600 (10krpm)	Drive copy	1h50m	←	←	←	←
	Correction copy	↑	←	←	←	←
J900 (10krpm)	Drive copy	2h50m	←	←	←	←
	Correction copy	↑	←	←	←	←
J1R2 (10krpm)	Drive copy	3h50m	←	←	←	←
	Correction copy	↑	←	←	←	←
K300 (15krpm)	Drive copy	50m	←	←	←	←
	Correction copy	↑	←	←	←	←
M400 (SSD)	Drive copy	30m	←	←	←	←
	Correction copy	↑	30m	30m	30m	45m
M800 (SSD)	Drive copy	55m	←	←	←	←
	Correction copy	↑	1h00m	1h00m	1h00m	1h30m
P1R6 (FMD)	Drive copy	3h00m	←	←	←	←
	Correction copy	↑	1h40m	2h20m	2h20m	3h30m
P3R2 (FMD)	Drive copy	6h00m	←	←	←	←
	Correction copy	↑	3h20m	4h50m	4h50m	7h10m

(2) No I/O, OPEN-V Copy Mode = Interleave Medium

HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)	RAID6 (14D+2P)
H3R0 (7.2krpm)	Drive copy	9h10m	←	←	←	←
	Correction copy	8h10m	←	←	←	←
H4R0 (7.2krpm)	Drive copy	12h10m	←	←	←	←
	Correction copy	10h50m	←	←	←	←
J600 (10krpm)	Drive copy	1h50m	←	←	←	←
	Correction copy	↑	←	←	←	←
J900 (10krpm)	Drive copy	2h50m	←	←	←	←
	Correction copy	↑	←	←	←	←
J1R2 (10krpm)	Drive copy	3h50m	←	←	←	←
	Correction copy	↑	←	←	←	←
K300 (15krpm)	Drive copy	50m	←	←	←	←
	Correction copy	↑	←	←	←	←
M400 (SSD)	Drive copy	30m	←	←	←	←
	Correction copy	↑	20m	25m	25m	40m
M800 (SSD)	Drive copy	55m	←	←	←	←
	Correction copy	↑	35m	55m	55m	1h30m
P1R6 (FMD)	Drive copy	2h30m	←	←	←	←
	Correction copy	↑	1h30m	2h00m	2h00m	3h00m
P3R2 (FMD)	Drive copy	5h10m	←	←	←	←
	Correction copy	↑	3h00m	4h00m	4h00m	6h10m

<Cache Memory>

Work ID	Part Name	Procedure			Replacing Time (*1) (*2)
		Pre-procedure	Replacement processing	Post-procedure	
RCA1	Cache Memory PCB Cache Memory Module MFC Cable	PRE-PROCEDURE A (REP02-01-10)	CACHE REPLACEMENT PROCESSING - RCA1 (REP03-10-10)	POST-PROCEDURE (REP04-01-10)	20 min

*1: The destaging operation takes 30 minutes to 2 hours (SVP time out).

*2: The time for the dump is not included.

NOTICE: When a cache PCB is replaced for preventive reasons, one side of cache is blocked. As a result, the storage system performance may degrade.

<CHA, DKA, SSW, and BKM>

Work ID	Part Name	Procedure			Replacing Time (*2)
		Pre-procedure	Replacement processing	Post-procedure	
RMP1	MPB	PRE-PROCEDURE A (REP02-01-10)	MPB REPLACEMENT PROCESSING - RMP1 (REP03-11-10)	POST-PROCEDURE (REP04-01-10)	20 min
RCH1	Fibre-T CHA	PRE-PROCEDURE A (REP02-01-10)	Fibre CHA REPLACEMENT PROCESSING - RCH1 (REP03-12-10)	POST-PROCEDURE (REP04-01-10)	20 min
RCH2	Mainframe Fibre CHA	PRE-PROCEDURE A (REP02-01-10)	Mainframe Fibre CHA REPLACEMENT PROCESSING - RCH2 (REP03-13-10)	POST-PROCEDURE (REP04-01-10)	20 min
RDA1	DKA	PRE-PROCEDURE A (REP02-01-10)	DKA REPLACEMENT PROCESSING - RDA1 (REP03-14-10)	POST-PROCEDURE (REP04-01-10)	20 min
RBM1	BKM	PRE-PROCEDURE A (REP02-01-10)	BKM REPLACEMENT PROCESSING - RBM1 (REP03-15-10)	POST-PROCEDURE (REP04-01-10)	13 min
RBT1	Battery	PRE-PROCEDURE A (REP02-01-10)	Battery REPLACEMENT PROCESSING - RBT1 (REP03-23-10)	POST-PROCEDURE (REP04-01-10)	11 min
RCF1	CFM	PRE-PROCEDURE A (REP02-01-10)	CFM REPLACEMENT PROCESSING - RCF1 (REP03-32-10)	POST-PROCEDURE (REP04-01-10)	20 min

*2: The time for the dump is not included.

NOTICE: Replacing a MPB may affect I/O when there is much write pending data in cache. We recommend to replace a MPB when all the cache write pending rate per CLPR in a MPB is less than 40%.

If a failure occurs in replacing a channel adapter or a disk adapter, see “2.3.3 Recovery Procedure for Failure During CHA/DKA Replacement” ([TRBL02-320](#)).

<Other Parts of DKC>

Work ID	Part Name	Procedure			Replacing Time
		Pre-procedure	Replacement processing	Post-procedure	
RTC1	DKCPANEL	PRE-PROCEDURE A (REP02-01-10)	DKCPANEL REPLACEMENT PROCESSING - RTC1 (REP03-16-10)	POST-PROCEDURE (REP04-01-10)	16 min
RTC2	SSVPMN	PRE-PROCEDURE A (REP02-01-10)	SSVPMN REPLACEMENT PROCESSING - RTC2 (REP03-17-10)	POST-PROCEDURE (REP04-01-10)	22 min
RTC3	MODCON	PRE-PROCEDURE A (REP02-01-10)	MODCON REPLACEMENT PROCESSING - RTC3 (REP03-18-10)	POST-PROCEDURE (REP04-01-10)	5 min
RTC4	DKCFAN (Front)	PRE-PROCEDURE A (REP02-01-10)	DKCFAN (Front) REPLACEMENT PROCESSING - RTC4 (REP03-19-10)	POST-PROCEDURE (REP04-01-10)	8 min
RTC5	DKCFAN (Rear)	PRE-PROCEDURE A (REP02-01-10)	DKCFAN (Rear) REPLACEMENT PROCESSING - RTC5 (REP03-20-10)	POST-PROCEDURE (REP04-01-10)	8 min
RTC6	SVP Unit	PRE-PROCEDURE A (REP02-01-10) (*1)	SVP REPLACEMENT PROCESSING - RTC6 (REP03-21-10)	POST-PROCEDURE (REP04-01-10)	40 min (*2) 85 min (*3)
RTC7	HUBBOX	PRE-PROCEDURE A (REP02-01-10)	HUBBOX REPLACEMENT PROCESSING - RTC7 (REP03-22-10)	POST-PROCEDURE (REP04-01-10)	40 min
RTC9	DKCPS	PRE-PROCEDURE A (REP02-01-10)	DKCPS REPLACEMENT PROCESSING - RTC9 (REP03-24-10)	POST-PROCEDURE (REP04-01-10)	11 min
RTCA	Fibre SFP Transceiver	PRE-PROCEDURE A (REP02-01-10)	SFP REPLACEMENT PROCESSING - RTCA (REP03-25-10)	POST-PROCEDURE (REP04-01-10)	5 min

- *1: When SVP is not able to operate, start from “2. HARDWARE REPLACEMENT PROCESSING” in “SVP REPLACEMENT PROCESSING - RTC6”. (When SVP High Reliability Kit is not installed.)
- *2: Replace time when SVP High Reliability Kit is not installed or when SVP High Reliability Kit is installed and target is Standby SVP.
- *3: Replace time when SVP High Reliability Kit is installed and target is Master SVP.

<Other Parts of DKU>

Work ID	Part Name	Procedure			Replacing Time
		Pre-procedure	Replacement processing	Post-procedure	
RUS1	SSW	PRE-PROCEDURE A (REP02-01-10)	2.5 inch SSW REPLACEMENT PROCESSING - RUS1 (REP03-26-10)	POST-PROCEDURE (REP04-01-10)	10 min
RUL1	SSW	PRE-PROCEDURE A (REP02-01-10)	3.5 inch SSW REPLACEMENT PROCESSING - RUL1 (REP03-27-10)	POST-PROCEDURE (REP04-01-10)	10 min
RUF1	SSW	PRE-PROCEDURE A (REP02-01-10)	FBX SSW REPLACEMENT PROCESSING - RUF1 (REP03-28-10)	POST-PROCEDURE (REP04-01-10)	10 min
RUS2	DKUPS	PRE-PROCEDURE A (REP02-01-10)	2.5 inch DKUPS REPLACEMENT PROCESSING - RUS2 (REP03-29-10)	POST-PROCEDURE (REP04-01-10)	10 min
RUL2	DKUPS	PRE-PROCEDURE A (REP02-01-10)	3.5 inch DKUPS REPLACEMENT PROCESSING - RUL2 (REP03-30-10)	POST-PROCEDURE (REP04-01-10)	10 min
RUF2	DKUPS	PRE-PROCEDURE A (REP02-01-10)	FBX DKUPS REPLACEMENT PROCESSING - RUF2 (REP03-31-10)	POST-PROCEDURE (REP04-01-10)	10 min
—	HDU (UBX/SBX)	—	HDU (UBX/SBX) REPLACEMENT PROCESSING (REP03-40-10)	—	40 min (*1) (*2)

*1: The time for replacing hardware parts. The time for powering on/off is not included.

*2: The replacement work must be done by two or more personnel.

1.6 Availability of the online maintenance when TrueCopy for Mainframe/TrueCopy is used

Component	Maintenance Type	Condition	TC-MF path established		During initial copy		After completing initial copy	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical	Blockade	—	×	×	SVP2031W (*2)	SVP2034W (*2)	SVP2031W (*2)	SVP2034W (*2)
Device	Recovery	—	×	×	SVP2031W (*2)	SVP2034W (*2)	SVP2031W (*2)	SVP2034W (*2)
	Format	—	×	×	SVP2031W (*2)	SVP2034W (*2)	SVP2031W (*2)	SVP2034W (*2)
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE	Replace	—	×	×	SVP2059W	SVP2079W	× (*1)	× (*1)
CHA	Replace	With Alternate path.	×	×	×	SVP2038W	×	SVP2038W
		Without Alternate path.	×	×	SVP2073W	SVP2038W	SVP2074W	SVP2038W
DKA	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path.	×	×	SVP2059W	SVP2079W		SVP2038W
		Without Alternate path.	×	×	SVP2059W	SVP2079W	SVP2074W	SVP2038W
MP	Replace	—	×	×	×	×	×	×

Component	Maintenance Type	Condition	Suspend	
			MCU	RCU
Logical	Blockade	—	SVP2031W (*2)	SVP2034W (*2)
Device	Recovery	—	SVP2031W (*2)	SVP2034W (*2)
	Format	—	SVP2031W (*2)	SVP2034W (*2)
	Verify	—	×	×
HDD canister	Replace	—	×	×
Cache or SM	Replace	—	×	×
CHE or CHF	Replace	With Alternate path.	×	SVP2038W
		Without Alternate path.	×	SVP2038W
DKA	Replace	—	×	×
DKC	Replace	With Alternate path.	×	SVP2038W
		Without Alternate path.	×	SVP2038W
MP	Replace	—	×	×

×: Maintenance is available.

SVPXXXXW : Maintenance is not available based on the specification.

Refer to SVP MESSAGE SECTION.

NOTE: About replacement of CHE in the RCU side.

If the CHE that will be replaced is connected to a path, from MCU please confirm that the Path is deleted from MCU.

After replacement, please add the Path.

The pair can be suspended if the ESTPAIR or paircreate (pairresync) command is issued during the HDD Canister or the Cache PCB replacement. Please ask your customer before the online maintenance operation.

*1: In the case of distinct UR pairs, it is recommended to execute the maintenance activity involving cache blockade at primary / secondary sites of Sync Pairs, keeping the write-pending data volumes at below 20%.

Also, if the maintenance activity is carried out at the aforesaid sites, maintenance activity consumes time, further there is a possibility of MIH occurrence etc., to the extent of affecting the processing on the host.

Note the following when performing a maintenance operation in an environment where TPC-R, which is disaster recovery software of IBM, is used.

*2: If you need to delete a pair used by TrueCopy for Mainframe when performing a maintenance operation, delete the TrueCopy for Mainframe pair by using Web Console.

After the maintenance operation is completed, you can restore the status of the TrueCopy for Mainframe pair by performing operations using TPC-R.

1.7 Availability of the online maintenance when ShadowImage for Mainframe/ ShadowImage is used

Component	Maintenance Type	Condition	Pending/Resync/ SP-PEND		Duplex		Split		Suspend	
			S-VOL/ P-VOL	T-VOL/ S-VOL	S-VOL/ P-VOL	T-VOL/ S-VOL	S-VOL/ P-VOL	T-VOL/ S-VOL	S-VOL/ P-VOL	T-VOL/ S-VOL
Logical Device	Blockade	—	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	×	
	Restore	—	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	×	
	Format	—	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	×	
	Verify	—	×		×		×		×	
HDD canister	Replace	—	×		×		×		×	
	Dynamic Sparing	—	×		×		×		×	
	Correction Copy	—	×		×		×		×	
Cache PCB	Replace	—	×		×		×		×	
CHA	Replace	—	× (*1)		× (*1)		× (*1)		× (*1)	
DKA	Replace	—	×		×		×		×	
MP	Replace	—	×		×		×		×	

*1: In the case of SI-MF, when all CHM is specified to de-install with pair includes 3390-A volume, the alert message of 'SVP4313W' is shown.

1.8 Availability of the online maintenance when XRC is used

Component	Maintenance Type	During initial copy		Established		Suspend	
		Primary	Secondary	Primary	Secondary	Primary	Secondary
Logical Device	Blockade	**	**	**	**	**	**
	Recovery	**	**	**	**	**	**
	Format	**	**	**	**	**	**
	Verify	×	×	×	×	×	×
HDD canister	Replace	×	×	×	×	×	×
Cache PCB	Replace	*	×	*	×	*	×
CHA	Replace	×	×	×	×	×	×
DKA	Replace	×	×	×	×	×	×
MP	Replace	*	×	*	×	*	×

×: Maintenance is available.

*: When a maintenance operation is needed while XRC is being used, I/O's for XRC pair volumes or XRC itself should be stopped before the maintenance operation.

If the maintenance operation must be done while XRC is being used, you must confirm that the usage of Sidefile monitor is less than 20% of total Cache capacity by monitoring each combination of MPB and CLPR usage before you start the maintenance operation. Only when the usage of Sidefile monitor is less than 20% of total Cache capacity, you can proceed the maintenance operation.

Refer to SVP SECTION “2.4 Monitoring” ([SVP02-04-10](#)) about Sidefile monitor.

Select the [Monitor] icon in the ‘SVP’ window.

Next select the [Monitor] menu in the ‘Information’ window and select [start....].

Next select the ‘Sidefile’ box in the ‘Item’ menu in the ‘Monitoring’ window and select [OK].

**:

When a maintenance operation is needed while XRC is being used, XRC should be stopped before the maintenance operation.

1.9 Availability of the online maintenance when UR is used

JNL-GROUP

Component	Maintenance Type	Condition	TC-MF path established		Initial		Active	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Recovery	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Format	—	×	×	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE	Replace	—	×	×	×	×	×	×
CHA	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
DKA	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
MP	Replace	—	×	×	×	×	×	×

Component	Maintenance Type	Condition	Halting		Stop		Stopping	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Recovery	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Format	—	SVP3825W	SVP3825W	SVP3825W	SVP3825W	SVP3825W	SVP3825W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE	Replace	—	×	×	×	×	×	×
CHA	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
DKA	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
MP	Replace	—	×	×	×	×	×	×

DATA-VOL

Component	Maintenance Type	Condition	TC-MF path established		During initial copy		After completing initial copy	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Recovery	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Format	—	×	×	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE	Replace	—	×	×	SVP2059W	SVP2079W	×	×
CHF	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W
CHM	Replace	—	×	×	×	SVP4291W (*1)	×	SVP4291W (*1)
DKA	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W
MP	Replace	—	×	×	×	×	×	×

Component	Maintenance Type	Condition	Suspend		Suspending		Deleting	
			MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Recovery	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Format	—	SVP2031W	SVP2034W	SVP2031W	SVP2034W	SVP2031W	SVP2034W
	Verify	—	×	×	×	×	×	×
HDD canister	Replace	—	×	×	×	×	×	×
CACHE	Replace	—	×	×	×	×	×	×
CHF	Replace	With Alternate path	SVP3848W	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	SVP3848W	×	SVP3848W	SVP2075W	SVP3848W	SVP2075W
CHM	Replace	—	×	×	×	SVP4291W (*1)	×	SVP4291W (*1)
DKA	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	SVP3848W	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	SVP3848W	×	SVP3848W	SVP2075W	SVP3848W	SVP2075W
MP	Replace	—	×	×	×	×	×	×

×: Maintenance is available

SVPXXXXW: Maintenance is not available based on the specification. Refer to SVP MESSAGE SECTION.

*1: In this operation, when the normal CHM disappear, the warning message of ‘SVP4291W’ will be outputted.

1.10 Availability of the online maintenance when GAD is used

Component	Maintenance Type	Condition	Path established		Quorum established
			M-DKC	R-DKC	
Logical Device	Blockade	—	×	×	SVP4197E
	Recovery	—	×	×	×
	Format	—	×	×	SVP4197E
	Verify	—	×	×	×
HDD canister	Replace	—	×	×	×
CACHE	Replace	—	×	×	×
CHA	Replace	With Alternate path	×	×	×
		Without Alternate path	×	×	×
DKA	Replace	—	×	×	×
MP	Replace	—	×	×	×

Component	Maintenance Type	Condition	Pair status = COPY		Pair status = PAIR	
			P-VOL	S-VOL	P-VOL	S-VOL
Logical Device	Blockade	—	SVP4482E	SVP4483W	SVP4482E	SVP4483W
	Recovery	—	SVP4482E	SVP4483W	SVP4482E	SVP4483W
	Format	—	SVP4482E	SVP4483W	SVP4482E	SVP4483W
	Verify	—	×	×	×	×
HDD canister	Replace	—	× (*1)	× (*2)	×	×
CACHE	Replace	—	SVP4484W	SVP4488W	×	×
CHA	Replace	With Alternate path	×	×	×	×
		Without Alternate path	SVP4486W	SVP4486W	SVP4486W	SVP4486W
DKA	Replace	—	×	×	×	×
MP	Replace	—	×	×	×	×

Component	Maintenance Type	Condition	Pair status = PSUS/PSUE (Local)	Pair status = SSWS (Local)	Pair status = PSUS/PSUE (Block)	Pair status = SSUS/PSUE (Block)
			P-VOL	S-VOL	P-VOL	S-VOL
Logical Device	Blockade	—	SVP4482E	SVP4483W	SVP4482E	SVP4483W
	Recovery	—	SVP4482E	SVP4483W	SVP4482E	SVP4483W
	Format	—	SVP4482E	SVP4483W	SVP4482E	SVP4483W
	Verify	—	×	×	×	×
HDD canister	Replace	—	×	×	×	×
CACHE	Replace	—	×	×	×	×
CHA	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Replace	—	×	×	×	×
MP	Replace	—	×	×	×	×

×: Maintenance is available

SVPXXXXE/SVPXXXXW: A message is shown in the above case. Refer to the SVP MESSAGE SECTION to take an appropriate action.

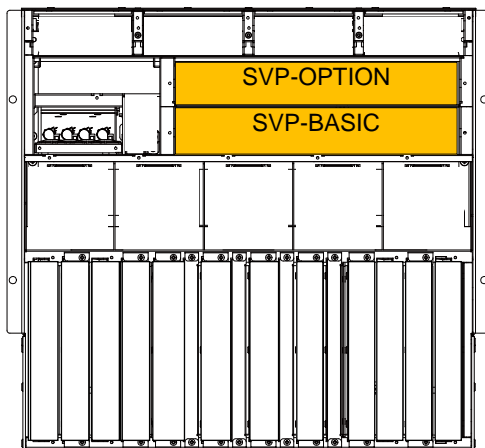
*1: When System Option Mode = 63 is ON, SVP4484W prevents a replace operation of the HDD canister.

*2: When System Option Mode = 63 is ON, SVP4488W prevents a replace operation of the HDD canister.

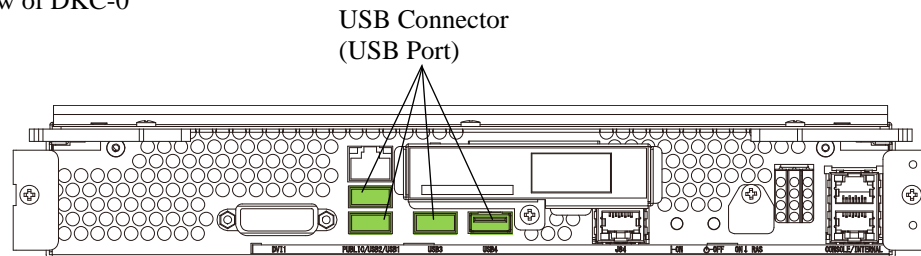
1.11 About the storage media used for installation/maintenance process

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

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



Rear View of DKC-0



Front View of SVP

*1: Maintenance PC(Console PC) should be prepared by each maintenance personnel, because it is not attached in the equipment as standard equipment.

Fig. 1.11-1 Information Collection Device for each Media

[PRE-PROCEDURE A]

— OUTLINE —

- ① Display Initial Screen
- ② Change SVP operation mode
- ③ Open Maintenance window

1. <Initial screen>

Display the SVP initial screen from SVP SECTION “1. How to Operate the SVP (PC)” (SVP01-10).

For CE Laptop PC, please refer to 3.1.5.3.

- “3.1.5.3 Attachment / Removal Procedure of Maintenance PC” (INST03-01-130)

2. <Maintenance Other Components>

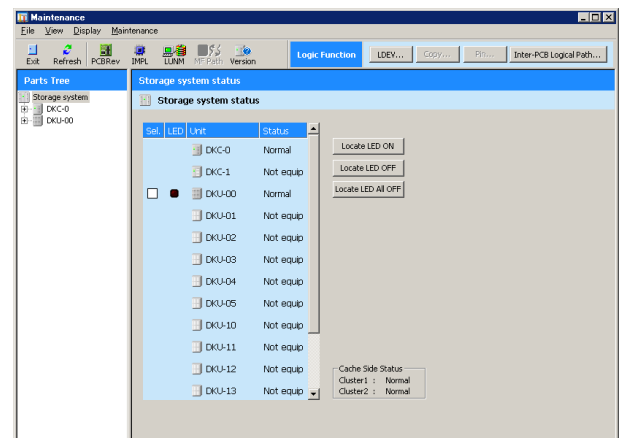
Select the [Maintenance Components]-[Maintenance Other Components] from Action Menu. And open the ‘Maintenance Other Components’ window.

3. <Operation mode change>

Change the mode to [Modify Mode].
Select (CL) [Maintenance].

4. <Maintenance window>

The ‘Maintenance’ window is displayed.



[PRE-PROCEDURE B]

— OUTLINE —

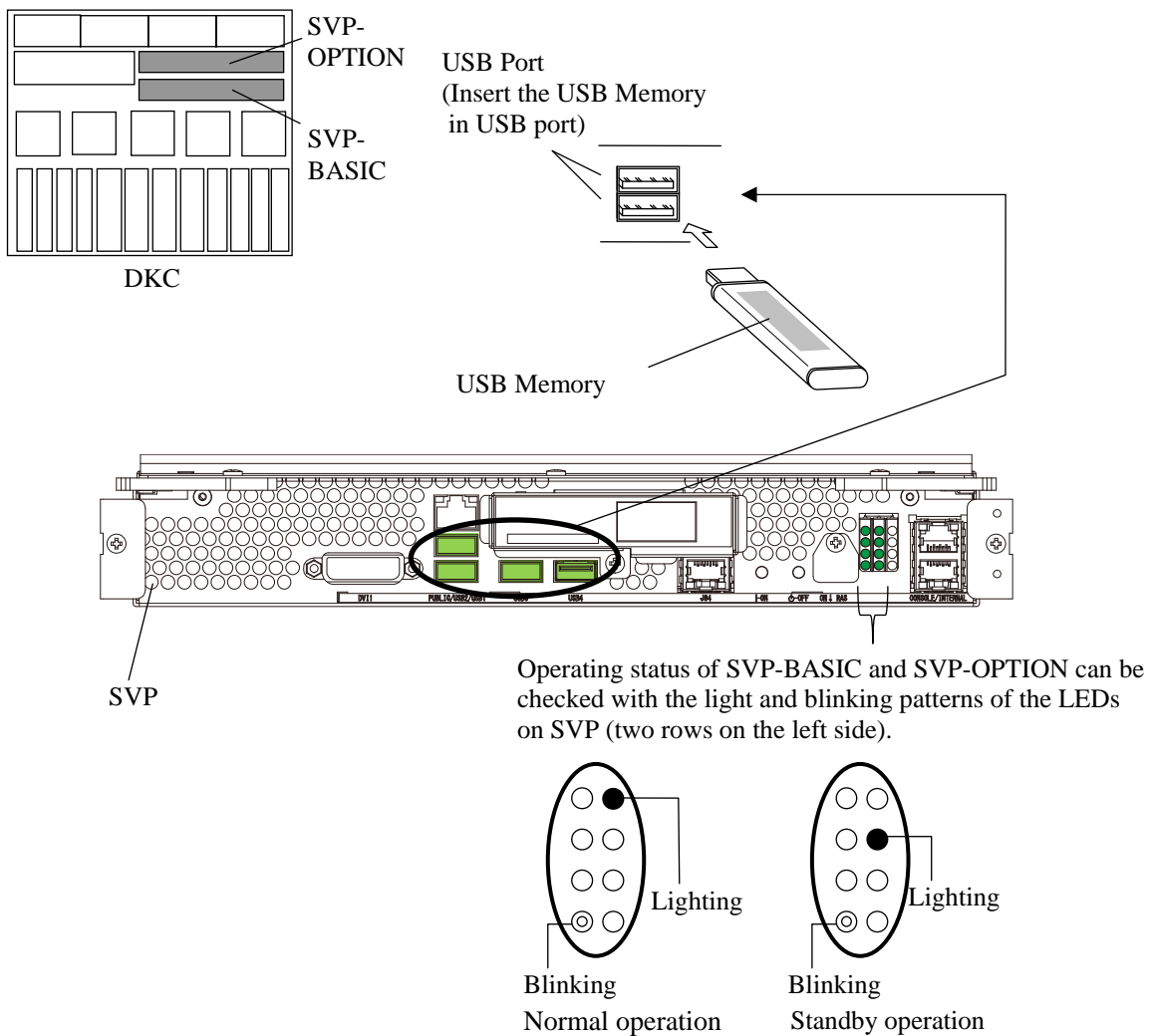
- ① Installation of USB memory
- ② Display Initial Screen
- ③ Open Maintenance window

1. Installation of USB memory

(1) Collecting information to the external USB memory.

Connect the USB memory to one of the USB ports on the SVP in the array as shown below. If the Additional SVP is installed, the USB memory must be installed in the SVP that is the active SVP.

① Insert the USB memory in USB port on the SVP.



2. <Initial screen>

Display the SVP initial screen from SVP SECTION “1. How to Operate the SVP (PC)”
(SVP01-10).

3. <Maintenance Other Components>

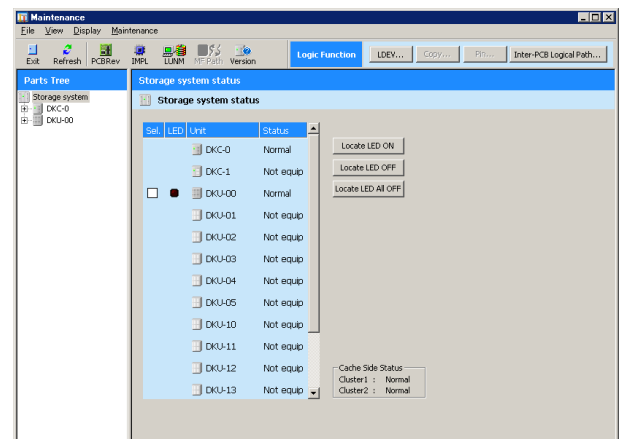
Select the [Maintenance Components]-[Maintenance Other Components] from Action Menu.
And open the ‘Maintenance Other Components’ window.

4. <Operation mode change>

Change the mode to [Modify Mode].
Select (CL) [Maintenance].

5. <Maintenance window>

The ‘Maintenance’ window is displayed.



[DRIVE REPLACEMENT PROCESSING - RDK1]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select drive (status check)
 - ② Check progress of copy processing
 - ③ Specify Replacement
 - ④ Place HDD into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on P-DEV
 - ② Specify recovery
 - ③ Copy back

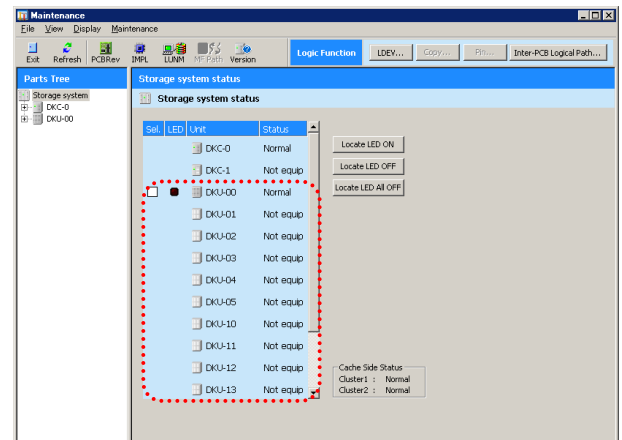
NOTICE: If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

1. PRE-PROCESSING of SVP

1-1. <Maintenance window>

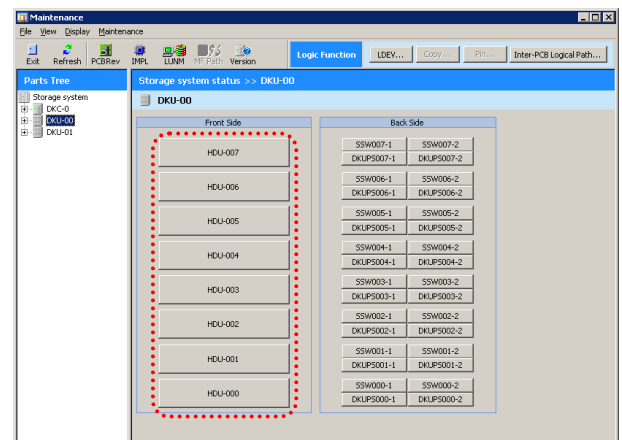
Open the 'Maintenance' window according to PRE PROCEDURE A (REP02-01-10).

Select (CL) the DKU information [DKU-nn] of the DKU which installs the HDD to be replaced in the 'Maintenance' window.



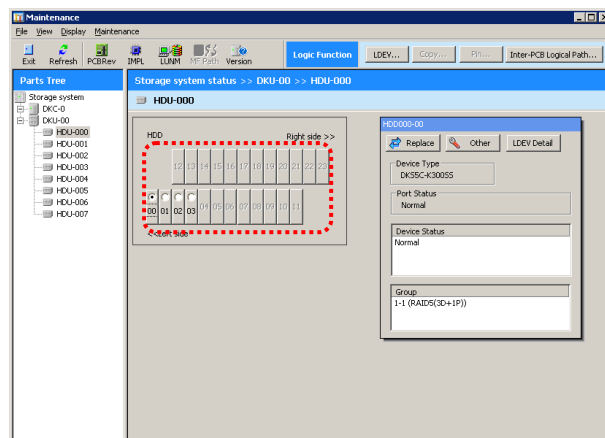
1-2. <Select HDU>

Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.



1-3. <Select HDD>

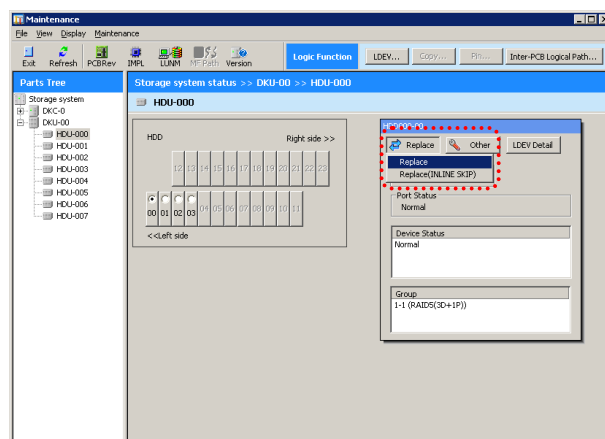
Check and select (CL) [nn] to be replaced.



1-4. <Specify replacement of HDD>

Make sure that the “Device Status” is [Failed] or [Warning] or [Reserved].

Select (CL) [Replace]-[Replace].



1-5. <Checking the P-DEV status>

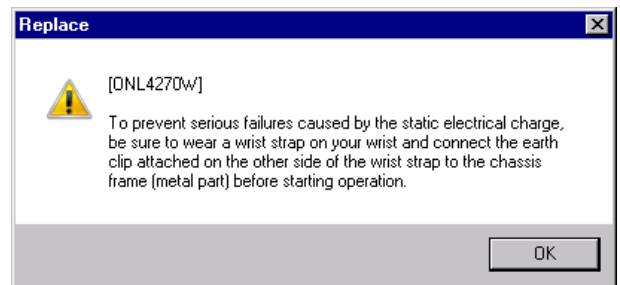
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

“Checking...” is displayed.

1-6. <Wear a wrist strap>

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



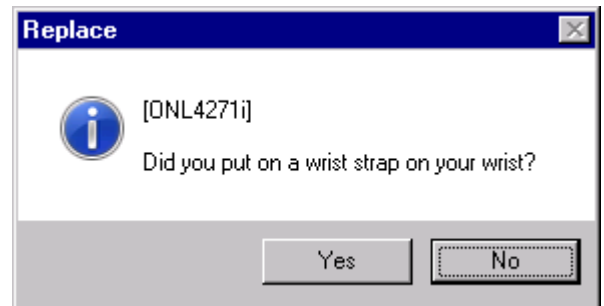
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

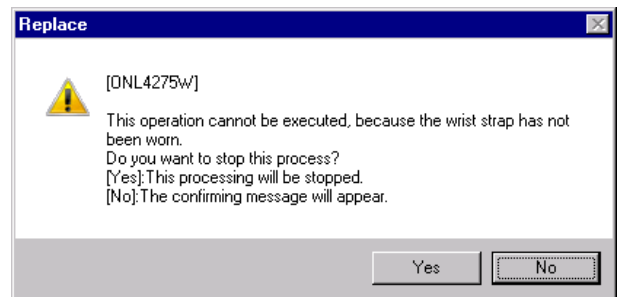


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

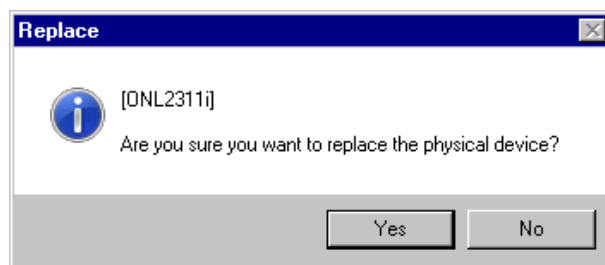


When [Yes] is selected (CL), returned to Step 1-3.

When [No] is selected (CL), returned to Step 1-6.

1-7. <P-DEV blocking>

Select (CL) [Yes] in response to “Are you sure you want to replace the physical device?”.



1-8. <Blocking the Physical device>

“Blocking...” is displayed.

1-9. <Spin down the Physical device>

“Spinning down...” is displayed.

1-10. <Check shut down LED>

CAUTION

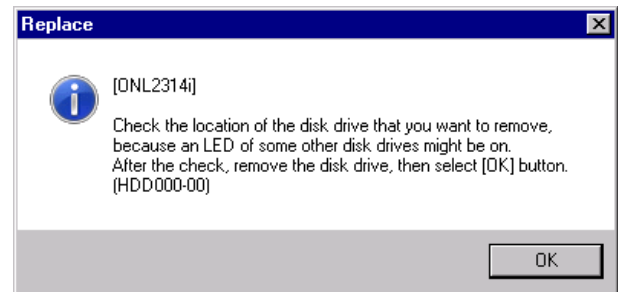
If a wrong HDD is removed, a data loss or a system down may occur.

Check the shut down LED on the HDD to be replaced.

If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

1-11. <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



1-12. <Replace HDD>

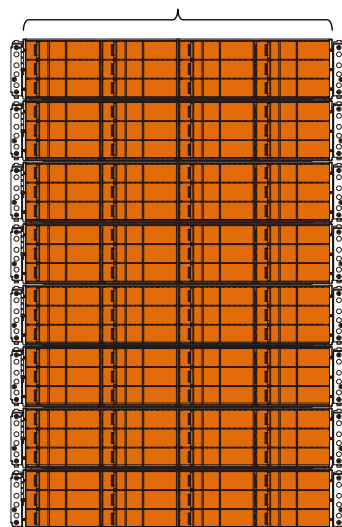
Replace HDD.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

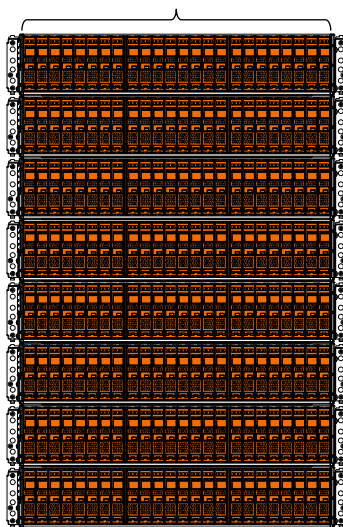
2. HARDWARE REPLACEMENT PROCESSING

Location		Function Name of Component	Part Name	HDA Label
Front View of UBX	1	Disk Drive (HDD)	HDU800-600J5MSS	R5D-J600SS
			HDU800-3R0H3MSS	S2E-H3R0SS
			HDU800-4R0H3MSS	R2E-H4R0SS
	2	Flash Drive (SSD)	HDU800-400M5MSS	S2E-H4R0SS
Front View of SBX	3	Disk Drive (HDD)	HDU800-300KCMSS	B5A-M400SS
			HDU800-600JCMSS	S5C-K300SS
				R5D-J600SS
				S5E-J600SS
			HDU800-900JCMSS	R5D-J900SS
				S5E-J900SS
			HDU800-1R2JCMSS	R5E-J1R2SS
				S5F-J1R2SS
	4	Flash Drive (SSD)	HDU800-400MCMSS	B5A-M400SS
				R5C-M400SS
			HDU800-800MCMSS	B5A-M800SS
				R5C-M800SS
Front View of FBX	5	Flash Module Drive (FMD)	HDU800-1R6FMSS	HAA-P1R6SS
			HDU800-3R2FMSS	HAB-P3R2SS

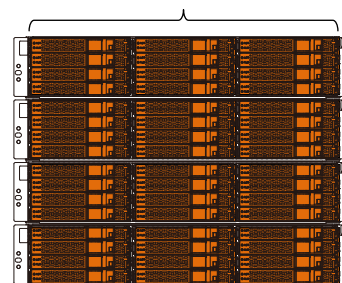
Drive (HDD/SSD)

Front View of
UBX

Drive (HDD/SSD)

Front View of
SBX

Drive (FMD)



Front View of FBX

- NOTICE:**
- Replace the drive in the storage system in power on status only. Do not replace the drive in power off status.
 - Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
 - HDD is a precise component. Be careful in handling HDD to avoid vibration and impact.

2-1 Drive (HDD/SSD/FMD) Replacement Procedure

2-1-1. Check the Shut Down LED.

- Check that the Shut Down LED on drive is turned on. Refer to Fig. 3.1.2-1, Fig. 3.1.2-2 or Fig. 3.1.2-3.

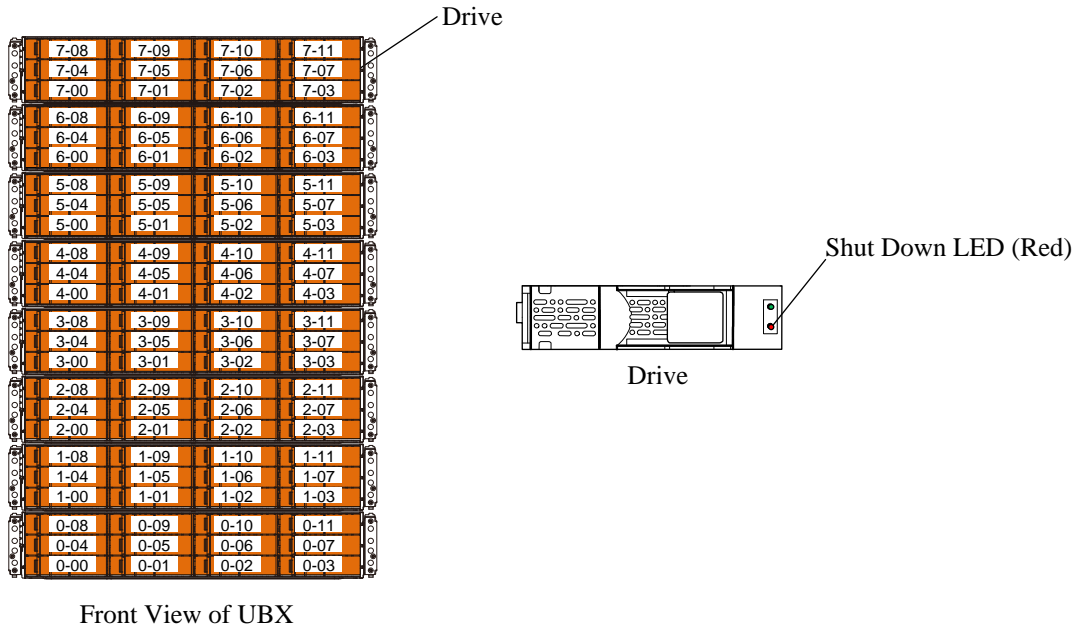


Fig. 3.1.2-1 Checking of Shut Down LED (In case of UBX)

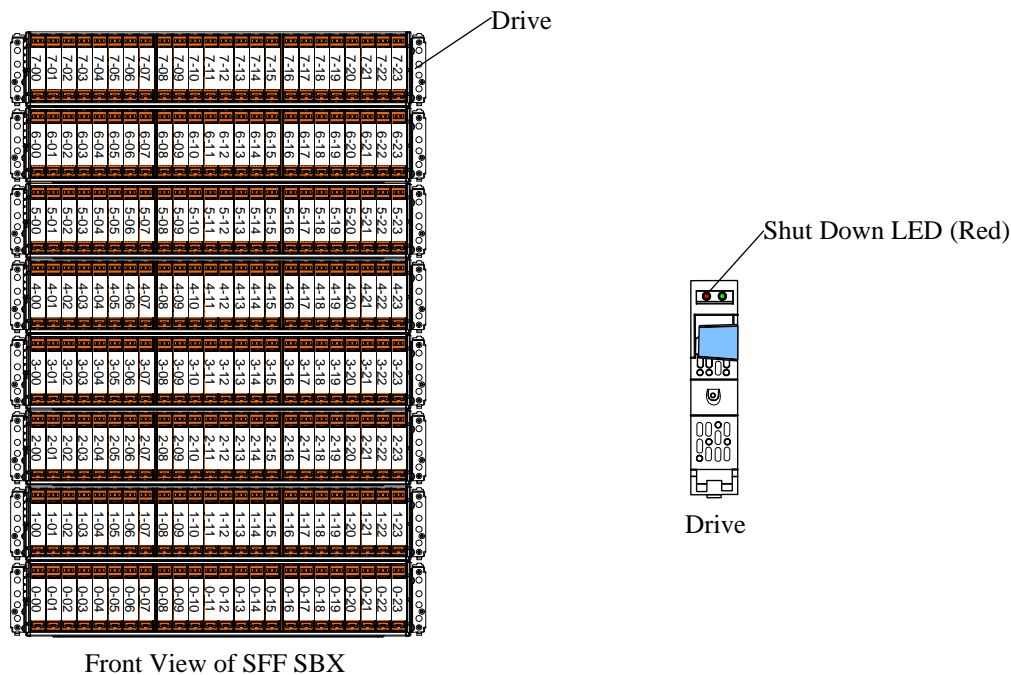
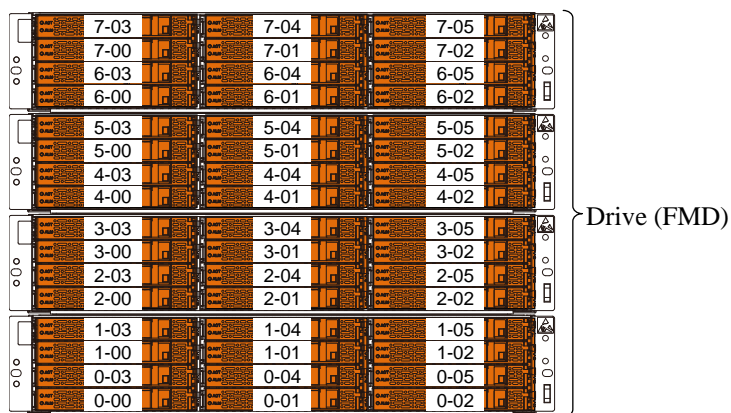
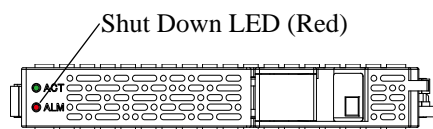


Fig. 3.1.2-2 Checking of Shut Down LED (In case of SBX)



Front View of FBX



Front View of Drive (FMD)

Fig. 3.1.2-3 Checking of Shut Down LED (In case of FBX)

2-1-2. Remove the drive.

2-1-2.1. In case of Drive for UBX

- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

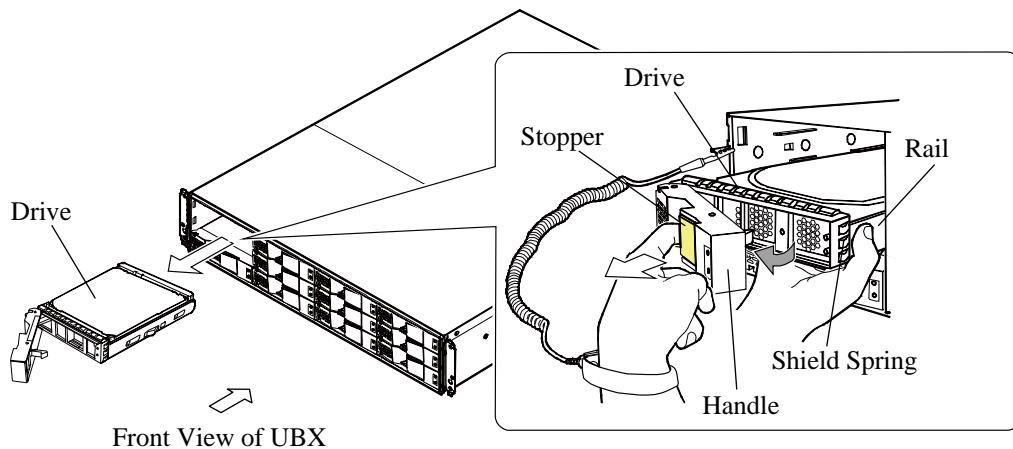


Fig. 3.1.2-4 Removal of Drive (for UBX)

2-1-2.2. In case of Drive for SBX

- Pull up the stopper of the drive handle toward you to release the lock.
- Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.

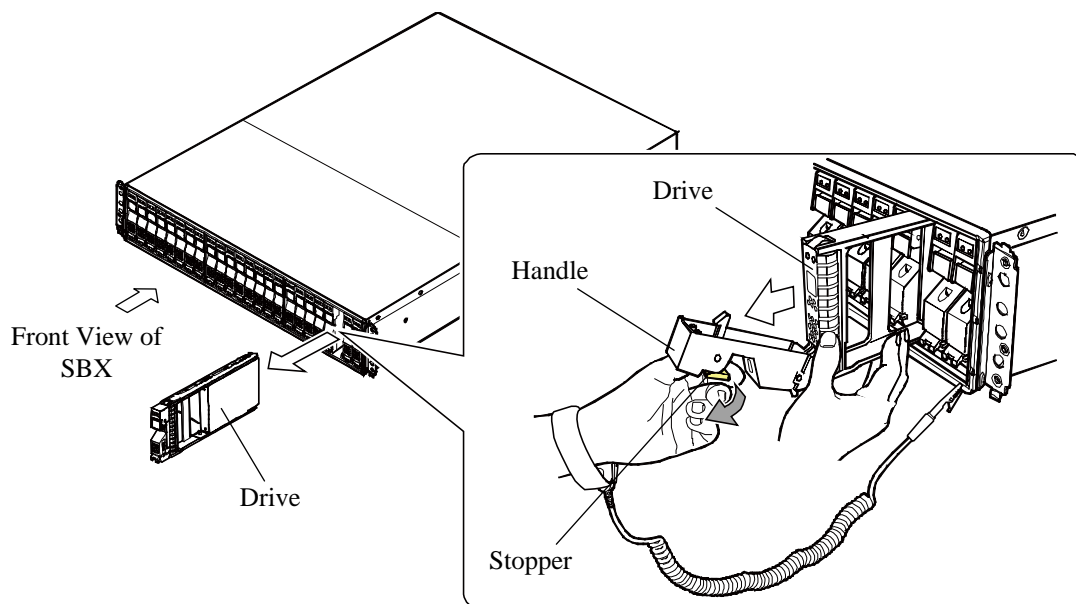
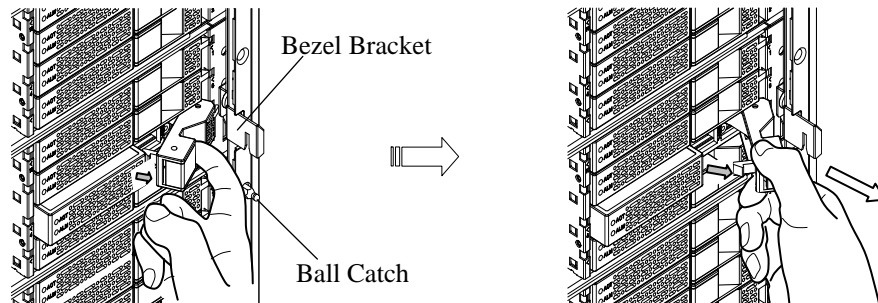


Fig. 3.1.2-5 Removal of Drive (for SBX)

2-1-2.3. In case of FBX

NOTICE: When the FMD is removed in replacing procedure, the fans of the DKUPS equipped in the rear of the FBX rotate at the highest speed. When the spare FMD is installed, the fans of the DKUPS rotate at the speed suitable for environmental temperature.

NOTICE: When extracting drives (FMD) centered on the right side of the FBX, be careful not to get your finger caught in the Bezel Bracket and/or the Ball Catch. Slightly pull the Stopper with your fingertip and then extract a drive with holding upper and bottom sides of the Handle as shown in the figure below.



- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

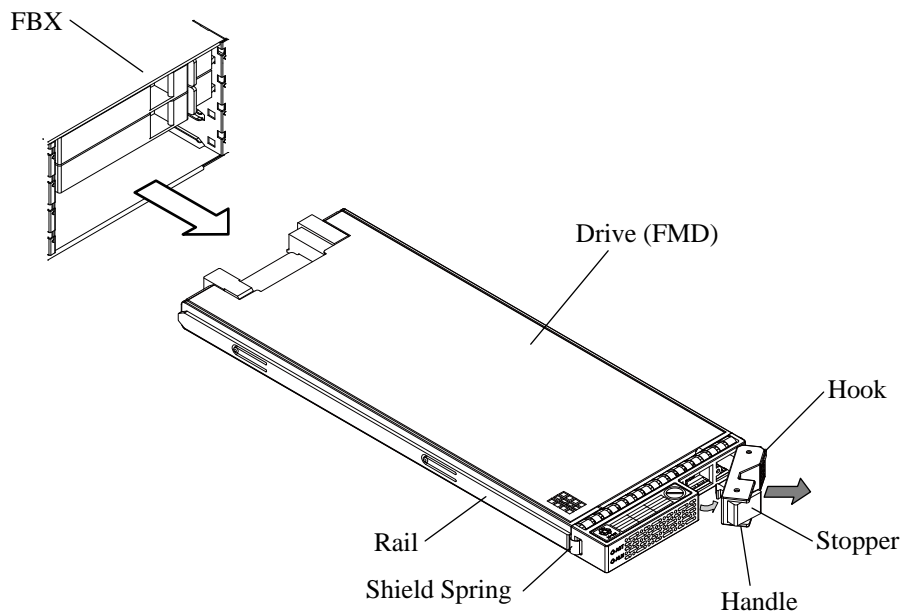
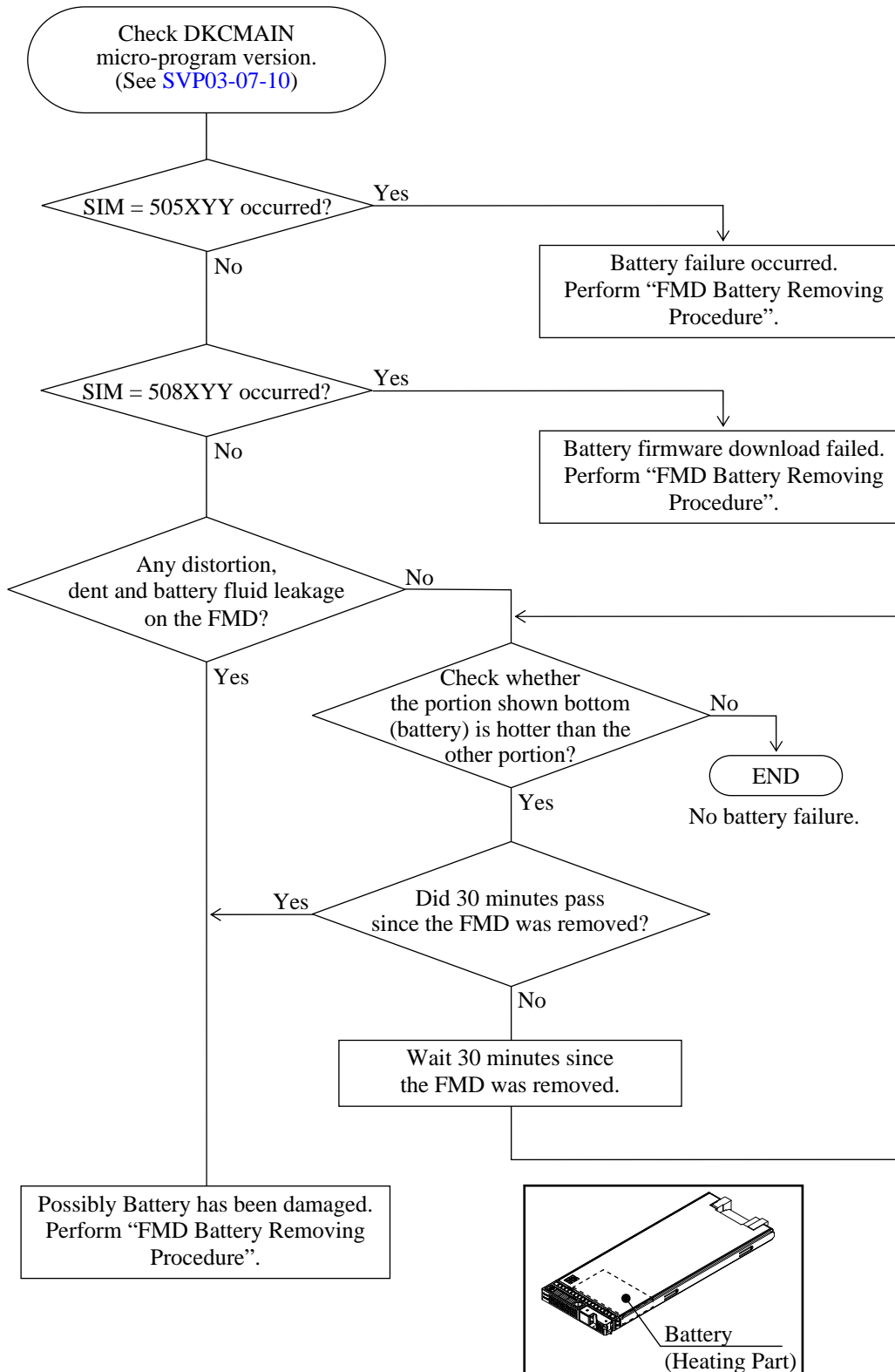


Fig. 3.1.2-6 Removal of Drive (In case of FBX)

- c. Check whether a failure of the battery built in the FMD has occurred by using the flowchart below. If a battery failure has occurred, remove the battery from the FMD. If no battery failure has occurred, go to Procedure 2-1-3.



d. FMD Battery Removing Procedure

(d)-1 Remove 4 Screws (SB310N) on the bottom side of FMD by using cross-head screw driver.

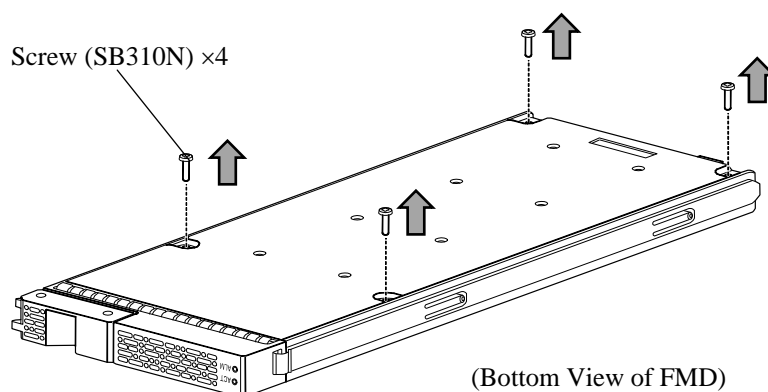


Fig. 3.1.2-7 Removing Screws

(d)-2 Remove Top Cover and Bottom Cover.

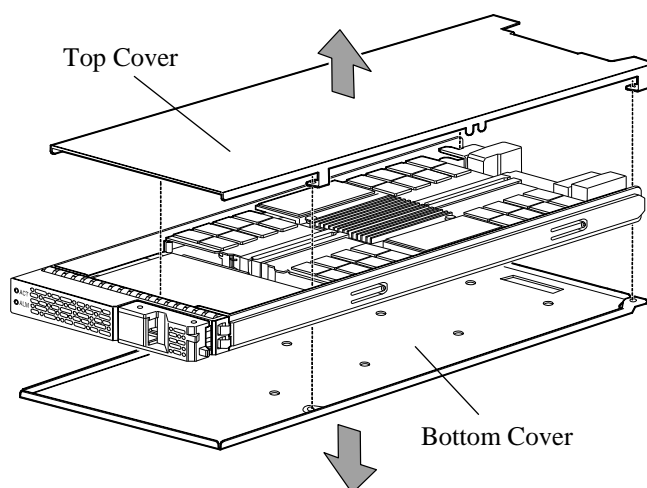


Fig. 3.1.2-8 Removing Covers

(d)-3 Remove 2 sets of Tapping-screw and Washer by using cross-head screw driver.

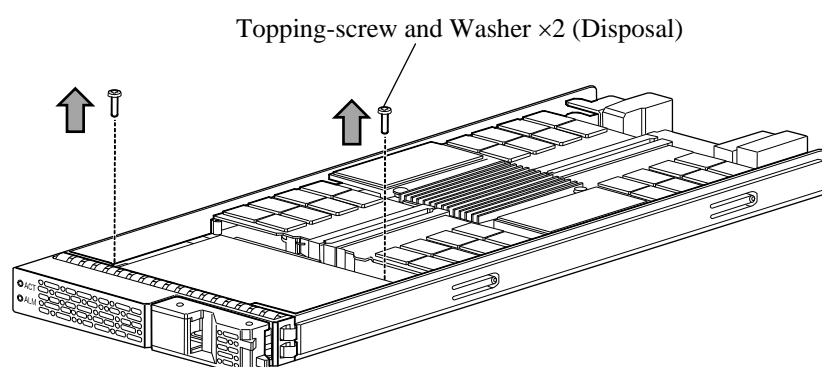


Fig. 3.1.2-9 Removing Tapping-screws and Washers

(d)-4 Move the Battery to the bezel side and disconnect the Battery from the circuit board.

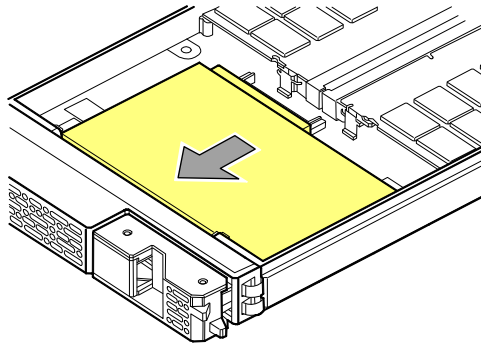


Fig. 3.1.2-10 Disconnecting from Connector

(d)-5 Remove the Battery to the bottom side of FMD. (After the connector comes off, battery is lowered below.)

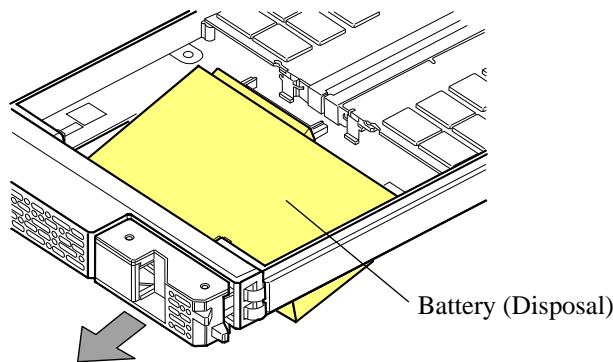


Fig. 3.1.2-11 Removing Battery

(d)-6 Attach Top Cover and Bottom Cover.

(d)-7 Attach 4 Screws (SB310N) on the bottom side of FMD.

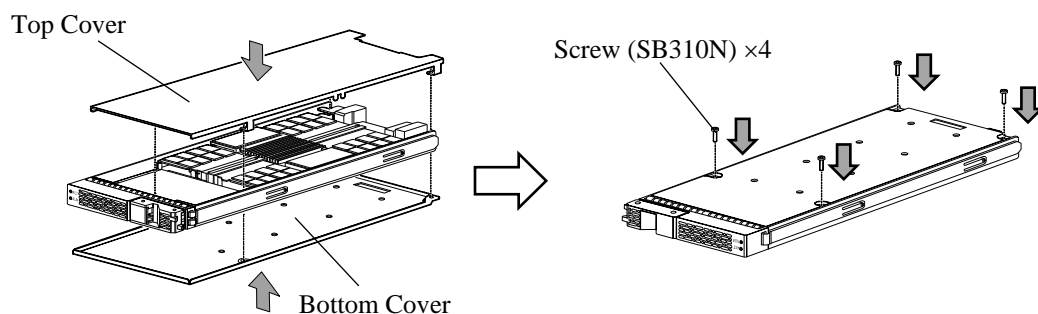


Fig. 3.1.2-12 Reassembling FMD

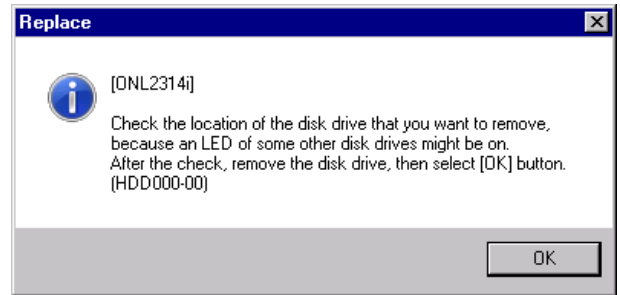
(d)-8 Dispose of the Tapping-screws, Washers and Battery removed in procedures (d)-3 and (d)-5.

When dispose of the Battery, follow the directions given by the local law where the product is used.

2-1-3. Check and handling of the drive.

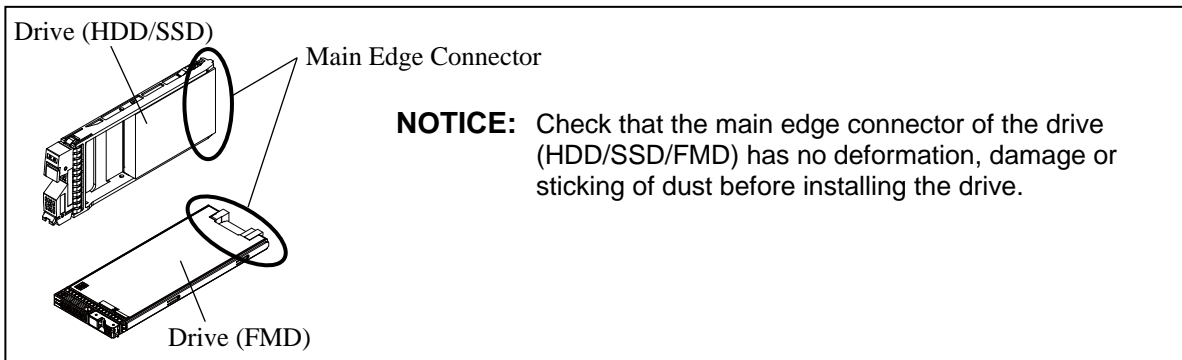
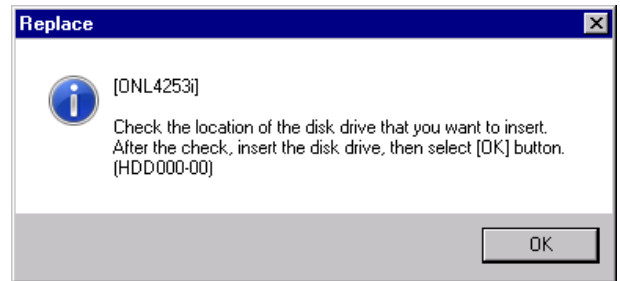
(1) <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



(2) <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



2-1-4. Install the drive.

NOTICE: Back Board, or drive connector or drive handle may be damaged when the drive is forcibly inserted.
If the drive cannot be easily inserted until the claws on the handle reach the DKU, or if the handle binds or stops before it can be locked, then remove the drive and perform inspection:

- a) Check the drive slot in DKU to be free and clear of obstructions.
- b) Check connector on back board for visible defects.
- c) Inspect connector on drive for visible defects.
- d) During installation make sure the drive is inserted in alignment with slot guides.

Reinsert drive after inspections have passed.

2-1-4.1. In case of UBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the UBX.

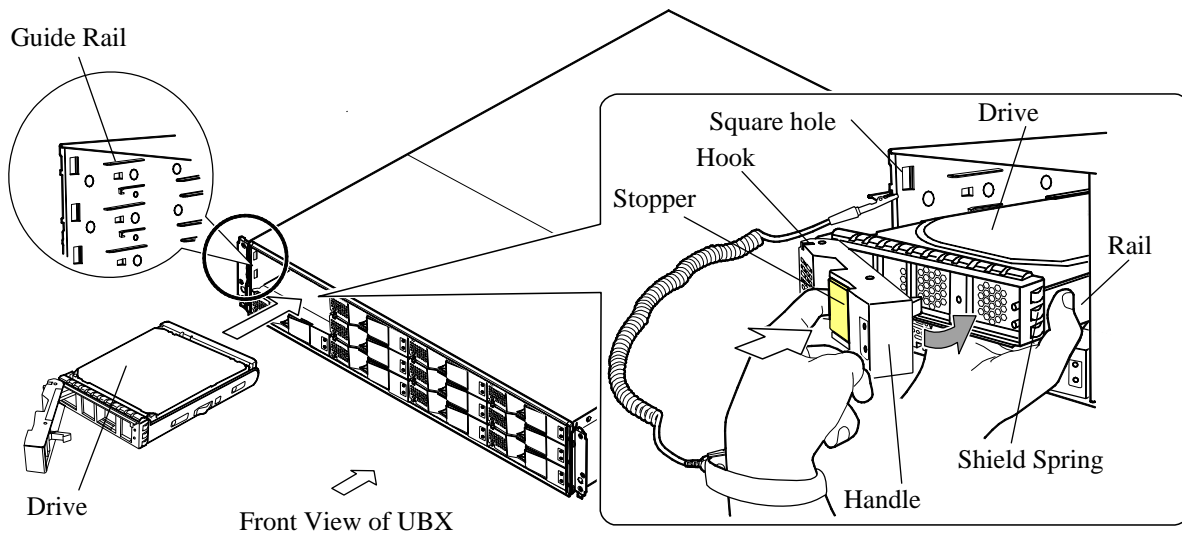


Fig. 3.1.2-13 Installation of Drive (In case of UBX)

2-1-4.2. In case of SBX

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

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

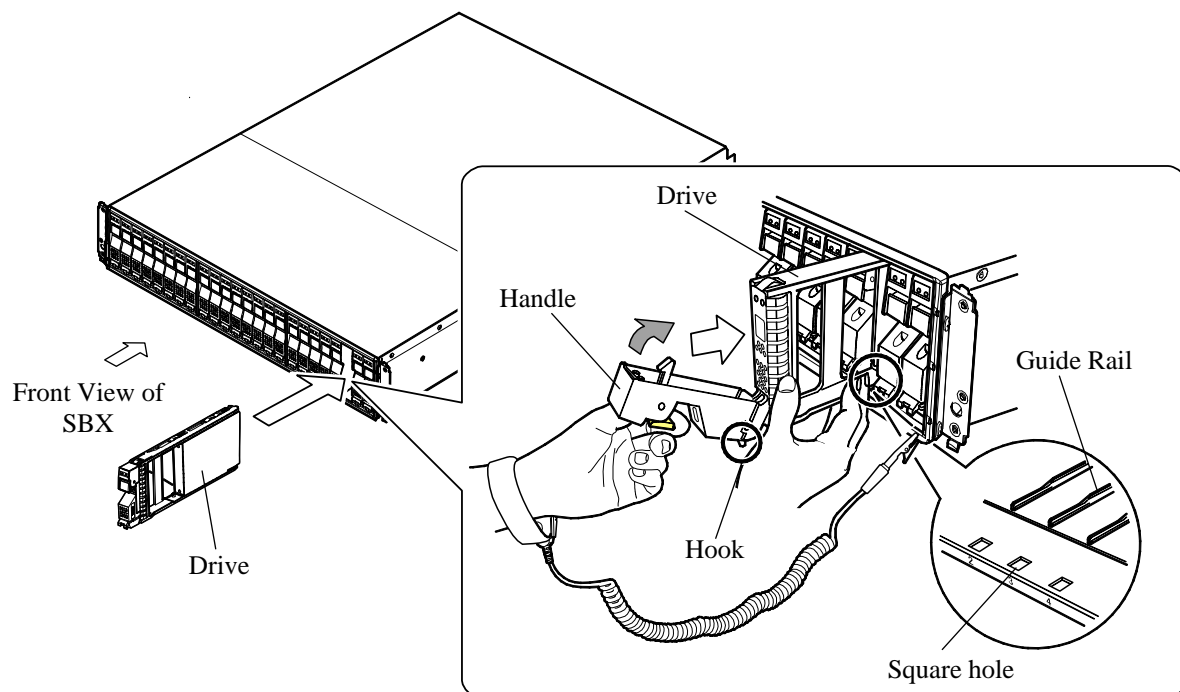


Fig. 3.1.2-14 Installation of Drive (In case of SBX)

2-1-4.3. In case of FBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the FBX.

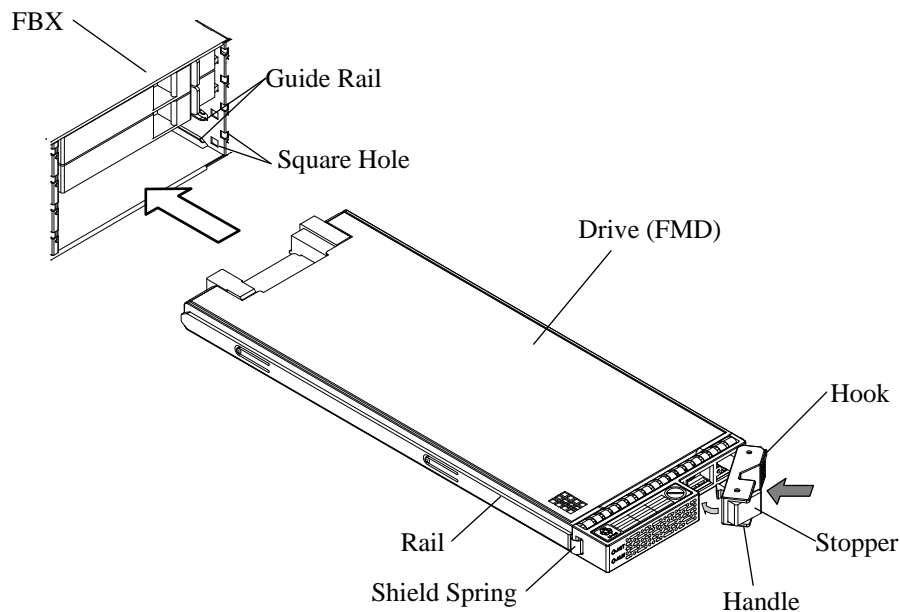


Fig. 3.1.2-15 Installation of Drive (In case of FBX)

2-1-5. Go to “3. POST-PROCESSING of SVP”.

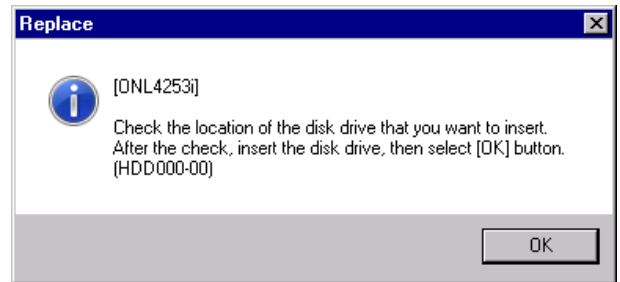
NOTICE: Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES of SVP, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.

A dump removable media is attached with a Spare HDD.

3. POST-PROCESSING of SVP

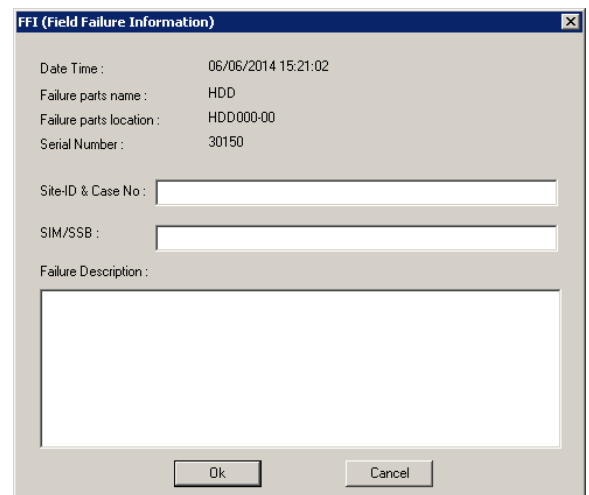
3-1. <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



3-2. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK].

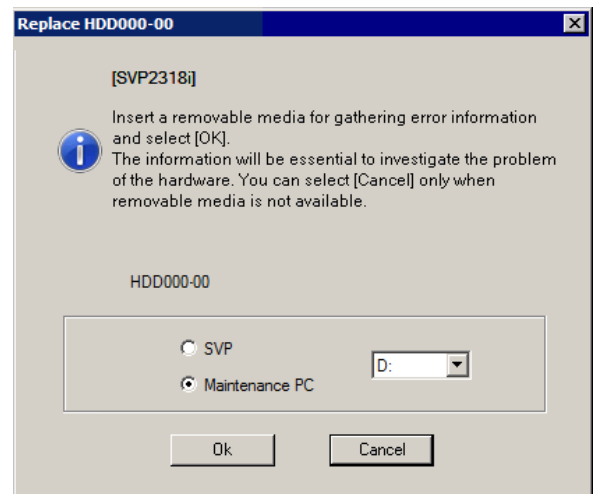
The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Select a Maintenance PC arbitrary drive, and select (CL) [Ok].

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu.

The drive letter becomes the drive letter of Maintenance PC connected with SVP.

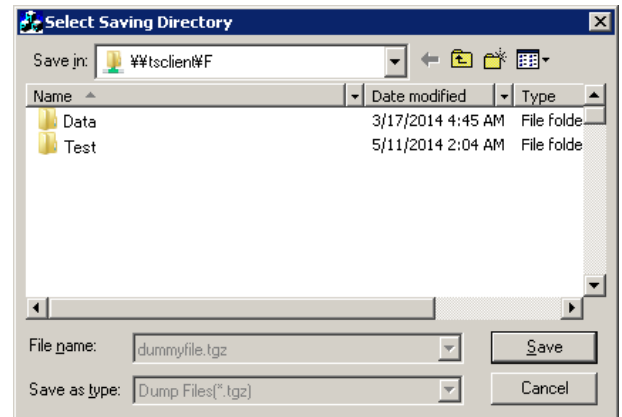


When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

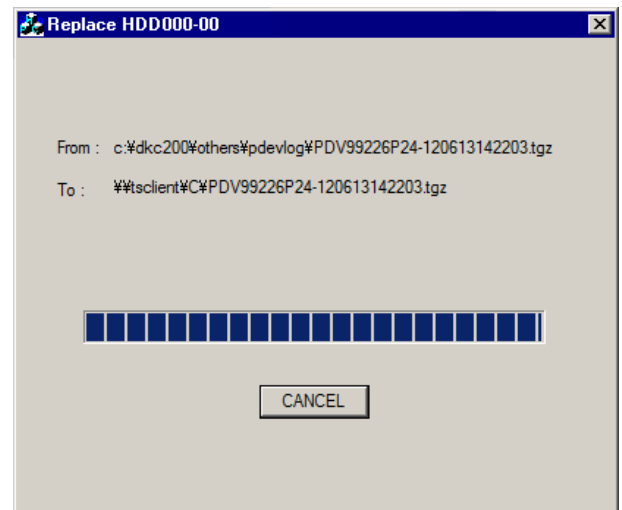
Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

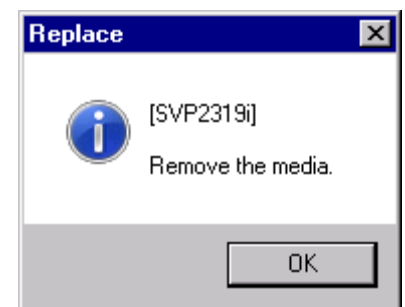


3-3. <Copy of the error information>

The error information is copied onto media.



“Remove the media.” is displayed.
Select (CL) [OK].



3-4. <Spin up the Physical Drive>

“Spinning up...” is displayed.

3-5. <DKU INLINE>

“DKU INLINE is now running...” is displayed.

3-6. <Replacement of the DKU micro-program>

When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.

The message “Exchanging DKU micro-program...” appears.

3-7. <Restore Physical Drive>

“Restoring...” is displayed.

3-8. <Check the Physical Drive>

“Checking...” is displayed.

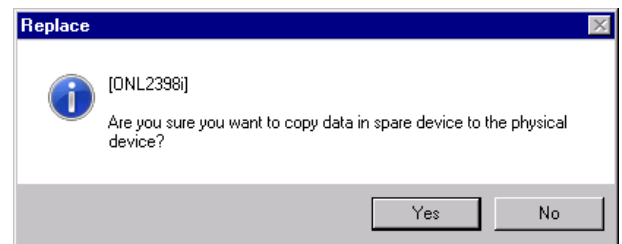
3-9. <Check the beginning of copy-back>

A message, which asks for confirmation of whether or not to start a copy-back or to make the automatic copy-back, is displayed.

[Confirmation of starting a copy-back]

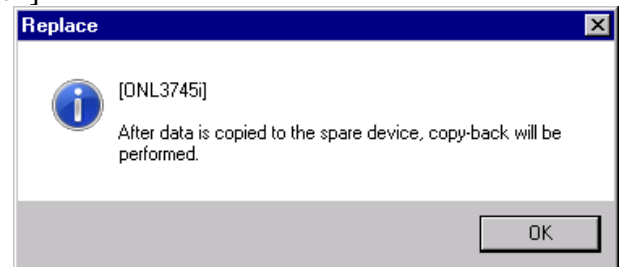
Select (CL) [Yes] in response to “Are you sure you want to copy data in spare device to the physical device?.”.

Go to Step 3-10.



[Confirmation of making an automatic copy-back]

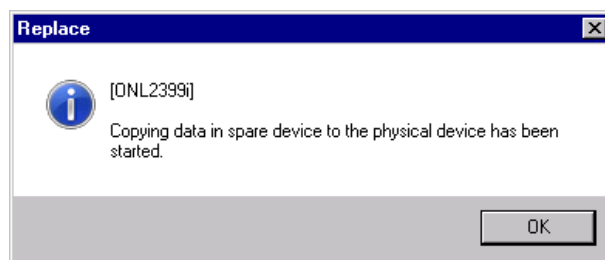
Select (CL) [OK] in response to a message, “After data is copied to the spare device, copy-back will be performed.”.



3-10. <Check starting of copyback>

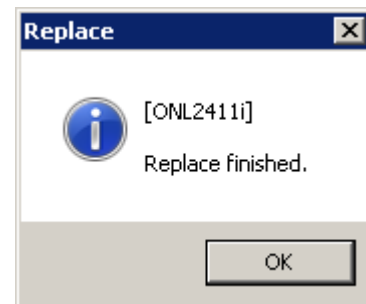
“Copying...” is displayed.

Select (CL) [OK] in response to “Copying data in spare device to the physical device has been started.”.



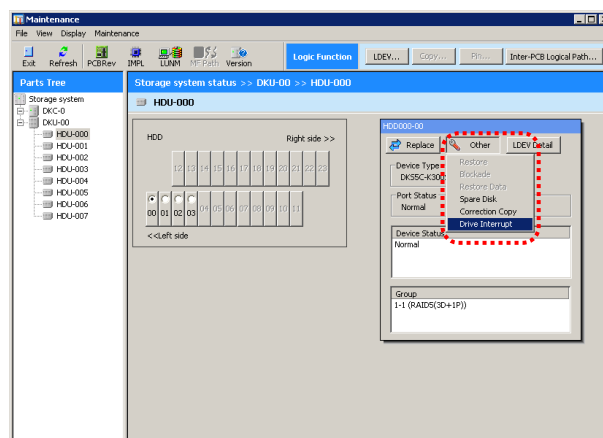
3-11. <Check the end of PDEV recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-12.

When interrupting a copy, select (CL) the [Other]-[Drive Interrupt] button.



3-13.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DRIVE REPLACEMENT PROCESSING - RDK2]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select drive (status check)
 - ② Specify Replacement
 - ③ Save Spare
 - ④ Select drive (status check)
 - ⑤ Check progress of copy processing
 - ⑥ Specify Replacement
 - ⑦ Place HDD into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on P-DEV
 - ② Specify recovery
 - ③ Copy back

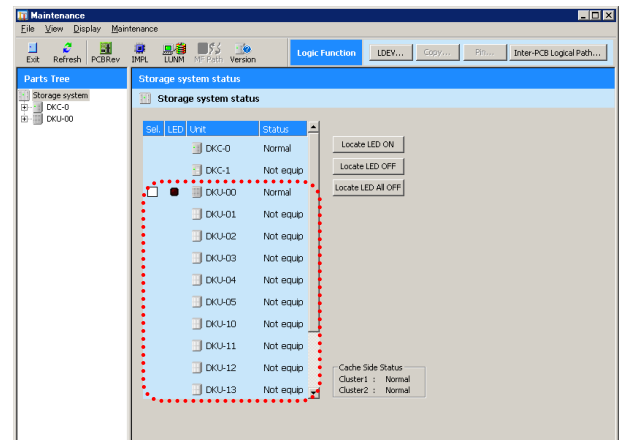
NOTICE: If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

1. PRE-PROCESSING of SVP

1-1. <Maintenance window>

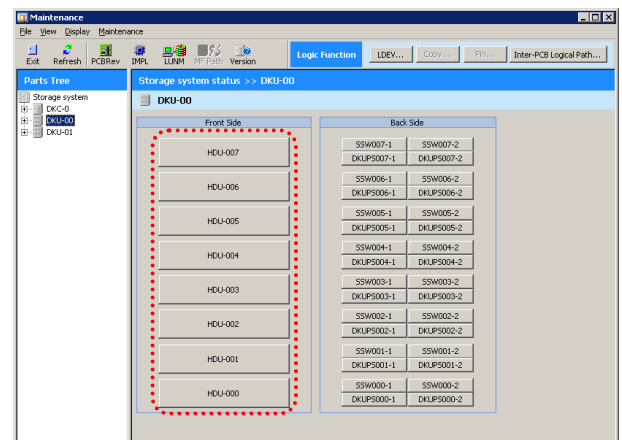
Open the 'Maintenance' window according to PRE PROCEDURE A ([REP02-01-10](#)).

Select (CL) the DKU information [DKU-nn] of the DKU which installs the HDD to be replaced in the 'Maintenance' window.



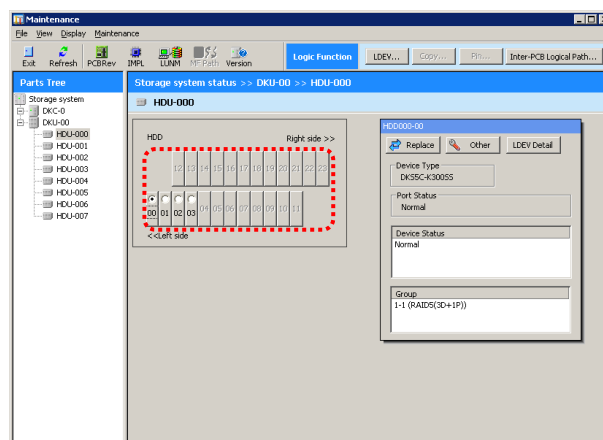
1-2. <Select HDU>

Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.



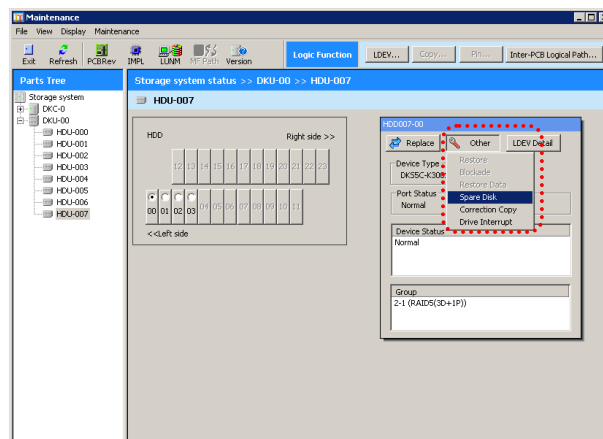
1-3. <Select HDD>

Check and select (CL) [nn] to be replaced.



1-4. <Specify replacement of HDD>

Select (CL) [Other]-[Spare Disk].



1-5. <Checking the P-DEV status>

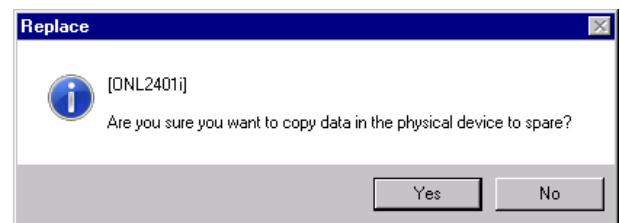
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

“Checking...” is displayed.

1-6. <Saving the spare>

Select (CL) [Yes] in response to “Are you sure you want to copy data in the physical device to spare?”.

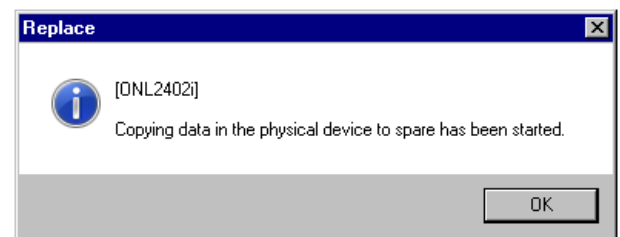


1-7. <Saving in process>

“Copying...” is displayed.

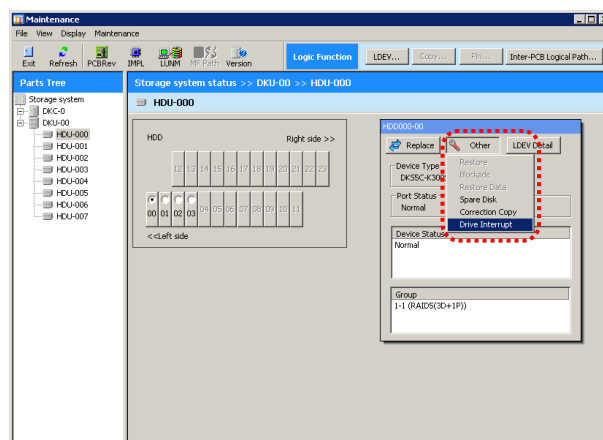
1-8. <End of spare saving>

Select (CL) [OK] in response to “Copying data in the physical device to spare has been started”.



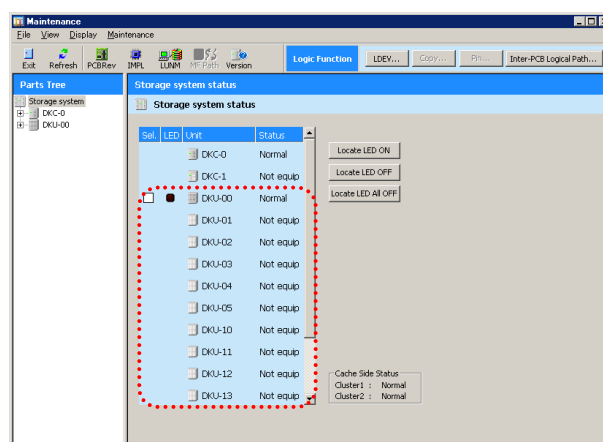
1-9.

When interrupting a copy, select (CL) the [Other]-[Drive Interrupt] button.



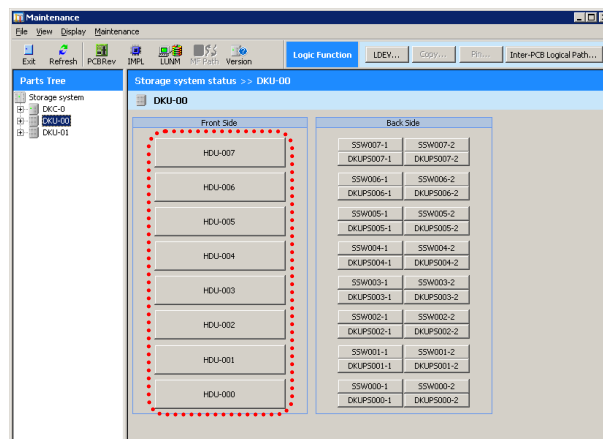
1-10. <Maintenance window>

Select (CL) the DKU information [DKU-nn] of the DKU which installs the HDD to be replaced in the 'Maintenance' window.



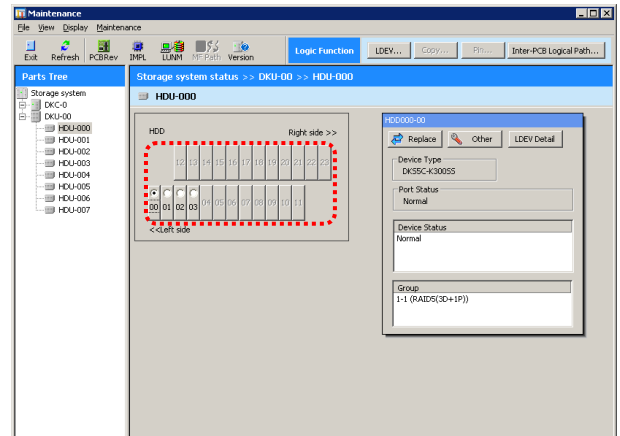
1-11. <Select HDU>

Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.



1-12. <Select HDD>

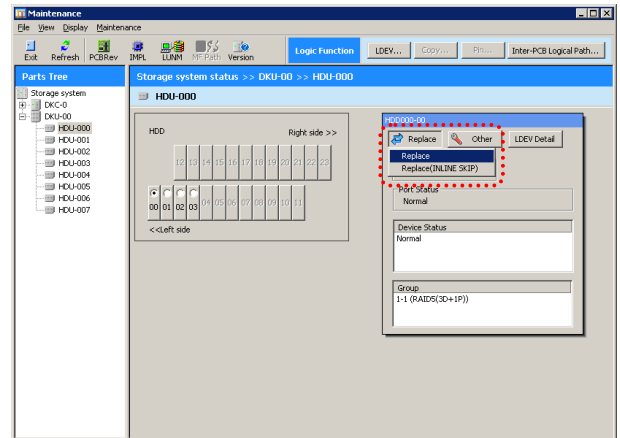
Check and select (CL) [nn] to be replaced.



1-13. <Specify replacement of HDD>

Make sure that the “Device Status” is [Failed] or [Warning] or [Reserved].

Select (CL) [Replace]-[Replace].



1-14. <Checking the P-DEV status>

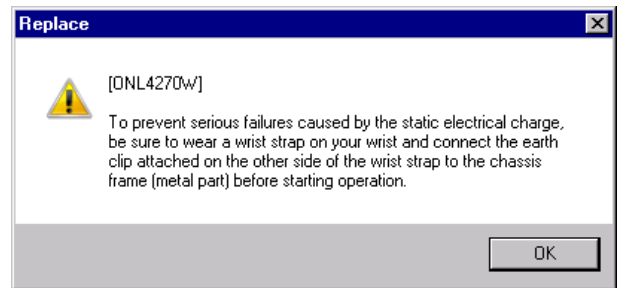
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

“Checking...” is displayed.

1-15. <Wear a wrist strap>

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



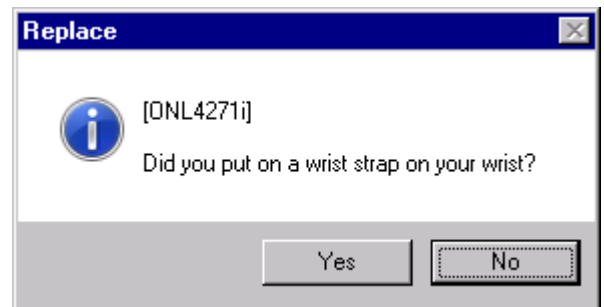
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

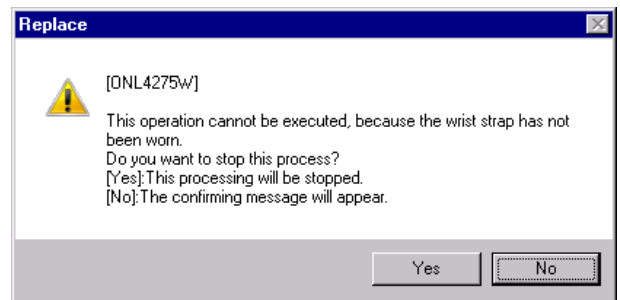


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

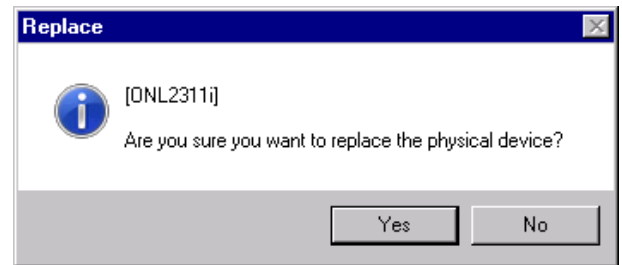


When [Yes] is selected (CL), returned to Step 1-12.

When [No] is selected (CL), returned to Step 1-15.

1-16. <P-DEV blocking>

Select (CL) [Yes] in response to “Are you sure you want to replace the physical device?”.

**1-17. <Blocking the Physical device>**

“Blocking...” is displayed.

1-18. <Spin down the Physical device>

“Spinning down...” is displayed.

1-19. <Check shut down LED>

CAUTION

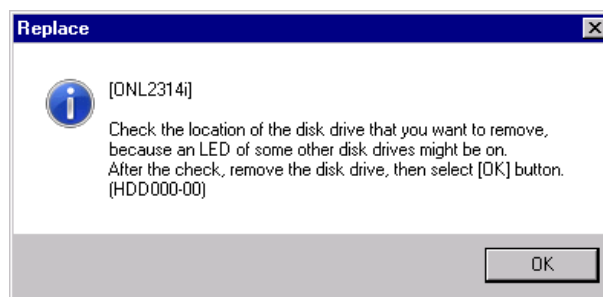
If a wrong HDD is removed, a data loss or a system down may occur.

Check the shut down LED on the HDD to be replaced.

If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

1-20. <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



1-21. <Replace HDD>

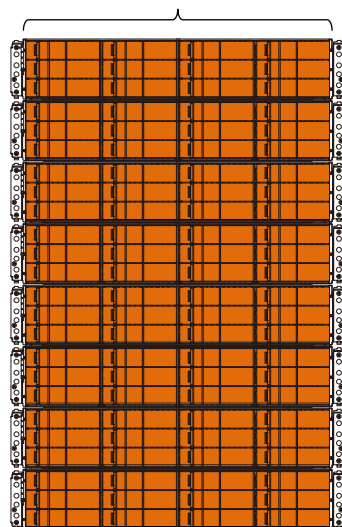
Replace HDD.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

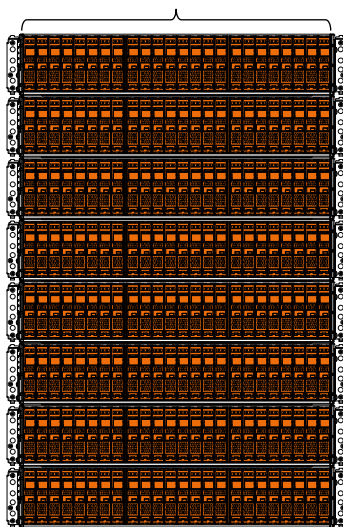
2. HARDWARE REPLACEMENT PROCESSING

Location		Function Name of Component	Part Name	HDA Label
Front View of UBX	1	Disk Drive (HDD)	HDU800-600J5MSS	R5D-J600SS
			HDU800-3R0H3MSS	S2E-H3R0SS
			HDU800-4R0H3MSS	R2E-H4R0SS
	2	Flash Drive (SSD)	HDU800-400M5MSS	S2E-H4R0SS
Front View of SBX	3	Disk Drive (HDD)	HDU800-300KCMSS	B5A-M400SS
			HDU800-600JCMSS	S5C-K300SS
				R5D-J600SS
				S5E-J600SS
			HDU800-900JCMSS	R5D-J900SS
				S5E-J900SS
	4	Flash Drive (SSD)	HDU800-1R2JCMSS	R5E-J1R2SS
				S5F-J1R2SS
Front View of FBX	5	Flash Module Drive (FMD)	HDU800-400MCMSS	B5A-M400SS
				R5C-M400SS
			HDU800-800MCMSS	B5A-M800SS
				R5C-M800SS
			HDU800-1R6FMSS	HAA-P1R6SS
			HDU800-3R2FMSS	HAB-P3R2SS

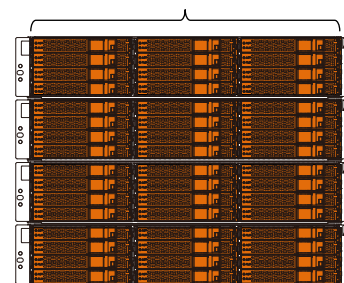
Drive (HDD/SSD)

Front View of
UBX

Drive (HDD/SSD)

Front View of
SBX

Drive (FMD)



Front View of FBX

- NOTICE:**
- Replace the drive in the storage system in power on status only. Do not replace the drive in power off status.
 - Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
 - HDD is a precise component. Be careful in handling HDD to avoid vibration and impact.

2-1 Drive (HDD/SSD/FMD) Replacement Procedure

2-1-1. Check the Shut Down LED.

- Check that the Shut Down LED on drive is turned on. Refer to Fig. 3.2.2-1, Fig. 3.2.2-2 or Fig. 3.2.2-3.

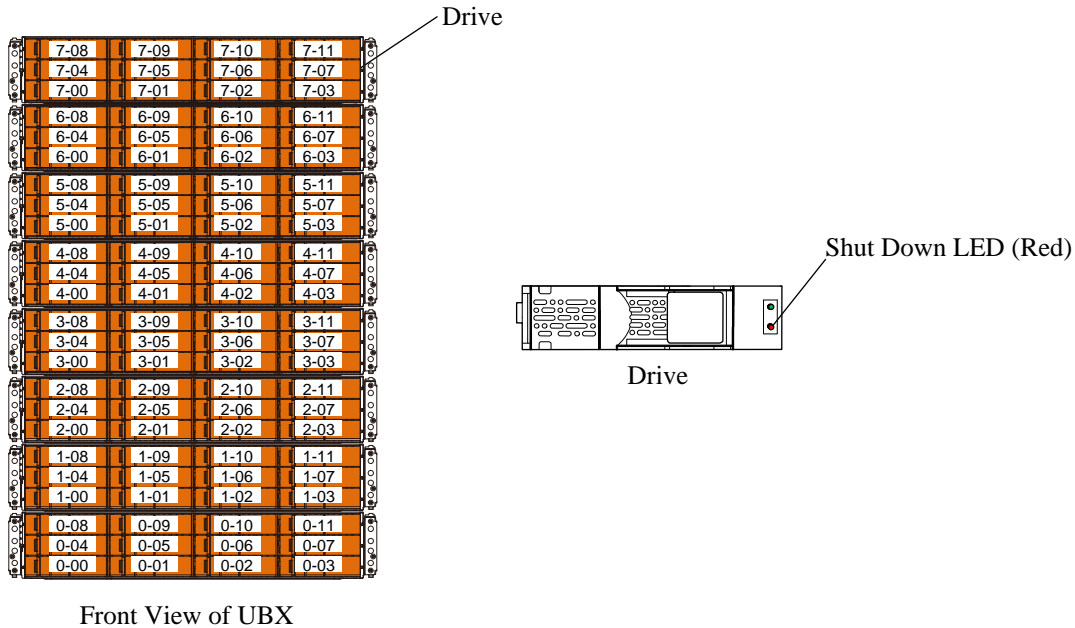


Fig. 3.2.2-1 Checking of Shut Down LED (In case of UBX)

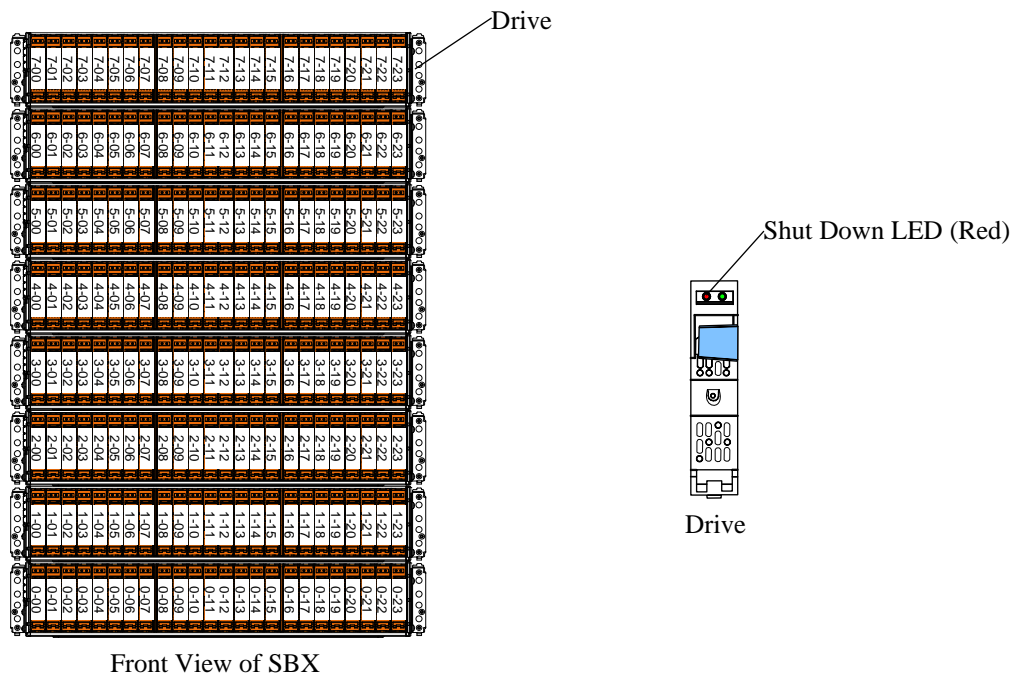
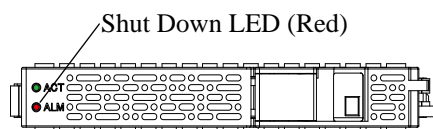


Fig. 3.2.2-2 Checking of Shut Down LED (In case of SBX)



Front View of FBX



Front View of Drive (FMD)

Fig. 3.2.2-3 Checking of Shut Down LED (In case of FBX)

2-1-2. Remove the drive.

2-1-2.1. In case of Drive for UBX

- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

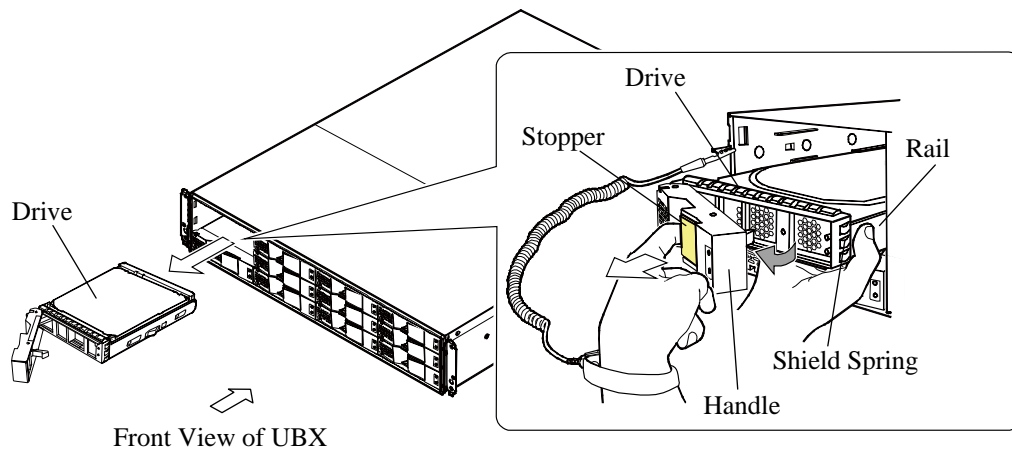


Fig. 3.2.2-4 Removal of Drive (for UBX)

2-1-2.2. In case of Drive for SBX

- Pull up the stopper of the drive handle toward you to release the lock.
- Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.

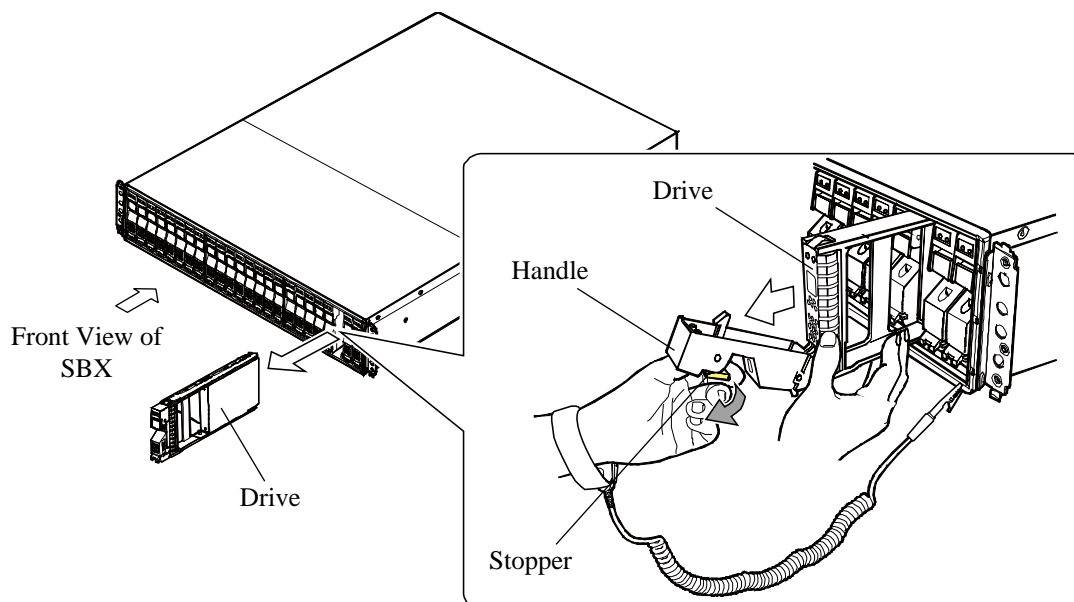
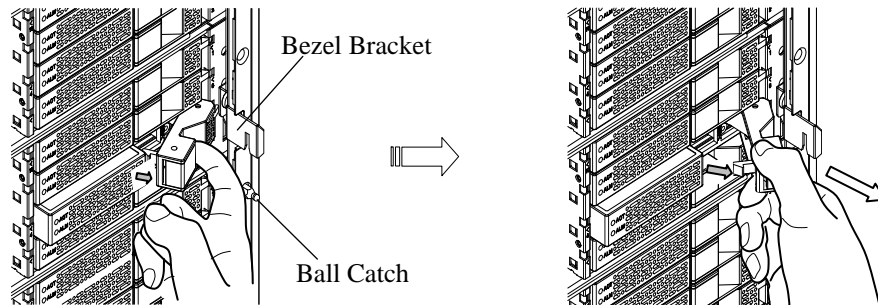


Fig. 3.2.2-5 Removal of Drive (for SBX)

2-1-2.3. In case of FBX

NOTICE: When the FMD is removed in replacing procedure, the fans of the DKUPS equipped in the rear of the FBX rotate at the highest speed. When the spare FMD is installed, the fans of the DKUPS rotate at the speed suitable for environmental temperature.

NOTICE: When extracting drives (FMD) centered on the right side of the FBX, be careful not to get your finger caught in the Bezel Bracket and/or the Ball Catch. Slightly pull the Stopper with your fingertip and then extract a drive with holding upper and bottom sides of the Handle as shown in the figure below.



- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

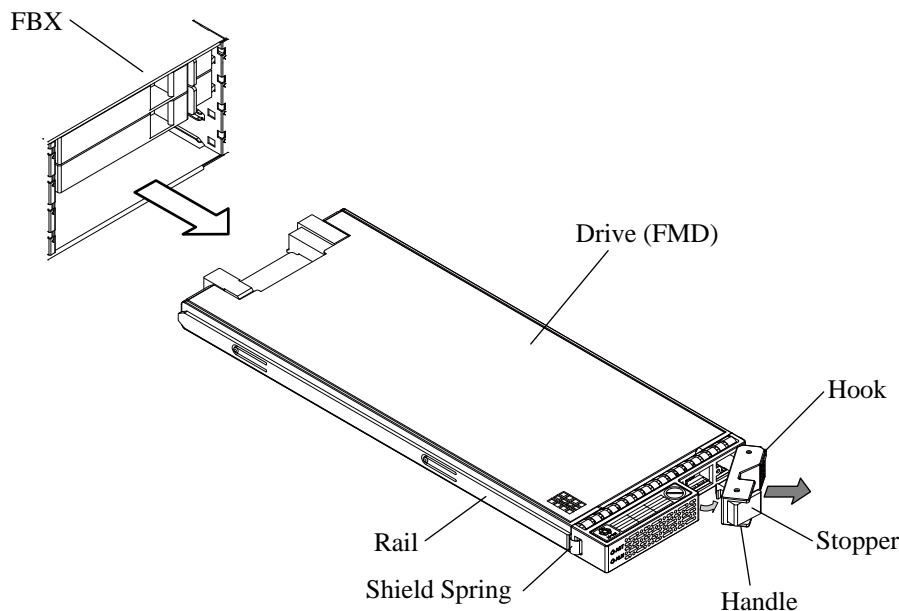
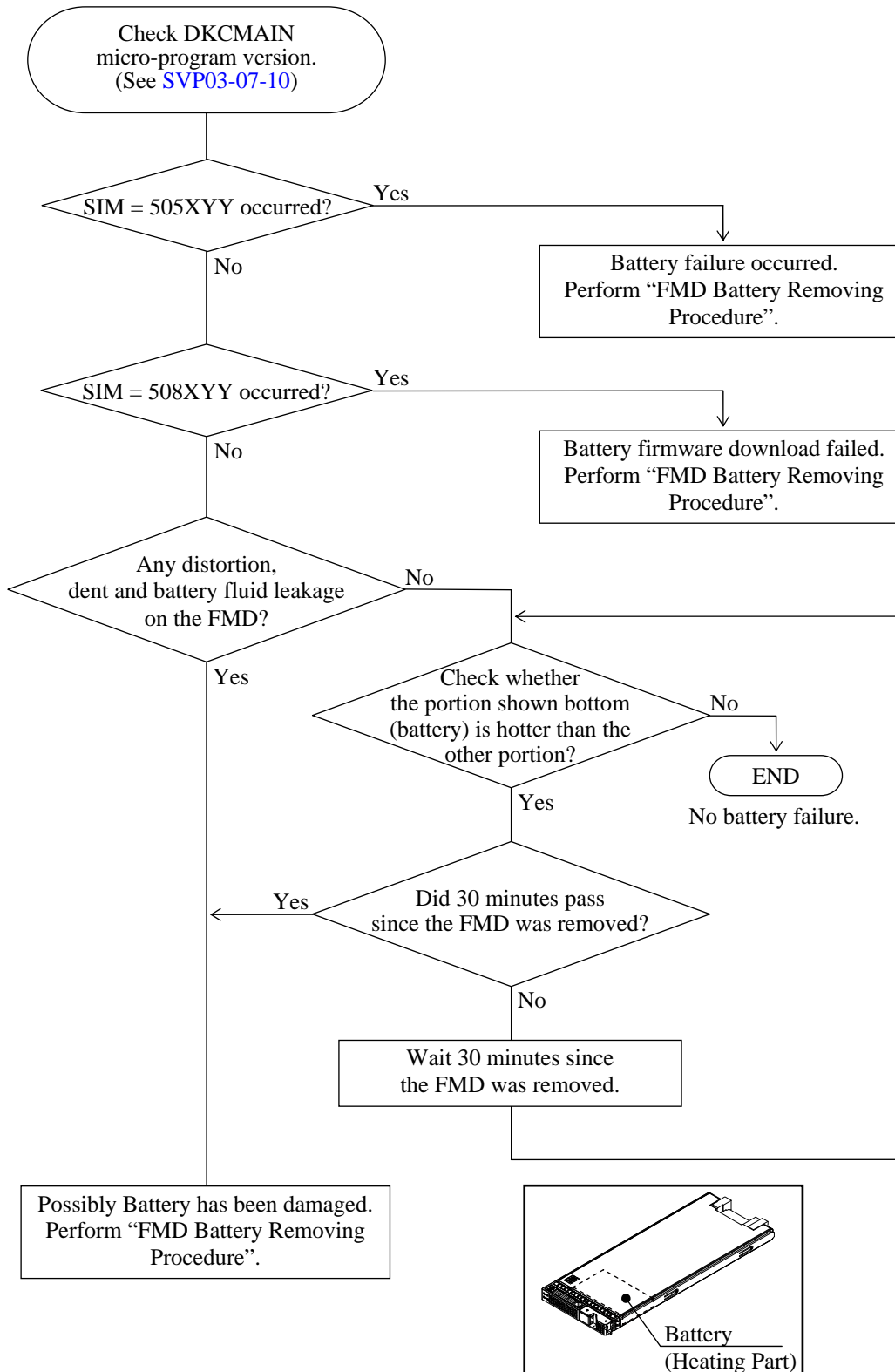


Fig. 3.2.2-6 Removal of Drive (In case of FBX)

- c. Check whether a failure of the battery built in the FMD has occurred by using the flowchart below. If a battery failure has occurred, remove the battery from the FMD. If no battery failure has occurred, go to Procedure 2-1-3.



d. FMD Battery Removing Procedure

(d)-1 Remove 4 Screws (SB310N) on the bottom side of FMD by using cross-head screw driver.

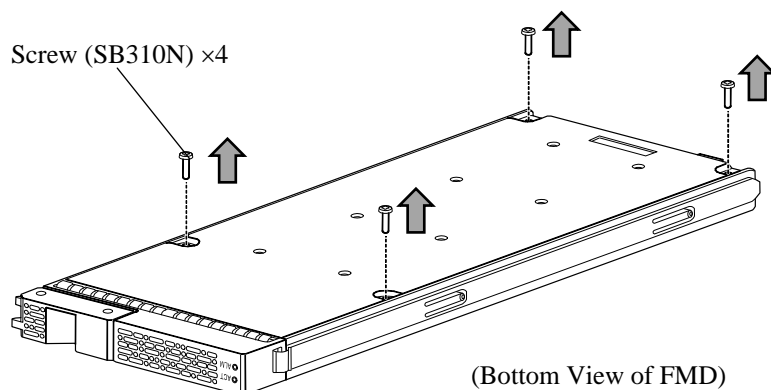


Fig. 3.2.2-7 Removing Screws

(d)-2 Remove Top Cover and Bottom Cover.

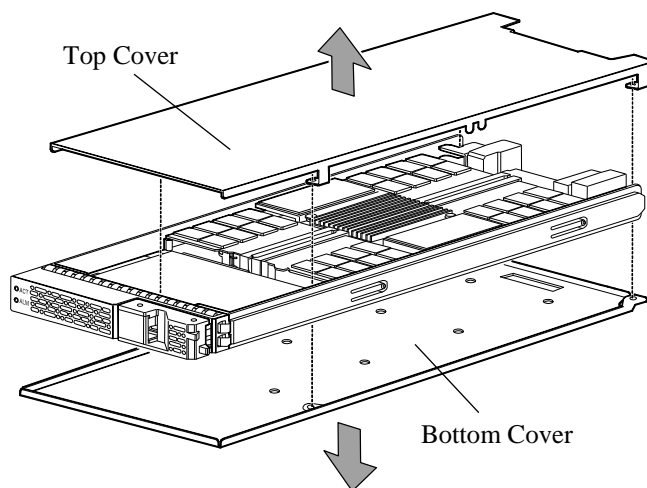


Fig. 3.2.2-8 Removing Covers

(d)-3 Remove 2 sets of Tapping-screw and Washer by using cross-head screw driver.

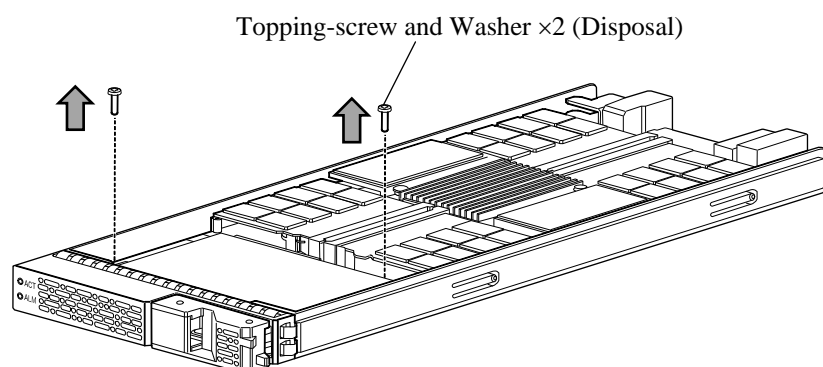


Fig. 3.2.2-9 Removing Tapping-screws and Washers

(d)-4 Move the Battery to the bezel side and disconnect the Battery from the circuit board.

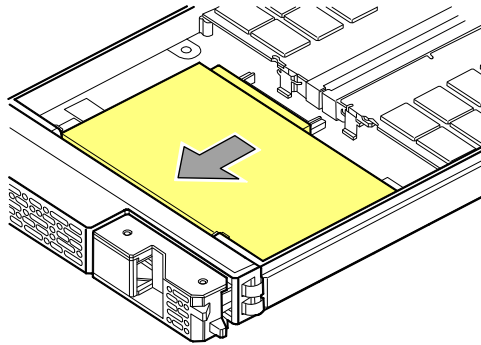


Fig. 3.2.2-10 Disconnecting from Connector

(d)-5 Remove the Battery to the bottom side of FMD. (After the connector comes off, battery is lowered below.)

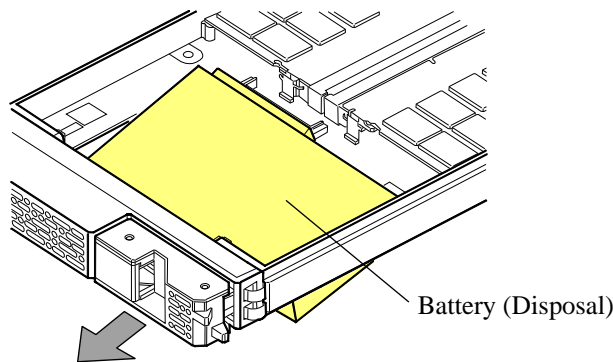


Fig. 3.2.2-11 Removing Battery

(d)-6 Attach Top Cover and Bottom Cover.

(d)-7 Attach 4 Screws (SB310N) on the bottom side of FMD.

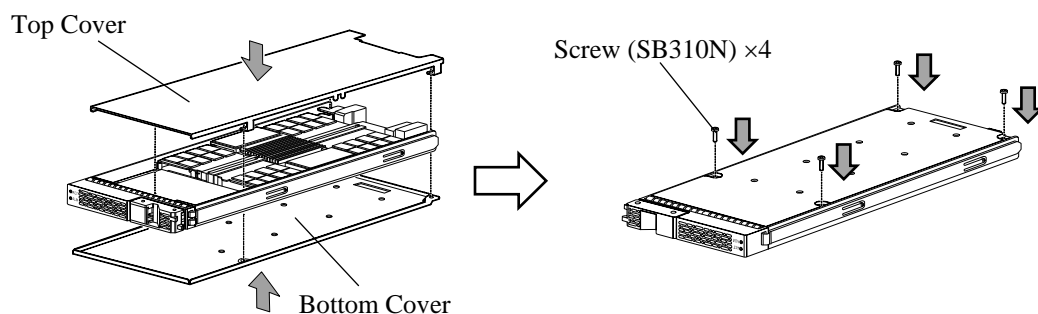


Fig. 3.2.2-12 Reassembling FMD

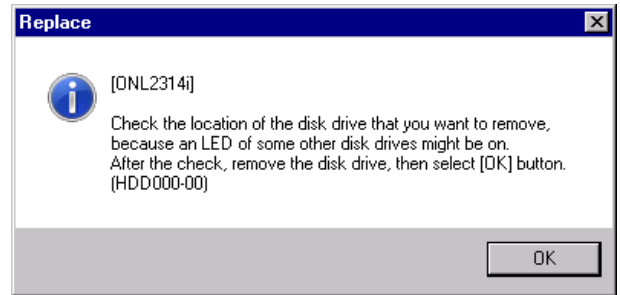
(d)-8 Dispose of the Tapping-screws, Washers and Battery removed in procedures (d)-3 and (d)-5.

When dispose of the Battery, follow the directions given by the local law where the product is used.

2-1-3. Check and handling of the drive.

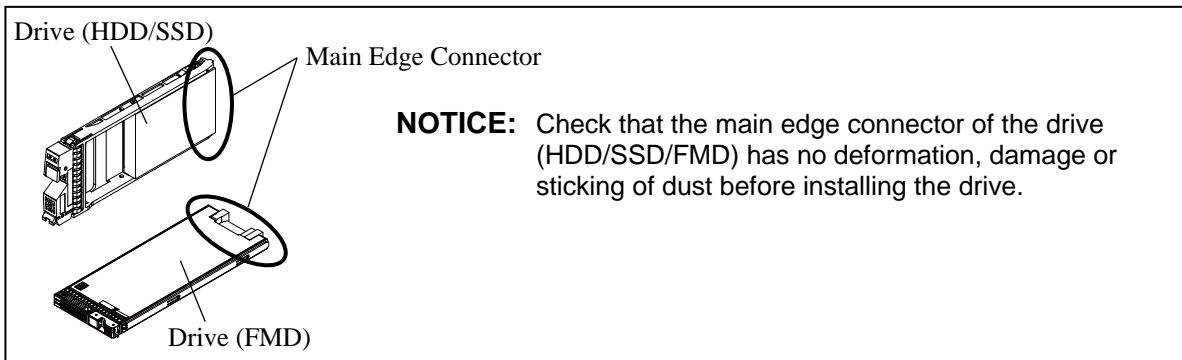
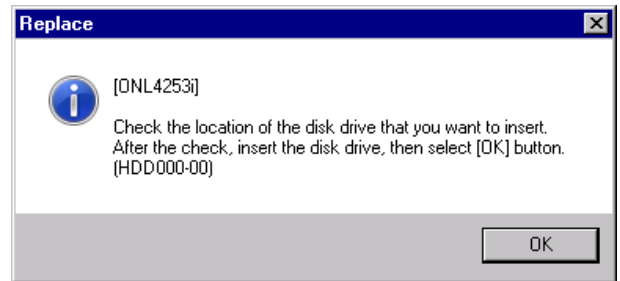
(1) <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



(2) <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



2-1-4. Install the drive.

NOTICE: Back Board, or drive connector or drive handle may be damaged when the drive is forcibly inserted.
If the drive cannot be easily inserted until the claws on the handle reach the DKU, or if the handle binds or stops before it can be locked, then remove the drive and perform inspection:

- a) Check the drive slot in DKU to be free and clear of obstructions.
- b) Check connector on back board for visible defects.
- c) Inspect connector on drive for visible defects.
- d) During installation make sure the drive is inserted in alignment with slot guides.

Reinsert drive after inspections have passed.

2-1-4.1. In case of UBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the UBX.

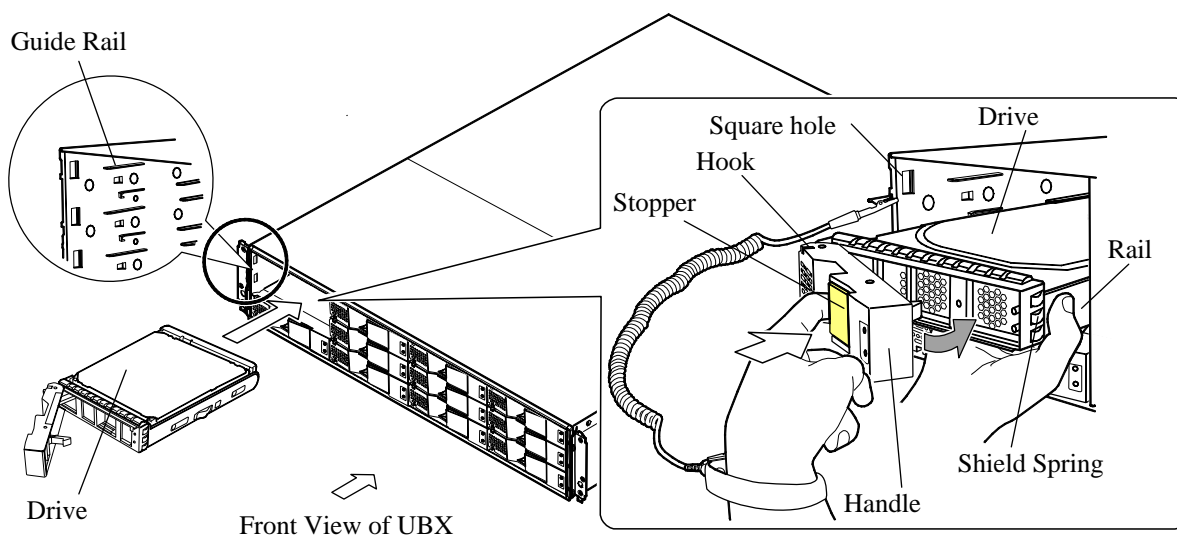


Fig. 3.2.2-13 Installation of Drive (In case of UBX)

2-1-4.2. In case of SBX

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

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

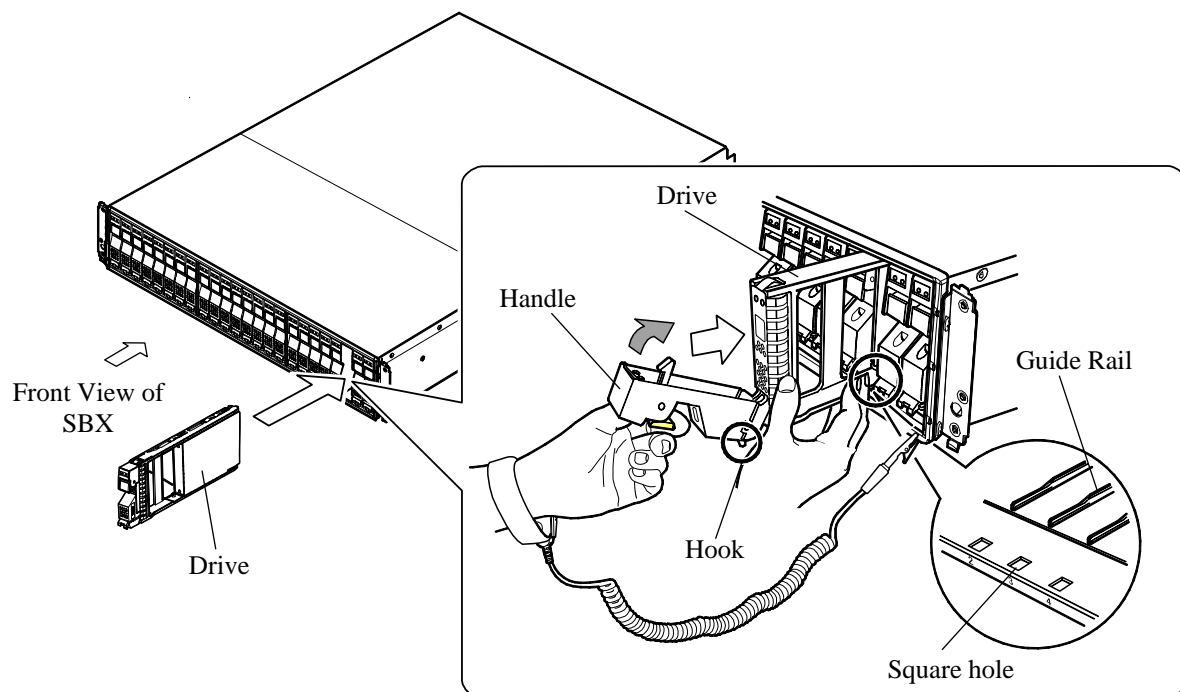


Fig. 3.2.2-14 Installation of Drive (In case of SBX)

2-1-4.3. In case of FBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the FBX.

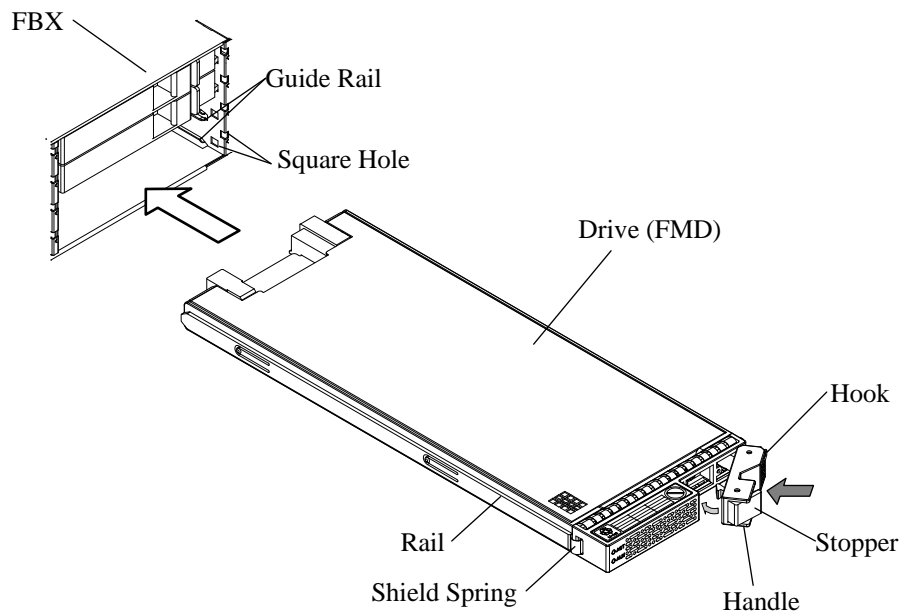


Fig. 3.2.2-15 Installation of Drive (In case of FBX)

2-1-5. Go to “3. POST-PROCESSING of SVP”.

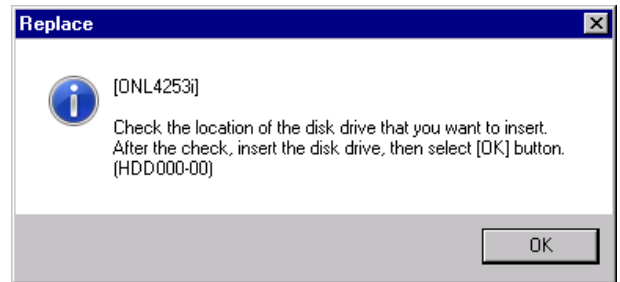
NOTICE: Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES of SVP, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.

A dump removable media is attached with a Spare HDD.

3. POST-PROCESSING of SVP

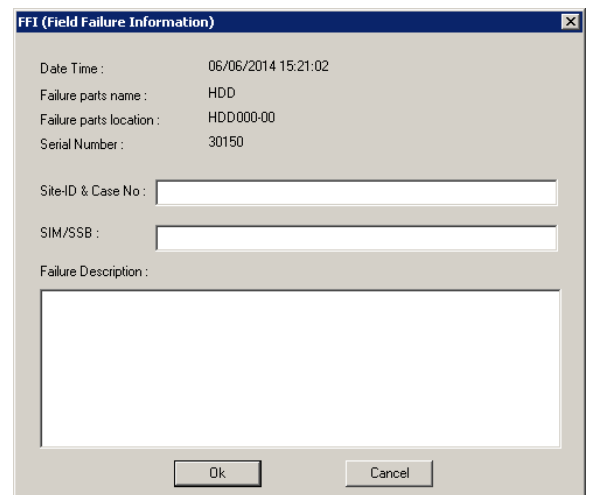
3-1. <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



3-2. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK].

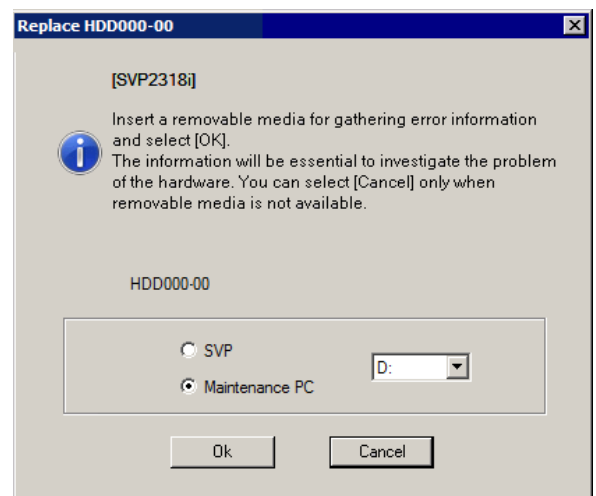
The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Select a Maintenance PC arbitrary drive, and select (CL) [Ok].

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu.

The drive letter becomes the drive letter of Maintenance PC connected with SVP.

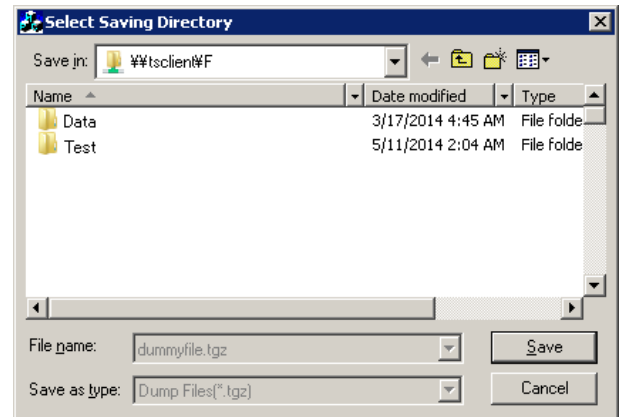


When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

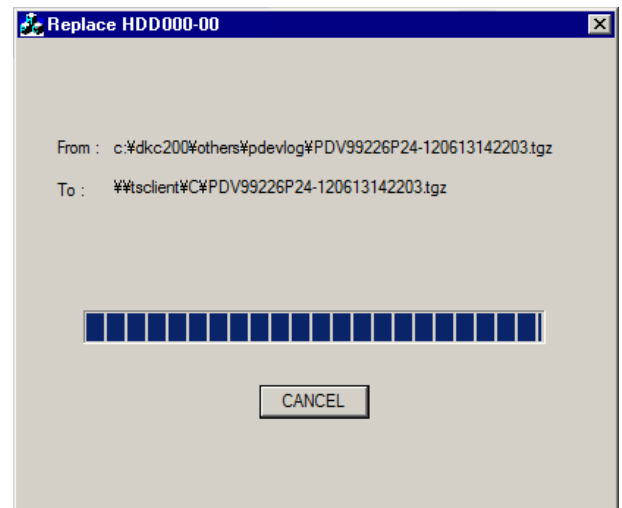
Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

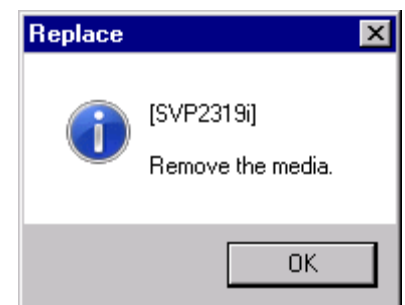


3-3. <Copy of the error information>

The error information is copied onto media.



“Remove the media.” is displayed. Select (CL) [OK].



3-4. <Spin up the Physical Drive>

“Spinning up...” is displayed.

3-5. <DKU INLINE>

“DKU INLINE is now running...” is displayed.

3-6. <Replacement of the DKU micro-program>

When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.

The message “Exchanging DKU micro-program...” appears.

3-7. <Restore Physical Drive>

“Restoring...” is displayed.

3-8. <Check the Physical Drive>

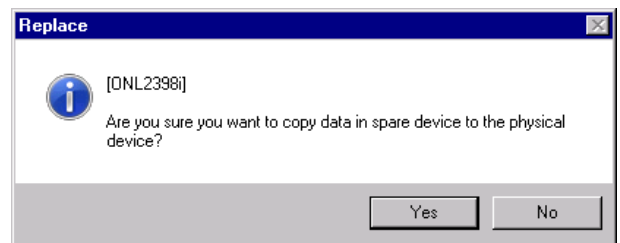
“Checking...” is displayed.

3-9. <Check the beginning of copy-back>

A message, which asks for confirmation of whether or not to start a copy-back or to make the automatic copy-back, is displayed.

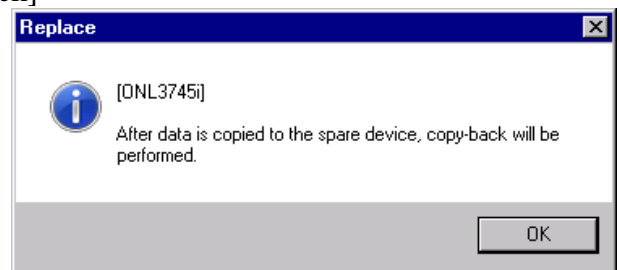
[Confirmation of starting a copy-back]

Select (CL) [Yes] in response to “Are you sure you want to copy data in spare device to the physical device?”.
Go to Step 3-10.



[Confirmation of making an automatic copy-back]

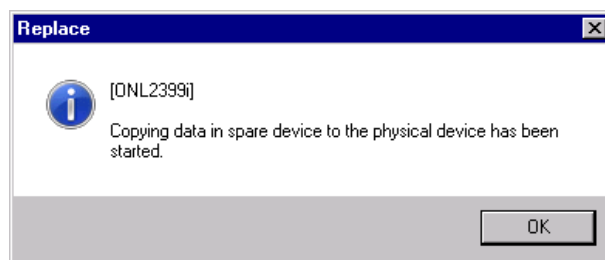
Select (CL) [OK] in response to a message, “After data is copied to the spare device, copy-back will be performed.”.



3-10. <Check starting of copyback>

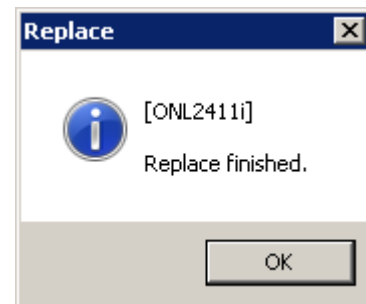
“Copying...” is displayed.

Select (CL) [OK] in response to “Copying data in spare device to the physical device has been started.”.



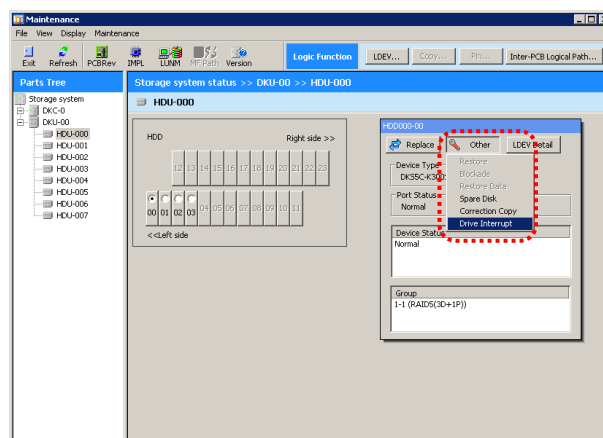
3-11. <Check the end of PDEV recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-12.

When interrupting a copy, select (CL) the [Other]-[Drive Interrupt] button.



3-13.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DRIVE REPLACEMENT PROCESSING - RDK3]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select P-DEV (status check)
 - ② Specify Replacement
 - ③ Place HDD into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on P-DEV
 - ② Specify recovery
 - ③ Correction copy

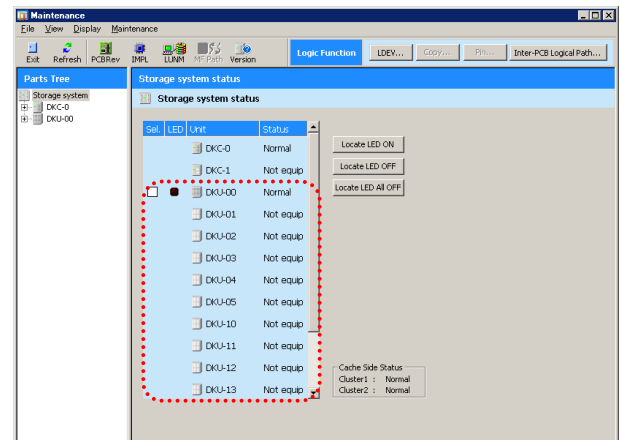
NOTICE: If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

1. PRE-PROCESSING of SVP

1-1. <Maintenance window>

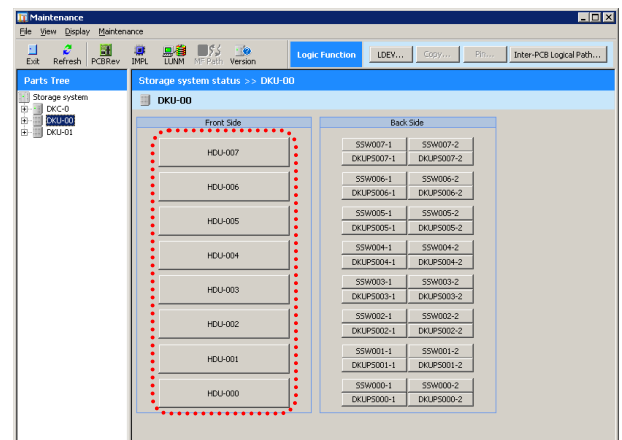
Open the 'Maintenance' window according to PRE PROCEDURE A ([REP02-01-10](#)).

Select (CL) the DKU information [DKU-nn] of the DKU which installs the HDD to be replaced in the 'Maintenance' window.



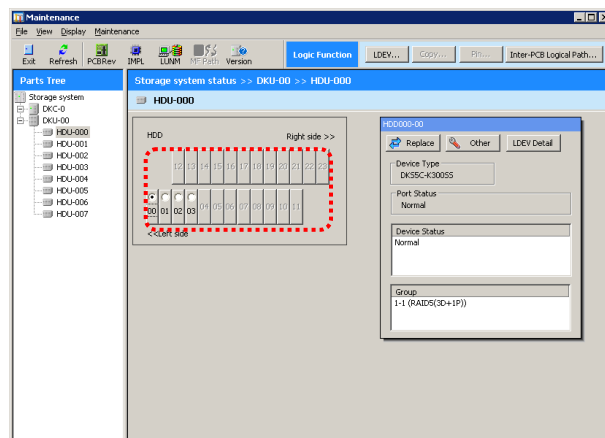
1-2. <Select HDU>

Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.



1-3. <Select HDD>

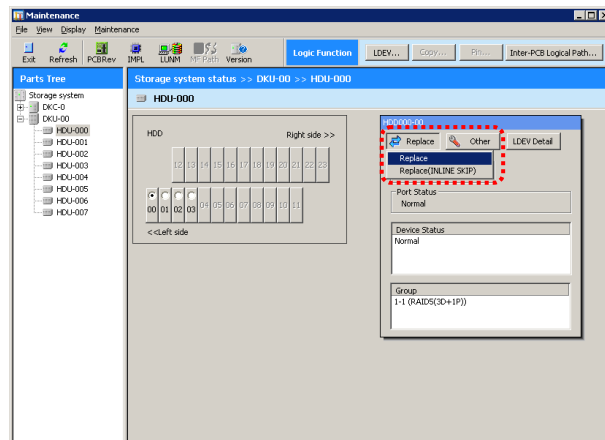
Check and select (CL) [nn] to be replaced.



1-4. <Specify replacement of HDD>

Make sure that the “Device Status” is [Failed] or [Warning].

Select (CL) [Replace]-[Replace].



1-5. <Checking the P-DEV status & saving the spare>

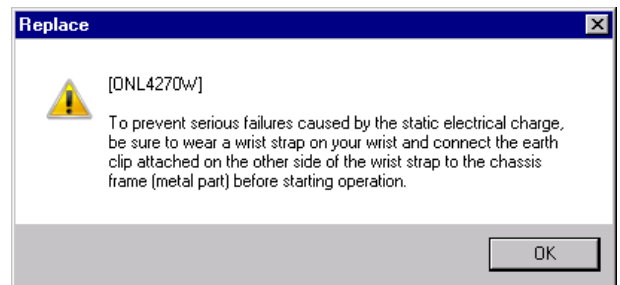
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

“Checking...” is displayed.

1-6. <Wear a wrist strap>

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



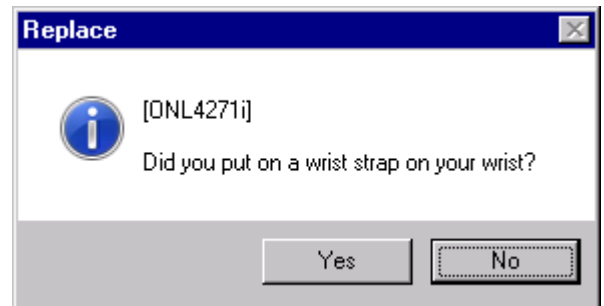
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

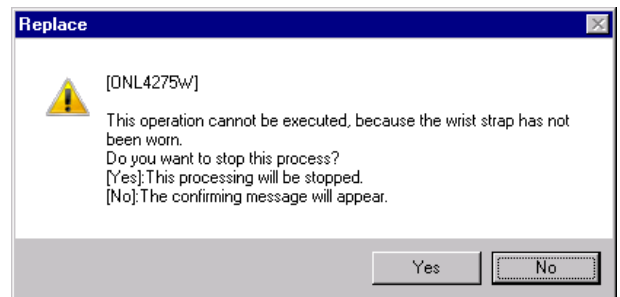


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

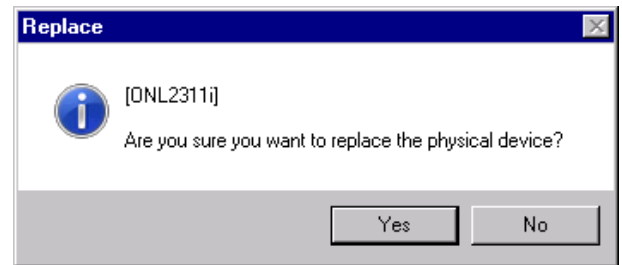


When [Yes] is selected (CL), returned to Step 1-3.

When [No] is selected (CL), returned to Step 1-6.

1-7. <P-DEV blocking>

Select (CL) [Yes] in response to “Are you sure you want to replace the physical device?”.

**1-8. <Blocking the Physical device>**

“Blocking...” is displayed.

1-9. <Spin down the Physical device>

“Spinning down...” is displayed.

1-10. <Check shut down LED>

CAUTION

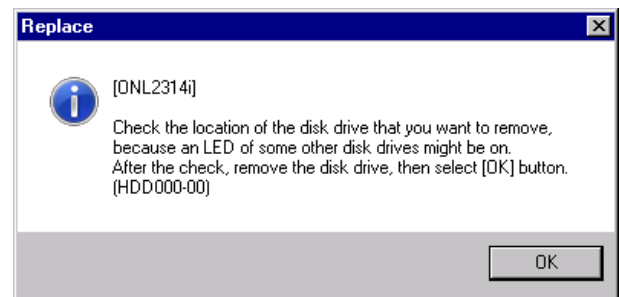
If a wrong HDD is removed, a data loss or a system down may occur.

Check the shut down LED on the HDD to be replaced.

If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

1-11. <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



1-12. <Replace HDD>

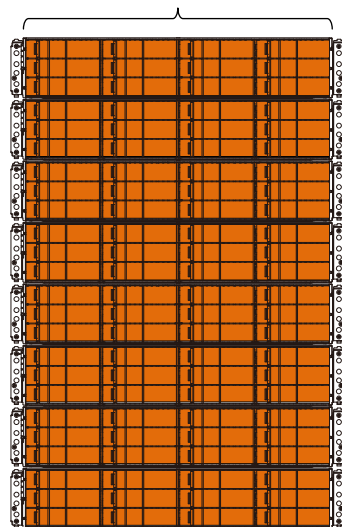
Replace HDD.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

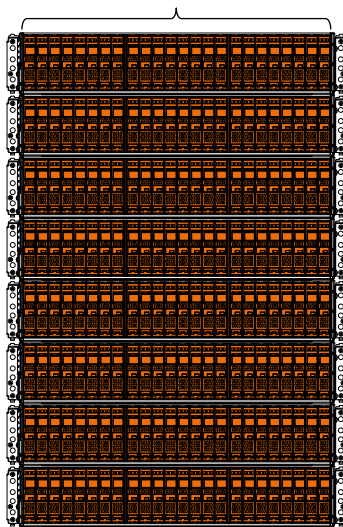
Location		Function Name of Component	Part Name	HDA Label
Front View of UBX	1	Disk Drive (HDD)	HDU800-600J5MSS	R5D-J600SS
			HDU800-3R0H3MSS	S2E-H3R0SS
			HDU800-4R0H3MSS	R2E-H4R0SS
	2	Flash Drive (SSD)	HDU800-400M5MSS	S2E-H4R0SS
Front View of SBX	3	Disk Drive (HDD)	HDU800-300KCMSS	B5A-M400SS
			HDU800-600JCMSS	R5D-J600SS
				S5E-J600SS
			HDU800-900JCMSS	R5D-J900SS
				S5E-J900SS
	4	Flash Drive (SSD)	HDU800-1R2JCMSS	R5E-J1R2SS
				S5F-J1R2SS
Front View of FBX	5	Flash Module Drive (FMD)	HDU800-400MCMSS	B5A-M400SS
				R5C-M400SS
			HDU800-800MCMSS	B5A-M800SS
				R5C-M800SS
			HDU800-1R6FMSS	HAA-P1R6SS
			HDU800-3R2FMSS	HAB-P3R2SS

Drive (HDD/SSD)



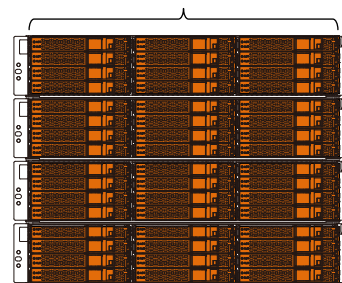
Front View of UBX

Drive (HDD/SSD)



Front View of SBX

Drive (FMD)



Front View of FBX

- NOTICE:**
- Replace the drive in the storage system in power on status only. Do not replace the drive in power off status.
 - Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
 - HDD is a precise component. Be careful in handling HDD to avoid vibration and impact.

2-1 Drive (HDD/SSD/FMD) Replacement Procedure

2-1-1. Check the Shut Down LED.

- Check that the Shut Down LED on drive is turned on. Refer to Fig. 3.3.2-1, Fig. 3.3.2-2 or Fig. 3.3.2-3.

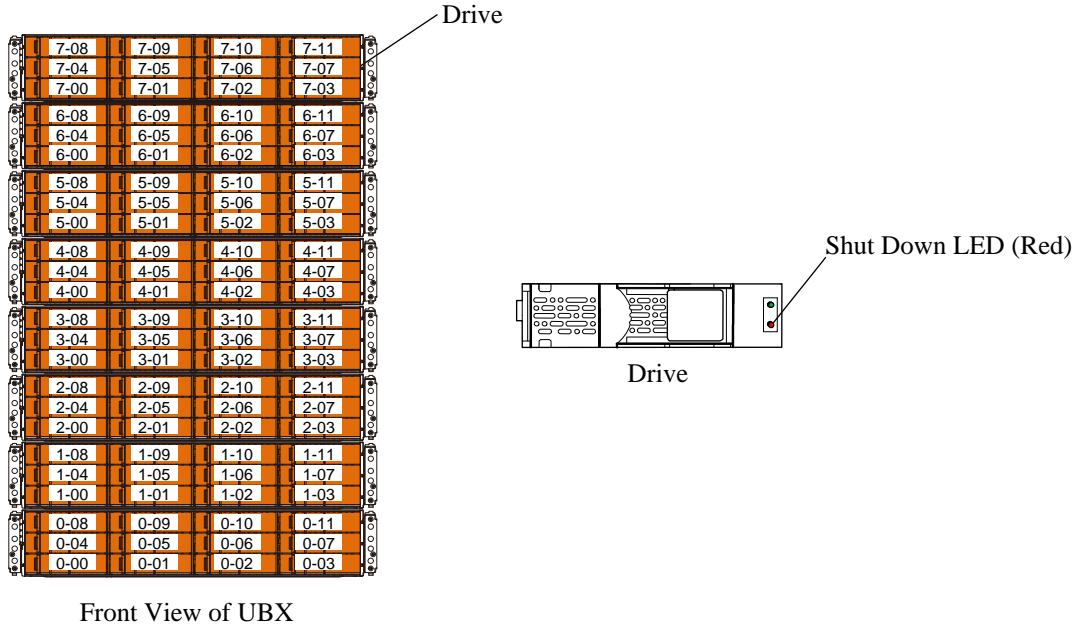


Fig. 3.3.2-1 Checking of Shut Down LED (In case of UBX)

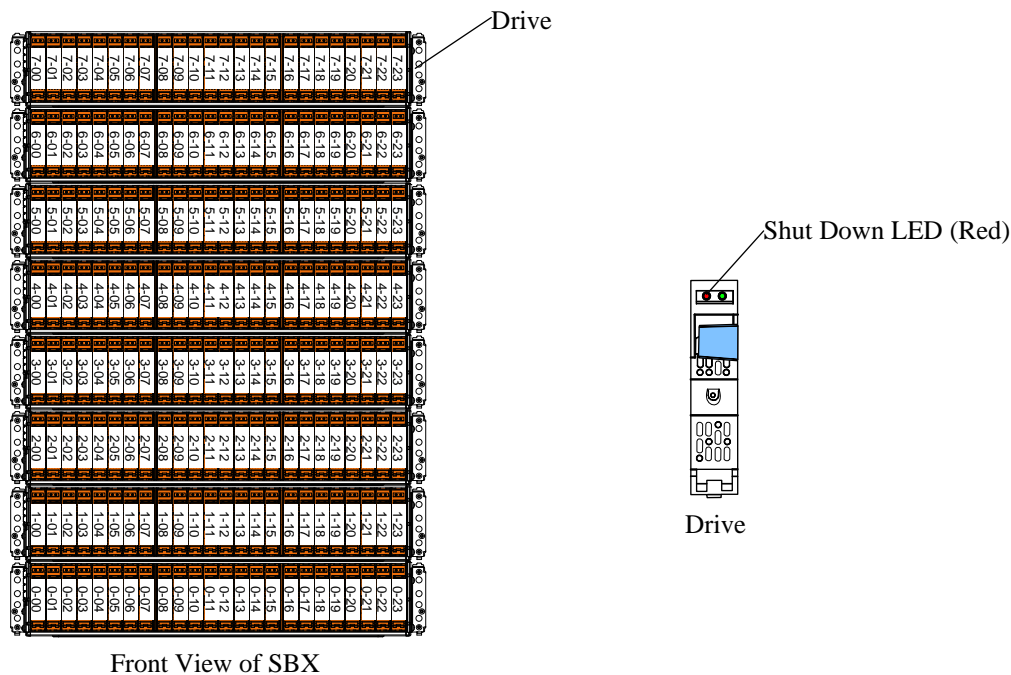
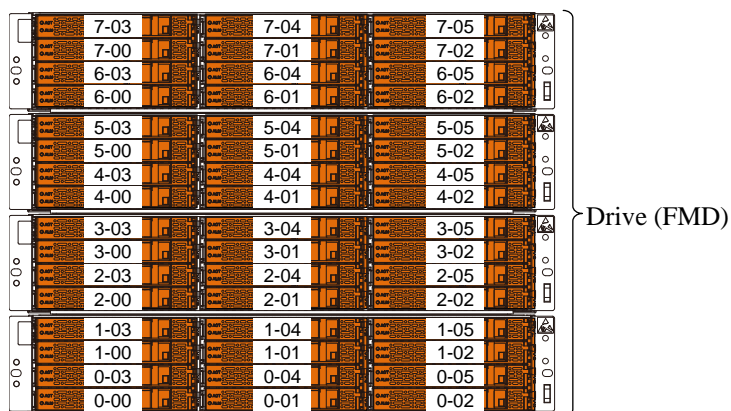
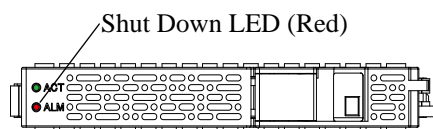


Fig. 3.3.2-2 Checking of Shut Down LED (In case of SBX)



Front View of FBX



Front View of Drive (FMD)

Fig. 3.3.2-3 Checking of Shut Down LED (In case of FBX)

2-1-2. Remove the drive.

2-1-2.1. In case of Drive for UBX

- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

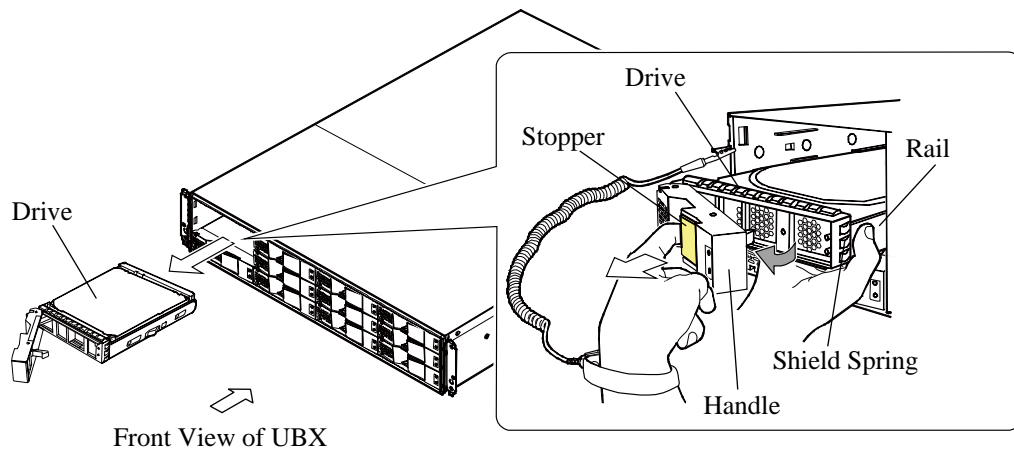


Fig. 3.3.2-4 Removal of Drive (for UBX)

2-1-2.2. In case of Drive for SBX

- Pull up the stopper of the drive handle toward you to release the lock.
- Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.

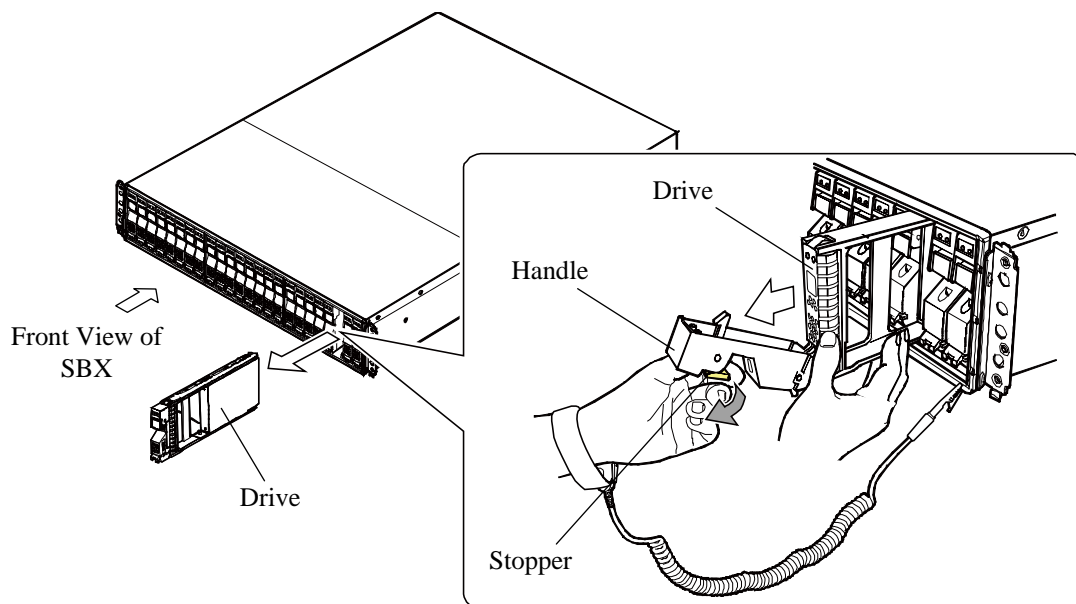
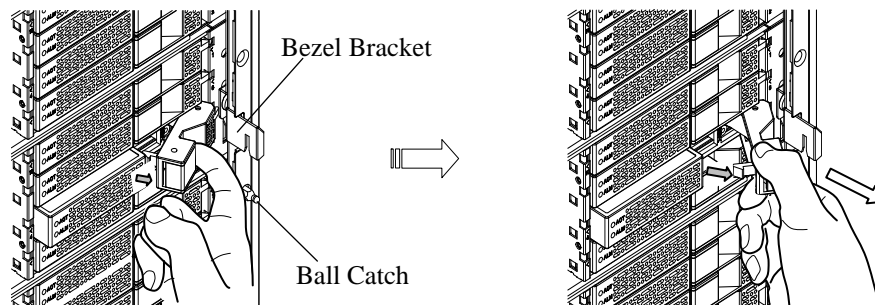


Fig. 3.3.2-5 Removal of Drive (for SBX)

2-1-2.3. In case of FBX

NOTICE: When the FMD is removed in replacing procedure, the fans of the DKUPS equipped in the rear of the FBX rotate at the highest speed. When the spare FMD is installed, the fans of the DKUPS rotate at the speed suitable for environmental temperature.

NOTICE: When extracting drives (FMD) centered on the right side of the FBX, be careful not to get your finger caught in the Bezel Bracket and/or the Ball Catch. Slightly pull the Stopper with your fingertip and then extract a drive with holding upper and bottom sides of the Handle as shown in the figure below.



- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

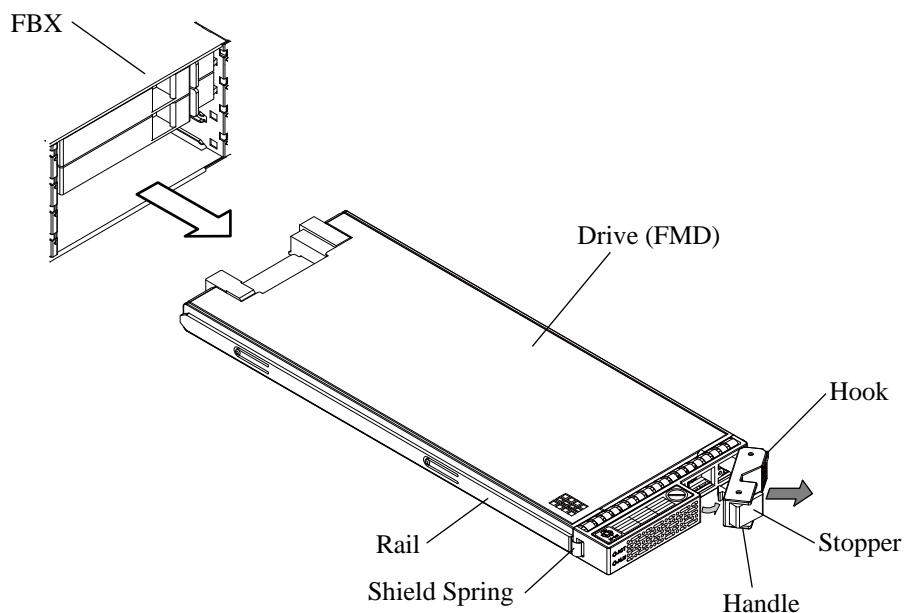
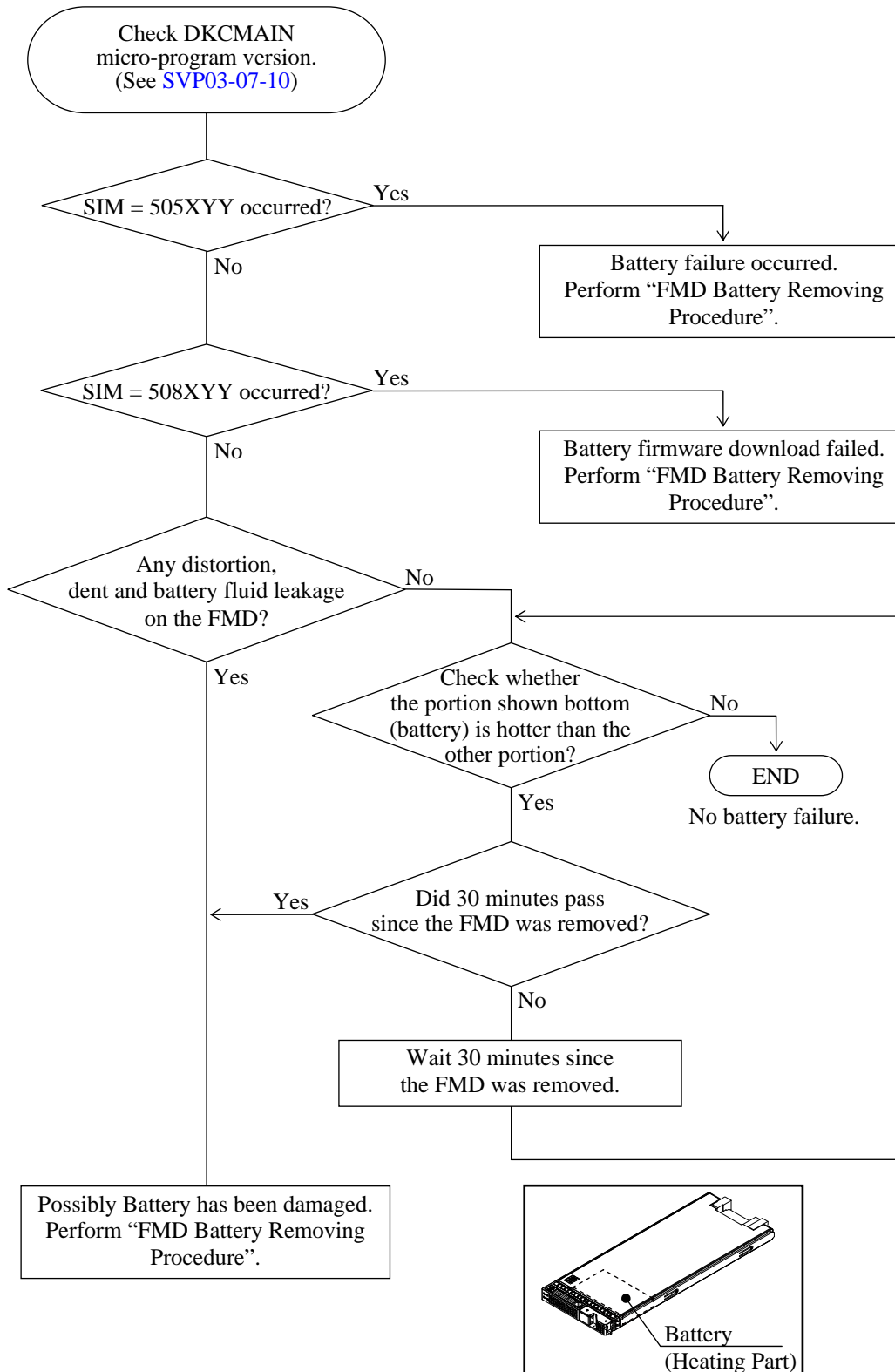


Fig. 3.3.2-6 Removal of Drive (In case of FBX)

- c. Check whether a failure of the battery built in the FMD has occurred by using the flowchart below. If a battery failure has occurred, remove the battery from the FMD. If no battery failure has occurred, go to Procedure 2-1-3.



d. FMD Battery Removing Procedure

(d)-1 Remove 4 Screws (SB310N) on the bottom side of FMD by using cross-head screw driver.

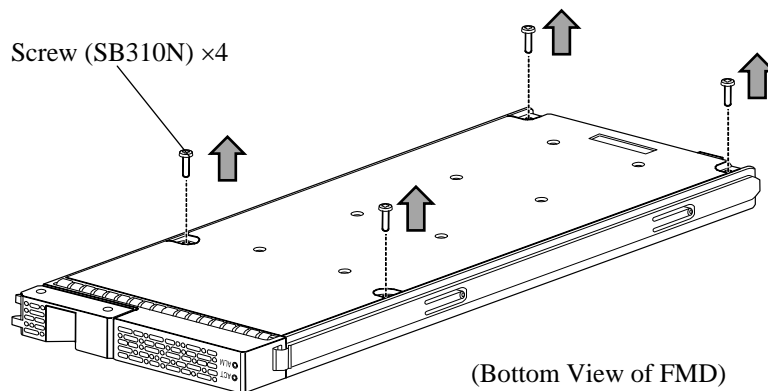


Fig. 3.3.2-7 Removing Screws

(d)-2 Remove Top Cover and Bottom Cover.

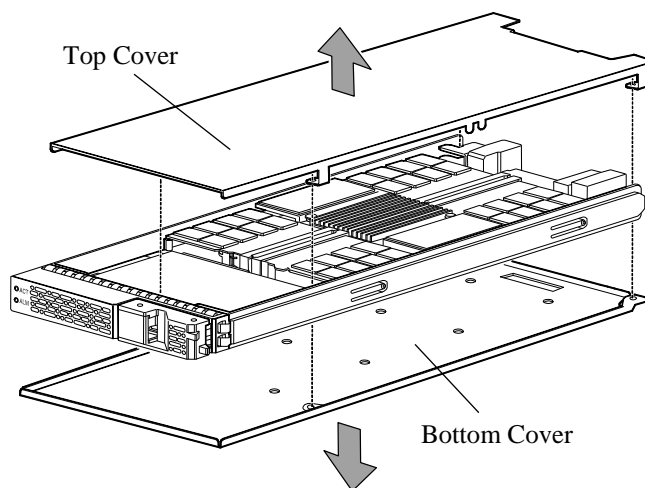


Fig. 3.3.2-8 Removing Covers

(d)-3 Remove 2 sets of Tapping-screw and Washer by using cross-head screw driver.

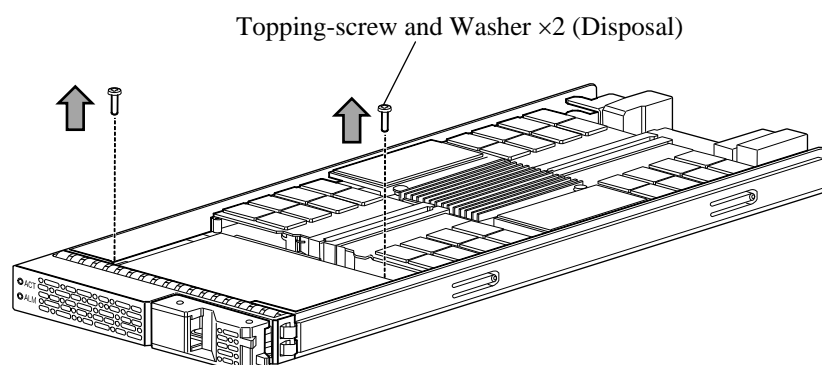


Fig. 3.3.2-9 Removing Tapping-screws and Washers

(d)-4 Move the Battery to the bezel side and disconnect the Battery from the circuit board.

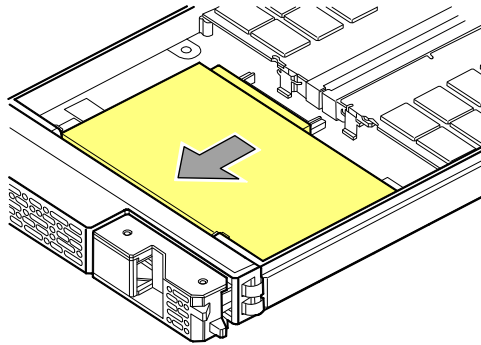


Fig. 3.3.2-10 Disconnecting from Connector

(d)-5 Remove the Battery to the bottom side of FMD. (After the connector comes off, battery is lowered below.)

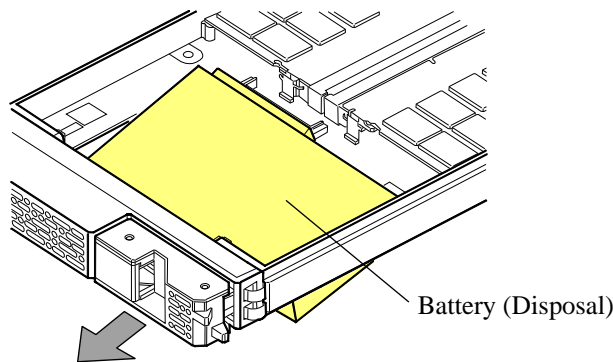


Fig. 3.3.2-11 Removing Battery

(d)-6 Attach Top Cover and Bottom Cover.

(d)-7 Attach 4 Screws (SB310N) on the bottom side of FMD.

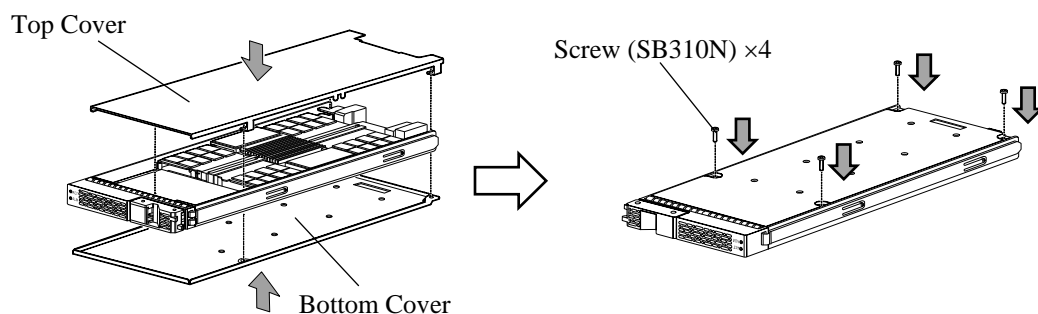


Fig. 3.3.2-12 Reassembling FMD

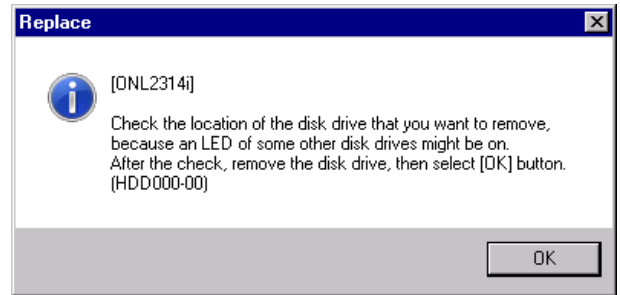
(d)-8 Dispose of the Tapping-screws, Washers and Battery removed in procedures (d)-3 and (d)-5.

When dispose of the Battery, follow the directions given by the local law where the product is used.

2-1-3. Check and handling of the drive.

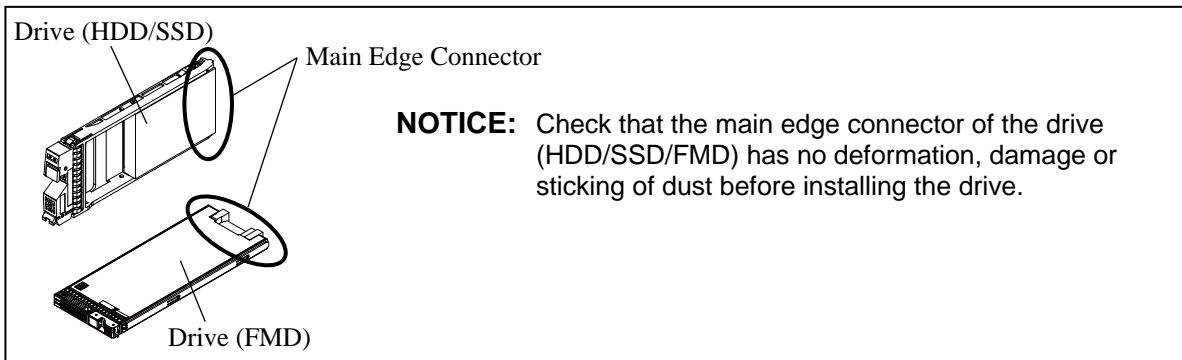
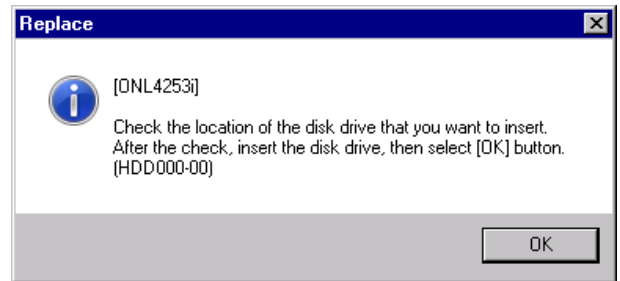
(1) <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



(2) <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



2-1-4. Install the drive.

NOTICE: Back Board, or drive connector or drive handle may be damaged when the drive is forcibly inserted.
If the drive cannot be easily inserted until the claws on the handle reach the DKU, or if the handle binds or stops before it can be locked, then remove the drive and perform inspection:

- a) Check the drive slot in DKU to be free and clear of obstructions.
- b) Check connector on back board for visible defects.
- c) Inspect connector on drive for visible defects.
- d) During installation make sure the drive is inserted in alignment with slot guides.

Reinsert drive after inspections have passed.

2-1-4.1. In case of UBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the UBX.

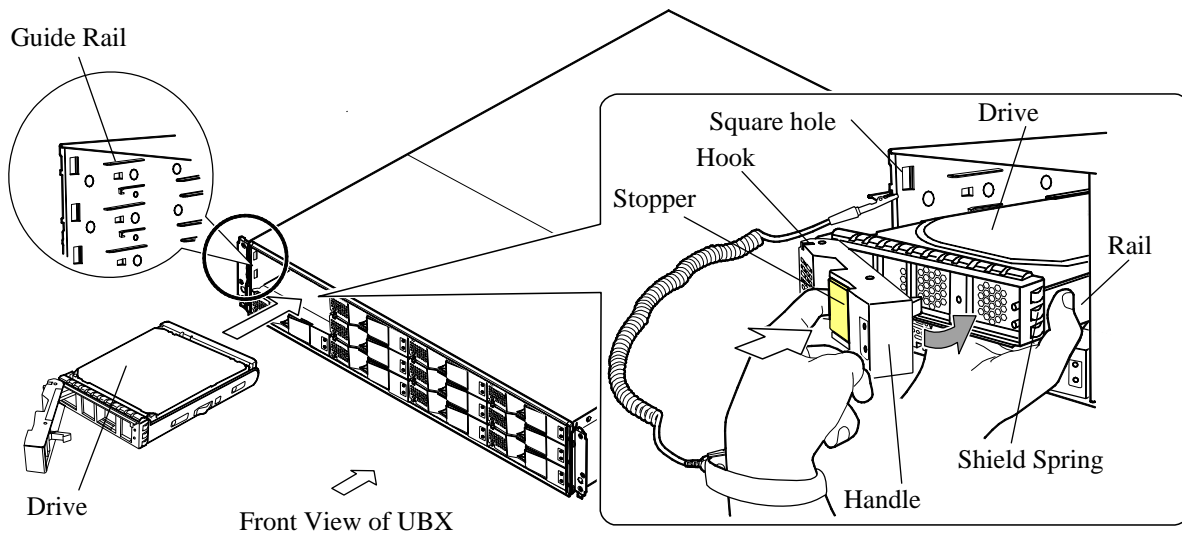


Fig. 3.3.2-13 Installation of Drive (In case of UBX)

2-1-4.2. In case of SBX

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

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

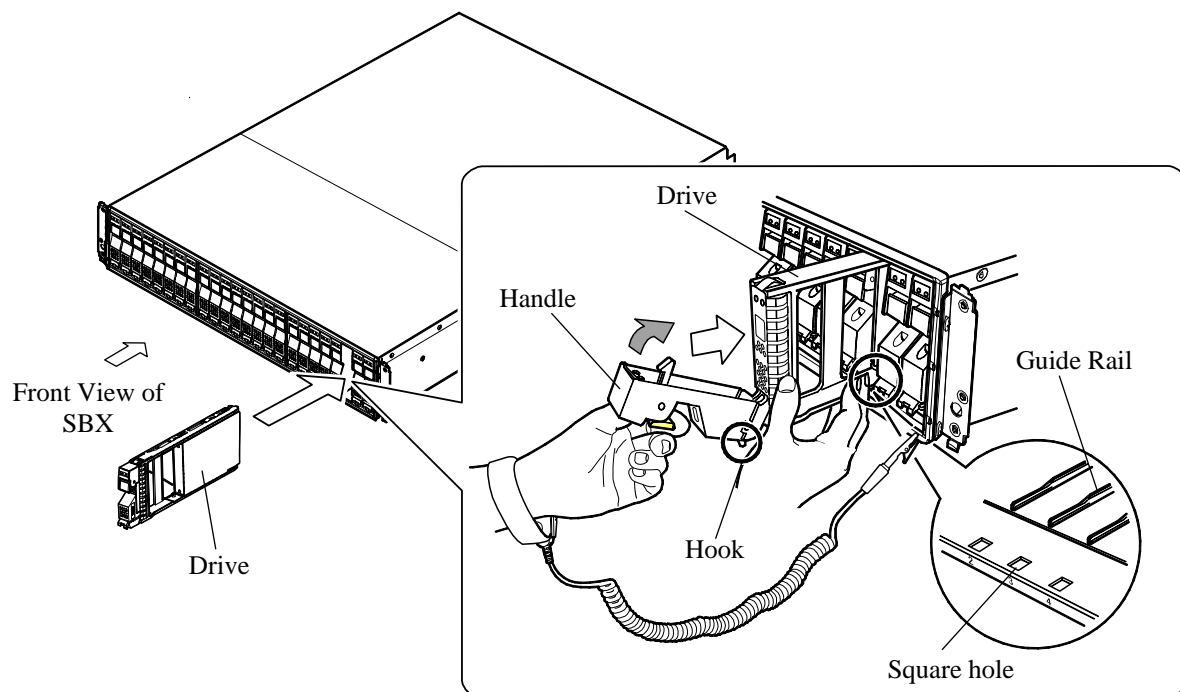


Fig. 3.3.2-14 Installation of Drive (In case of SBX)

2-1-4.3. In case of FBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the FBX.

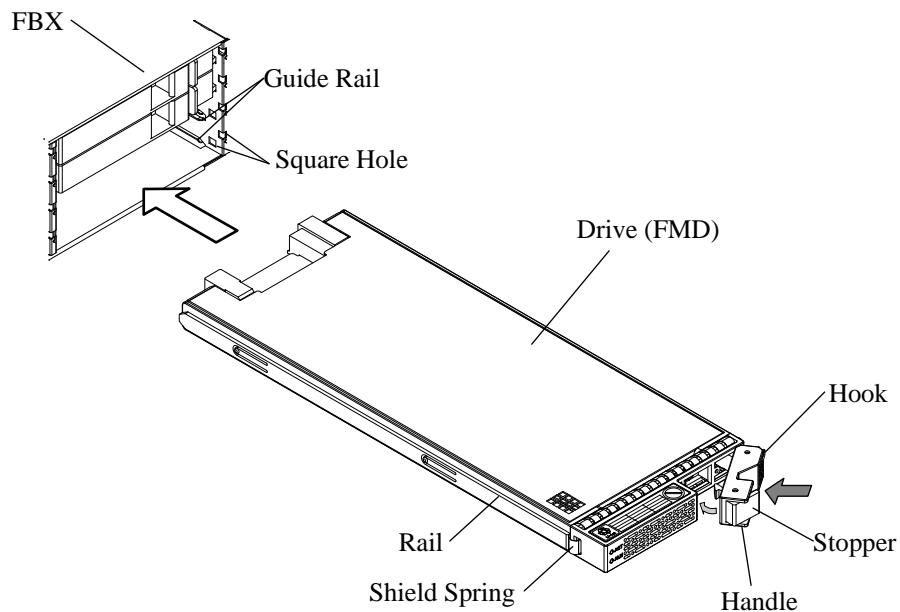


Fig. 3.3.2-15 Installation of Drive (In case of FBX)

2-1-5. Go to “3. POST-PROCESSING of SVP”.

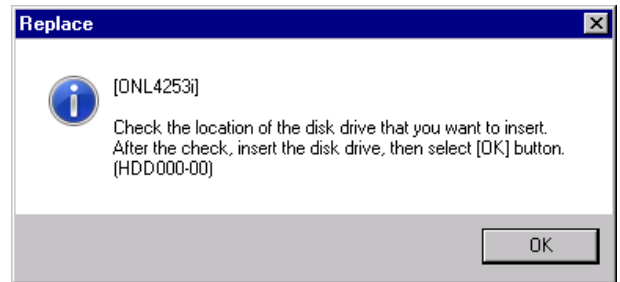
NOTICE: Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES of SVP, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.

A dump removable media is attached with a Spare HDD.

3. POST-PROCESSING of SVP

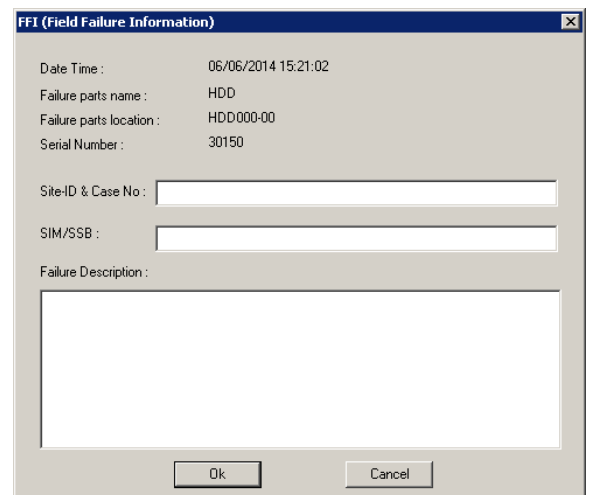
3-1. <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



3-2. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK].

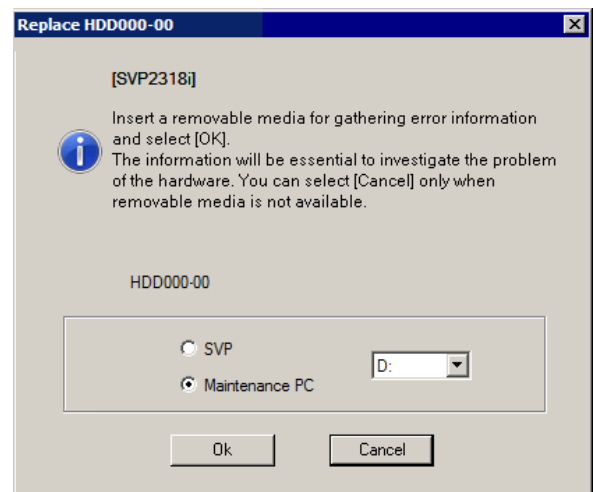
The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Select a Maintenance PC arbitrary drive, and select (CL) [Ok].

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu.

The drive letter becomes the drive letter of Maintenance PC connected with SVP.

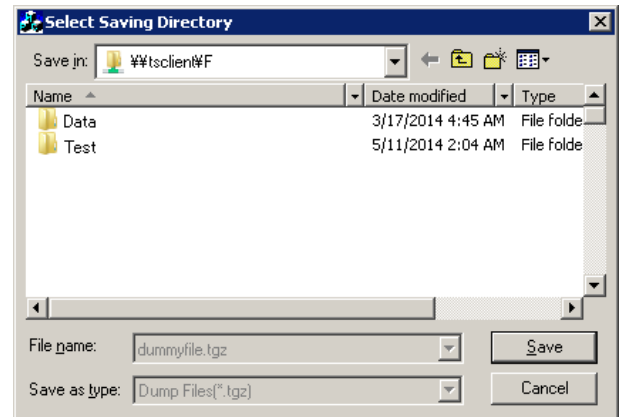


When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

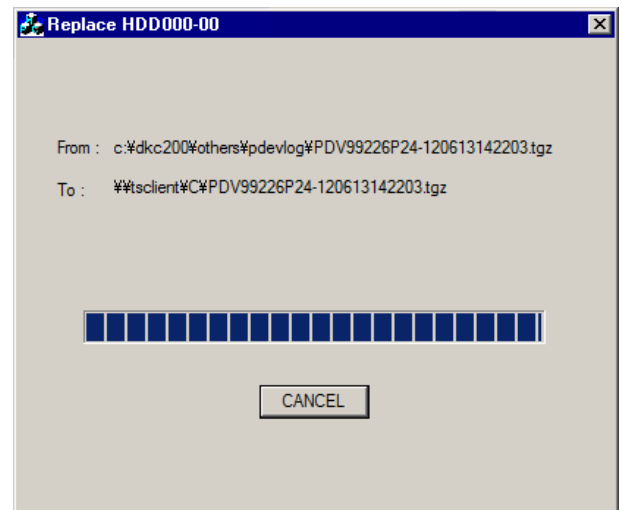
Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

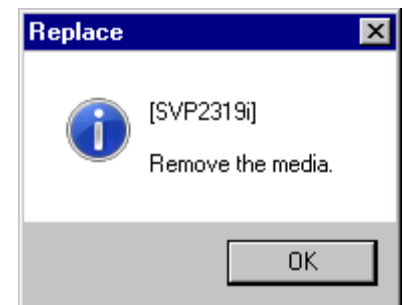


3-3. <Copy of the error information>

The error information is copied onto media.



“Remove the media.” is displayed.
Select (CL) [OK].



3-4. <Spin up the Physical Drive>

“Spinning up...” is displayed.

3-5. <DKU INLINE>

“DKU INLINE is now running...” is displayed.

3-6. <Replacement of the DKU micro-program>

When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.

The message “Exchanging DKU micro-program...” appears.

3-7. <Restore Physical Drive>

“Restoring...” is displayed.

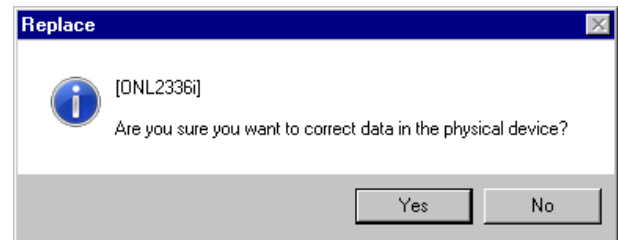
3-8. <Check the Physical Drive>

“Checking...” is displayed.

Device is still blocked.

3-9. <Check the beginning of correction copy>

Select (CL) [Yes] in response to “Are you sure you want to correct data in the physical device?”.

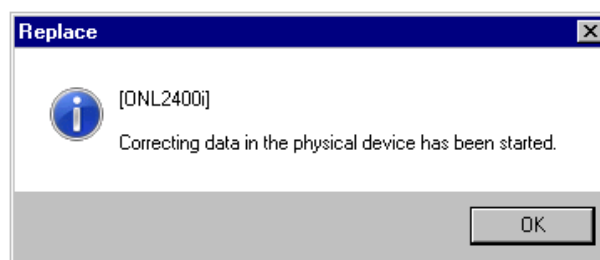


3-10. <Correct data>

“Correcting...” is displayed.

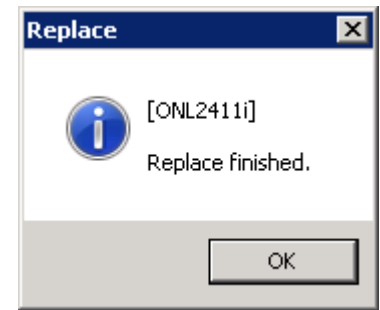
3-11. <Check the starting of Correction copy>

Select (CL) [OK] in response to “Correcting data in the physical device has been started.”.



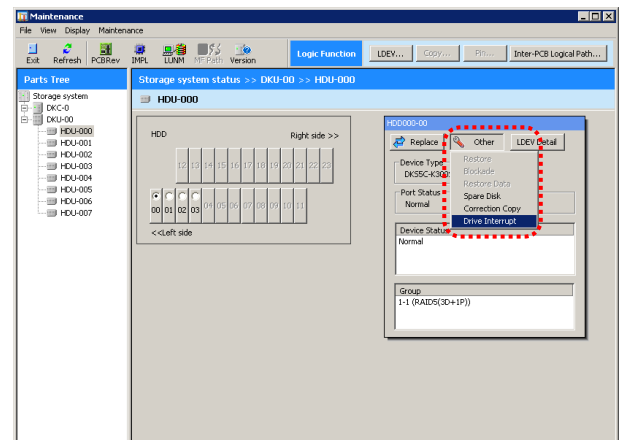
3-12. <Check the end of P-DEV recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-13.

When interrupting the correction copy, select the PDEV to which the copy is being made and select (CL) the [Drive Interrupt] button.



3-14.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DRIVE REPLACEMENT PROCESSING - RDK4]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select P-DEV (status check)
 - ② Specify Replacement
 - ③ Block parity group (enter password)
 - ④ Restore the Logical Device
 - ⑤ Place HDD into unpluggable state
 - ⑥ Replace HDD
 - ⑦ Perform steps ② to ⑤ on blocked drives in parity group
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on P-DEV
 - ② Perform L-DEV formatting on P-DEV
 - ③ Recover with backup data

CAUTION

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

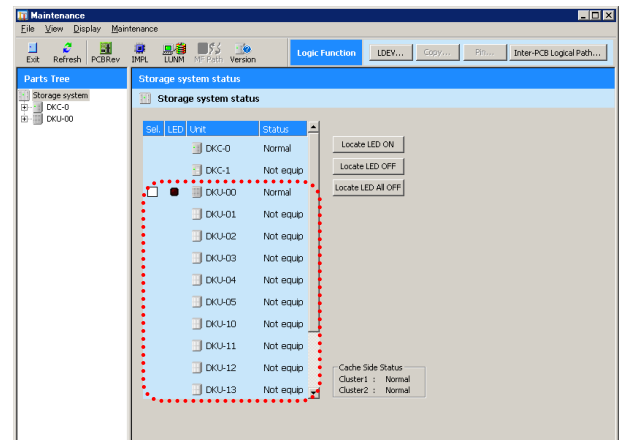
NOTICE: If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

1. PRE-PROCESSING of SVP

1-1. <Maintenance window>

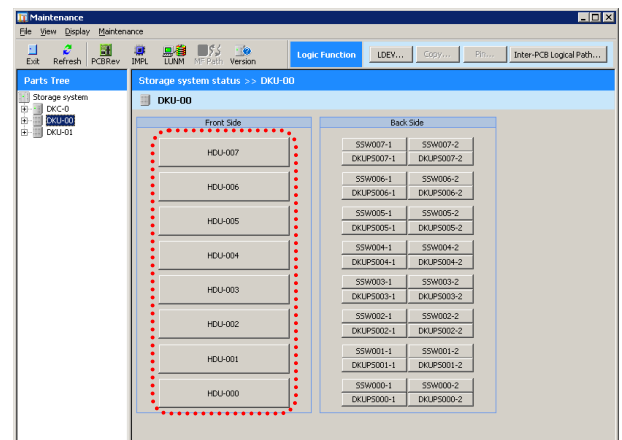
Open the 'Maintenance' window according to PRE PROCEDURE A ([REP02-01-10](#)).

Select (CL) the DKU information [DKU-nn] of the DKU which installs the HDD to be replaced in the 'Maintenance' window.



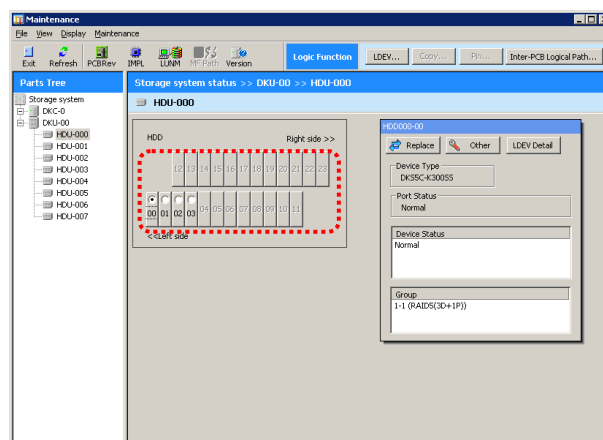
1-2. <Select HDU>

Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.



1-3. <Select HDD>

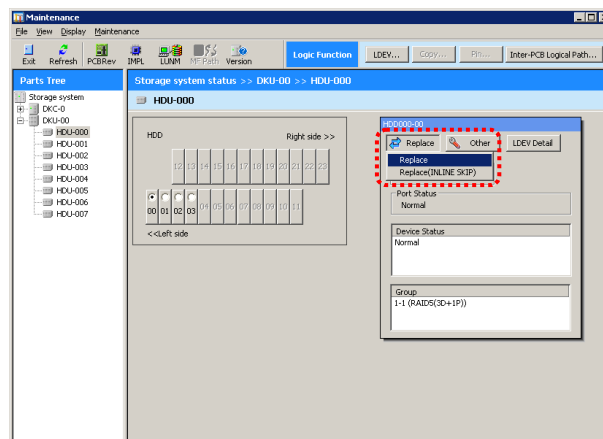
Check and select (CL) [nn] to be replaced.



1-4. <Specify replacement of HDD>

Make sure that the “Device Status” is [Failed].

Select (CL) [Replace]-[Replace].

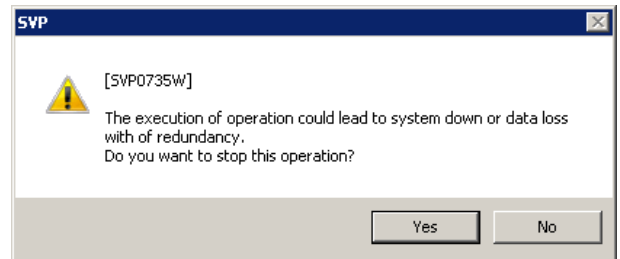


1-5. <Confirm lost data>

CAUTION

Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

Select (CL) [No] in response to “The execution of operation could lead to system down or data loss with of redundancy. Do you want to stop this operation?”.

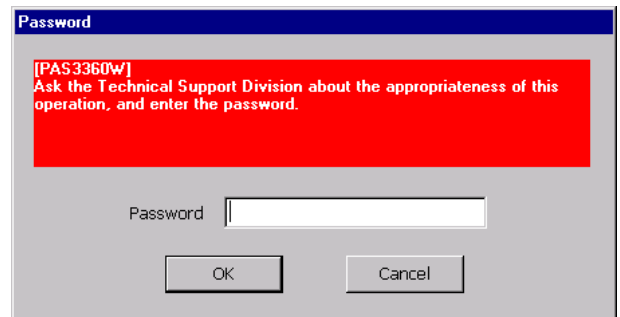


1-6. <Enter password>

CAUTION

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

Enter the password in response to “Ask the Technical Support Division about the appropriateness of this operation, and enter the password.” and select (CL) [OK]. Password is needed for this operation.

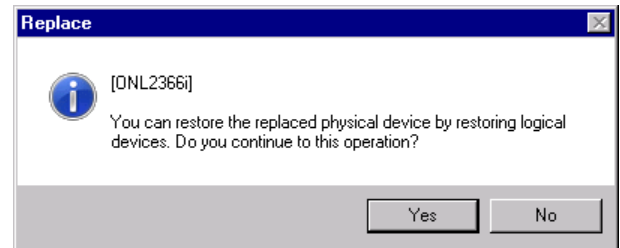


1-7. <Checking the P-DEV status>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

“Checking...” is displayed.

When “You can restore the replaced physical device by restoring logical devices. Do you continue to this operation?” is displayed, PDEV is automatically recovered by recovering LDEV.



When you replace PDEV and format LDEV, please select (CL) [Yes].

When you want to change LDEV into a collection access state for the purpose of data backup, please select [No] and go to LDEV recovery for multiple PDEV failures (Step 1-7-1).

1-7-1. Restore the Logical Device

CAUTION

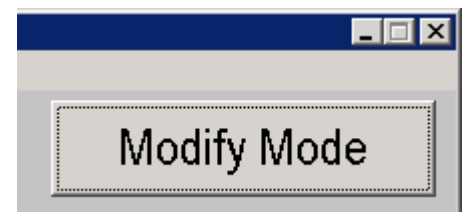
Executing this operation may cause a serious error such as a system down or a data loss. Accordingly, confirmation of the appropriateness of the operation and input of a password on the succeeding password input screen is required.

(1) <Preparation>

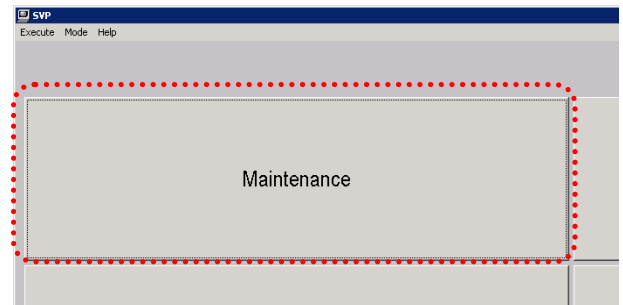
Close each menu of the starting SVP entirely.

(2) <Start>

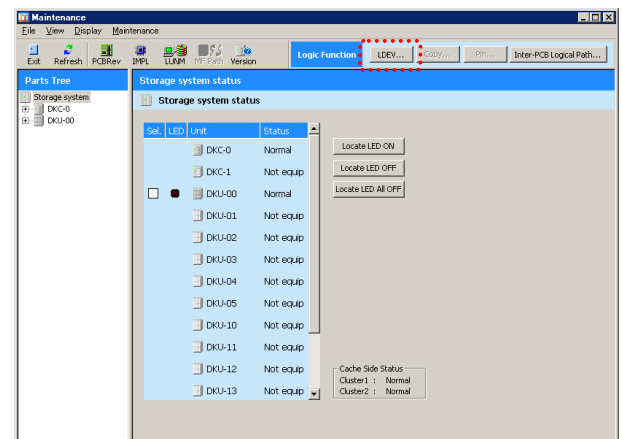
Change the mode to [Modify Mode].



Select (CL) the [Maintenance] in the 'SVP' window.



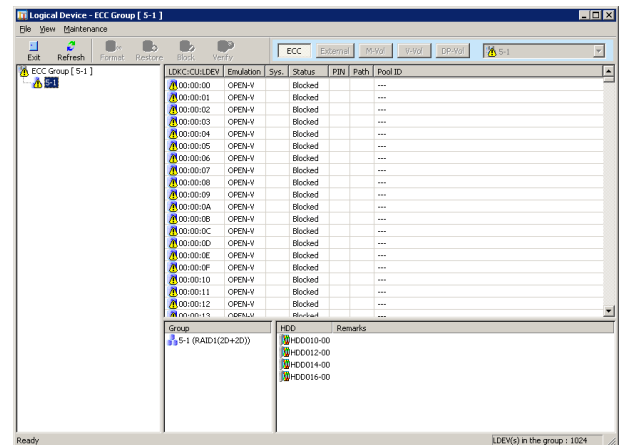
Select (CL) [LDEV...] on the dialog bar in the 'Maintenance' window.



(3) <Selection of Logical Device>

NOTICE: Be careful enough not to make a mistake in selecting a device.

Select (CL) the target device (or group) from the list in the right of the 'Logical Device' window.



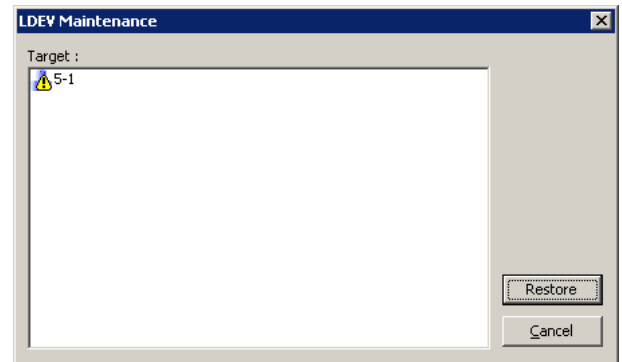
(4) <Execution>

Select (CL) [Restore] on the tool bar in the 'Logical Device' window.



(5) <Check>

Check the device (or group) to be restored in the 'LDEV Maintenance' window, and select (CL) [Restore].



(6) <Selection of Recovery Processing>

Select (CL) [Restore Type] in the 'Restore Logical Devices' window, and select (CL) [OK].

“Normal Restoration”

“Forcible Restoration”

**■Normal Restoration**

Explanation:

In case LDEV(s) is (are) blocked due to multiple PDEV failures in one parity group, this option spins up the PDEV which was blocked last to restore the LDEV(s).

When to choose this option?

Use this option when you would like to restore the LDEV(s) that is (are) blocked due to multiple PDEV failures in one parity group.

⚠ CAUTION

The purpose of this action is to restore the PDEV blocked last and restore the parity group status to “correction access”. Therefore do not replace or self-replace any failed HDD in the parity group before performing this action.

■ Forcible Restoration**Explanation:**

This option restores only the LDEV status forcibly without considering data consistency etc.

When all PDEV status in the parity group is “normal”, the LDEV status is changed from “Blocked” to “normal”.

When to choose this option?

In case “Normal Restoration” cannot restore LDEV, use this option by following the instructions of the technical support division.

After PDEV is manually restored, the LDEV status is changed to “normal” forcibly.

⚠ CAUTION

The data consistency may not be guaranteed. Contact the technical support division to ask for instructions.

(7) <Password Input>

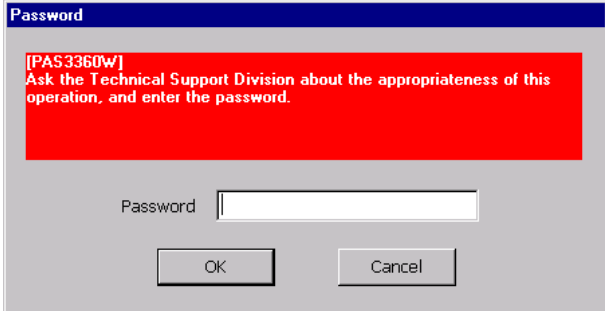
This operation is required only when “Forcible Restoration” is selected in Step (6).

⚠ CAUTION

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

Corresponding to the following message, enter the password and select (CL) the [OK] button.

“Ask the Technical Support Division about the appropriateness of this operation, and enter the password.”



(8) <Processing Wait>

The following message is displayed.

“Restoring the logical device...”

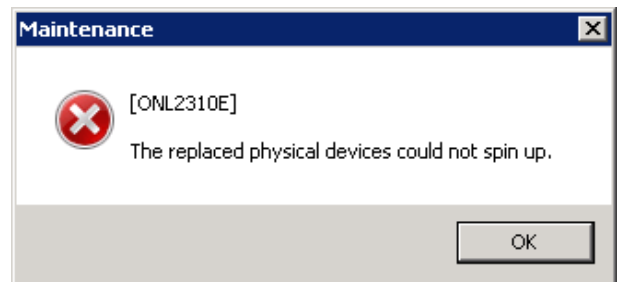
In case that, “Normal Restoration” is selected in Step (6).

If multiple PDEV failures, the restoration processing of the recoverable PDEV is performed here.

This processing cannot recover it when the following message is displayed.

“The replaced physical devices could not spin up.”

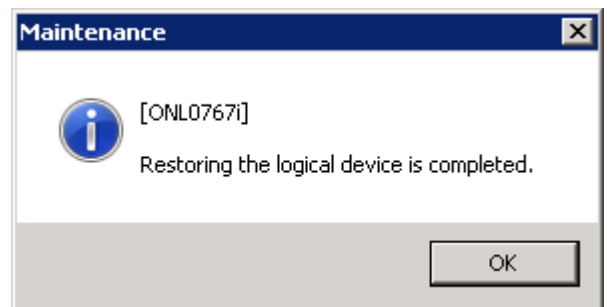
Perform the procedure RDK4 refer to [REP01-250](#).



(9) <Completion Check>

When the restoration is completed, the following message is displayed. Select (CL) [OK].

“Restoring the logical device is completed.”



(10) <Check of Device Status>

Check the target device status in the ‘Logical Device’ window.

(11) <Post-processing>

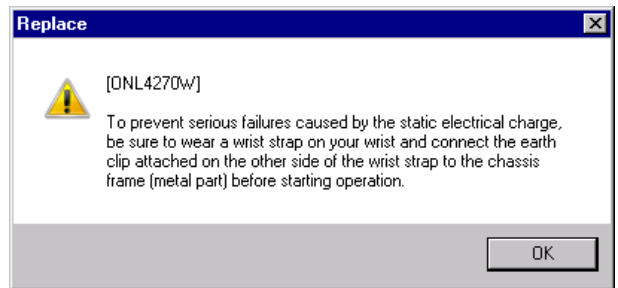
Close the ‘Logical Device’ window.

Close the ‘Maintenance’ window.

Change the mode to [View Mode].

1-8. <Wear a wrist strap>

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



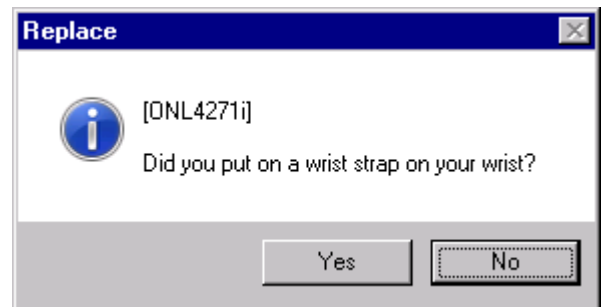
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

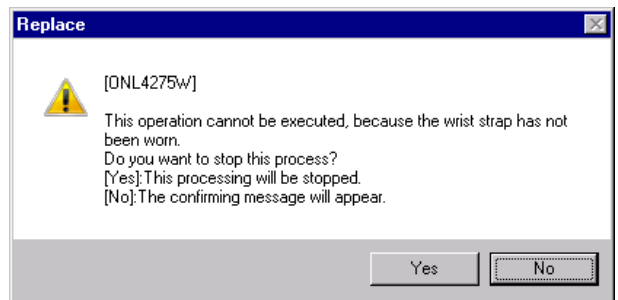


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

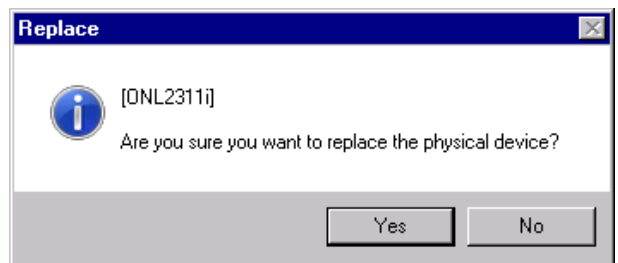


When [Yes] is selected (CL), returned to Step 1-3.

When [No] is selected (CL), returned to Step 1-8.

1-9. <P-DEV blocking>

Select (CL) [Yes] in response to “Are you sure you want to replace the physical device?”.



1-10. <Blocking the Physical device>

“Blocking...” is displayed.

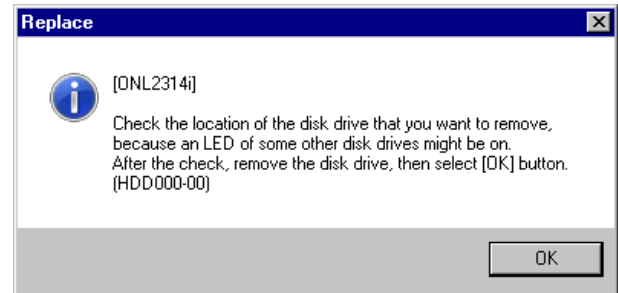
1-11. <Spin down the Physical device>

“Spinning down...” is displayed.

The Shut down LED is lit.

1-12. <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



1-13. <Replace HDD>

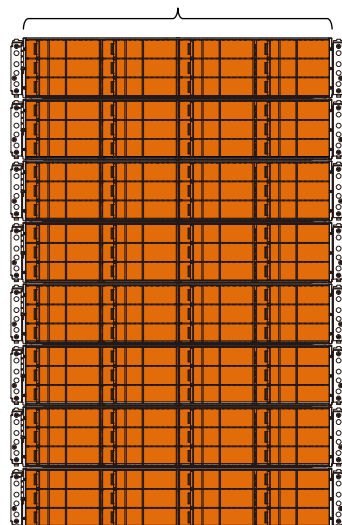
Replace HDD.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

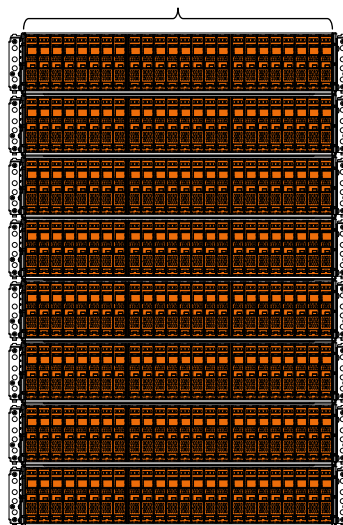
Location		Function Name of Component	Part Name	HDA Label
Front View of UBX	1	Disk Drive (HDD)	HDU800-600J5MSS	R5D-J600SS
			HDU800-3R0H3MSS	S2E-H3R0SS
			HDU800-4R0H3MSS	R2E-H4R0SS
	2	Flash Drive (SSD)	HDU800-400M5MSS	S2E-H4R0SS
Front View of SBX	3	Disk Drive (HDD)	HDU800-300KCMSS	B5A-M400SS
			HDU800-600JCMSS	S5C-K300SS
				R5D-J600SS
				S5E-J600SS
			HDU800-900JCMSS	R5D-J900SS
				S5E-J900SS
	4	Flash Drive (SSD)	HDU800-1R2JCMSS	R5E-J1R2SS
				S5F-J1R2SS
			HDU800-400MCMSS	B5A-M400SS
Front View of FBX	5	Flash Module Drive (FMD)		R5C-M400SS
			HDU800-800MCMSS	B5A-M800SS
				R5C-M800SS
			HDU800-1R6FMSS	HAA-P1R6SS
			HDU800-3R2FMSS	HAB-P3R2SS

Drive (HDD/SSD)



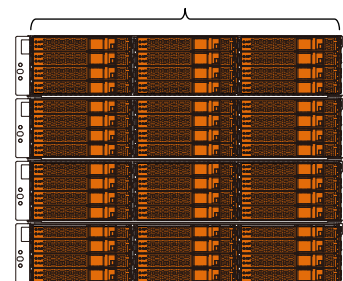
Front View of UBX

Drive (HDD/SSD)



Front View of SBX

Drive (FMD)



Front View of FBX

- NOTICE:**
- Replace the drive in the storage system in power on status only. Do not replace the drive in power off status.
 - Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
 - HDD is a precise component. Be careful in handling HDD to avoid vibration and impact.

2-1 Drive (HDD/SSD/FMD) Replacement Procedure

2-1-1. Check the Shut Down LED.

- Check that the Shut Down LED on drive is turned on. Refer to Fig. 3.4.2-1, Fig. 3.4.2-2 or Fig. 3.4.2-3.

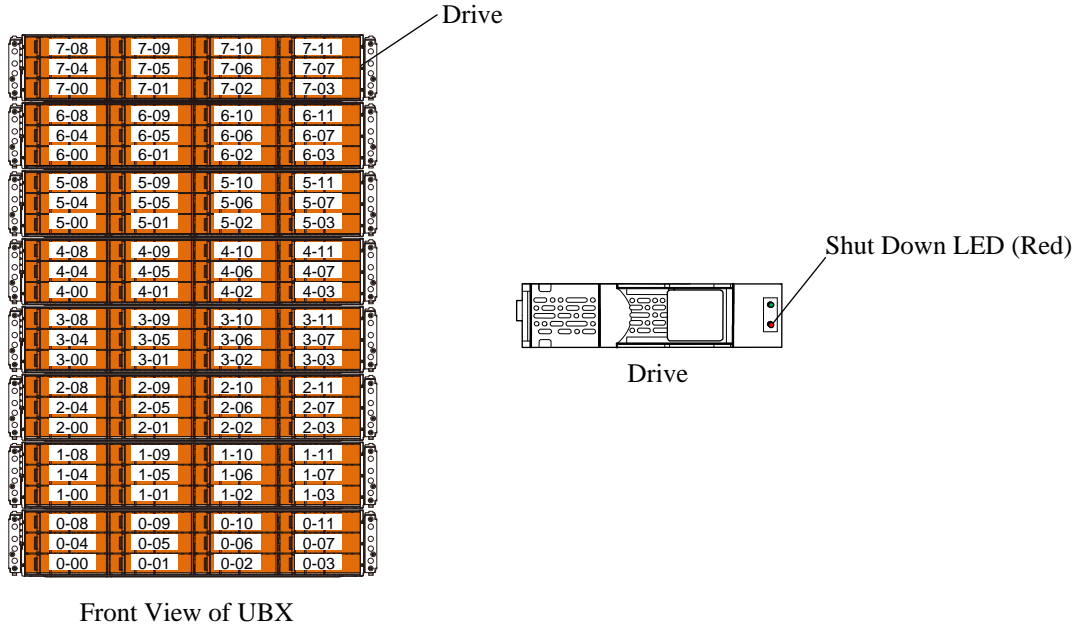


Fig. 3.4.2-1 Checking of Shut Down LED (In case of UBX)

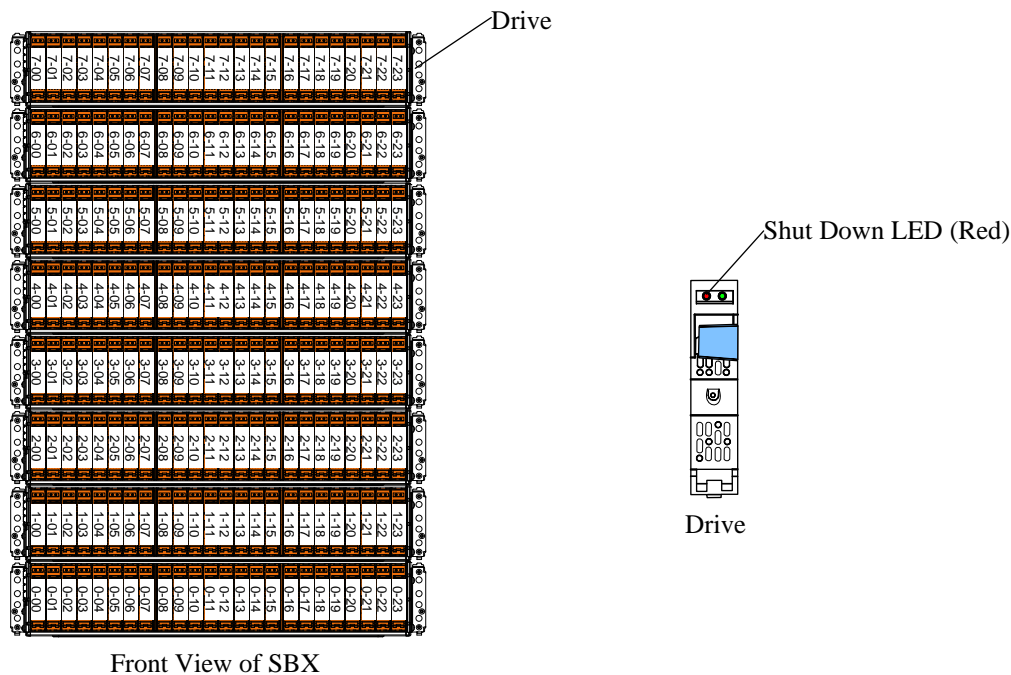
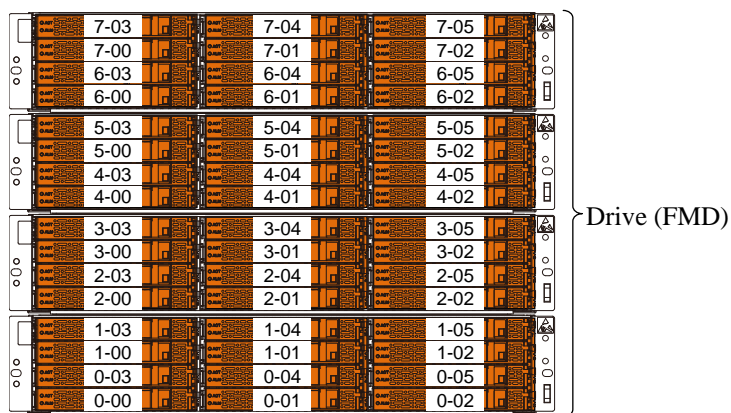
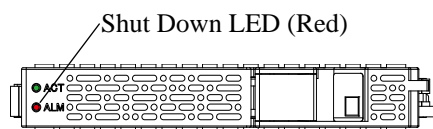


Fig. 3.4.2-2 Checking of Shut Down LED (In case of SBX)



Front View of FBX



Front View of Drive (FMD)

Fig. 3.4.2-3 Checking of Shut Down LED (In case of FBX)

2-1-2. Remove the drive.

2-1-2.1. In case of Drive for UBX

- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

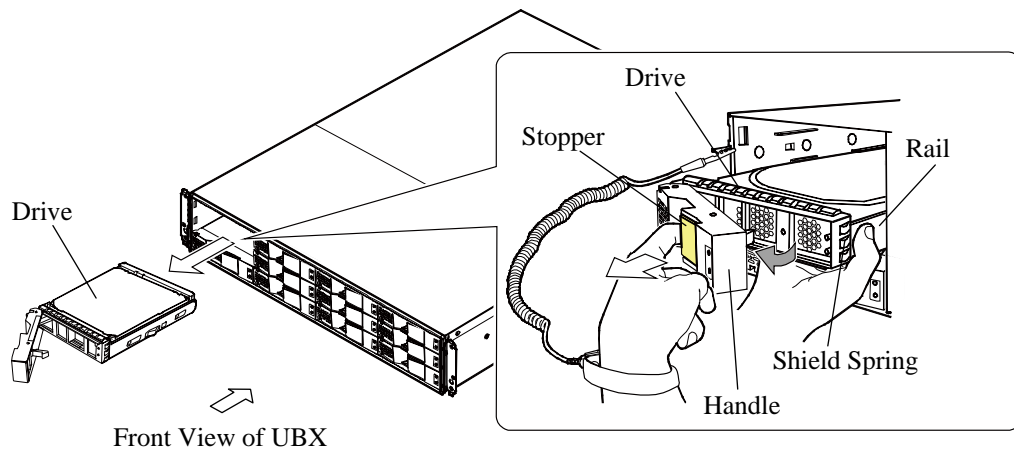


Fig. 3.4.2-4 Removal of Drive (for UBX)

2-1-2.2. In case of Drive for SBX

- Pull up the stopper of the drive handle toward you to release the lock.
- Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.

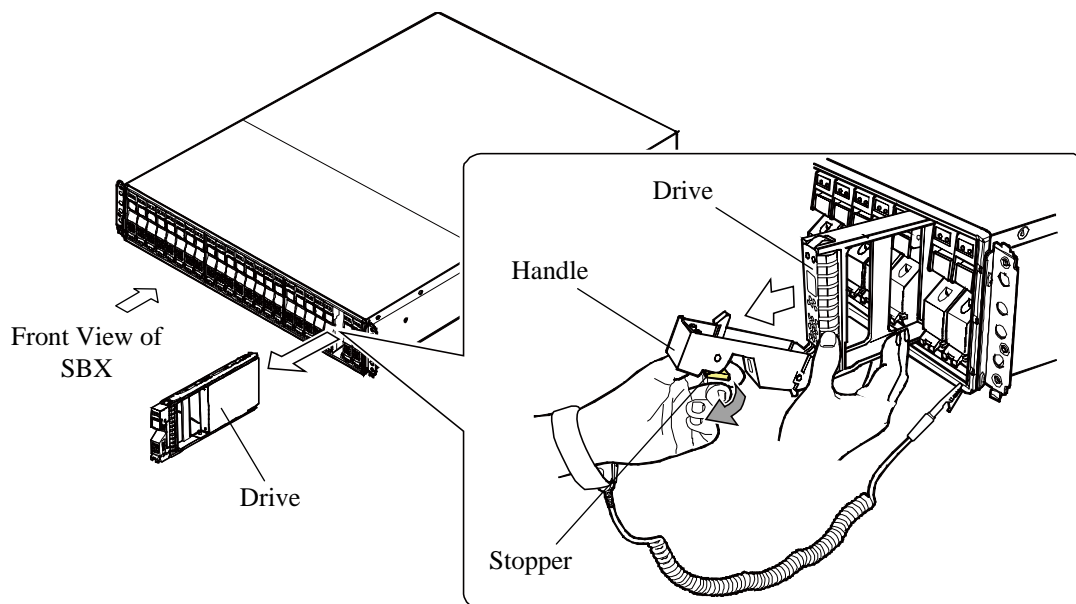
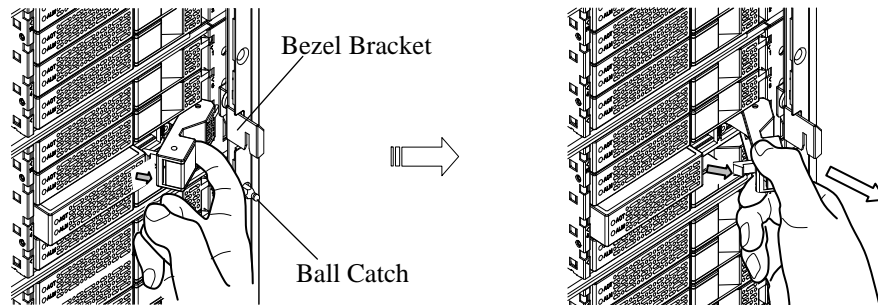


Fig. 3.4.2-5 Removal of Drive (for SBX)

2-1-2.3. In case of FBX

NOTICE: When the FMD is removed in replacing procedure, the fans of the DKUPS equipped in the rear of the FBX rotate at the highest speed. When the spare FMD is installed, the fans of the DKUPS rotate at the speed suitable for environmental temperature.

NOTICE: When extracting drives (FMD) centered on the right side of the FBX, be careful not to get your finger caught in the Bezel Bracket and/or the Ball Catch. Slightly pull the Stopper with your fingertip and then extract a drive with holding upper and bottom sides of the Handle as shown in the figure below.



- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

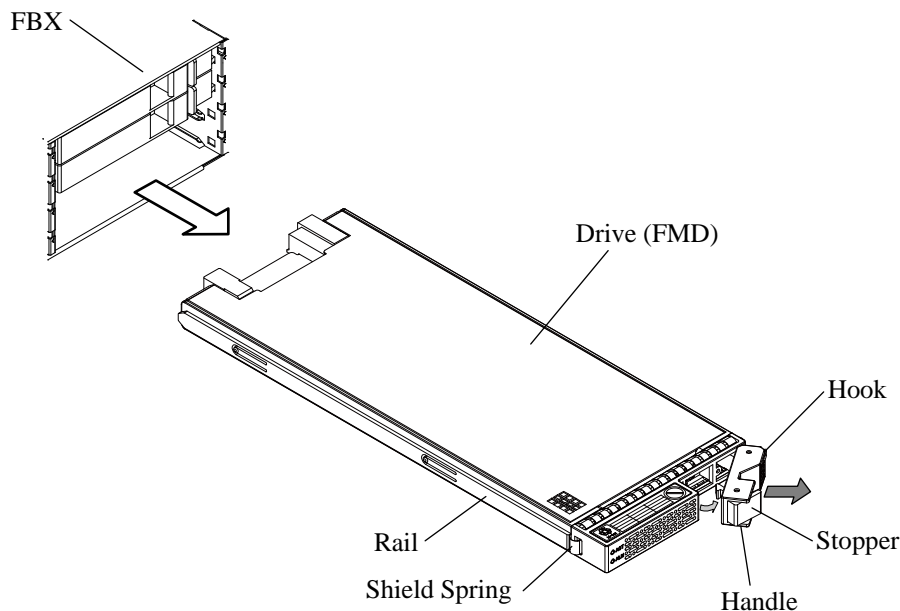
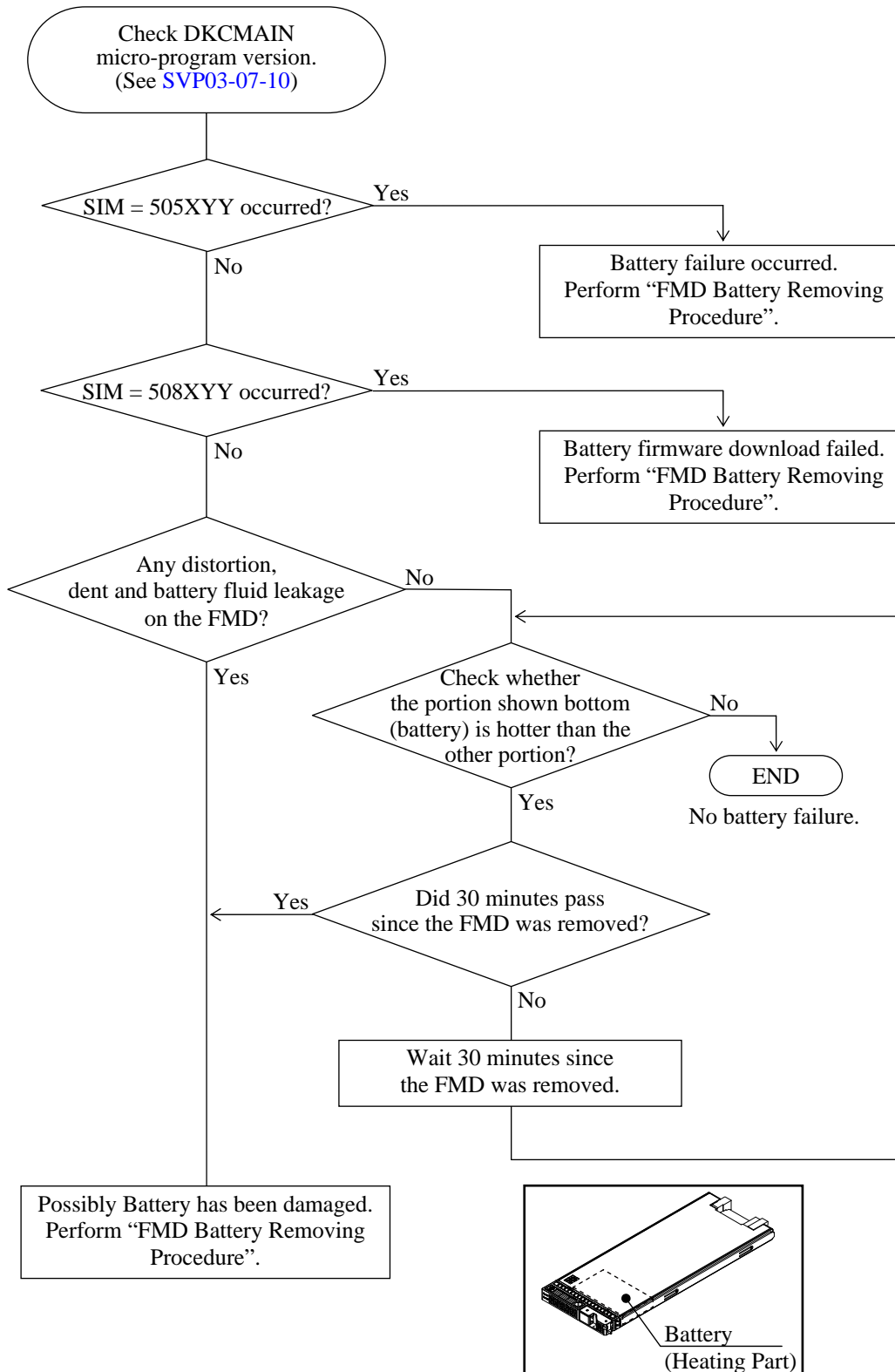


Fig. 3.4.2-6 Removal of Drive (In case of FBX)

- c. Check whether a failure of the battery built in the FMD has occurred by using the flowchart below. If a battery failure has occurred, remove the battery from the FMD. If no battery failure has occurred, go to Procedure 2-1-3.



d. FMD Battery Removing Procedure

(d)-1 Remove 4 Screws (SB310N) on the bottom side of FMD by using cross-head screw driver.

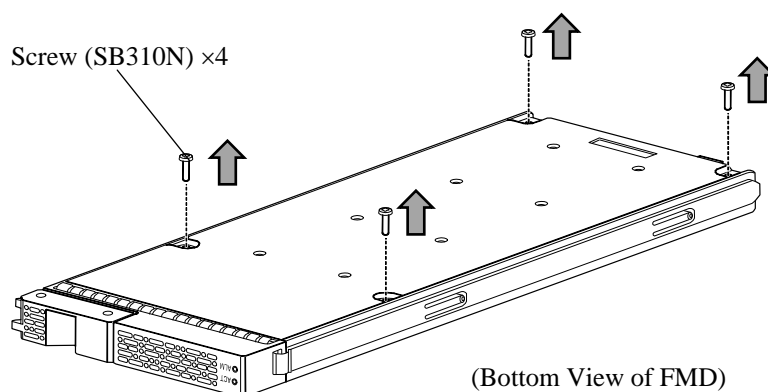


Fig. 3.4.2-7 Removing Screws

(d)-2 Remove Top Cover and Bottom Cover.

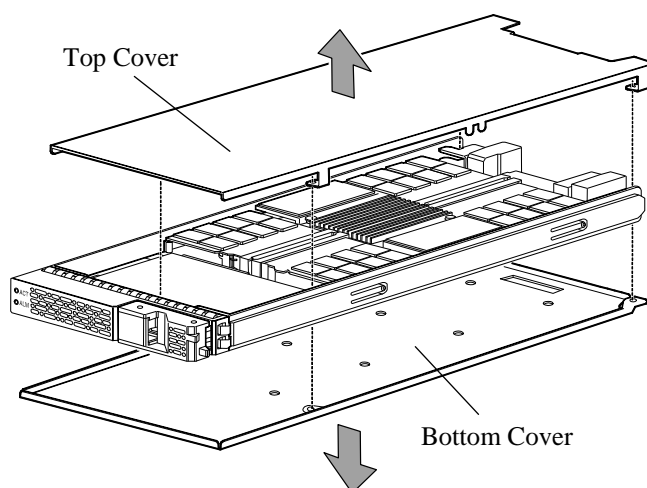


Fig. 3.4.2-8 Removing Covers

(d)-3 Remove 2 sets of Tapping-screw and Washer by using cross-head screw driver.

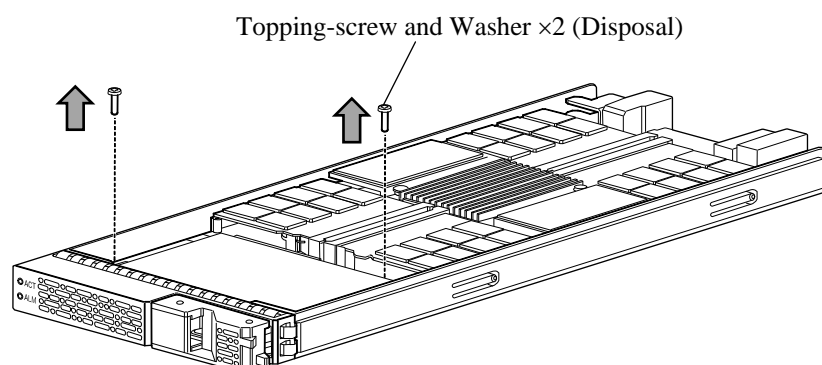


Fig. 3.4.2-9 Removing Tapping-screws and Washers

(d)-4 Move the Battery to the bezel side and disconnect the Battery from the circuit board.

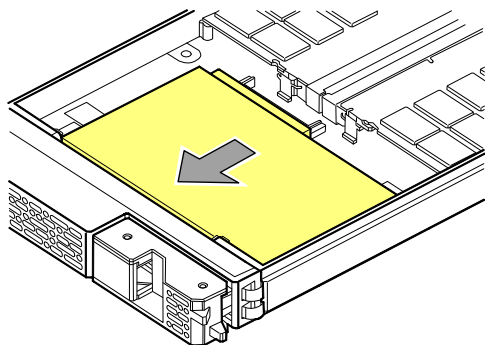


Fig. 3.4.2-10 Disconnecting from Connector

(d)-5 Remove the Battery to the bottom side of FMD. (After the connector comes off, battery is lowered below.)

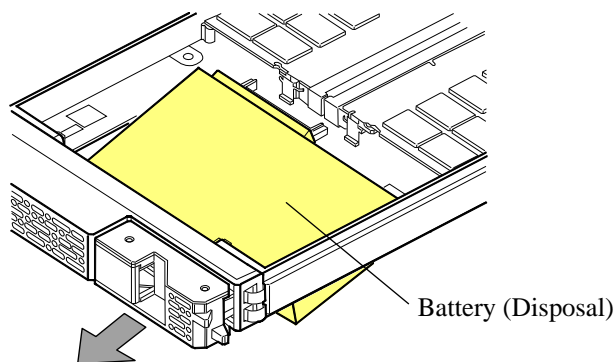


Fig. 3.4.2-11 Removing Battery

(d)-6 Attach Top Cover and Bottom Cover.

(d)-7 Attach 4 Screws (SB310N) on the bottom side of FMD.

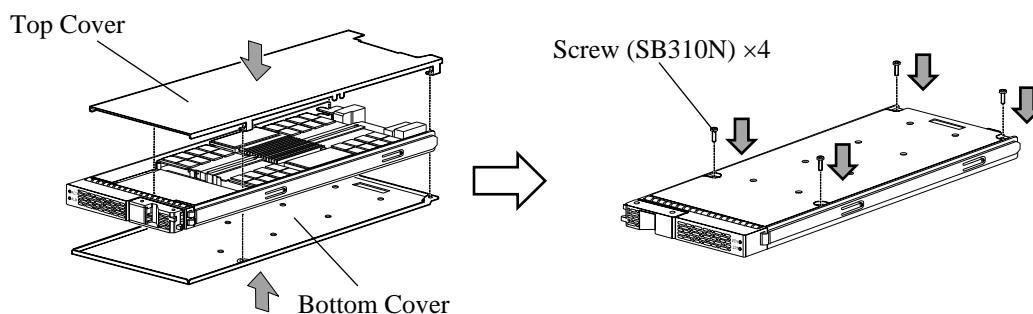


Fig. 3.4.2-12 Reassembling FMD

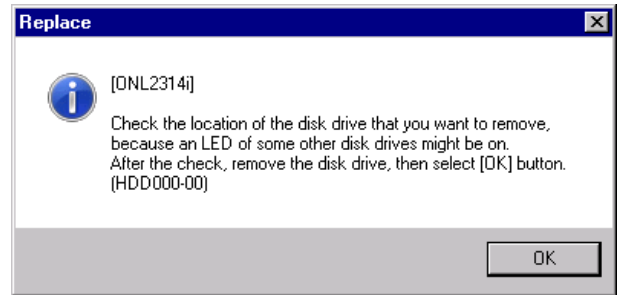
(d)-8 Dispose of the Tapping-screws, Washers and Battery removed in procedures (d)-3 and (d)-5.

When dispose of the Battery, follow the directions given by the local law where the product is used.

2-1-3. Check and handling of the drive.

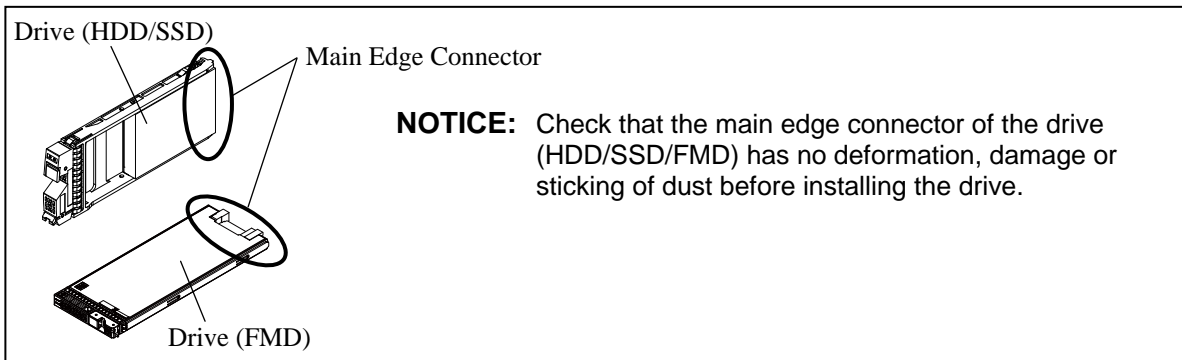
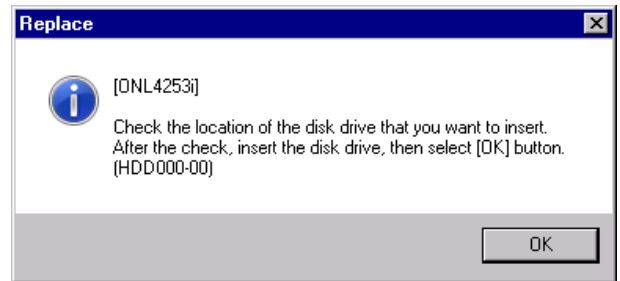
(1) <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



(2) <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



2-1-4. Install the drive.

NOTICE: Back Board, or drive connector or drive handle may be damaged when the drive is forcibly inserted.
If the drive cannot be easily inserted until the claws on the handle reach the DKU, or if the handle binds or stops before it can be locked, then remove the drive and perform inspection:

- a) Check the drive slot in DKU to be free and clear of obstructions.
- b) Check connector on back board for visible defects.
- c) Inspect connector on drive for visible defects.
- d) During installation make sure the drive is inserted in alignment with slot guides.

Reinsert drive after inspections have passed.

2-1-4.1. In case of UBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the UBX.

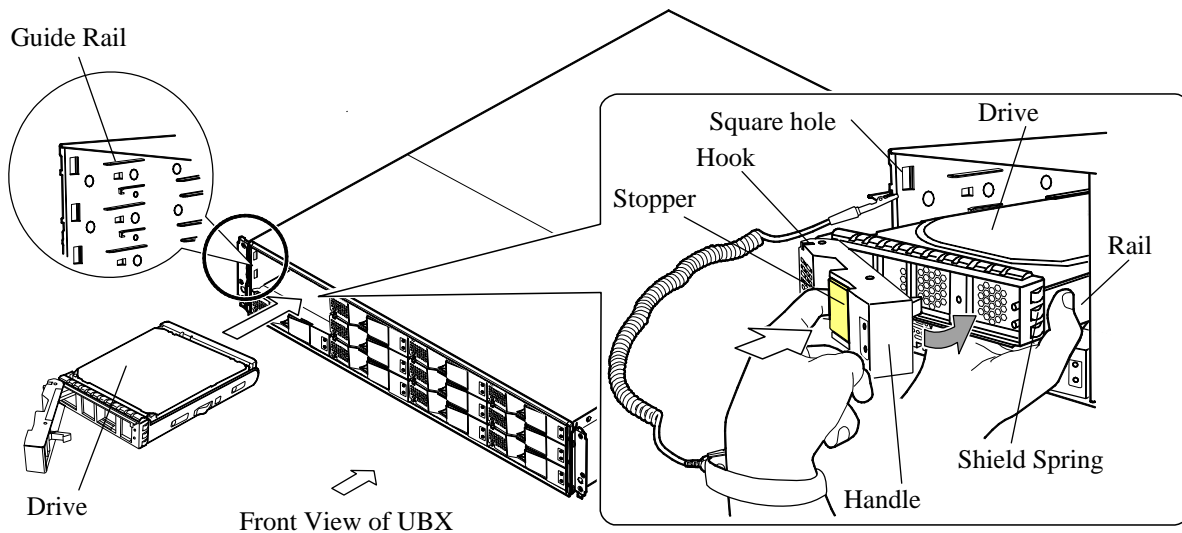


Fig. 3.4.2-13 Installation of Drive (In case of UBX)

2-1-4.2. In case of SBX

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

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

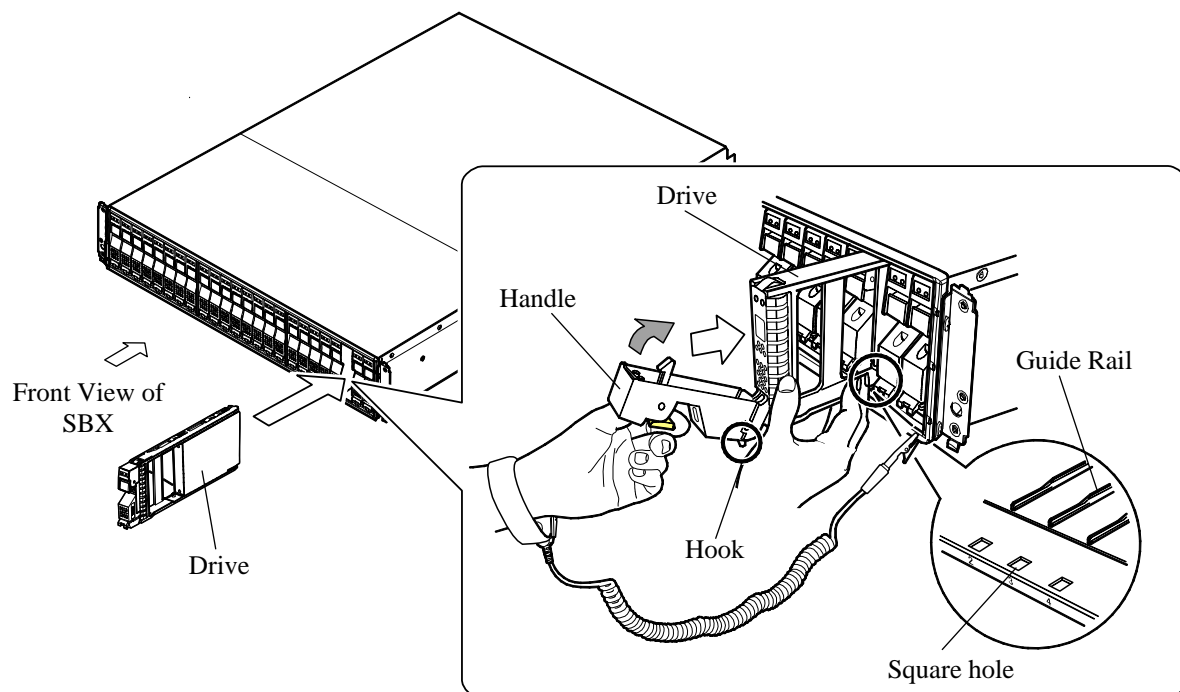


Fig. 3.4.2-14 Installation of Drive (In case of SBX)

2-1-4.3. In case of FBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the FBX.

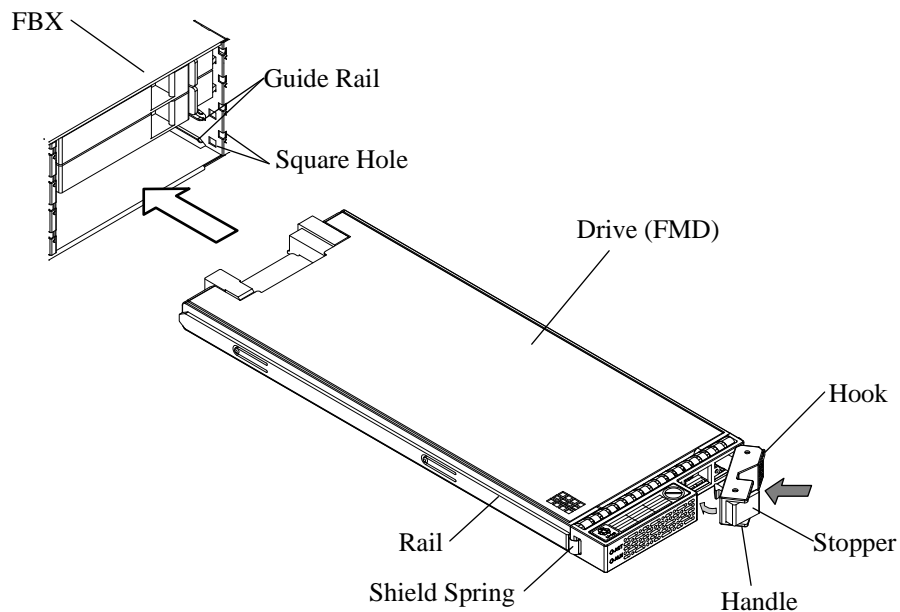


Fig. 3.4.2-15 Installation of Drive (In case of FBX)

2-1-5. Go to “3. POST-PROCESSING of SVP”.

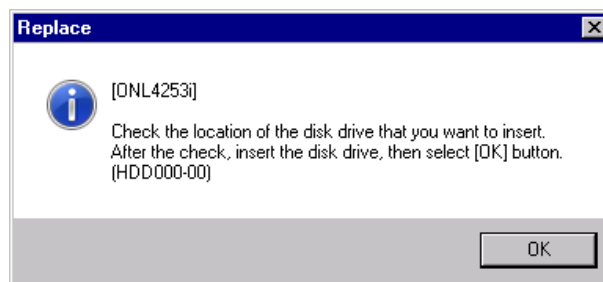
NOTICE: Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES of SVP, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.

A dump removable media is attached with a Spare HDD.

3. POST-PROCESSING of SVP

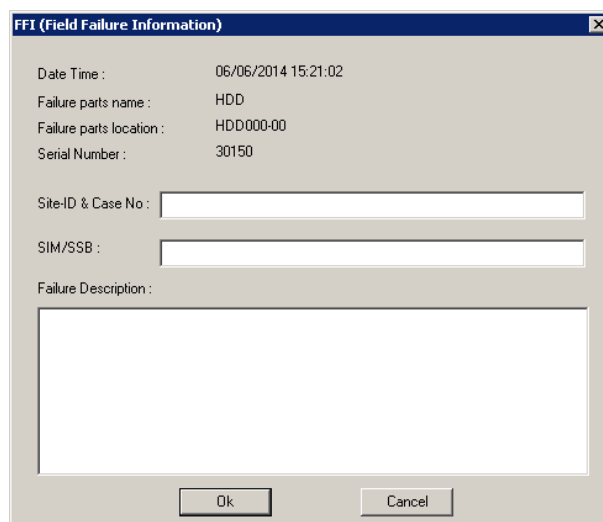
3-1. <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



3-2. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK].

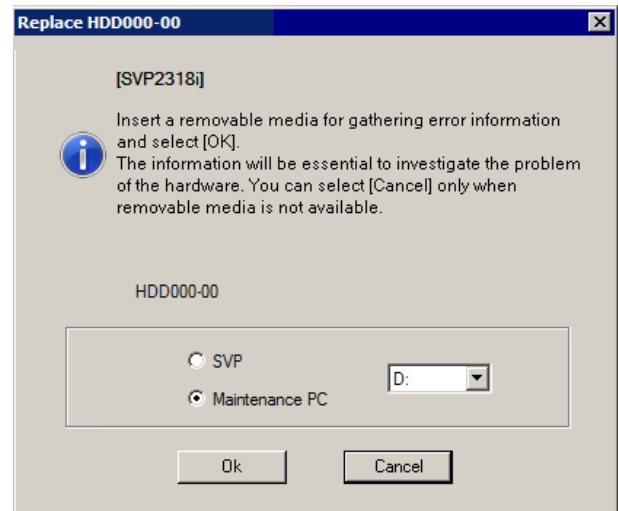
The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Select a Maintenance PC arbitrary drive, and select (CL) [Ok].

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu.

The drive letter becomes the drive letter of Maintenance PC connected with SVP.

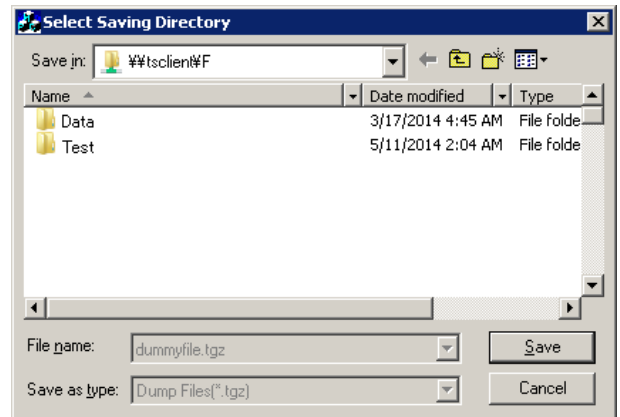


When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

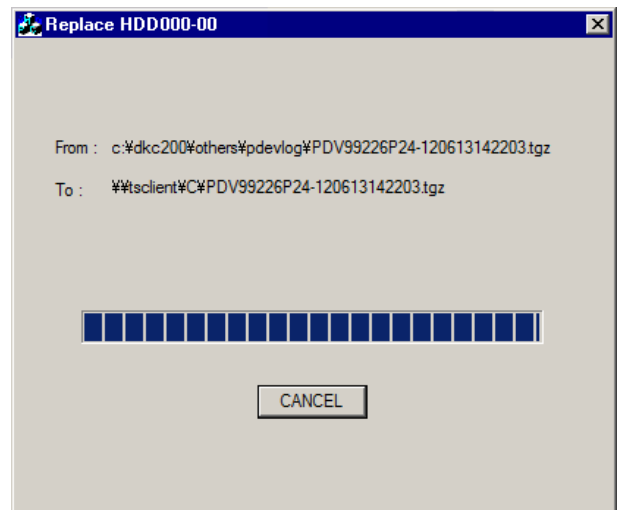
Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

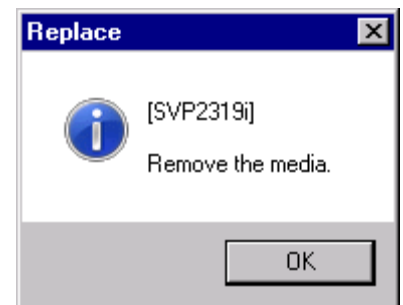


3-3. <Copy of the error information>

The error information is copied onto media.



“Remove the media.” is displayed. Select (CL) [OK].



3-4. <Spin up the Physical Drive>

“Spinning up...” is displayed.

3-5. <DKU INLINE>

“DKU INLINE is now running...” is displayed.

3-6. <Replacement of the DKU micro-program>

When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.

The message “Exchanging DKU micro-program...” appears.

3-7. <Restore Physical Drive>

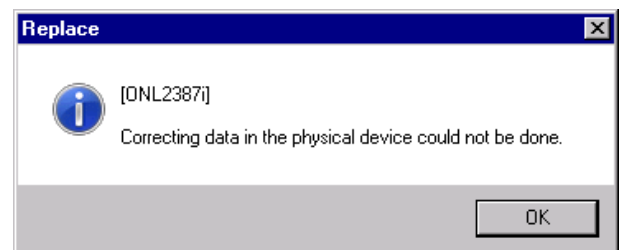
“Restoring...” is displayed.

3-8. <Check the Drive status>

“Checking...” is displayed.

3-9. <Correction Copy disable message>

Select (CL) [OK] in response to “Correcting data in the physical device could not be done.”.



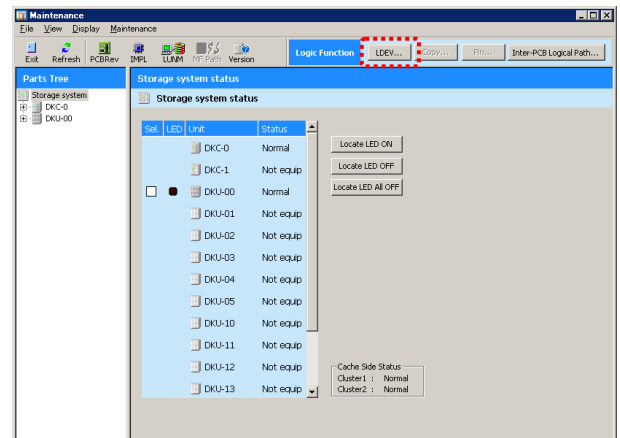
NOTICE: If a blocked HDD exists in the same parity group, replace the HDD.
After confirming that “NORMAL” is indicated for all the HDDs in the same parity group, execute an L-DEV formatting following the procedure below.

3-10. <Select [Logical Device]>

CAUTION

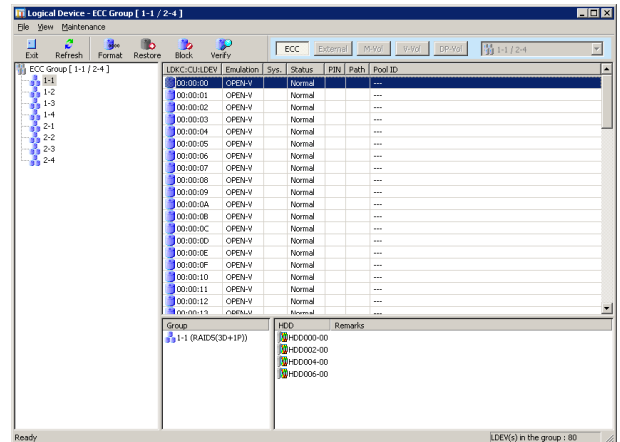
Before you perform following steps, be sure to call T.S.D.
Data stored in Logical Device will be lost due to formatting Logical Device.

Select (CL) [LDEV...] from [Maintenance].



3-11. <Logical Device Status>

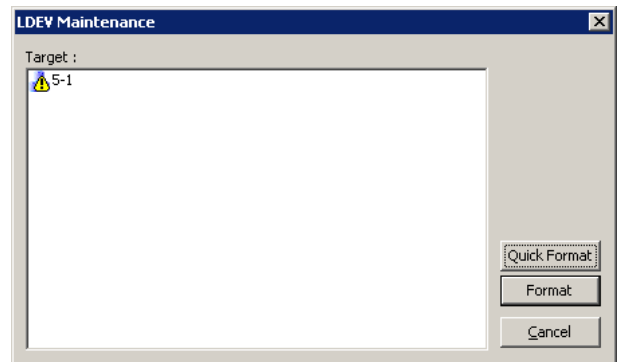
Select (CL) [Format].



3-12. <Format Logical Device>

Select (CL) [Format] or [Quick Format].

If the target LDEV is not blocked, return to 'Logical Device' dialog box.

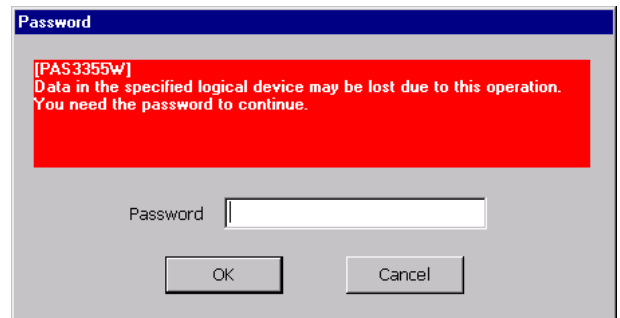


3-13. <Caution message for DATA lost>

CAUTION

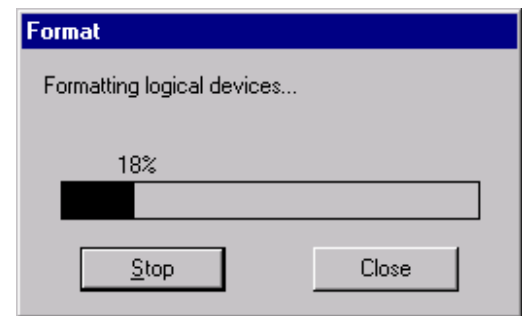
This is a special (exceptional) operation that can cause a serious failure such as a system down or a data loss and requires an input of a password. Ask the technical support division about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

“Data in the specified logical device may be lost due to this operation. You need the password to continue.” is displayed. Enter the password and select (CL) [OK].

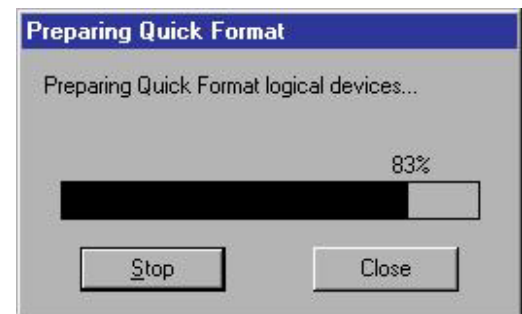


3-14. <Confirmation of processing progress>

- In case of LDEV formatting
“Formatting logical devices...” is displayed.

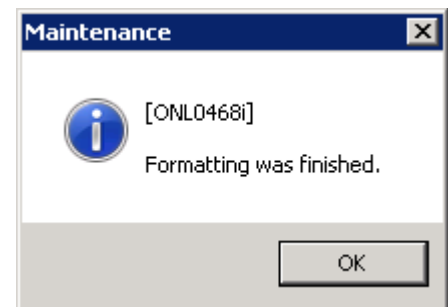


- In case of Quick Format
“Preparing Quick Format logical devices...” is displayed.

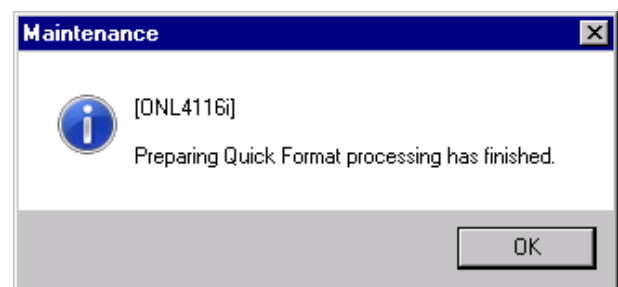


3-15. <Confirmation of processing end>

- In case of LDEV formatting
Select (CL) [OK] in response to “Formatting was finished.”.



- In case of Quick Format
Select (CL) [OK] in response to
“Preparing Quick Format processing has finished.”.



3-16. <Recover data>

Ask the customer for recovering data with backup data.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DRIVE REPLACEMENT PROCESSING - RDK5]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select P-DEV (status check)
 - ② Specify Replacement
 - ③ Place HDD into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on P-DEV
 - ② Specify recovery

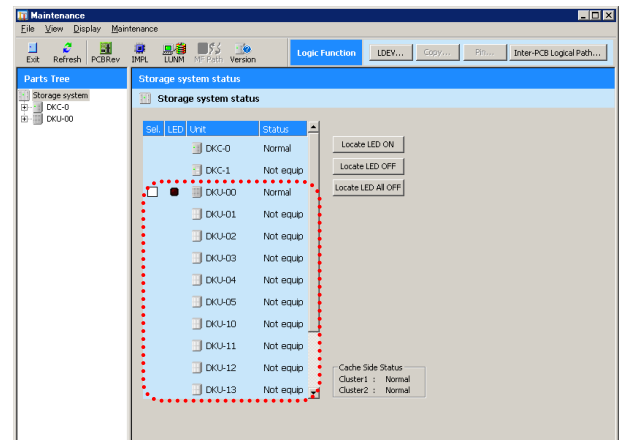
NOTICE: If No Charging of FMD (SIM = 50EXYY) occurs in installation of a FMD, the FMD ACTIVE LED will change to low-speed blinking. In this case, it takes 90 minutes at most for the FMD ACTIVE LED to go out and for the battery in the FMD to be fully charged.

1. PRE-PROCESSING of SVP

1-1. <Maintenance window>

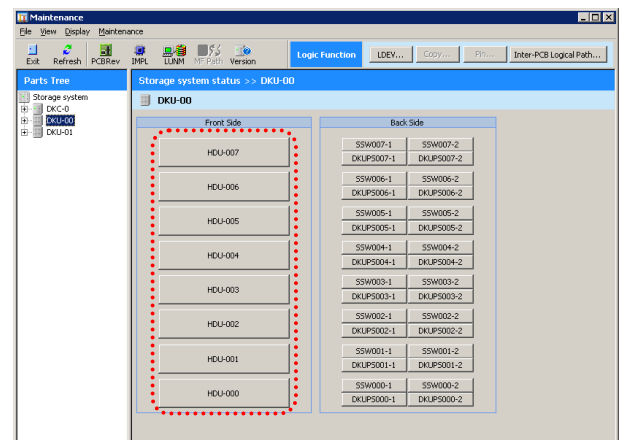
Open the 'Maintenance' window according to PRE PROCEDURE A ([REP02-01-10](#)).

Select (CL) the DKU information [DKU-nn] of the DKU which installs the HDD to be replaced in the 'Maintenance' window.



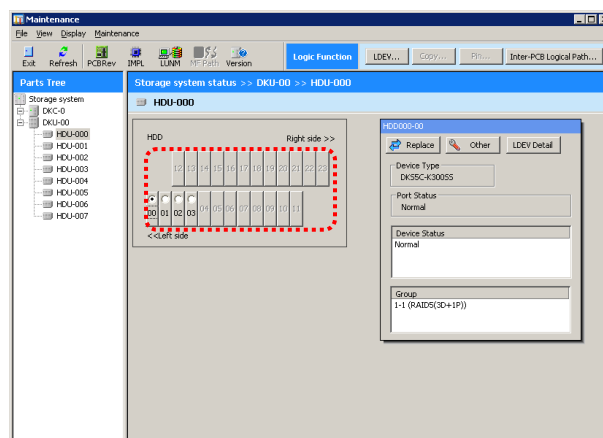
1-2. <Select HDU>

Select (CL) the HDU information [HDU-nnn] of the HDU which installs the HDD to be replaced.



1-3. <Select HDD>

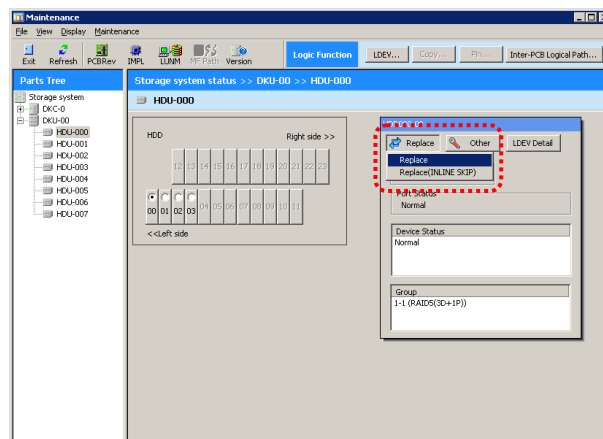
Check and select (CL) [nn] to be replaced.



1-4. <Specify replacement of HDD>

Make sure that the “Device Status” is [Failed] or [Warning].

Select (CL) [Replace]-[Replace].



1-5. <Checking the P-DEV status & saving the spare>

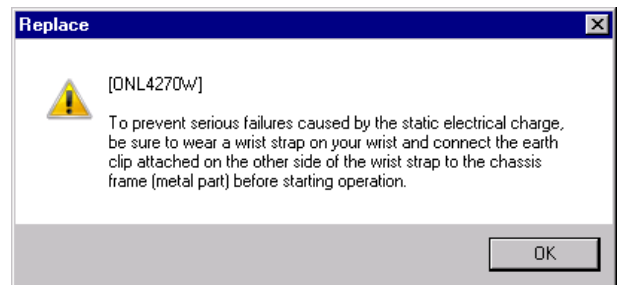
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

“Checking...” is displayed.

1-6. <Wear a wrist strap>

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



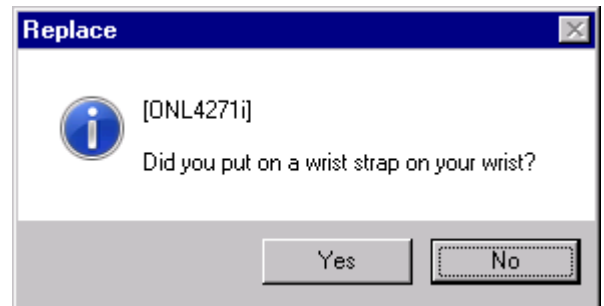
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

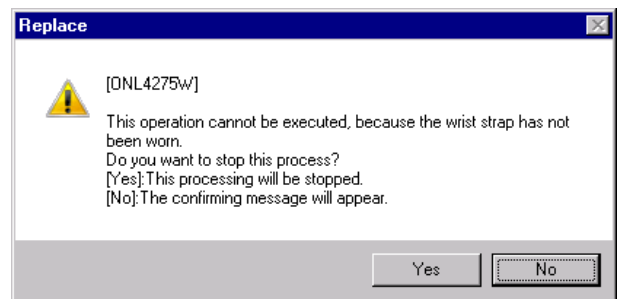


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

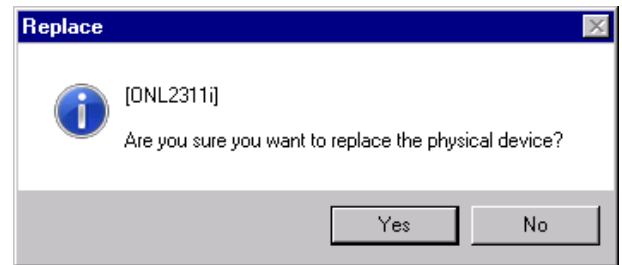


When [Yes] is selected (CL), returned to Step 1-3.

When [No] is selected (CL), returned to Step 1-6.

1-7. <P-DEV blocking>

Select (CL) [Yes] in response to “Are you sure you want to replace the physical device?”.

**1-8. <Blocking the Physical device>**

“Blocking...” is displayed.

1-9. <Spin down the Physical device>

“Spinning down...” is displayed.

1-10. <Check shut down LED>

CAUTION

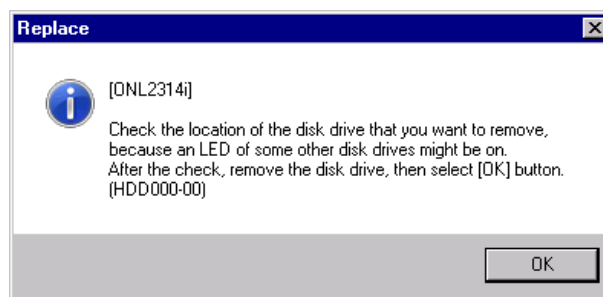
If a wrong HDD is removed, a data loss or a system down may occur.

Check the shut down LED on the HDD to be replaced.

If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

1-11. <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



1-12. <Replace HDD>

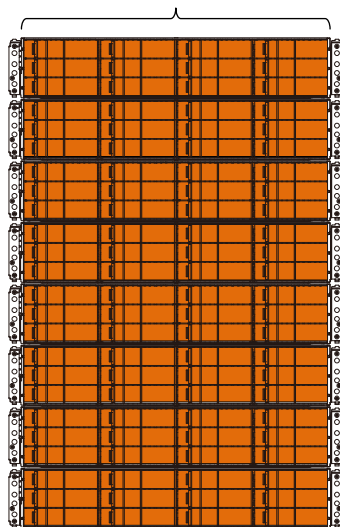
Replace HDD.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

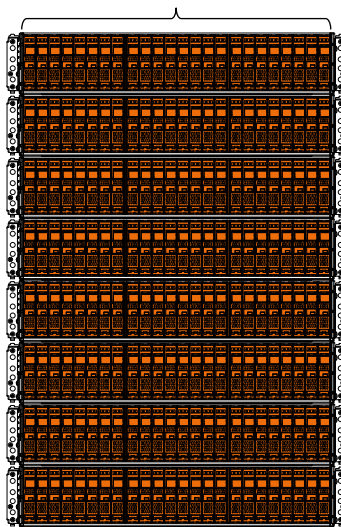
Location		Function Name of Component	Part Name	HDA Label
Front View of UBX	1	Disk Drive (HDD)	HDU800-600J5MSS	R5D-J600SS
			HDU800-3R0H3MSS	S2E-H3R0SS
			HDU800-4R0H3MSS	R2E-H4R0SS
	2	Flash Drive (SSD)	HDU800-400M5MSS	S2E-H4R0SS
Front View of SBX	3	Disk Drive (HDD)	HDU800-300KCMSS	B5A-M400SS
			HDU800-600JCMSS	R5D-J600SS
				S5E-J600SS
			HDU800-900JCMSS	R5D-J900SS
				S5E-J900SS
	4	Flash Drive (SSD)	HDU800-1R2JCMSS	R5E-J1R2SS
				S5F-J1R2SS
			HDU800-800MCMSS	B5A-M400SS
Front View of FBX	5	Flash Module Drive (FMD)		R5C-M400SS
				B5A-M800SS
				R5C-M800SS
			HDU800-1R6FMSS	HAA-P1R6SS
			HDU800-3R2FMSS	HAB-P3R2SS

Drive (HDD/SSD)



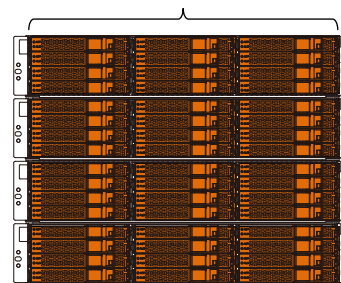
Front View of UBX

Drive (HDD/SSD)



Front View of SBX

Drive (FMD)



Front View of FBX

- NOTICE:**
- Replace the drive in the storage system in power on status only. Do not replace the drive in power off status.
 - Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
 - HDD is a precise component. Be careful in handling HDD to avoid vibration and impact.

2-1 Drive (HDD/SSD/FMD) Replacement Procedure

2-1-1. Check the Shut Down LED.

- Check that the Shut Down LED on drive is turned on. Refer to Fig. 3.5.2-1, Fig. 3.5.2-2 or Fig. 3.5.2-3.

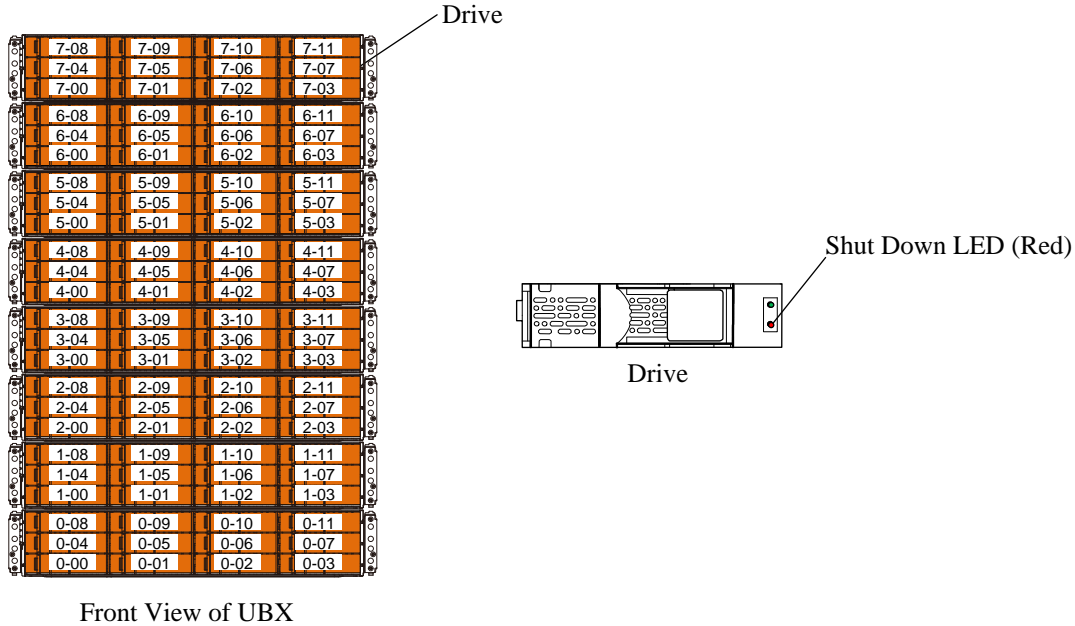


Fig. 3.5.2-1 Checking of Shut Down LED (In case of UBX)

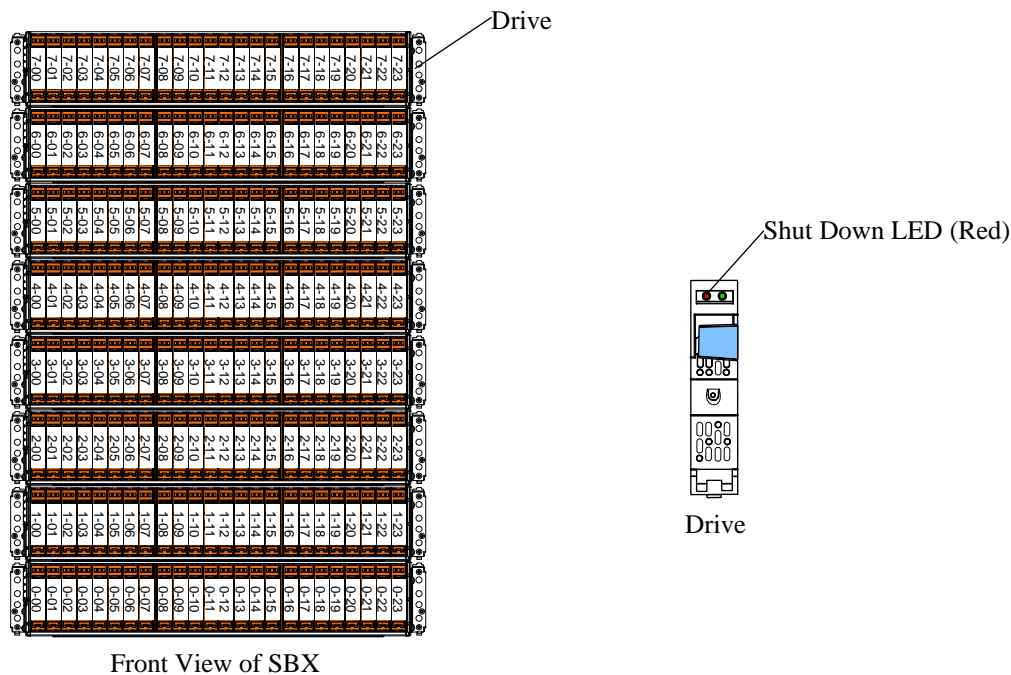
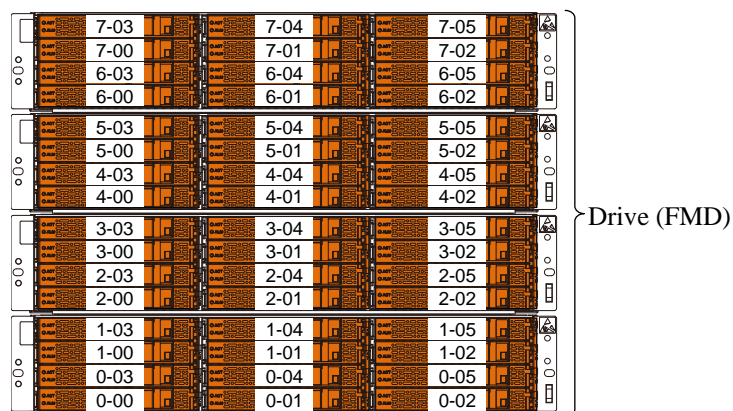
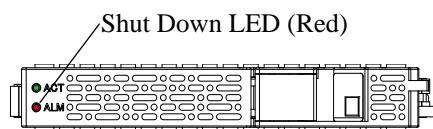


Fig. 3.5.2-2 Checking of Shut Down LED (In case of SBX)



Front View of FBX



Front View of Drive (FMD)

Fig. 3.5.2-3 Checking of Shut Down LED (In case of FBX)

2-1-2. Remove the drive.

2-1-2.1. In case of Drive for UBX

- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

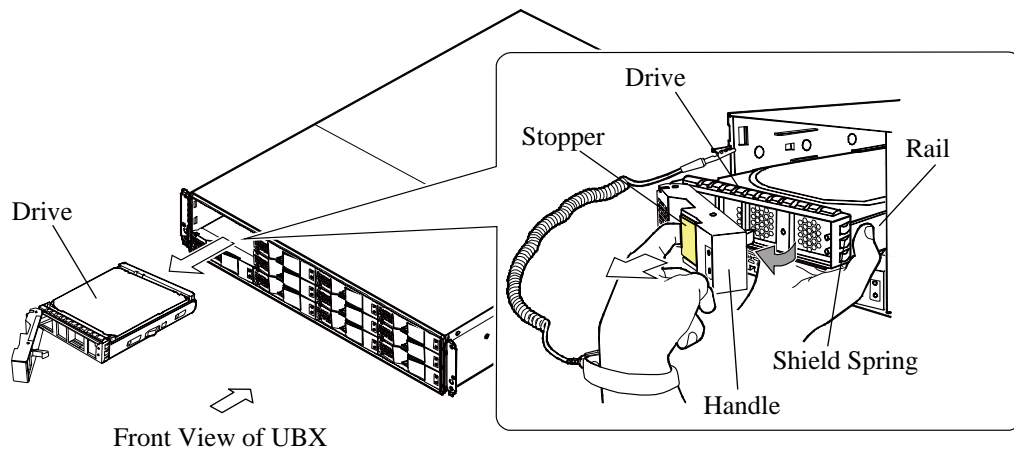


Fig. 3.5.2-4 Removal of Drive (for UBX)

2-1-2.2. In case of Drive for SBX

- Pull up the stopper of the drive handle toward you to release the lock.
- Open the handle toward you, and then pull out and remove the drive to be replaced not to give a shock.

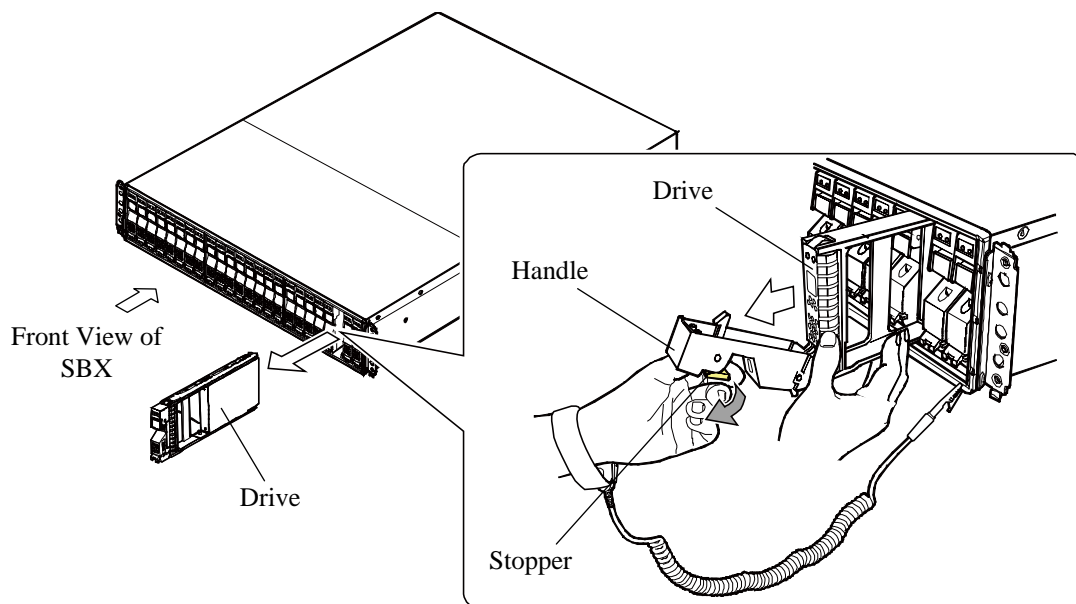
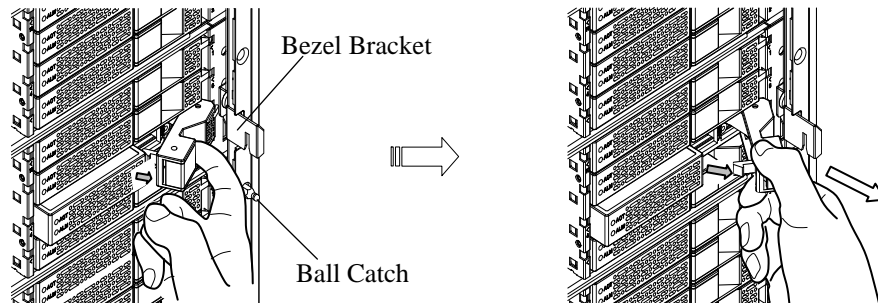


Fig. 3.5.2-5 Removal of Drive (for SBX)

2-1-2.3. In case of FBX

NOTICE: When the FMD is removed in replacing procedure, the fans of the DKUPS equipped in the rear of the FBX rotate at the highest speed. When the spare FMD is installed, the fans of the DKUPS rotate at the speed suitable for environmental temperature.

NOTICE: When extracting drives (FMD) centered on the right side of the FBX, be careful not to get your finger caught in the Bezel Bracket and/or the Ball Catch. Slightly pull the Stopper with your fingertip and then extract a drive with holding upper and bottom sides of the Handle as shown in the figure below.



- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

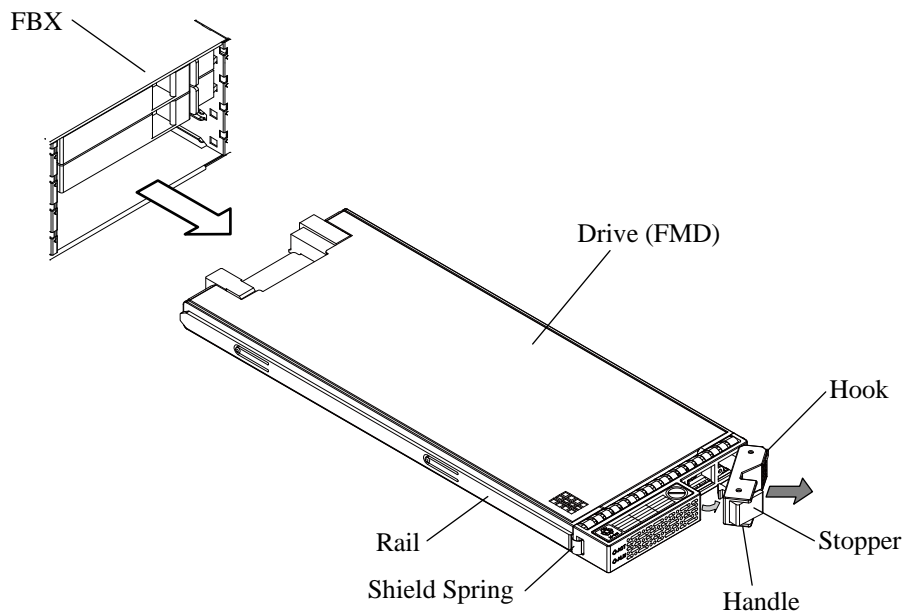
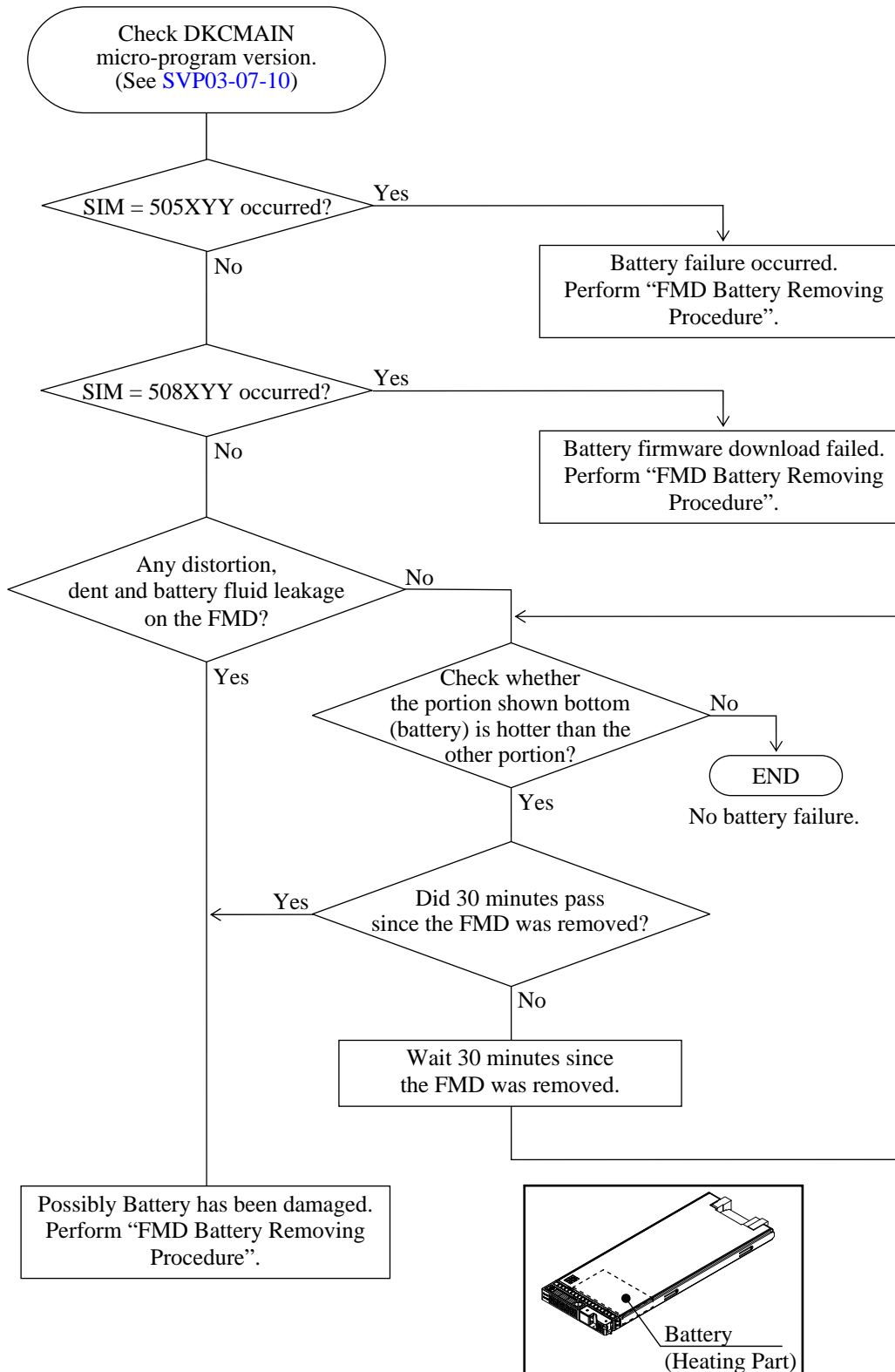


Fig. 3.5.2-6 Removal of Drive (In case of FBX)

- c. Check whether a failure of the battery built in the FMD has occurred by using the flowchart below. If a battery failure has occurred, remove the battery from the FMD. If no battery failure has occurred, go to Procedure 2-1-3.



d. FMD Battery Removing Procedure

(d)-1 Remove 4 Screws (SB310N) on the bottom side of FMD by using cross-head screw driver.

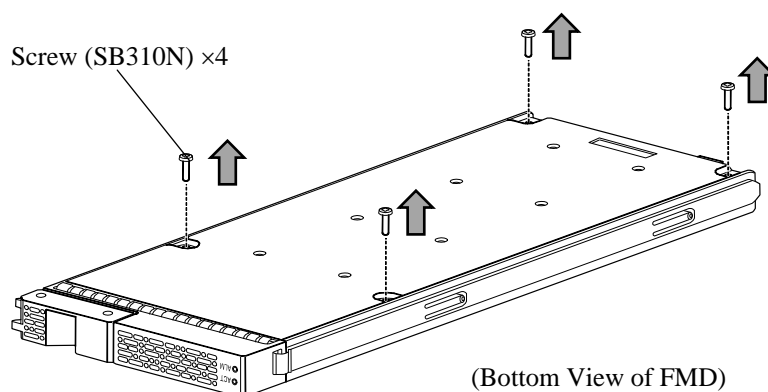


Fig. 3.5.2-7 Removing Screws

(d)-2 Remove Top Cover and Bottom Cover.

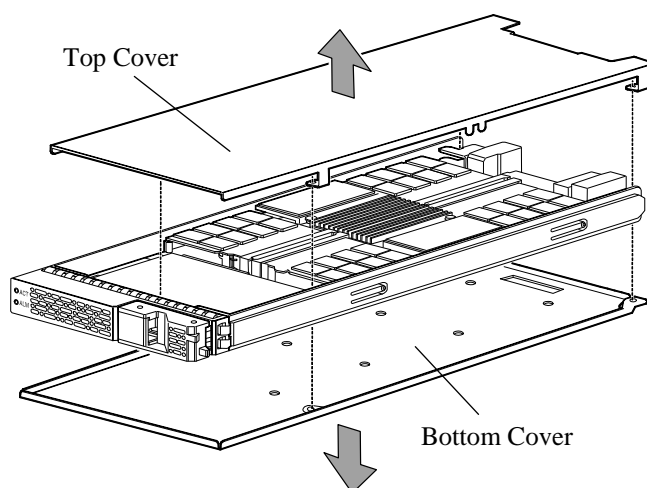


Fig. 3.5.2-8 Removing Covers

(d)-3 Remove 2 sets of Tapping-screw and Washer by using cross-head screw driver.

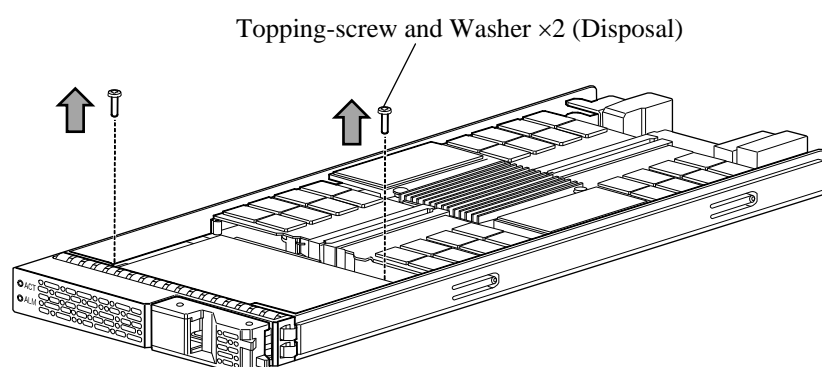


Fig. 3.5.2-9 Removing Tapping-screws and Washers

(d)-4 Move the Battery to the bezel side and disconnect the Battery from the circuit board.

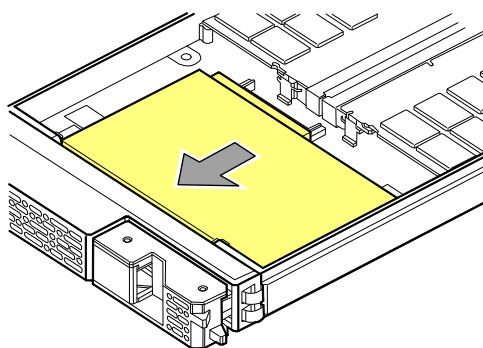


Fig. 3.5.2-10 Disconnecting from Connector

(d)-5 Remove the Battery to the bottom side of FMD. (After the connector comes off, battery is lowered below.)

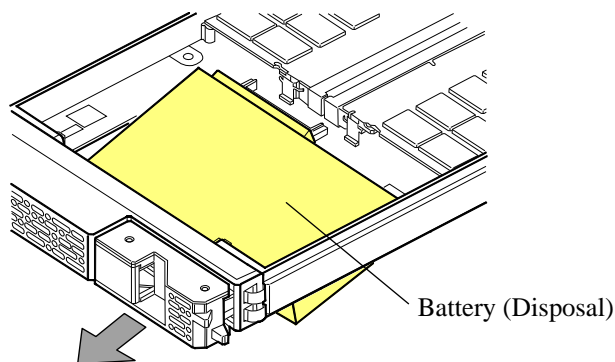


Fig. 3.5.2-11 Removing Battery

(d)-6 Attach Top Cover and Bottom Cover.

(d)-7 Attach 4 Screws (SB310N) on the bottom side of FMD.

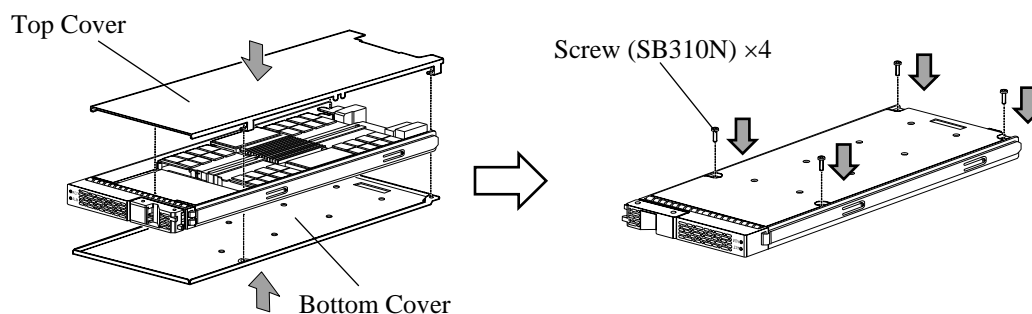


Fig. 3.5.2-12 Reassembling FMD

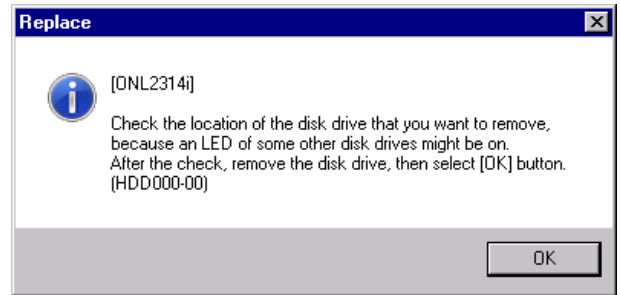
(d)-8 Dispose of the Tapping-screws, Washers and Battery removed in procedures (d)-3 and (d)-5.

When dispose of the Battery, follow the directions given by the local law where the product is used.

2-1-3. Check and handling of the drive.

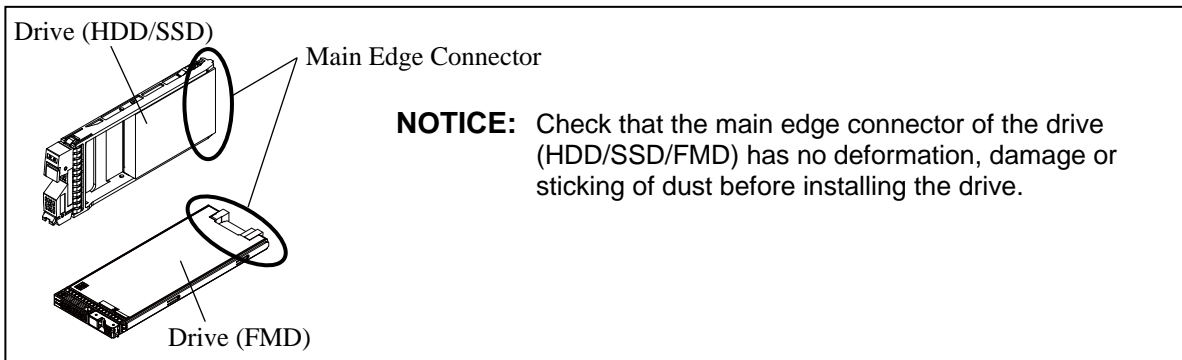
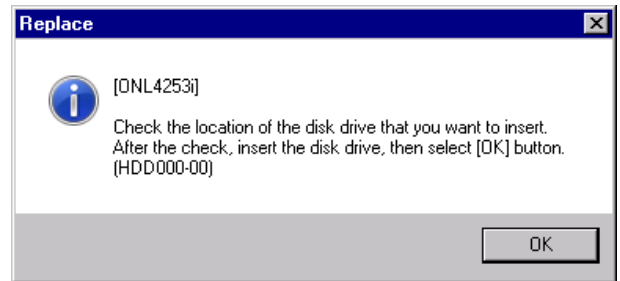
(1) <Confirm Removal>

Select (CL) [OK] in response to “Check the location of the disk drive that you want to remove, because an LED of some other disk drives might be on. After the check, remove the disk drive, then select [OK] button. (HDDnnn-nn)” after the unit is removed. (Step 2-1-2)



(2) <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



2-1-4. Install the drive.

NOTICE: Back Board, or drive connector or drive handle may be damaged when the drive is forcibly inserted.
If the drive cannot be easily inserted until the claws on the handle reach the DKU, or if the handle binds or stops before it can be locked, then remove the drive and perform inspection:

- a) Check the drive slot in DKU to be free and clear of obstructions.
- b) Check connector on back board for visible defects.
- c) Inspect connector on drive for visible defects.
- d) During installation make sure the drive is inserted in alignment with slot guides.

Reinsert drive after inspections have passed.

2-1-4.1. In case of UBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the UBX.

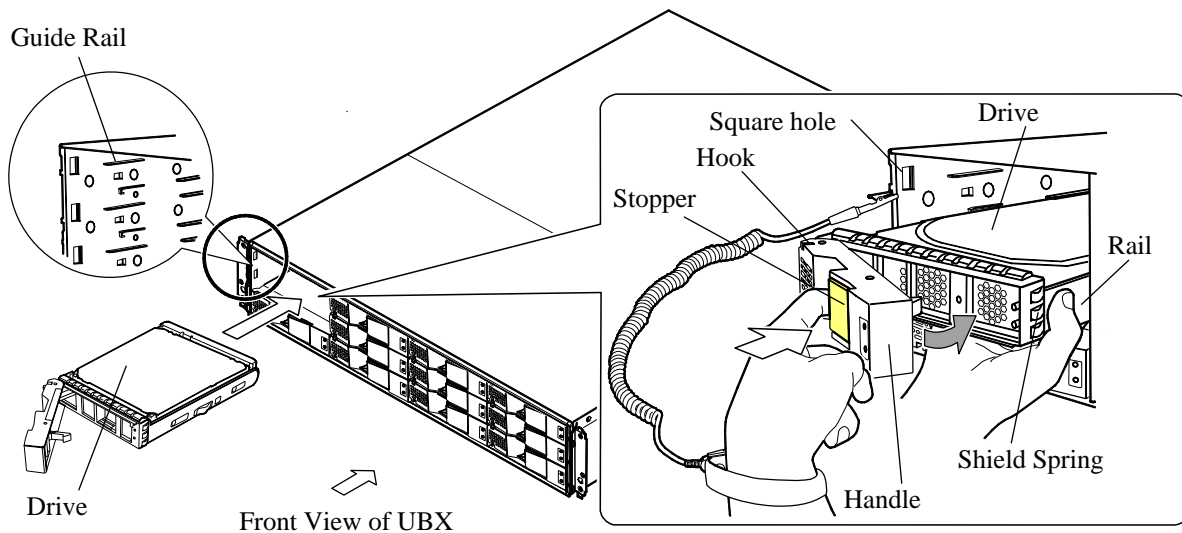


Fig. 3.5.2-13 Installation of Drive (In case of UBX)

2-1-4.2. In case of SBX

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

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

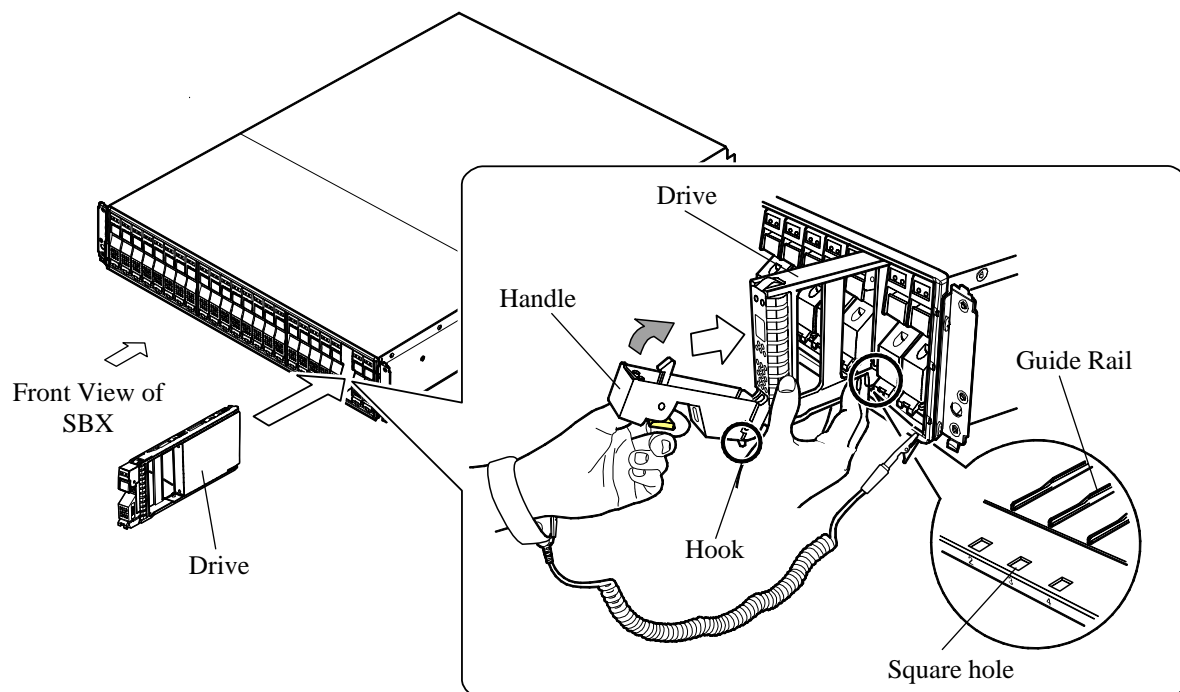


Fig. 3.5.2-14 Installation of Drive (In case of SBX)

2-1-4.3. In case of FBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the FBX.

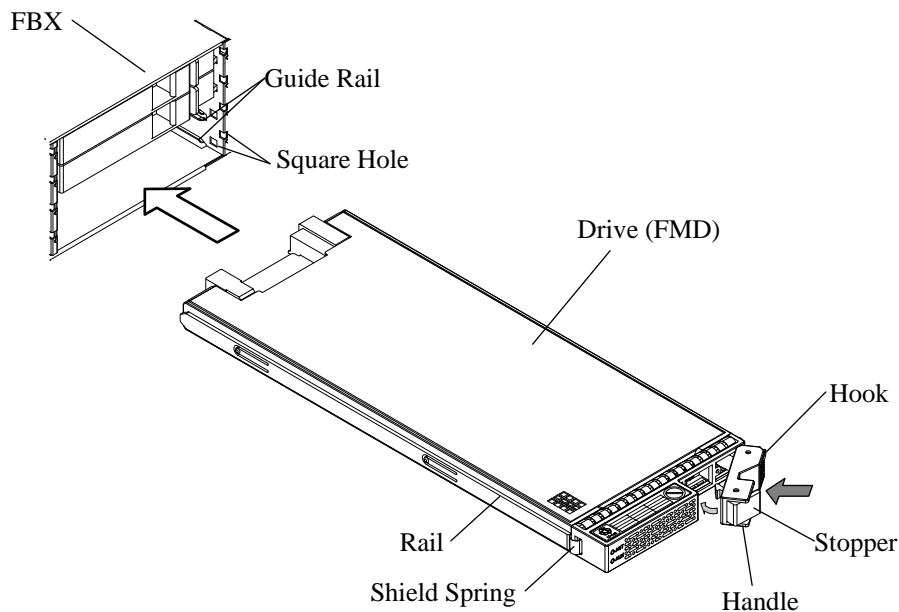


Fig. 3.5.2-15 Installation of Drive (In case of FBX)

2-1-5. Go to “3. POST-PROCESSING of SVP”.

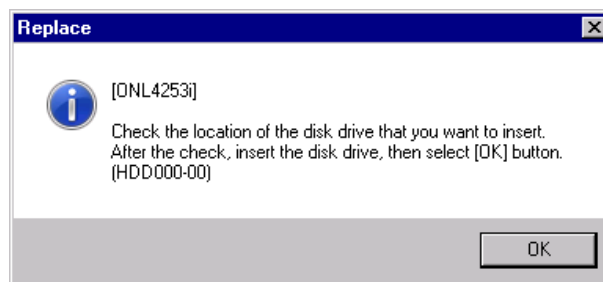
NOTICE: Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES of SVP, be sure to insert a removable media for dump, collect failure information, and return the removable media with the failed HDD.

A dump removable media is attached with a Spare HDD.

3. POST-PROCESSING of SVP

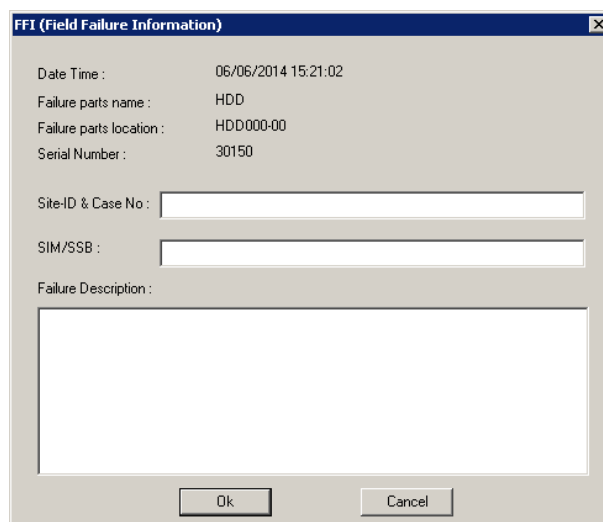
3-1. <Confirm Insertion>

“Check the location of the disk drive that you want to insert. After the check, insert the disk drive, then select [OK] button. (HDDnnn-nn)” is displayed.



3-2. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK].

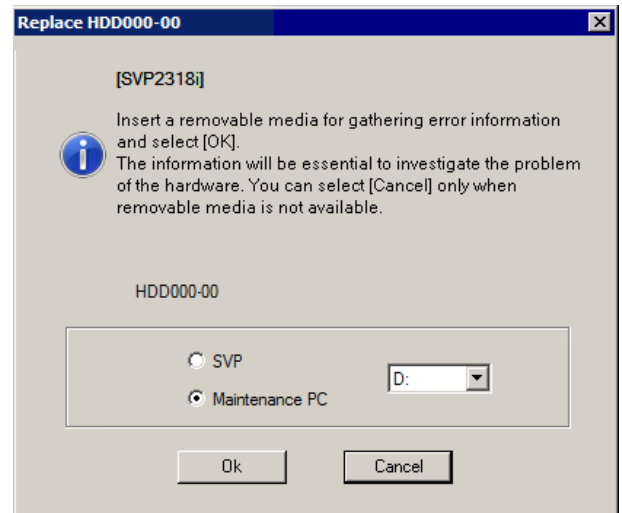
The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Select a Maintenance PC arbitrary drive, and select (CL) [Ok].

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu.

The drive letter becomes the drive letter of Maintenance PC connected with SVP.

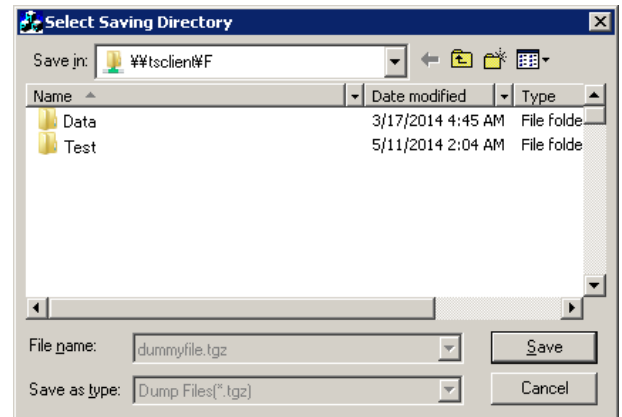


When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

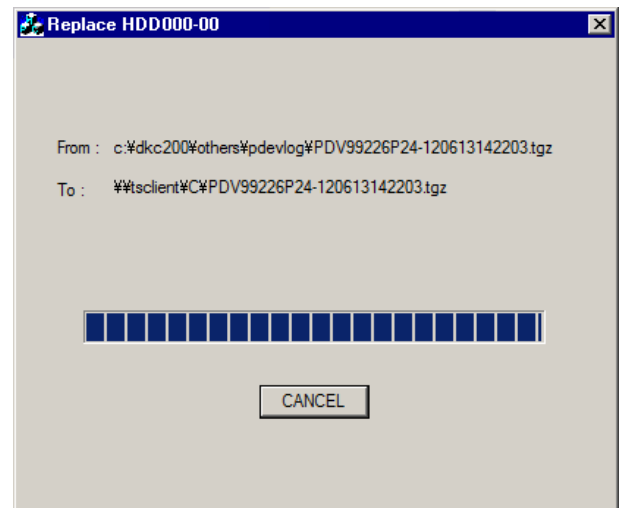
Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

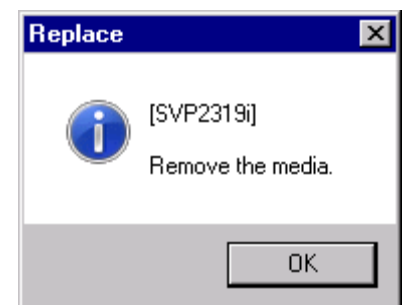


3-3. <Copy of the error information>

The error information is copied onto media.



“Remove the media.” is displayed. Select (CL) [OK].



3-4. <Check the spin up process>

“Spinning up...” is displayed.

3-5. <Check the INLINE process>

“DKU INLINE is now running...” is displayed.

3-6. <Replacement of the DKU micro-program>

When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.

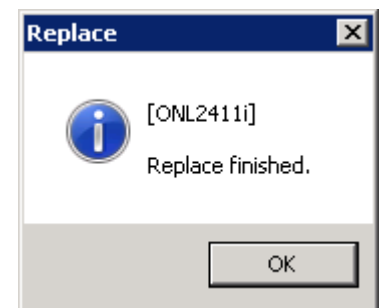
The message “Exchanging DKU micro-program...” appears.

3-7. <Restore Physical Drive>

“Restoring...” is displayed.

3-8. <Check the end of PDEV recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-9.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[CACHE REPLACEMENT PROCESSING - RCA1]

— OUTLINE —

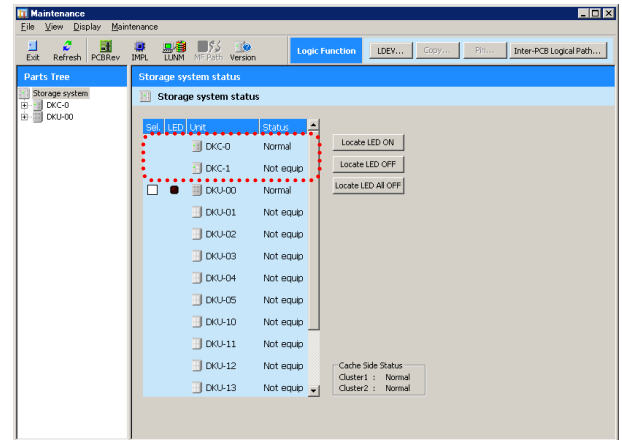
1. PRE-PROCESSING of SVP
 - ① Select cache (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on cache
 - ② Specify recovery
 - ③ Version of Microprogram

NOTICE: When a cache PCB is replaced for preventive reasons, one side of cache is blocked. As a result, the storage system performance may degrade.

1. PRE-PROCESSING of SVP

1-1. <Maintenance window>

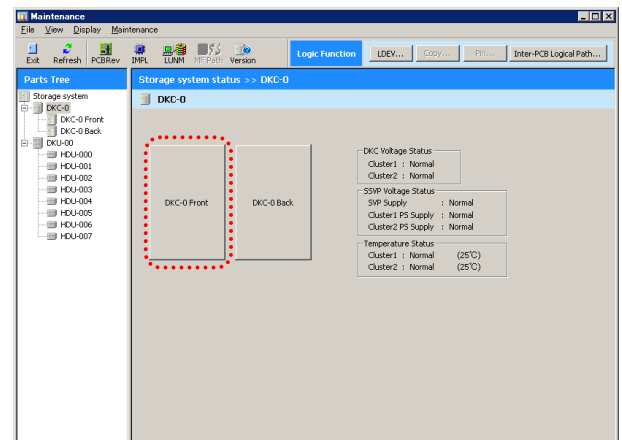
Select (CL) [DKC-n] in the 'Maintenance' window.



1-2. <DKC window>

Select (CL) [DKC-n Front] in the 'DKC' window.

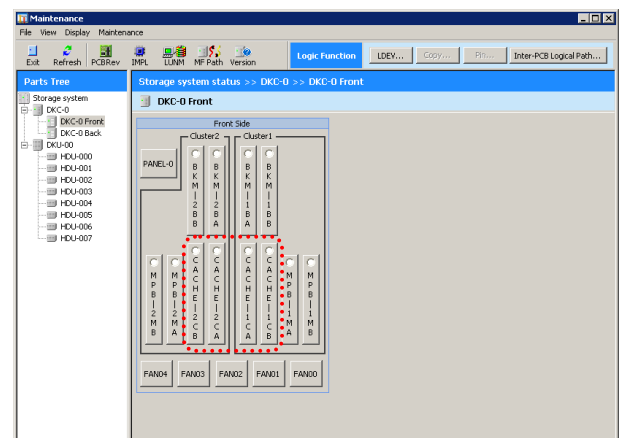
NOTE: When replacing the MFC Cable, Select (CL) [DKC-1 Front].



1-3. <Select Cache>

Select (CL) [CACHE-nnn] in the 'DKC-n Front' window.

NOTE: When replacing the MFC Cable, select (CL) the CACHE to which the cable is connected.

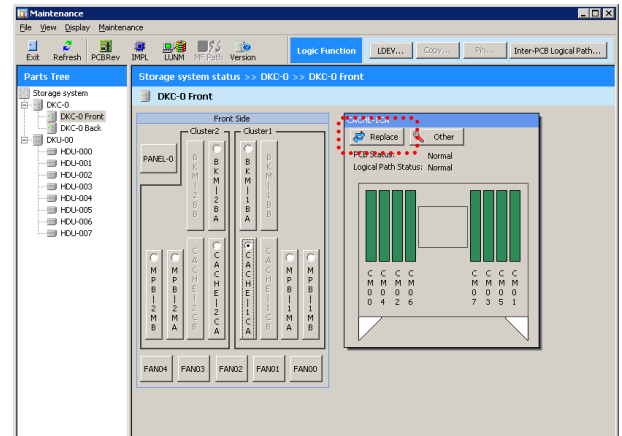


1-4. <Specify replacement of cache>

NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions

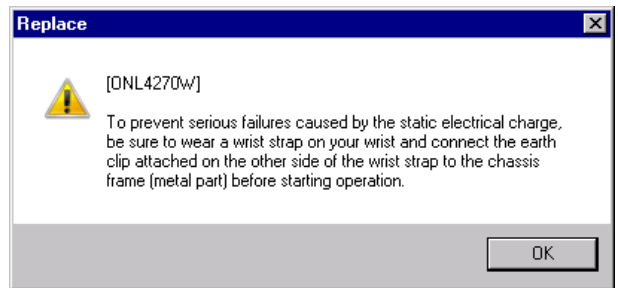
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION (SVPMSG00-00)

Check status display.
Select (CL) [Replace].



1-5. <Wear a wrist strap>

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



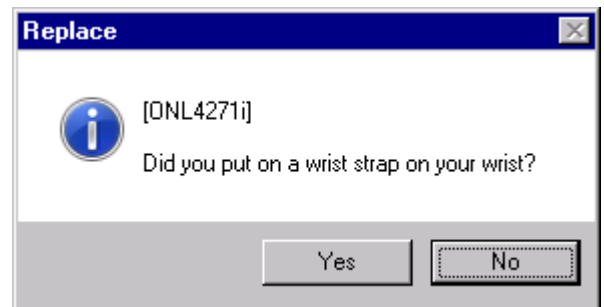
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

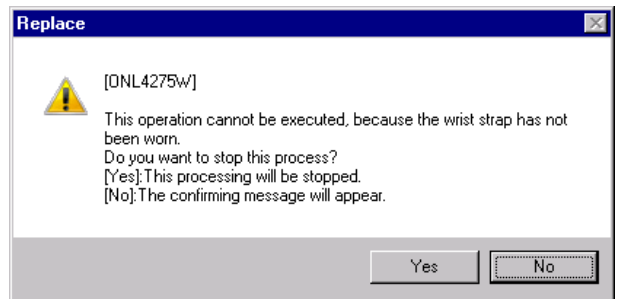


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

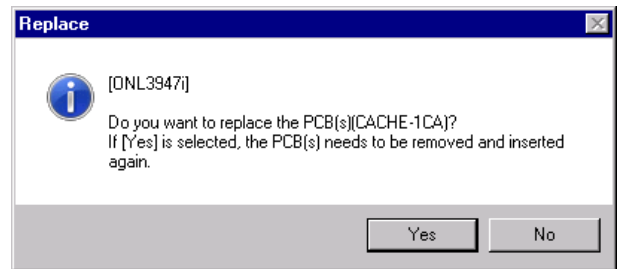


When [Yes] is selected (CL), returned to Step 1-4.

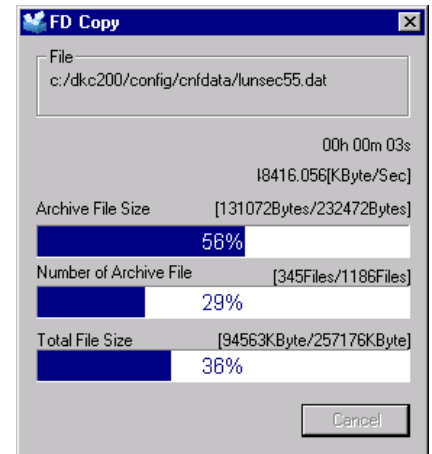
When [No] is selected (CL), returned to Step 1-5.

1-6. <Check the beginning of cache replace>

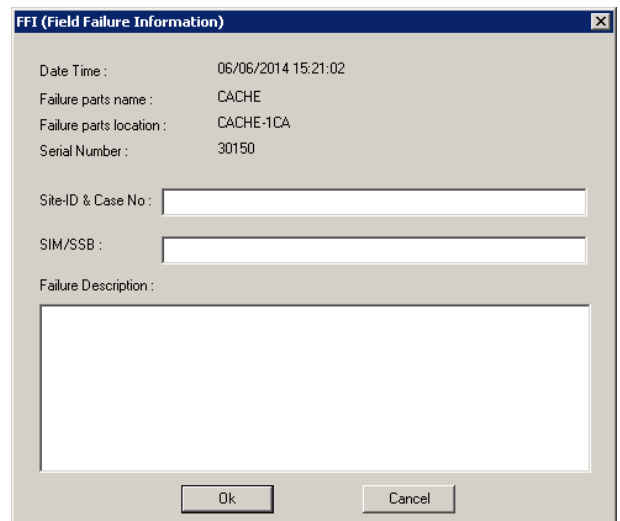
Select (CL) [Yes] after making sure that the package to be replaced is correct in response to “Do you want to replace the PCB(s)(CACHE-1CA)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.”.

**1-7. <Compression of the error information>**

The error information is compressed.
The dialog of FD Copy is displayed.

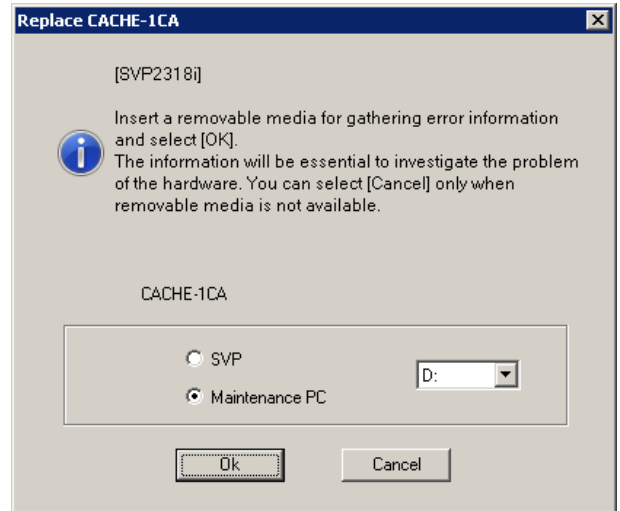
**1-8. <Get the error information>**

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP. Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



NOTE: When Cache Memory Module is replaced, select (CL) [Cancel] because the dump is not required.

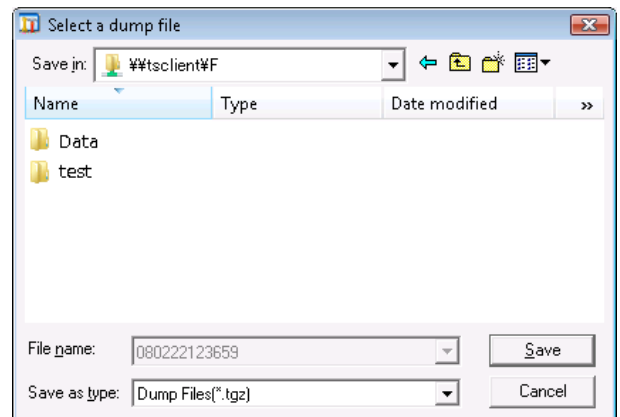
A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format

“[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”.

(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

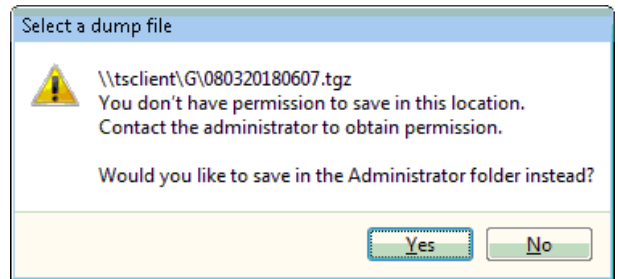
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.



Select (CL) [Save] when saving a file in a specified directory.

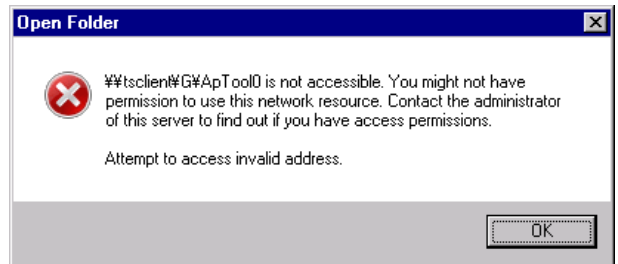
It returns to the drive selection screen when [Cancel] is selected (CL).

- When the destination media is write-protected.
Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



Please appoint another destination whether you remove write protect when you save it and carry it out.

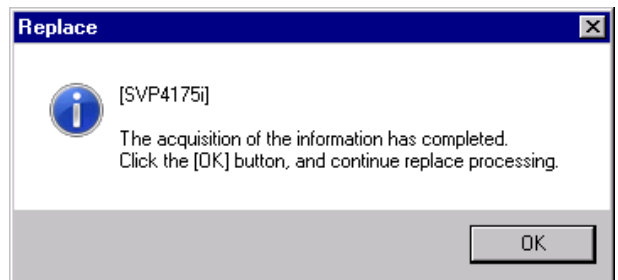
- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].



At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.

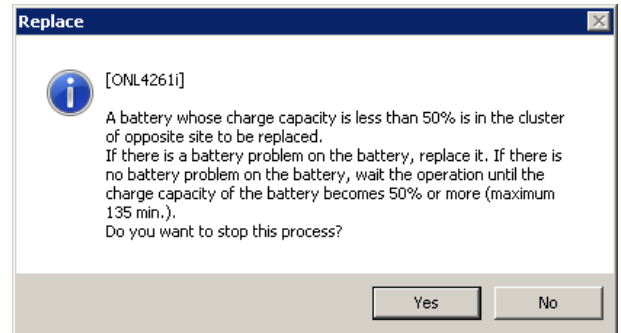


1-9. <Confirmation of amount of opposite cluster battery charge>

(1)

- When there is PCB whose amount of battery charge is less than 50% in the opposite cluster:

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



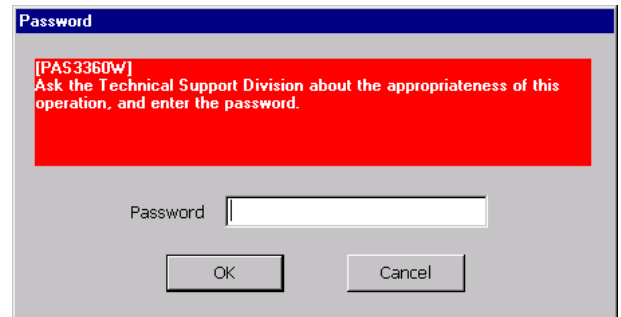
When [Yes] is selected (CL), returned to [REP03-10-30](#) Step 1-4.

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

- When there is no PCB whose amount of charge of the Cache battery is less than 50%: go to Step 1-10.

(2) <Input password>

Enter the password and select (CL) [OK].



CAUTION

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

1-10. <Cache blocking>

“The Cache Memory PCB (CACHE-*nnn*) is being blocked.” is displayed.

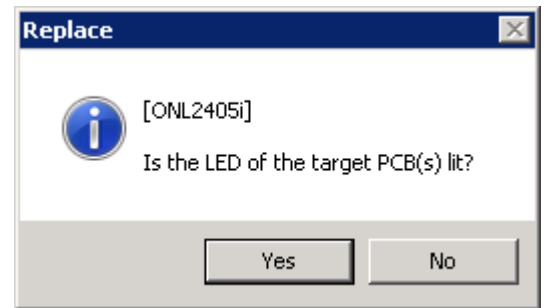
1-11. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

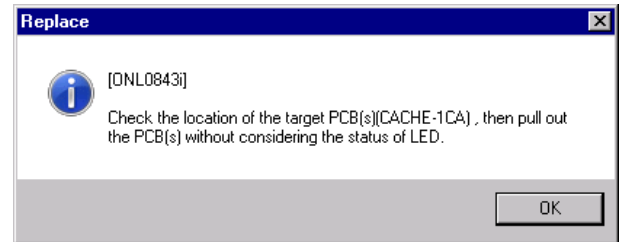
* [No] if LED is off

in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(CACHE-*nnn*), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)



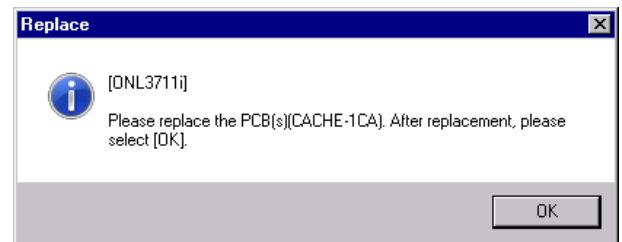
NOTE: Select (CL) [OK] after pulling out the PCB.

Go to Step 1-12.

1-12. <Cache Replacement>

“Please replace the PCB(s)(CACHE-*nnn*). After replacement, please select [OK].” is displayed.

Select (CL) [OK] after replacing the PCB.



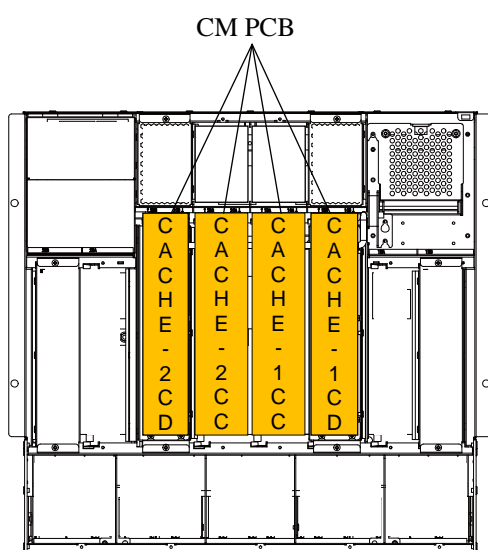
1-13. <Replace cache PCB>

Replace cache.

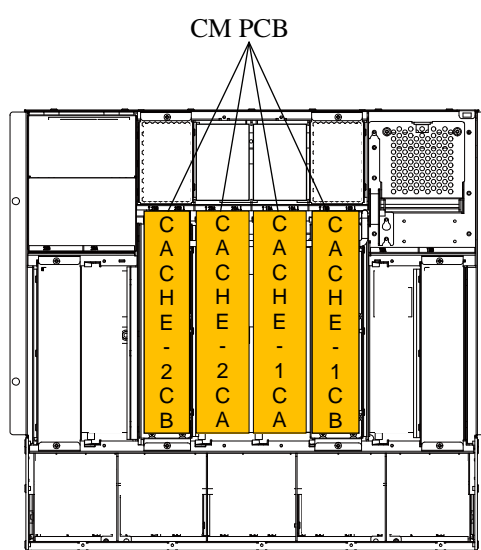
Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name	Page
Front View of DKC	1	CM (Cache Memory) PCB	• WP840-A	REP03-10-110
	2	CM Module	• 16GB DIMM (CM16G) • 32GB DIMM (CM32G)	REP03-10-160
	3	MFC Cable	• MFC Cable 5m (MFC5) • MFC Cable 30m (MFC30) • Optical Cable 100m + QSFP (MFC1J)	REP03-10-210



Front View of DKC-1



Front View of DKC-0

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	CM (Cache Memory) PCB
-----	-----------------------

2-1-1. Check that the Shut Down LED is on.

- a. Check that the Shut Down LED is on. (only hot replace)

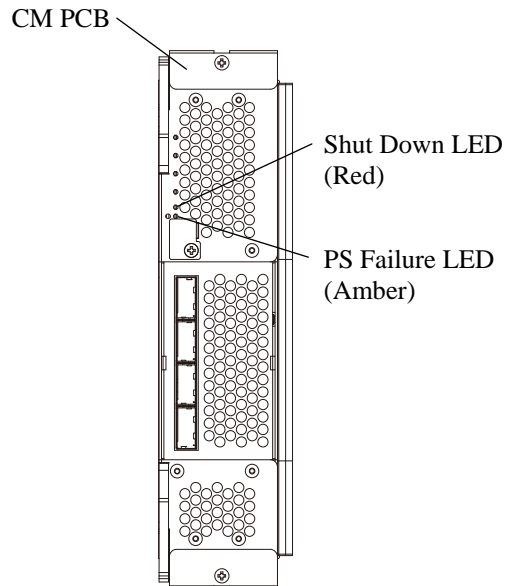
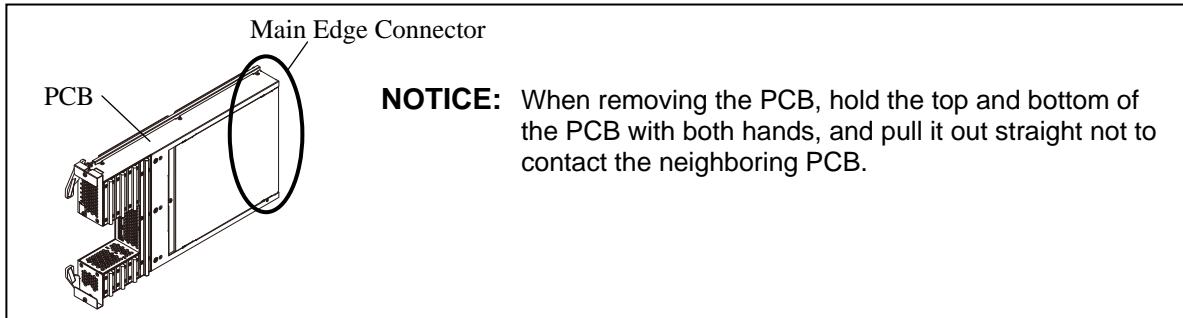


Fig. 3.10.2-1 Confirmation of Shut Down LED

2-1-2. Remove the CM PCB.

- a. If the cables are connected to the CM PCB, disconnect the cables after checking “3.1.7 Notes when connecting and disconnecting MFC cable” ([INST03-01-190](#)).
If the cables are not connected to the CM PCB, go to procedure b.
- b. Remove the two screws and remove the CM PCB.

NOTE: When removing the CM PCB, be careful not to pull cables.



NOTICE: After removing the PCB, install the spare PCB immediately.
If the PCB is kept removed for 30 minutes or more, the wind doesn't flow among installed PCBs, causing the PCBs' temperature rise which may result in temperature warning or temperature alarm.

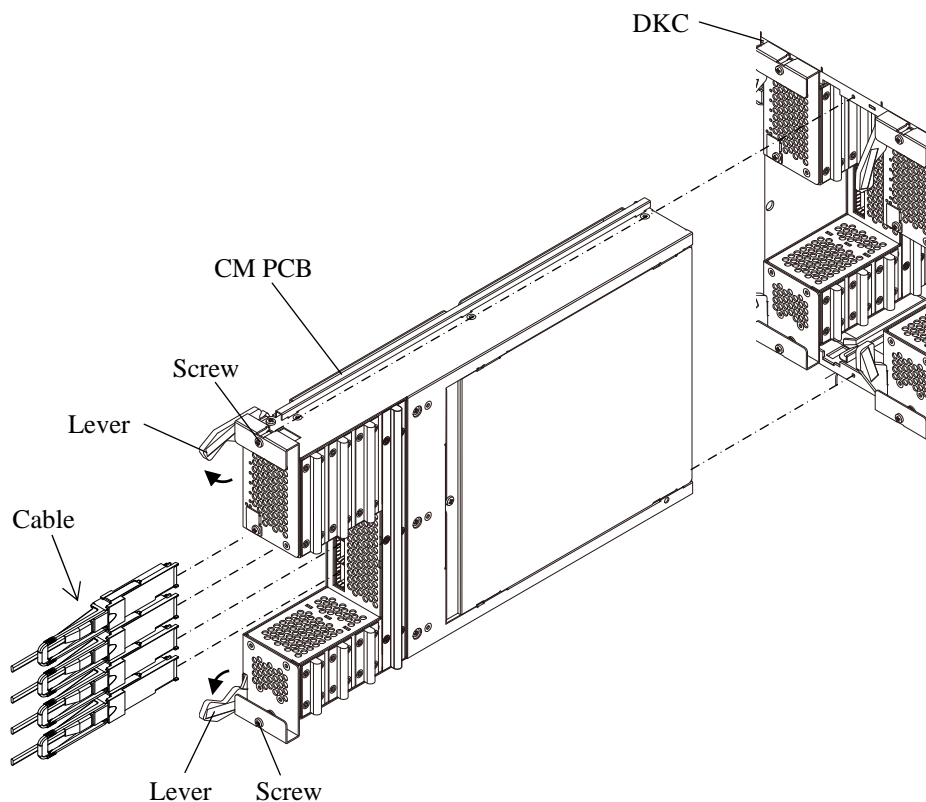


Fig. 3.10.2-2 Removal of CM PCB

2-1-3. Move the CM module.

- a. Loosen the screw and remove the cover.

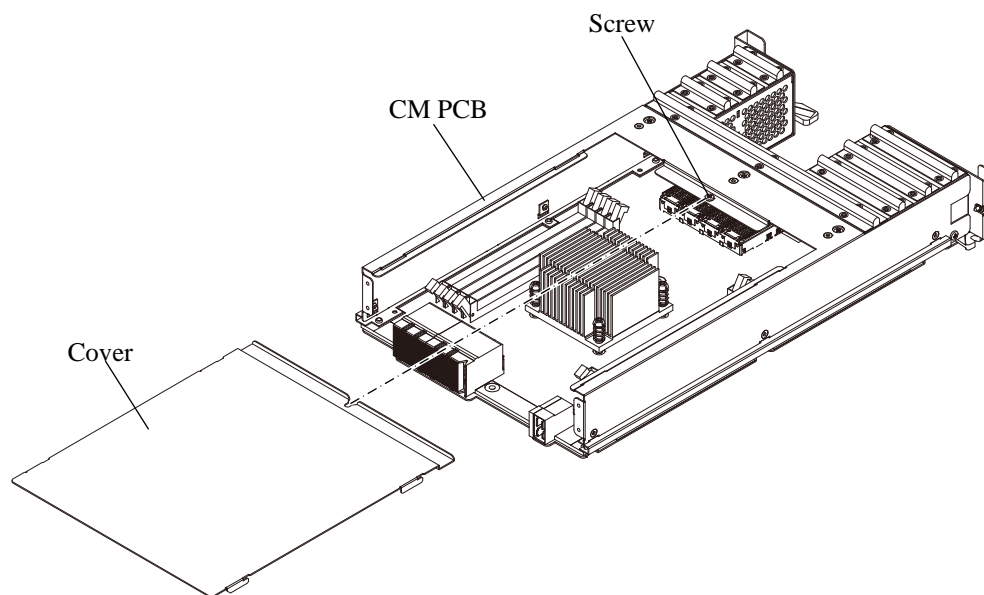
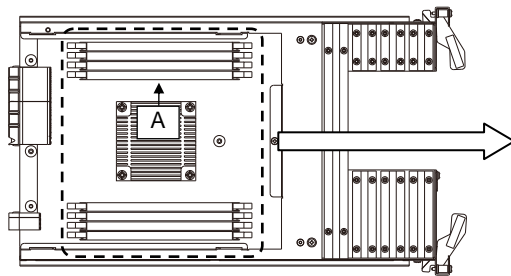


Fig. 3.10.2-3 Removal of Cover

- b. Move all the cache memory modules (including dust covers if any) mounted on an extracted PCB to the same mounting positions on the spare PCB.
- c. Attach the cover and tighten the screw. (Refer to Fig. 3.10.2-3.)

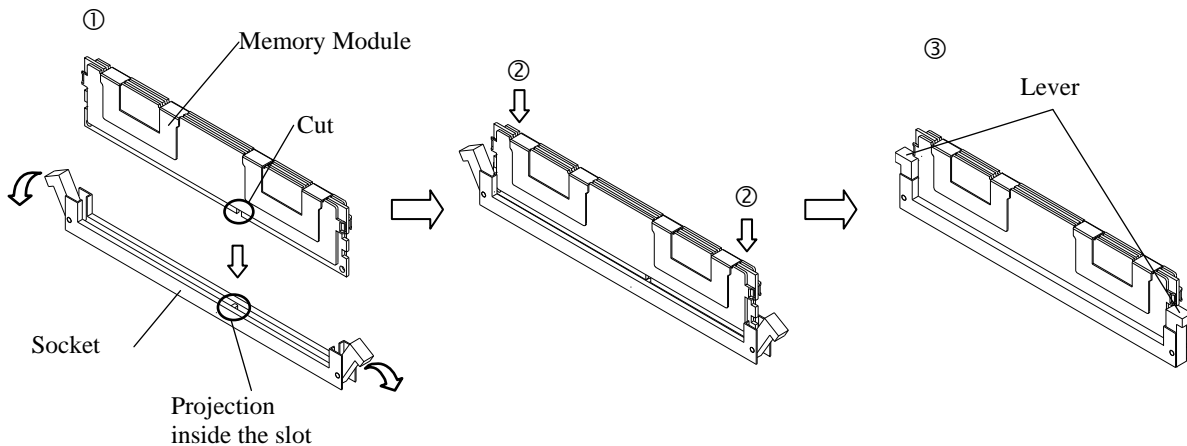
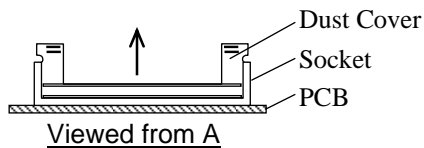


CM PCB (WP840-A)

CM Module Location

CM1P: CM Module
CM5P: CM Module
CM3P: CM Module
CM7P: CM Module

CM6P: CM Module
CM2P: CM Module
CM4P: CM Module
CM0P: CM Module

Removal of Dust CoverInstallation

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

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

Removal

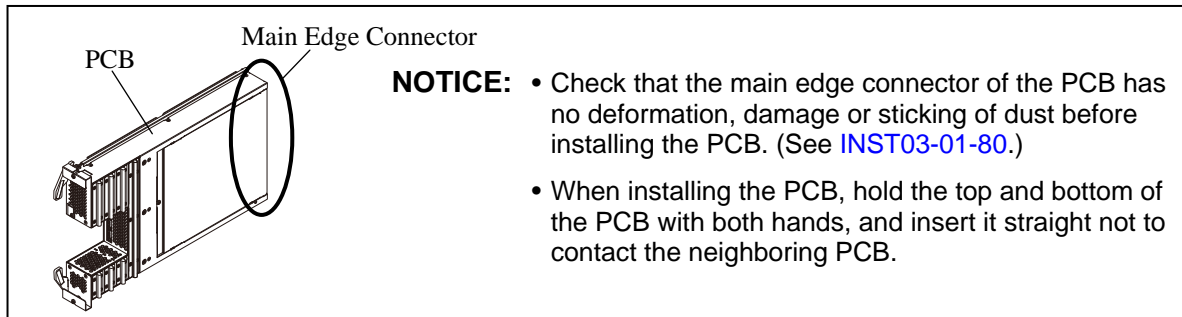
- ① Pull the lever outward, and remove the memory module by the inverse process of the installation.

Fig. 3.10.2-4 Insertion Location of CM Module

2-1-4. Insert the CM PCB.

- a. Insert the CM PCB and tighten the screws.

NOTE: When inserting the CM PCB, be careful not to get cables caught on anything.



- b. If the cables were disconnected in procedure 2-1-2 a, connect the cables to the CM PCB after checking “3.1.7 Notes when connecting and disconnecting MFC cable” ([INST03-01-190](#)).

2-1-5. Go to “3. POST-PROCESSING of SVP” ([REP03-10-250](#)).

2-2 Replacement of CM Module

2-2-1. Check that the Shut Down LED is on.

- a. Check that the Shut Down LED is on. (only hot replace)

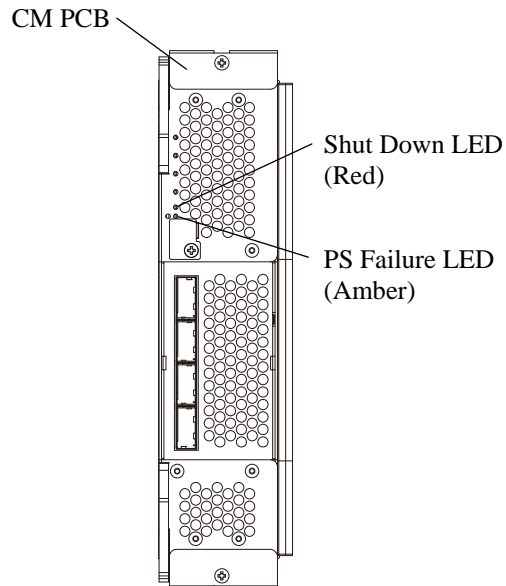
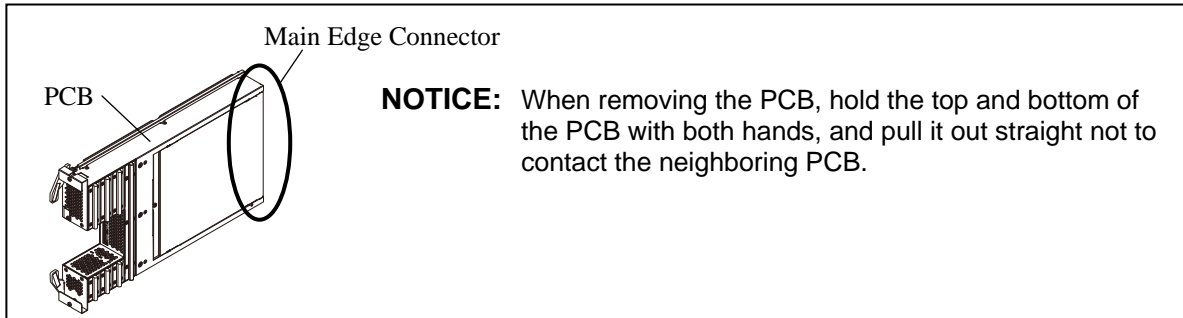


Fig. 3.10.2-5 Confirmation of Shut Down LED

2-2-2. Remove the CM PCB.

- a. If the cables are connected to the CM PCB, disconnect the cables after checking “3.1.7 Notes when connecting and disconnecting MFC cable” ([INST03-01-190](#)).
If the cables are not connected to the CM PCB, go to procedure b.
- b. Remove the two screws and remove the CM PCB.

NOTE: When removing the CM PCB, be careful not to pull cables.



NOTICE: After removing the PCB, replace memory modules immediately and install the extracted PCB.
If the PCB is kept removed for 30 minutes or more, the wind doesn't flow among installed PCBs, causing the PCBs' temperature rise which may result in temperature warning or temperature alarm.

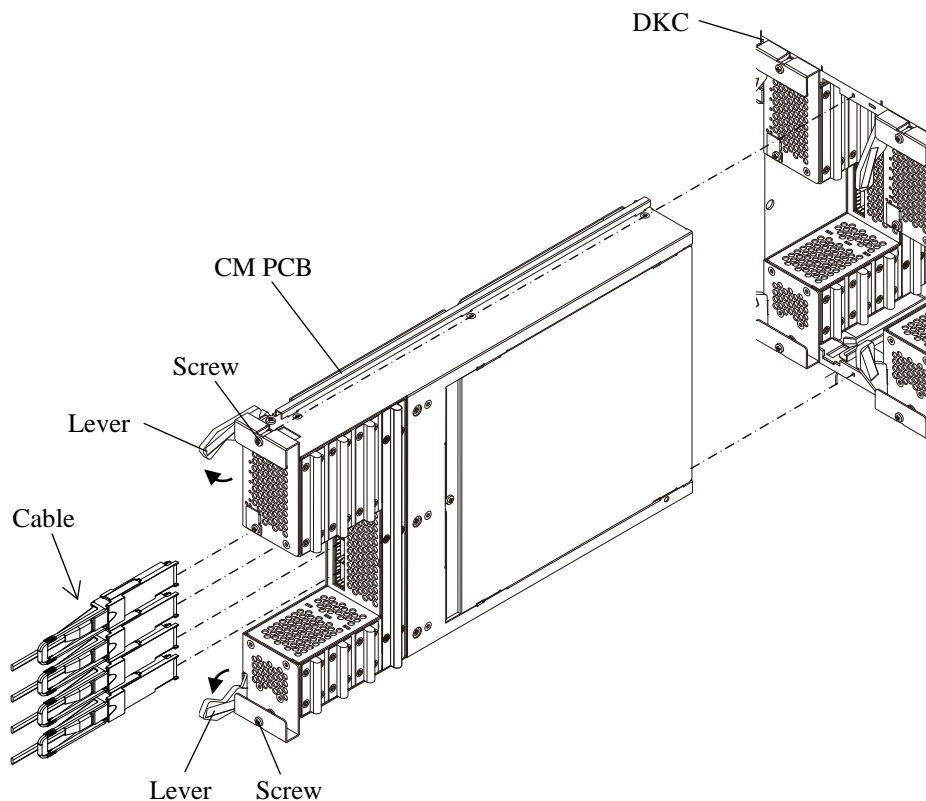


Fig. 3.10.2-6 Removal of CM PCB

2-2-3. Replace the CM module.

- a. Loosen the screw and remove the cover.

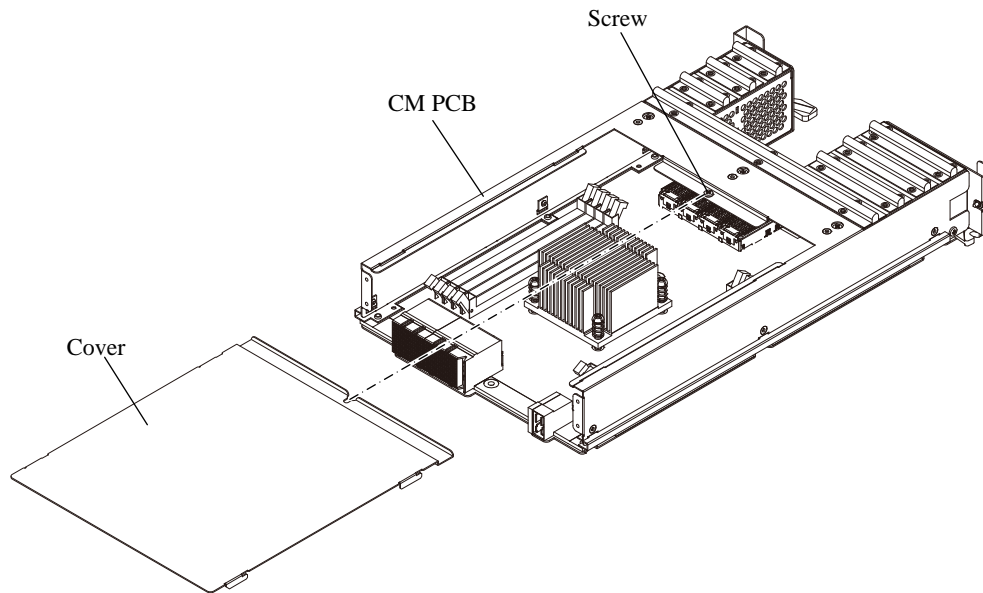
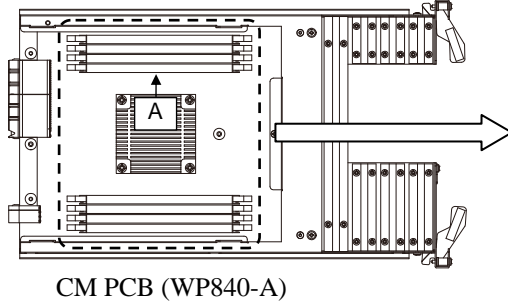


Fig. 3.10.2-7 Removal of Cover

b. Replace the CM Module.

c. Attach the cover and tighten the screw. (Refer to Fig. 3.10.2-7.)



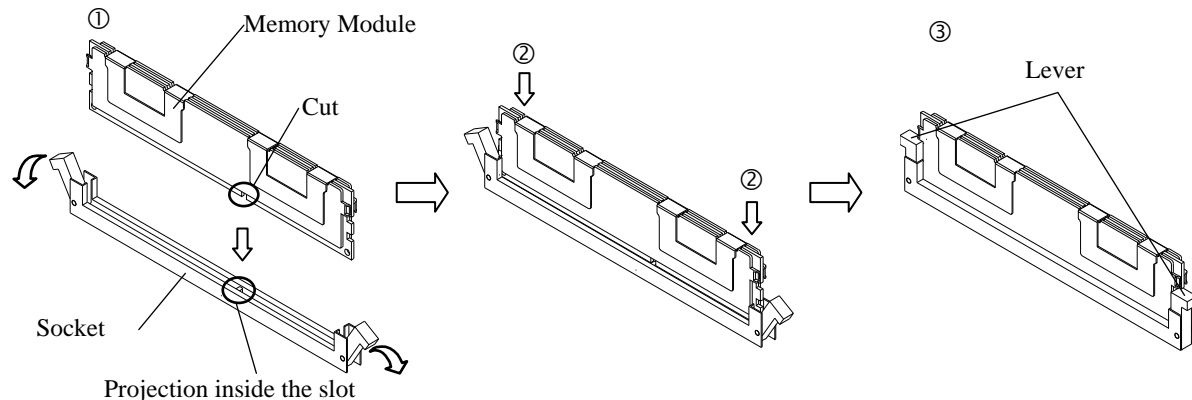
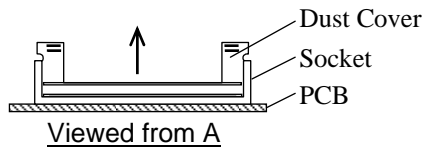
CM PCB (WP840-A)

CM Module Location

CM1P: CM Module
CM5P: CM Module
CM3P: CM Module
CM7P: CM Module

CM6P: CM Module
CM2P: CM Module
CM4P: CM Module
CM0P: CM Module

Removal of Dust Cover



Installation

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

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

Removal

- ① Pull the lever outward, and remove the memory module by the inverse process of the installation.

Memory Module Appearance

There are two types of memory modules. One has a heat spreader and the other has no heat spreaders. Both memory modules can be used because they are compatible with each other.

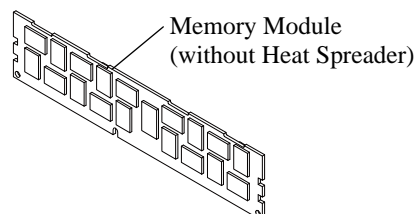
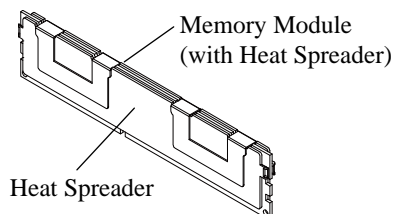
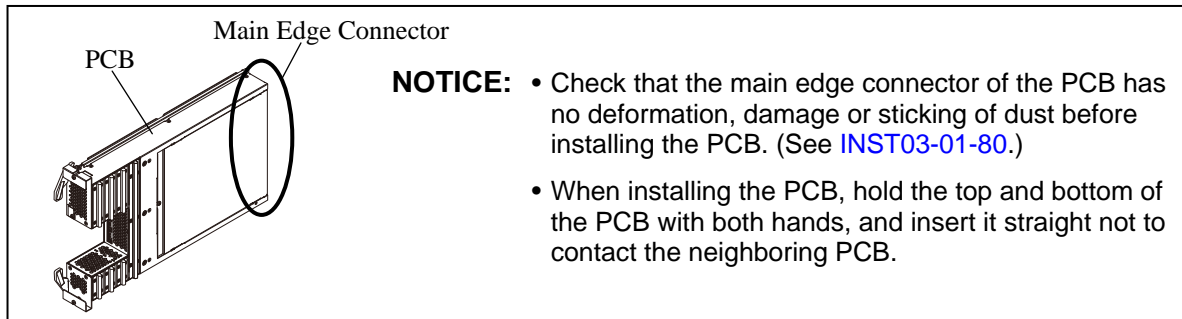


Fig. 3.10.2-8 Replacement of CM Module

2-2-4. Insert the CM PCB.

- a. Insert the CM PCB and tighten the screws.

NOTE: When inserting the CM PCB, be careful not to get cables caught on anything.



- b. If the cables were disconnected in procedure 2-2-2 a, connect the cables to the CM PCB after checking “3.1.7 Notes when connecting and disconnecting MFC cable” ([INST03-01-190](#)).

2-2-5. Go to “3. POST-PROCESSING of SVP” ([REP03-10-250](#)).

2-3	Replacement of MFC Cable
-----	--------------------------

2-3-1. Check that the Shut Down LED is on.

- a. Check that the Shut Down LED is on. (only hot replace)

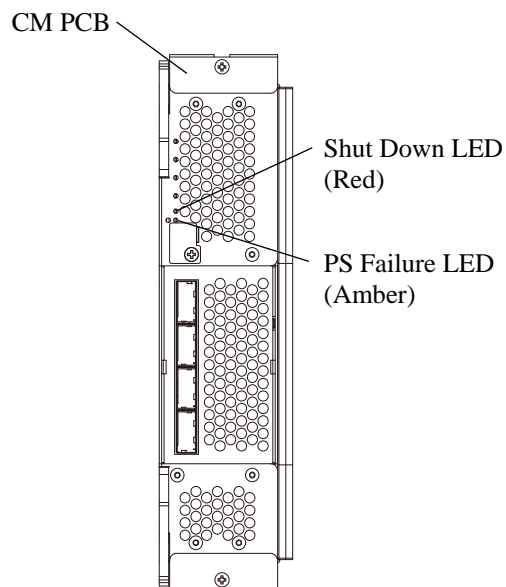


Fig. 3.10.2-9 Confirmation of Shut Down LED

2-3-2. Replace the MFC Cable.

- a. Pull out the MFC Cable to be replaced and insert the new cable while both the CM PCBs that are connected to the MFC Cable to be replaced are installed in the DKCs.

NOTE: As to MFC1J, the optical fiber cable is detachable and replacement of only optical modules is possible. However, note that the optical modules on each end of the cable must be replaced in a pair at the same time. (As to MFC5 and MFC30, the optical fiber cable is not detachable.)

For the details of cable replacement, see “3.1.7 Notes when connecting and disconnecting MFC cable” ([INST03-01-190](#)).

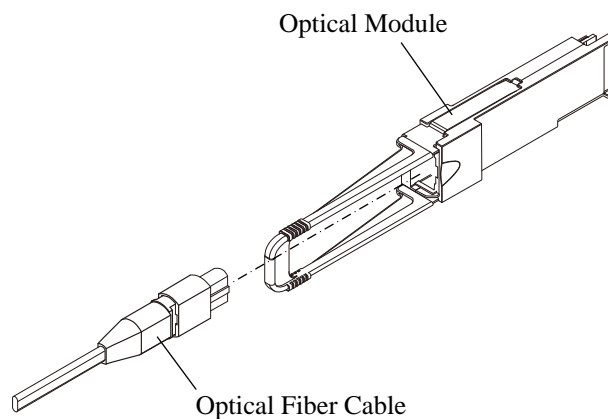


Fig. 3.10.2-10 Detaching Optical Fiber Cable from Optical Module

2-3-3. Remove the CM PCB.

- a. Loosen the two screws on the CM PCB and pull out the PCB until its main edge connector disengages from the platter.

NOTE: When removing the CM PCB, be careful not to pull cables.

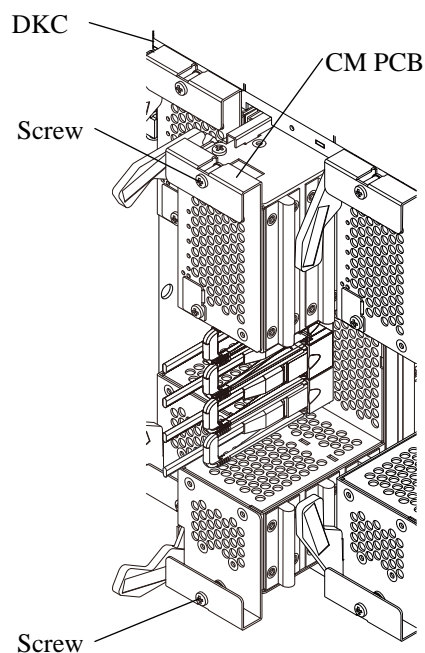
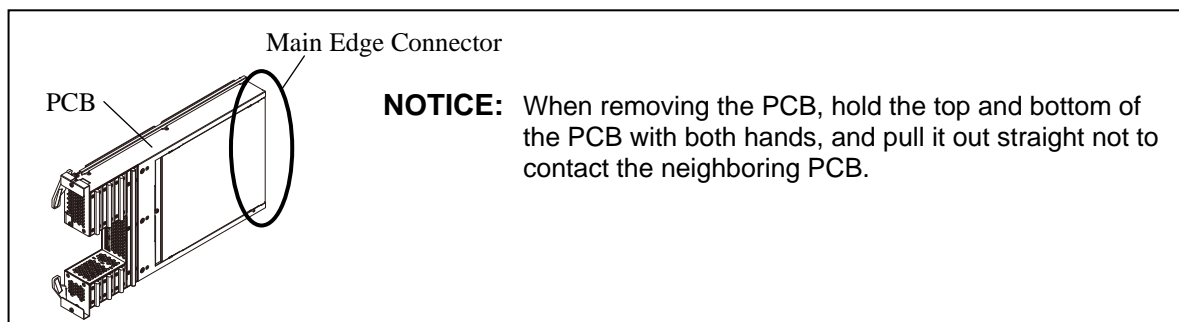
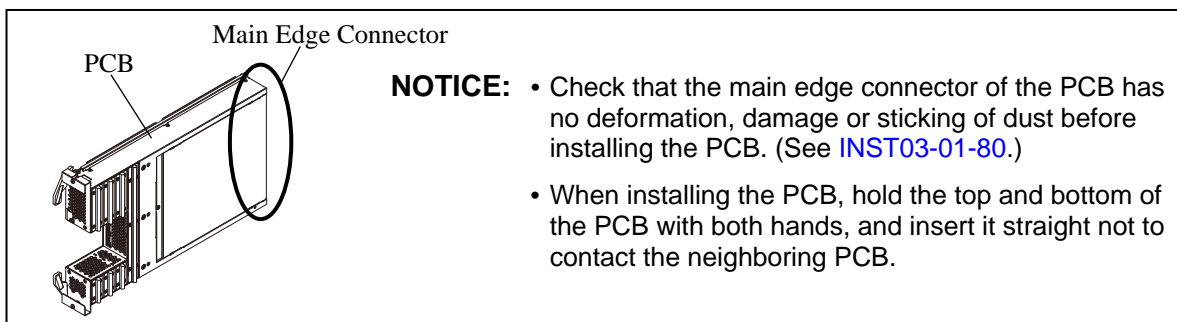


Fig. 3.10.2-11 Removal of CM PCB

2-3-4. Insert the CM PCB.

- a. Insert the CM PCB and tighten the screws.

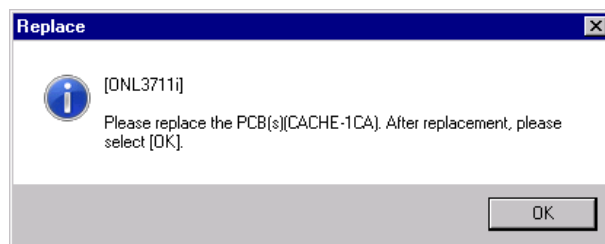


2-3-5. Go to “3. POST-PROCESSING of SVP” ([REP03-10-250](#)).

3. POST-PROCESSING of SVP

3-1. <Cache Replacement>

Select (CL) [OK] in response to “Please replace the PCB(s)(CACHE-*nnn*). After replacement, please select [OK].” after replacement.



3-2. <INLINE CUDG>

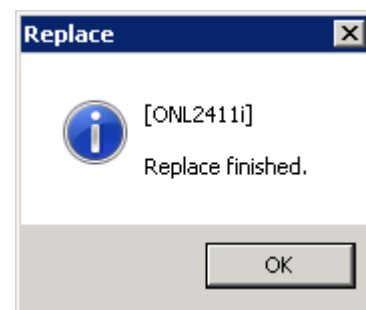
“INLINE CUDG is now running...” is displayed.

3-3. <Restore the Cache Memory>

“Restoring the Cache Memory PCB...” is displayed.

3-4. <Check the end of Cache recovery>

Select (CL) [OK] in response to “Replace finished.”.



CAUTION

Confirm the version of the exchanged CACHE microprogram on the 'STATUS' screen.

If the CMBK microprogram version of the CACHE that is target to be maintained is lower than in the SVP, replace CACHE again.

3-5. <Version of Microprogram>

Select (CL) [Version]-[CM/BKM Ver.] in the 'Maintenance' window.

The 'Version' window displays microprogram version information for three components: CMBK, BTCL, and CFM. Each component has a table of version data and SVP (Service Version Program) information.

CMBK Table:

CACHE	CMBK
CACHE-1CA	80-00-15
CACHE-1CB	-----
CACHE-2CA	80-00-15
CACHE-2CB	-----
CACHE-1CC	-----
CACHE-1CD	-----
CACHE-2CC	-----
CACHE-2CD	-----

SVP : 80-00-15
Previous : -----

BTCL Table:

BKM	BTCL
BKM-1BA	80-01-08
BKM-1BB	-----
BKM-2BA	80-01-08
BKM-2BB	-----
BKM-1BC	-----
BKM-1BD	-----
BKM-2BC	-----
BKM-2BD	-----

SVP : 80-01-08
Previous : -----

CFM Section:

Current:

Type	Version
SD128-A/A21	00-03-00-00

SVP:

Type	Version
CSAA21	00-03-00-00

Previous:

Type	Version

Buttons: Renew, Close

Table 3.10.3-1 Information to Be Displayed

Item	Description
• Display of "CMBK"	
Display of "Current"	"CACHE" : CM name "CMBK" : CMBK micro version information (It is stored in FM) that each CM PCB has is displayed. "SVP" : Latest version of the drive microprogram stored in the SVP. "Previous" : Previous version of the drive microprogram stored in the SVP.
• Display of "BTCL"	
Display of "Current"	"BKM" : BKM name "BTCL" : BTCL micro version information (It is stored in FM) that each BKM has is displayed. "SVP" : Latest version of the drive microprogram stored in the SVP. "Previous" : Previous version of the drive microprogram stored in the SVP.
• Display of "CFM"	
Display of "Current"	Current Version. "Type" : CFM type model "Version" : Version of CFM microprogram
Display of "SVP"	Latest version of the CFM microprogram stored in the SVP. "Type" : CFM type "Version" : Version of CFM microprogram
Display of "Previous"	Former version of the CFM microprogram stored in the SVP. "Type" : CFM type "Version" : Version of CFM microprogram

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[MPB REPLACEMENT PROCESSING - RMP1]

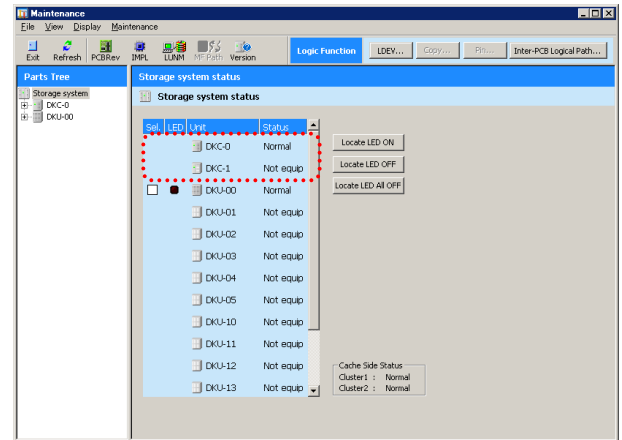
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select MPB (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery for MPB
 - ② Version of Microprogram

1. PRE-PROCESSING of SVP

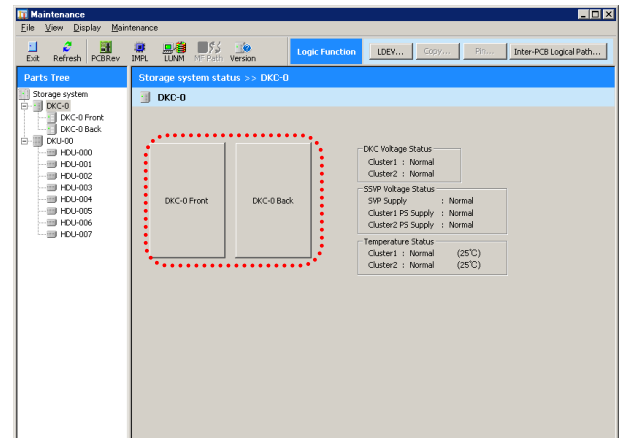
1-1. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.



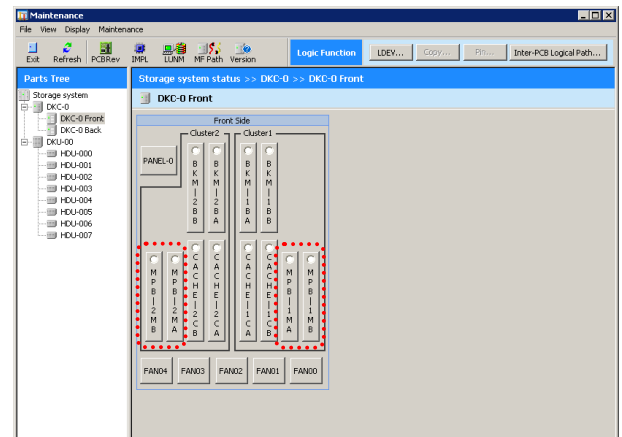
1-2. <DKC window>

Select (CL) [DKC-n Front] or [DKC-n Back] in the 'DKC' window.



1-3. <Select MPB>

Select (CL) [MPB-nnn] in the 'DKC-n Front' or 'DKC-n Back' window.



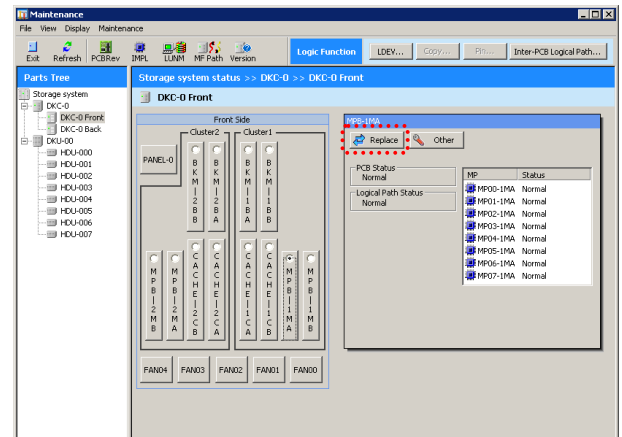
(Eg. DKC-0 Front)

1-4. <Specify replacement of MPB>

NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

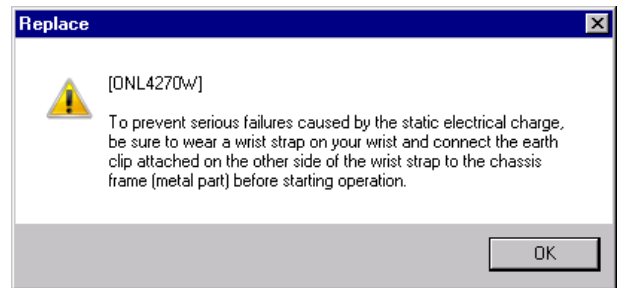
Check status display.
Select (CL) [Replace].



(Eg. DKC-0 Front)

1-5. <Wear a wrist strap>

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



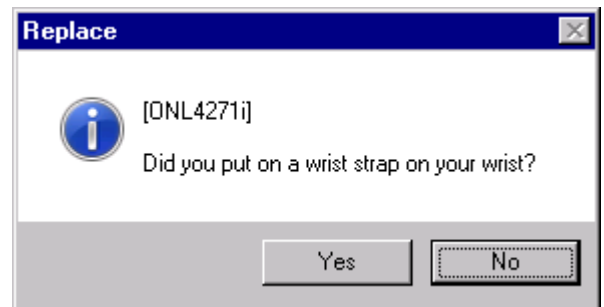
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

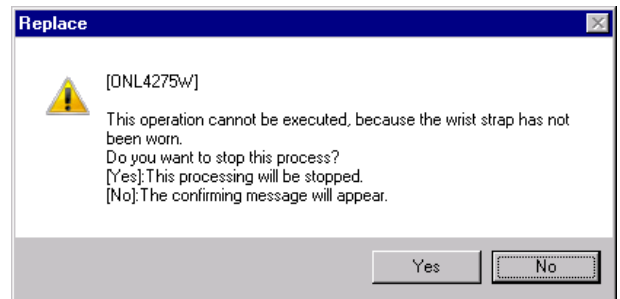


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”

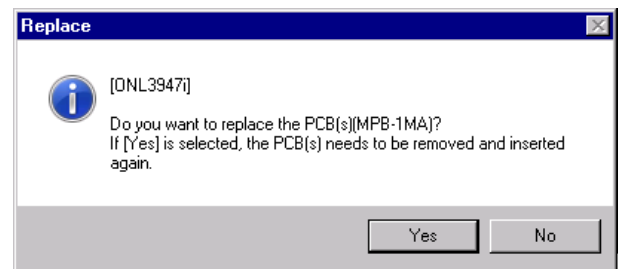


When [Yes] is selected (CL), returned to Step 1-4.

When [No] is selected (CL), returned to Step 1-5.

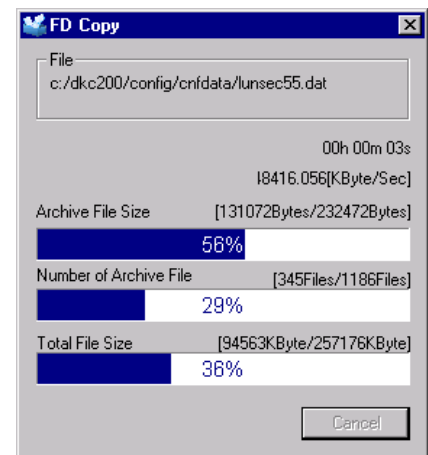
1-6. <Check the beginning of MPB replace>

Select (CL) [Yes] after making sure that the package to be replaced is correct in response to “Do you want to replace the PCB(s)(MPB-
nnn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.”.



1-7. <Compression of the error information>

The error information is compressed.
The dialog of FD Copy is displayed.



1-8. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].

“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.

A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format

“[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”.

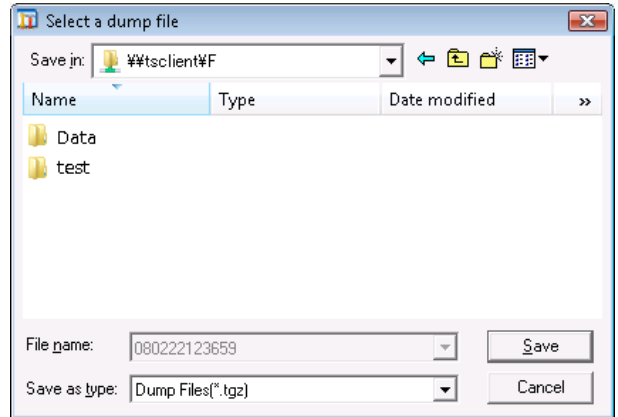
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

Select (CL) [Save] when saving a file in a specified directory.

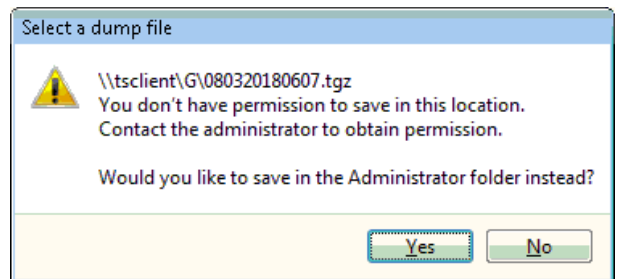
It returns to the drive selection screen when [Cancel] is selected (CL).



<For Windows Vista>

Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP. Selecting (CL) [No] displays the folder selected with the Maintenance PC.

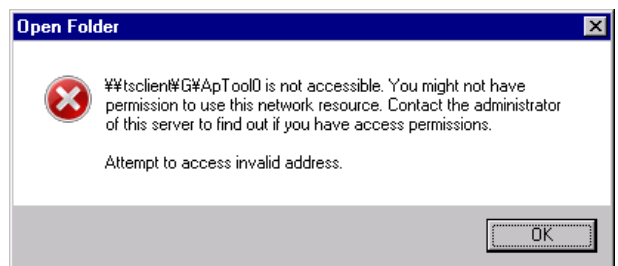
Please appoint another destination whether you remove write protect when you save it and carry it out.



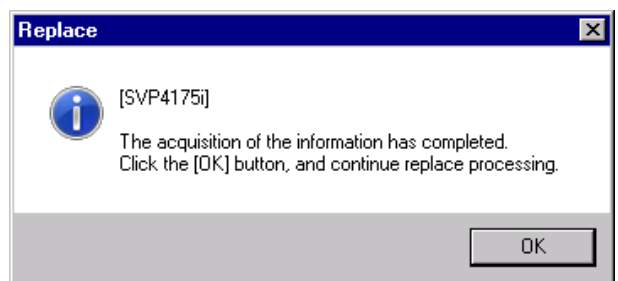
- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].
- When the memory in the destination drive specified with the Maintenance PC is corrupted. The dialog remains displayed after selecting (CL) [OK].

At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.



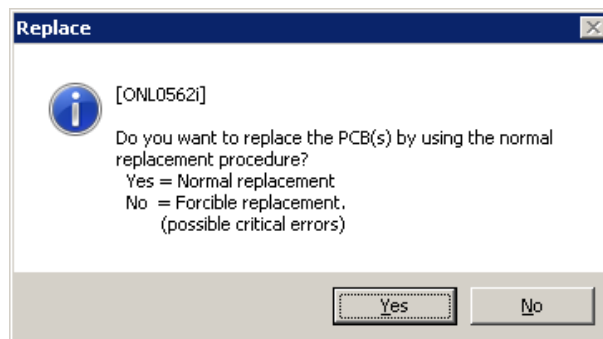
Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.



1-9. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

Do you want to replace the PCB(s) by using the normal replacement procedure?
Yes = Normal replacement
No = Forcible replacement.
(possible critical errors)” is displayed.



1-10. <MPB blocking>

“The MPB (MPB-nnn) is being blocked.” is displayed.

1-11. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

in response to “Is the LED of the target PCB(s) lit?”.

When [No] is selected, the same message is displayed again.

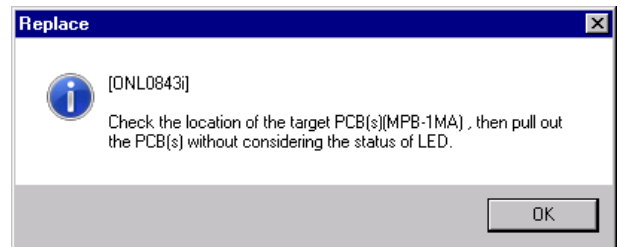
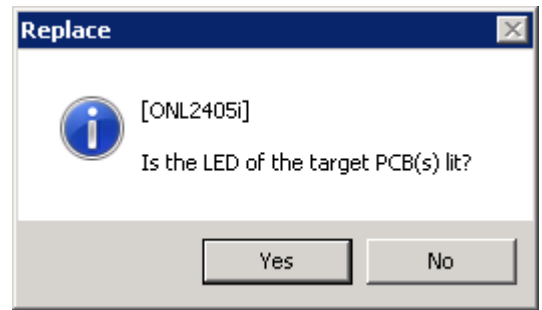
Check the LED and then reply to the message.

If [No] is selected twice:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(MPB-nnn), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)

NOTE: Select (CL) [OK] after pulling out the PCB.

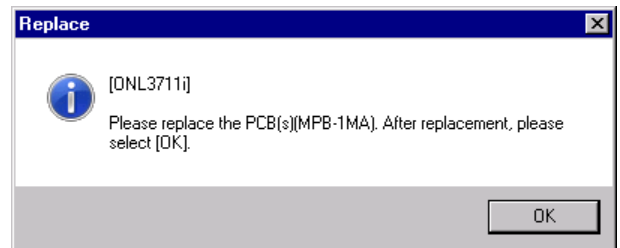
Go to Step 1-12.



1-12. <MPB Replacement>

“Please replace the PCB(s)(MPB-nnn). After replacement, please select [OK].” is displayed.

Select (CL) [OK] after replacing the PCB.



1-13. <Replace MPB>

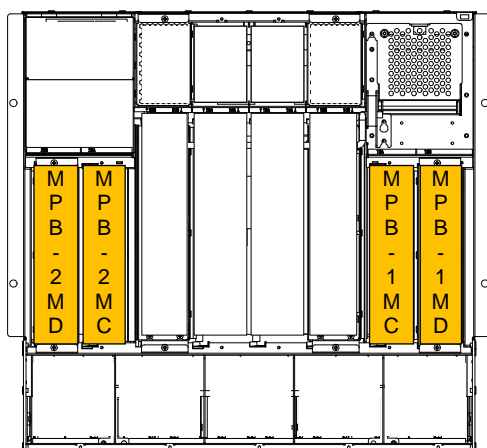
Replace MPB.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

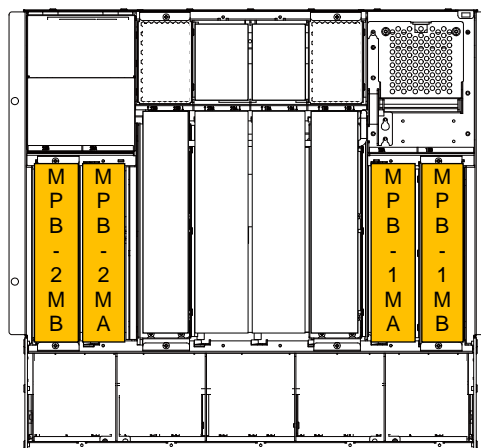
2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name	Page
Front/Rear View of DKC	1	MPB (Two MP Memory Modules are included.)	<ul style="list-style-type: none"> • WP850-A (*1) • WP850-B (*1) 	REP03-11-110
	2	MP Memory Module	• DDR3 8GB DIMM	REP03-11-140

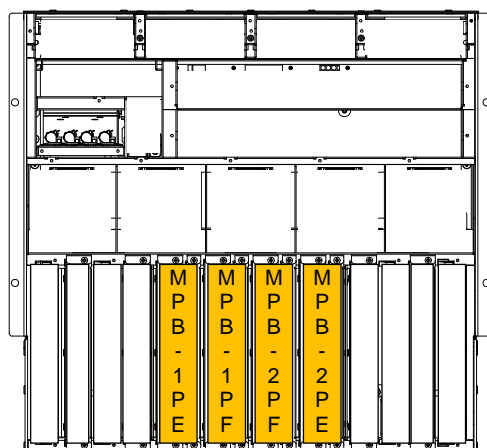
*1: WP850-A and WP850-B are compatible and either or both of them can be used without problem.



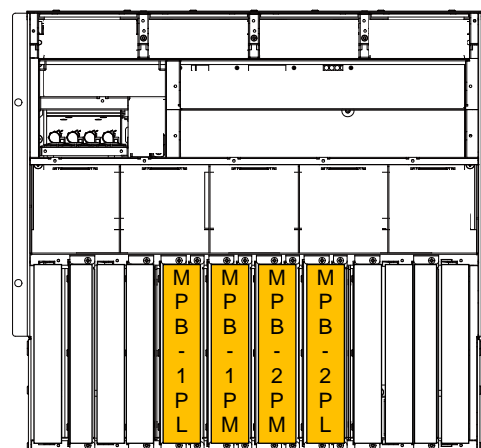
Front View of DKC-1



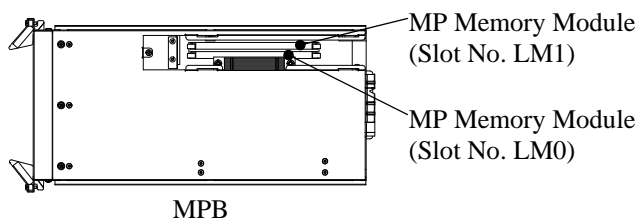
Front View of DKC-0



Rear View of DKC-0



Rear View of DKC-1



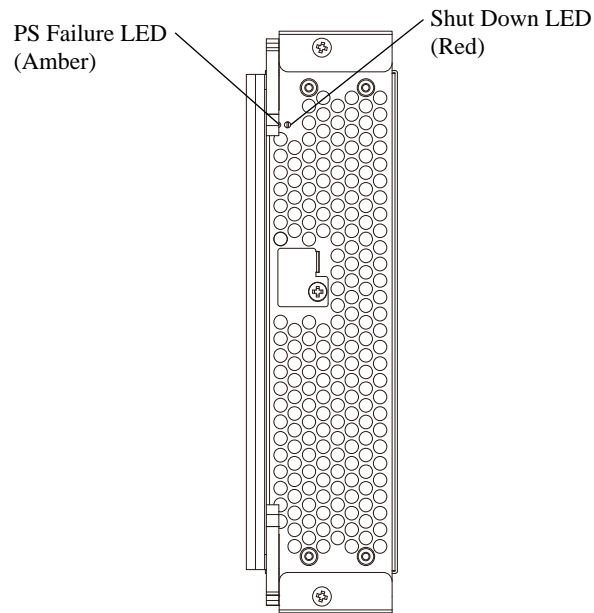
MPB

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	MPB
-----	-----

2-1-1. Remove the MPB.

- a. Check that the Shut Down LED is on. (only hot replace)



Front View of MPB

Fig. 3.11.2-1 Confirmation of Shut Down LED

- b. Remove the two screws and remove the failed MPB.

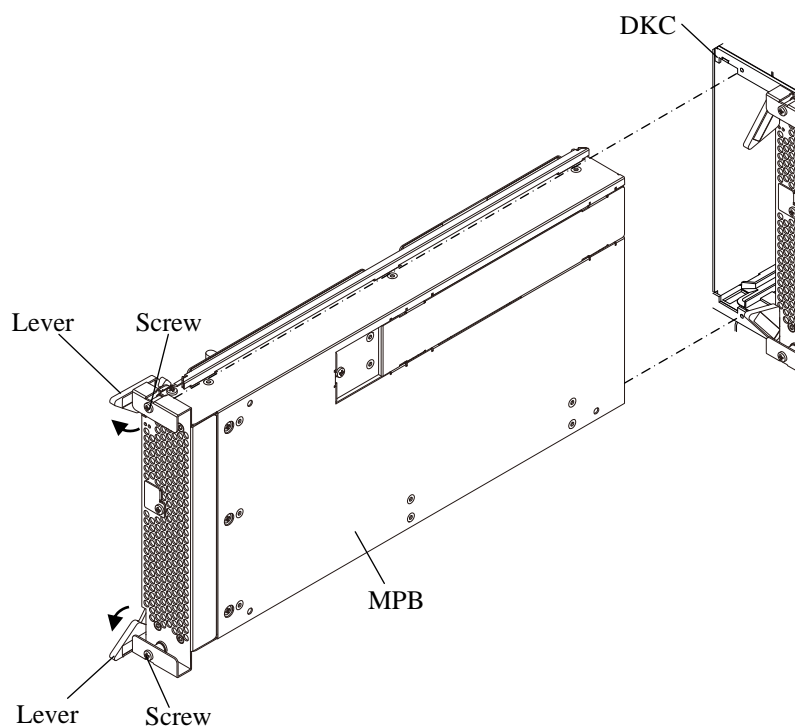
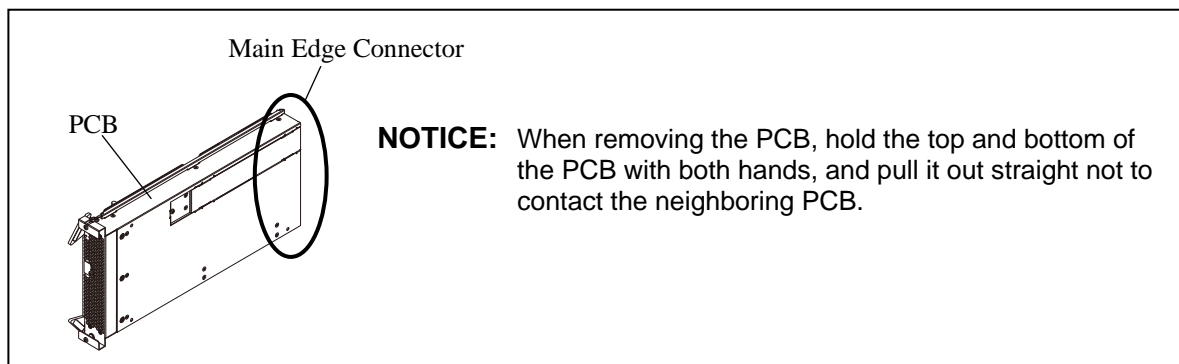
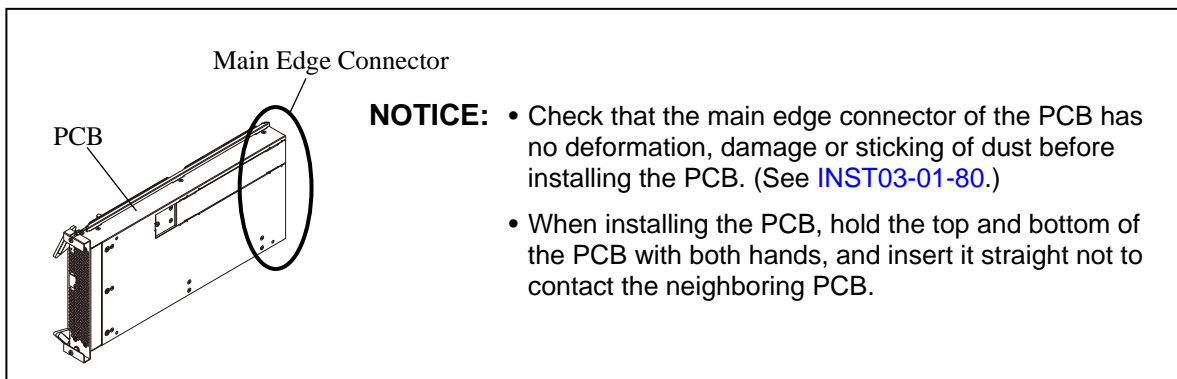


Fig. 3.11.2-2 Removal of MPB

2-1-2. Insert the spare MPB.

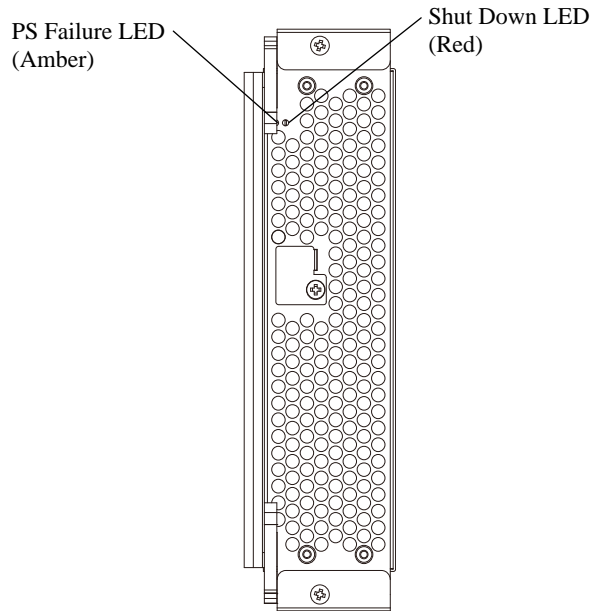
- a. Insert the spare MPB to the correct location and tighten the screws.



2-1-3. Go to “3. POST-PROCESSING of SVP”.

2-2 MP Memory Module**2-2-1. Remove the MPB.**

- a. Check that the Shut Down LED is on. (only hot replace)



Front View of MPB

Fig. 3.11.2-3 Confirmation of Shut Down LED

- b. Remove the two screws and remove the MPB.

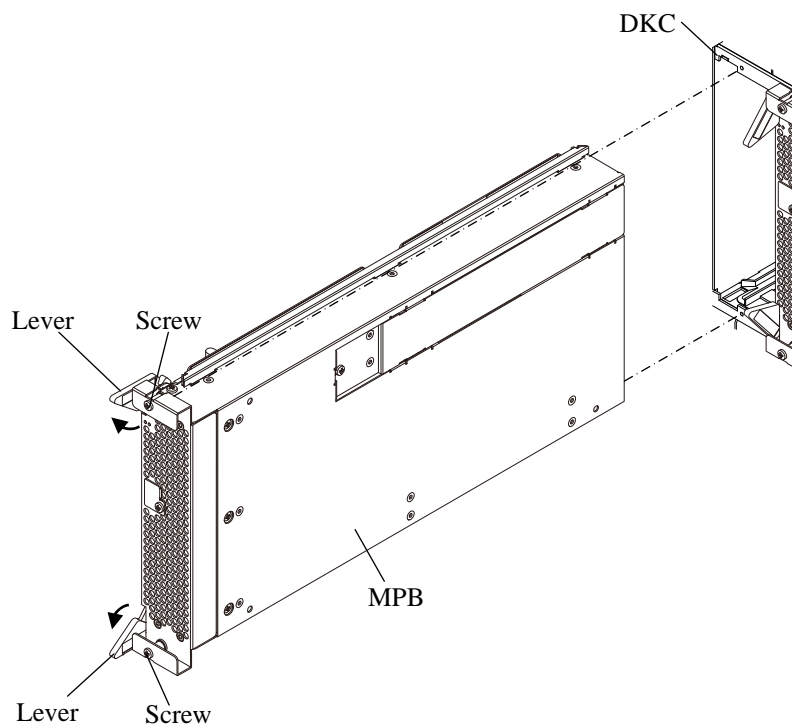
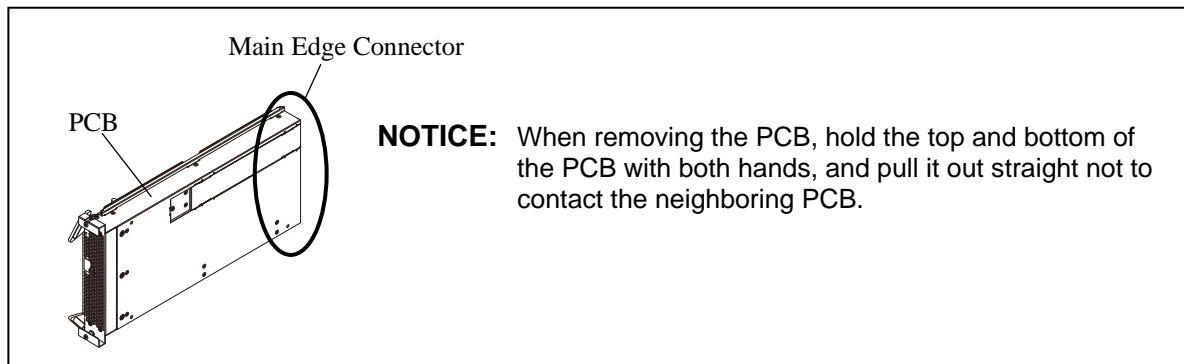


Fig. 3.11.2-4 Removal of MPB

2-2-2. Replace the MP Memory Module.

- a. Loosen the screw and remove the cover.

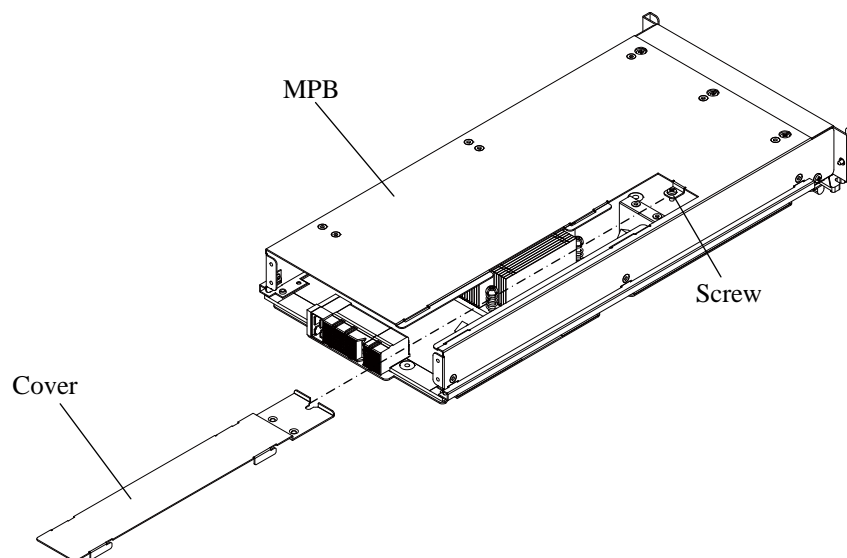
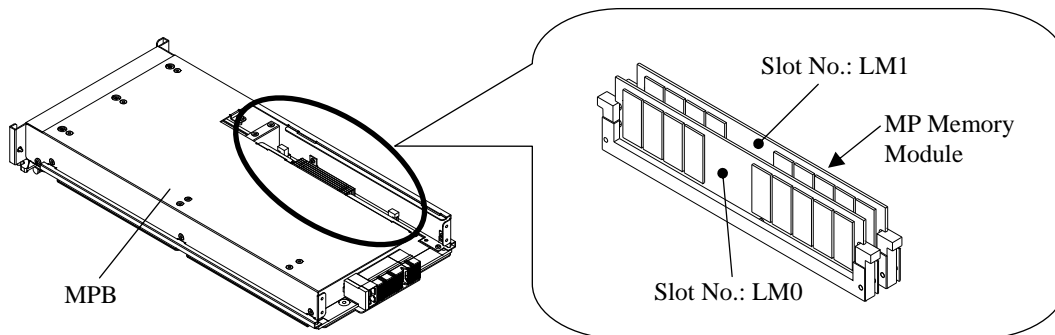


Fig. 3.11.2-5 Removal of Cover

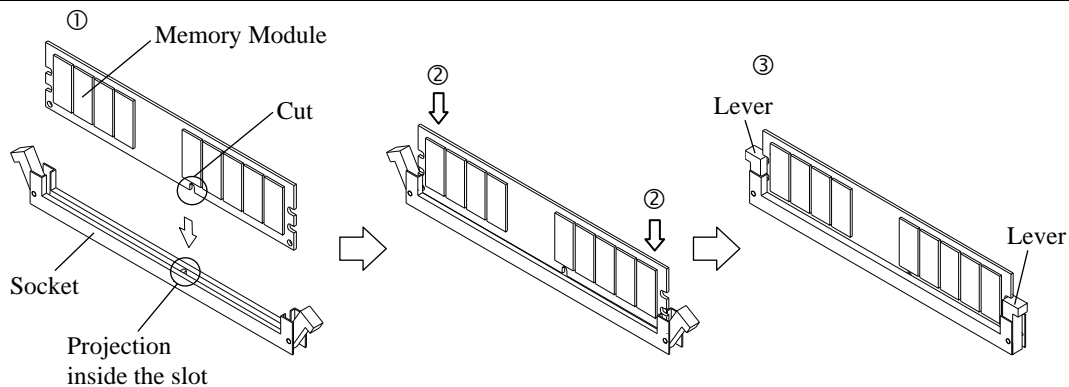
- b. Remove the failed MP memory module and insert the spare MP memory module.
- c. Attach the cover and tighten the screw. (Refer to Fig. 3.11.2-5.)



Installation

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

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



Removal

- ① Pull the lever outward.
- ② Hold both ends of the memory module by the fingers, and pull out the memory module from the socket.

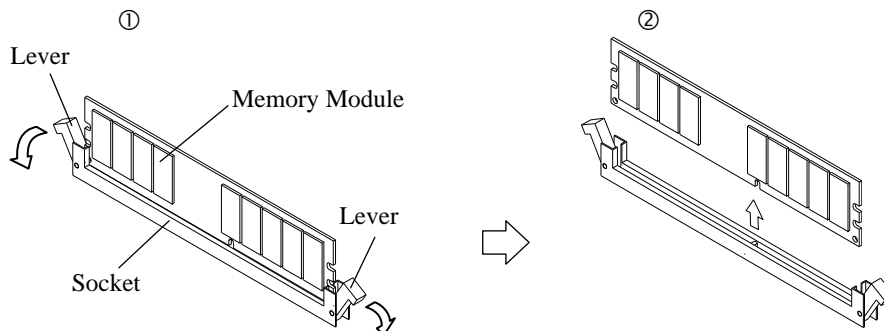
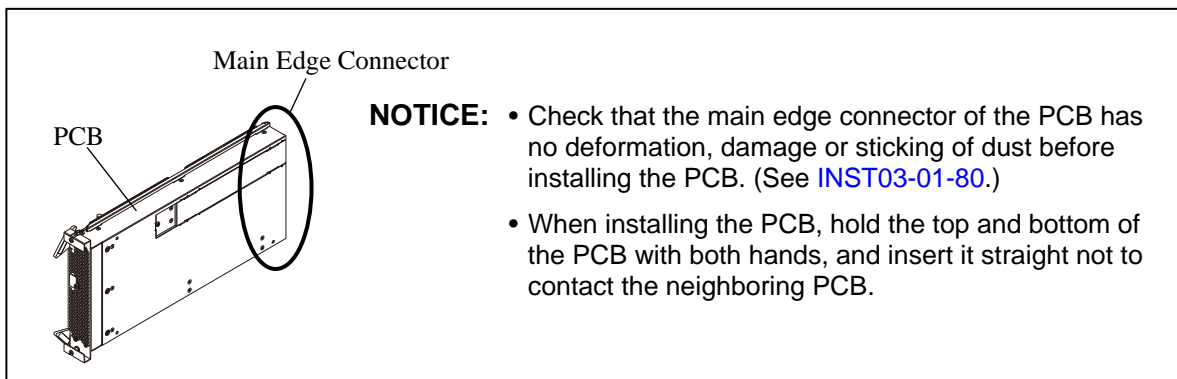


Fig. 3.11.2-6 Replacement of MP Memory Module

2-2-3. Insert the spare MPB.

- a. Insert the MPB to the correct location and tighten the screws.

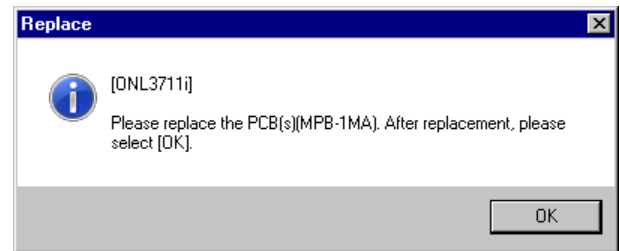


2-2-4. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <MPB Replacement>

Select (CL) [OK] in response to “Please replace the PCB(s)(MPB-*nnn*). After replacement, please select [OK].”



3-2. <Waiting for Power Event>

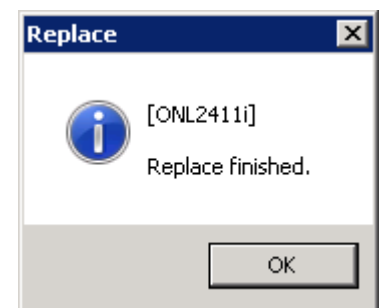
“Waiting for Power Event...”

Usually several minutes (maximum 15 minutes).” is displayed.

NOTICE: Confirm the version of the exchanged MP microprogram on the ‘STATUS’ screen.
Check whether the version of all processors accords.
If the DKCMAIN microprogram version of the MPB that is target to be maintained is lower than in the SVP, replace MPB again.

3-3. <Check the end of MPB recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-4. Version of Microprogram

Select (CL) [Version]-[MP Ver.(Curt./Running)] in this order in the 'Maintenance' window.
The 'Version' window is displayed.

The 'Version' window displays the following information:

- Current:**

DKCMAIN	HTP	FCHF	DKAF	FCDG	BOOT(ROM)	BOOT(RAM)
80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
- Running(MP):**

MP	DKCMAIN	BOOT(ROM)	BOOT(RAM)
MP00-1MA	80-00-00-00/00	80-00-00	80-00-01
MP01-1MA	80-00-00-00/00	80-00-00	80-00-01
MP02-1MA	80-00-00-00/00	80-00-00	80-00-01
MP03-1MA	80-00-00-00/00	80-00-00	80-00-01
MP04-1MA	80-00-00-00/00	80-00-00	80-00-01
MP05-1MA	80-00-00-00/00	80-00-00	80-00-01
MP06-1MA	80-00-00-00/00	80-00-00	80-00-01
MP07-1MA	80-00-00-00/00	80-00-00	80-00-01
MP00-1MB	-----/---	-----	-----
MP01-1MB	-----/---	-----	-----
MP02-1MB	-----/---	-----	-----
- Running(CHA PORT):**


Port	Port Program
1A	---
3A	---
5A	---
7A	---
- Running(DKA PORT):**

Port	DKAF
SAS-1PA-A1	80-08-12
SAS-1PA-A2	80-08-12
SAS-1PA-A3	-----
SAS-1PA-A4	-----
SAS-1PA-A5	80-08-12

Buttons: Renew, Close

Table 3.11.3-1 Information to Be Displayed

Item	Description
DKC Current Version area	Major version of the microprogram currently running. In regard to a version inconsistent with a corresponding version in the MP Version area or a binary version (Internal administrative information), the area concerned is displayed in red-white-reversal with an asterisk ("*").
MP Version area	Version of the microprogram of each processor currently running. A version, which is displayed in red-white-reversal, is inconsistent with the DKC Current Version. A version displayed with an asterisk ("*") at the end of it is the inconsistent one.
CHA PORT area	The version is displayed. Running version of port program (HTP) of each Port is displayed. The target type name is displayed.
DKA PORT area	The SAS-CON Running version is displayed. The Location name is displayed.

Concerning this item, when even a single piece of information is inconsistent, an icon , which shows an error, is displayed in the tab portion.

Select (CL) [Version]-[MP Ver.(Curt./FM)] in this order in the 'Maintenance' window.

Version							
DKC Ver. MP Ver.(Curt./Running) MP Ver.(Curt./FM) CM/BKM Ver. HDD Ver. SSW Ver.							
Current							
DKCMAIN	HTP	FCHF	DKAF	FCDG	BOOT(ROM)	BOOT(RAM)	
80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01	
FM							
MP	DKCMAIN	HTP	FCHF	DKAF	FCDG	BOOT(ROM)	BOOT(RAM)
MP00-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP01-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP02-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP03-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP04-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP05-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP06-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP07-1MA	80-00-00-00/00	80-00-00	80-01-03	80-08-12	80-00-00	80-00-00	80-00-01
MP00-1MB	-----/--	-----	-----	-----	-----	-----	-----
MP01-1MB	-----/--	-----	-----	-----	-----	-----	-----
MP02-1MB	-----/--	-----	-----	-----	-----	-----	-----

Table 3.11.3-2 Information to Be Displayed

Item	Description
DKC Current Version area	Major version of the microprogram currently running. In regard to a version inconsistent with a corresponding version in the MP FM area or a binary version (Internal administrative information), the area concerned is displayed in red-white-reversal with an asterisk ("*").
FM Version area	Version of FM microprogram of each processor. A version, which is displayed in red-white-reversal, is inconsistent with the DKC Current Version. A version displayed with an asterisk ("*") at the end of it is the inconsistent one.

Concerning this item, when even a single piece of information is inconsistent, an icon "⚠" which shows an error, is displayed in the tab portion.

3-5.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[Fibre CHA REPLACEMENT PROCESSING - RCH1]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select CHA (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery for CHA
 - ② Path online (for CHA)

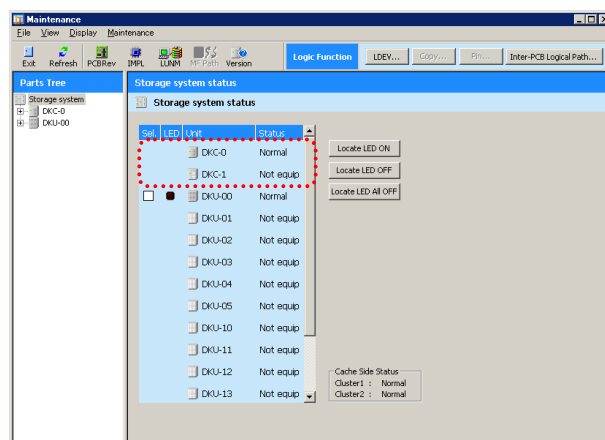
1. PRE-PROCESSING of SVP

1-1. <Set path offline or switch of channel path>

NOTICE: For Mainframe, the path to be placed offline is that connected with the CHA concerned.
For Open host, the switch to the alternate channel path or host shutdown is that connected with the CHA concerned.
As for other channel path, switching to the alternate channel path or host shutdown is unnecessary.
However, the host must be shut down when the Pinned track in CHA connected port.

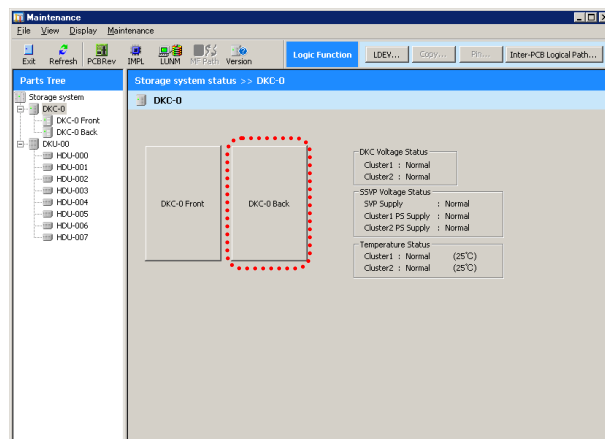
1-2. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.

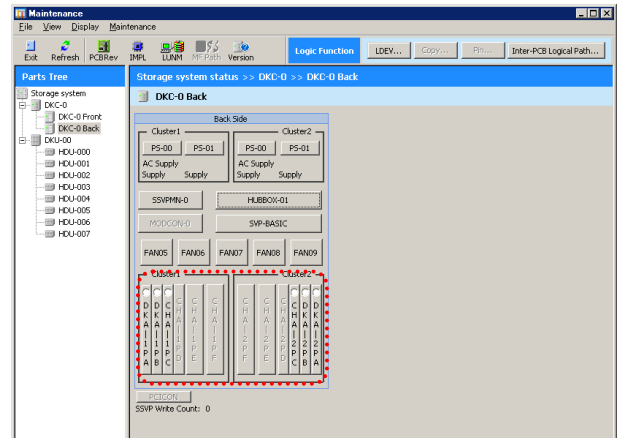


1-3. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



1-4. <Select CHA> Select (CL) CHA.

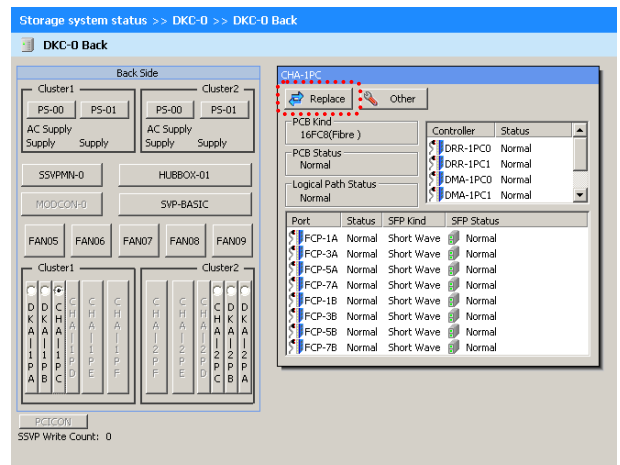


1-5. <Specify Replacement of CHA>

- NOTICE:**
- When the path to the PCB to be replaced is online, ask the customer to place it offline. (For CHA replacement)
 - For Open host, switch to the alternate channel path or shut down the host. However, the host must be shut down when the Pinned track in CHA connected port.
 - When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

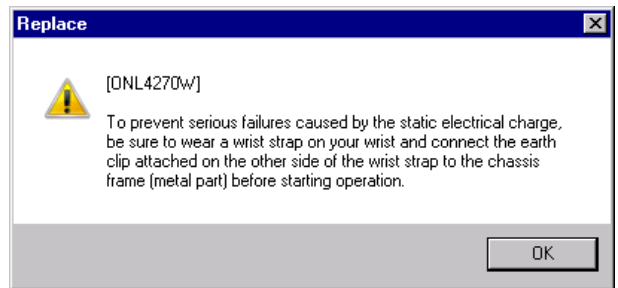
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

Make sure that the status is WARNING.
Select (CL) [Replace].



1-6. <Wear a wrist strap>

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



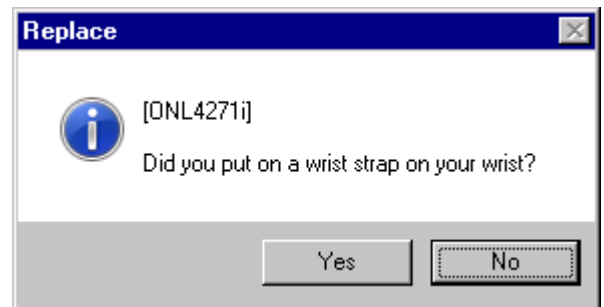
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

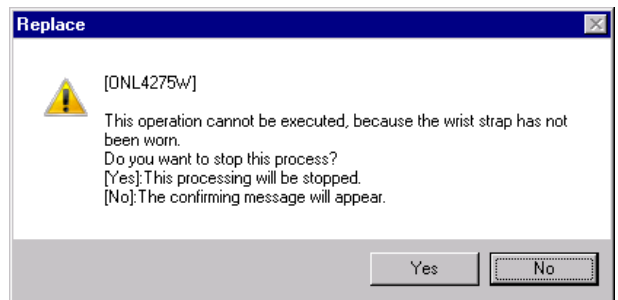


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



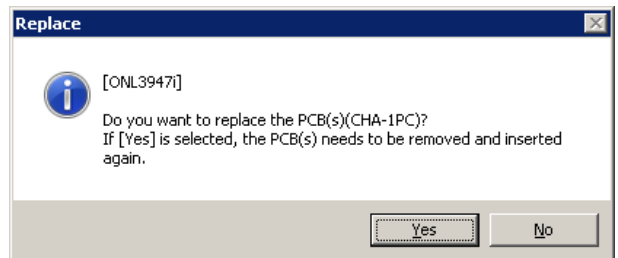
When [Yes] is selected (CL), returned to Step 1-5.

When [No] is selected (CL), returned to Step 1-6.

1-7. <CHA replace>

Select (CL) [Yes] in response to:

“Do you want to replace the PCB(s)(CHA-nnn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.”.

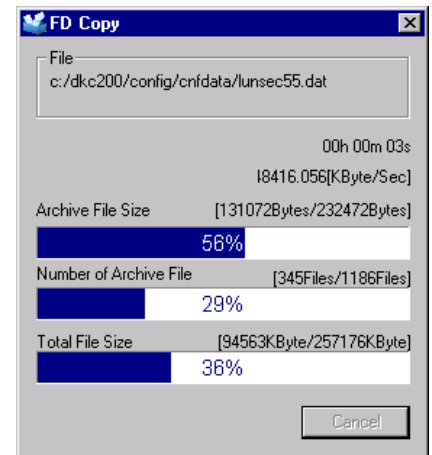


(Eg. CHA)

1-8. <Compression of the error information>

The error information is compressed.

The dialog of FD Copy is displayed.



1-9. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].

The screenshot shows a dialog box titled "FFI (Field Failure Information)". It contains the following fields and values:

- Date Time : 06/06/2014 15:49:03
- Failure parts name : CHA
- Failure parts location : CHA-1PC
- Serial Number : 30150
- Site-ID & Case No : [Empty text box]
- SIM/SSB : [Empty text box]
- Failure Description : [Empty text area]

At the bottom, there are two buttons: "Ok" and "Cancel".

“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP.

Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.

The screenshot shows a dialog box titled "Replace CHA-1PC". It contains the following information:

- [SVP2318i]
- Insert a removable media for gathering error information and select [OK].
- The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.
- CHA-1PC
- Two radio buttons: "SVP" (unselected) and "Maintenance PC" (selected).
- A pull-down menu next to the "Maintenance PC" radio button, showing "D:".

At the bottom, there are two buttons: "Ok" and "Cancel".

A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format

“[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”.

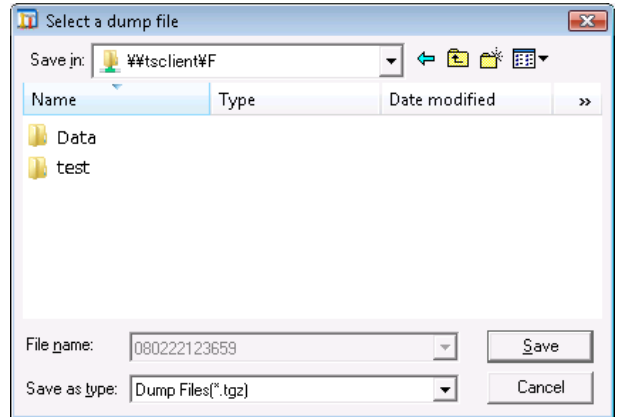
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

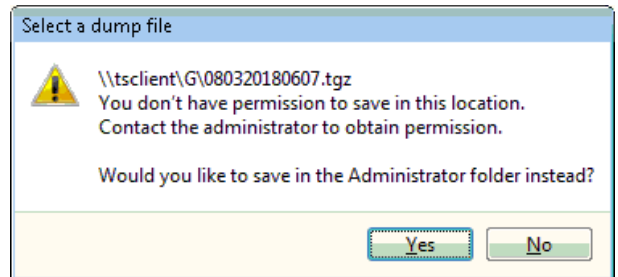
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).



- When the destination media is write-protected.
Selecting (CL) [Yes] displays the "C:\users\Administrator" folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



Please appoint another destination whether you remove write protect when you save it and carry it out.

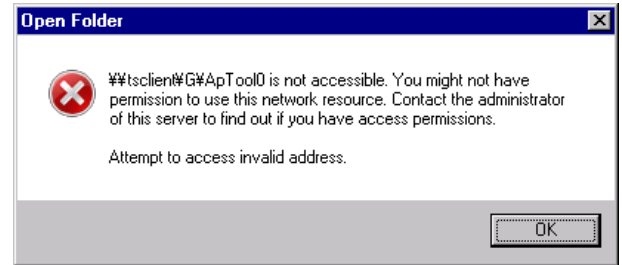
- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].

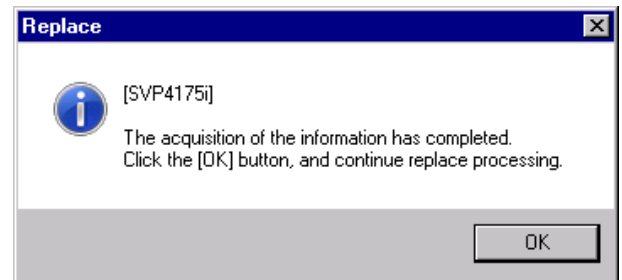
At the time of the above operation

completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.



Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.

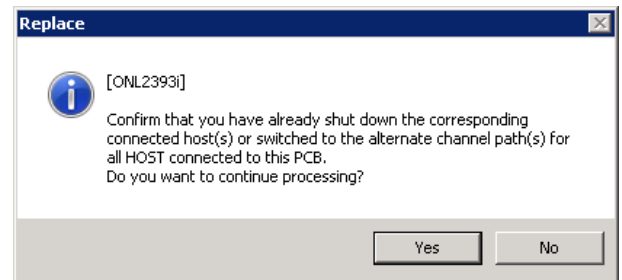


1-10. <Confirm Channel Path offline>

Select (CL) [Yes] in response to following message.

For Fibre CHA:

“Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST connected to this PCB. Do you want to continue processing?”.



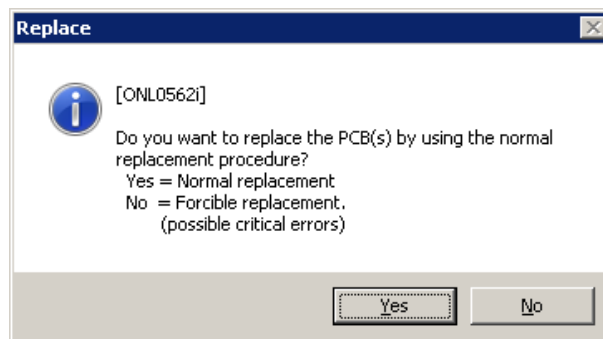
1-11. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

“Do you want to replace the PCB(s) by using the normal replacement procedure?

Yes = Normal replacement

No = Forcible replacement.
(possible critical errors)”.



1-12. <CHA blocking>

“CHA-xxx is being blocked... Usually, several minutes (maximum 15 minutes)”

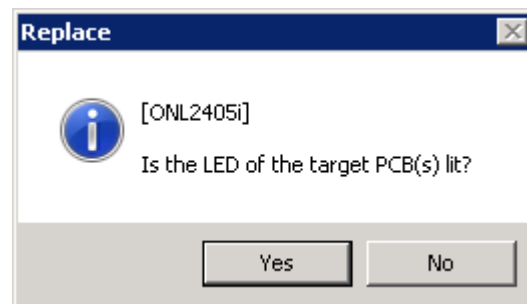
1-13. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

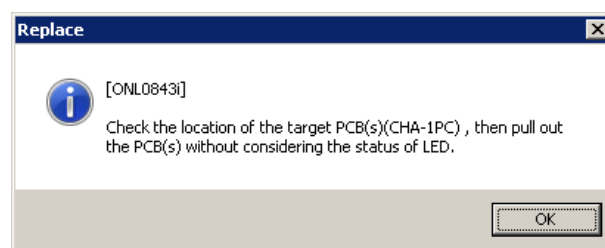
* [No] if LED is off

in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(CHA-nnn), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)



NOTE: Select (CL) [OK] after pulling out the PCB.

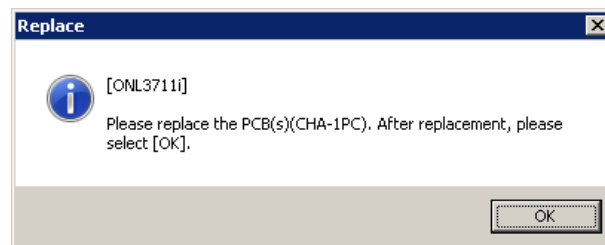
Go to Step 1-14.

1-14. <Beginning of CHA replacement>

“Please replace the PCB(s)(CHA-nnn). After replacement, please select [OK].” is displayed.

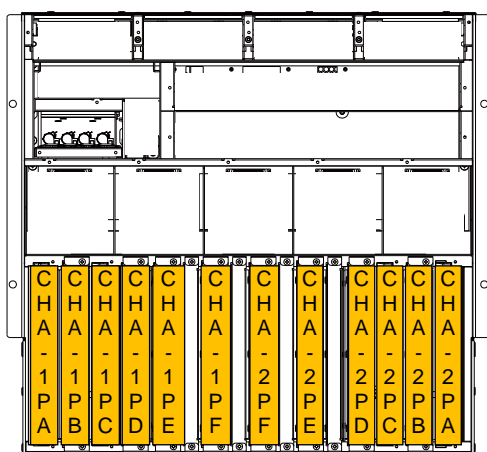
Select (CL) [OK] after replacing the CHA.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

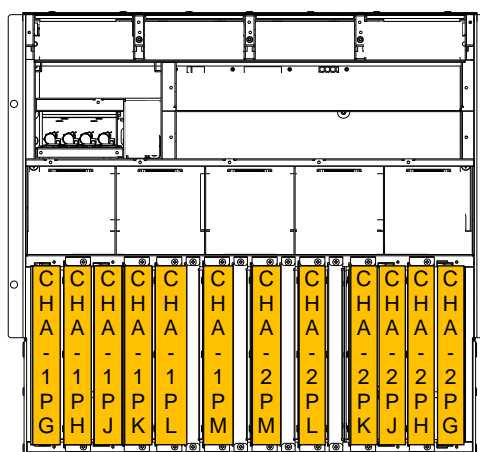


2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear View of DKC	1	CHA (Channel Adapter) PCB for Fibre (8Gbps) (Fibre 8-port Adapter PCB)	• WP810-A (16FC8)
	2	CHA PCB for Fibre (16Gbps) (Fibre 4-port Adapter PCB)	• WP812-A (8FC16)



Rear View of
DKC-0



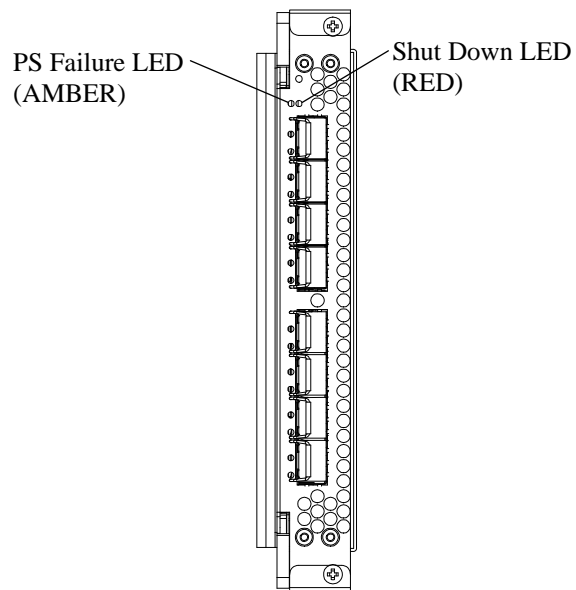
Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	Replacement of CHA PCB for Fibre
-----	----------------------------------

2-1-1. Remove the CHA PCB.

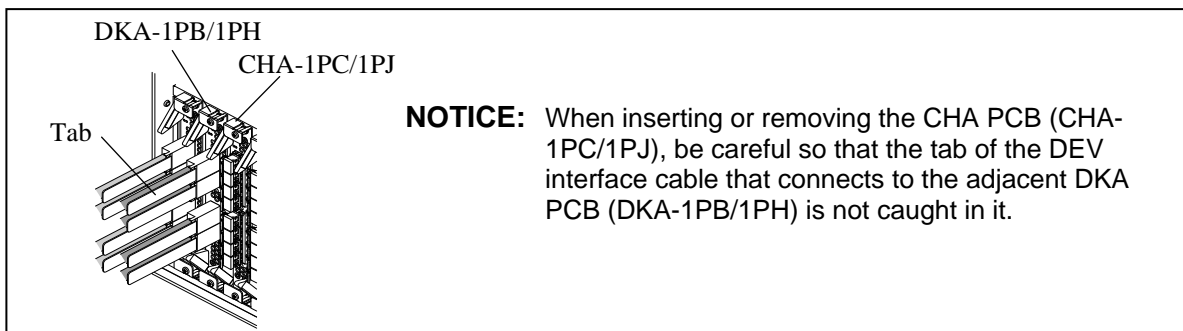
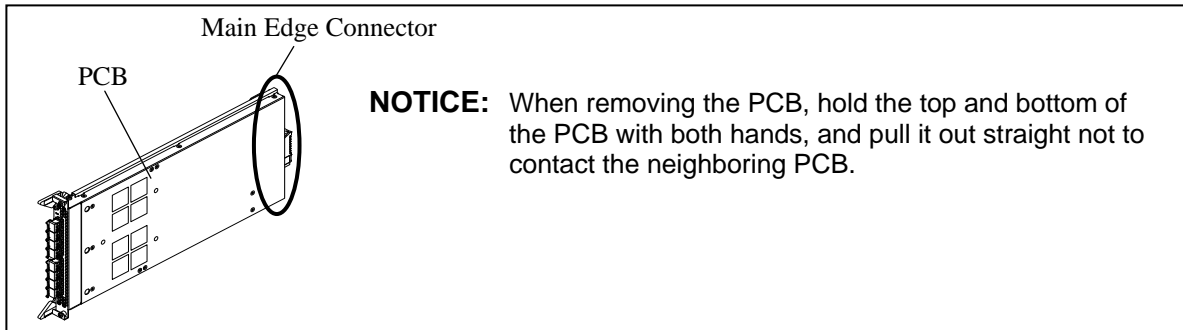
- a. Check that the Shut Down LED is on. (only hot replace)



Front View of
CHA PCB for Fibre

Fig. 3.12.2-1 Confirmation of Shut Down LED

- b. Disconnect the fibre cables from the failed CHA PCB.
- c. Remove the two screws and remove the failed PCB.



NOTICE: After removing the PCB, install the spare PCB immediately. If the PCB is kept removed for 30 minutes or more, the wind doesn't flow among installed PCBs, causing the PCBs' temperature rise which may result in temperature warning or temperature alarm.

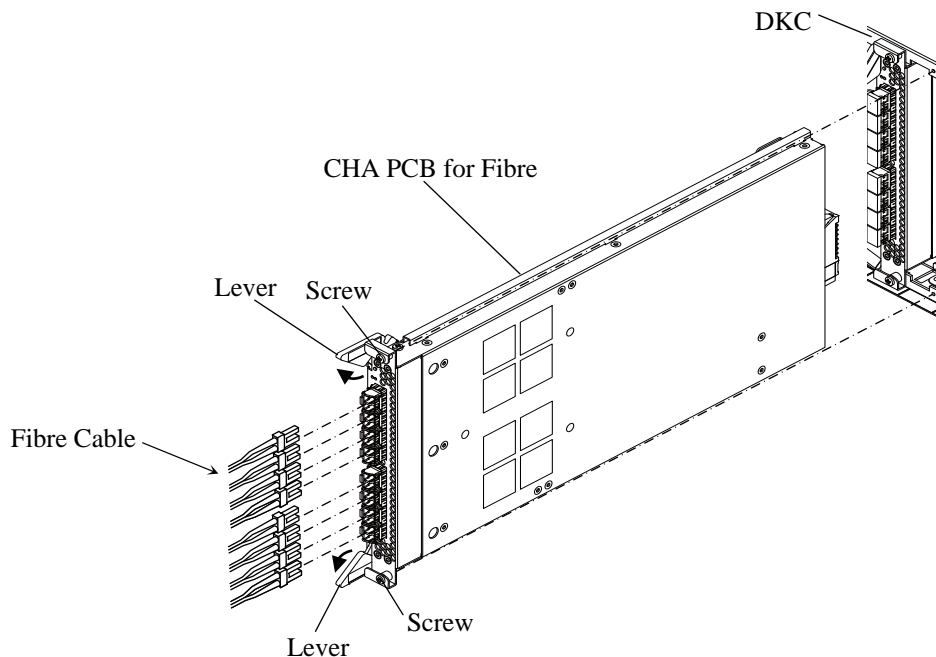
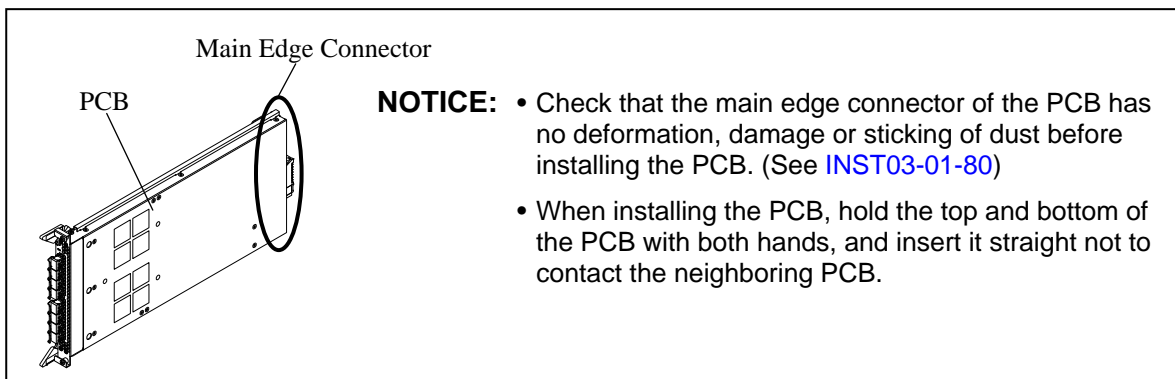


Fig. 3.12.2-2 Removal of PCB

2-1-2. Insert the spare PCB.

- a. Insert the spare PCB to the correct location and tighten the screws.



2-1-3. Cleaning the fibre cable connectors.

For the tools needed for the cleaning, refer to the tool list on page [PARTS05-10](#).

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

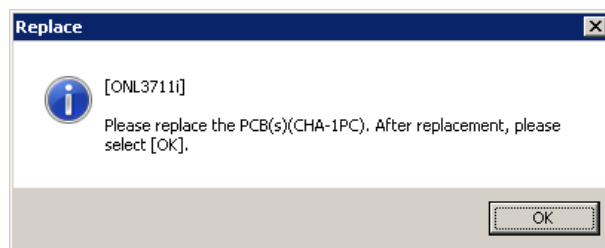
2-1-4. Connect the fibre cables to the spare PCB.

2-1-5. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

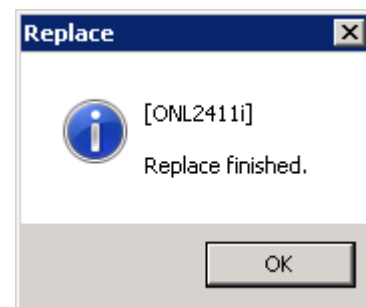
3-1. <Beginning of CHA Replacement>

Select (CL) [OK] in response to “Please replace the PCB(s)(CHA-nnn). After replacement, please select [OK].” after replacement.



3-2. <Check the end of CHA recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-3. <Path on-line when CHA is replaced>

When a CHA is replaced, set the path (from the host) on the replaced CHA to ONLINE by your customer.

3-4.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[Mainframe Fibre CHA REPLACEMENT PROCESSING - RCH2]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select CHA (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery for CHA
 - ② Path online (for CHA)

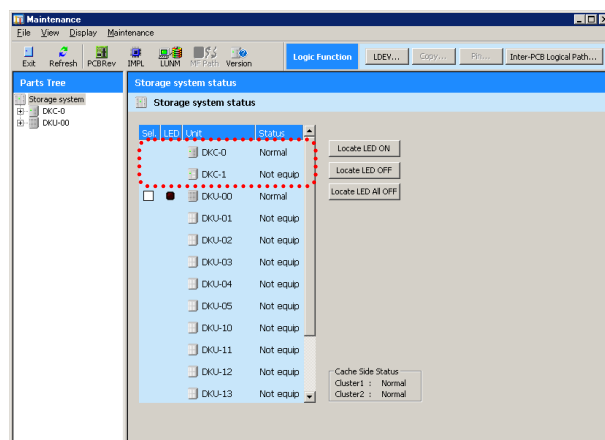
1. PRE-PROCESSING of SVP

1-1. <Set path offline or switch of channel path>

NOTICE: For Mainframe, the path to be placed offline is that connected with the CHA concerned.
For Open host, the switch to the alternate channel path or host shutdown is that connected with the CHA concerned.
As for other channel path, switching to the alternate channel path or host shutdown is unnecessary.
However, the host must be shut down when the Pinned track in CHA connected port.

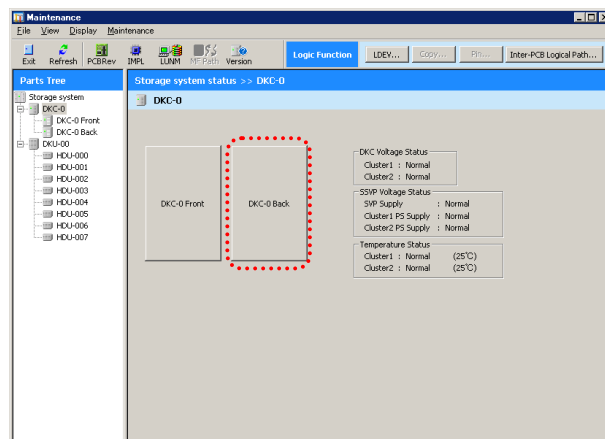
1-2. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.

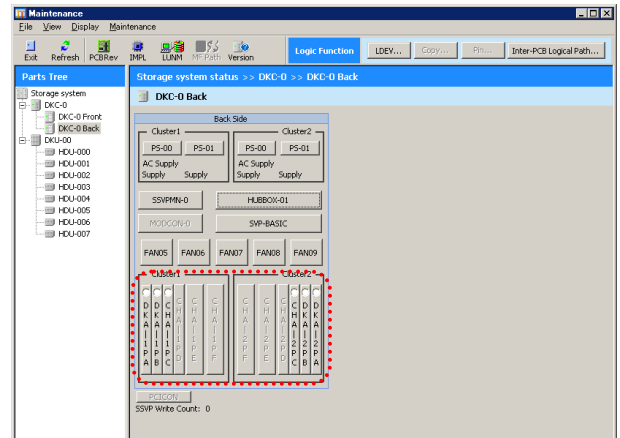


1-3. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



1-4. <Select CHA> Select (CL) CHA.



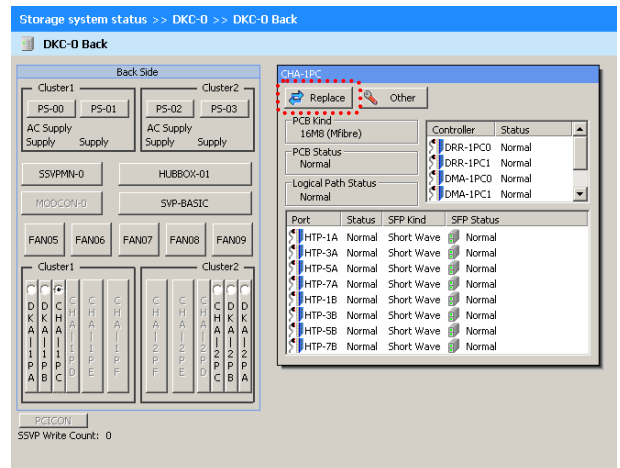
1-5. <Specify Replacement of CHA>

NOTICE:

- When the path to the PCB to be replaced is online, ask the customer to place it offline. (For CHA replacement)
- For Mainframe, vary off the concerned channel paths.
- When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

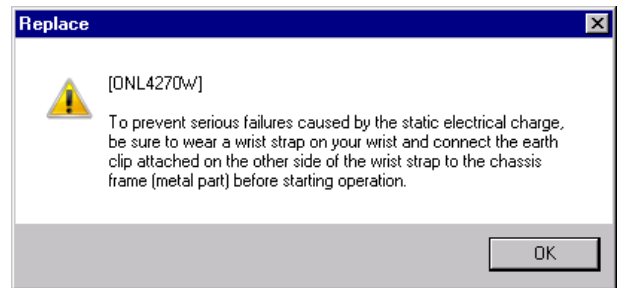
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

Make sure that the status is WARNING.
Select (CL) [Replace].



1-6. <Wear a wrist strap>

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



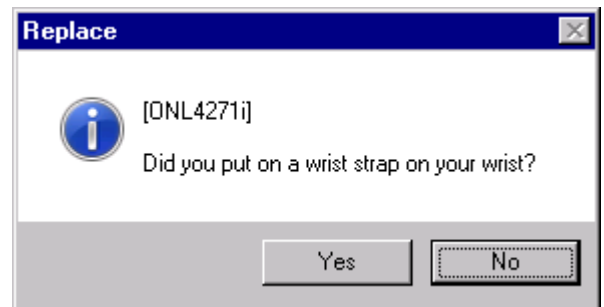
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

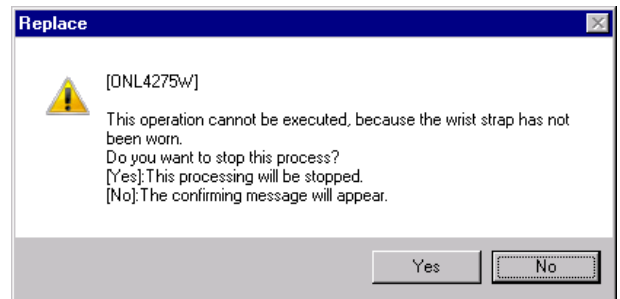


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



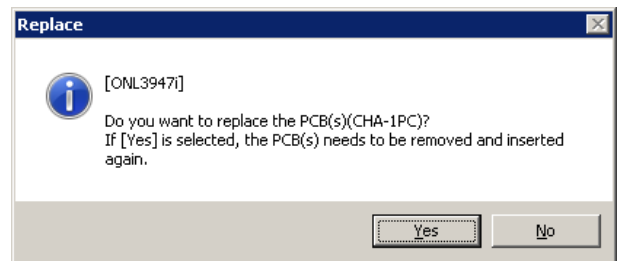
When [Yes] is selected (CL), returned to Step 1-5.

When [No] is selected (CL), returned to Step 1-6.

1-7. <CHA replace>

Select (CL) [Yes] in response to:

“Do you want to replace the PCB(s)(CHA-nnn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.”.

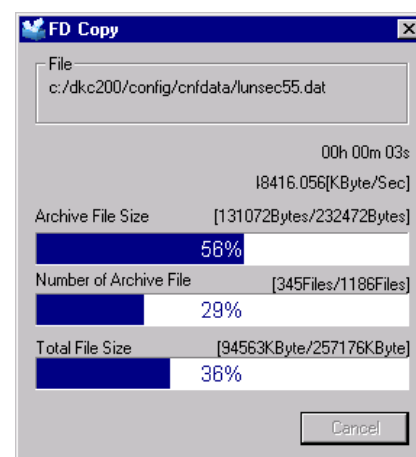


(Eg. CHA)

1-8. <Compression of the error information>

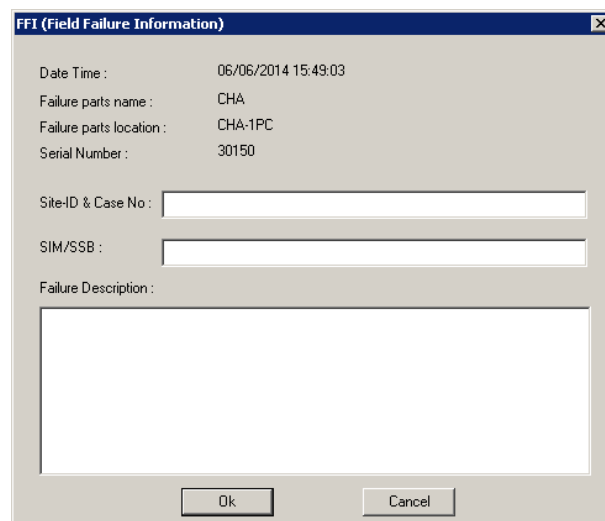
The error information is compressed.

The dialog of FD Copy is displayed.



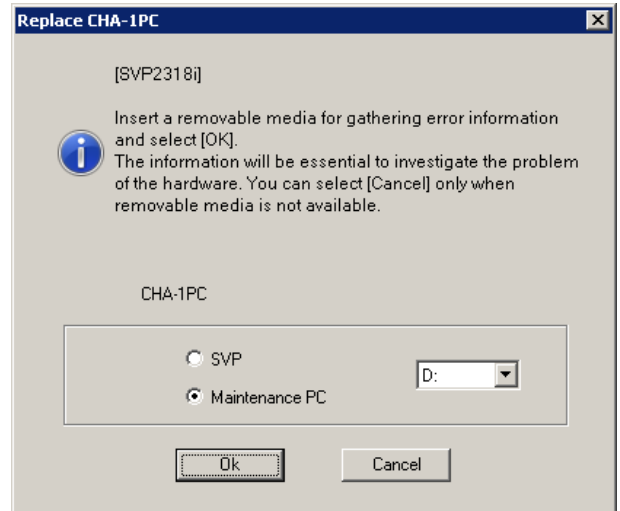
1-9. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

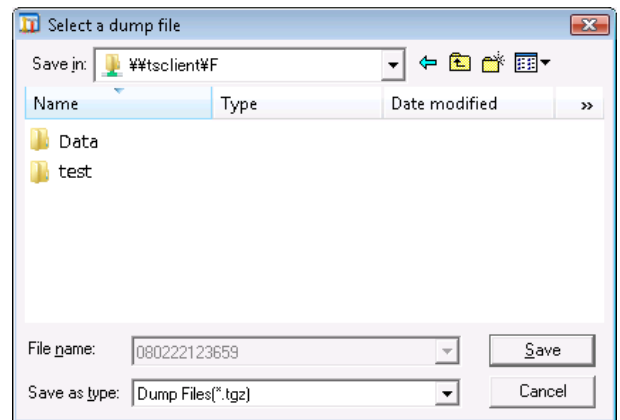
Trouble information is preserved in Maintenance PC connected with SVP.
Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format
“[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”.
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

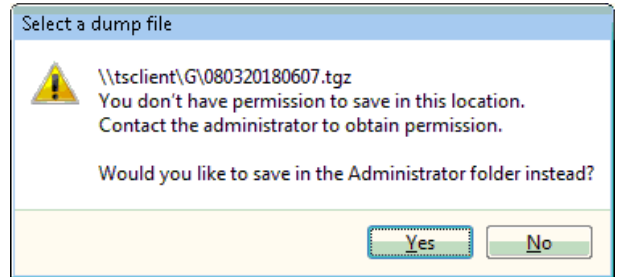
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.



Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

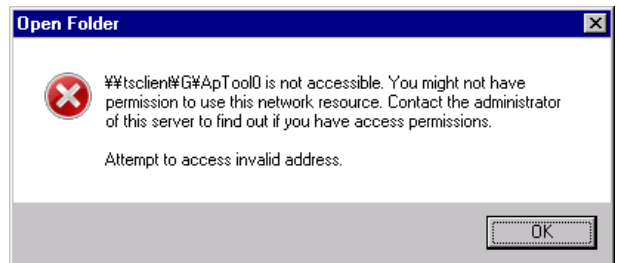
- When the destination media is write-protected.
Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



Please appoint another destination whether you remove write protect when you save it and carry it out.

- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

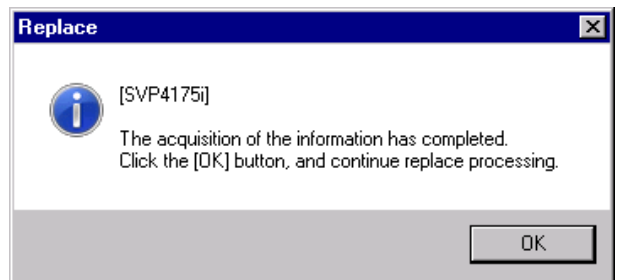
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].



At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.

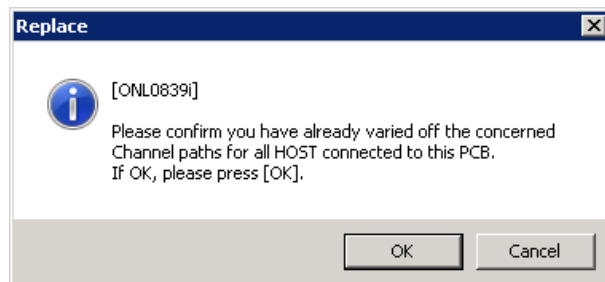


1-10. <Confirm Channel Path offline>

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

For Mainframe Fibre CHA:

“Please confirm you have already varied off the concerned Channel paths for all HOST connected to this PCB. If OK, please press [OK].”.



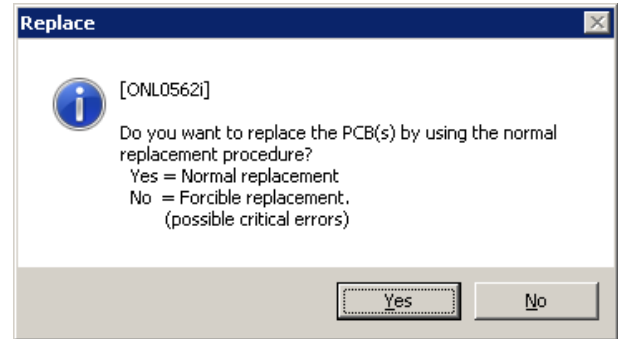
1-11. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

“Do you want to replace the PCB(s) by using the normal replacement procedure?

Yes = Normal replacement

No = Forcible replacement.
(possible critical errors)”.



1-12. <CHA blocking>

“CHA-xxx is being blocked... Usually, several minutes (maximum 15 minutes)”

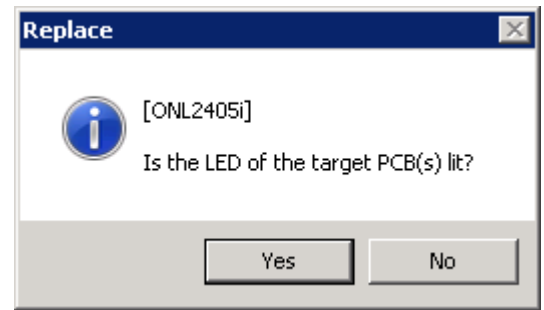
1-13. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

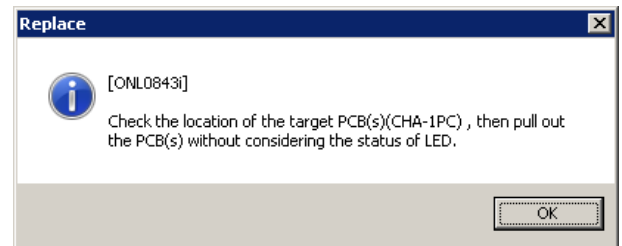
in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(CHA-1PC), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)

NOTE: Select (CL) [OK] after pulling out the PCB.



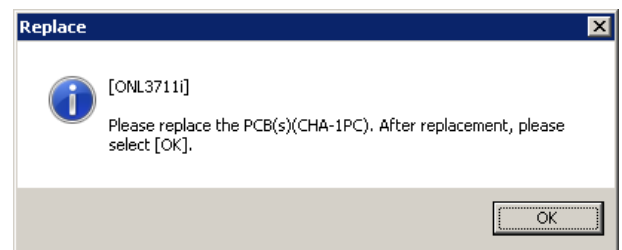
Go to Step 1-14.

1-14. <Beginning of CHA replacement>

“Please replace the PCB(s)(CHA-1PC). After replacement, please select [OK].” is displayed.

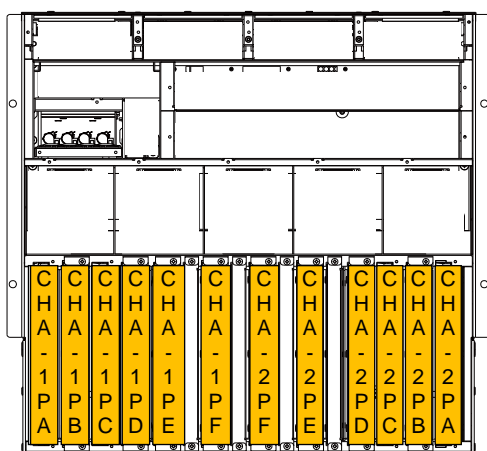
Select (CL) [OK] after replacing the CHA.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

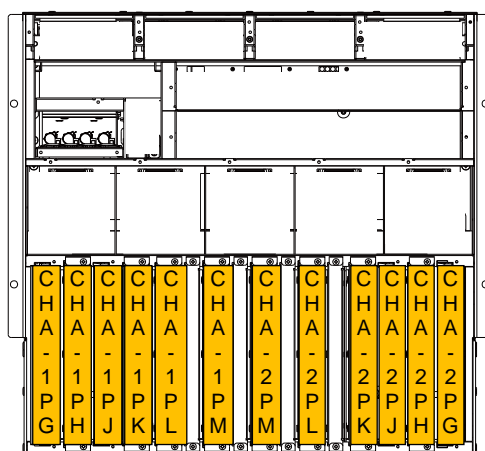


2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Front DKC or Rear DKC	1	CHA (Channel Adapter) PCB for Mainframe Fibre (8Gbps) (MF Fibre 8-port Adapter PCB)	• WP811-A (16MS8)
	2	CHA PCB for Mainframe Fibre (8Gbps) (MF Fibre 8-port Adapter PCB)	• WP811-B (16ML8)



Rear View of
DKC-0



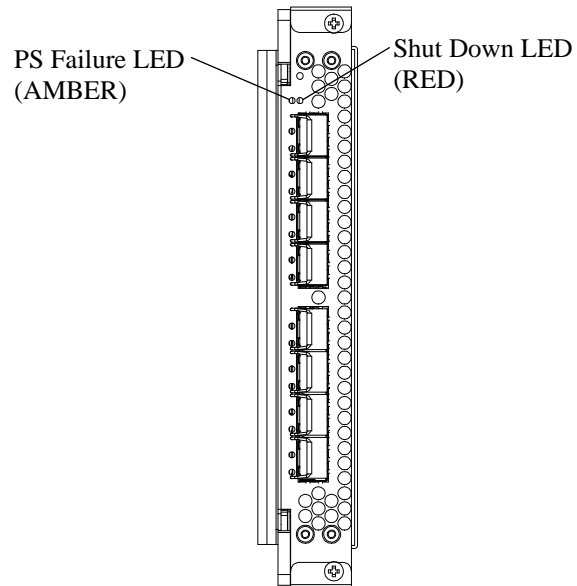
Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	Replacement of CHA PCB for Mainframe Fibre
-----	--

2-1-1. Remove the CHA PCB.

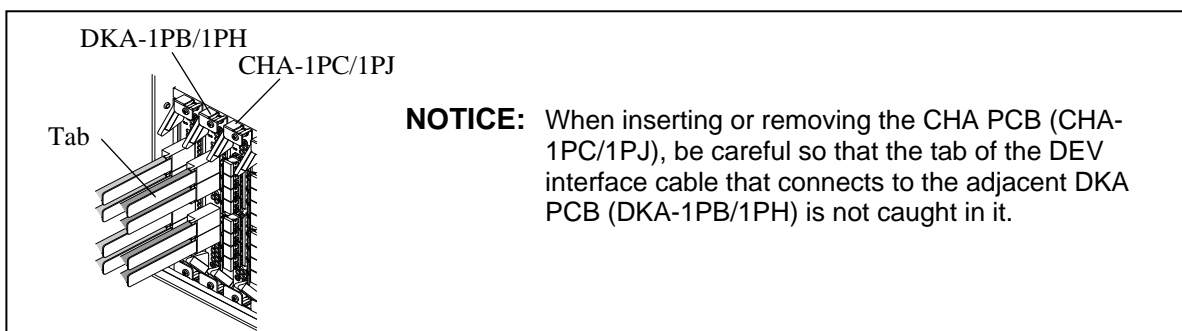
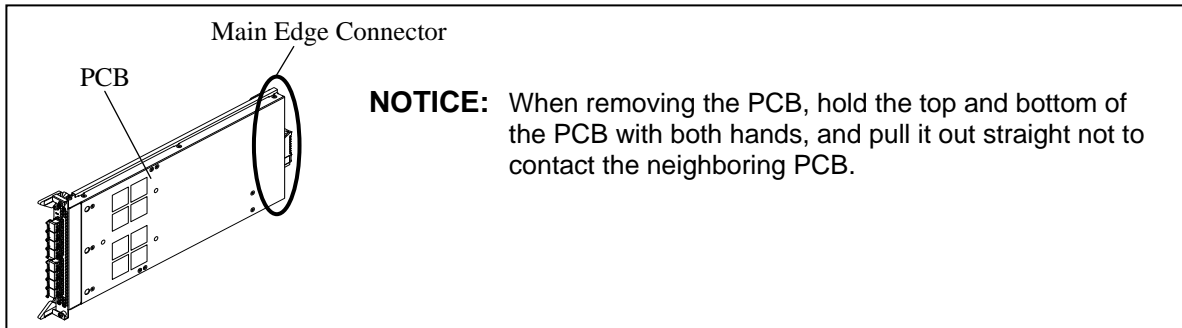
- a. Check that the Shut Down LED is on. (only hot replace)



Front View of
CHA PCB for Mainframe Fibre

Fig. 3.13.2-1 Confirmation of Shut Down LED

- b. Disconnect the fibre cables from the failed CHA PCB.
- c. Remove the two screws and remove the failed PCB.



NOTICE: After removing the PCB, install the spare PCB immediately. If the PCB is kept removed for 30 minutes or more, the wind doesn't flow among installed PCBs, causing the PCBs' temperature rise which may result in temperature warning or temperature alarm.

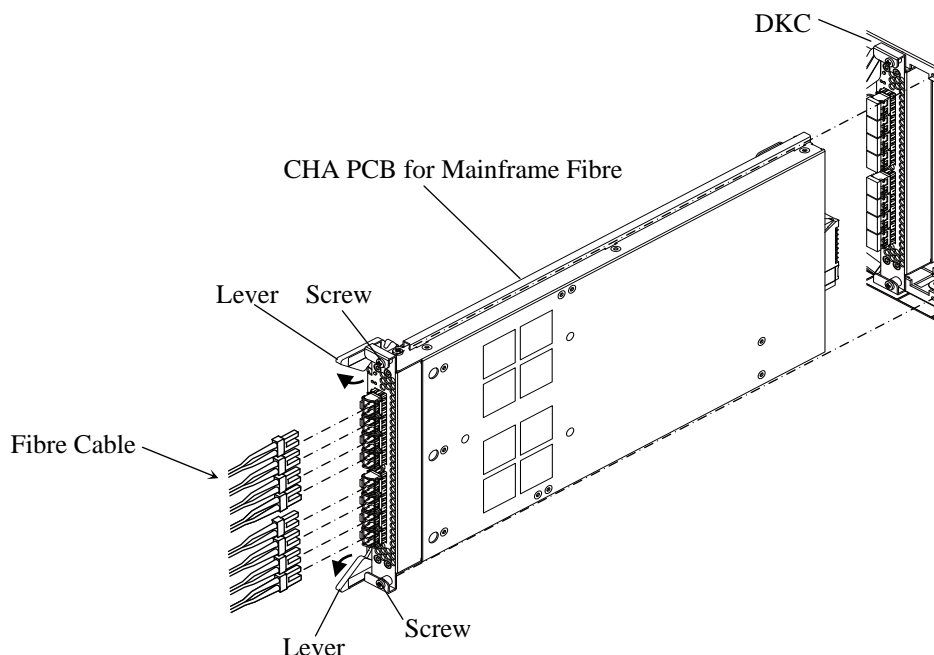
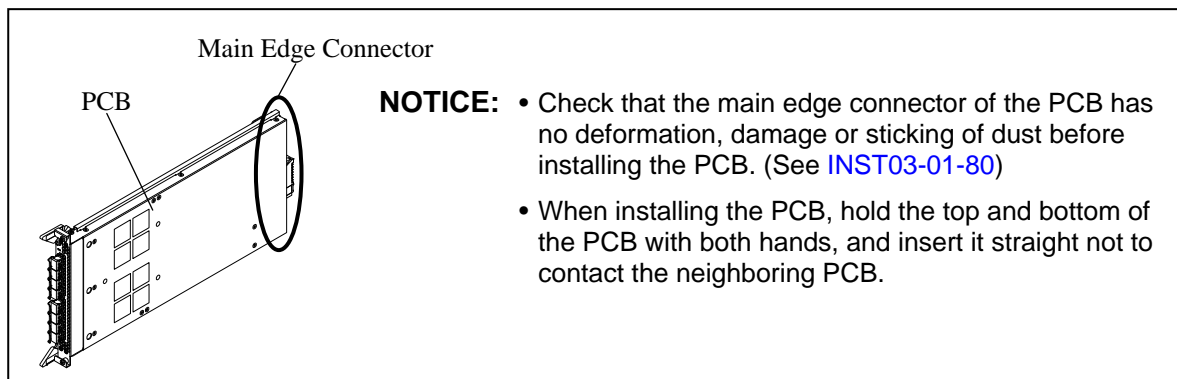


Fig. 3.13.2-2 Removal of PCB

2-1-2. Insert the spare PCB.

- a. Insert the spare PCB to the correct location and tighten the screws.



2-1-3. Cleaning the fibre cable connectors.

For the tools needed for the cleaning, refer to the tool list on page [PARTS05-10](#).

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

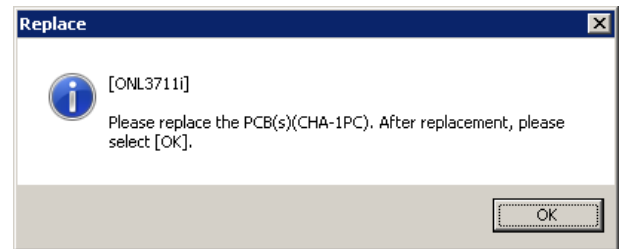
2-1-4. Connect the fibre cables to the spare PCB.

2-1-5. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

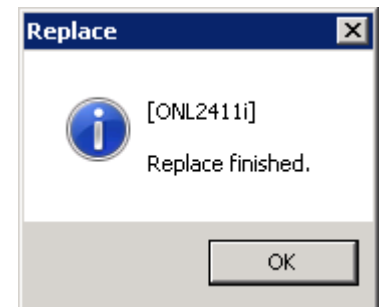
3-1. <Beginning of CHA Replacement>

Select (CL) [OK] in response to “Please replace the PCB(s)(CHA-*nnn*). After replacement, please select [OK].” after replacement.



3-2. <Check the end of CHA recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-3. <Path on-line when CHA is replaced>

When a CHA is replaced, set the path (from the host) on the replaced CHA to ONLINE by your customer.

3-4.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DKA REPLACEMENT PROCESSING - RDA1]

— OUTLINE —

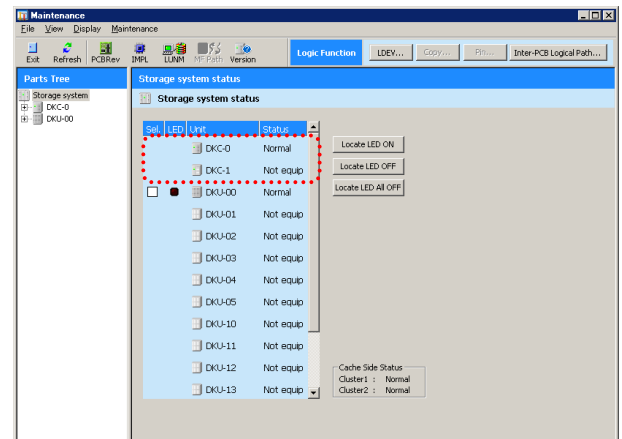
1. PRE-PROCESSING of SVP
 - ① Select DKA (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery for DKA

NOTICE: If encryption DKA have been blocked when restoring encryption keys, please execute not dummy replacement but replacement under technical support division's guidance.

1. PRE-PROCESSING of SVP

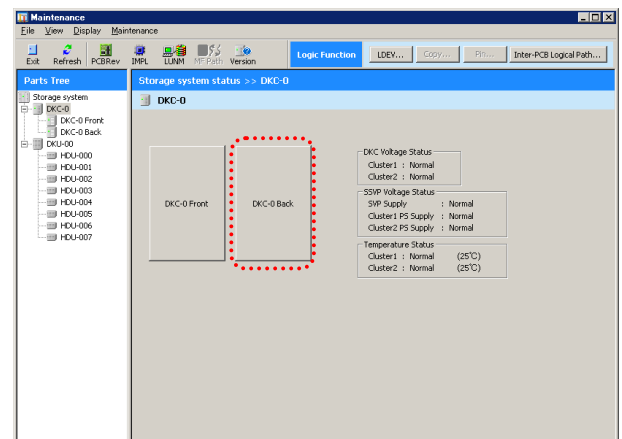
1-1. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.



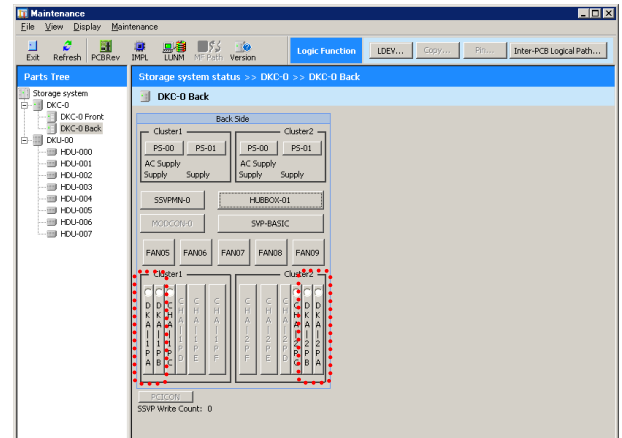
1-2. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



1-3. <Select DKA>

Select (CL) DKA.

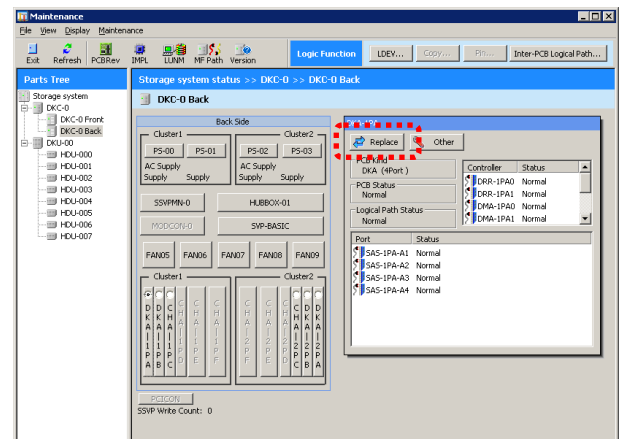


1-4. <Specify Replacement of DKA>

NOTICE: When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

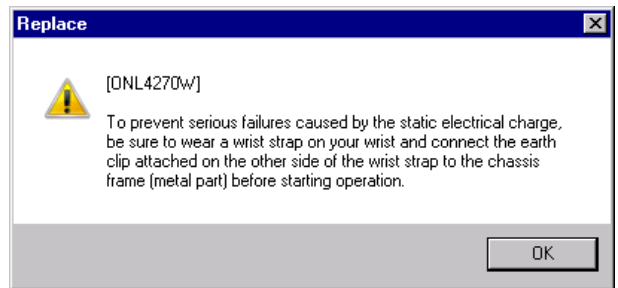
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

Make sure that the status is WARNING.
Select (CL) [Replace].



1-5. <Wear a wrist strap>

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



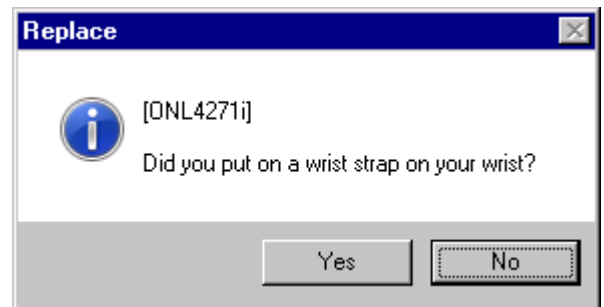
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

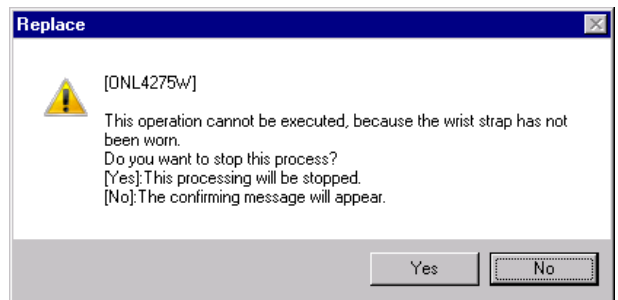


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



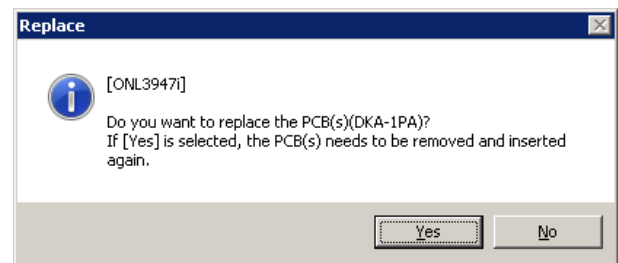
When [Yes] is selected (CL), returned to Step 1-4.

When [No] is selected (CL), returned to Step 1-5.

1-6. <DKA replace>

Select (CL) [Yes] in response to:

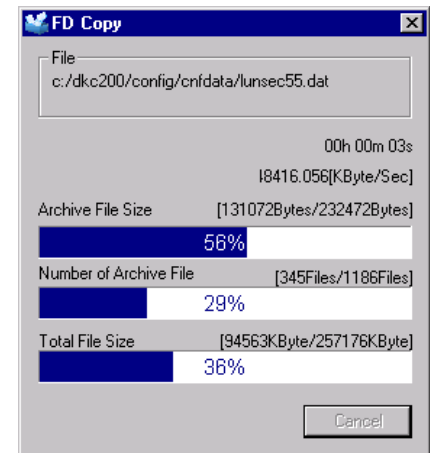
“Do you want to replace the PCB(s)(DKA-nnn)? If [Yes] is selected, the PCB(s) needs to be removed and inserted again.”



1-7. <Compression of the error information>

The error information is compressed.

The dialog of FD Copy is displayed.



1-8. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].

“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP. Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.

A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format

“[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”.

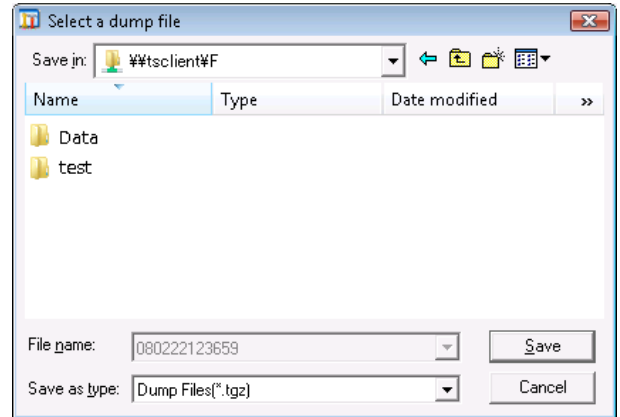
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

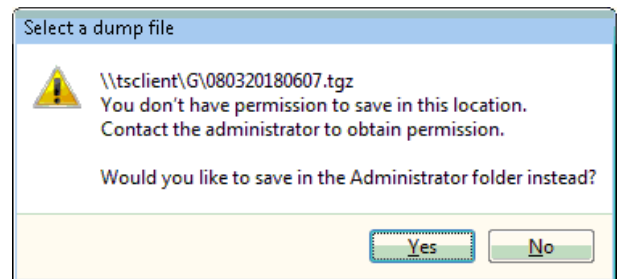
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).



- When the destination media is write-protected.
Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



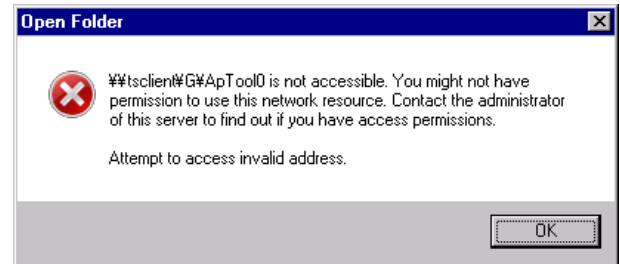
Please appoint another destination whether you remove write protect when you save it and carry it out.

- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

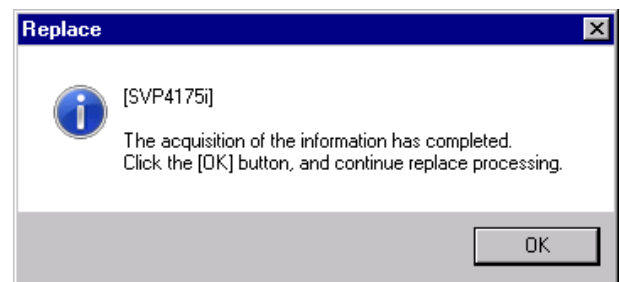
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].

At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.



Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.



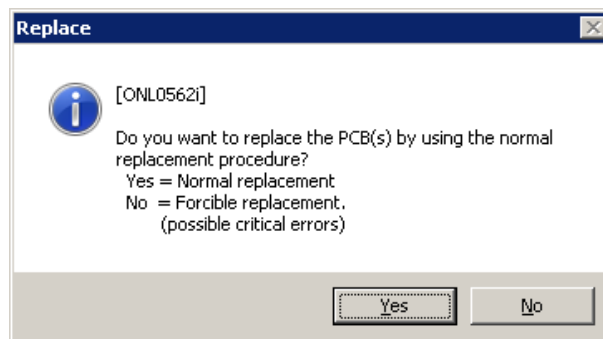
1-9. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

“Do you want to replace the PCB(s) by using the normal replacement procedure?

Yes = Normal replacement

No = Forcible replacement.
(possible critical errors)”.



1-10. <DKA blocking>

“DKA is being blocked...”

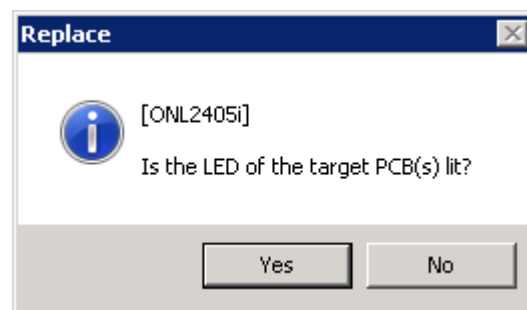
1-11. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

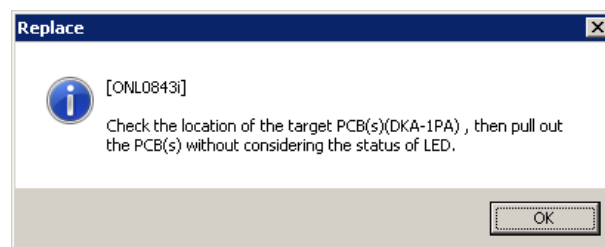
in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(DKA-nnn), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)

NOTE: Select (CL) [OK] after pulling out the PCB.



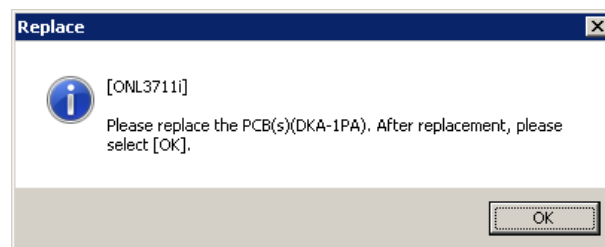
Go to Step 1-12.

1-12. <Beginning of DKA replacement>

“Please replace the PCB(s)(DKA-nnn). After replacement, please select [OK].” is displayed.

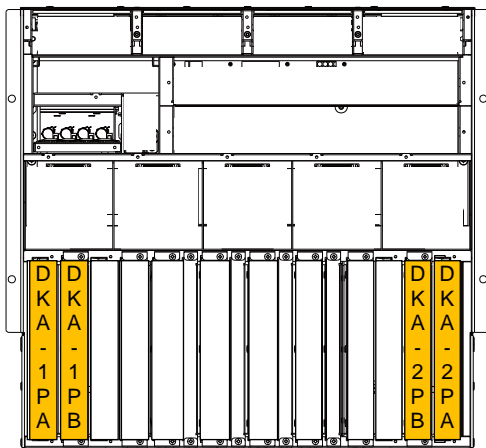
Select (CL) [OK] after replacing the PCBs.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

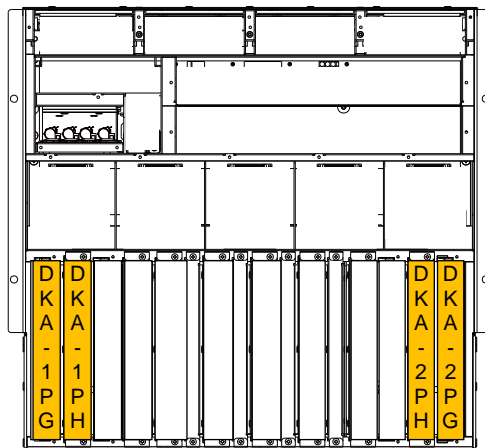


2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear View of DKC	1	DKA (Disk Adapter) PCB	<ul style="list-style-type: none">• WP820-A (SCA)• WP820-B (ESCA)



Rear View of
DKC-0



Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	Replacement of DKA PCB
-----	------------------------

2-1-1. Remove the DKA PCB.

- a. Check that the Shut Down LED is on. (only hot replace)

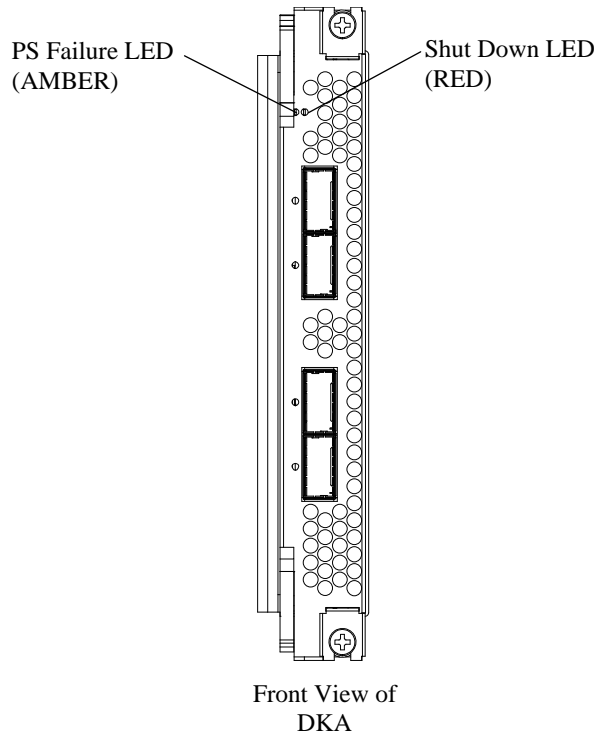
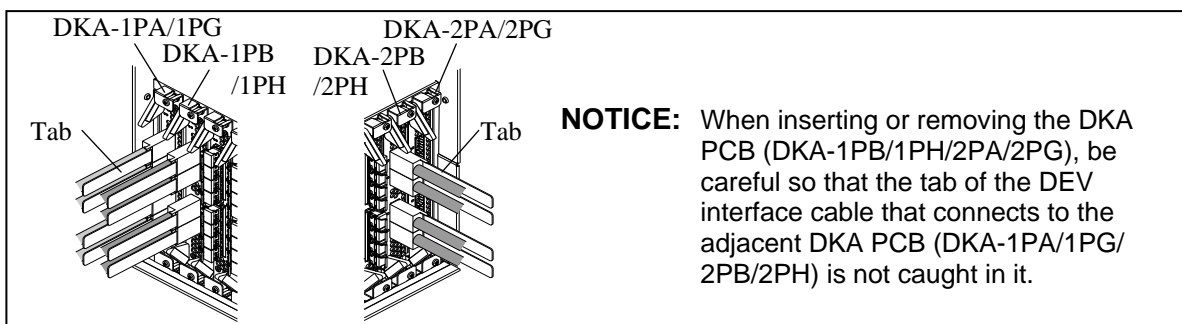
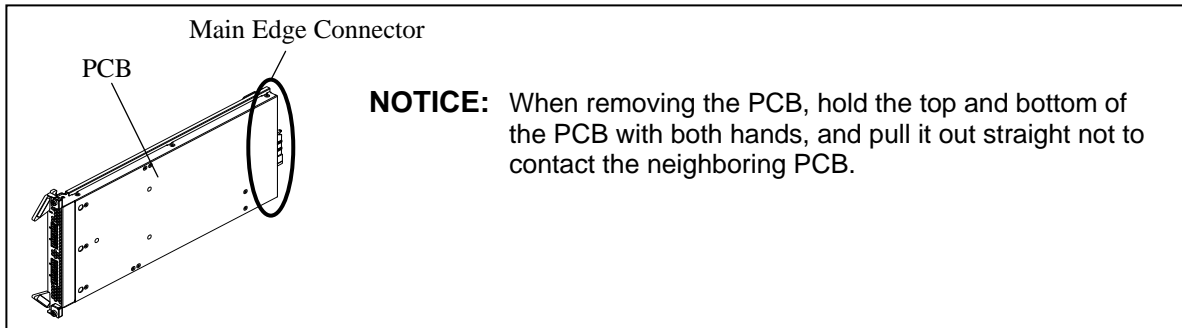


Fig. 3.14.2-1 Confirmation of Shut Down LED

- b. Disconnect the cables from the failed DKA PCB.
- c. Remove the two screws and remove the failed PCB.



NOTICE: After removing the PCB, install the spare PCB immediately. If the PCB is kept removed for 30 minutes or more, the wind doesn't flow among installed PCBs, causing the PCBs' temperature rise which may result in temperature warning or temperature alarm.

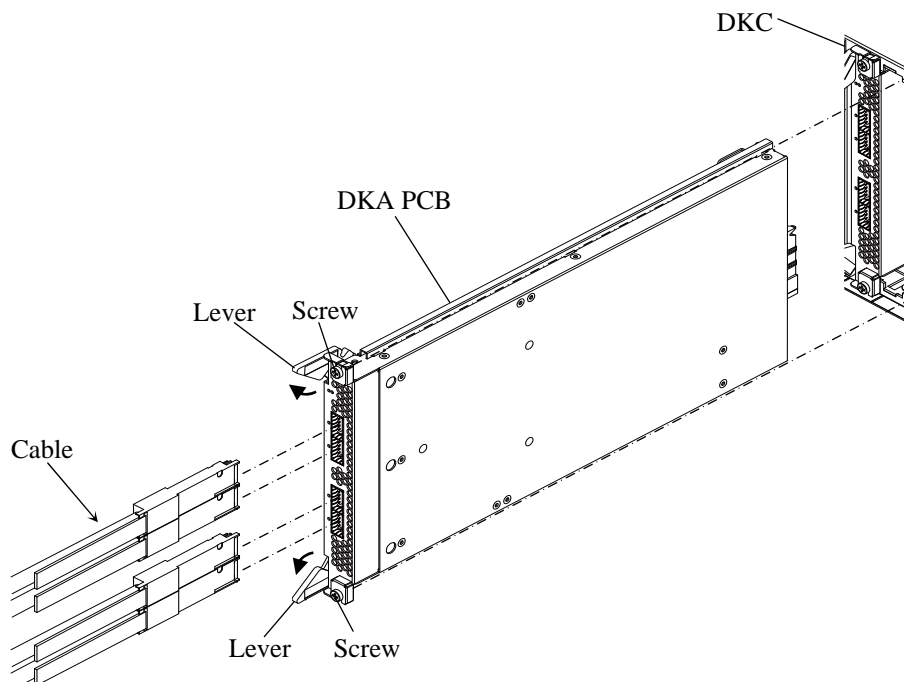
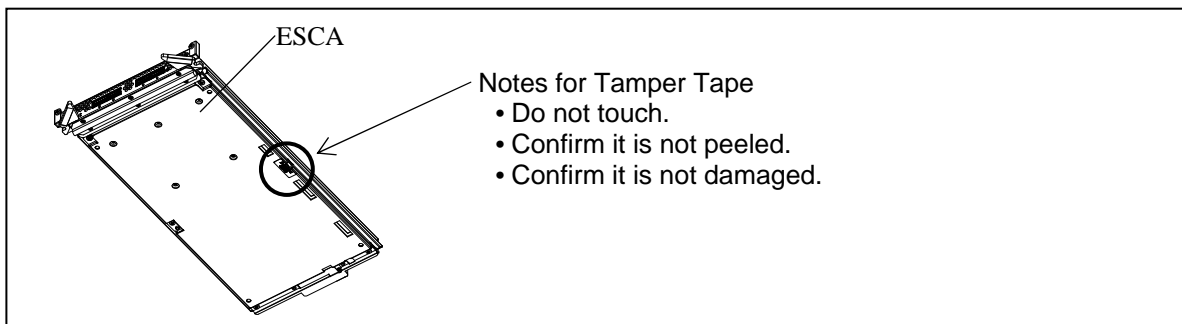
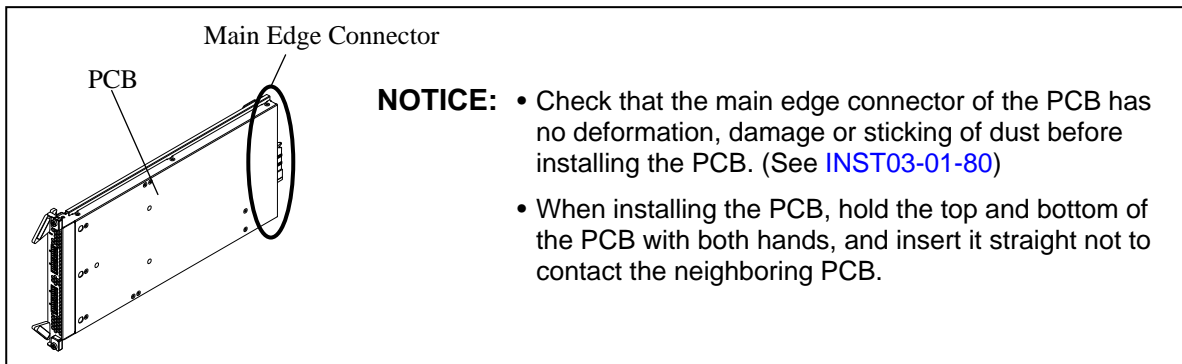


Fig. 3.14.2-2 Removal of PCB

2-1-2. Insert the spare PCB.

- a. Insert the spare PCB to the correct location and tighten the screws.



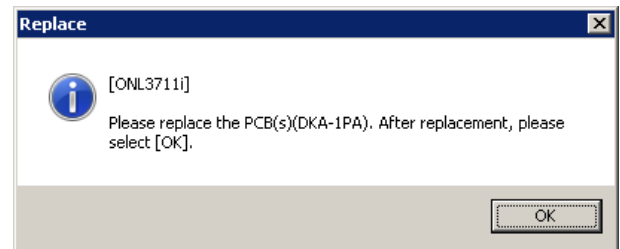
- b. Connect the cables to the spare PCB after checking “3.1.6 Notes when connecting the DEV interface cable” ([INST03-01-180](#)).

2-1-3. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Beginning of DKA Replacement>

Select (CL) [OK] in response to “Please replace the PCB(s)(DKA-nnn). After replacement, please select [OK].” after replacement.



3-2. <Check the recovery processing>

The following message is displayed:

“Restoring (DKA-xxx)

Usually, several minutes (maximum xx minutes)”

3-3. <Check the recovery processing>

“Initializing the Expander...”

“DKU PATH INLINE is now running...” is displayed.

3-4. <Check the recovery processing>

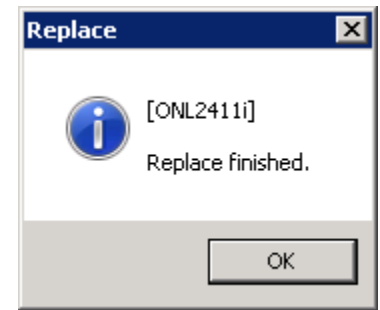
The following message is displayed:

“Restoring the Drive Path...”

“DKA-xxx is being path recovered...”

3-5. <Check the end of DKA recovery>

Select (CL) [OK] in response to “Replace finished.”.



3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[BKM REPLACEMENT PROCESSING - RBM1]

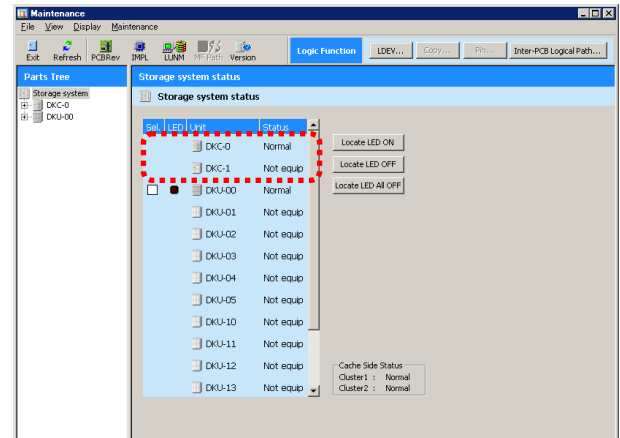
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select BKM (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery of BKM

1. PRE-PROCESSING of SVP

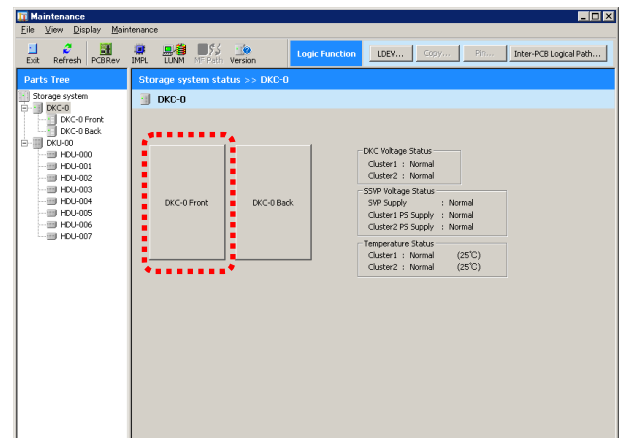
1-1. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.



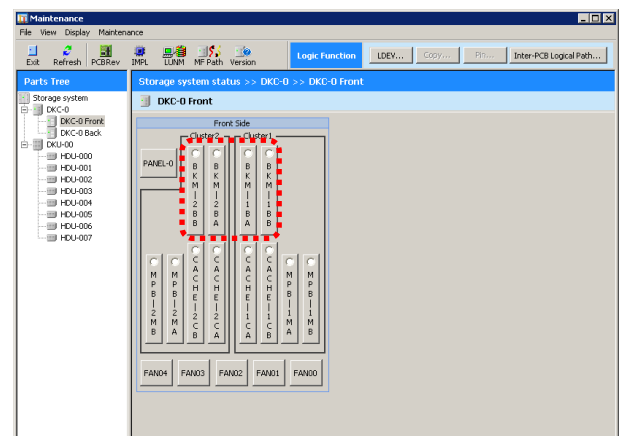
1-2. <DKC window>

Select (CL) [DKC-n Front] in the 'DKC' window.



1-3. <Select BKM>

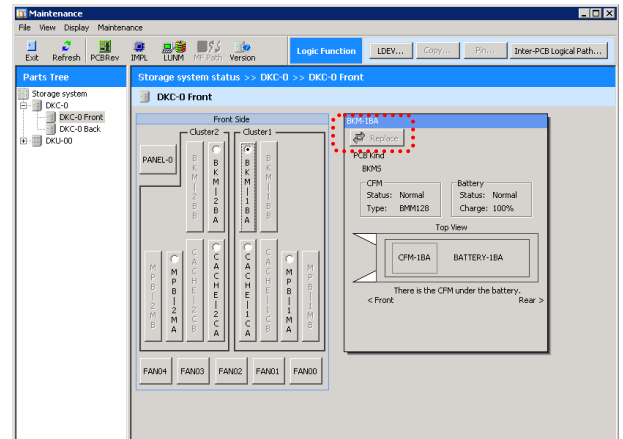
Select (CL) [BKM-nnn].



1-4. <Specify replacement of BKM>

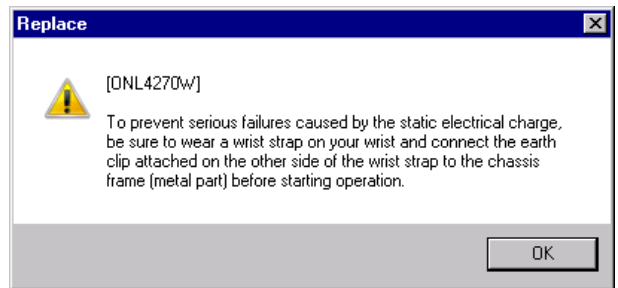
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

Check the status display.
Select (CL) [Replace].



1-5. <Wear a wrist strap>

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

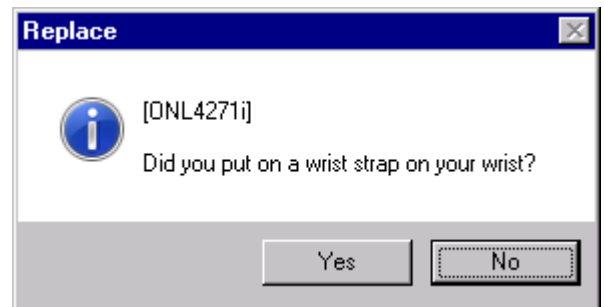


(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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



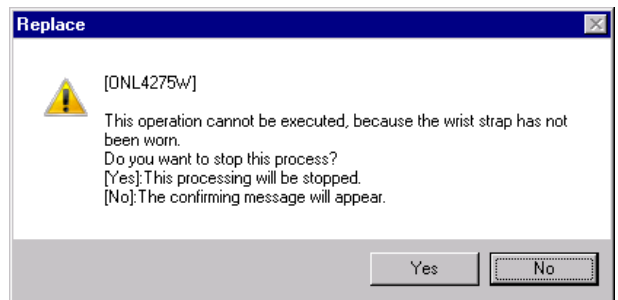
When [No] is selected (CL), go to Step (2).

(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



When [Yes] is selected (CL), returned to Step 1-4.

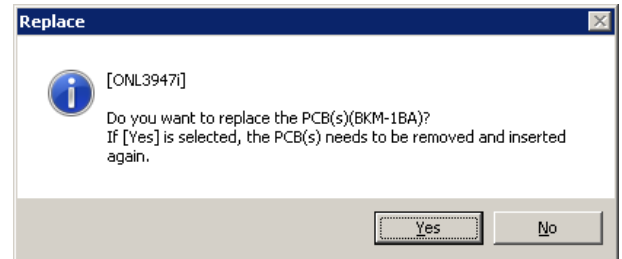
When [No] is selected (CL), returned to Step 1-5.

1-6. <BKM replace>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

Select (CL) [Yes] in response to:

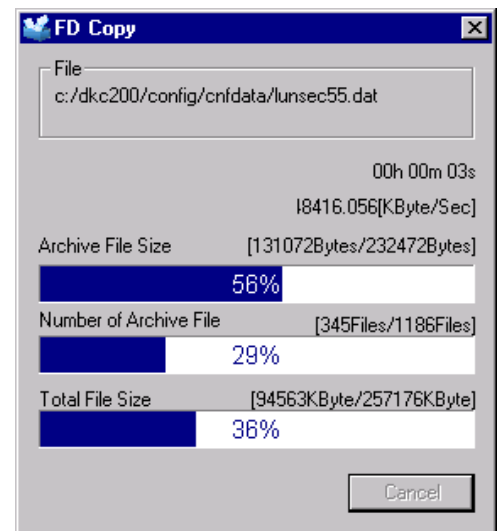
“Do you want to replace the PCB(s)(BKM-
nnn)? If [Yes] is selected, the PCB(s) needs to
be removed and inserted again.”.



1-7. <Compression of the error information>

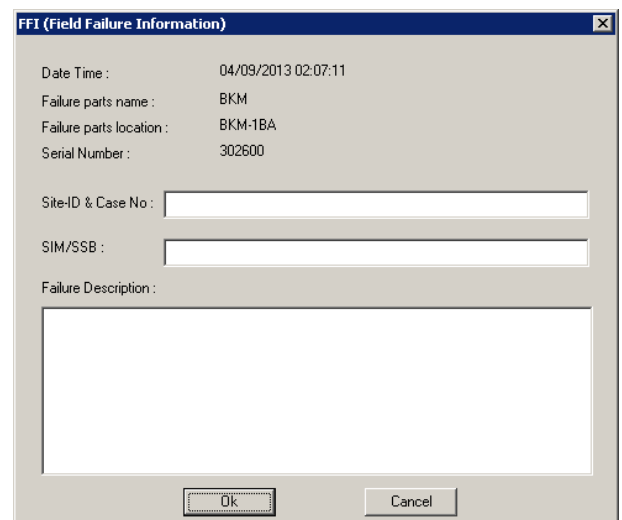
The error information is compressed.

The dialog of FD Copy is displayed.



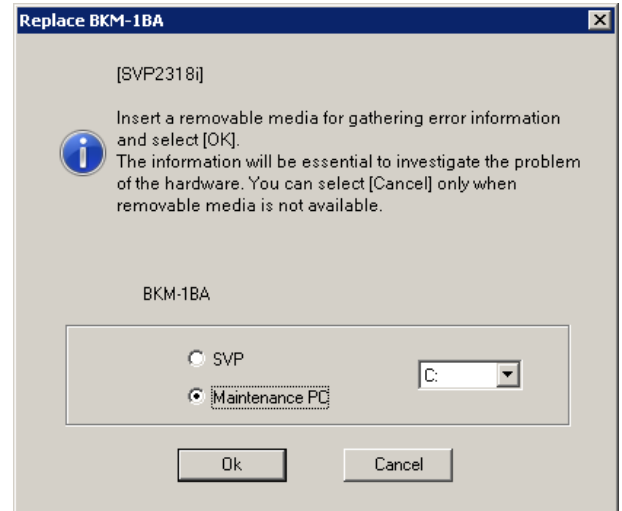
1-8. <Get the error information>

Input the Field Failure Information, and select
(CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

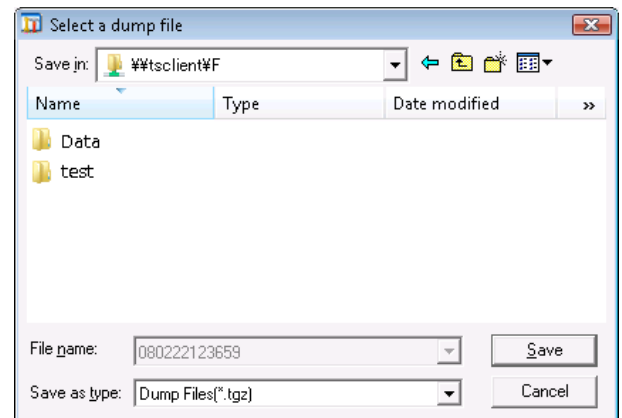
Trouble information is preserved in Maintenance PC connected with SVP.
Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format
“[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”.
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

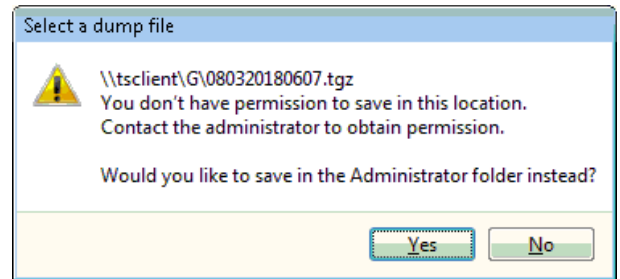
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.



Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

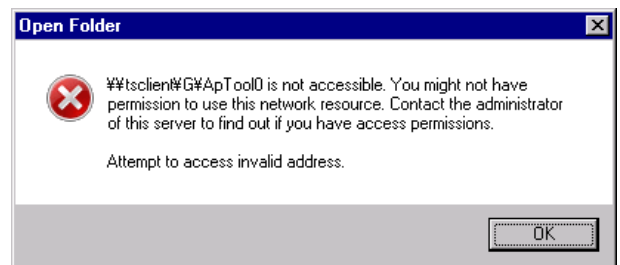
- When the destination media is write-protected.
Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



Please appoint another destination whether you remove write protect when you save it and carry it out.

- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

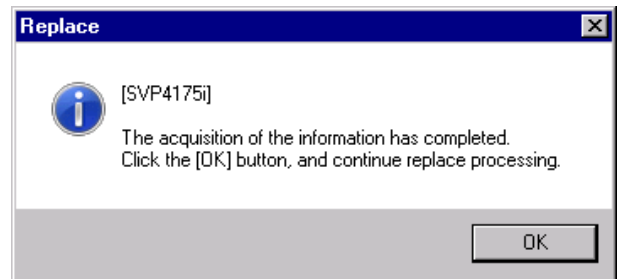
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].



At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.

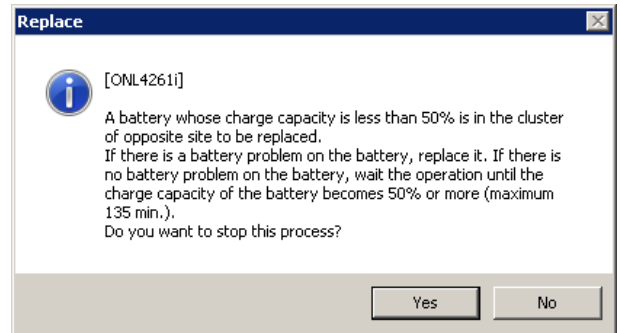


1-9. <Check battery charge opposite cluster>

Automatically, the battery's charge is measured in the opposite cluster.

- More than 50% charge capacity, or “being measured”, go to Step 1-11.

Charge capacity of less than 50%, the following message “A battery whose charge capacity is less than 50% is in the cluster of opposite site to be replaced. If there is a battery problem on the battery, replace it. If there is no battery problem on the battery, wait the operation until the charge capacity of the battery becomes 50% or more (maximum 135 min.). Do you want to stop this process?” is displayed.



If you stop for battery replacement, select (CL) [Yes], returned to Step 1-4.

To continue the replacement battery, select (CL) [No], go to Step 1-10.

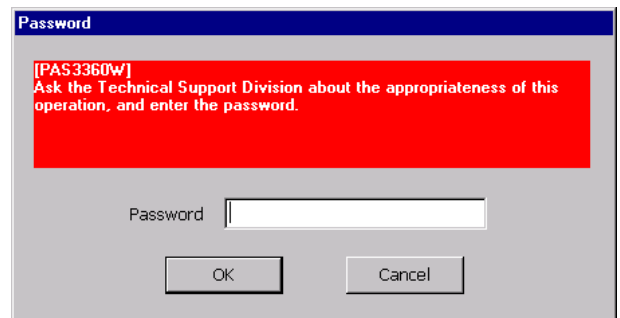
1-10. <Enter the password>

Corresponding to the following message, enter the password and select (CL) the [OK] button.

“Ask the Technical Support Division about the appropriateness of this operation, and enter the password.”

Go to Step 1-11.

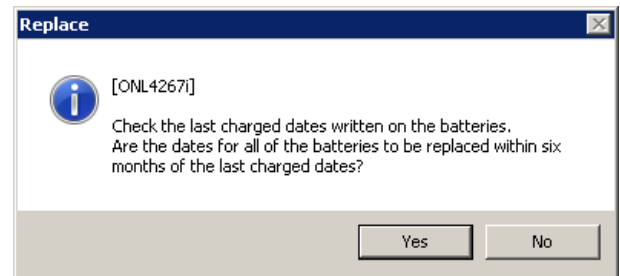
If you stop for a replacement, [Cancel].
Return to Step 1-9.



1-11. <Check with battery storage period>

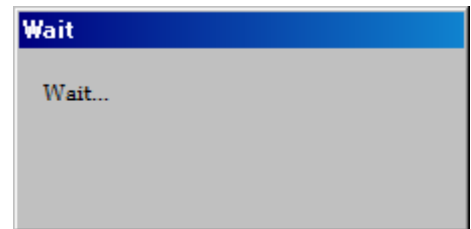
Check the date that is mentioned in the final charge to replace the battery.

“Check the last charged dates written on the batteries. Are the dates for all of the batteries to be replaced within six months of the last charged dates?” is displayed.



- Within six months from the date when the final charge, select (CL) [Yes].
- When more than 6 months from the date of the last charge, select (CL) [No].

And Processing. Go to Step 1-12.



1-12. <Check BKM blocking>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

“The BKM(BKM-nnn) is being blocked...” is displayed.

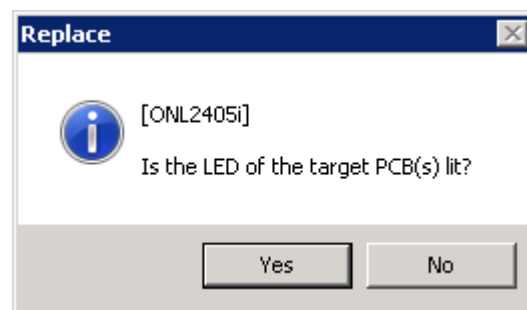
1-13. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

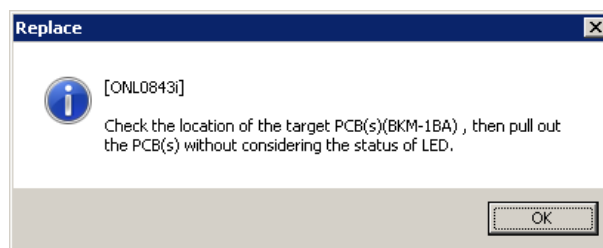
in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(BKM-nnn), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)

NOTE: Select (CL) [OK] after pulling out the PCB.



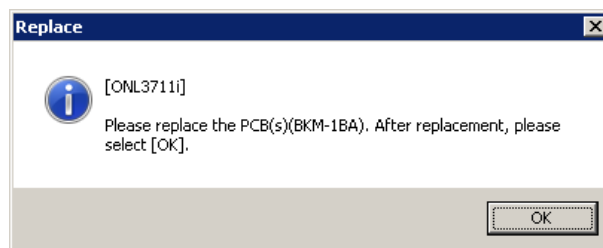
Go to Step 1-14.

1-14. <Beginning of BKM replacement>

“Please replace the PCB(s)(BKM-nnn). After replacement, please select [OK].” is displayed.

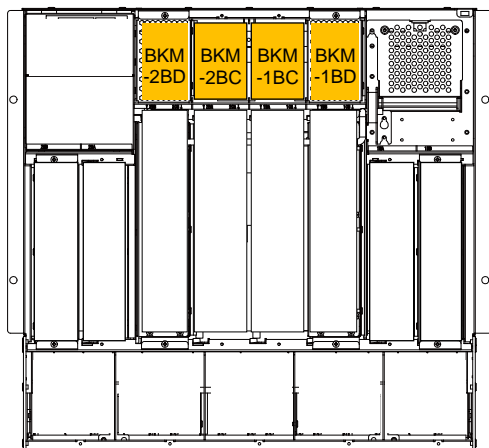
Select (CL) [OK] after replacing the BKM.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

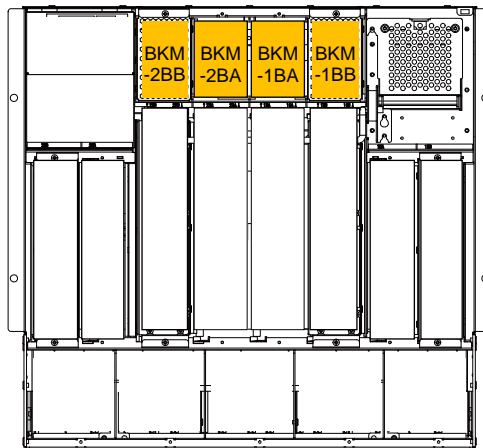


2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Front View of DKC	1	BKM	<ul style="list-style-type: none">• SH586-A (BKMS)• SH622-A (BKML)



Front View of
DKC-1

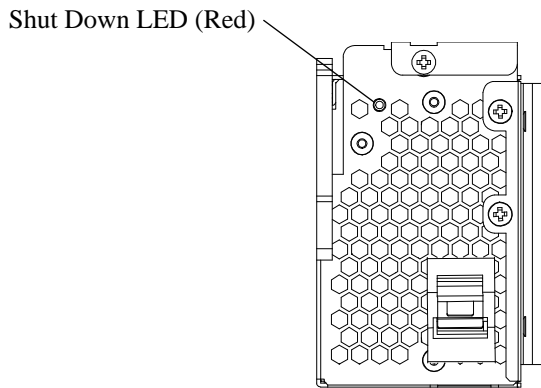


Front View of
DKC-0

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of BKM**2-1-1. Check that the Shut Down LED is on.**

- a. Check that the Shut Down LED is on. (only hot replace)



Front View of BKM

Fig. 3.15.2-1 Confirmation of Shut Down LED

2-1-2. If the cables are attached to the BKMs, move the cables.

If the cables are not attached to the BKMs, go to Procedure 2-1-3.

- a. Check that the screws to secure the BKMs are tightened.

NOTE: If the screw is loose, the BKM may be extracted when the cables or the locking clamp is moved.

- b. Open the four locking clamps and move all the cables to where they cannot obstruct removal of the BKM.

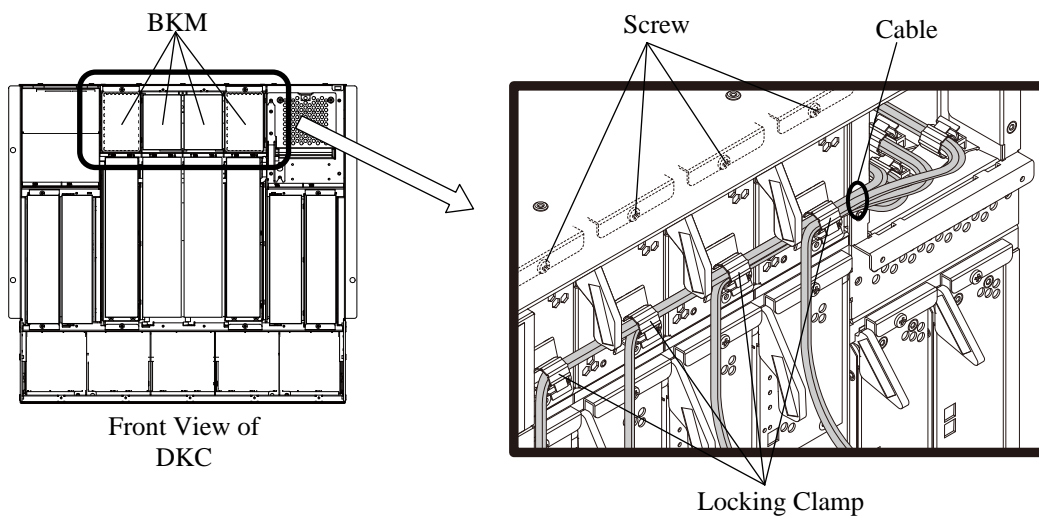


Fig. 3.15.2-2 Moving Cables

2-1-3. Remove the BKM.

- a. Remove the screw and remove the failed BKM.

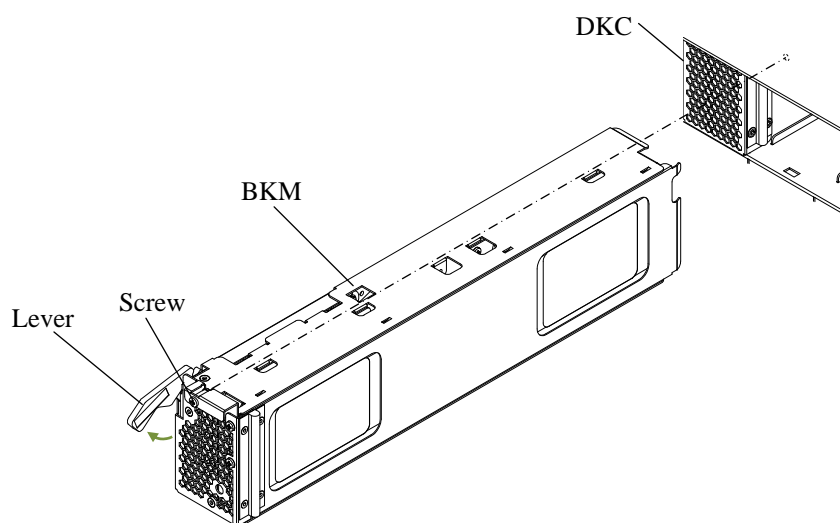
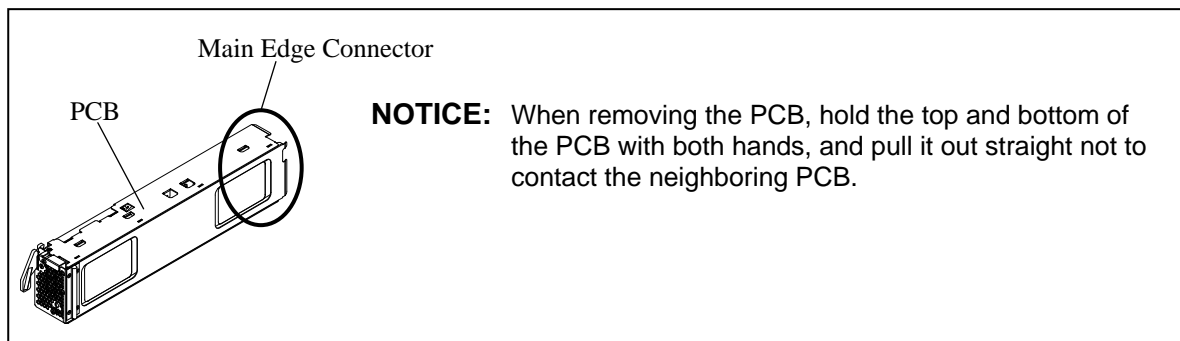


Fig. 3.15.2-3 Removal of BKM

2-1-4. Remove the BKM.

- a. Remove the two screws and remove the cover.

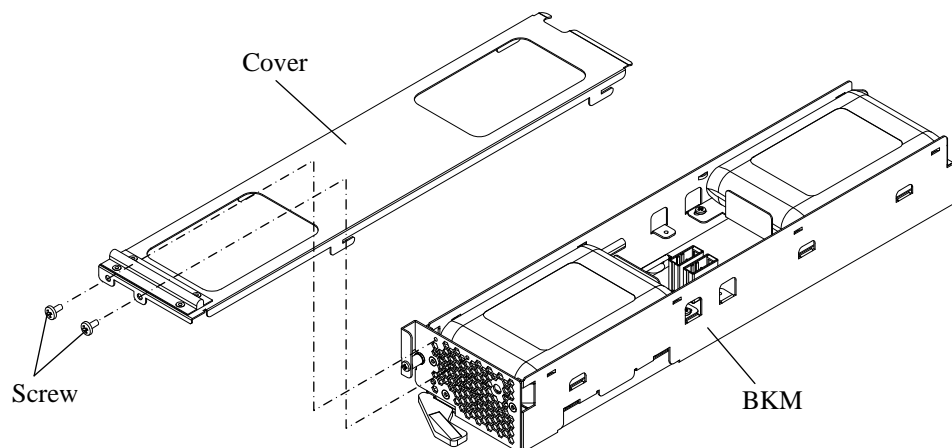


Fig. 3.15.2-4 Removal of Cover

- b. Disconnect the two cables and remove the two batteries.

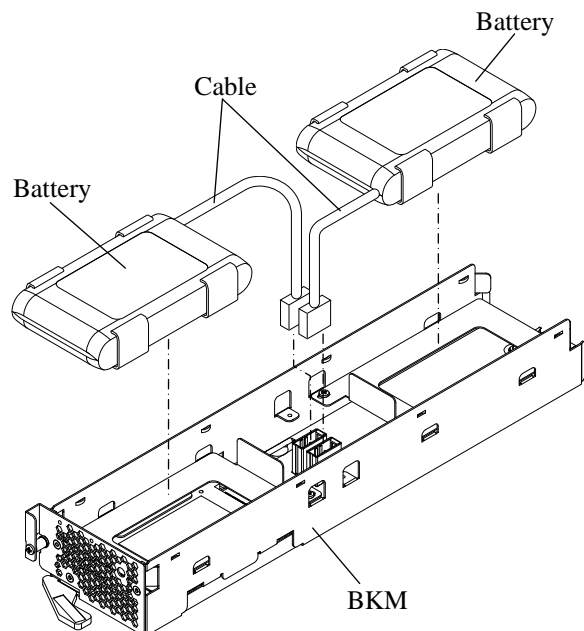


Fig. 3.15.2-5 Removal of Batteries

- c. Remove the screw and remove the cover.

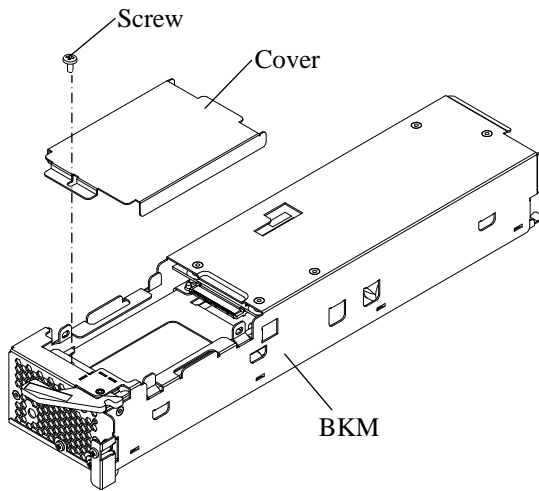


Fig. 3.15.2-6 Removal of Cover

- d. Remove the two screws and remove the CFM.
e. Attach the cover and tighten the screw.

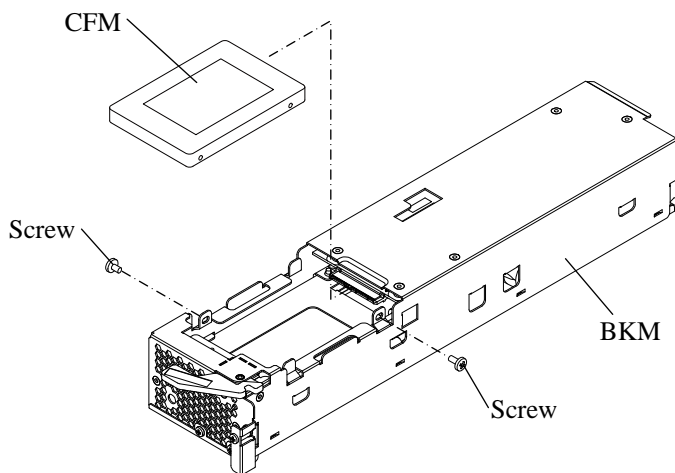
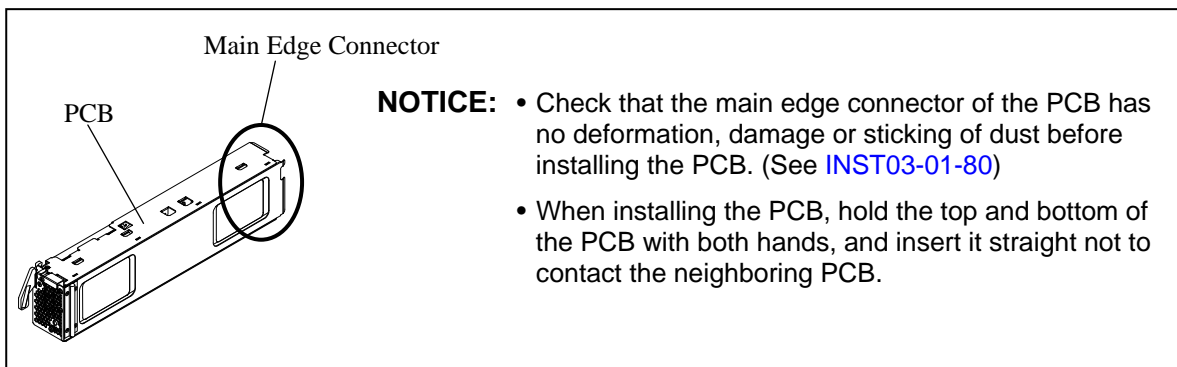


Fig. 3.15.2-7 Removal of CFM

- f. Remove the screw and remove the cover from the spare BKM. (Refer to Fig. 3.15.2-6.)
g. Attach the CFM to the spare BKM and tighten the two screws. (Refer to Fig. 3.15.2-7.)
h. Attach the cover to the spare BKM and tighten the screw.
i. Remove the two screws of the spare BKM and remove the cover. (Refer to Fig. 3.15.2-4.)
j. Attach the two batteries to the spare BKM and connect the two cables. (Refer to Fig. 3.15.2-5.)
k. Attach the cover to the spare BKM and tighten the two screws.

2-1-5. Insert the spare BKM.

- a. Insert the spare BKM to the correct location and tighten the screw.
- b. If the cables were moved aside in Procedure 2-1-2, put them back in place.

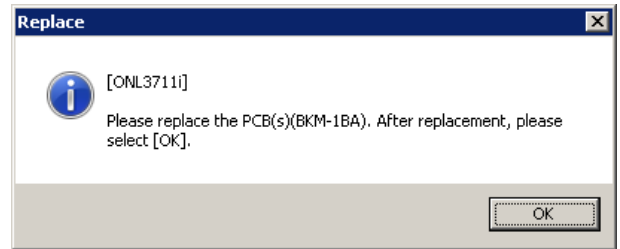


2-1-6. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. < Check replacement of BKM >

Select (CL) [OK] in response to “Please replace the PCB(s)(BKM-nnn). After replacement, please select [OK].” after replacement.



3-2. <INLINE CUDG>

“INLINE CUDG is now running...” is displayed.

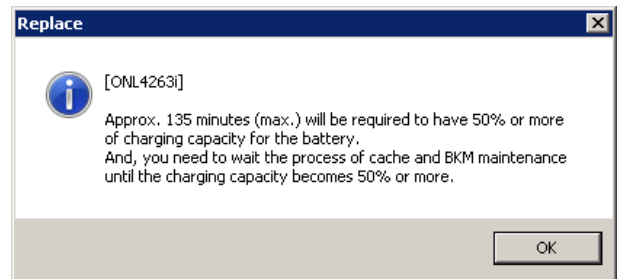
3-3. <Check the BKM recovery procedure>

“Restoring the BKM...” is displayed.

3-4. <Check the battery status>

Automatically check the status of the replaced battery.

If the storage period of the battery is more than six months from the date of the last charge, “Approx. 135 minutes (max.) will be required to have 50% or more of charging capacity for the battery. And, you need to wait the process of cache and BKM maintenance until the charging capacity becomes 50% or more.” is displayed.



Go to Step 3-5.

If the display of Battery Life Warning SIM is disabled, go to Step 3-6.

3-5. <Setting Battery Life>

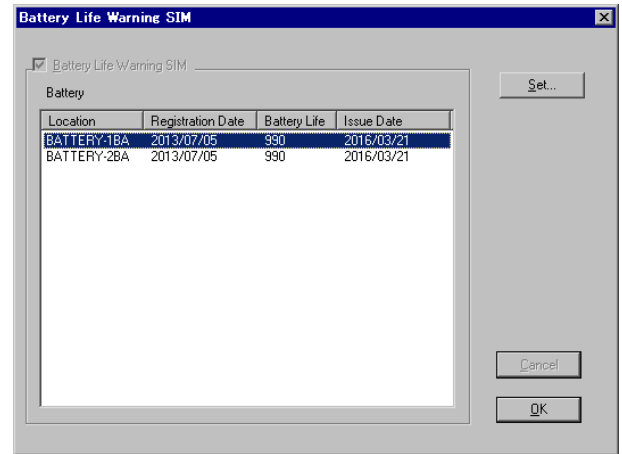
(1)

Select (CL) the target Battery in the 'Battery Life Warning SIM' screen, and then select (CL) [Set...].

Go to Step (2).

Make sure that the all input items are correct and select (CL) [OK].

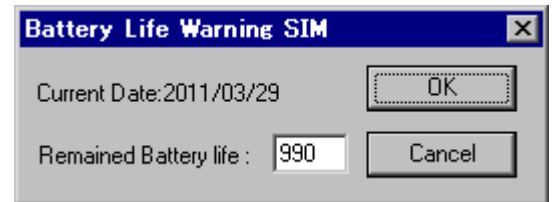
NOTE: If the date is displayed as "****/**/**", follow Step (2) to set the date.



(2)

Select (CL) [OK] after inputting the remainder days until Warning SIM is reported.

Return to Step (1).



NOTE: After executing the periodical exchange of a battery, set 33 month (990 days).

NOTE: Default value is 33 month (990 days), which is 3 month earlier than the lifetime of a battery (3 years).

Determine the number of days remained based on your maintenance plan.

NOTE: The input ranges of "Remained Battery life" are from 1 to 3650.

3-6. <Check end of replacement>

Select (CL) [OK] in response to "Replace finished."



3-7.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DKCPANEL REPLACEMENT PROCESSING - RTC1]

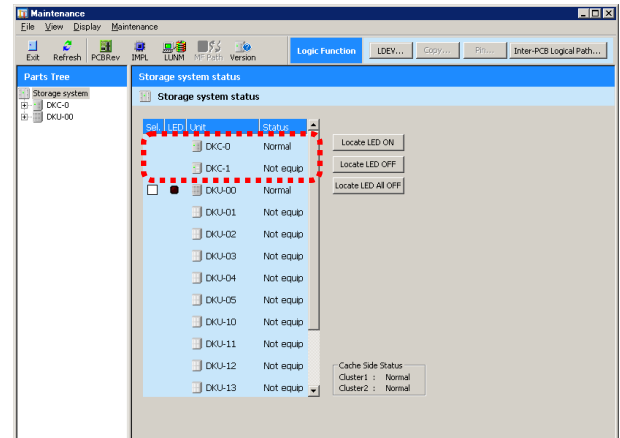
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select DKCPANEL (status check)
 - ② Stop environment monitor
 - ③ Specify Replacement
 - ④ Detach DKCPANEL
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of DKCPANEL replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

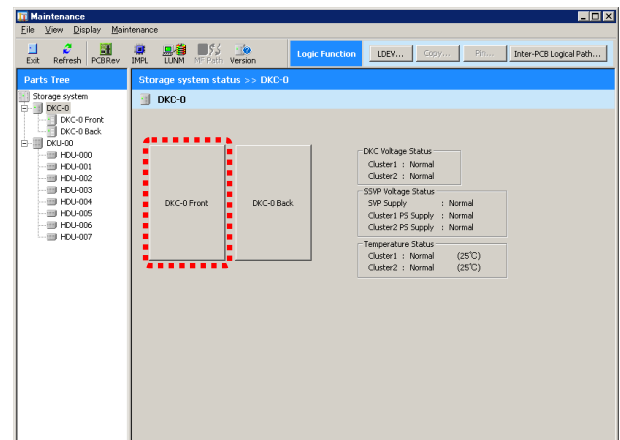
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



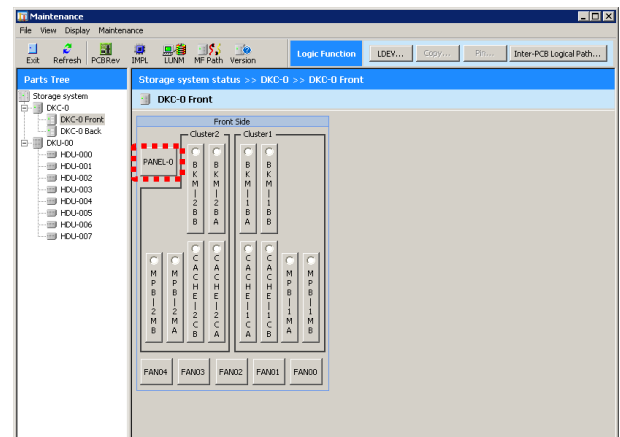
1-2. <DKC window>

Select (CL) [DKC-n Front] in the 'DKC' window.



1-3. <Specify DKCPANEL >

Select (CL) [PANEL-n].

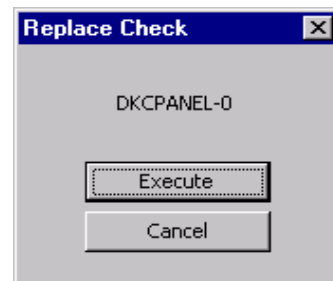


1-4. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

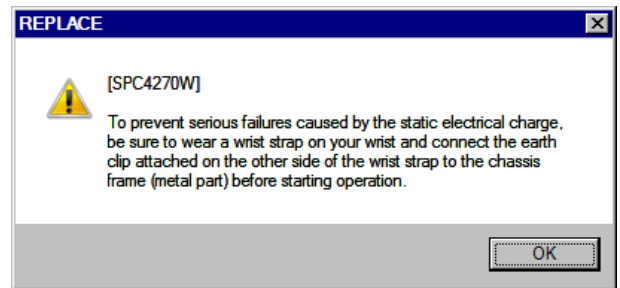
A window shown on the right is displayed.
Select (CL) [Execute].



(Eg. DKCPANEL-0)

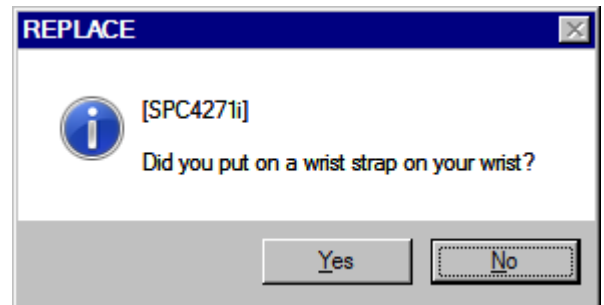
1-5.<Wear a wrist strap>

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



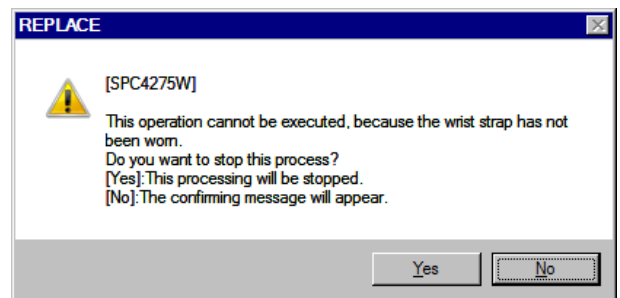
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.



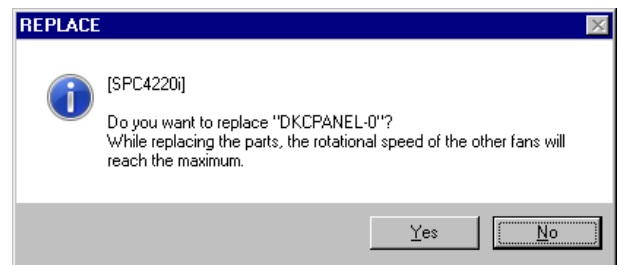
“This operation cannot be executed, because the wrist strap has not been worn.
Do you want to stop this process?
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.”
is displayed.

When the processing will be stopped, select (CL) [Yes].



1-6. <Check beginning of DKCPANEL Replacement>

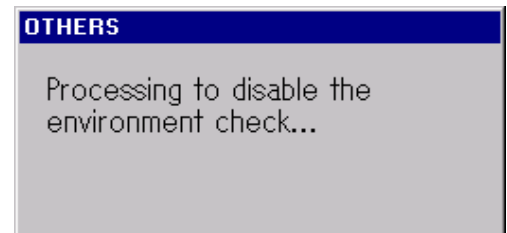
Select (CL) [Yes] in response to “Do you want to replace “DKCPANEL-n”? While replacing the parts, the rotational speed of the other fans will reach the maximum.”.



(Eg. DKCPANEL-0)

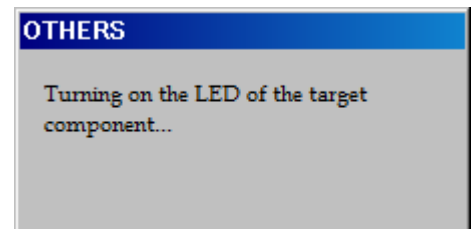
1-7. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.



1-8. <Processing before exchanges>

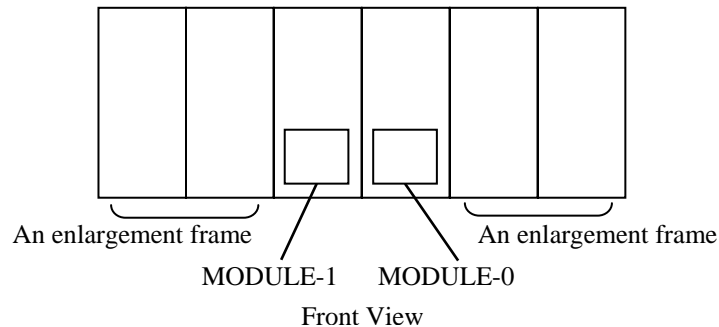
The message “Turning on the LED of the target component...” is displayed.



1-9. <Checking lighting of the LED on the PCB to be pulled out>

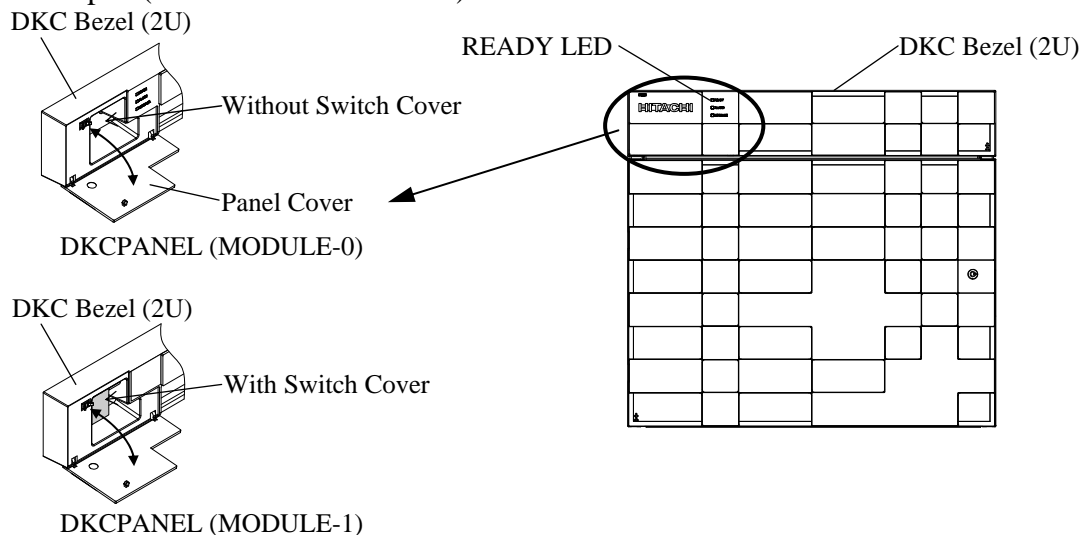
Check the Module Number before working.

Toward the system connected to MODULE, and the basic rack frame of the right side is MODULE-0, basic rack frame of the left is MODULE-1.

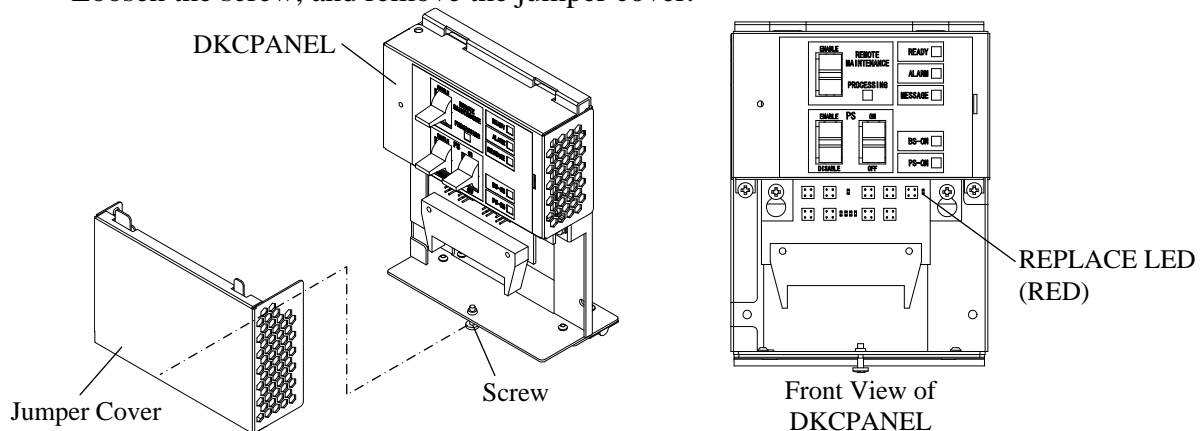


In addition, there is a confirmation method such as follows. The device which READY LED of DKC Bezel (2U) turns on is MODULE-0.

If the READY LED does not light, the device whose switch is visible with the panel cover open (there is no switch cover) is MODULE-0.



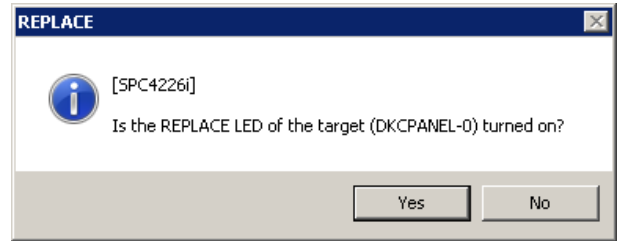
Loosen the screw, and remove the jumper cover.



The message “Is the REPLACE LED of the target (DKCPANEL-n) turned on?” is displayed.

When the REPLACE LED on the component to be pulled out is on, select (CL) [Yes] and go to Step 1-11.

When the REPLACE LED on the component to be pulled out is kept off, select (CL) [No] and go to Step 1-10.



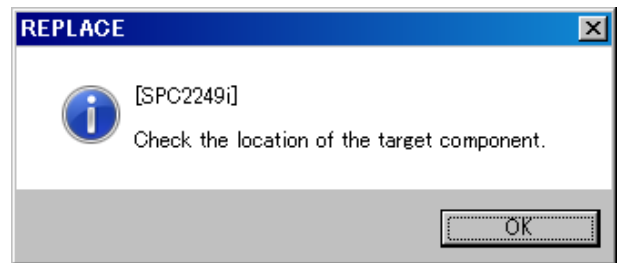
(Eg. DKCPANEL-0)

1-10. <Making sure of the DKCPANEL location>

The message “Check the location of the target component.” is displayed.

See the “2. HARDWARE REPLACEMENT PROCESSING”.

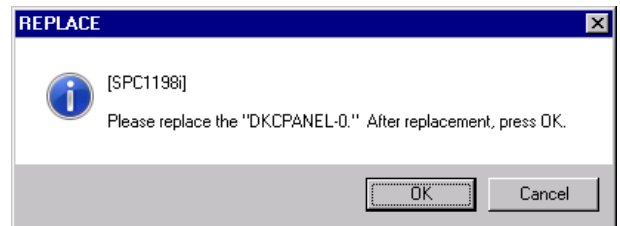
After making sure of the DKCPANEL location, select (CL) [OK] and go to Step 1-11.



1-11. <Check beginning of DKCPANEL Replacement>

The message “Please replace the “DKCPANEL-n.” After replacement, press OK.” is displayed.
(Reply with [OK] after replacing the special part.)

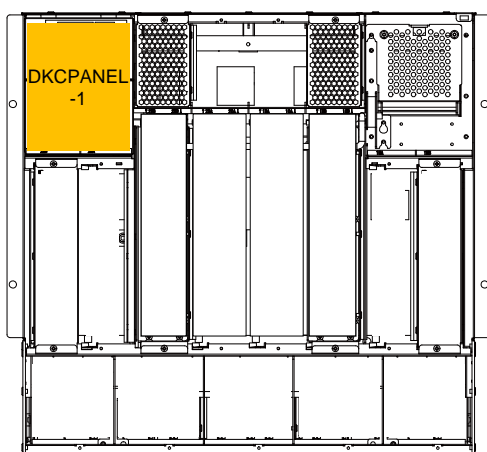
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



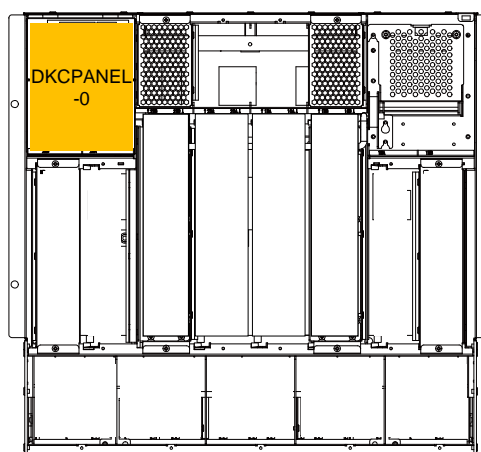
(Eg. DKCPANEL-0)

2. HARDWARE REPLACEMENT PROCESSING

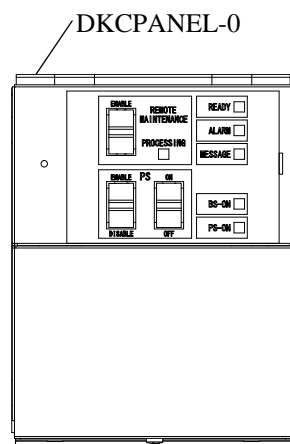
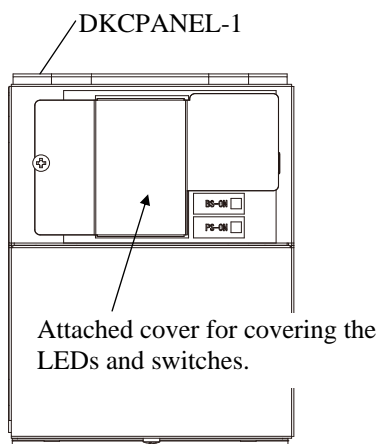
Location	Function Name of Component		Part Name
Front of DKC	1	DKCPANEL	• SH589-A



Front View of DKC-1



Front View of DKC-0



NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 DKCPANEL

2-1-1. Check the REPLACE LED of DKCPANEL.

- a. Loosen the screw, and remove the jumper cover.

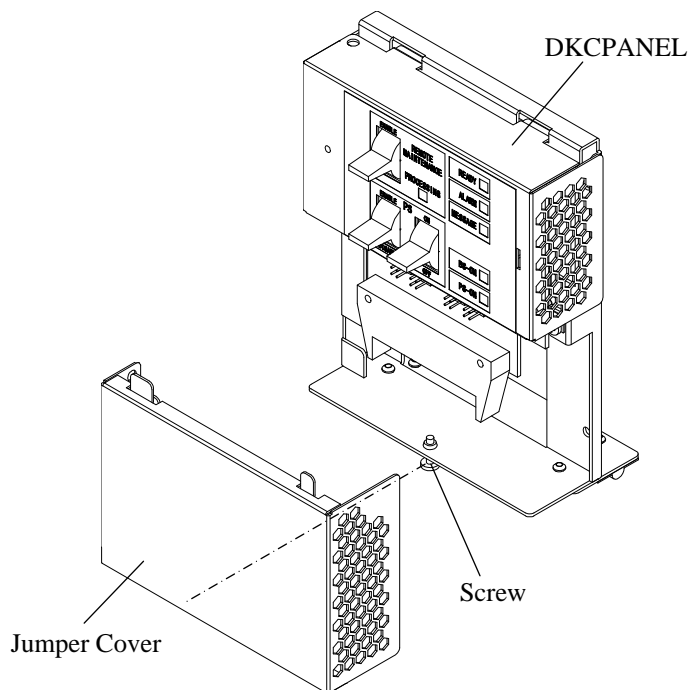


Fig. 3.16.2-1 Removal of Jumper Cover

- b. Check that the REPLACE LED is on.

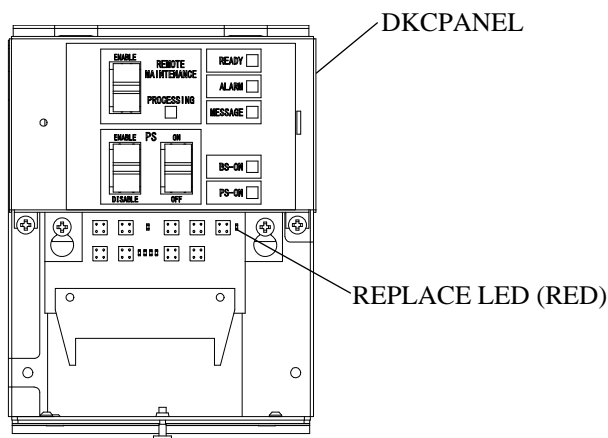


Fig. 3.16.2-2 Confirmation of REPLACE LED

2-1-2. Set the Switches and Jumpers on the Spare DKCPANEL PCB.

- a. Do the same switch settings as the DKCPANEL PCB to be removed for the spare DKCPANEL PCB.
- b. Do the same jumper settings as the DKCPANEL PCB to be removed for the spare DKCPANEL PCB.

2-1-3. Replace the DKCPANEL PCB.

- a. Disconnect the cable (P1) from the DKCPANEL PCB.

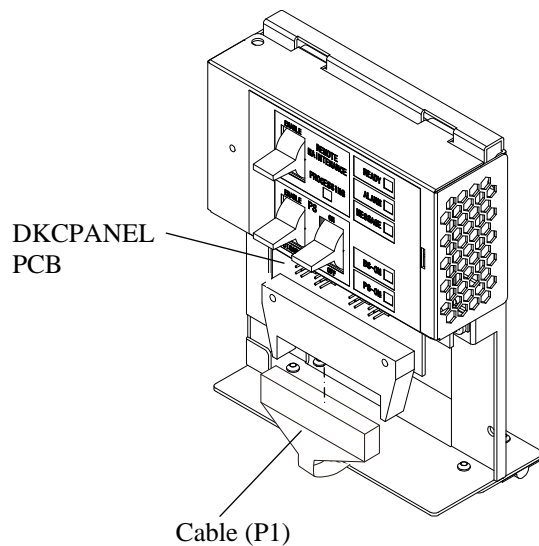


Fig. 3.16.2-3 Disconnection of Cable

- b. Loosen the two screws on the bottom of the cover.
- c. Remove the cover pressing it upward and bringing down the upper part toward you.

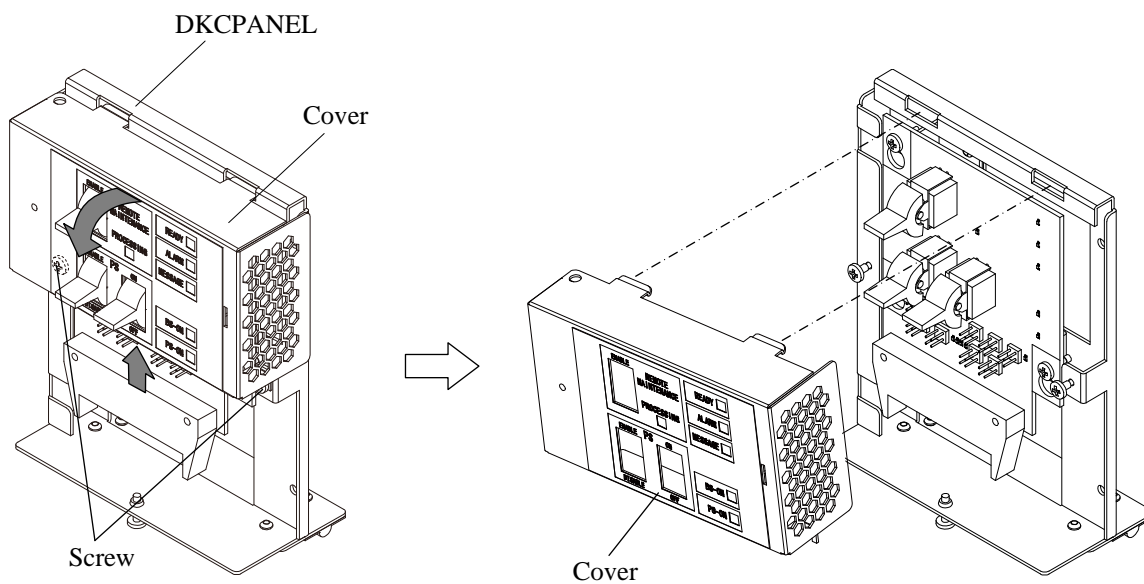


Fig. 3.16.2-4 Removal of Cover

- d. Loosen the three screws, and remove the DKCPANEL PCB.
- e. Attach the spare DKCPANEL PCB, and tighten the screws.

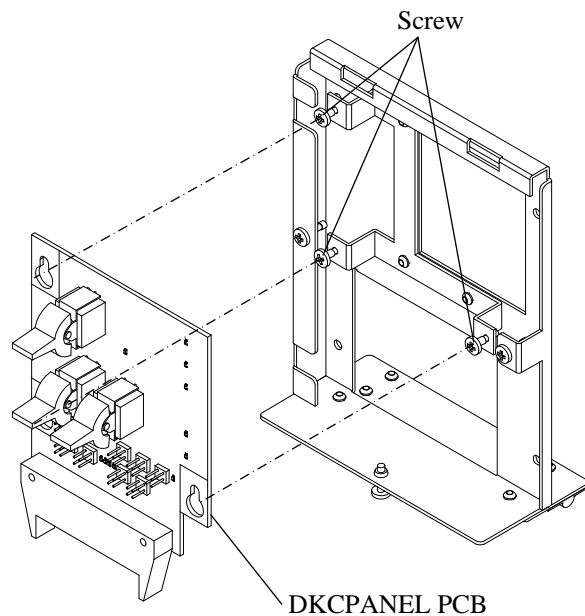


Fig. 3.16.2-5 Removal of DKCPANEL PCB

- f. Attach the cover, and tighten the two screws. (Refer to Fig. 3.16.2-4.)
- g. Connect the cable (P1) to the DKCPANEL PCB. (Refer to Fig. 3.16.2-3.)

2-1-4. Attach the Jumper Cover.

- a. Attach the jumper cover, and tighten the screw. (Refer to Fig. 3.16.2-1.)

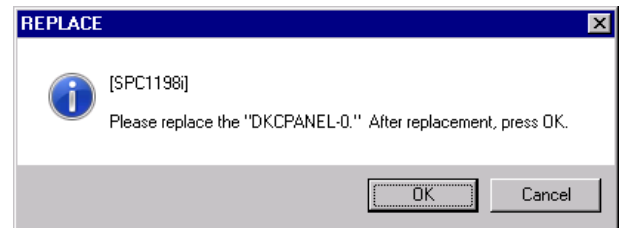
2-1-5. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of DKCPANEL>

Select (CL) [OK] in response to “Please replace the “DKCPANEL-n.” After replacement, press OK.”.

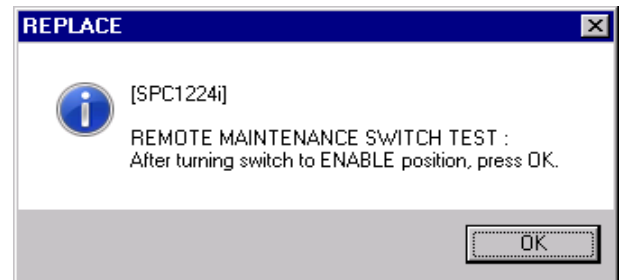
When DKCPANEL (DKCPANEL-1) on module1 side is exchanged, go to Step 3-5.



(Eg. DKCPANEL-0)

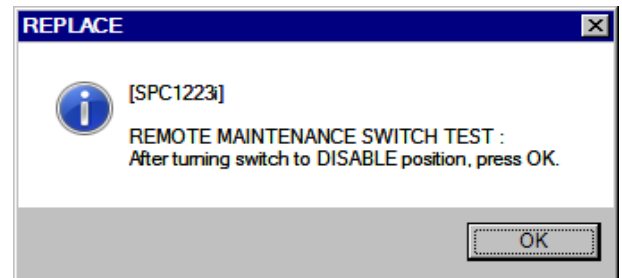
3-2.

Select (CL) [OK] in response to “REMOTE MAINTENANCE SWITCH TEST: After turning switch to ENABLE position, press OK.”.



3-3.

Select (CL) [OK] in response to “REMOTE MAINTENANCE SWITCH TEST: After turning switch to DISABLE position, press OK.”.



3-4.

Select (CL) [OK] in response to “RESTART JP TEST:

Execute the following procedures.

1. Attach the RESTART JP to DKCPANEL.
2. Detach the RESTART JP from DKCPANEL.
3. Select [OK].” is displayed.

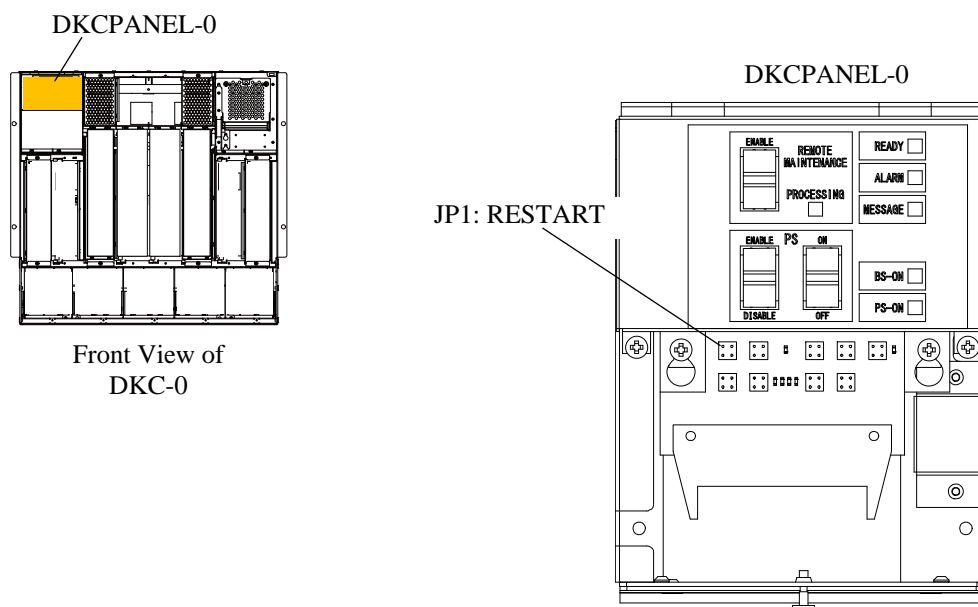
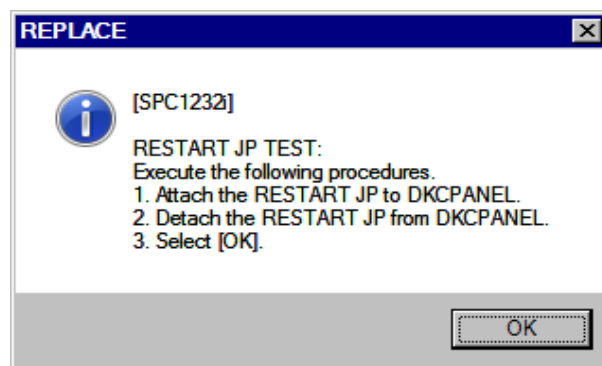
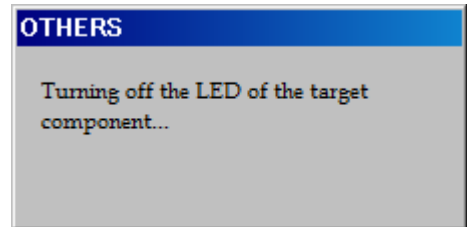


Fig. 3.16.3-1 Place of RESTART JP in DKCPANEL PCB

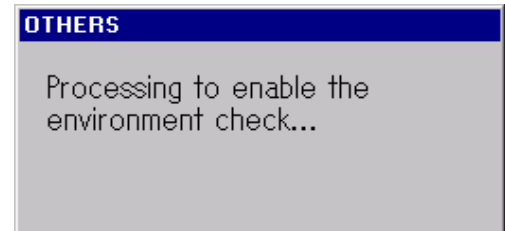
3-5. <Processing after exchanges>

The message “Turning off the LED of the target component...” is displayed.



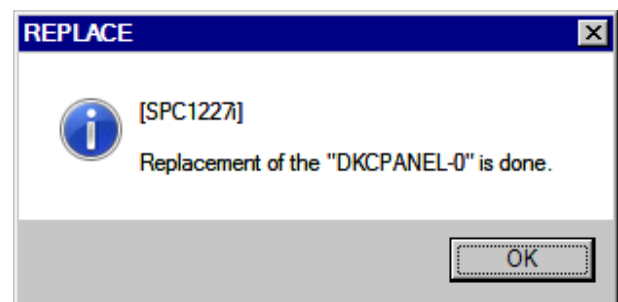
3-6. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-7. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKCPANEL-n” is done.”.



(Eg. DKCPANEL-0)

3-8.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[SSVPMN REPLACEMENT PROCESSING - RTC2]

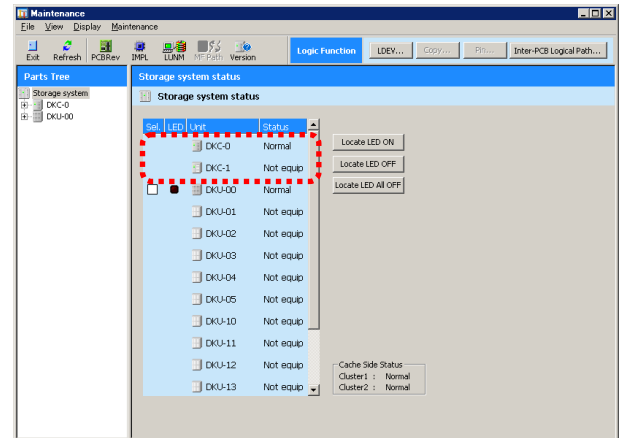
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select SSVPMN (status check)
 - ② Stop environment monitor
 - ③ Specify Replacement
 - ④ Detach SSVPMN
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of SSVPMN replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

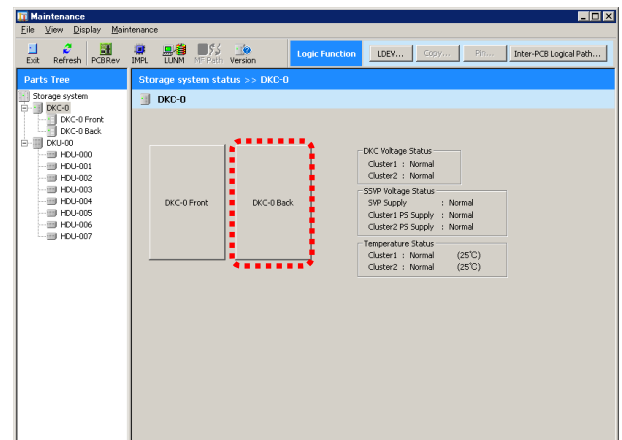
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



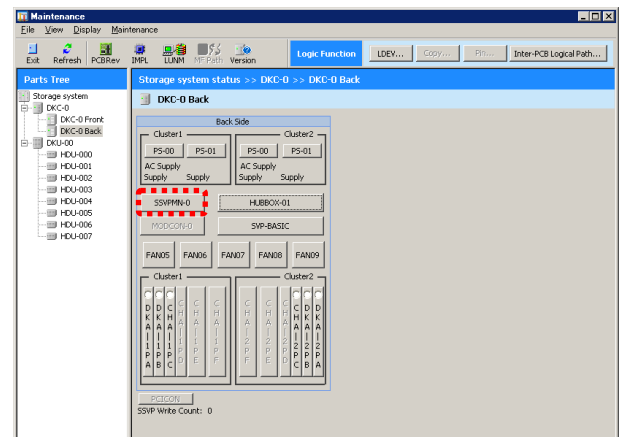
1-2. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



1-3. <Specify SSVPMN>

Select (CL) [SSVPMN-n].



1-4. <Execute>

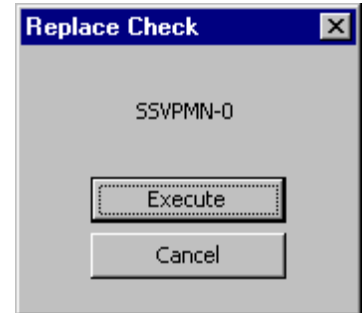
NOTICE: When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

When the SVP High Reliability Kit has been installed and an SVP fail over (SIM=7FF3XX) is detected, at first, take actions to resolve the failure (SIM=7FF3XX).

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

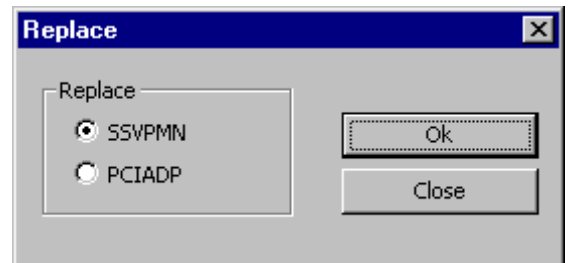
A window shown on the right is displayed.

Select (CL) [Execute] if PCI Option is not installed.



(Eg. PCI Option is not installed)

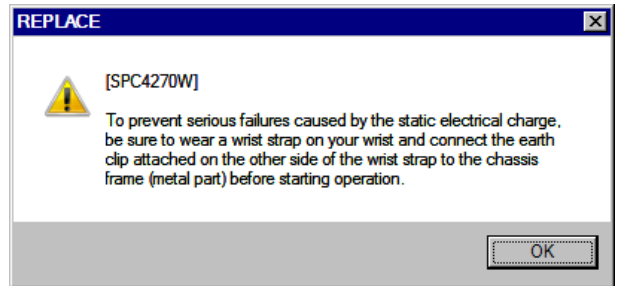
Select (CL) "SSVPMN", and select (CL) [Ok] if PCI Option is installed.



(Eg. PCI Option is installed)

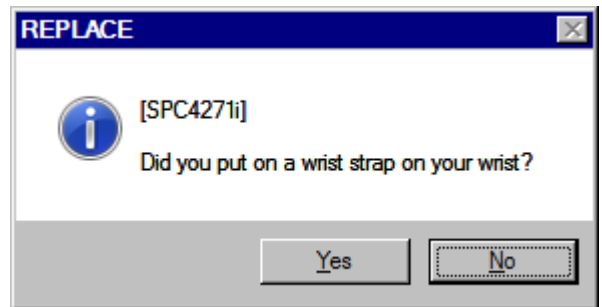
1-5. <Wear a wrist strap>

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



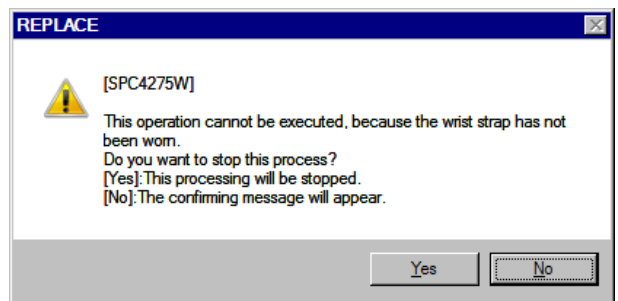
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.



“This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?”
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.” is displayed.

When the processing will be stopped, select (CL) [Yes].



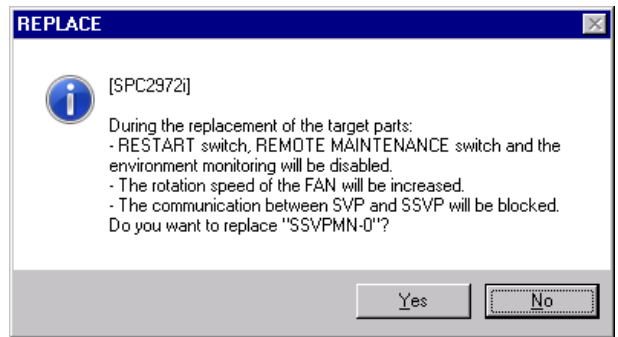
1-6. <Check beginning of SSVPMN Replacement>

The message “During the replacement of the target parts:

- RESTART switch, REMOTE MAINTENANCE switch and the environment monitoring will be disabled.
- The rotation speed of the FAN will be increased.
- The communication between SVP and SSVP will be blocked.

Do you want to replace “SSVPMN-n”?” is displayed.

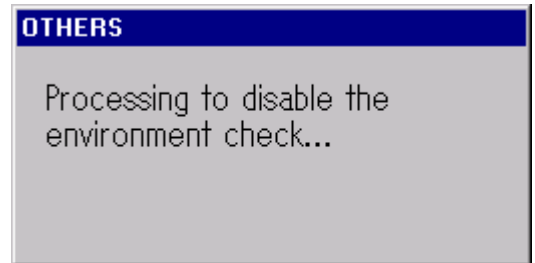
Select (CL) [Yes].



(Eg. SSVPMN-0)

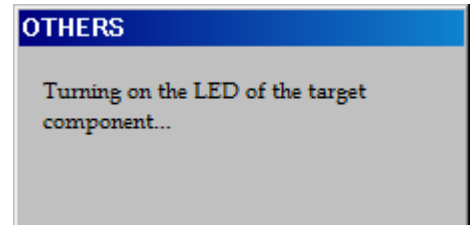
1-7. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.



1-8. <Processing before exchanges>

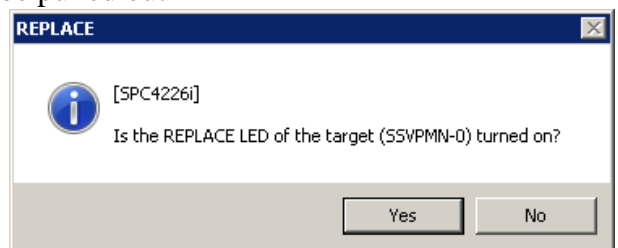
The message “Turning on the LED of the target component...” is displayed.



1-9. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (SSVPMN-n) turned on?” is displayed. When the REPLACE LED on the component to be pulled out is on, select (CL) [Yes] and go to Step 1-11.

When the REPLACE LED on the component to be pulled out is kept off, select (CL) [No] and go to Step 1-10.



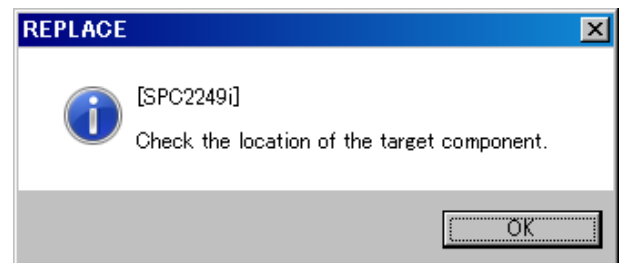
(Eg. SSVPMN-0)

1-10. <Making sure of the SSVPMN location>

The message “Check the location of the target component.” is displayed.

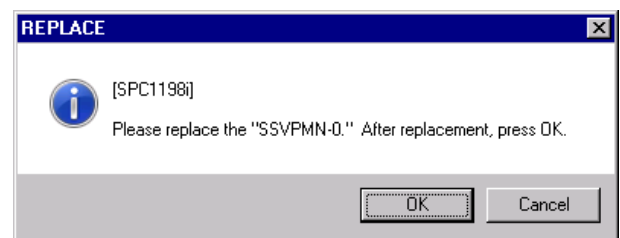
See the “2. HARDWARE REPLACEMENT PROCESSING”.

After making sure of the SSVPMN location, select (CL) [OK] and go to Step 1-11.

**1-11. <SSVPMN Replacement>**

The message “Please replace the “SSVPMN-n.” After replacement, press OK.” is displayed.

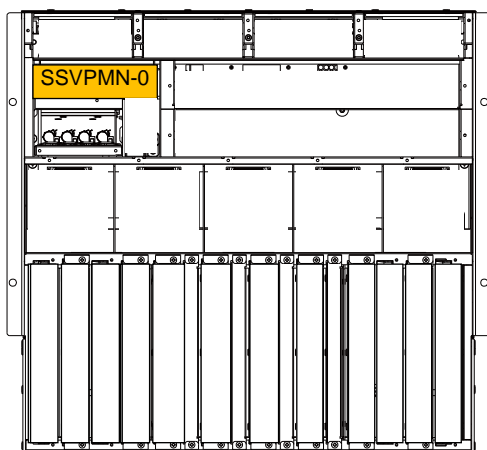
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



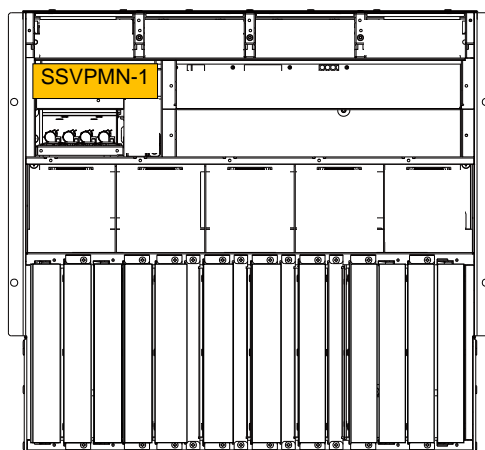
(Eg. SSVPMN-0)

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of DKC	1	SSVPMN	• SH524-B



Rear View of
DKC-0



Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 SSVPMN

NOTE: While the SSVPMN is extracted for replacement, the LEDs on the DKCPANEL (READY, ALARM, MESSAGE, BS-ON, PS-ON) are off.

2-1-1. Remove the SSVPMN.

- Check that the REPLACE LED is on.
- Loosen the screw.
- Operate the levers and remove the SSVPMN PCB.

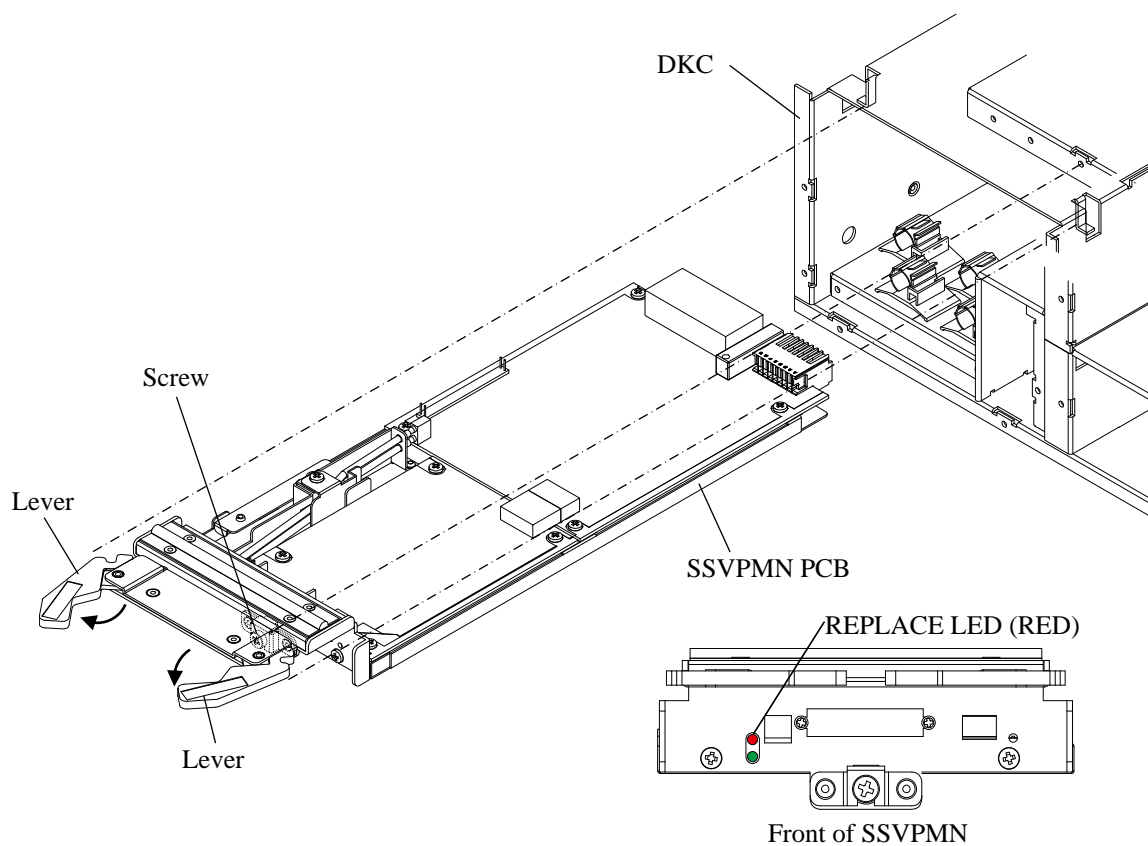
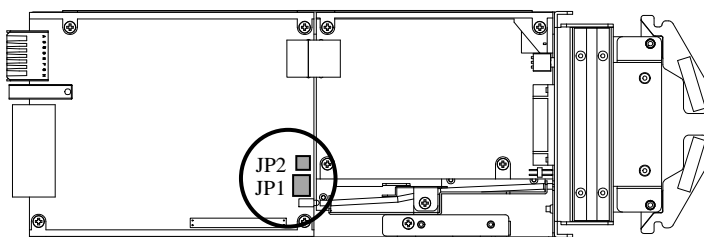


Fig. 3.17.2-1 Removal of SSVPMN

2-1-2. Set the Jumpers.

- a. Set the jumpers (JP1 and JP2) in the spare SSVPMN. For jumper settings, refer to [LOC06-180](#).

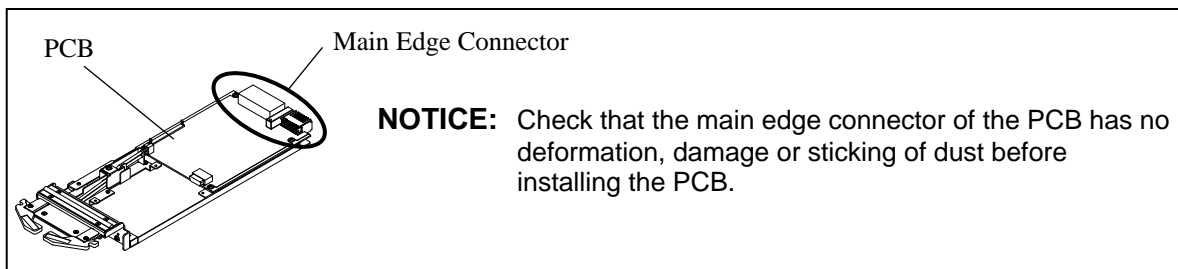


Top View of SSVPMN

Fig. 3.17.2-2 Jumper Setting of SSVPMN

2-1-3. Insert the SSVPMN.

- a. Insert the spare SSVPMN PCB.
- b. Tighten the screw.
- c. Check that the REPLACE LED is off.



2-1-4. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of SSVPMN>

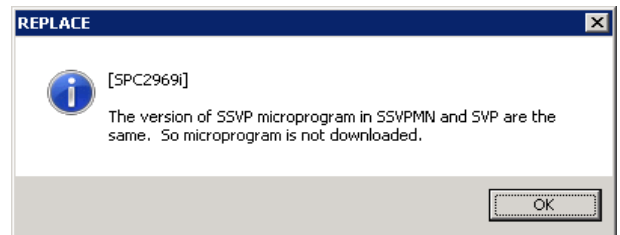
Select (CL) [OK] in response to “Please replace the “SSVPMN-n.” After replacement, press OK.”.



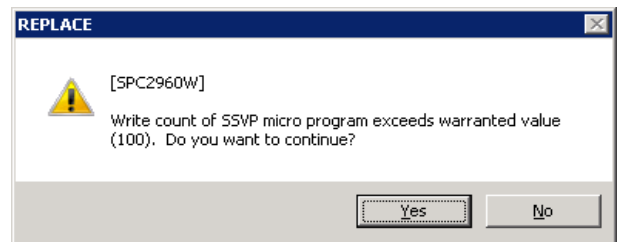
(Eg. SSVPMN-0)

3-2. <Warning message>

If the target is SSVPMN-1, go to Step 3-4.
When the versions of two microprograms, one is to be downloaded to the SSVPMN and the other is stored in an ROM of the SSVPMN, are the same, a message, “The version of SSVP microprogram in SSVPMN and SVP are the same. So microprogram is not downloaded.” is displayed.
Select (CL) [OK] and go to Step 3-4.



When the number of times of the SSVP microprogram downloading exceeds 100, a message, “Write count of SSVP micro program exceeds warranted value (100). Do you want to continue?” is displayed.
When you download the microprogram, select (CL) [Yes] and go to Step 3-3.

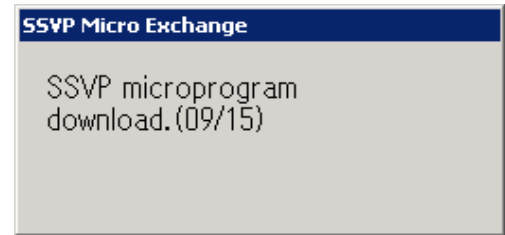


When you do not download the microprogram, select (CL) [No] and go to Step 3-4.

NOTICE: When you download the microprogram, an entry of a password is requested. Contact the Technical Support Division to ask for an instruction.

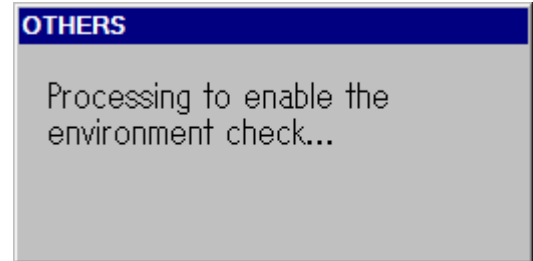
3-3.

The message “SSVP microprogram download. (n/15)” is displayed.



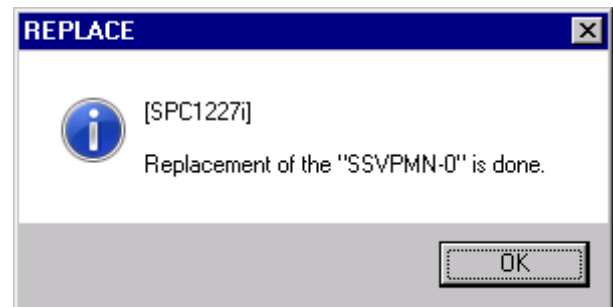
3-4. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-5. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “SSVPMN-n” is done.”.



(Eg. SSVPMN-0)

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[MODCON REPLACEMENT PROCESSING - RTC3]

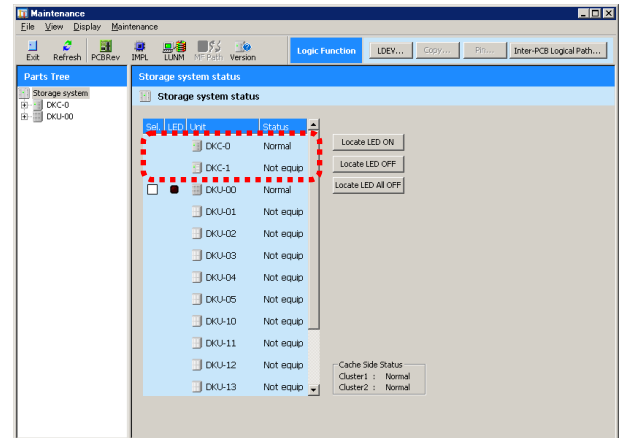
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select MODCON (status check)
 - ② Stop environment monitor
 - ③ Specify Replacement
 - ④ Detach MODCON
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of MODCON replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

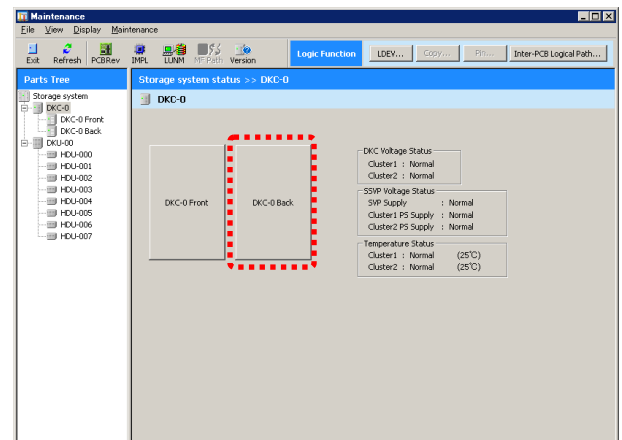
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



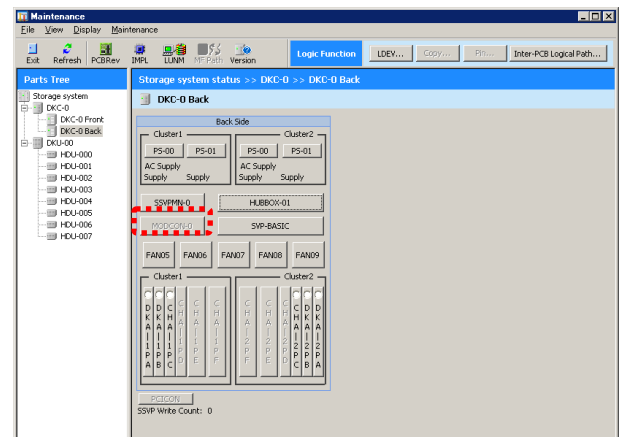
1-2. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



1-3. <Specify special part MODCON>

Select (CL) [MODCON-n].



1-4. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

Following SIM may occur during replacement of the MODCON.

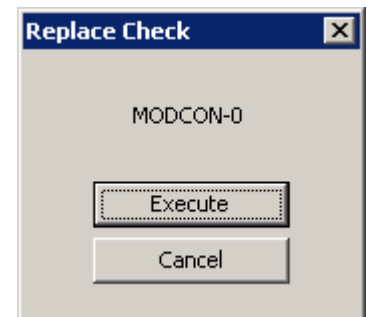
In this case please complete SIM after replace MODCON.

- bfaca0 Communication Error between MN and MN
- bfb5a4 MODCON cable misconnection
- bfb6xx MODCON unconnection

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

A window shown on the right is displayed.

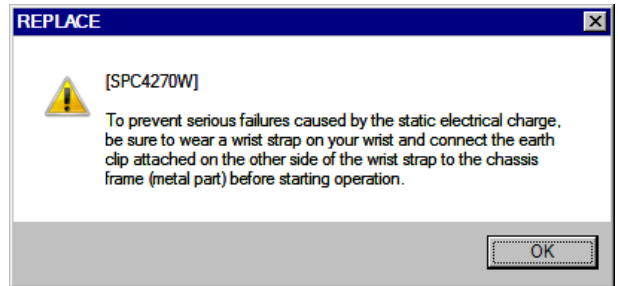
Select (CL) [Execute].



(Eg. MODCON-0)

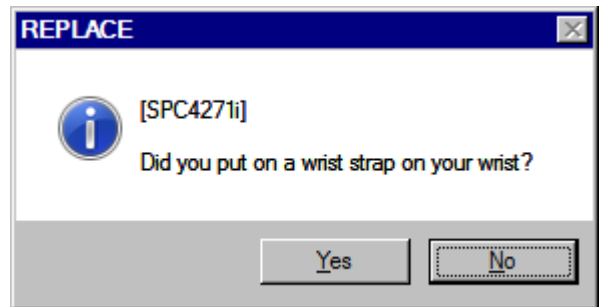
1-5. <Wear a wrist strap>

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



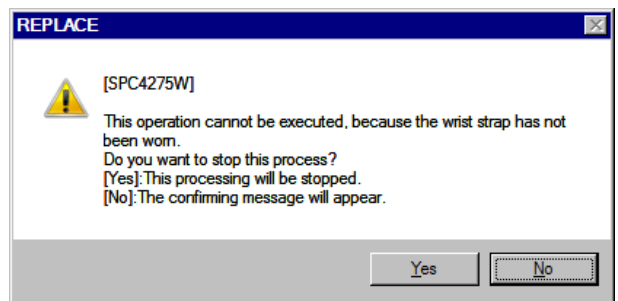
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.



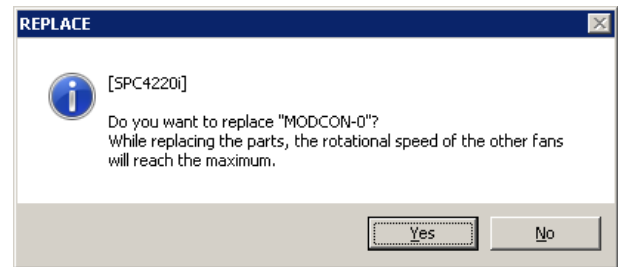
“This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?”
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.” is displayed.

When the processing will be stopped, select (CL) [Yes].



1-6. <Check beginning of MODCON Replacement>

Select (CL) [Yes] in response to “Do you want to replace “MODCON-n”? While replacing the parts, the rotational speed of the other fans will reach the maximum.”.



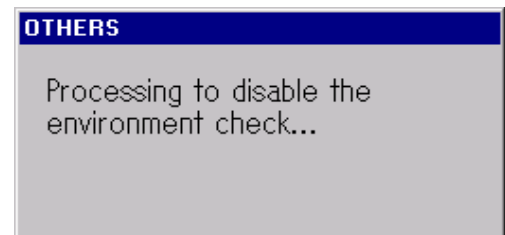
(Eg. MODCON-0)

1-7. <Checking the MODCON>

The SVP automatically checks the MODCON to see if it is replaceable.

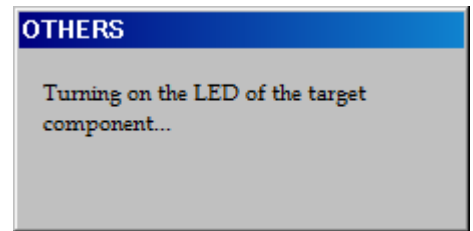
1-8. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.



1-9. <Processing before exchanges>

The message “Turning on the LED of the target component...” is displayed.

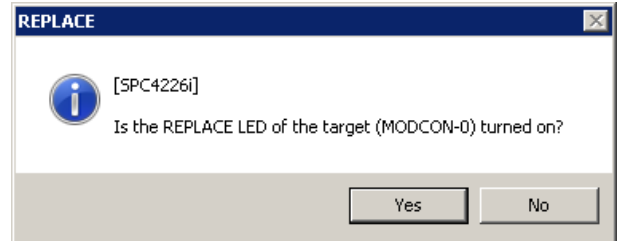


1-10. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (MODCON-n) turned on?” is displayed.

When the REPLACE LED on the component to be pulled out is on, select (CL) [Yes] and go to Step 1-12.

When the REPLACE LED on the component to be pulled out is kept off, select (CL) [No] and go to Step 1-11.



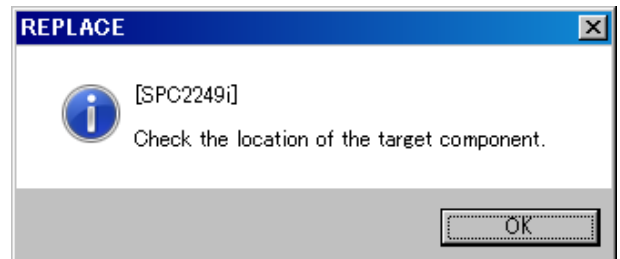
(Eg. MODCON-0)

1-11. <Making sure of the MODCON location>

The message “Check the location of the target component.” is displayed.

See the “2. HARDWARE REPLACEMENT PROCESSING”.

After making sure of the MODCON location, select (CL) [OK] and go to Step 1-12.

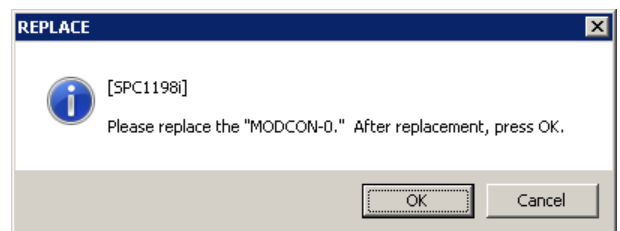


1-12. <MODCON Replacement>

The message “Please replace the “MODCON-n.” After replacement, press OK.” is displayed.

(Reply with [OK] after replacing the special part.)

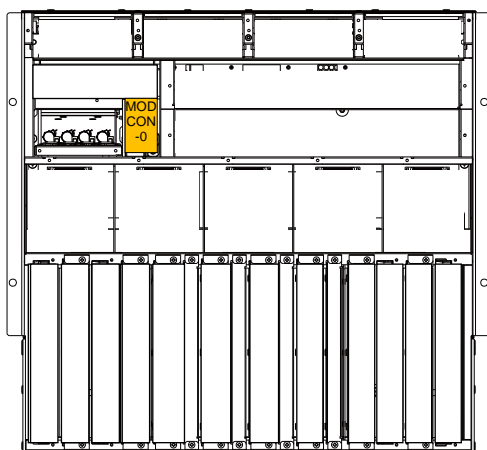
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



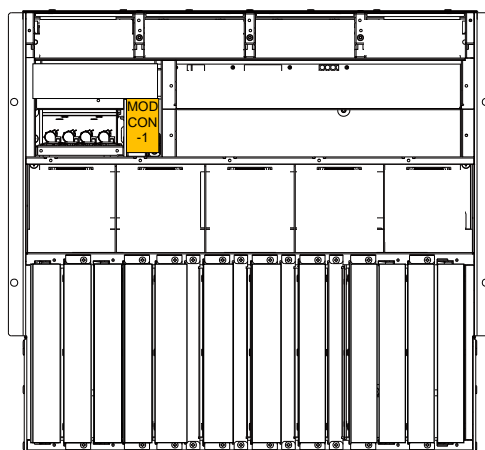
(Eg. MODCON-0)

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of DKC	1	MODCON	• SH590-A



Rear View of
DKC-0



Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of MODCON

2-1-1. Replace the MODCON.

- Check that the REPLACE LED is on.
- Disconnect the cables from the MODCON while pressing the lock part of the cables.
- Loosen the screw and remove the MODCON.
- Insert the spare MODCON and tighten the screw.
- Connect the cables to the MODCON.

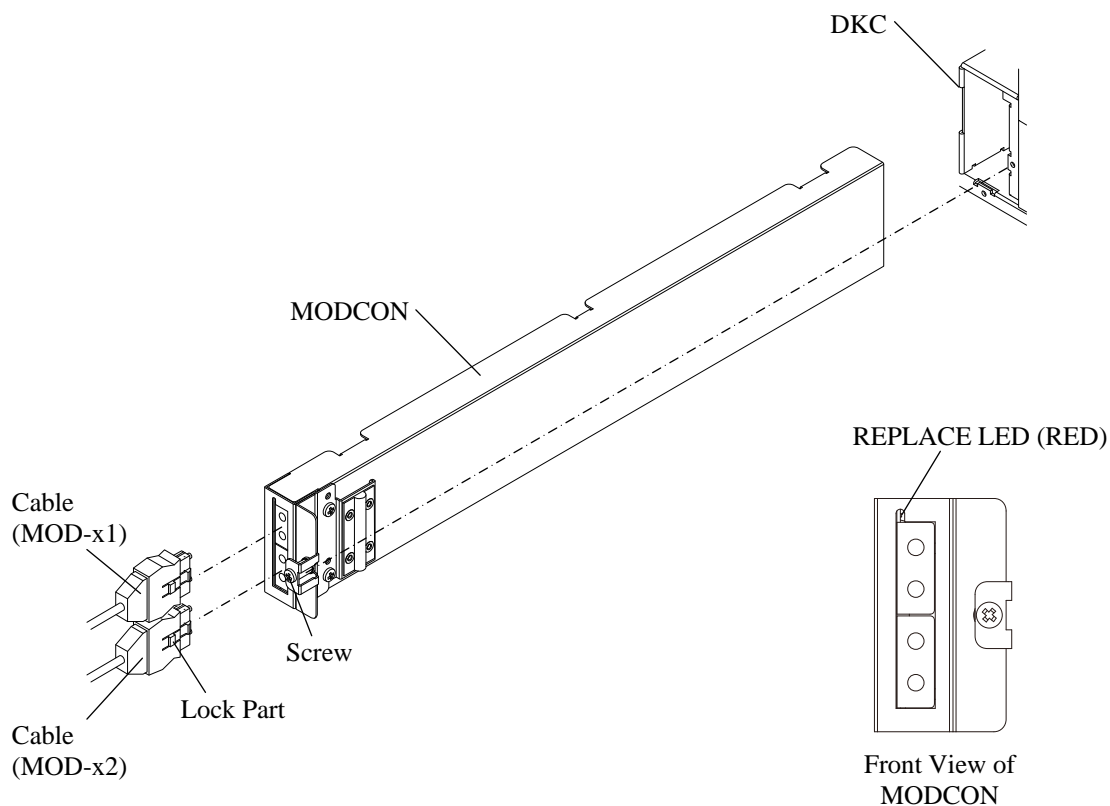
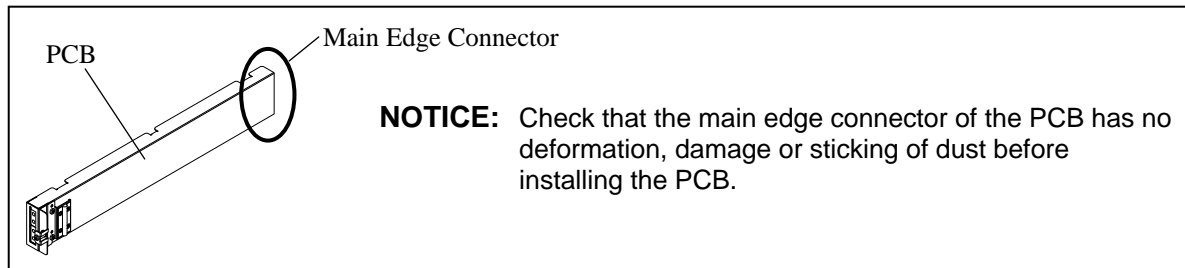


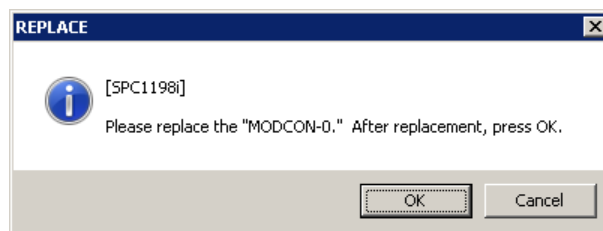
Fig. 3.18.2-1 Replacement of MODCON

2-1-2. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of MODCON>

Select (CL) [OK] in response to “Please replace the “MODCON-n.” After replacement, press OK.” After replacement, press OK.”.

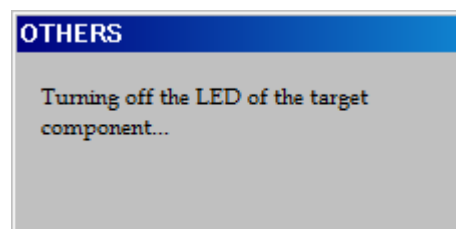


(Eg. MODCON-0)

3-2. <Processing after exchanges>

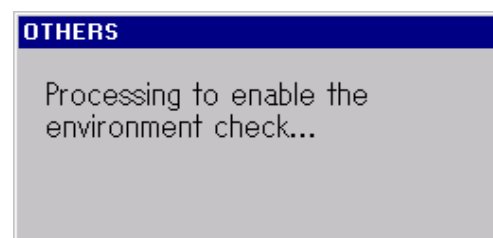
The message “Turning off the LED of the target component...” is displayed.

If the LED is lit, it turns off in this screen.



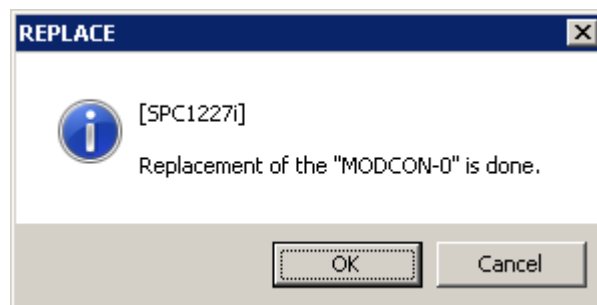
3-3. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-4. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “MODCON-n” is done.”.



(Eg. MODCON-0)

3-5. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-6.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DKCFAN (Front) REPLACEMENT PROCESSING - RTC4]

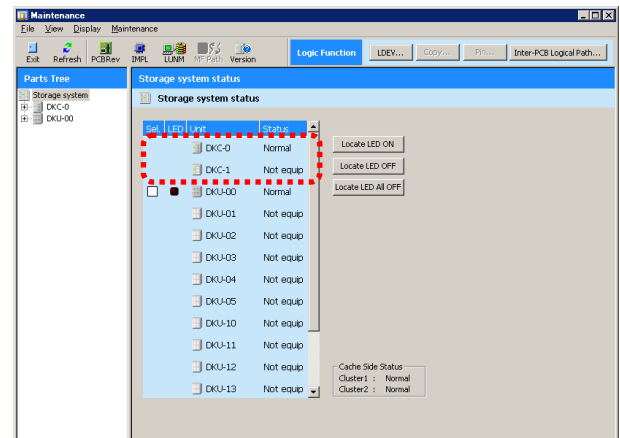
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select DKCFAN (Front) (status check)
 - ② Stop environment monitor
 - ③ Specify Replacement
 - ④ Detach DKCFAN (Front)
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of DKCFAN (Front) replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

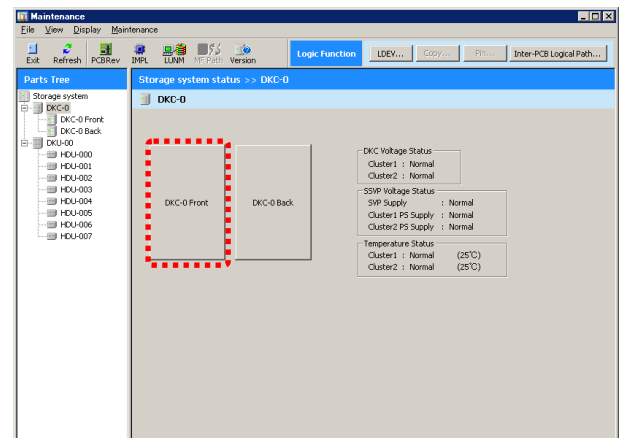
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



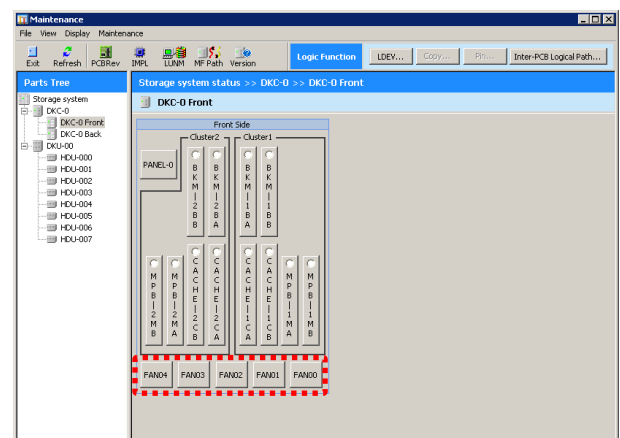
1-2. <DKC window>

Select (CL) [DKC-n Front] in the 'DKC' window.



1-3. <Specify DKCFAN>

Select (CL) [FANnn].

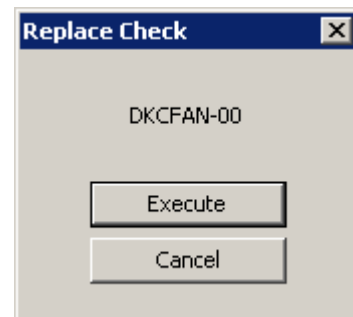


1-4. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

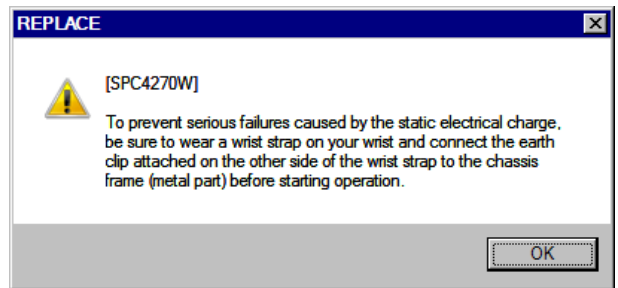
A window shown on the right is displayed.
Select (CL) [Execute].



(Eg. DKCFAN-00)

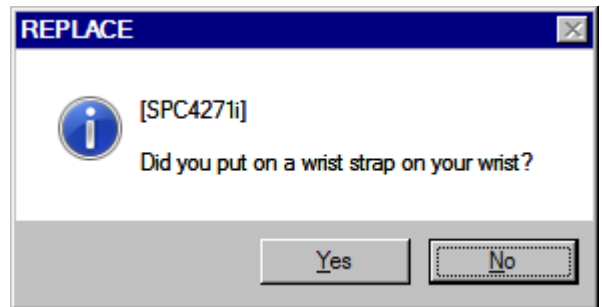
1-5. <Wear a wrist strap>

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



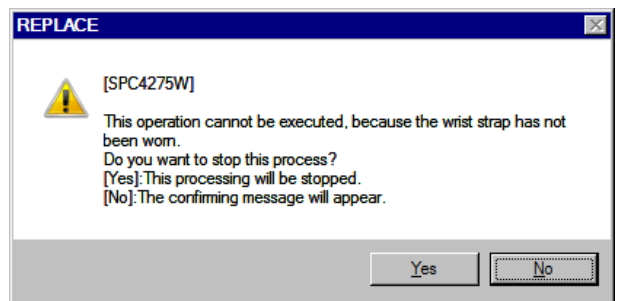
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.



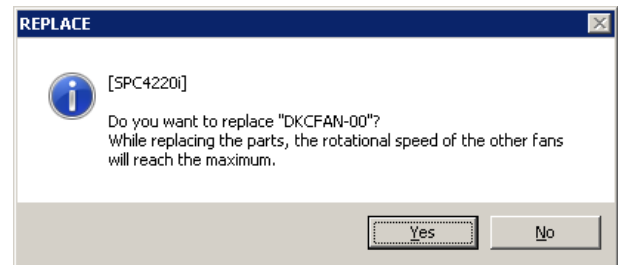
“This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?”
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.” is displayed.

When the processing will be stopped, select (CL) [Yes].



1-6. <Check beginning of DKCFAN Replacement>

Select (CL) [Yes] in response to “Do you want to replace “DKCFAN-nn”? While replacing the parts, the rotational speed of the other fans will reach the maximum.”.



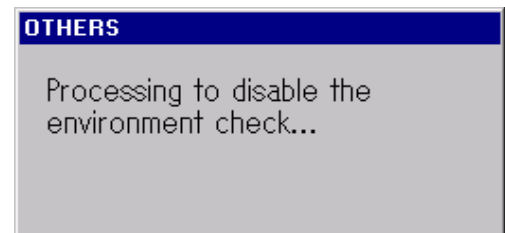
(Eg. DKCFAN-00)

1-7. <Checking the FAN>

The SVP automatically checks the DKCFAN to see if it is replaceable.

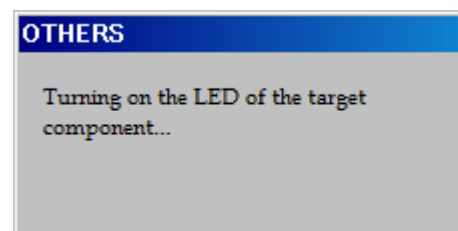
1-8. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.



1-9. <Processing before exchanges>

The message “Turning on the LED of the target component...” is displayed.

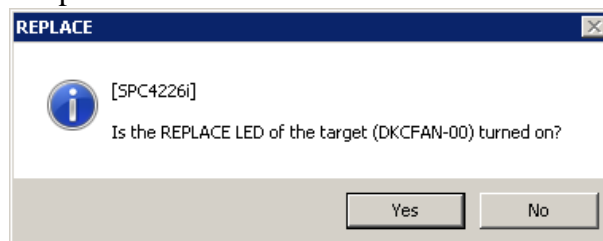


1-10. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (DKCFAN-nn) turned on?” is displayed.

When the REPLACE LED on the component to be pulled out is on, select (CL) [Yes] and go to Step 1-12.

When the REPLACE LED on the component to be pulled out is kept off, select (CL) [No] and go to Step 1-11.



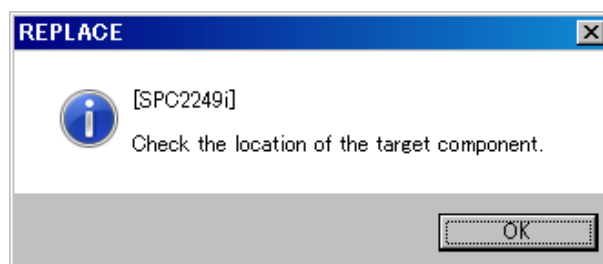
(Eg. DKCFAN-00)

1-11. <Making sure of the DKCFAN location>

The message “Check the location of the target component.” is displayed.

See the “2. HARDWARE REPLACEMENT PROCESSING”.

After making sure of the DKCFAN location, select (CL) [OK] and go to Step 1-12.

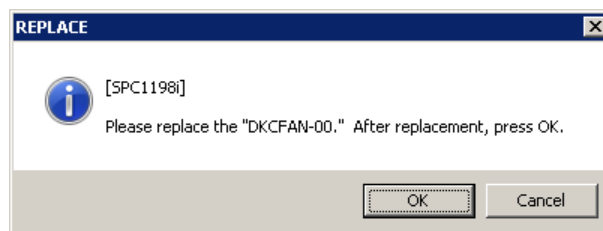


1-12. <DKCFAN Replacement>

The message “Please replace the “DKCFAN-nn.” After replacement, press OK.” is displayed.

(Reply with [OK] after replacing the special part.)

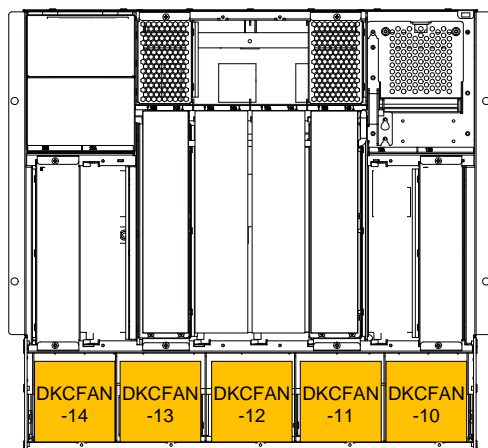
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



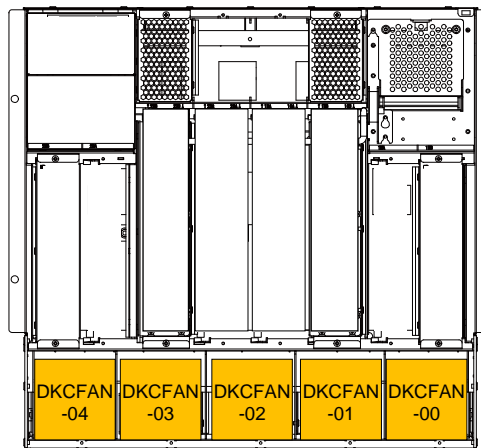
(Eg. DKCFAN-00)

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Front of DKC	1	DKCFAN (Front)	

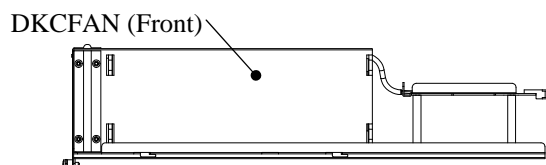


Front View of
DKC-1

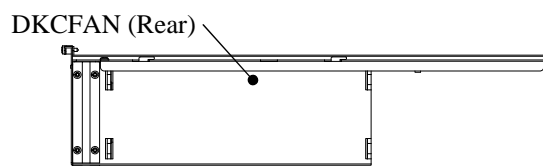


Front View of
DKC-0

NOTE: The DKCFAN (Front) to install in the front side and the DKCFAN (Rear) to install in the rear side have different parts. Check the part shape carefully to avoid mistakes.



Side View



Side View

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of DKCFAN (Front)**CAUTION**

Hazardous rotating mechanism:

Can cause injury if touched. Stay clear of it when machine is running.

2-1-1. Replace the DKCFAN (Front).

- Check that the REPLACE LED is on.
- Loosen the screw and remove the failed DKCFAN (Front).
- Take time for 10 seconds from removing the DKCFAN (Front) to the installation.
- Attach the spare DKCFAN (Front) and tighten the screw.
- Make sure the replaced LED has been turned off after 30 seconds have passed since the DKCFAN (Front) was replaced.

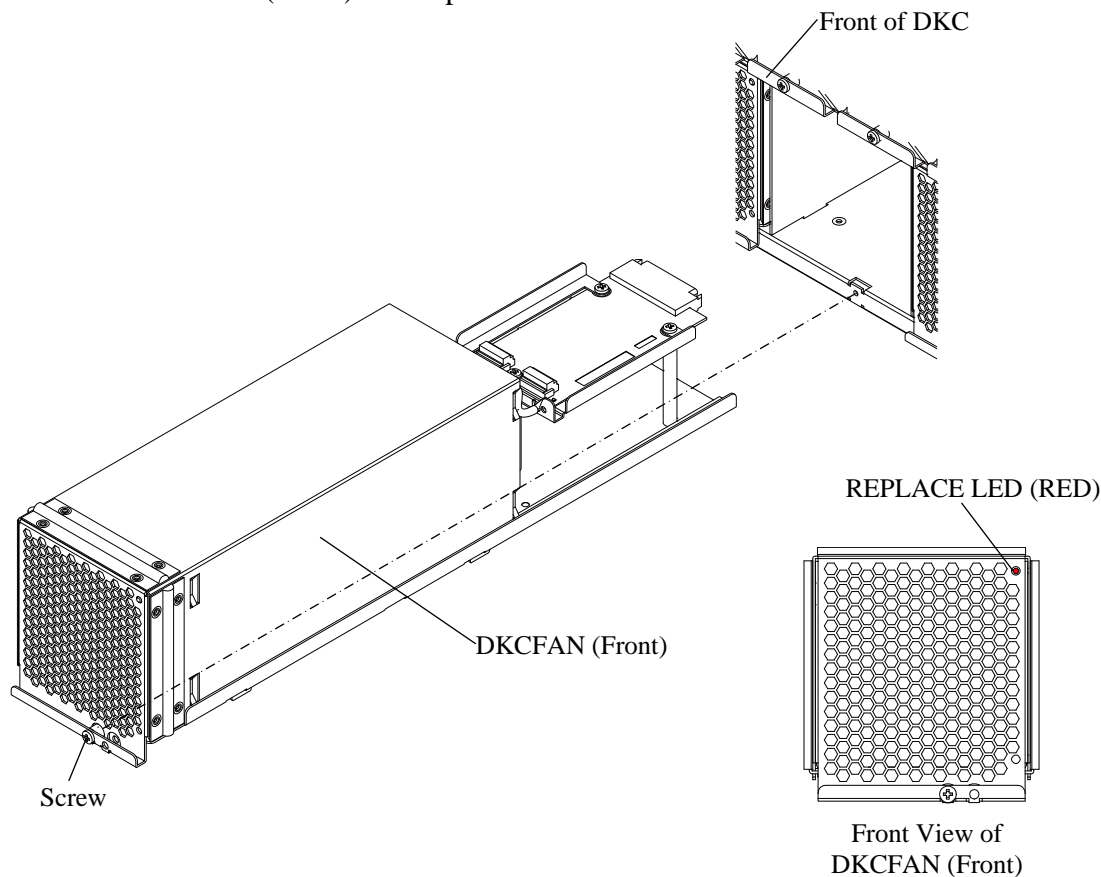


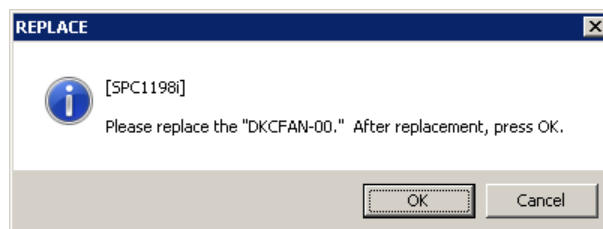
Fig. 3.19.2-1 Replacement of DKCFAN (Front)

2-1-2. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of DKCFAN>

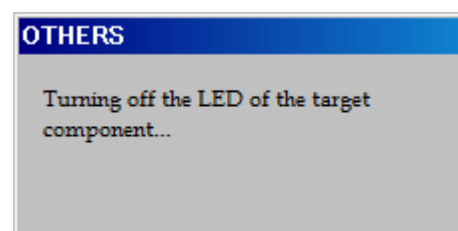
Select (CL) [OK] in response to “Please replace the “DKCFAN-nn.” After replacement, press OK.”.



(Eg. DKCFAN-00)

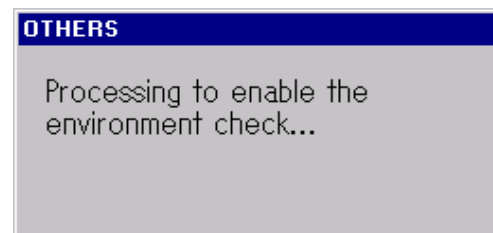
3-2. <Processing after exchanges>

The message “Turning off the LED of the target component...” is displayed.
If the LED is lit, it turns off in this screen.



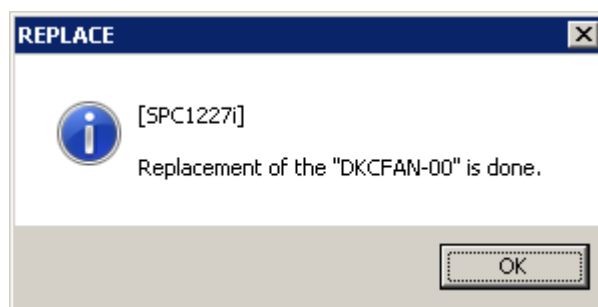
3-3. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-4. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKCFAN-nn” is done.”.



(Eg. DKCFAN-00)

3-5. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-6.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DKCFAN (Rear) REPLACEMENT PROCESSING - RTC5]

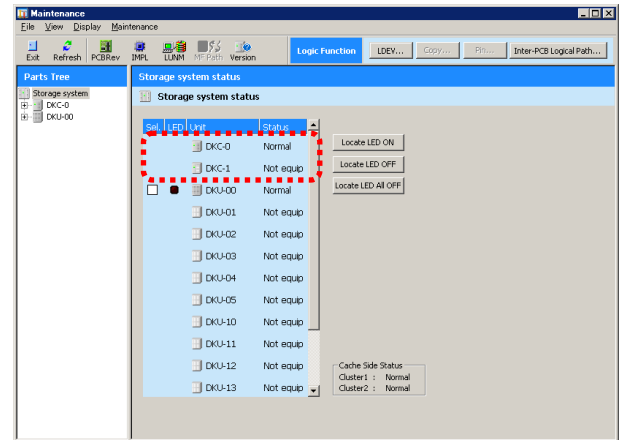
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select DKCFAN (Rear) (status check)
 - ② Stop environment monitor
 - ③ Specify Replacement
 - ④ Detach DKCFAN (Rear)
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of DKCFAN (Rear) replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

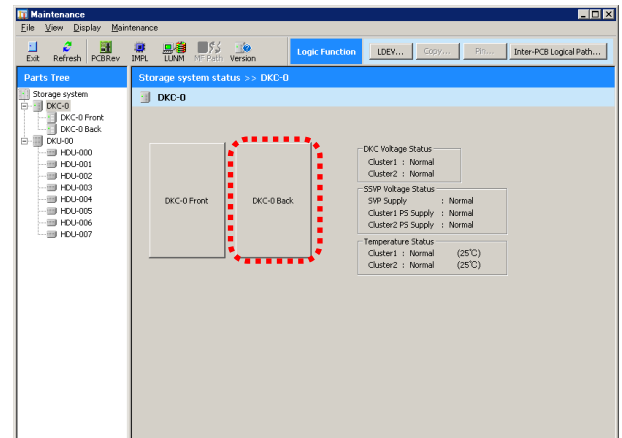
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



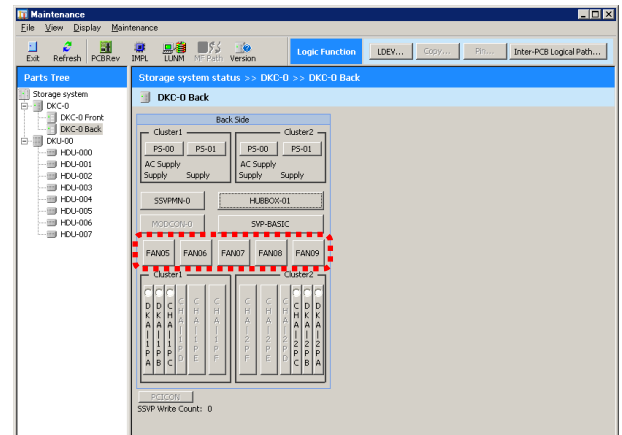
1-2. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



1-3. <Specify DKCFAN>

Select (CL) [FANnn].

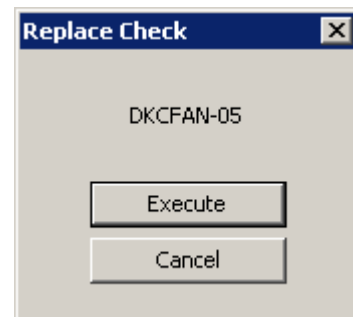


1-4. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

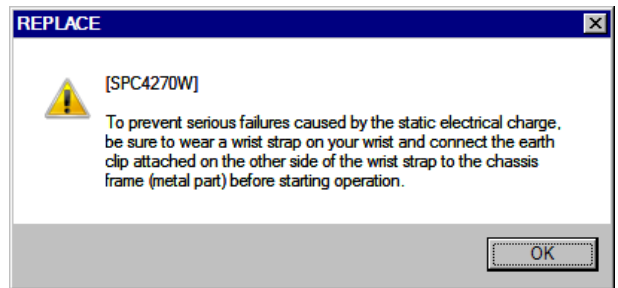
A window shown on the right is displayed.
Select (CL) [Execute].



(Eg. DKCFAN-05)

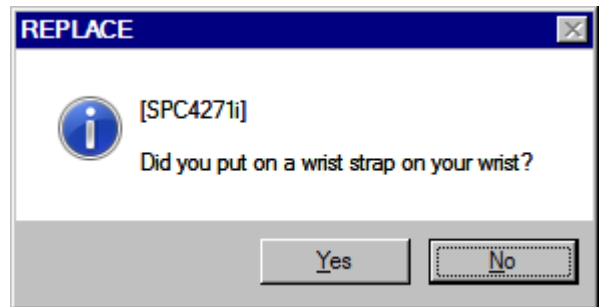
1-5. <Wear a wrist strap>

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



“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.

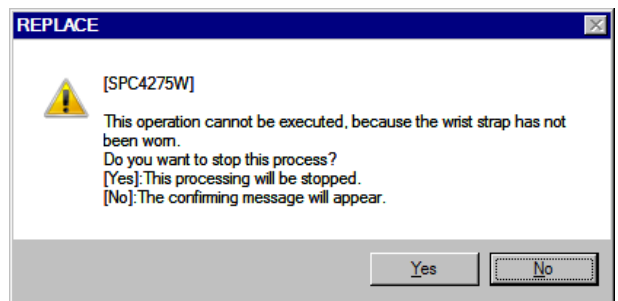


“This operation cannot be executed, because the wrist strap has not been worn.

Do you want to stop this process?

[Yes]: This processing will be stopped.

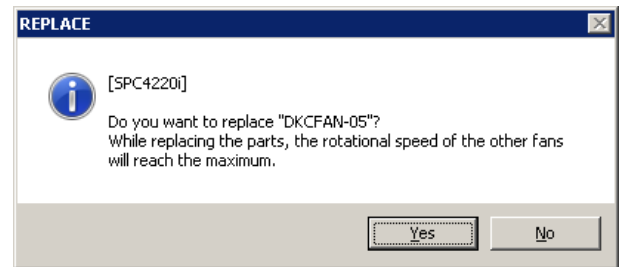
[No]: The confirming message will appear.” is displayed.



When the processing will be stopped, select (CL) [Yes].

1-6. <Check beginning of DKCFAN Replacement>

Select (CL) [Yes] in response to “Do you want to replace “DKCFAN-nn”? While replacing the parts, the rotational speed of the other fans will reach the maximum.”.



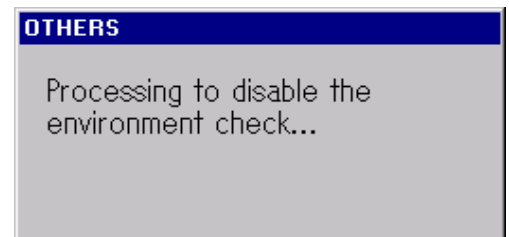
(Eg. DKCFAN-05)

1-7. <Checking the FAN>

The SVP automatically checks the DKCFAN to see if it is replaceable.

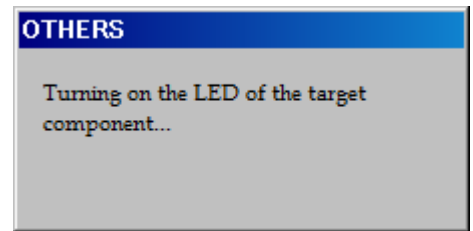
1-8. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.



1-9. <Processing before exchanges>

The message “Turning on the LED of the target component...” is displayed.

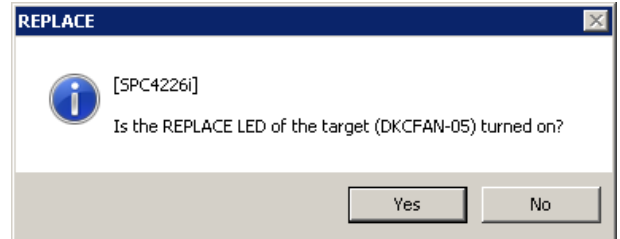


1-10. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (DKCFAN-nn) turned on?” is displayed.

When the REPLACE LED on the component to be pulled out is on, select (CL) [Yes] and go to Step 1-12.

When the REPLACE LED on the component to be pulled out is kept off, select (CL) [No] and go to Step 1-11.



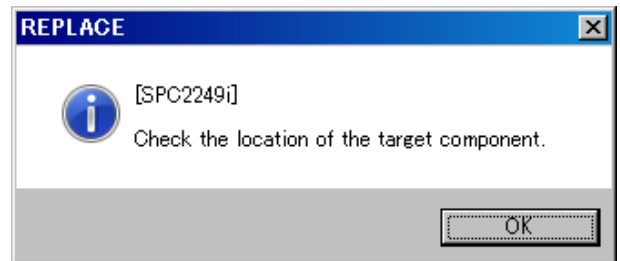
(Eg. DKCFAN-05)

1-11. <Making sure of the DKCFAN location>

The message “Check the location of the target component.” is displayed.

See the “2. HARDWARE REPLACEMENT PROCESSING”.

After making sure of the DKCFAN location, select (CL) [OK] and go to Step 1-12.

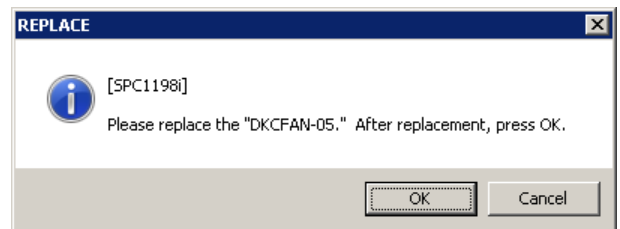


1-12. <DKCFAN Replacement>

The message “Please replace the “DKCFAN-nn.” After replacement, press OK.” is displayed.

(Reply with [OK] after replacing the special part.)

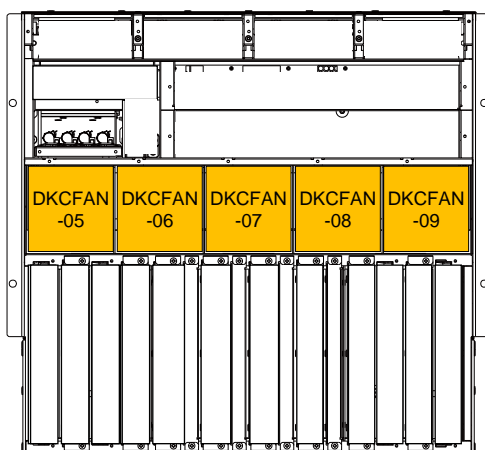
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



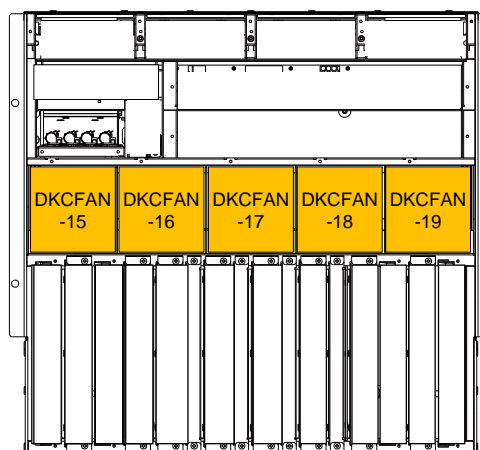
(Eg. DKCFAN-05)

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of DKC	1	DKCFAN (Rear)	

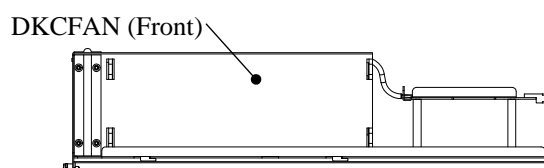


Rear View of
DKC-0

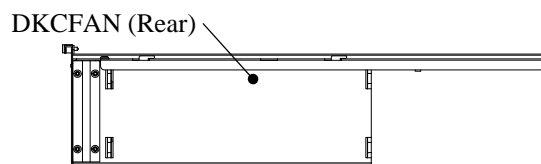


Rear View of
DKC-1

NOTE: The DKCFAN (Front) to install in the front side and the DKCFAN (Rear) to install in the rear side have different parts. Check the part shape carefully to avoid mistakes.



Side View



Side View

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of DKCFAN (Rear)**CAUTION**

Hazardous rotating mechanism:

Can cause injury if touched. Stay clear of it when machine is running.

2-1-1. Replace the DKCFAN (Rear).

- Check that the REPLACE LED is on.
- Loosen the screw and remove the failed DKCFAN (Rear).
- Take time for 10 seconds from removing the DKCFAN (Rear) to the installation.
- Attach the spare DKCFAN (Rear) and tighten the screw.
- Make sure the replaced LED has been turned off after 30 seconds have passed since the DKCFAN (Rear) was replaced.

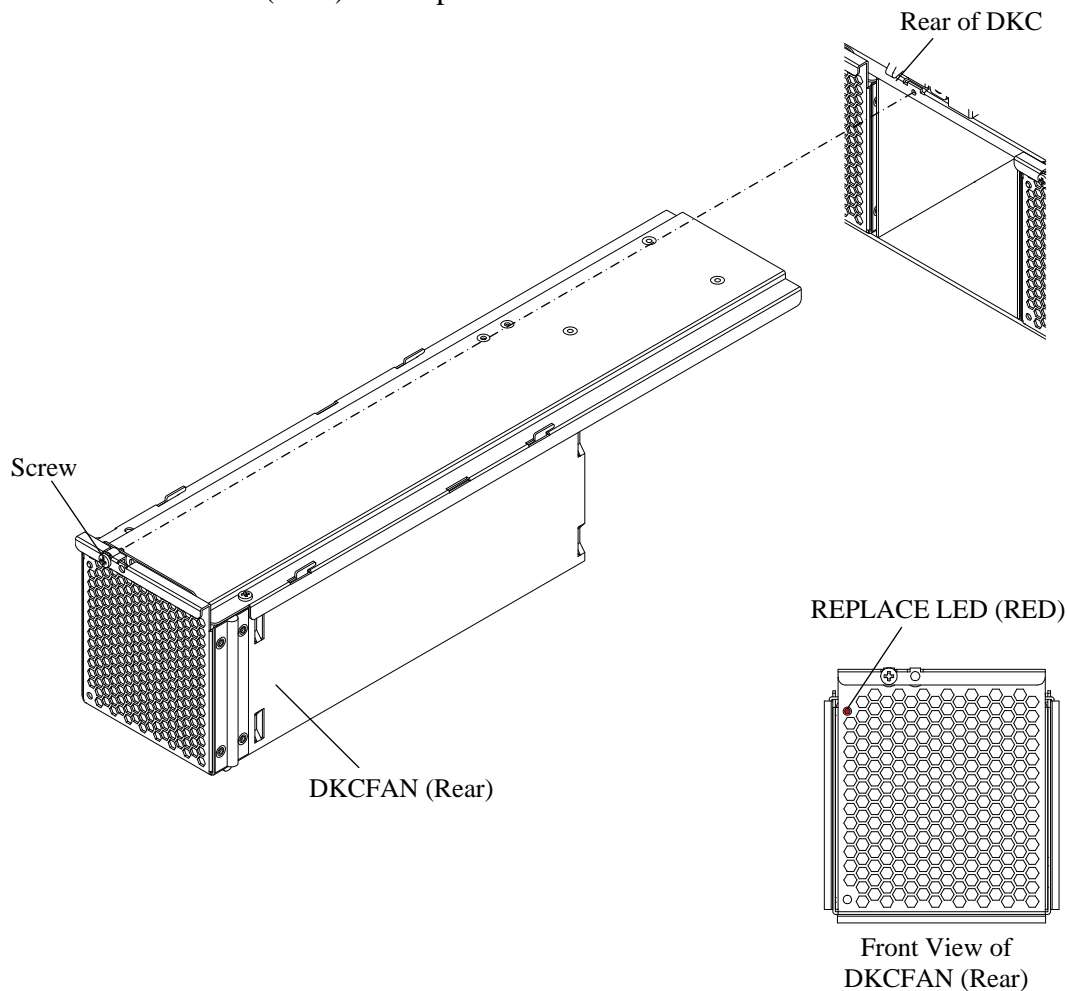


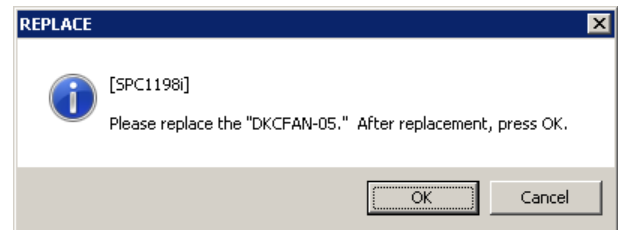
Fig. 3.20.2-1 Replacement of DKCFAN (Rear)

2-1-2. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of DKCFAN>

Select (CL) [OK] in response to “Please replace the “DKCFAN-nn.” After replacement, press OK.”.

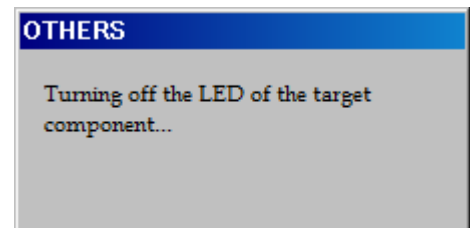


(Eg. DKCFAN-05)

3-2. <Processing after exchanges>

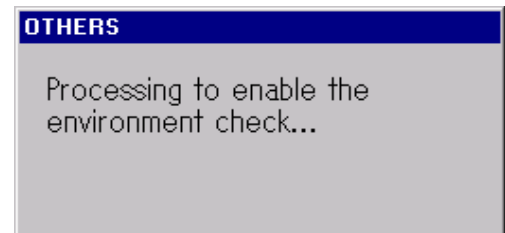
The message “Turning off the LED of the target component...” is displayed.

If the LED is lit, it turns off in this screen.



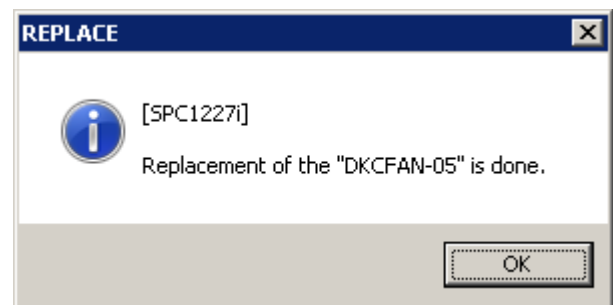
3-3. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-4. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKCFAN-nn” is done.”.



(Eg. DKCFAN-05)

3-5. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-6.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[SVP REPLACEMENT PROCESSING - RTC6]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select SVP (status check)
 - ② Specify Replacement
 - ③ Detach SVP
2. HARDWARE REPLACEMENT PROCESSING
3. Setup for SVP
 - ① Installation of SVP micro-program
 - ② Various setting for SVP
 - ③ Config Backup

— Advance preparation—

OSS media

Micro program media

Backup Config media

**When SVP is not able to operate, start from “2. HARDWARE REPLACEMENT PROCESSING.
(When SVP High Reliability Kit is not installed.)**

1. PRE-PROCESSING of SVP

NOTICE: <When the parts to be replaced is the SVP>

When the Audit Log information which is not downloaded remains, ask the customer to download the Audit Log information as needed.

When the customer needed to download Performance Monitor of Web Console, ask the customer to download the Performance data.

When the customer uses original key and manifest file for SSL communication of Web Console, ask the customer to prepare these data, see “Hitachi Command Suite User Guide” or “Hitachi Virtual Storage Platform G1000 Mainframe System Administrator Guide”.

When the SVP High Reliability Kit has been installed and an SVP fail over (SIM = 7FF3XX) is detected, at first, take actions to resolve the failure (SIM = 7FF3XX).

(1) <Operation Mode Change>

Change the mode to [Modify Mode].

Select (CL) the [Maintenance] button.

<When the SVP High Reliability Kit has been added. And [Master SVP]>

The SVP to be replaced must be a Standby SVP. When the SVP to be replaced is a Master SVP, replace it after switching its status to standby. Replace the Master SVP only when the SVP status cannot be switched to standby.

- If the SVP to be replaced is a Master SVP, go to Step 1-1.
- If the SVP to be replaced is a Standby SVP, go to Step 1-2.

<When the SVP High Reliability Kit has been not added. or [Standby SVP]>

Ask the customer to backup the user account information and the environment setting information of Web Console. Please refer to “Hitachi Command Suite User Guide” or “Hitachi Virtual Storage Platform G1000 Mainframe System Administrator Guide” for the backup method.

Go to Step 1-2

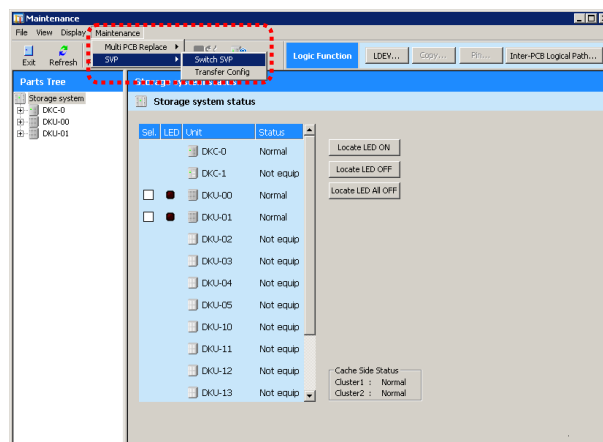
1-1. SVP Switching

This function is valid when the SVP High Reliability Kit is installed.

NOTE: This operation needs that Standby SVP (IP Address: xxx.xxx.xxx.14) is a View mode.

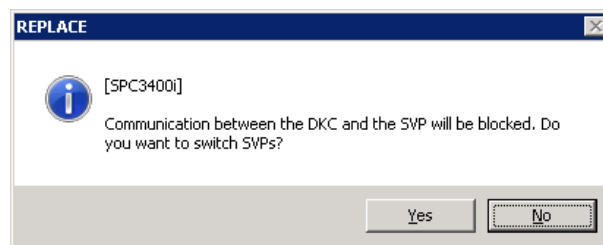
NOTE: When screen saver operates (60 minutes pass without operation) with a Standby SVP having been connected to the remote desktop, this operation fails.

- (1) Select (CL) [Maintenance]-[SVP]-
[Switch SVP] from the menu.



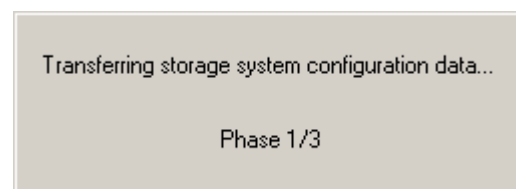
- (2) <Execution>
Execute switching.
Select (CL) [Yes].

NOTE: Switching takes about 20 minutes.



- (3) <Configuration Information Transfer>
The message “Transferring storage system configuration data...” is displayed.

The SVP transfers the configuration information automatically to reflect the configuration information of the master SVP on the standby side SVP. Therefore, if the transfer processing of the configuration information overlaps, the actually transferred status display may be repeated.



(4) <Connection to SVP after Switching Operation>

It waits for about 3 minutes until a change is completed.

After Standby SVP starts as Master SVP by the switching indication, use the connection utility connect Maintenance PC and the switched SVP.

Select (CL) IP Address of SVP in the “SvpConnectUtility” window and select (CL) [Connect].

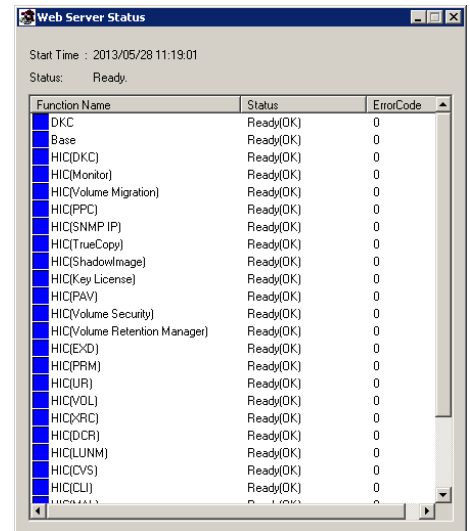
(IP Address is the same with that of SVP at the time of the SVP switching indication.)

(5) <Initial Window>

Press the “Web Server Status” button.

(6) <Web Server Status Window>

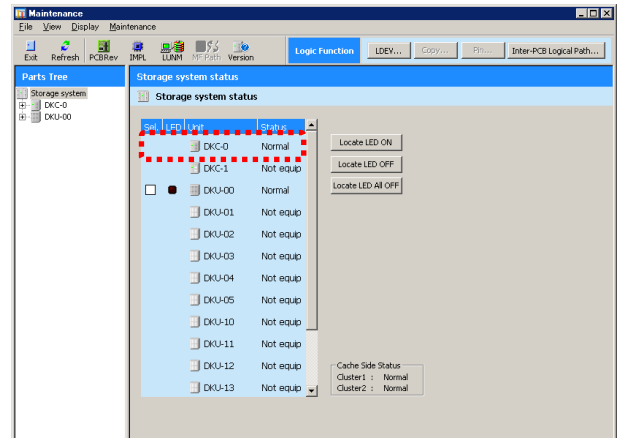
If all function's Status displays Ready, switching is completed.



NOTE: The pop-up message to indicate duplicate computer names exist may be displayed depending on network environment on task-tray after the change. Although the message may be displayed, there is especially no problem.

1-2. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-0] to be replaced.

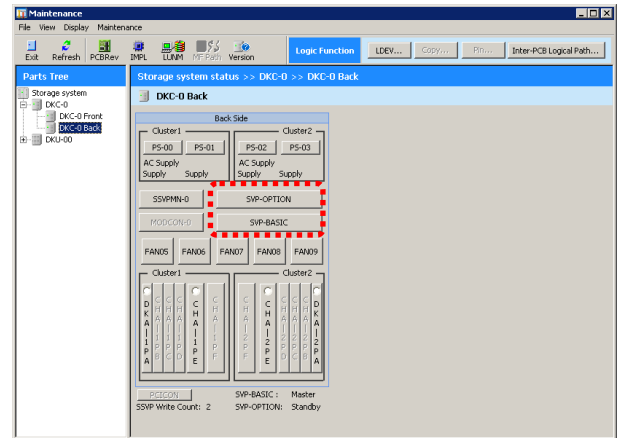


1-3. <Specify SVP>

Select (CL) [DKC-0 Back], and then select (CL) the SVP ([SVP-BASIC] or [SVP-OPTION]) to be replaced.

NOTE: Make sure that the status of the SVP (Master/Standby) at the bottom of the window and make a selection.

- If the SVP to be replace is a Master SVP, go to Step 1-3-1 ([REP03-21-60](#)).
- If the SVP to be replace is a Standby SVP, go to Step 1-3-2 ([REP03-21-120](#)).



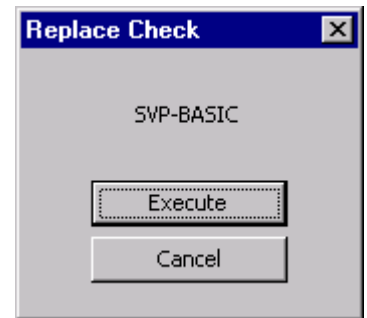
1-3-1. MASTER SVP

1-3-1.1. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMMSG00-00](#)).

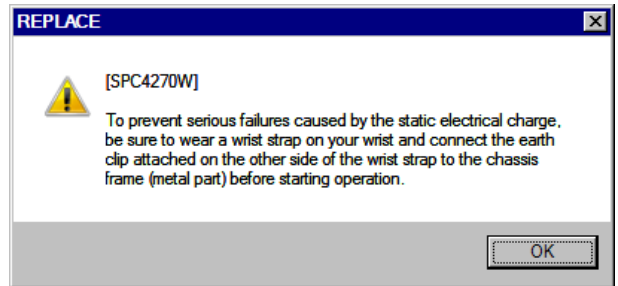
The 'Replace Check' window shown on the right is displayed.
(The case where a Master SVP is SVP-BASIC is shown.)
Select (CL) [Execute].
Go to Step 1-3-1.2.



Eg. In case of SVP-BASIC.

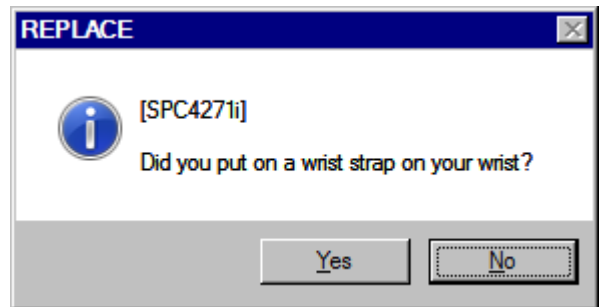
1-3-1.2. <Wear a wrist strap>

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



“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-3-1.3.

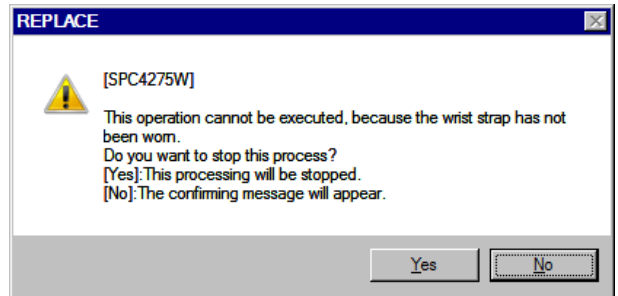


“This operation cannot be executed, because the wrist strap has not been worn.

Do you want to stop this process?

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.” is displayed.



When the processing will be stopped, select (CL) [Yes].

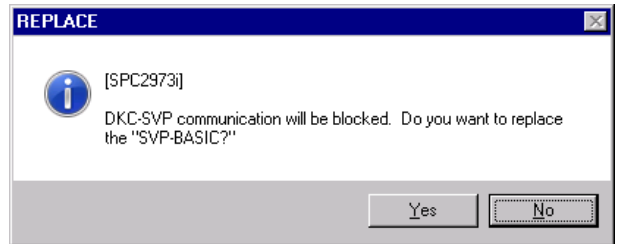
1-3-1.3. <Check beginning of SVP Replacement>

<When the SVP High Reliability Support Kit has not been added>

The message, “DKC-SVP communication will be blocked. Do you want to replace the “SVP-BASIC?”” is displayed.

When you perform the replacement, select (CL) [Yes].

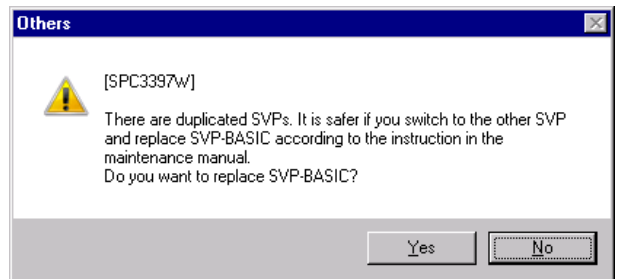
Go to Step 1-3-1.4.



<When the SVP High Reliability Support Kit has been added>

The message, “There are duplicated SVPs. It is safer if you switch to the other SVP and replace SVP-BASIC according to the instruction in the maintenance manual. Do you want to replace SVP-BASIC?” is displayed.

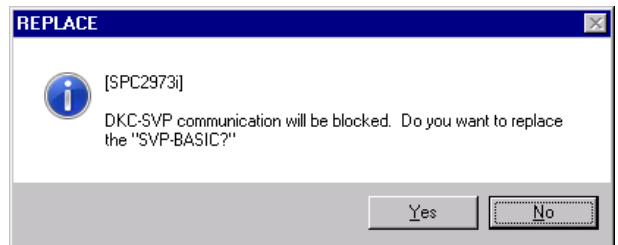
When you perform the replacement, select (CL) [Yes].



The message, “DKC-SVP communication will be blocked. Do you want to replace the “SVP-BASIC?”” is displayed.

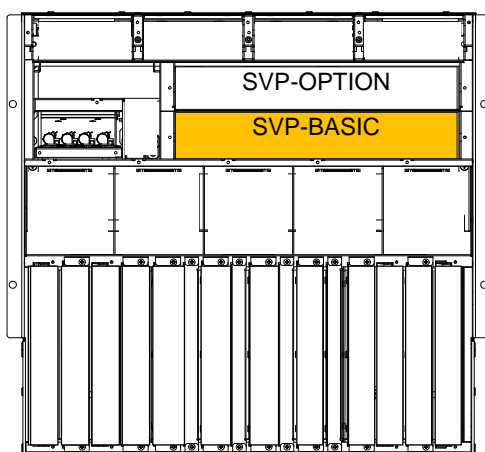
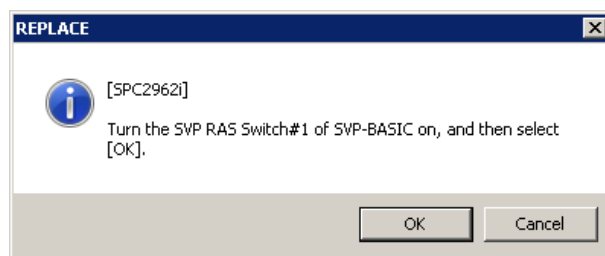
When you perform the replacement, select (CL) [Yes].

Go to Step 1-3-1.4.

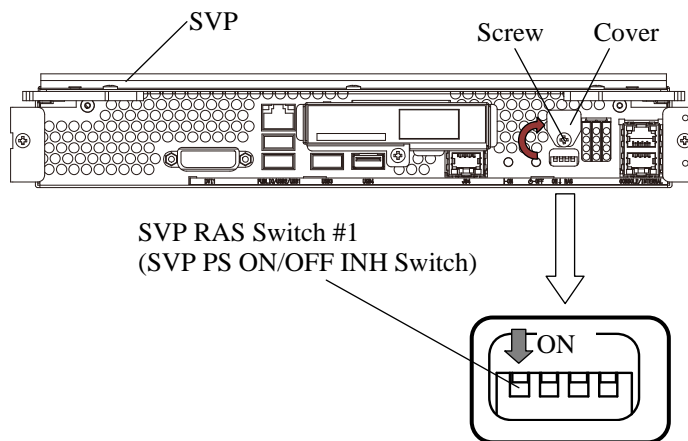


1-3-1.4. <Entering the RAS Switch#1>

Turn ON SVP RAS Switch#1 of the SVP to be replaced and select (CL) [OK] following the message, “Turn the SVP RAS Switch#1 of SVP-BASIC on, and then select [OK].”



Rear View of DKC-0



Go to Step 1-3-1.6.

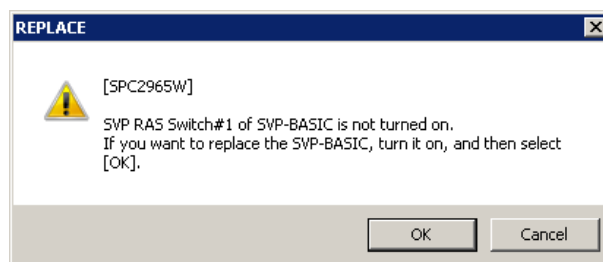
When the SVP RAS Switch#1 is not turned ON, go to Step 1-3-1.5.

1-3-1.5. <Checking the RAS Switch#1>

When the SVP RAS Switch#1 is not turned on, the message, “SVP RAS Switch#1 of SVP-BASIC is not turned on. If you want to replace the SVP-BASIC, turn it on, and then select [OK].” is displayed. Turn ON SVP RAS Switch#1 of the SVP to be replaced and select (CL) [OK].

Go to Step 1-3-1.6.

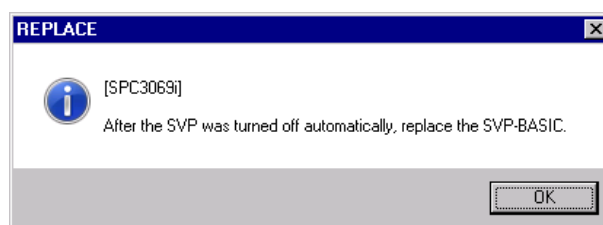
When the SVP RAS Switch#1 is not turned on, re-execute Step 1-3-1.4.



1-3-1.6. <Powering off the SVP>

The message, “After the SVP was turned off automatically, replace the SVP-BASIC.” is displayed.

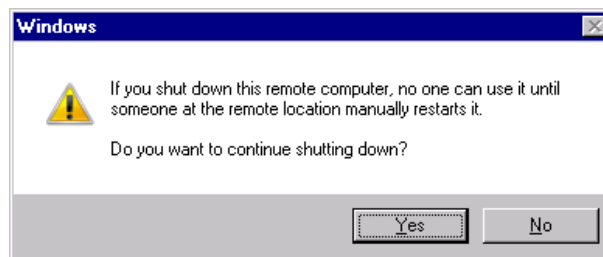
Select (CL) [OK].



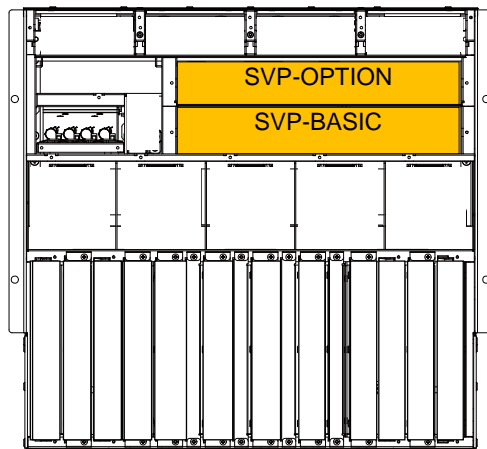
1-3-1.7. <The check of Maintenance PC shut down>

The message, “If you shut down this remote computer, no one can use it until someone at the remote location manually restart it. Do you want to continue shutting down?” is displayed.

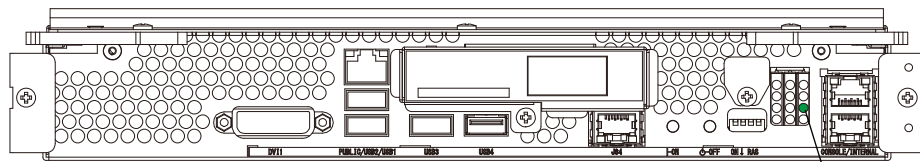
Select (CL) [Yes].



1-3-1.8. <SVP power supply OFF confirmation>



Rear View of DKC-0



Front View of SVP

SVP POWER LED (①)

It is confirmed that SVP POWER LED (①) in front of the main body of SVP disappears.

1-3-1.9. <SVP replacement>

Replace the SVP.

The message to indicate the shutdown of remote session may be displayed on the Maintenance PC. Select (CL) [OK].

Go to “2. HARDWARE REPLACEMENT PROCESSING”. ([REP03-21-160](#))

1-3-2. STANDBY SVP

1-3-2.1. <Execute>

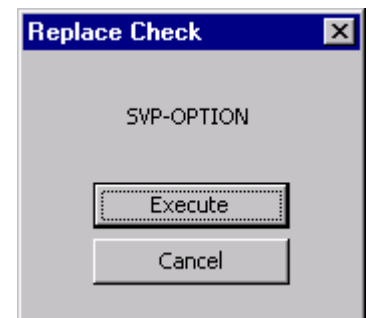
NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

<When the SVP High Reliability Support Kit has been added>

The SVP to be replaced must be a Standby SVP. When the SVP to be replaced is a Master SVP, replace it after switching its status to standby. (See Step 1-1) Replace the Master SVP only when the SVP status cannot be switched to standby.

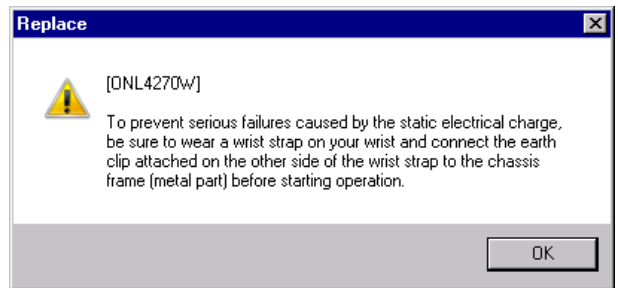
The 'Replace Check' window shown on the right is displayed.
(The case where a Standby SVP is SVP-OPTION is shown.)
Select (CL) [Execute].
Go to Step 1-3-2.2.



Eg. In case of SVP-OPTION.

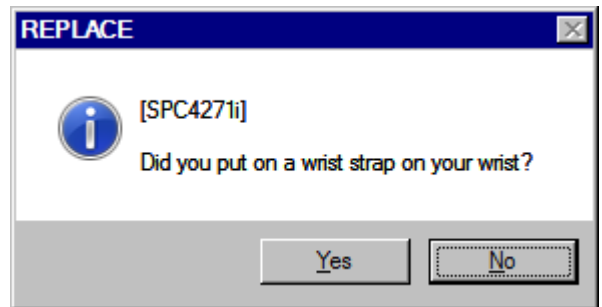
1-3-2.2. <Wear a wrist strap>

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



“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-3-2.3.



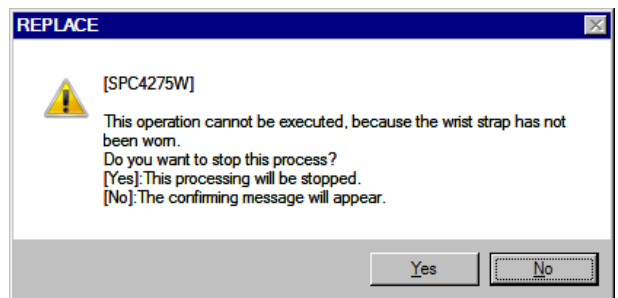
“This operation cannot be executed, because the wrist strap has not been worn.

Do you want to stop this process?

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.” is displayed.

When the processing will be stopped, select (CL) [Yes].

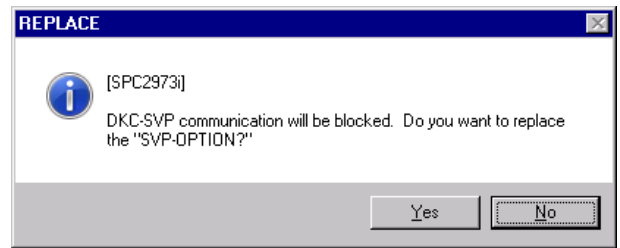


1-3-2.3. <Check beginning of SVP Replacement>

The message, “DKC-SVP communication will be blocked. Do you want to replace the “SVP-OPTION?”” is displayed.

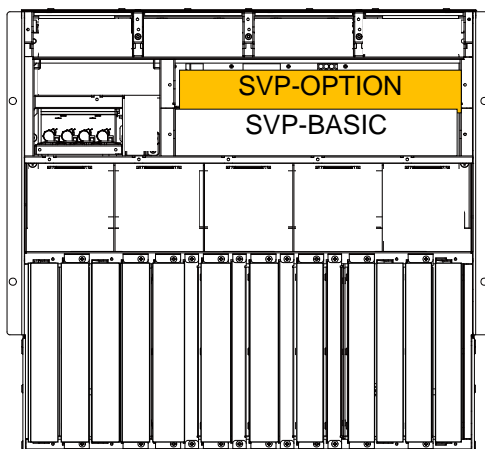
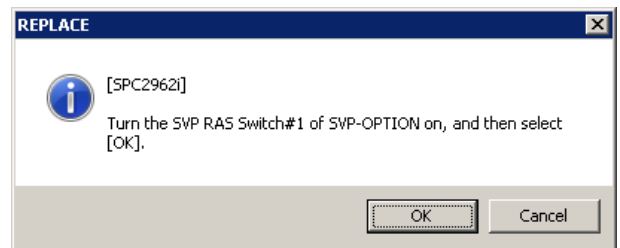
When you perform the replacement, select (CL) [Yes].

Go to Step 1-3-2.4.

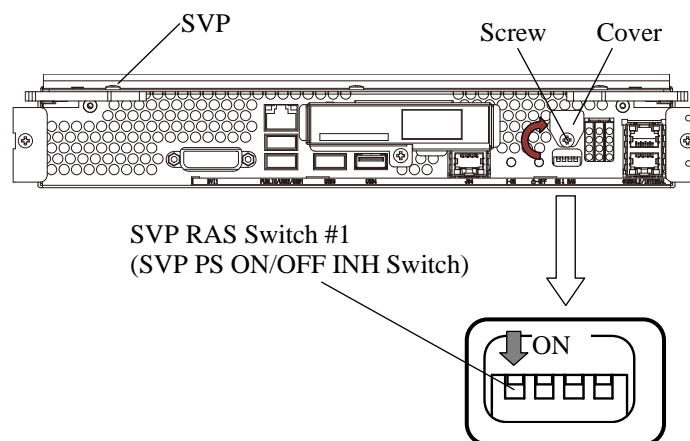


1-3-2.4. <Entering the RAS Switch#1>

Turn ON SVP RAS Switch#1 of the SVP to be replaced and select (CL) [OK] following the message, “Turn the SVP RAS Switch#1 of SVP-OPTION on, and then select [OK].”



Rear View of DKC-0

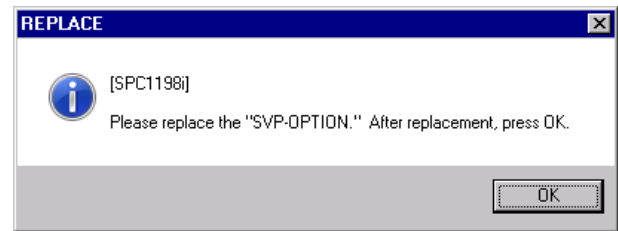


Go to Step 1-3-2.5.

1-3-2.5. <Check beginning of SVP Replacement>

The message “Please replace the “SVP-OPTION.” After replacement, press OK.” is displayed.

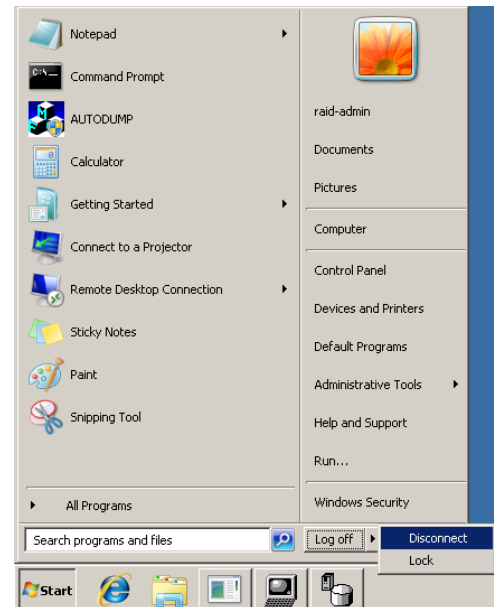
(Reply with [OK] after 3-13 Resetting the SSVP.)



1-3-2.6. <Disconnecting the SVP>

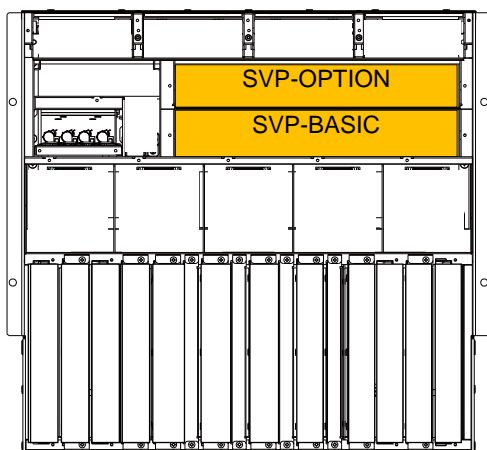
Select (CL) [Log off]-[Disconnect] from the [Start] menu.

Go to “2. HARDWARE REPLACEMENT PROCESSING”. ([REP03-21-160](#))



2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of DKC-0	1	SVP	



Rear View of
DKC-0

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 SVP

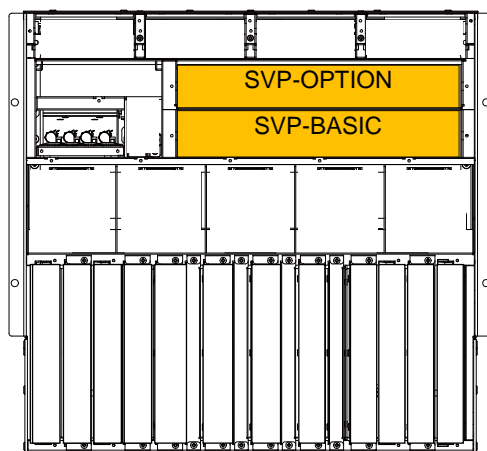
2-1-1. SVP PS OFF

- a. Check that the SVP POWER LED is off.

When the SVP POWER LED is still on, press the SVP PS OFF switch on the SVP and check if the SVP POWER LED is off.

When the SVP POWER LED is still on even if three minutes have passed since the SVP PS OFF switch was pressed, press the SVP PS OFF switch on the SVP for five seconds or more (forced power off) and check if the SVP POWER LED is off.

- b. Check that the SVP SHUT DOWN LED of the SVP is on.



Rear View of DKC-0

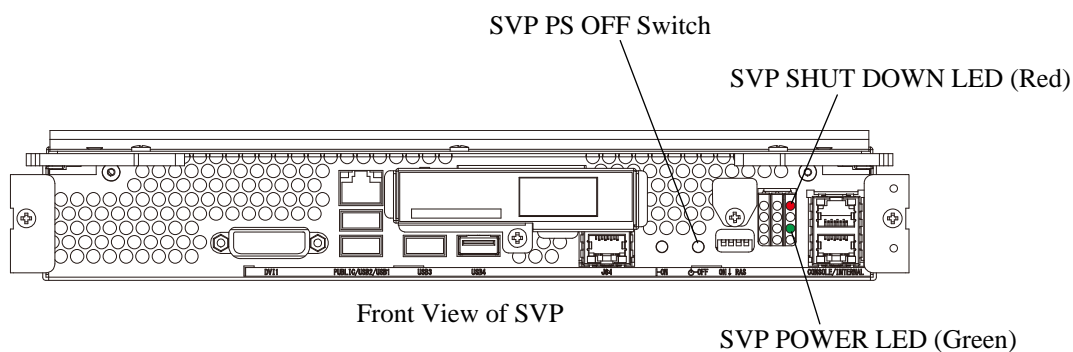


Fig. 3.21.2-1 SVP PS OFF

2-1-2. Remove the SVP

- Disconnect all the cables from the failed SVP.
- Loosen the two screws on the front of the SVP.
- Open the levers of the SVP outward.
- Open the levers completely and remove the SVP.

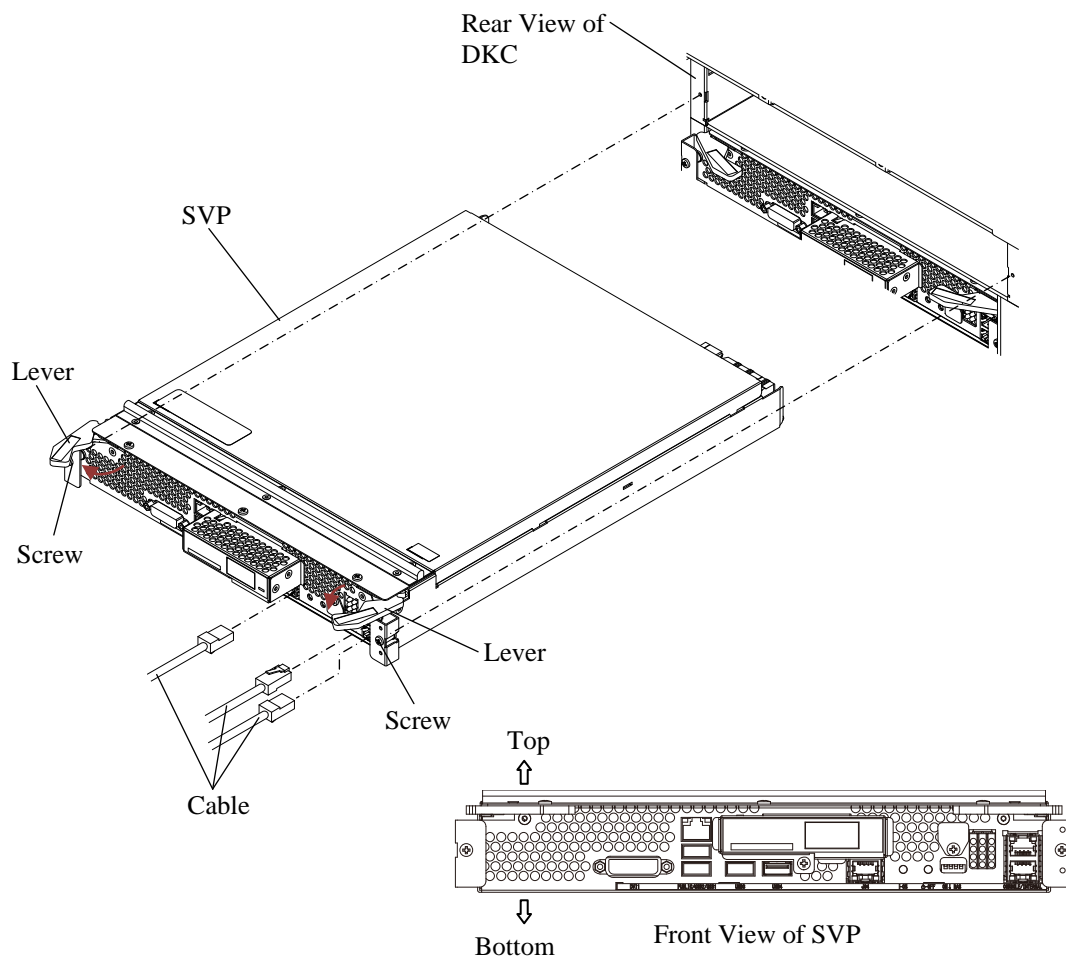


Fig. 3.21.2-2 Removal of SVP

2-1-3. Set the Jumper

- a. Set the SVP RAS Switch #1 on the spare SVP to ON (lower position).
Use something sharp (Eg. a pen or a mini screwdriver etc.) when set the SVP RAS Switch #1.

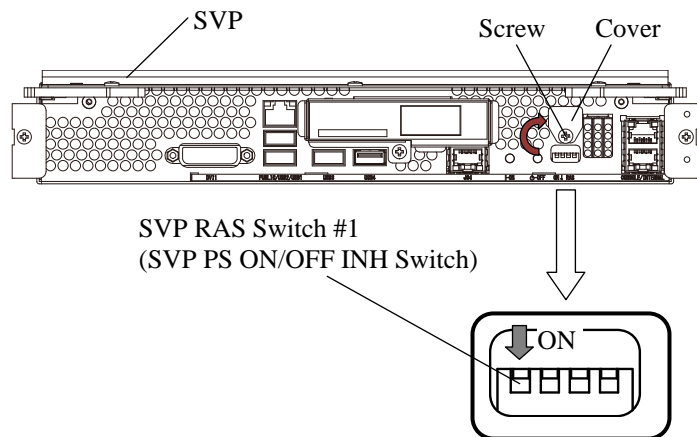


Fig. 3.21.2-3 Setting of SVP RAS Switch #1

2-1-4. Install the spare SVP

- a. Insert the spare SVP until its lever edges reach the DKC. (Refer to Fig. 3.21.2-2.)

NOTICE: Confirm the vertical direction of the SVP. If the direction was wrong, the SVP will not be ON.

- b. Close the levers inward and fully insert the spare SVP.
- c. Tighten the two screws.
- d. Connect all the cables to the spare SVP.

2-1-5. SVP PS ON

- a. Check that the SVP POWER LED of the SVP is on. (Refer to Fig. 3.21.2-1.)

2-1-6. Go to “3. Setup for SVP”.

3. Setup for SVP

This chapter explains the procedure of software installation after the hardware replace and various setting.

3-1. PRE-PROCESSING of the Setup for SVP

3-1-1. Powering up the SVP

NOTICE: If the MESSAGE LED on DKCPANEL has lit on when power on SVP, please complete SIM before operation.
(When the SVP high-reliability kit is installed, SIM RC=BF85A3 (Basic SVP maintenance switch setting error), BF86A3 (Optional SVP maintenance switch setting error), BFE3A2 (SVP duplication setting defect) and 7FF201 (standby SVP failure detection) may occur but there is no problem because they occur in process of the SVP replacement.)

NOTICE: When an SSVP alarm is issued during replacement of the SVP, reset the SSVP.

NOTICE: If the message “Do you want to restart your computer now?” is displayed during the SVP reboot after replacement, select (CL) [Yes].

3-1-2. Connecting the Maintenance PC

Connect the Maintenance PC to the SVP has been replaced using the utility for connection. Please refer to [SVP01-60](#) for the usage of the utility for connection.

The login user is different by the presence of the microprogram.

[Connection destination] 126.255.254.15

NOTE: Keep the IP address of Maintenance PC, and set it to 126.255.254.x (x is the available value which is 13 or less. For example 12.) before connection. Reset it after the SVP setup.

The SVP and the Maintenance PC communicate by the auto negotiation, 1Gbps or less (Depend on the specification of Maintenance PC).

It waits for about 10 minutes the start.

In this section, using two user types to connect with the SVP. If you don't know the password, please contact with the technical support division. When there is no description, using “Installed User”.

user type	reference
Installed User	Contact with the technical support division
Preinstalled User	Contact with the technical support division

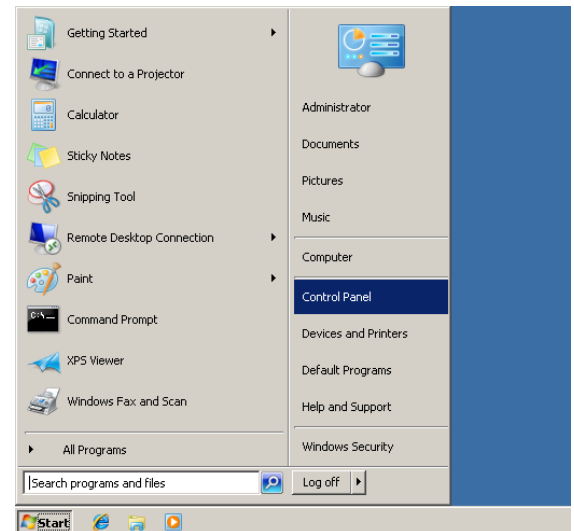
After you input a user name and the password, input “Maintenance Password”. If you don't know the “Maintenance Password”, please contact with the technical support division.

3-1-3. Setting the Data and Time

<Making sure of the setting of a time zone>

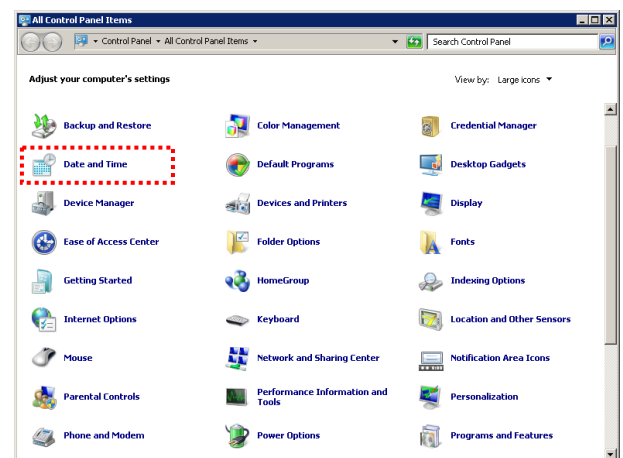
(1) Open the 'Control Panel' window.

Select (DR) [Control Panel] from the [Start] menu.



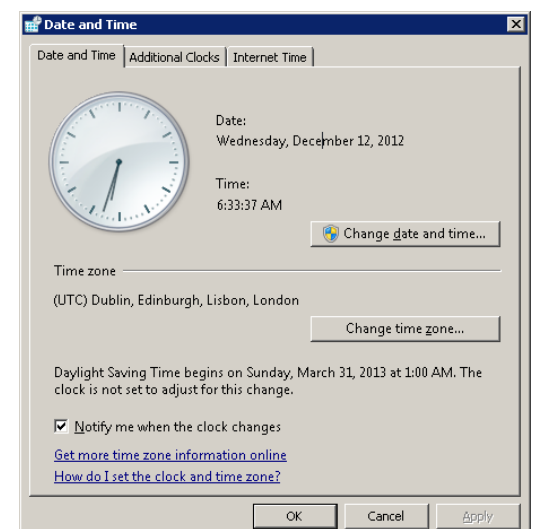
(2) Open the 'Date and Time' window.

Select (DC) [Date and Time] in the [Control Panel] window.



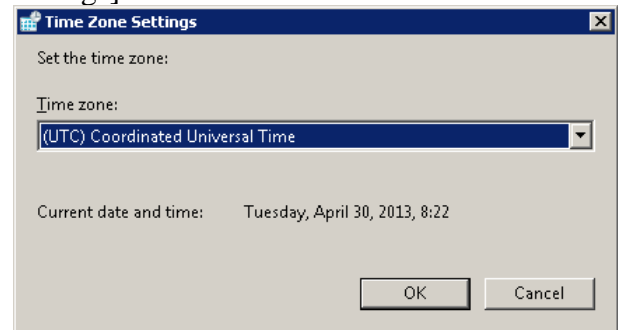
(3) Select [Change time zone].

Select (CL) [Change time zone...].



- (4) Make sure of the setting of the [Time Zone Settings].

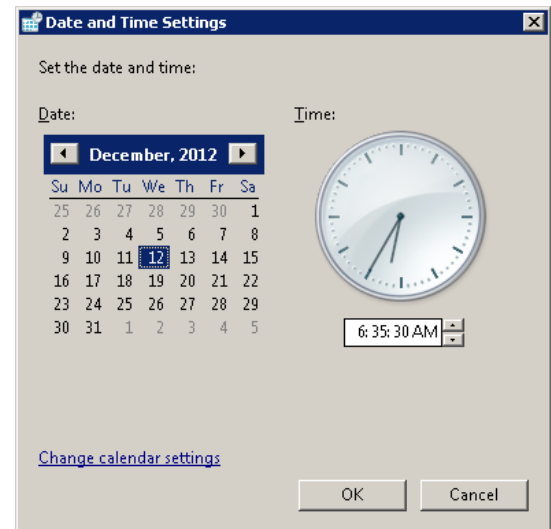
Make sure that the [Time Zone Settings] is set as “(UTC) Coordinated Universal Time” irrespective of a place where the storage system is installed.



- (5) <Set the [Date and Time Settings]>

Check if the [Date and Time Settings] is set to the current time and date.

If not, reset it correctly. Then, select (CL) [OK].



- (6) Close the ‘Control Panel’ window.

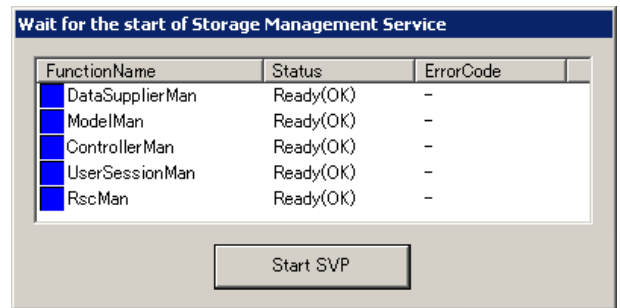
Select (DR) [File] and [Close] in this order in the “Control Panel” window.

3-2. Installing the Microprogram

3-2-1. Preparation

When the Microprogram has already been installed in the SVP (when 'Wait for the start of Storage Management Service' is displayed in desktop window) in replaced SVP (service parts), perform the following operations. When the Microprogram is not installed, go to 3-2-2.

- ① Perform uninstalling Apache program.
(Go to 3-2-1.1 Uninstalling Apache)
- ② Perform uninstalling Tomcat program. (Go to 3-2-1.2 Uninstalling Tomcat program)
- ③ Perform uninstalling SMI-S Provider program. (Go to 3-2-1.3 Uninstalling SMI-S Provider program)
- ④ Perform uninstalling Java program. (Go to 3-2-1.4 Uninstalling Java program)
- ⑤ Perform uninstalling Perl program. (Go to 3-2-1.5 Uninstalling Perl program)
- ⑥ Perform uninstalling Flash Player program. (Go to 3-2-1.6 Uninstalling Flash Player program)



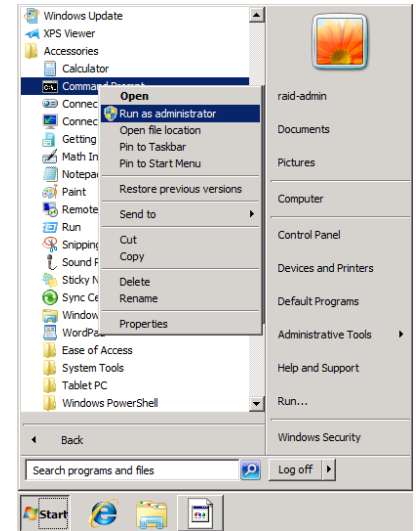
3-2-1.1. Uninstalling Apache

(1) Mount the OSS media

Insert the OSS media (the second media) to the CD-ROM drive in the Maintenance PC.

(2) Launch the Command Prompt as administrator

Select (DR) [Start]-[All Programs]-[Accessories], and launch the Command Prompt with ‘Run as administrator’ in right-click menu.

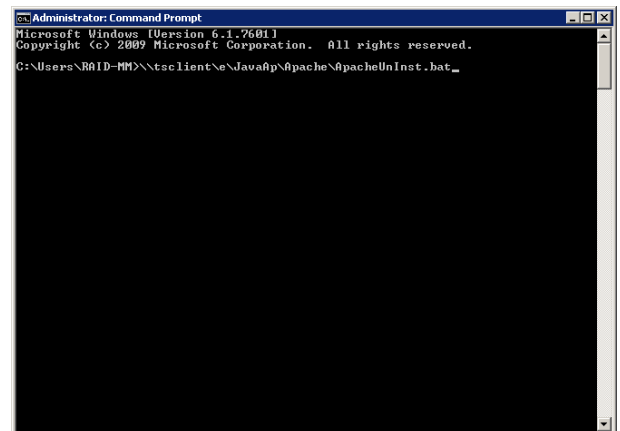


(3) Launch the uninstallation batch

Enter

“\\tsclient\<drive letter>\JavaAp\Apache\ApacheUnInst.bat” into the Command Prompt, and press the Enter key.

At the end of this process, the Command Prompt will close automatically.



NOTE: The input value is the form of

“\\tsclient\<drive letter>\ JavaAp\Apache\ApacheUnInst.bat”.

A drive letter is made the drive which inserted the OSS media.

The above is a case where the CD-ROM drive is assigned a drive letter E.

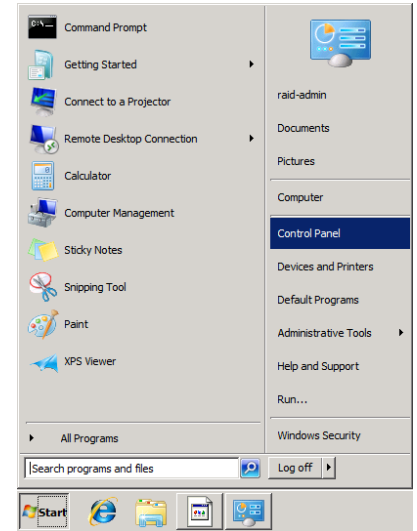
(4) Take out the OSS media

Take out the OSS media (the second media) from the CD-ROM drive in the Maintenance PC.

3-2-1.2. Uninstalling Tomcat program

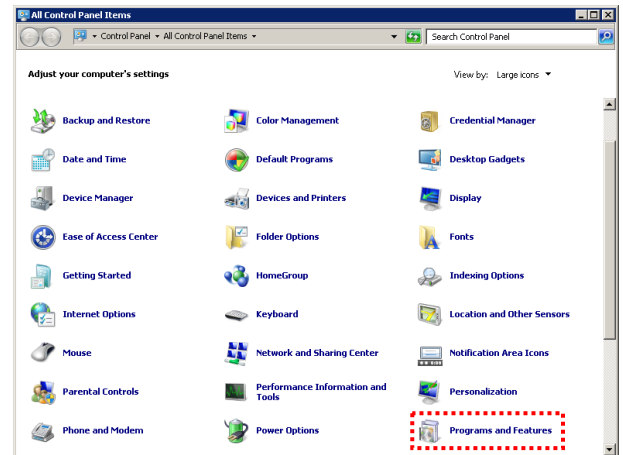
(1)

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



(2)

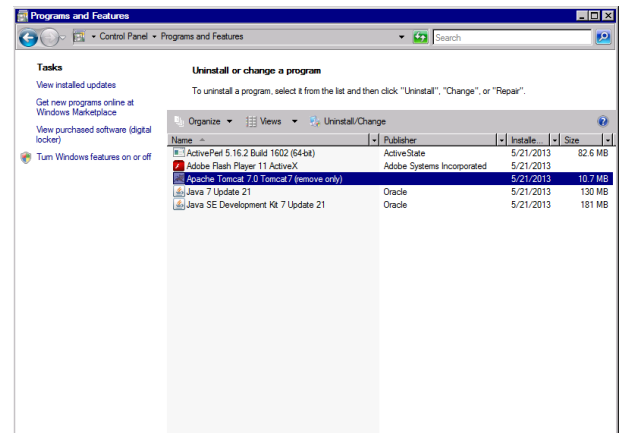
Select (DC) [Programs and Features].



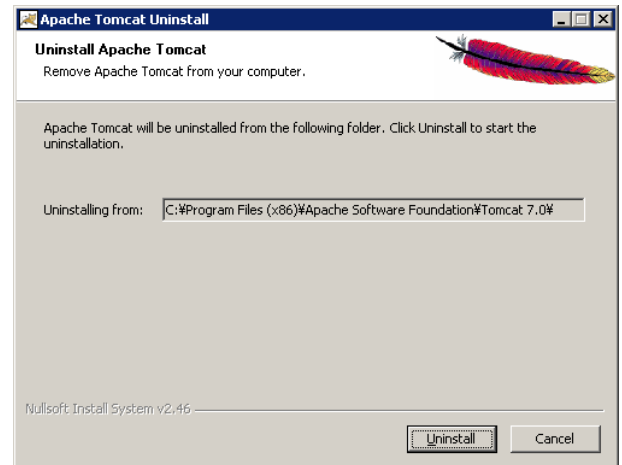
(3)

Select (CL) [Apache Tomcat 7.0 Tomcat7 (remove only)], and select (CL) [Uninstall/Change].

If there is no [Apache Tomcat 7.0 Tomcat7 (remove only)] in the list, go to 3-2-1.3.

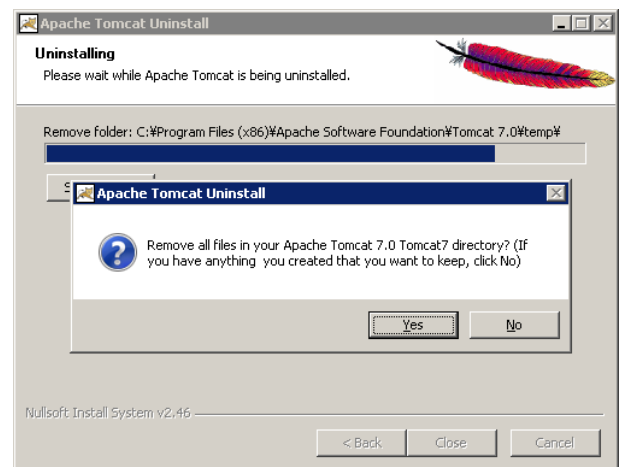


- (4)
Select (CL) [Uninstall].

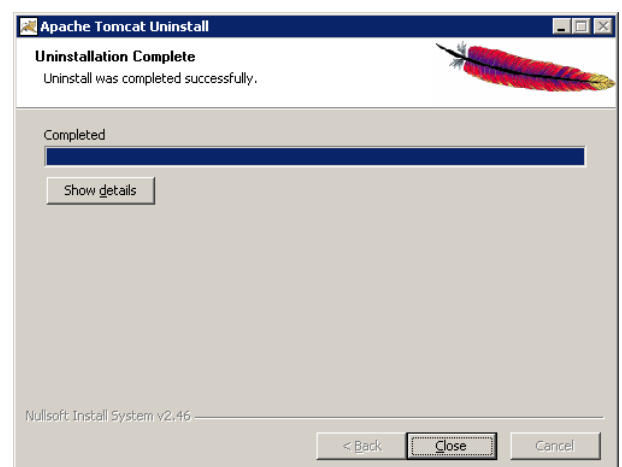


- (5)
If the following message box is displayed,
select (CL) [Yes].

If “Note: C:\Program Files (x86)\Apache Software Foundation\Tomcat 7.0 could not be removed.” is displayed, select (CL) [OK].

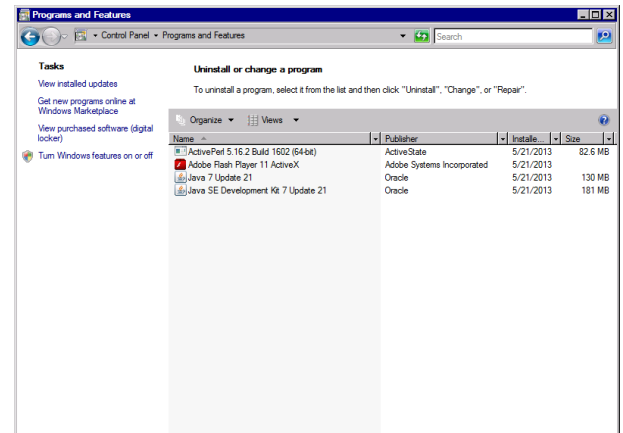


- (6)
When “Uninstallation Complete”
dialogue box is displayed, select (CL)
[Close].



(7)

[Apache Tomcat 7.0 Tomcat7 (remove only)] in 'Programs and Features' window was deleted.
Close the window.

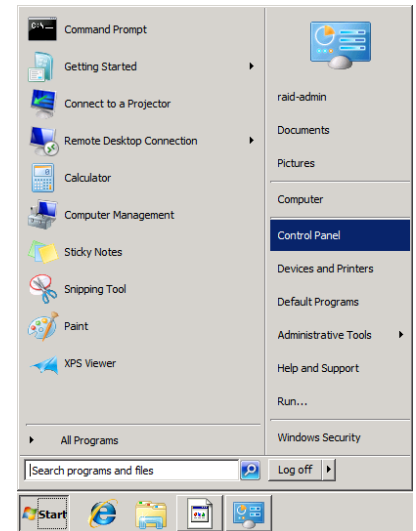


NOTICE: Until procedure 3-2-1 is finished, please don't logout or shutdown SVP.
If you do them, SVP may no longer work properly. If a shutdown request message is displayed, please don't shutdown.

3-2-1.3. Uninstalling SMI-S Provider program

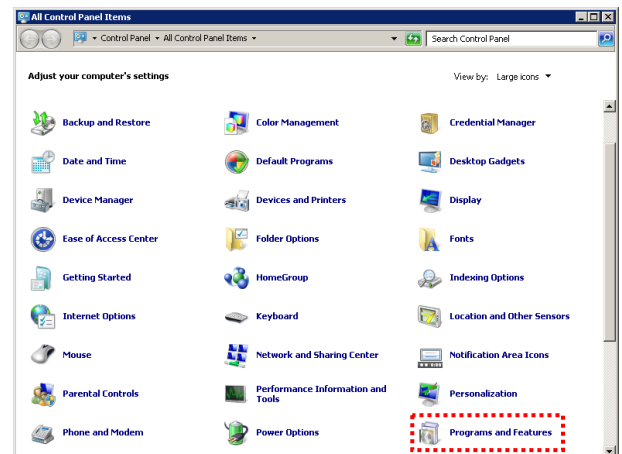
(1)

Select (DR) [Start]-[Control Panel] in this order.



(2)

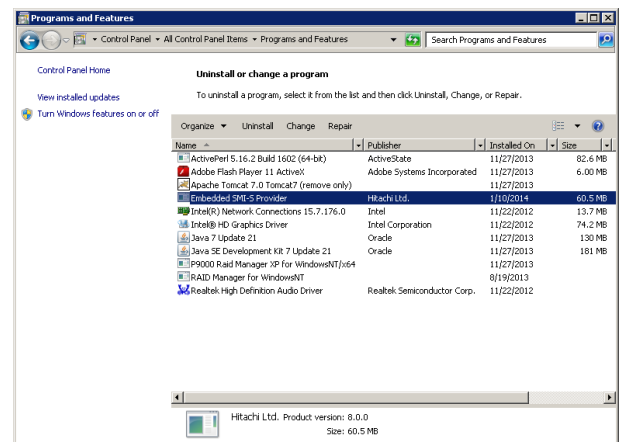
Select (DC) [Programs and Features].



(3)

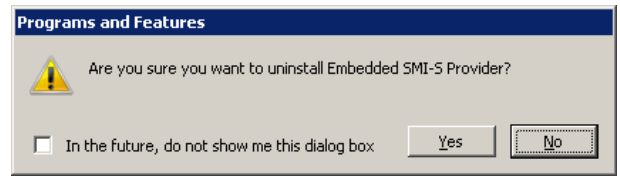
Select (CL) [Embedded SMI-S Provider], and then select (CL) [Uninstall].

If there is no [Embedded SMI-S Provider] in the list, go to 3-2-1.4.



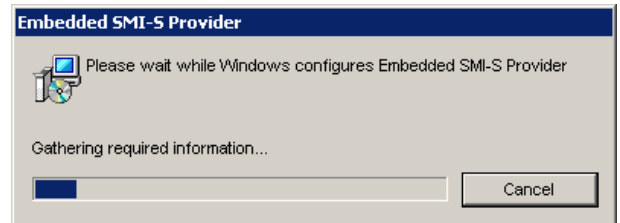
(4)

A message, “Are you sure you want to uninstall Embedded SMI-S Provider?” is displayed.
Select (CL) [Yes].



(5)

Uninstallation of SMI-S Provider is started.

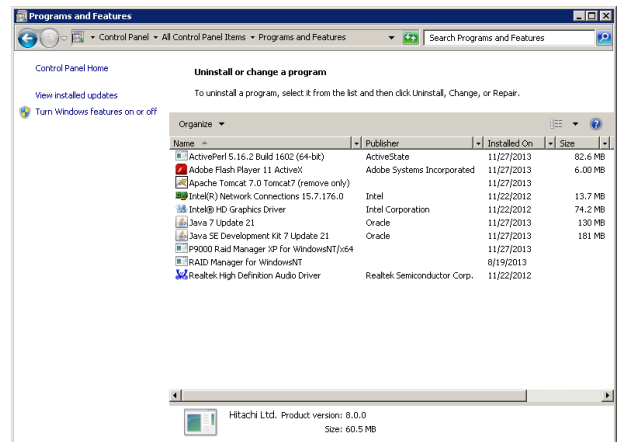


(6)

The [Embedded SMI-S Provider] is deleted from the ‘Programs and Features’ window.

Close the window by selecting (CL) the [×] button.

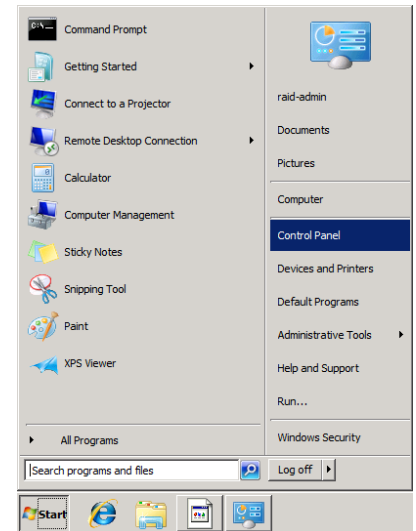
NOTE: When the SVP High Reliability Kit is installed, you need to install it for the standby SVP in the same procedure.
About the switching SVP, refer to Post-Procedure “2.17 SVP Switching” ([SVP02-17-10](#)) in the SVP SECTION.



3-2-1.4. Uninstalling Java program

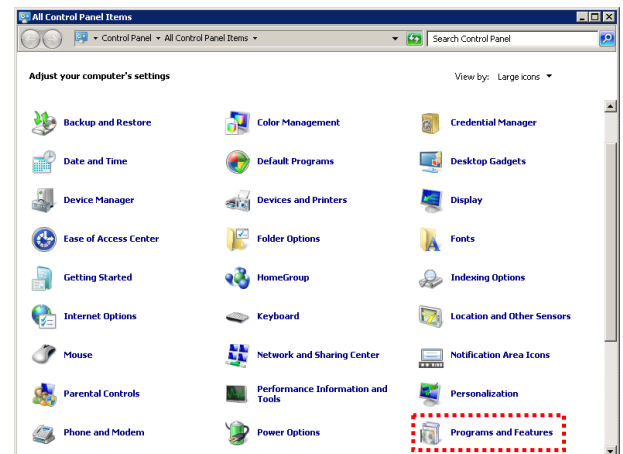
(1)

Select (DR) [Start]-[Control Panel] in this order.



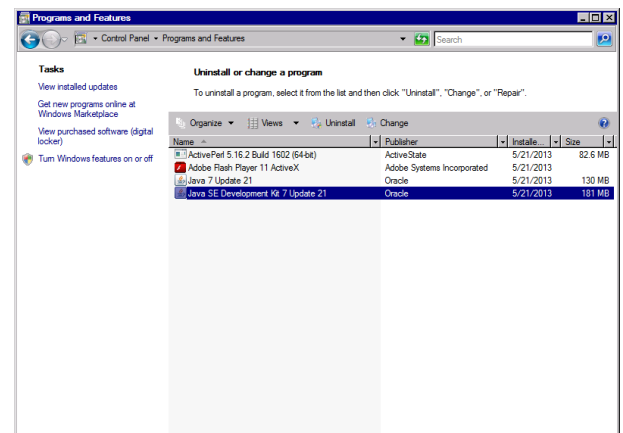
(2)

Select (DC) [Programs and Features].



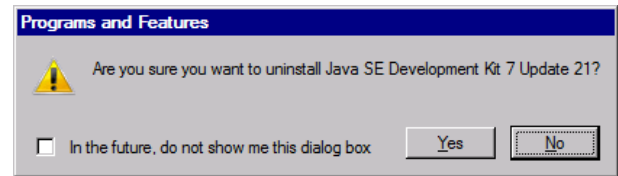
(3)

Select [Java SE Development Kit 7 Update 21], and then select (CL) [Uninstall].
If there is no [Java SE Development Kit 7 Update 21] in the list, go to (8).



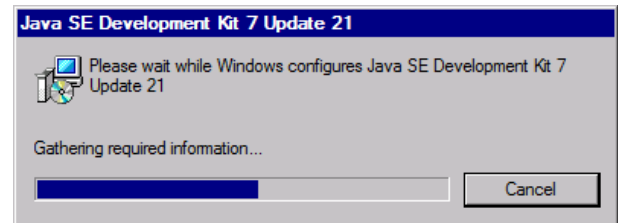
(4)

A message, “Are you sure you want to uninstall Java SE Development Kit 7 Update 21?” is displayed.
Select (CL) [Yes].



(5)

Uninstallation of Java is started.



(6)

When the window to require rebooting the system is displayed, select (CL) [No]. (*1)
When this window is not displayed, go to Step (7).

NOTE: Don't select [Yes]. If you do them, SVP may no longer work properly.

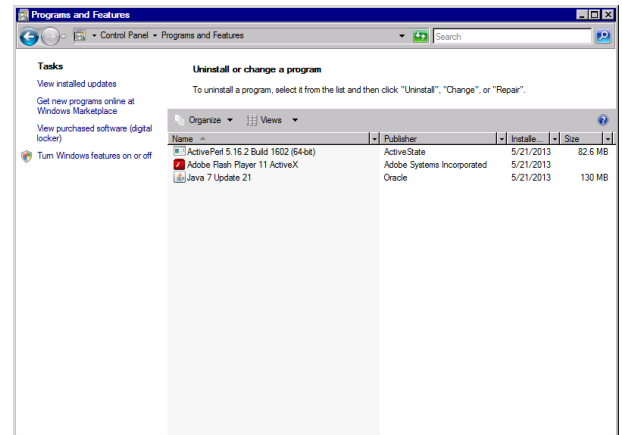
*1: If selecting (CL) [Yes], SVP will be rebooted. In this case, follow the procedures below.

- Login to SVP after rebooting.
Refer to “3-1-2 Connecting the Maintenance PC” ([REP03-21-210](#)) to choose login user name.
- When the following message is displayed, select (CL) [OK].
“Unable to log into the SVP, because there is a problem with its system requirements.
Reboot it, and then reconfigure the SVP.”
- Continue procedures from (8) after SVP rebooting.
Refer to “3-1-2 Connecting the Maintenance PC” ([REP03-21-210](#)). Please use “Preinstalled User”.

(7)

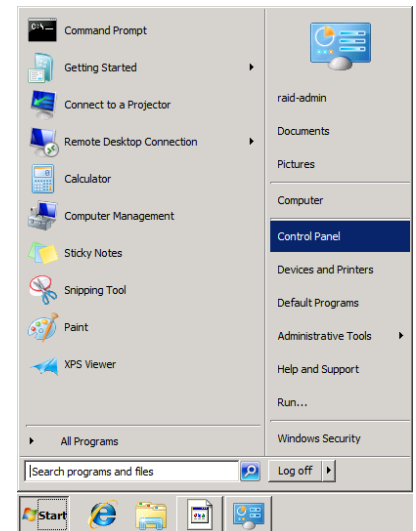
The [Java SE Development Kit 7 Update 21] is deleted from the 'Programs and Features' window.

Close the window by selecting (CL) the [×] button.



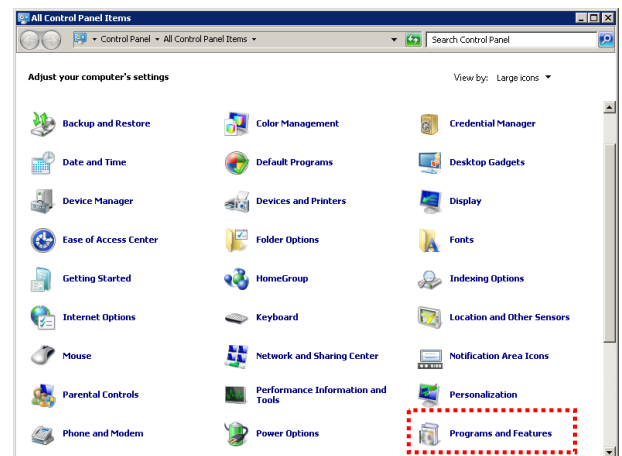
(8)

Select (DR) [Start]-[Control Panel] in this order.



(9)

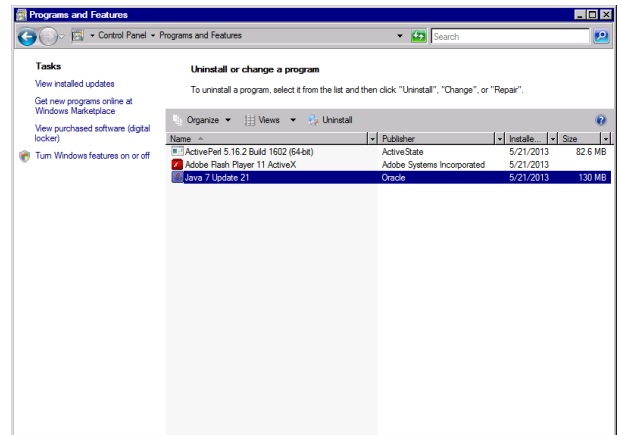
Select (DC) [Programs and Features].



(10)

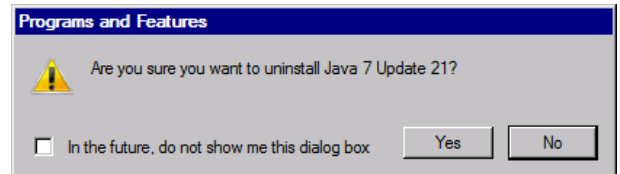
Select [Java 7 Update 21], and then select (CL) [Uninstall].

If there is no [Java 7 Update 21] in the list, go to 3-2-1.5.



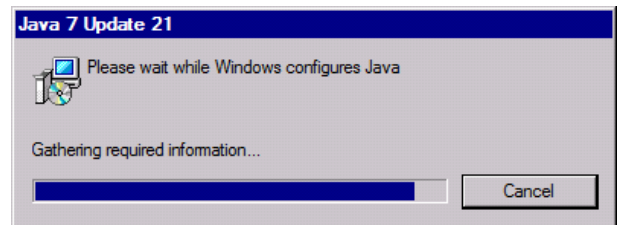
(11)

A message, “Are you sure you want to uninstall Java 7 Update 21?” is displayed. Select (CL) [Yes].



(12)

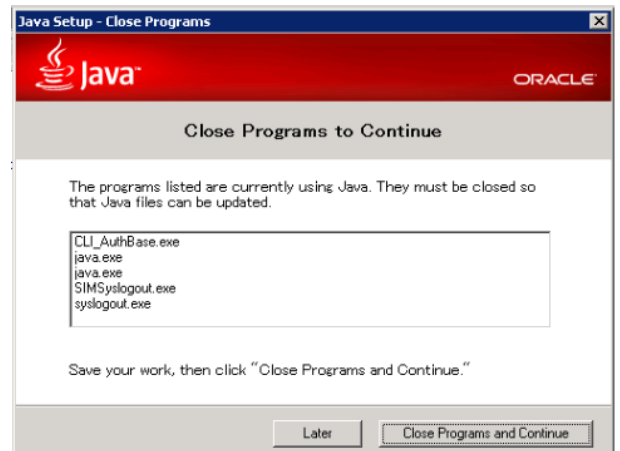
Uninstallation of Java is started.



(13)

If the following message box is displayed, select (CL) [Close Programs and Continue].

If the message, “Save your work and data! Then click OK to close your programs and complete the Java update.” is displayed, select (CL) [OK].



(14)

When the window to require rebooting the system is displayed, select (CL) [No]. (*1)
When this window is not displayed, go to Step (15).

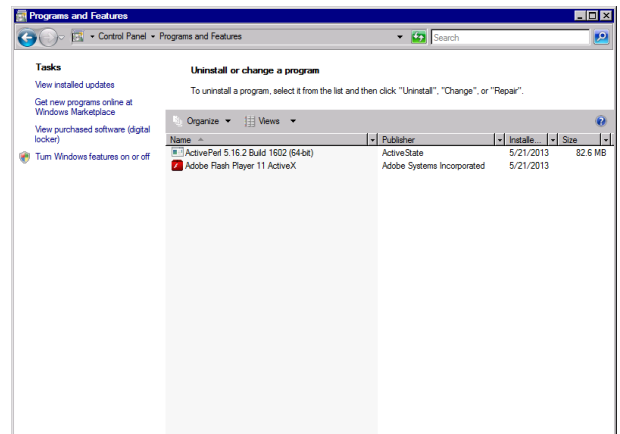
NOTE: In several minutes, it may reboot automatically.

*1: If selecting (CL) [Yes] or automatically, SVP will be rebooted. In this case, follow the procedures below.

- Login to SVP after rebooting.
Refer to “3-1-2 Connecting the Maintenance PC” (REP03-21-210) to choose login user name.
- When the following message is displayed, select (CL) [OK].
“Unable to log into the SVP, because there is a problem with its system requirements. Reboot it, and then reconfigure the SVP.”
- Continue procedures from 3-2-1.5 after SVP rebooting.
Refer to “3-1-2 Connecting the Maintenance PC” (REP03-21-210). Please use “Preinstalled User”.

(15)

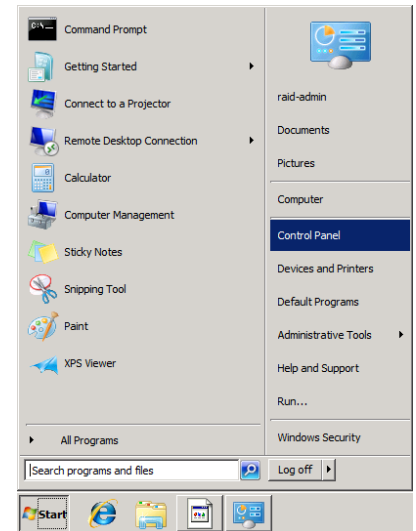
The [Java 7 Update 21] is deleted from the ‘Programs and Features’ window.
Close the window by selecting (CL) the [×] button.



3-2-1.5. Uninstalling Perl program

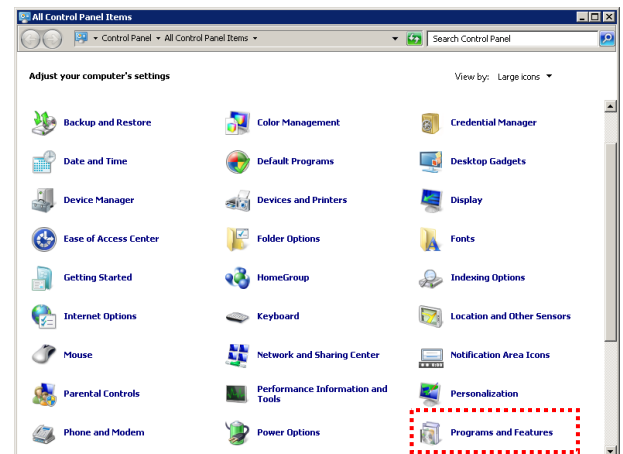
(1)

Select (DR) [Start]-[Control Panel] in this order.



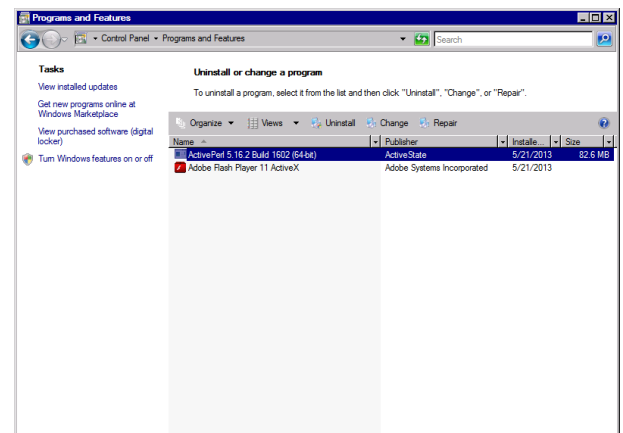
(2)

Select (DC) [Programs and Features].



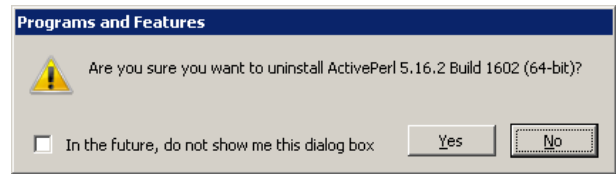
(3)

Select [ActivePerl 5.16.2 Build 1602 (64-bit)], and then select (CL) [Uninstall]. If there is no [ActivePerl 5.16.2 Build 1602 (64-bit)] in the list, go to 3-2-1.6.



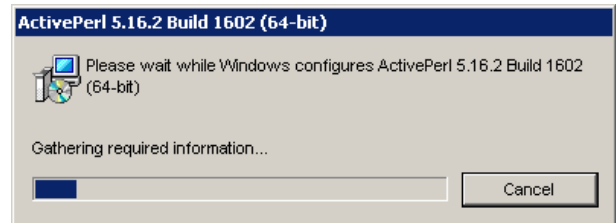
(4)

A message, “Are you sure you want to uninstall ActivePerl 5.16.2 Build 1602 (64-bit)?” is displayed. Select (CL) [Yes].



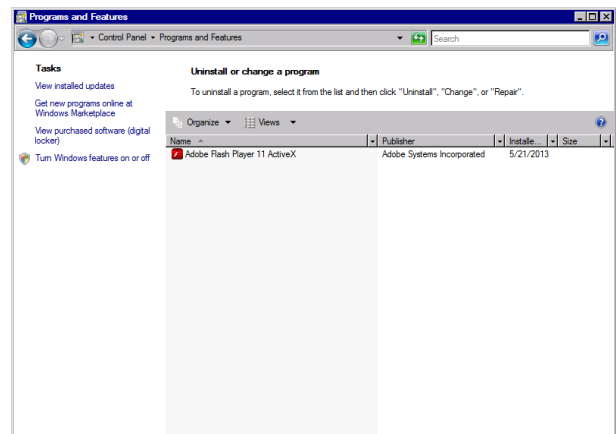
(5)

Uninstallation of Perl is started.



(6)

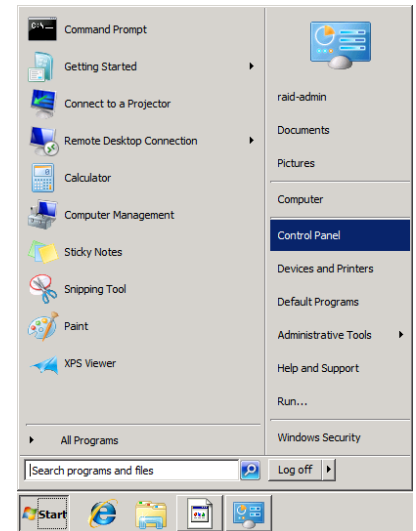
The [ActivePerl 5.16.2 Build 1602 (64-bit)] is deleted from the ‘Programs and Features’ window.
Close the window by selecting (CL) the [×] button.



3-2-1.6. Uninstalling Flash Player program

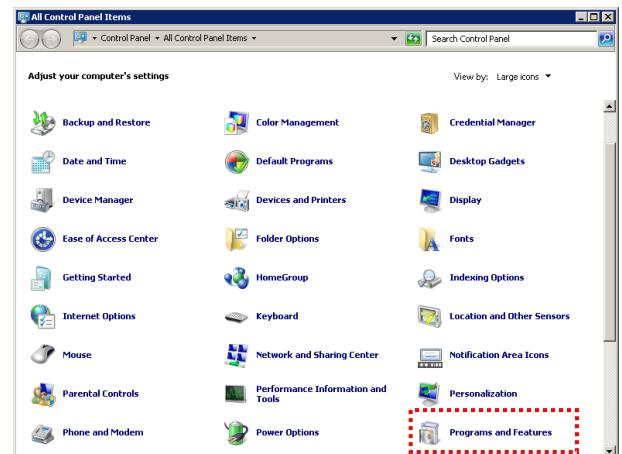
(1)

Select (DR) [Start]-[Control Panel] in this order.



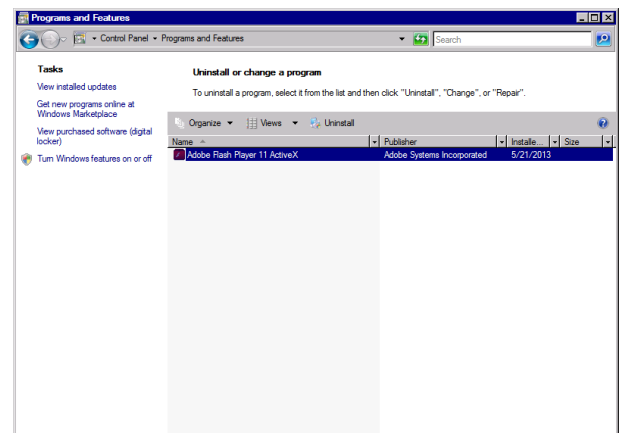
(2)

Select (DC) [Programs and Features].



(3)

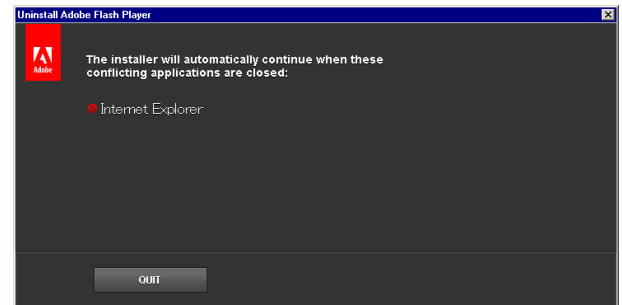
Select [Adobe Flash Player 11 ActiveX], and then select (CL) [Uninstall].
If there is no [Adobe Flash Player 11 ActiveX] in the list, go to 3-2-2.



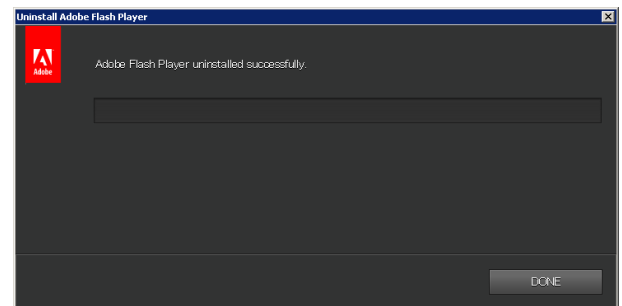
- (4) Starting uninstallation
Select (CL) [UNINSTALL].



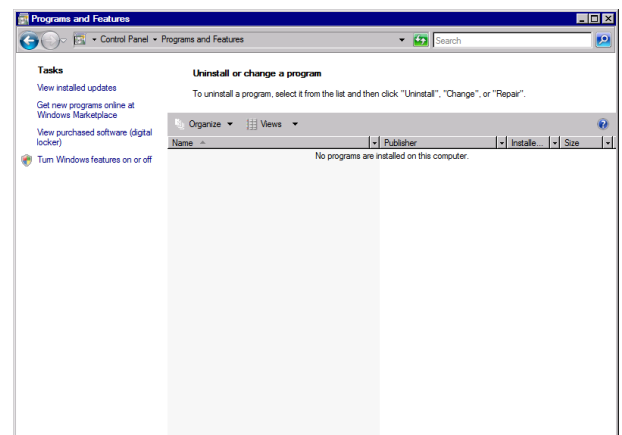
- (5) Finishing application
If some applications were using Flash Player, the application name is displayed.
Please finish the applications.



- (6) Finishing uninstallation
Select (CL) [DONE].



- (7)
The [Adobe Flash Player 11 ActiveX] is deleted from the 'Programs and Features' window.
Close the window by selecting (CL) the [×] button.



3-2-2. Starting Installation

- ① Insert a micro program media in the CD-ROM drive of Maintenance PC and wait for one minutes or so.
- ② Select (DR) [All Programs]-[Accessories]-[Run] from [Start] menu on SVP. Enter “\\tsclient\E\setup.exe” and select (CL) the [OK] button.

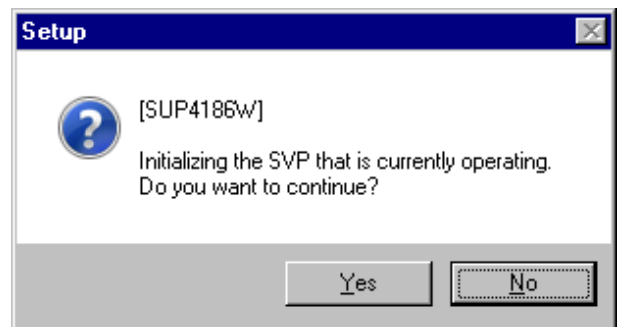
NOTE1: Select the drive which inserted a CD-R in ②.

“\\tsclient\E\setup.exe”

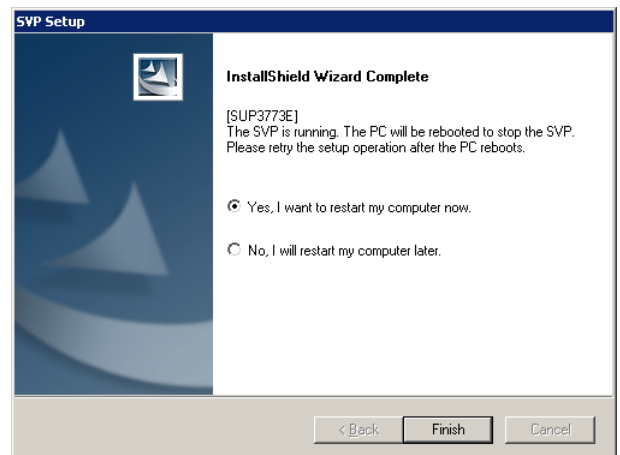
Input the drive name of the CD-ROM drive of Maintenance PC.

Indicate Maintenance PC. (This spelling is inputted.)

- ③ When the SVP is running, the message [SUP4186] (cf. Right window) is displayed. Select (CL) [Yes].



- ④ Next, The window to reboot the SVP is displayed. Select (CL) [Finish] after check [Yes] in radio buttons. After rebooting the SVP (after waiting for about five minutes), install the microprogram again from 3-2-2 ②. Refer to “3-1-2. Connecting the Maintenance PC” (REP03-21-210). Please use “Preinstalled User” to connect with SVP.



- ⑤ When you retry the installation micro-program after the SVP reboot, The message of the right window is displayed. Select (CL) [Run].



3-2-3. Installing the Configuration Information

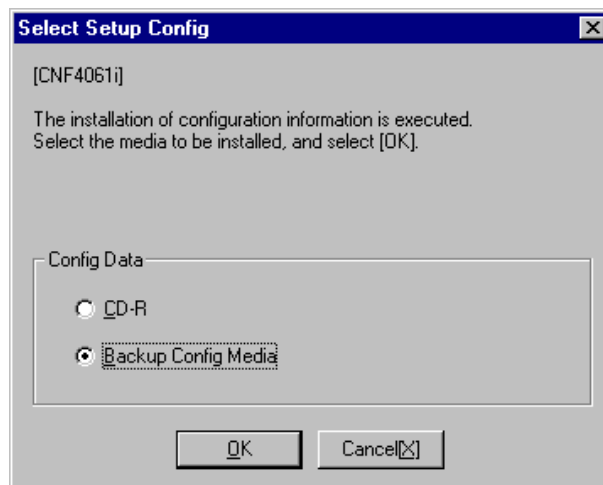
(1)

When installation processing advances, the screen of the right window is displayed.

Insert the media which stored backup configuration information in the drive of the Maintenance PC.

Select “Backup Config Media”, and select (CL) the [OK] button.

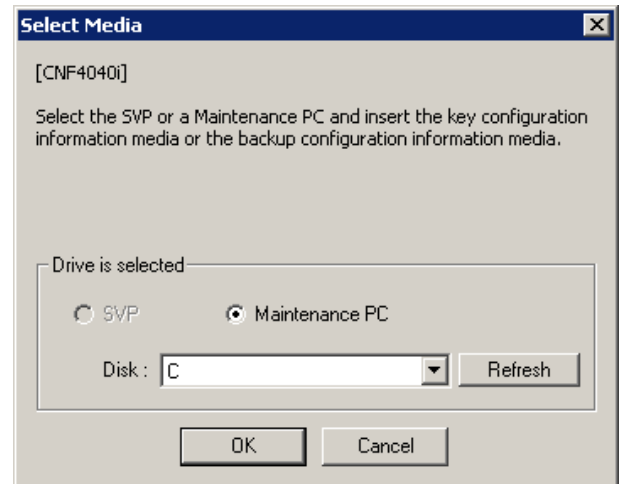
“CD-R” : Use Only With Technical Support Authorization.



(2)

Select the drive which insert the Backup Config Media (prepared with Step (1)), and select (CL) the [OK] button.

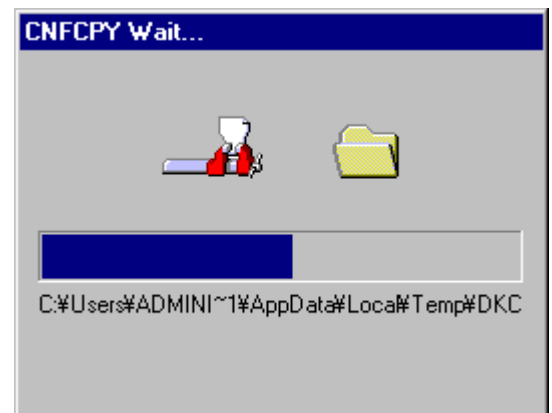
Select (CL) [Refresh] button, Disk is updated to the latest information.



(3)

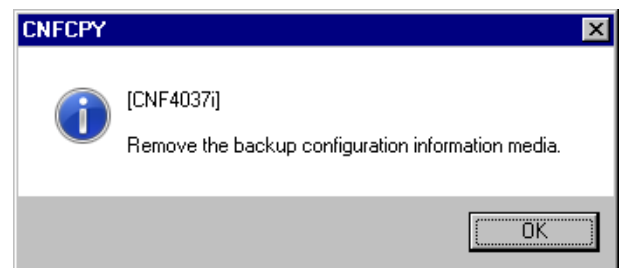
Perform copy processing of the configuration information from the Backup Config Media to the SVP.

The 'CNFCPY Wait...' window is displayed during this time.



(4)

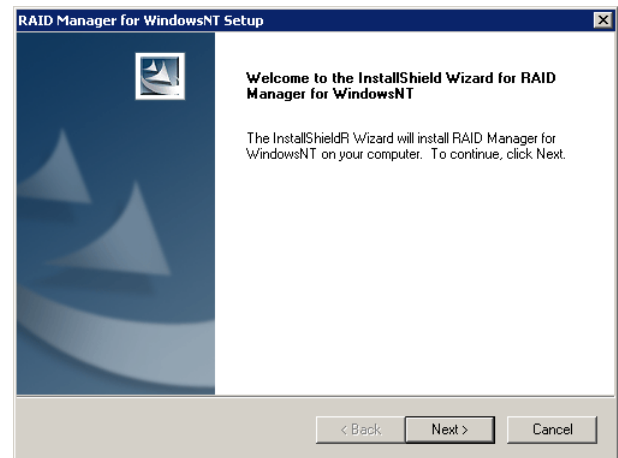
Select (CL) the [OK] button after removing the configuration information media.



3-2-4. Installing the RAID Manager

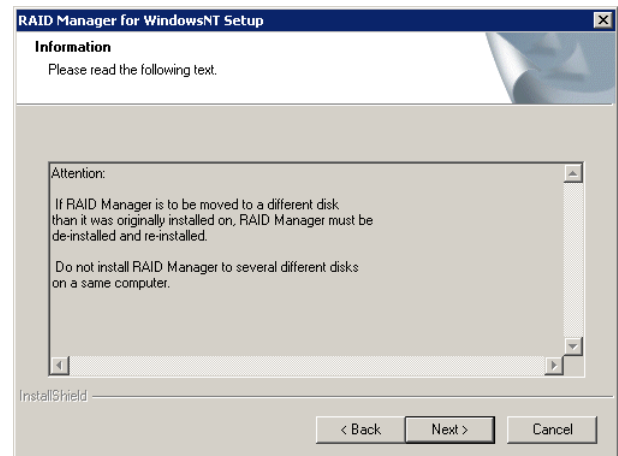
(1)

Select (CL) [Next>].



(2)

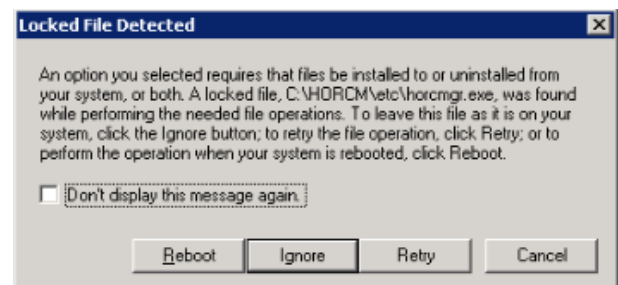
Select (CL) [Next>].



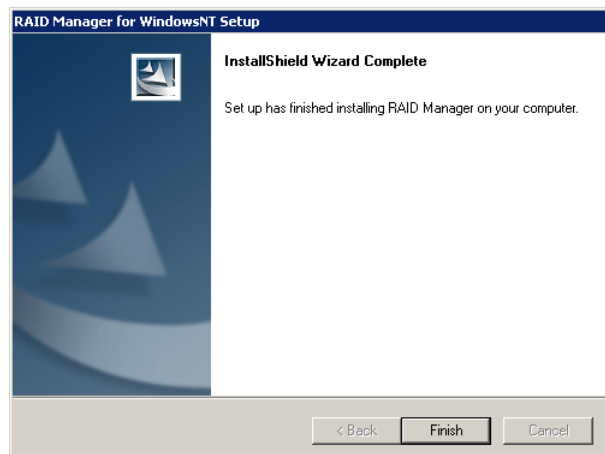
When “Locked File Detected” is displayed, select (CL) [Retry] after waiting for about five minutes.

NOTE: “Locked File Detected” is displayed when RAID Manager process is not terminated.

At this time, you should wait until RAID Manager process is terminated.

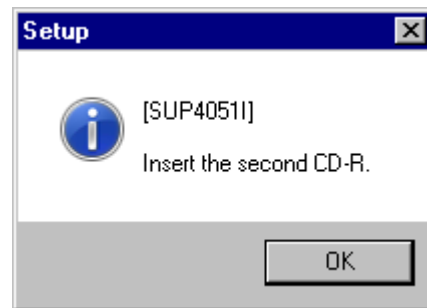


- (3)
Select (CL) [Finish].



3-2-5. Installing the OSS media

- (1)
When the message of "Insert the second CD-R." is displayed, replace it to the second media. Select (CL) [OK] after the replacement.



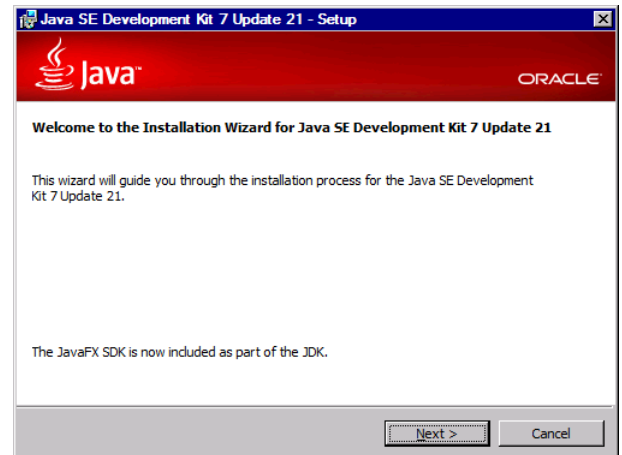
3-2-5.1. Setting Up JAVA

Perform setting up operation of Java.

When JAVA has already been installed, go to Section 3-2-5.3.

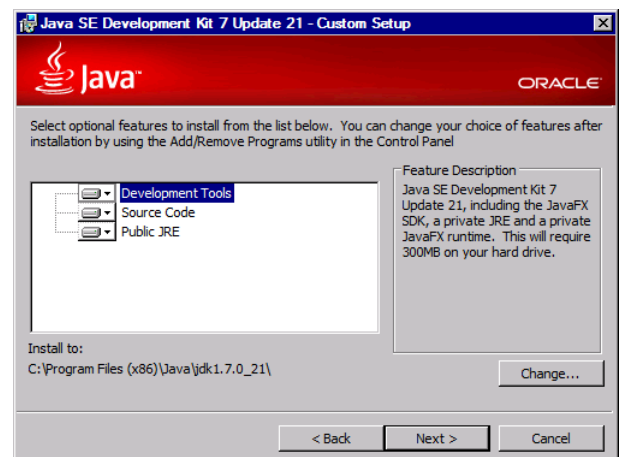
(1)

Select (CL) [Next>].



(2)

Select (CL) [Next>].

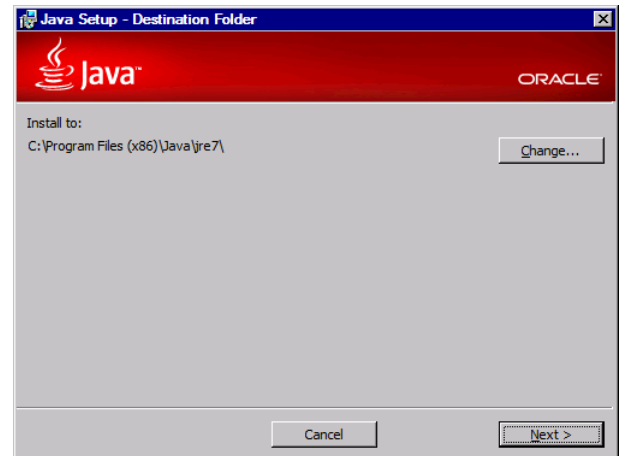


(3)

Copying of the file is started.



- (4)
Select (CL) [Next>].



- (5)
Installation is started.



- (6)
Select (CL) [Close].
If [Register your JDK] window opens,
close it.



(7)

When the window to require rebooting the system is displayed, select (CL) [No].
When this window is not displayed, go to 3-2-5.2.

NOTE: Don't select [Yes]. If you do them, SVP may no longer work properly.

NOTE: Until SVP is shutdown in procedure 3-2-6, please don't logout or shutdown SVP.
If you do them, SVP may no longer work properly. If a shutdown request message is displayed, please don't shutdown.

3-2-5.2. The Setting of Apache SSL communication

The things of default are set in the key creation for SSL communication and the certificate file.
When you install an SSL communication key and a certificate file responding to the customer's request, see "Hitachi Command Suite User Guide" or "Hitachi Virtual Storage Platform G1000 Mainframe System Administrator Guide".

It advances to Step 3-2-5.3 when setting it by default.

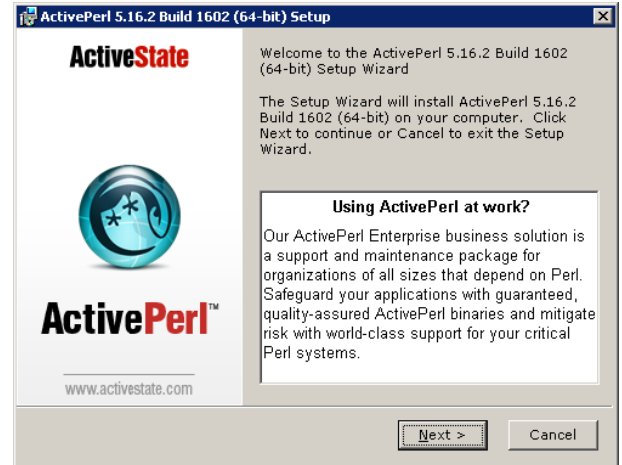
3-2-5.3. Setting Up of Perl

Perform setting up operation of Perl.

When Perl has already been installed, go to Section 3-2-5.4.

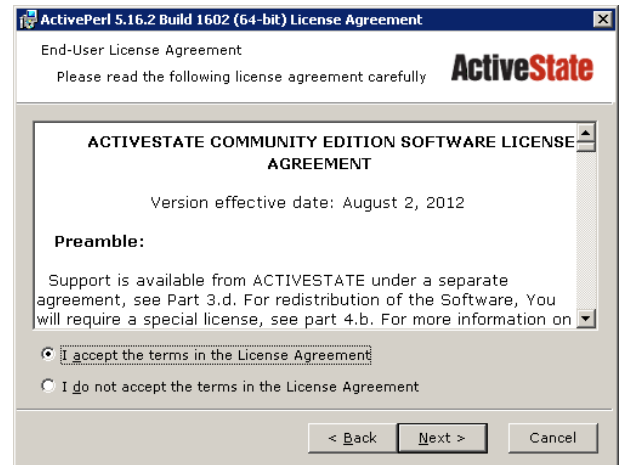
(1)

Select (CL) [Next>].



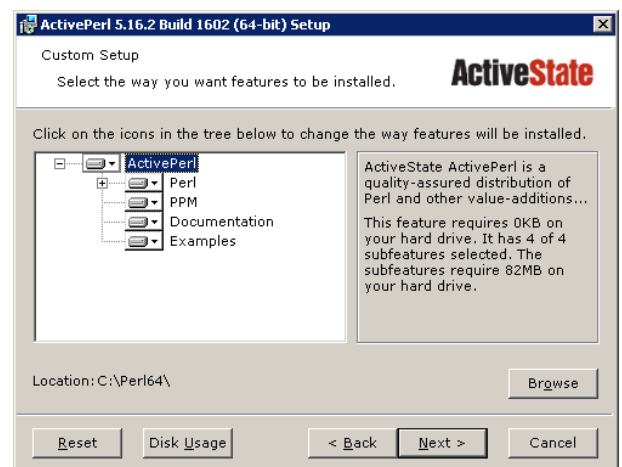
(2)

After selecting “I accept the terms in the License Agreement”, select (CL) [Next>].

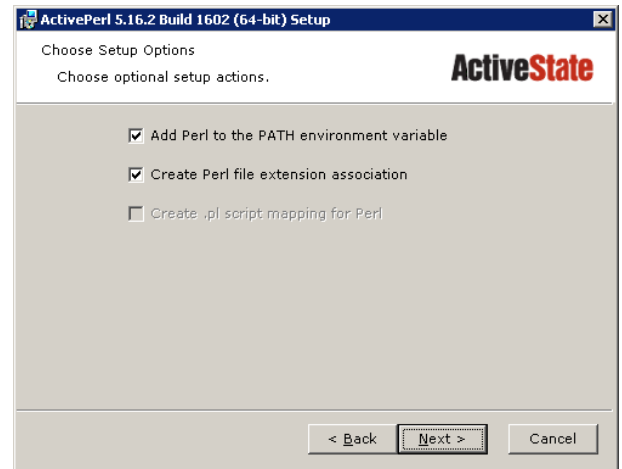


(3)

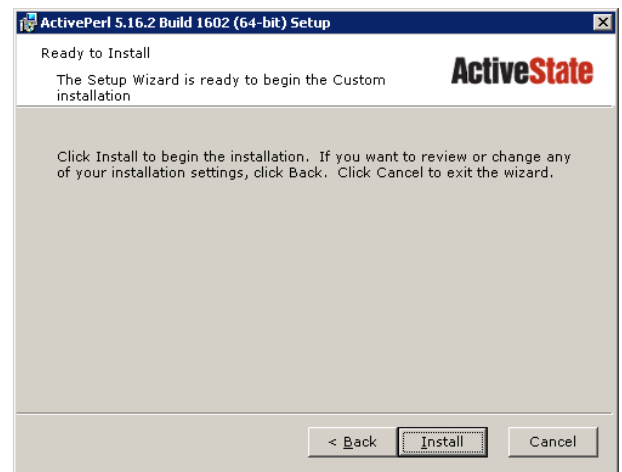
Select (CL) [Next>].



- (4)
Select (CL) [Next>].



- (5)
Select (CL) [Install].
Copying of the file is started.



- (6)
When the copying of the file is completed, this window is displayed. Remove the check mark from the left side check box of the “Display the release notes” and select (CL) [Finish].



3-2-5.4. Setting Up of Tomcat

Perform setting up operation of Tomcat.

When Tomcat has already been installed, go to Section 3-2-5.5.

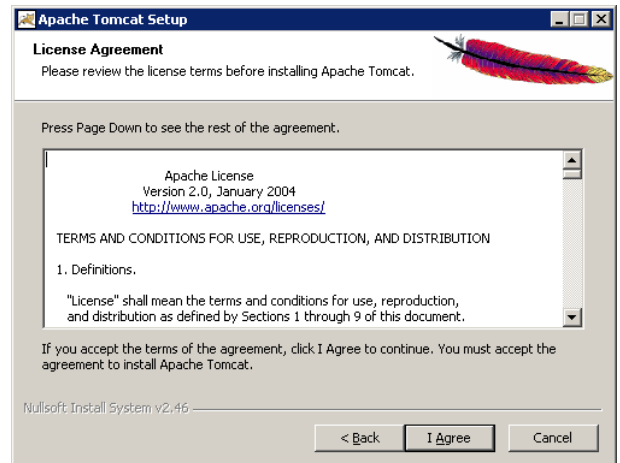
(1)

Select (CL) [Next>].



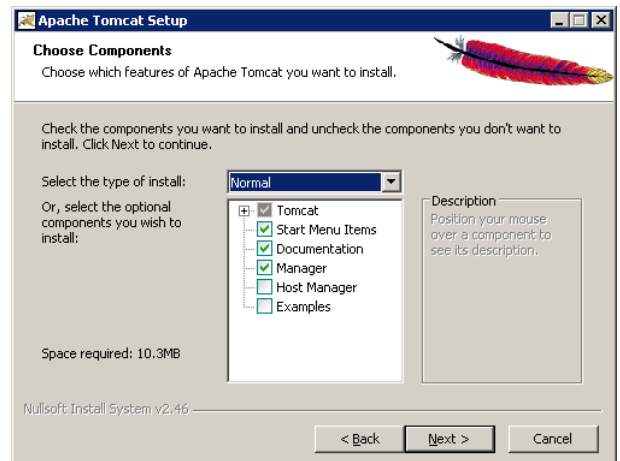
(2)

Select (CL) [I Agree].

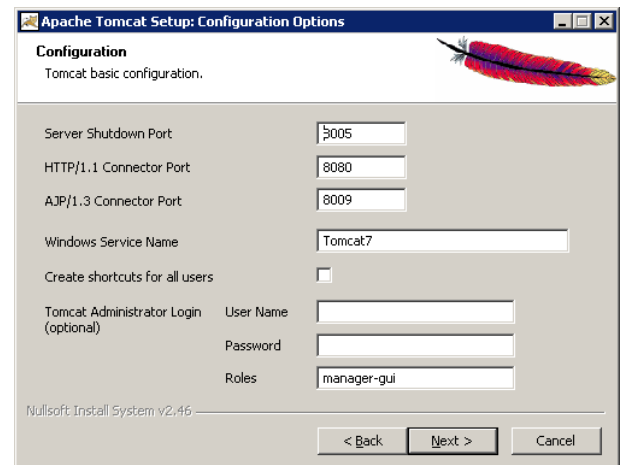


(3)

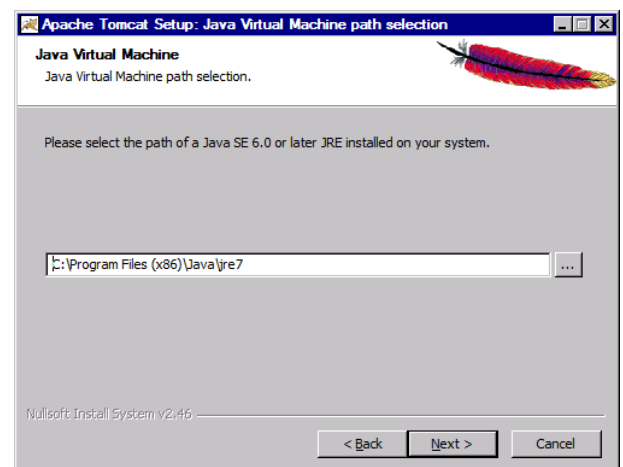
Select (CL) [Next>].



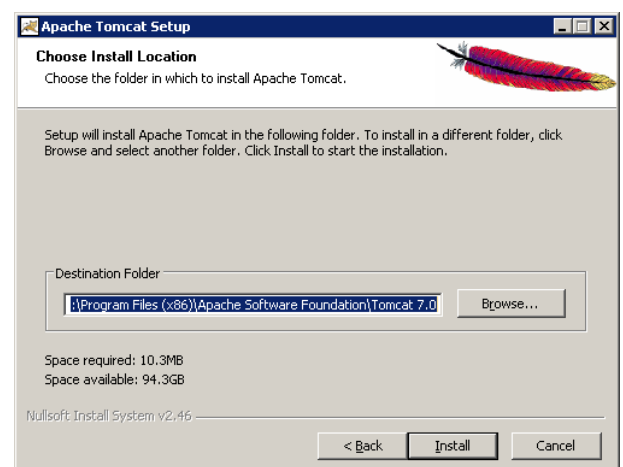
- (4)
Select (CL) [Next>].



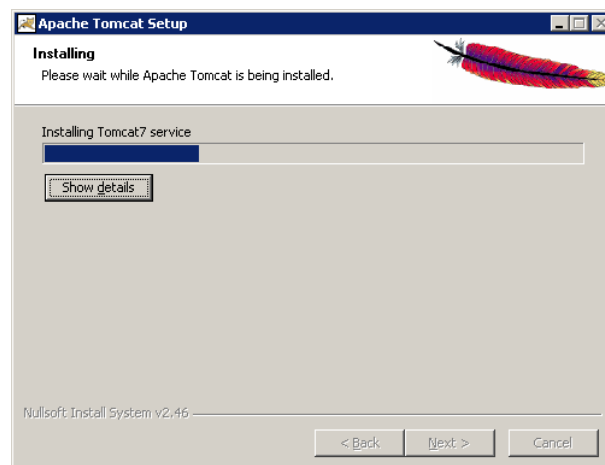
- (5)
Select (CL) [Next>].



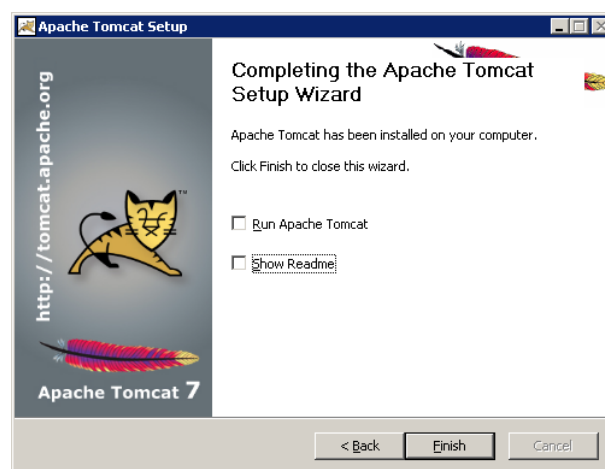
- (6)
Select (CL) [Install].
- If the message, “The specified installation directory is not empty. Do you wish to continue?” is displayed, select (CL) [OK].



- (7) Wait while installing.



- (8) Uncheck all the checkboxes, and select (CL) [Finish].



3-2-5.5. Setting Up of Flash Player

Perform setting up operation of Flash Player.

When Flash Player has already been installed, go to Section 3-2-6.

(1) Starting installation

Select (CL) [I have read and agree to the terms of the Flash Player License Agreement], and select (CL) [INSTALL].



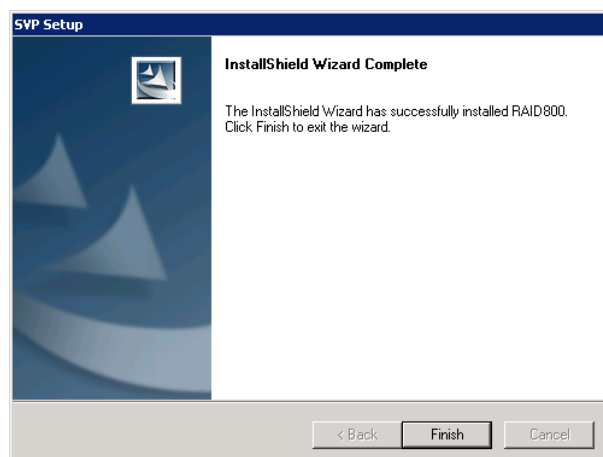
(2) Finishing installation

After installation is finished, select (CL) [Never check for updates (not recommended)], and select (CL) [DONE].



3-2-6. Restarting the SVP

When the installation of the micro program is completed, the following window is displayed. Take out the CD-ROM and select (CL) [Finish]. The SVP is restarted (disconnected from the Maintenance PC). After waiting for about five minutes, reconnect the Maintenance PC to the SVP that has been replaced.



3-3. Turning off the RAS Switch#1

When SVP High Reliability Support Kit is not set, turn off the SVP RAS Switch#1 on the SVP.

When SVP High Reliability Support Kit is set, go to the next step.

NOTICE: The SIM bf85a3, bf86a3 may be reported, however, it is not a problem because it is one of the normal processes of the SVP replacement.
Complete the SIM concerned.

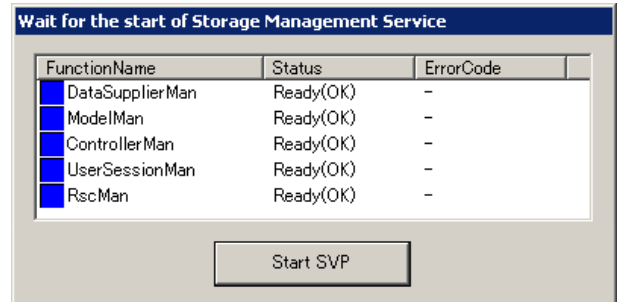
3-4. Various setting for SVP

3-4-1. Setting the IP Address of the SVP

(1) <Starting SVP program>

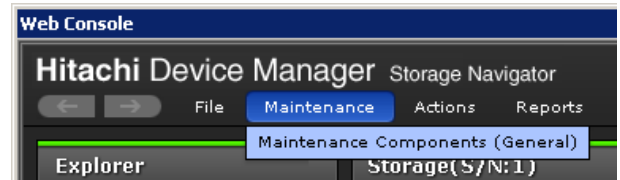
<When Web Console isn't working>

Select (CL) [Start SVP].



<When Web Console is working>

Select (CL) [Maintenance]-
[Maintenance Components
(General)].

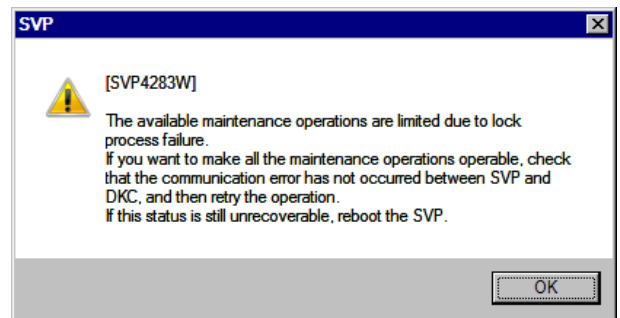


(2) <Mode change>

Select (CL) the [View Mode] of SVP main screen. When it becomes [Modify Mode (Unlocked)] and the next message is displayed, select (CL) the [OK] button and go to (3).

“The available maintenance operations are limited due to lock process failure.

If you want to make all the maintenance operations operable, check that the communication error has not occurred between SVP and DKC, and then retry the operation. If this status is still unrecoverable, reboot the SVP.”.

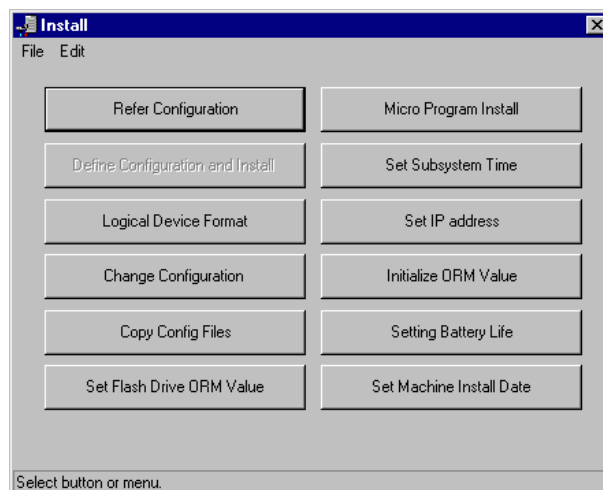


Select (CL) the [View Mode] of the SVP main screen. When it becomes to [Modify Mode] from [View Mode] too, select (CL) the [OK] button and go to (3).

(3) <Opening the 'Install' window>

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

- (4) <Selecting [Set SVP IP address]>
Select (CL) [Set IP address] in the
'Install' window.



NOTE: Although it may be an error display if the Web Server Status window is displayed before the IP address setting work of SVP is completed, there is no problem because it is the one by the process of the SVP replacement.

(5) <Setting the IP address>

Select (CL) [SVP], make sure of the IP Address and Subnet Mask of the Internal IP Address and the External IP Address, and select (CL) the [OK] button.

When the “IP Address” and/or “Subnet Mask” are/is wrong, enter the correct one(s).

NOTE: Please select [OK] absolutely (CL). And, [Cancel] is not reflected in the setting.

When SVP High Reliability Support Kit is not set

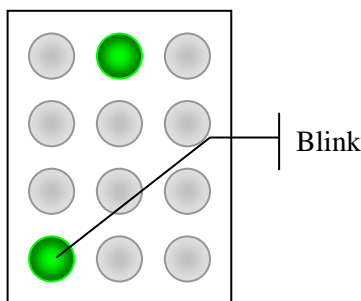
When SVP High Reliability Support Kit is set
(in the Master SVP)

When SVP High Reliability Support Kit is set
(in the Standby SVP)

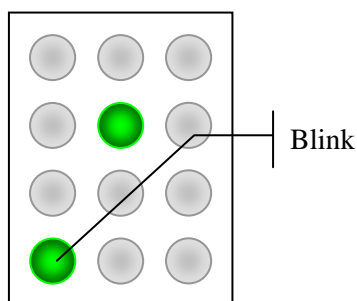
NOTE: When setting the High Reliability kit, select (CL) “Use Duplex SVP”.

You can use the LED of SVP to verify the SVP, which is in operation and is not to be replaced, whether it is the master one or the standby one and whether it is in operation or not (for more information, see section SVP).

State of LED at Master SVP



State of LED at Standby SVP

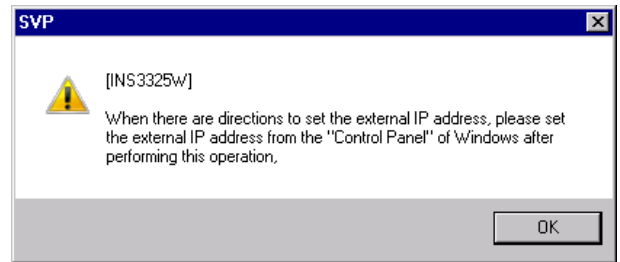


If the SVP, which is in operation, is a master one, select (CL) “Standby SVP” for the replaced SVP.

If the SVP, which is in operation, is a standby one, select (CL) “Master SVP” for the replaced SVP.

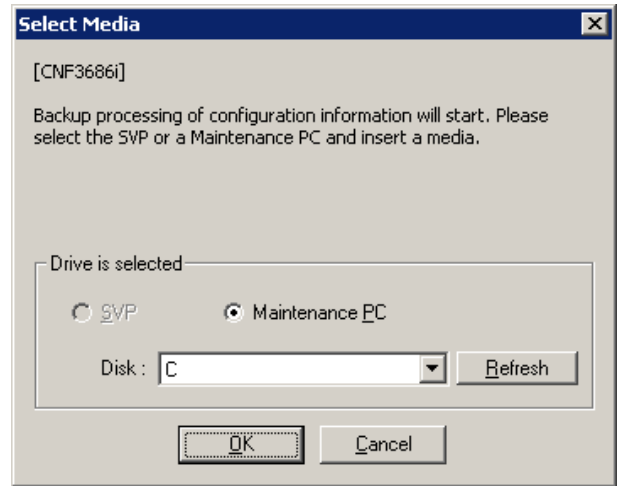
(6) <Making sure of the setting of the external IP address>

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



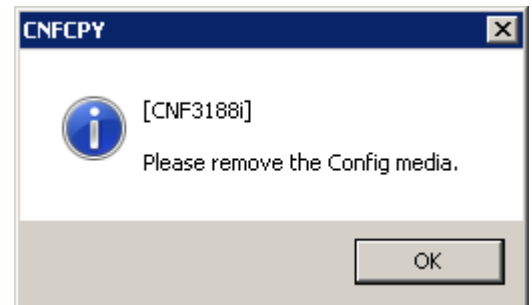
(7) <Inserting the Config media>

Insert the medium containing the configuration information in the specified drive and select (CL) the [OK] button.



(8) <Taking out the Config media>

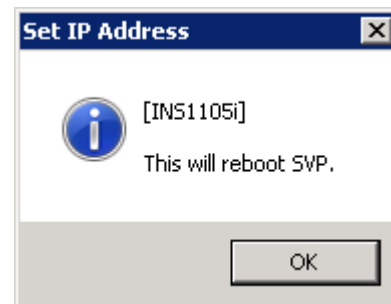
When the copying of the configuration information is completed, a message, “Please remove the Config media.” is displayed. Take out the medium containing the configuration information and select (CL) the [OK] button.



(9) <Making sure of the restart of the SVP>

Select (CL) the [OK] button.

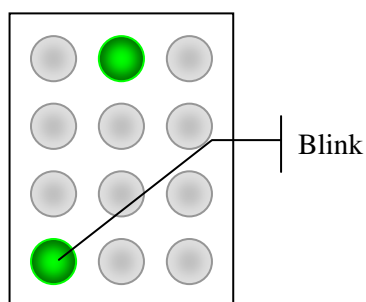
The SVP is disconnected from the Maintenance PC.
After waiting for about five minutes, reconnect the SVP
that has been replaced to the Maintenance PC.



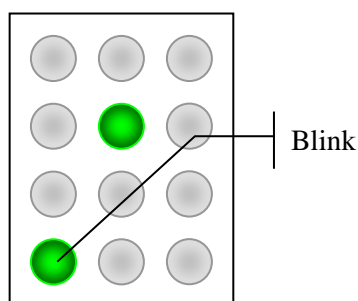
(10) <LED state confirmation of SVP>

It confirms it with LED of SVP. Please do over again from (2) when you turn off LED.

State of LED at Master SVP



State of LED at Standby SVP



[Connection destination]

- When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
- When SVP High Reliability Support Kit is set:
 - When the Master SVP was replaced: xxx.xxx.xxx.15
 - When the Standby SVP was replaced: xxx.xxx.xxx.14

NOTE: If the IP address of the Maintenance PC has been changed to 126.255.254.x, reset to the original IP address before connection.

When the SVP, which is an object of the operation, cannot be detected, retry the connection after a while (about one minute).

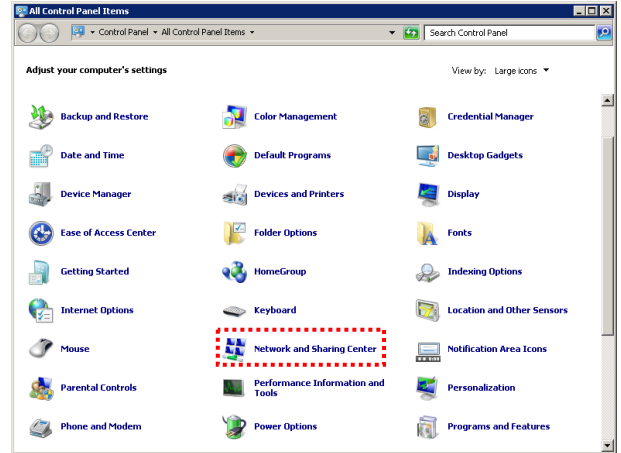
(11) <Setting the external IP address>

(a) <Opening the Control Panel window>

Select (DR) [Control Panel] from the [Start] menu.

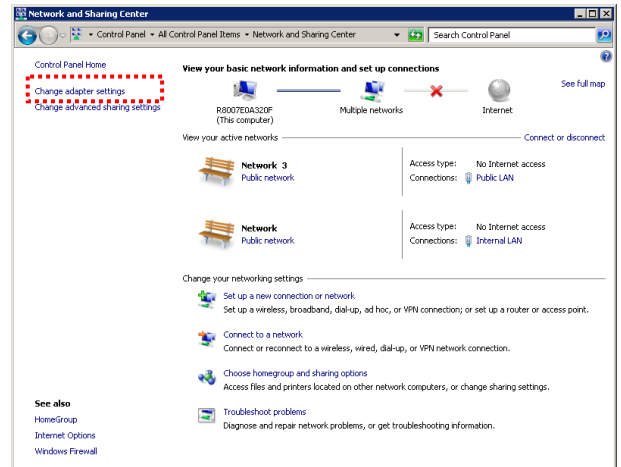
(b) <Opening the Network and Sharing Center window>

Select (CL) [Network and Sharing Center] in the 'Control Panel' window.



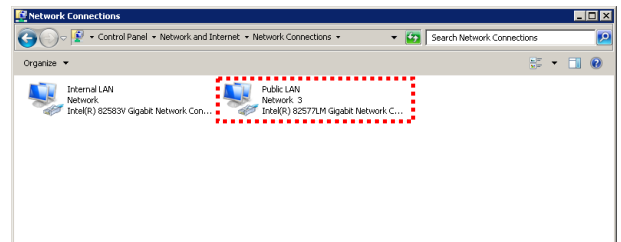
(c) <Opening the Network connections window>

Select (CL) [Change adapter settings] in the 'Network and Sharing Center' window.



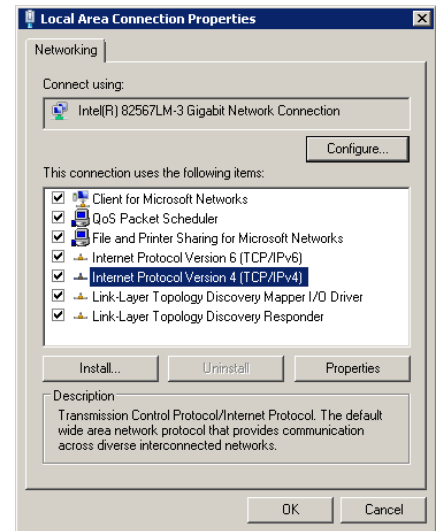
(d) <Opening the Public LAN Properties window>

Select (CL) [Public LAN] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.



(e)

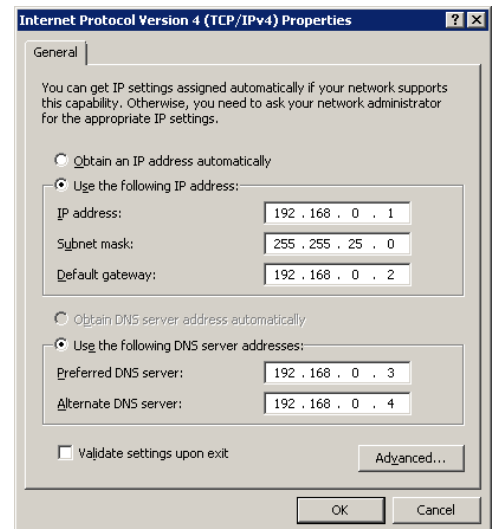
Select (CL) [Internet Protocol Version 4 (TCP/IPv4)] in the 'Local Area Connection Properties' window and select (CL) the [Properties] button.



(f) <Setting the external IP address>

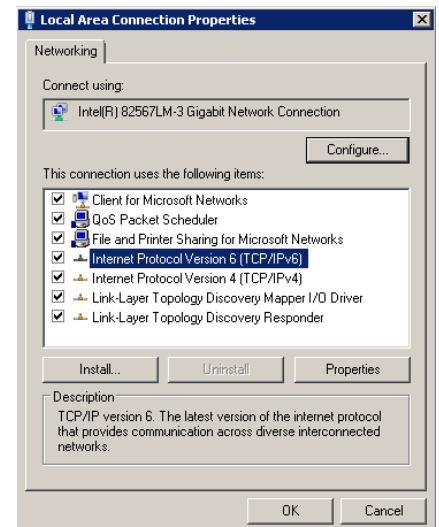
Set the "IP address", "Subnet mask", "Default gateway", "Preferred DNS server" and "Alternate DNS server" and select (CL) the [OK] button.

When you do not set IPv6, go to Step (i).

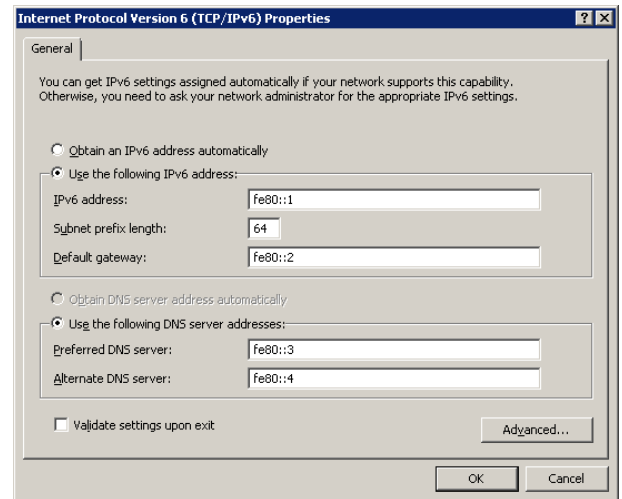


(g)

Select (CL) [Internet Protocol Version 6 (TCP/IPv6)] in the 'Local Area Connection Properties' window and select (CL) the [Properties] button.



- (h) <Setting the external IP address>
Set the “IPv6 address”, “Subnet prefix length”, “Default gateway”, “Preferred DNS server”, “Alternate DNS server” and select (CL) the [OK] button.



- (i)
After the setting is completed, select (CL) the [Close] button (In case of no change of IP address, select (CL) [OK] button) in the ‘Local Area Connection Properties’ window.
Close the ‘Network connections’ window.

3-4-2. Resetting the SSVP

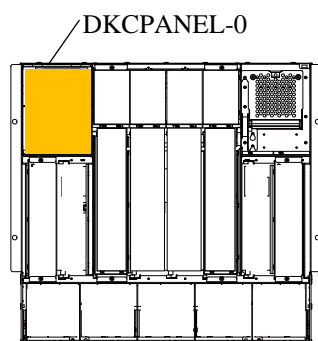
When SVP High Reliability Support Kit is not set, go to 3-4-7.

When the SVP high-reliability kit is set, insert the maintenance jumper into SSVP ALARM RESET jumper (JP3) on the DKCPANEL more than one second. And then, remove the maintenance jumper. Confirm that four SSVP STATUS LED of DKCPANEL turns on and turns off the light.

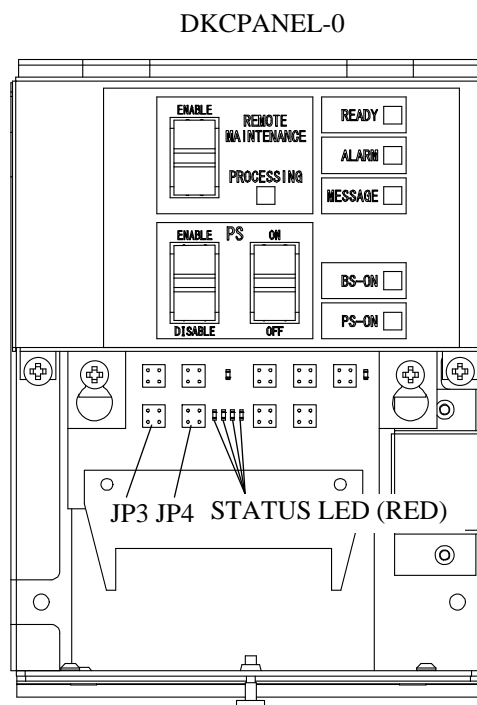
When a dump is necessary, carry it out earlier than SSVP reset.

Please set the maintenance jumper in JP4 of DKCPANEL, and remove the jumper.

(Refer to [LOC06-20](#))

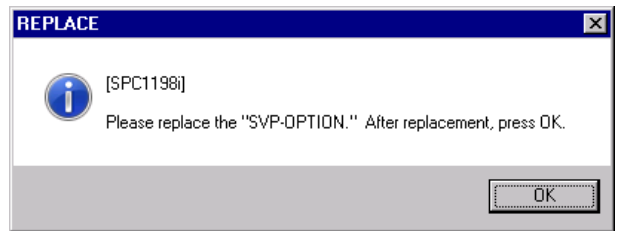


Front View of
DKC-0



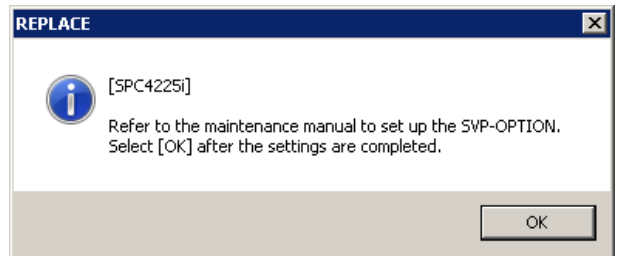
3-4-3. Post operation of STANDBY SVP replace

When SVP High Reliability Support Kit is set and replaced STANDBY SVP, connect to MASTER SVP (IP address: xxx.xxx.xxx.15), select (CL) the [OK] for “Please replace the “SVP-OPTION.” After replacement, press OK.”.



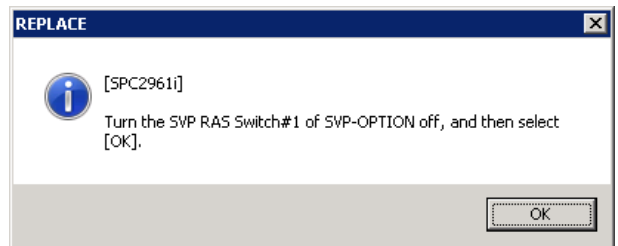
(1) <Setting the SVP>

Select (CL) [OK] in response to “Refer to the maintenance manual to set up the SVP-OPTION. Select [OK] after the settings are completed.” after setting the SVP.



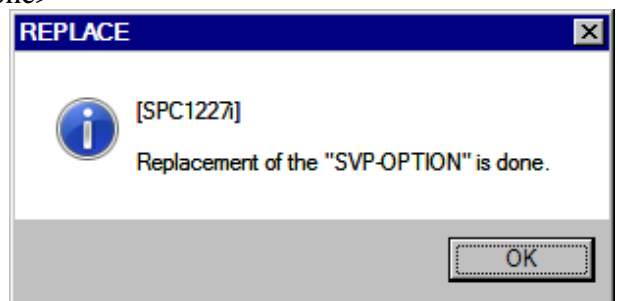
(2) <Turning off the RAS Switch#1>

Confirm that the SVP RAS Switch#1 was turned off and select (CL) the [OK].



(3) <Replacement of the STANDBY SVP is done>

Select (CL) the [OK] for “Replacement of the “SVP-XXXXX” is done.”.



3-4-4. Transferring the Configuration Information

When SVP High Reliability Support Kit is set, transfer the configuration information. (See “3-4-5 Configuration Information Transfer (SVP High Reliability Kit is installed)”)
(When the Master SVP has been replaced, do the same in order to make sure of the setting of the Master SVP.)

Perform the following operation for the Master SVP (IP address: xxx.xxx.xxx.15)

When the SVP, which is an object of the operation, cannot be detected, retry the connection after a while (about one minute).

3-4-5. Configuration Information Transfer (SVP High Reliability Kit is installed)

This function is valid when the SVP High Reliability Kit is installed.

NOTE: This operation needs that Standby SVP is a View mode.

NOTE: When screen saver operates (60 minutes pass without operation) with a Standby SVP having been connected to the remote desktop, this operation fails.

Execute the following operation for Master SVP.

(1) <Execute Maintenance>

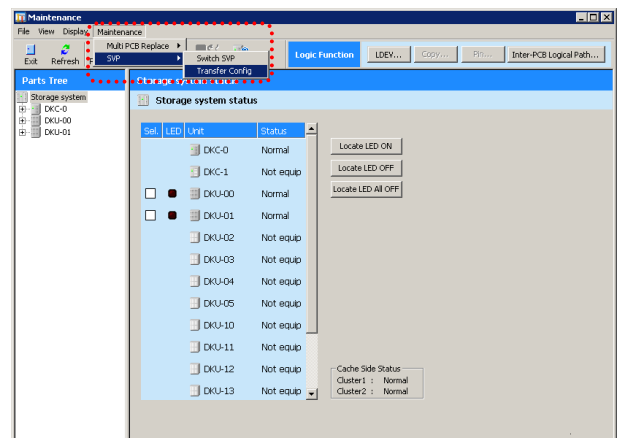
When the Master SVP was replaced, change the mode to [Modify Mode].

Select (CL) the [Maintenance] button.

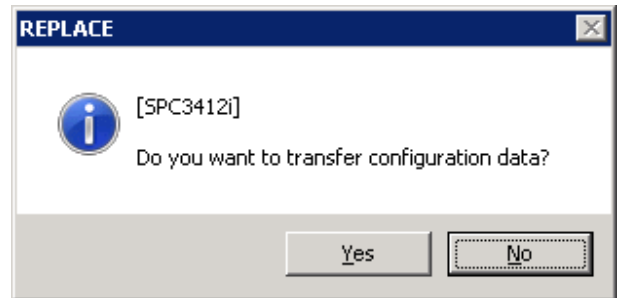
When the Standby SVP was replaced, go to (2).

(2)

Select (CL) [Maintenance]-[SVP]-[Transfer Config] from the menu.



- (3) Select (CL) [Yes] for the message “Do you want to transfer configuration data?”.

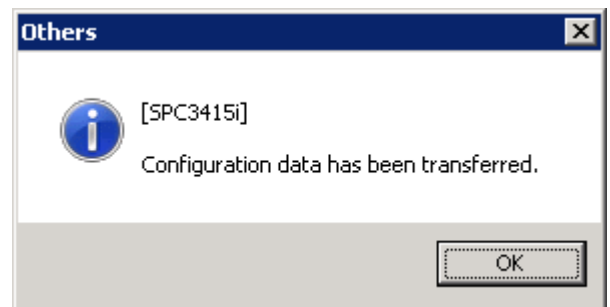


- (4) The message “Transferring storage system configuration data...” is displayed.

The SVP transfers the configuration information automatically to reflect the configuration information of the master SVP on the standby side SVP. Therefore, if the transfer processing of the configuration information overlaps, the actually transferred status display may be repeated.



- (5) When configuration data has been transferred, the message “Configuration data has been transferred.” is displayed. Select (CL) [OK].
If errors occur on the way, check the problems of connection and setting of the replaced SVP (Standby).



- (6) Close the “Maintenance” window.

- (7) Change the SVP mode to [View Mode].

3-4-6. Setting the TOD

When SVP High Reliability Support Kit is not set or Master SVP is replaced after SVP High Reliability Support Kit is set, set the TOD after the message, “Loading SVP Program... SVP requests to DKC cannot be performed presently. Please wait...” disappears.

When SVP High Reliability Support Kit is set, go to the next step.

(1) <Changing the mode>

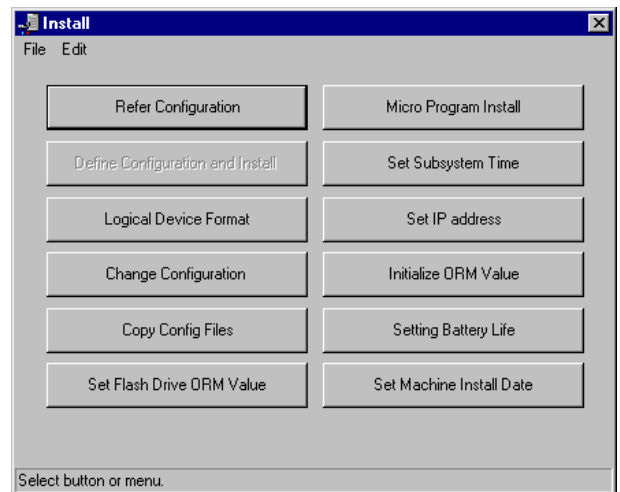
Change the mode to Modify Mode.

(2) <Opening the ‘Install’ window>

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

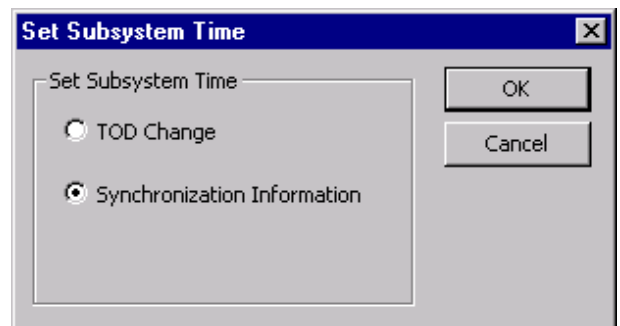
(3) <Selecting [Set Subsystem Time] >

Select (CL) [Set Subsystem Time] in the ‘Install’ window.

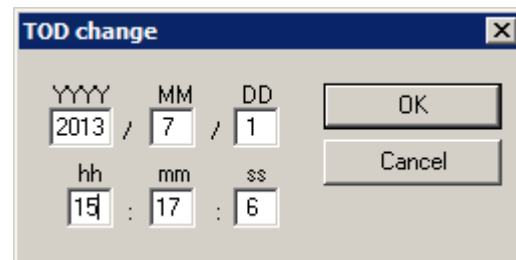


(4)

Select (CL) [TOD Change] in the ‘Set Subsystem Time’ window, and then select (CL) [OK].



- (5)
- Enter a date (year, month, and day) and time (hours, minutes, and seconds), and then select (CL) the [OK] button.



- (6)
- Close the 'Install' window.

3-4-7. Loading the configuration information from the SM to an HDD of the SVP

When SVP High Reliability Support Kit is not set, load the configuration information from the SM to an HDD of the SVP.

When SVP High Reliability Support Kit is set, go to the next step.

-
- (1) <Opening the 'Maintenance' window>
- Select (CL) [Maintenance] from the "SVP" window.

-
- (2)
- Make sure that the message, "Connection error occurred SVP-DKC," is not displayed. If the above message is displayed, refer to page [TRBL02-320](#).

-
- (3) <Selecting [Exit]>
- Select (CL) [File] from the 'Maintenance' window.
- Select (CL) the [Exit] button.

3-4-8. Setting the Web Console

If the customer don't use Web Console (Storage Navigator), 3-4-8.3 and 3-4-8.4 are not required.

If the customer uses neither Web Console nor SNMP Agent, 3-4-8.1, 2, 3 and 3-4-8.4 are not required.

3-4-8.1. Setting IP Address and Network

When using Web Console from a remote personal computer or using the SNMP Agent function, a connection to an external LAN and a setting of a network is required (See [LOC04-40](#)).

Please setup according to the worksheet which the user's administrator indicated at the time of a new Installation.

Please setup the contents which took the duplicate from a setup on SVP before REPLACE.

NOTE: Don't change connection name. If you do so, Web Console will not work.

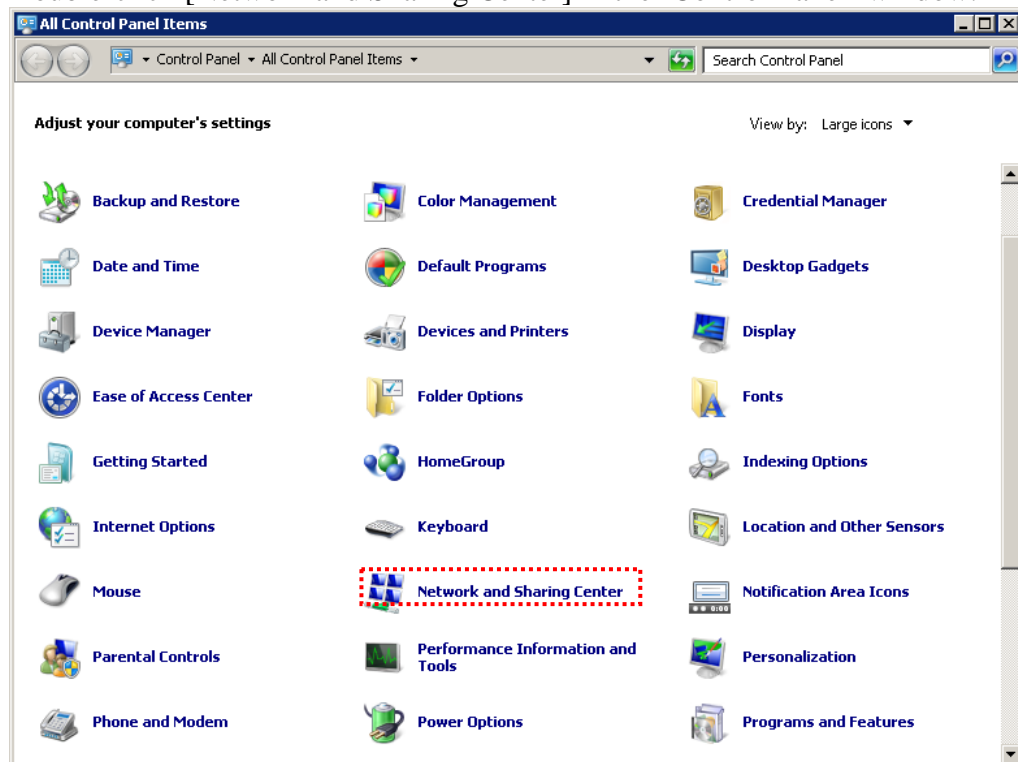
(1) <Setting IP address>

(a) Opening the Control Panel window

Select (DR) [Control Panel] from the [Start] menu.

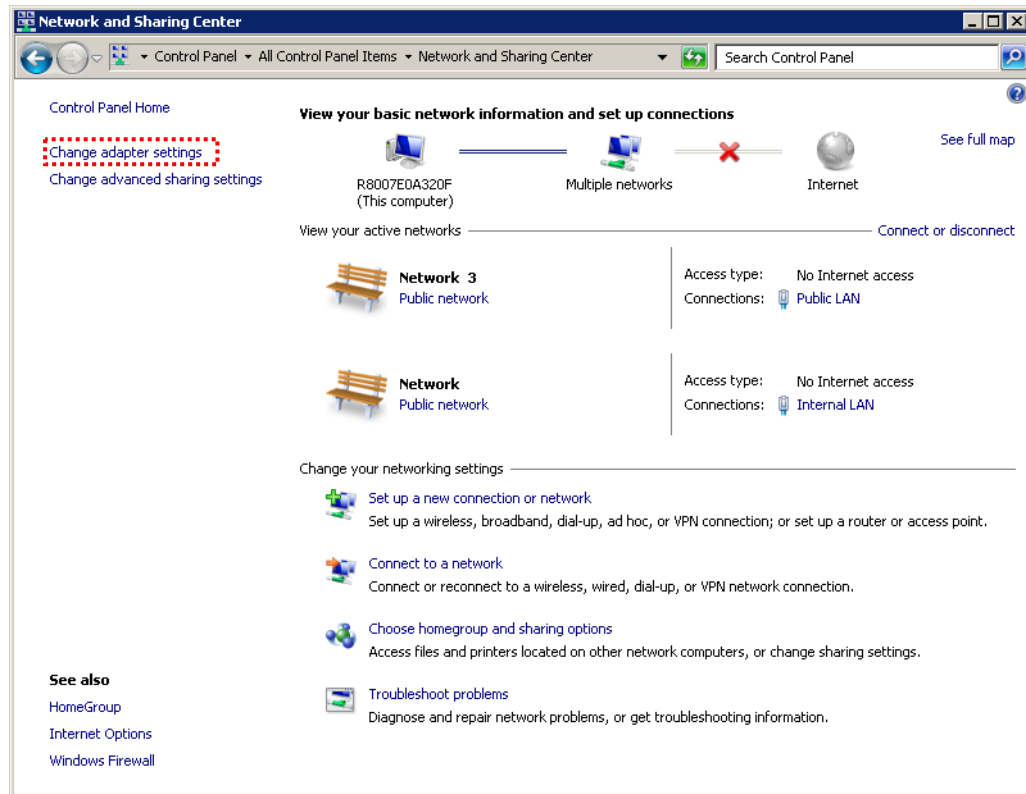
(b) Opening the Network and Sharing Center window

Double-click [Network and Sharing Center] in the 'Control Panel' window.



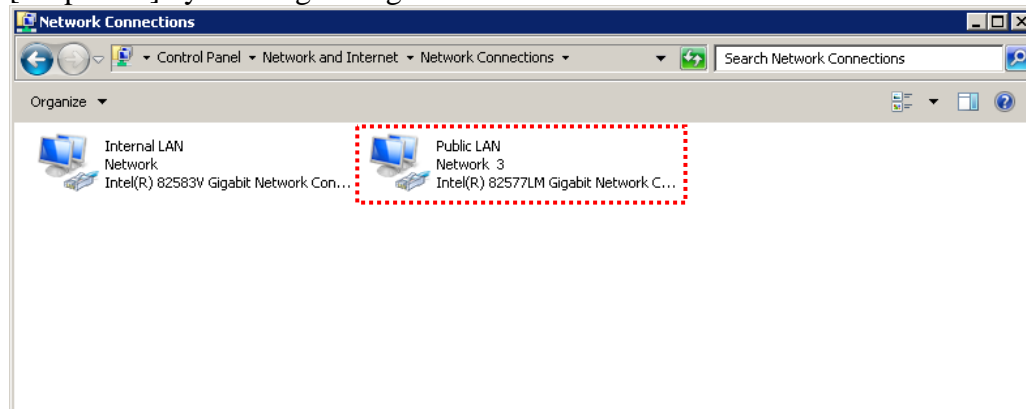
(c) Opening the Network connections window

Select (CL) [Change adapter settings] in the left side of 'Network and Sharing Center' window.

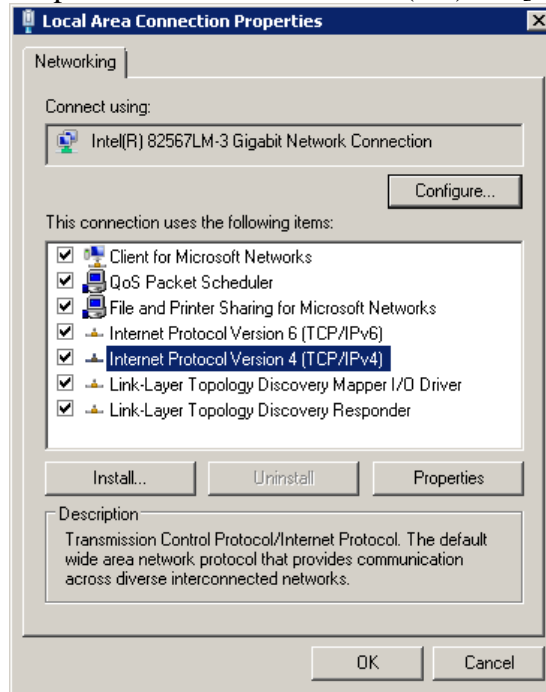


(d) Opening the Public LAN Properties window

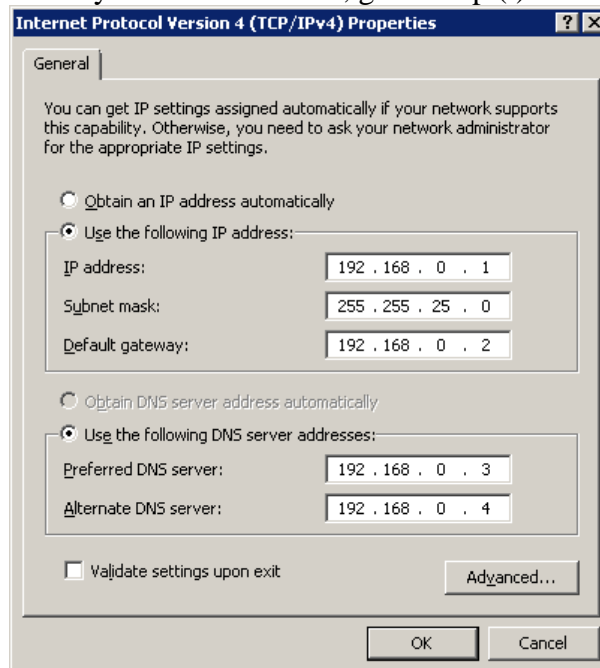
Select (CL) [Public LAN] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.



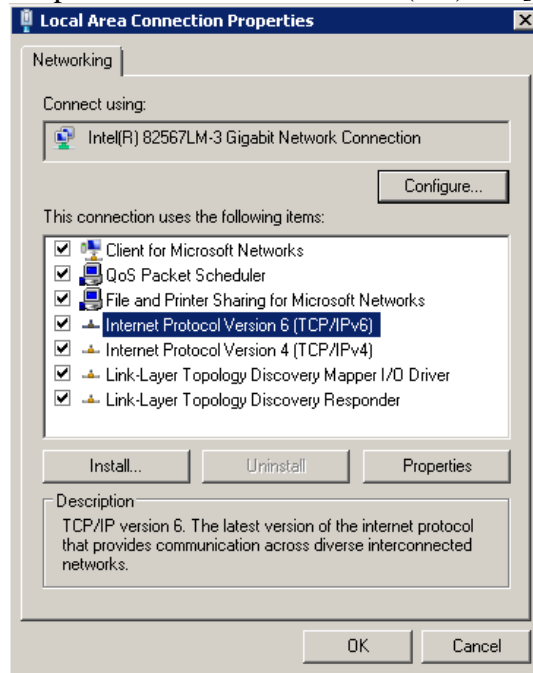
- (e) Opening the Internet Protocol Version 4 (TCP/IPv4) Properties window
Select (CL) [Internet Protocol Version 4 (TCP/IPv4)] in the 'Local Area Connection Properties' window and select (CL) the [Properties] button.



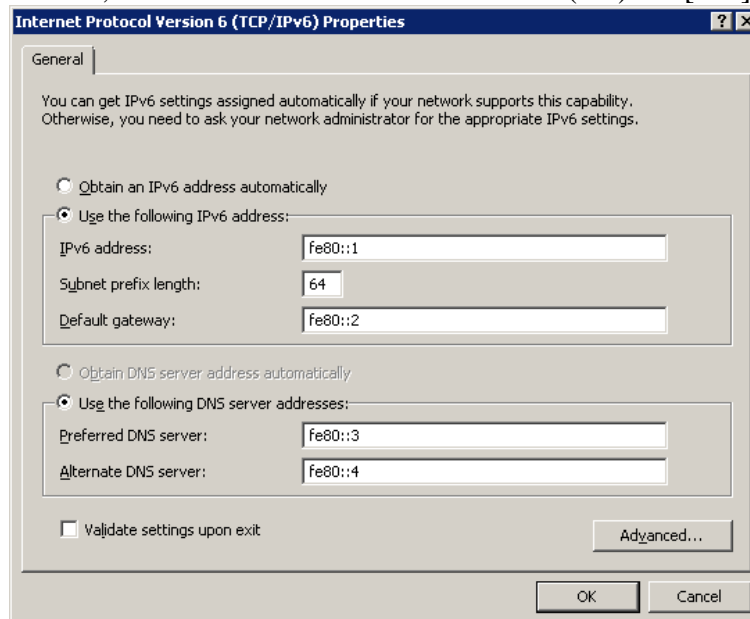
- (f) Setting the external IP address
Set the "IP address", "Subnet mask", "Default gateway", "Preferred DNS server" and "Alternate DNS server" and select (CL) the [OK] button.
When you do not set IPv6, go to Step (i).



- (g) Opening the Internet Protocol Version 6 (TCP/IPv6) Properties window
Select (CL) [Internet Protocol Version 6 (TCP/IPv6)] in the 'Local Area Connection Properties' window and select (CL) the [Properties] button.



- (h) Setting the external IP address
Set the "IPv6 address", "Subnet prefix length", "Default gateway", "Preferred DNS server", "Alternate DNS server" and select (CL) the [OK] button.



- (i) Closing the window
After the setting is completed, select (CL) the [Close] button (In case of no change of IP address, select (CL) [OK] button) in the 'Local Area Connection Properties' window.
Close the 'Network connections' window.

(2) <Setting Network Connection Properties>

Checking whether the setting of the network (setting of Config) must be changed or not. Ask the customer about the setting of the switch (HUB) connected to the SVP. When the case is not the above, terminate the operation by selecting (CL) the [OK] button.

There is a case where the setting must be changed depending on the customer's environment. The case where the change is required is as follows.

(Normally, no setting change is required.)

When the switch (HUB), setting of which is fixed as '100M Full Duplex', is connected to the PC of the SVP.

NOTE: The setting of the SVP made is "Auto Negotiation".

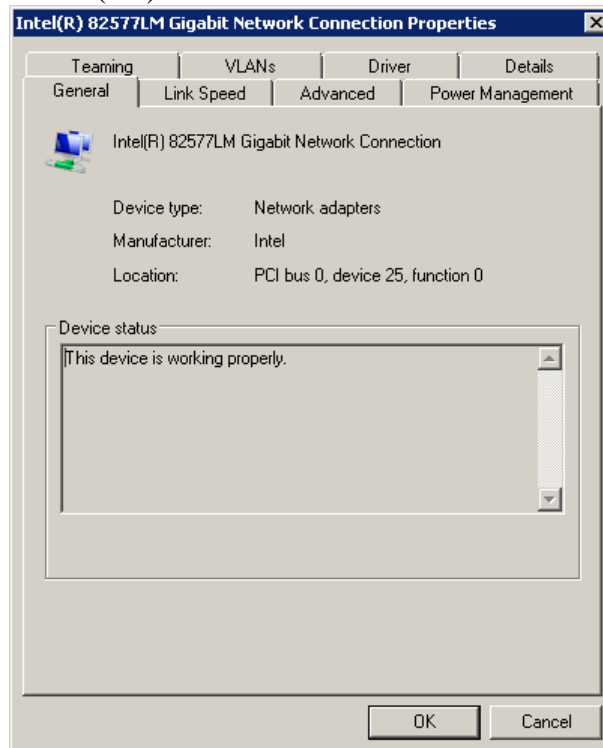
(a) Opening the configuration windows

Select (CL) the [Configure] button in the window for Step (1) (d), Step (1) (g).

(b) Switching the tab

After the [Configure] button is pressed, the following window is displayed.

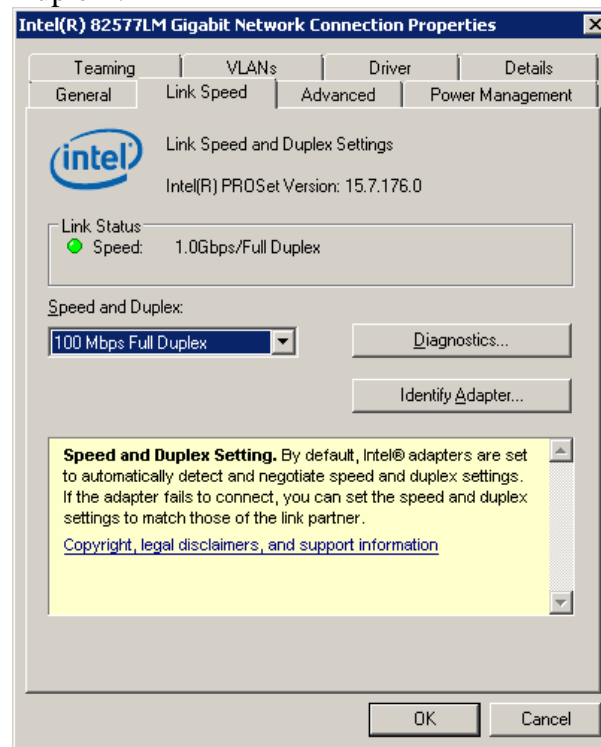
Select (CL) the 'Advanced' tab in the following window.



(c) Setting the Connection Properties

After the 'Advanced' tab is selected, the following window is displayed.

Change the value of 'Speed and Duplex' from 'Auto Detect' to '100Mbps Full Duplex'.



(d) Applying the settings and closing the window

Return the window to 'Public LAN Properties' by pressing (CL) the [OK] button and close the window by pressing the [OK] button.

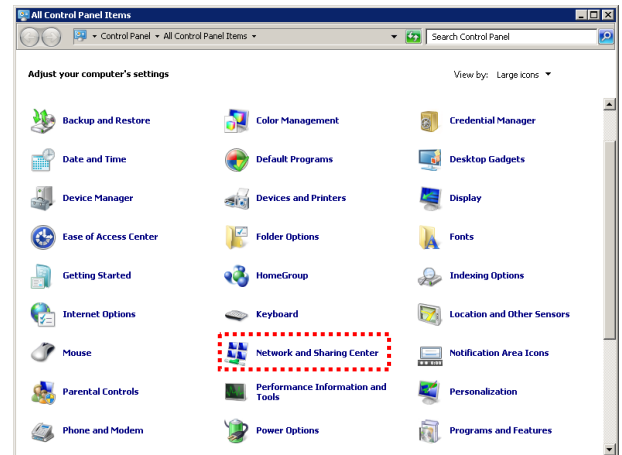
NOTE: When you use Web Console only with the IPv6 connection, set it referring to next step.

(3) <Setting only with IPv6>

Perform the following when using Web Console only with IPv6.

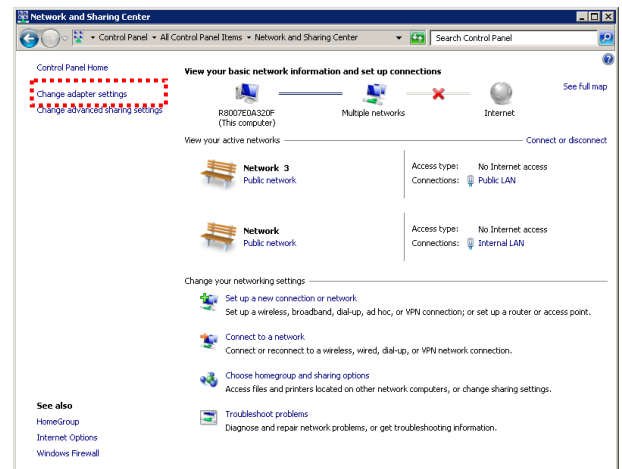
(a) Launch the Network and Sharing Center

Select (CL) [Start]-[Control Panel] and launch (double-click) the “Network and Sharing Center”.



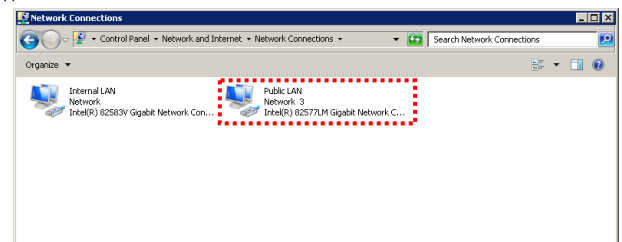
(b) Launch the Network Connections

Select (CL) “Change adapter settings”.



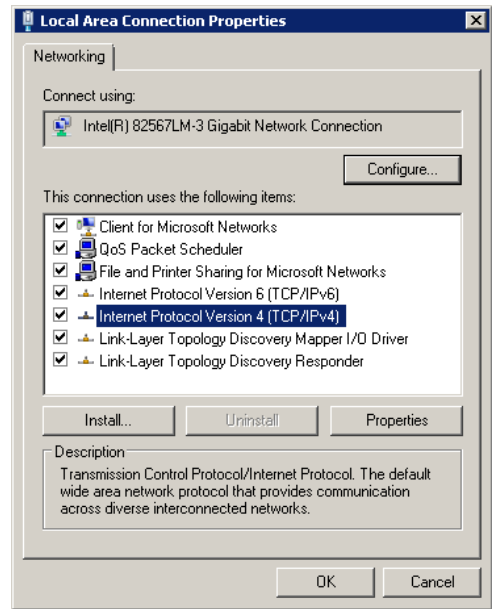
(c) Open the Connection Properties window

Right-click on the icon of “Public LAN” and select “Properties” from the displayed popup menu. Select (CL) “Continue” when the confirmation window is displayed.



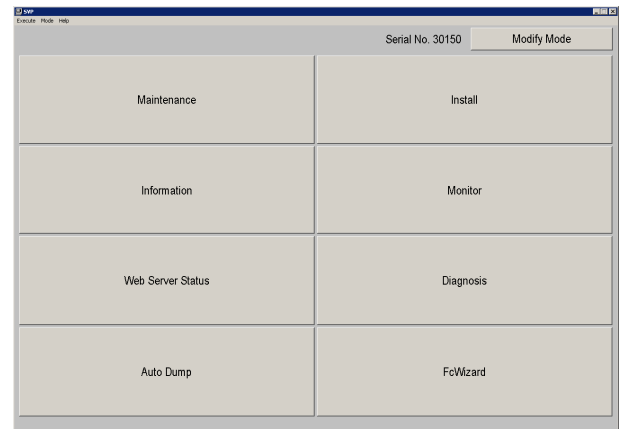
(d) Set properties

When the property is displayed, uncheck the checkbox of “Internet Protocol Version 4 (TCP/IPv4)” in the list. Select (CL) [OK] and close the window.



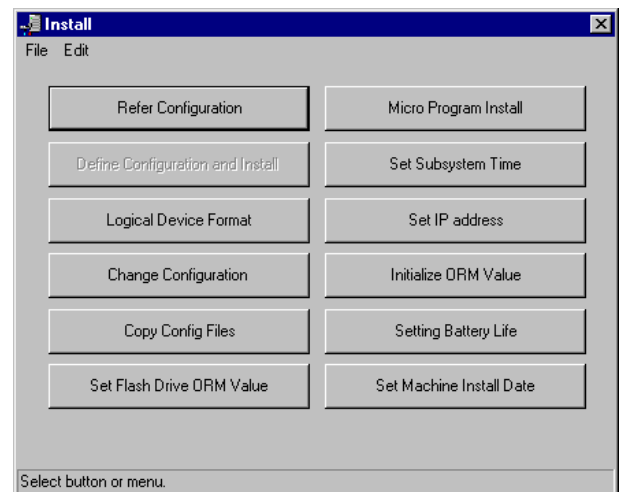
(e) Operate SVP window

Change to [Modify Mode].



(f) Open Install window

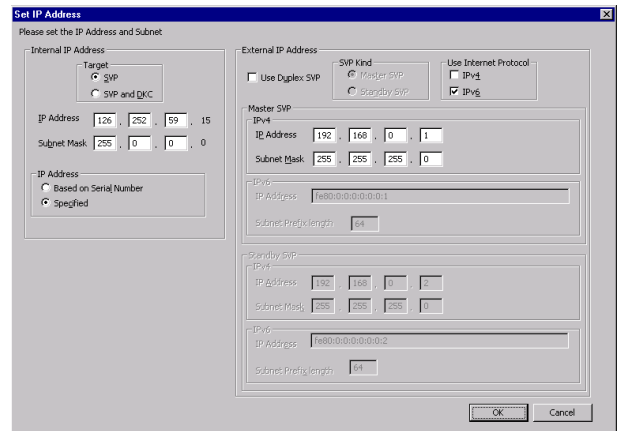
Select (CL) [Install] from [SVP].



- (g) Set SVP properties
 Select (CL) [Set IP address] from the 'Install' window.
 Check the checkbox of IPv4 of "Use Internet Protocol".
 Uncheck the checkbox of IPv4 of "Use Internet Protocol".

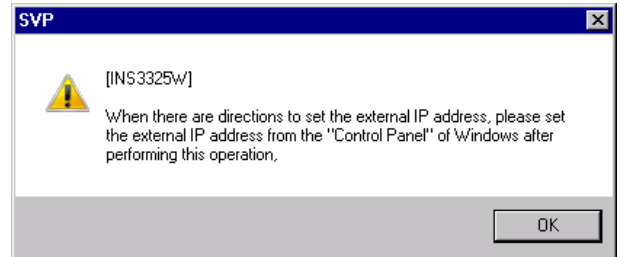
Select (CL) the [OK] button.

NOTE: Please select [OK] absolutely (CL). And, [Cancel] is not reflected in the setting.



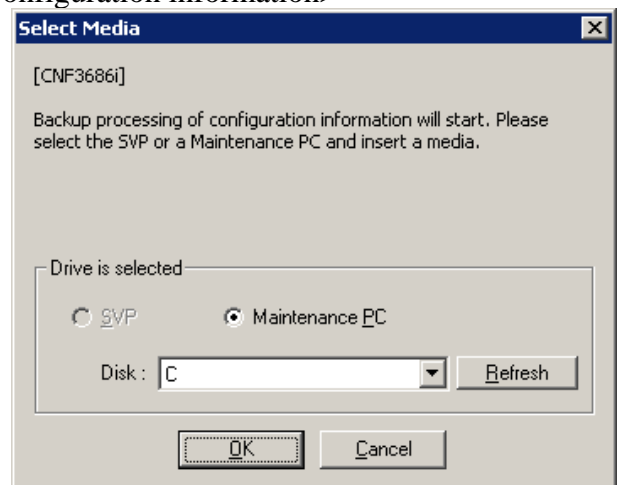
- (h) <Making sure of the setting of the external IP address>

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



- (i) <Inserting the medium containing the configuration information>

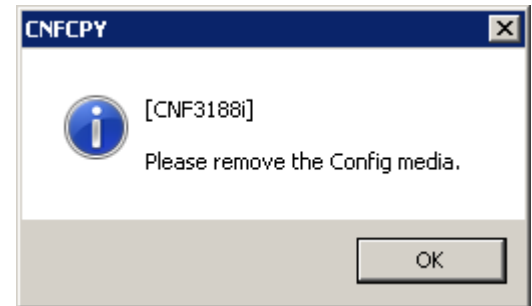
Insert the medium containing the configuration information in the specified drive and select (CL) the [OK] button.



(j) <Taking out the Config media>

When the copying of the configuration information is completed, a message, "Please remove the Config media." is displayed.

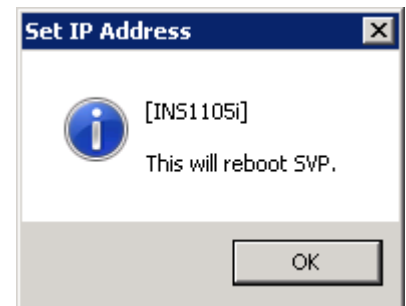
Take out the medium containing the configuration information and select (CL) the [OK] button.



(k) <Making sure of the restart of the SVP>

Select (CL) the [OK] button.

The SVP is disconnected from the Maintenance PC. After waiting for about five minutes, reconnect the SVP that has been replaced to the Maintenance PC.



3-4-8.2. Setting SNMP

When you replace Standby SVP, go to Step 3-4-8.4.

- ① Please perform the following procedure, when you use SNMP Agent.
 1. Select (CL) the following menu item on Web Console.
[Settings]-[Environmental Setting]-[Edit Alert Settings]
 2. Select (CL) [SNMP] tab.
 3. Select (CL) [Extension SNMP] to [Enable], and then select (CL) [Finish] button.
 4. Select (CL) [Apply] button after checking the settings on the confirmation window.
- ② Please perform the following procedure, when you don't use SNMP Agent.
 1. Select (CL) the following menu item on Web Console.
[Settings]-[Environmental Setting]-[Edit Alert Settings]
 2. Select (CL) [SNMP] tab.
 3. Select (CL) [Extension SNMP] to [Disable], and then select (CL) [Finish] button.
 4. Select (CL) [Apply] button after checking the settings on the confirmation window.
 5. Select (CL) the following menu item on Web Console.
[Settings]-[Environmental Setting]-[Edit Storage System]
 6. Set Storage System Name/Contact/Location again, and then select (CL) [Finish] button.
 7. Select (CL) [Apply] button after checking the settings on the confirmation window.

For details, refer to the chapter on operation of SNMP in “Hitachi SNMP Agent User Guide”.

3-4-8.3. Setting the user account information and the environment setting information

(The setting is not required if the SVP High Reliability Support Kit is set.)

Ask the customer to restore the user account information and the environment setting information of Web Console using the backup which he/she is keeping.

If the backup is not kept, ask him/her to reset it.

Please refer to the descriptions related to the user account and the environmental setting in “Hitachi Command Suite User Guide” or “Hitachi Virtual Storage Platform G1000 Mainframe System Administrator Guide” for the restoration method and the setting method.

3-4-8.4. Setting Audit Log

When the customer is using the Syslog function of Audit Log or the FTP transfer function, request the customer to restore it by using the backup that he/she is keeping.

If the backup is not kept, ask him/her to reset it.

Please refer to the descriptions related to the audit log files in “Hitachi Audit Log User Guide”, and the descriptions related to the restoration of the configuration files in “Hitachi Virtual Storage Platform G1000 Mainframe System Administrator Guide” for the restoration method and the setting method.

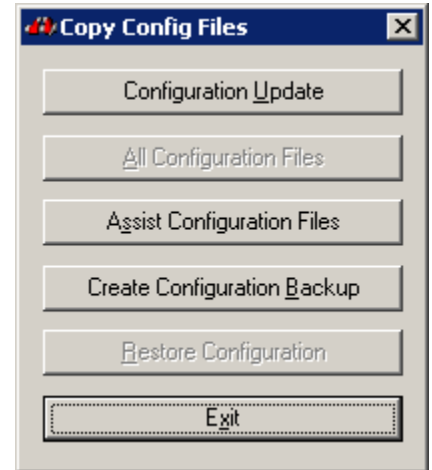
3-5. Backing Up the Configuration Information

In the case where SVP High Reliability Support Kit is not set and where SVP High Reliability Support Kit is set and the Master SVP has been replaced, make a backup of the configuration information, go to (1).

In the case where SVP High Reliability Support Kit is set and the Standby SVP has been replaced, go to 3-6.

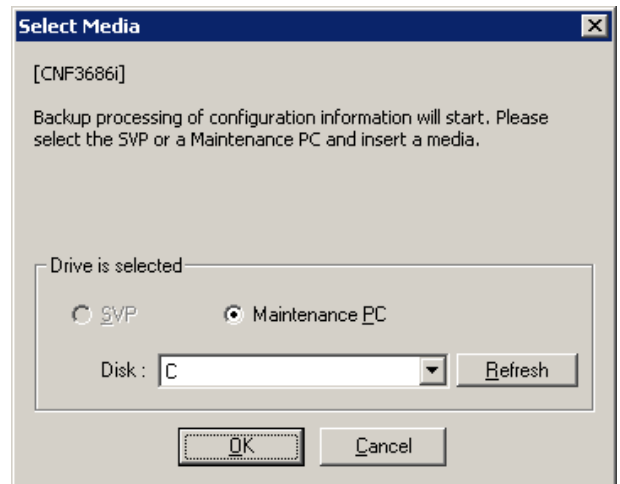
- (1) Select (CL) [Install] in the 'SVP' window and select (CL) [Copy Config Files] in the 'Install'.

- (2) Select (CL) [Create Configuration Backup] in the 'Copy Config Files'.

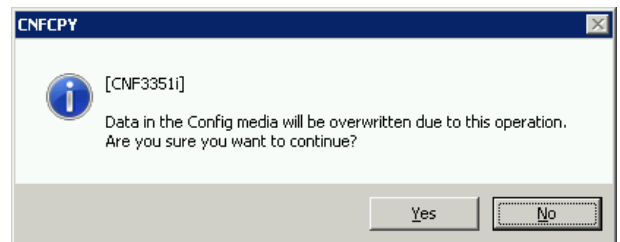


- (3) Execute an operation for backing up the configuration information.
Prepare the removable media for backup and insert the media.
Please select (CL) the [Refresh] button, and update drive information.
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see Step 3-5-1.

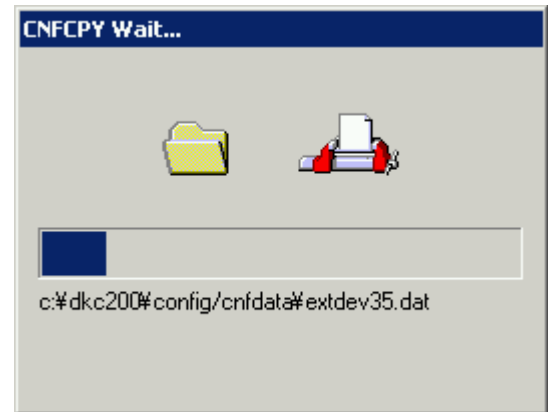


- (4) When you want to continue the process, select the [Yes] button. When the backup to the Config media is not necessary, select the [No] button.



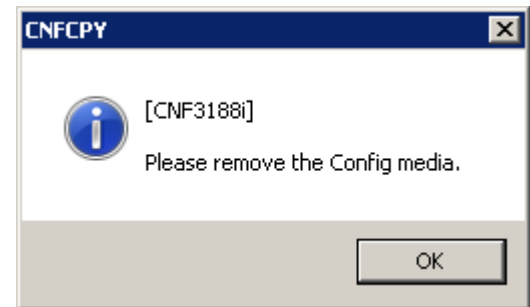
(5)

Backup the configuration information to the Config media for backup. While this operation is being done, the 'CNFCPY Wait...' window is displayed.



(6)

After the Config media is pulled out, select (CL) the [OK] in response to the message "Please remove the Config media."



(7)

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

3-5-1. Storing a backup of configuration information (config) to a CD-R

(1)

To store a backup of the config, prepare a blank CD-R.

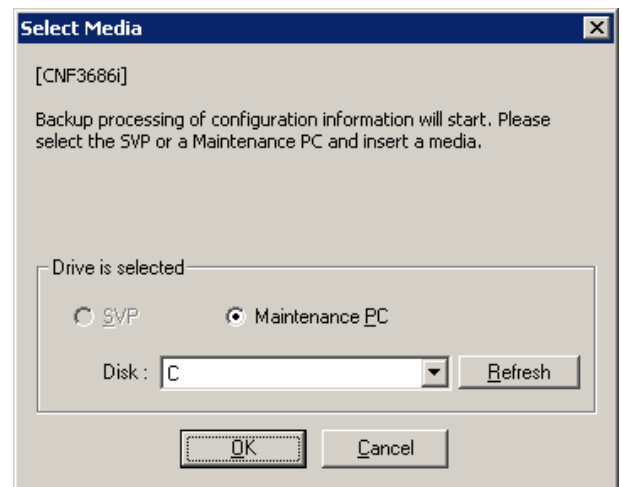
(2)

If the DKC200 directory exists in the root of the hard disk (C drive) of the Maintenance PC to which the backup of the config is stored temporarily, delete the DKC200 directory.

(3)

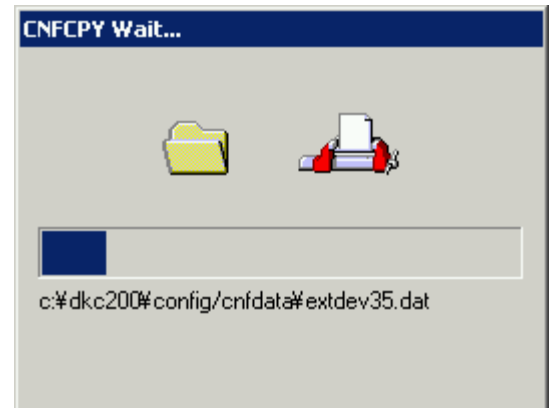
Perform the backup processing of the config.

Select the drive (C drive) prepared in (2).



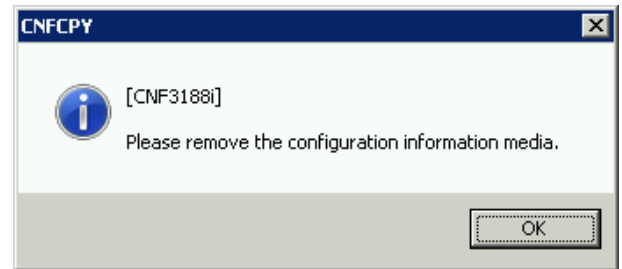
(4)

The backup processing is performed. The 'CNFCPY Wait...' window appears.



(5)

Select (CL) the [OK] button.



(6)

The DKC200 directory exists in the root of the drive (C drive) specified in (3). Use the CD writing tool to copy the DKC200 directory to the root directory of the CD-R, which was prepared in (1).

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[HUBBOX REPLACEMENT PROCESSING - RTC7]

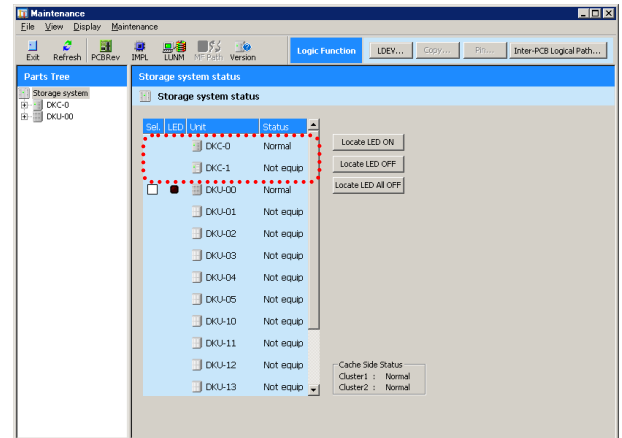
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select HUBBOX (status check)
 - ② Stop environment monitor
 - ③ Specify Replacement
 - ④ Detach HUBBOX
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of HUBBOX replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

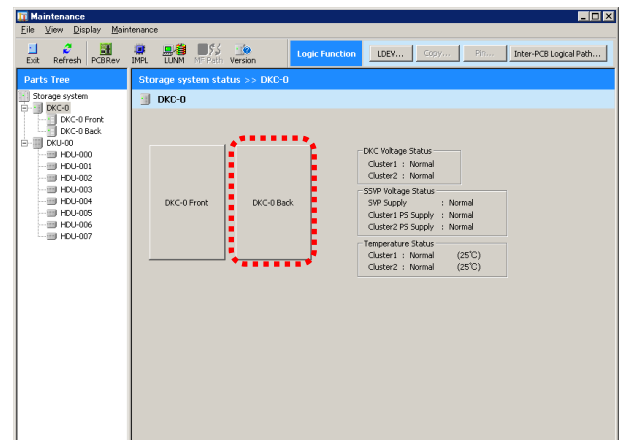
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



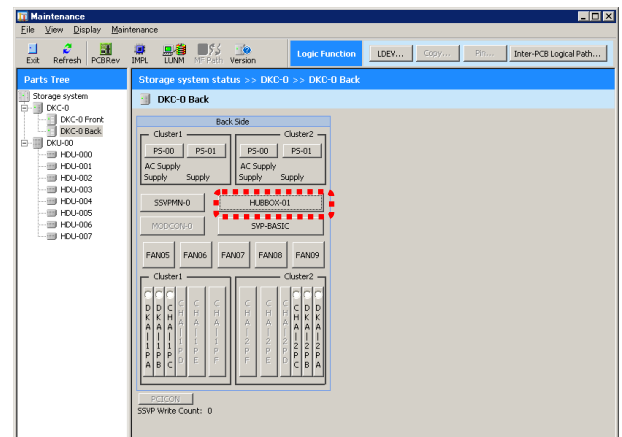
1-2. <DKC window>

Select (CL) [DKC-n Back].



1-3. <Specify HUB BOX>

Select (CL) [HUBBOX-nn].



1-4. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

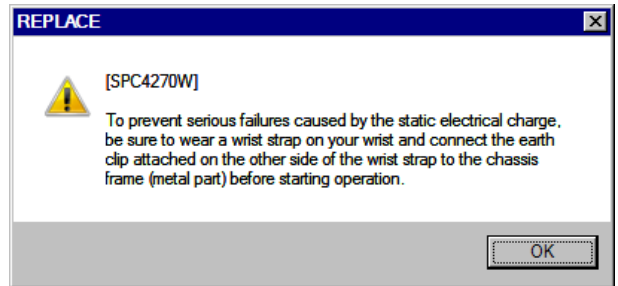
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

A window shown on the right is displayed.
Select (CL) [Execute].



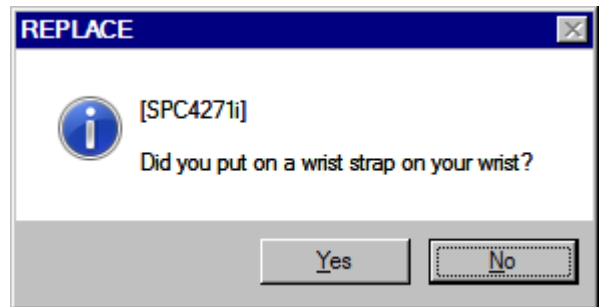
1-5. <Wear a wrist strap>

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



“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.

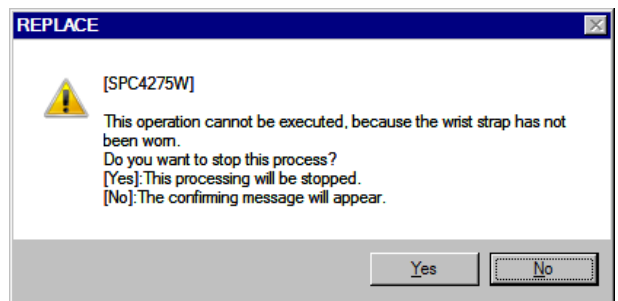


“This operation cannot be executed, because the wrist strap has not been worn.

Do you want to stop this process?

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.” is displayed.

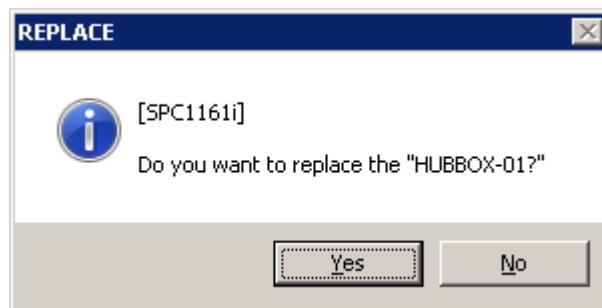


When the processing will be stopped, select (CL) [Yes].

1-6. <Check beginning of HUBBOX Replacement>

(HUBBOX-01)

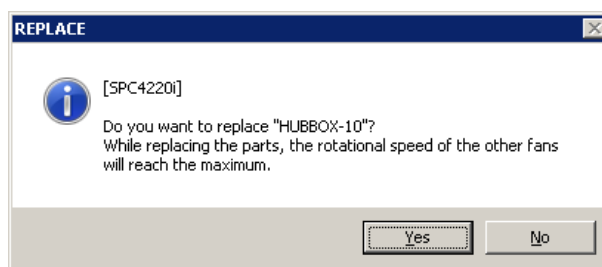
Select (CL) [Yes] in response to “Do you want to replace the “HUBBOX-01?””.



(Eg. HUBBOX-01)

(HUBBOX-10, HUBBOX-11)

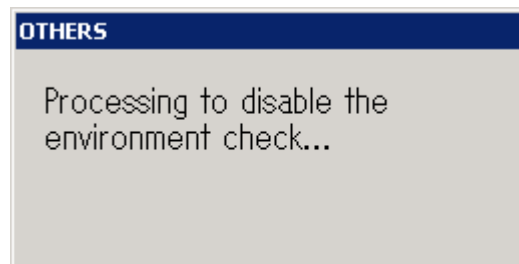
Select (CL) [Yes] in response to “Do you want to replace “HUBBOX-nn”? While replacing the parts, the rotational speed of the other fans will reach the maximum.”.



(Eg. HUBBOX-10)

1-7. <Check environment monitor stopped state>

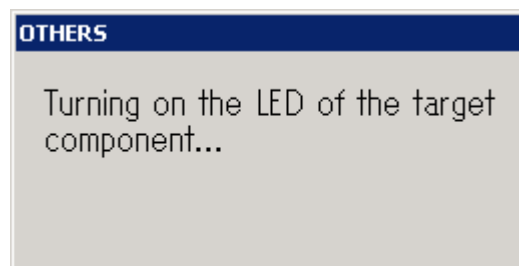
The message “Processing to disable the environment check...” is displayed.



1-8. <Processing before exchanges>

(For HUBBOX-10 or HUBBOX-11)

The message “Turning on the LED of the target component...” is displayed.

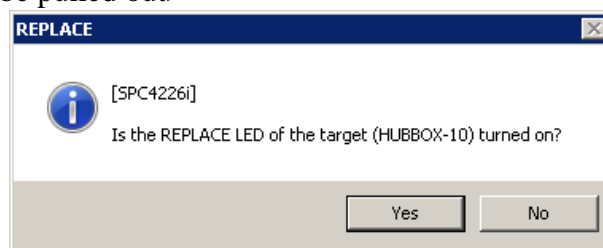


1-9. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (HUBBOX-nn) turned on?” is displayed.

When the LED on the PCB to be pulled out is on, select (CL) [Yes] and go to Step 1-11.

When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 1-10.



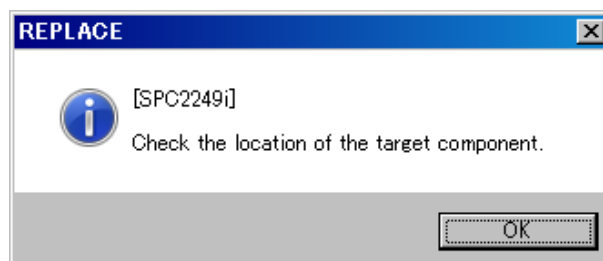
(Eg. HUBBOX-10)

1-10. <Making sure of the HUBBOX location>

The message “Check the location of the target component.” is displayed.

See the “2. HARDWARE REPLACEMENT PROCESSING”.

After making sure of the HUBBOX location, select (CL) [OK] and go to Step 1-11.

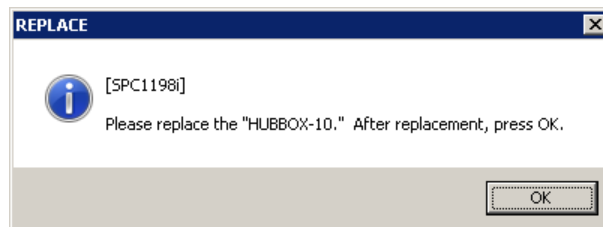


1-11. <Check beginning of HUBBOX Replacement>

The message “Please replace the “HUBBOX-nn.” After replacement, press OK.” is displayed.

(Reply with [OK] after replacing the special part.)

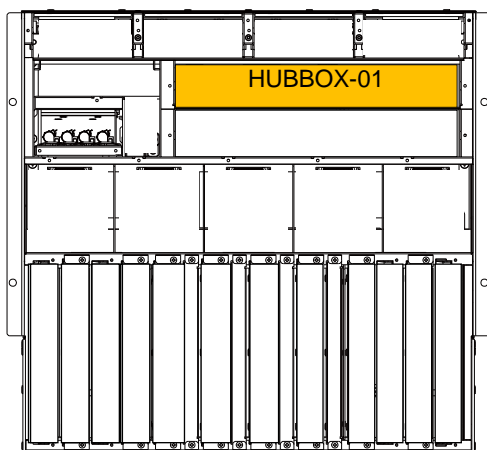
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



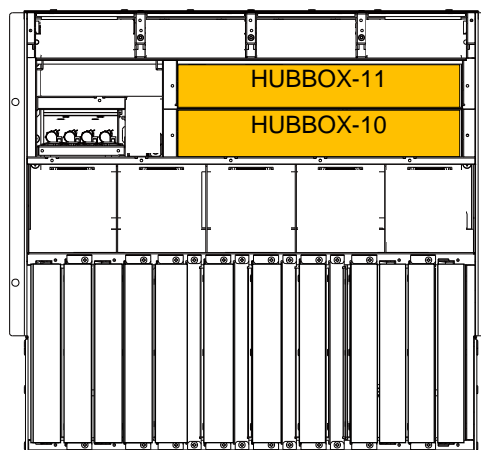
(Eg. HUBBOX-10)

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of DKC	1	HUBBOX	



Rear View of
DKC-0



Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	Replacement of HUBBOX
-----	-----------------------

2-1-1. Replace the HUBBOX.

- a. Check that the Shut Down LED is on.
- b. In case that the replacing HUBBOX is the HUBBOX-10, remove the LAN cable (P83).
In case that the replacing HUBBOX is other than the HUBBOX-10, go to the procedure c.
- c. Loosen the two screws on the front of the HUBBOX.
- d. Open the levers of the HUBBOX outward and remove the failed HUBBOX.
- e. Insert the spare HUBBOX until its lever edges reach the DKC.

NOTE: Confirm the vertical direction of the HUBBOX. If the direction was wrong, the HUBBOX will not be ON.

- f. Close the levers inward and fully insert the spare HUBBOX.
- g. Tighten the two screws.
- h. If the LAN cable was removed in the procedure b, connect the LAN cable to the HUBBOX.

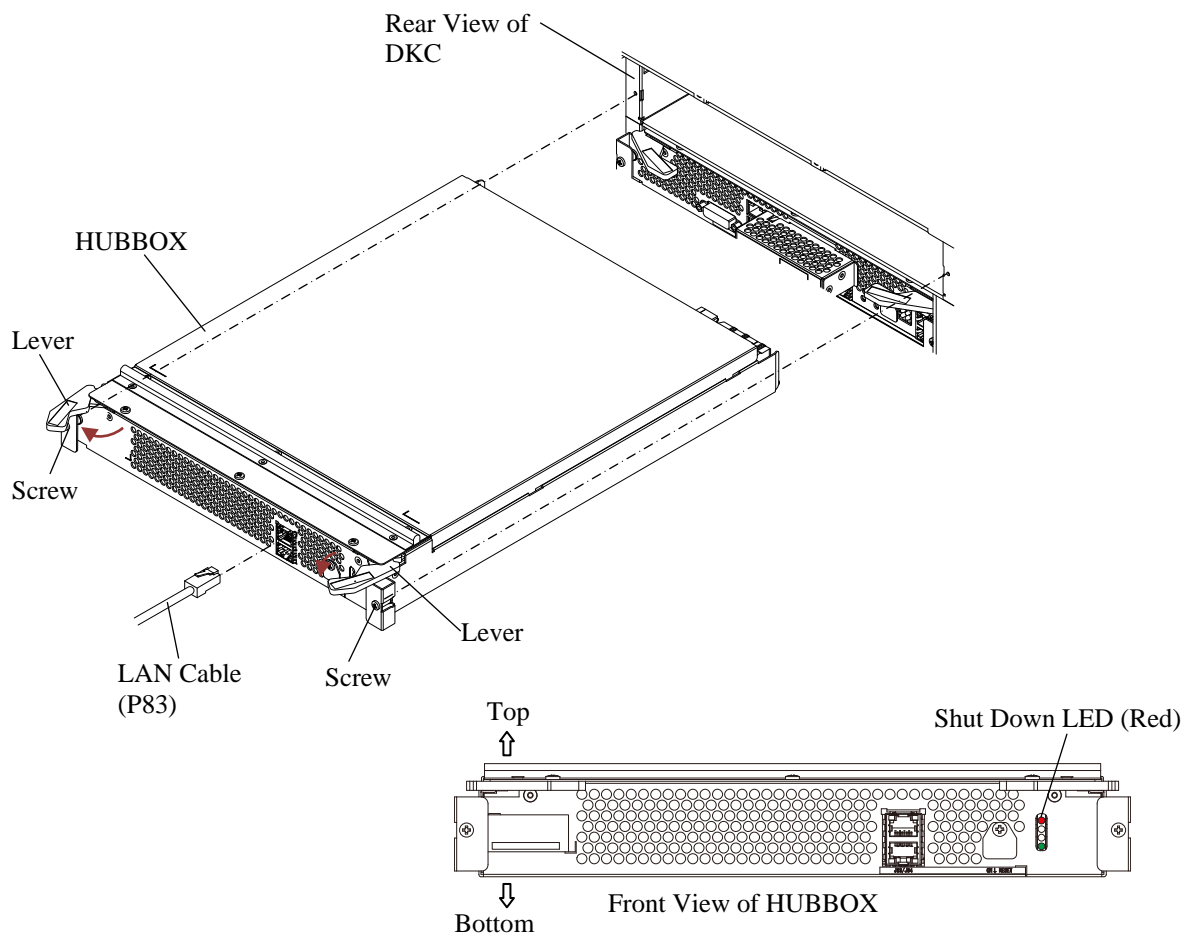


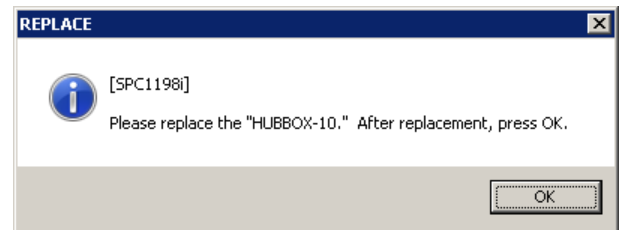
Fig. 3.22.2-1 Replacement of HUBBOX

2-1-2. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of HUBBOX>

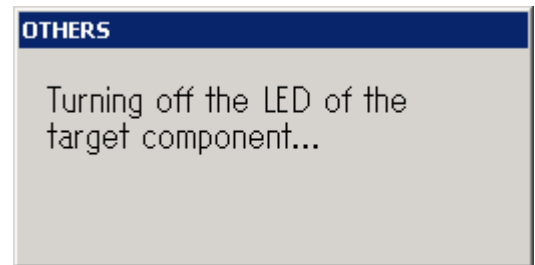
Select (CL) [OK] in response to “Please replace the “HUBBOX-nn.” After replacement, press OK.”.



(Eg. HUBBOX-10)

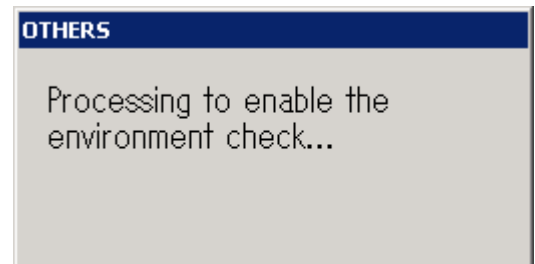
3-2. <Processing after exchanges>

The message “Turning off the LED of the target component...” is displayed.



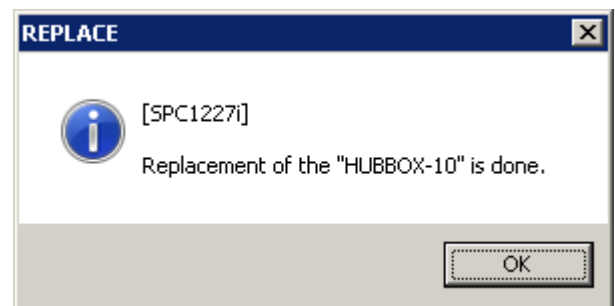
3-3. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-4. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “HUBBOX-nn” is done.”



(Eg. HUBBOX-10)

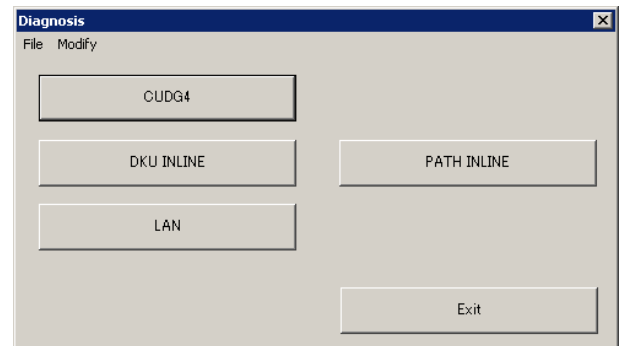
3-5. <Activating Diagnosis>

Select (CL) [Diagnosis].

3-6. <Activating LAN>

Select (CL) [LAN].

(The screen is changed to the LAN Check menu screen.)



3-7. <Starting LAN Check>

Select (CL) [Start] in the 'LAN Check' window.

<Supplementary explanation>

Although an installed processor is set to be default to execute a hardware diagnosis, all processors can be selected.

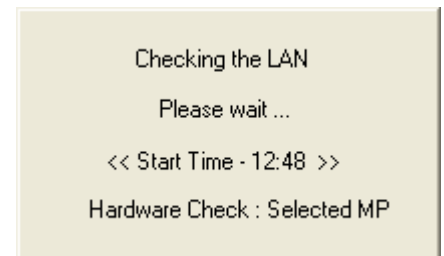
Installed processor : Select (CL) [Target MP] and then select (DR) [Equipped MP].

All processors : Select (CL) [Target MP] and then select (DR) [All MP].



3-8. <Displaying Wait message>

The Wait message is displayed. The screen will change to the result display screen in a few minutes.



3-9. <Displaying result>

(1) Adapter status display

When the Adapter button is selected, the screen is changed to the MPB status screen.

The screen is returned to the LAN Check menu screen by selecting (CL) [OK].

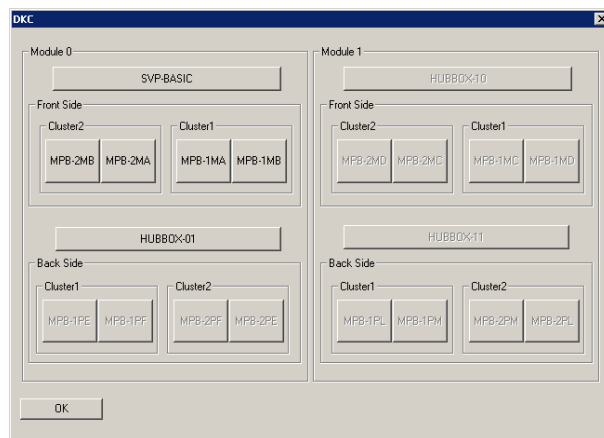
[Explanation on statuses]

The status is shown by the appearance of the button as follows:

Black : The test object is normal.

Blinking : The test object is abnormal.

Gray : The test object is not installed.



(2) MPB status display

When the MPB button is selected, the screen is changed to the detailed status screen.

The screen is returned to the adapter status screen by selecting (CL) [OK].

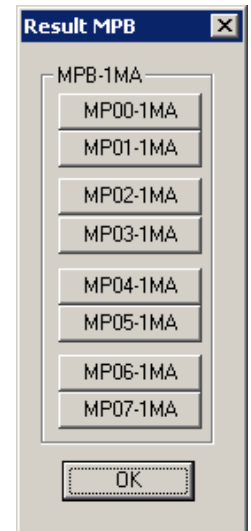
[Explanation on statuses]

The status is shown by the appearance of the MPB button as follows:

Black : The concerning MPB is normal.

Blinking : The test object is abnormal. However, for the MPB which was normal at the time of an FF-Ping, “#” is indicated in front of the MPB name.

Gray : The test object is not installed.



[Supplemental explanation]

When the test object is not installed in the state that the hardware is abnormal:

The concerning MPB is indicated in gray.

When the test object is not installed in the state that the hardware is normal:

The indication of the concerning MPB is grayed and blinks.

When the test object is installed by an FF-Ping:

A character “#” is indicated in front of the MPB name, and the name indication blinks.

When the test object is connected by an FF-Ping but not installed:

A character “#” is indicated in front of the MPB name, and the name indication is grayed and blinks.

(3) Detailed status display

Detailed information on the concerning MP is displayed.

The screen is returned to the MP status screen by selecting (CL) [OK].

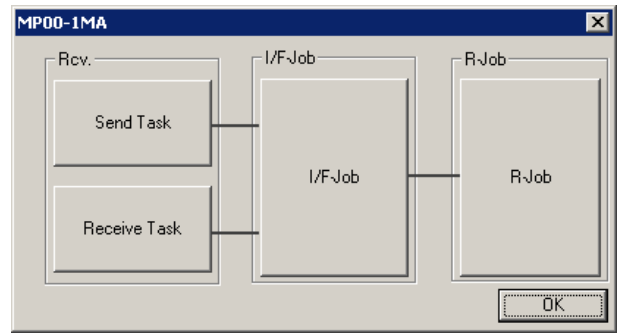
[Explanation on statuses]

The test result is shown by the appearance of the Task button as follows:

Black : The MP is normal from the viewpoint of software.

Blinking : The blinking part has a problem.

Gray : Not diagnosed yet.



[Supplemental explanation]

There are five types of status as shown below:

When the hardware is abnormal : Rcv., I/F-JOB, and R-JOB are indicated in gray.

When the software is normal : Rcv., I/F-JOB, and R-JOB are indicated in black.

When the Rcv. is abnormal : Rcv. indication blinks, and I/F-JOB and R-JOB are indicated in gray.

When the I/F-JOB is abnormal : Rcv. is indicated in black, I/F-JOB indication blinks, and R-JOB is indicated in gray.

When the R-JOB is abnormal : Rcv. and I/F JOB are indicated in black and R-JOB indication blinks.

3-10. <Exiting from LAN Check>

Select (CL) [Exit] in the 'LAN Check' window.

Go to POST-PROCEDURE ([REP04-01-10](#)).



[Battery REPLACEMENT PROCESSING - RBT1]

— OUTLINE —

1. PRE-PROCESSING of SVP

- ① Check beginning of Battery Replacement
- ② Check battery charge opposite cluster
- ③ Enter the password
- ④ Check with battery storage period
- ⑤ Check the LED blinks
- ⑥ Replacement

2. HARDWARE REPLACEMENT PROCESSING

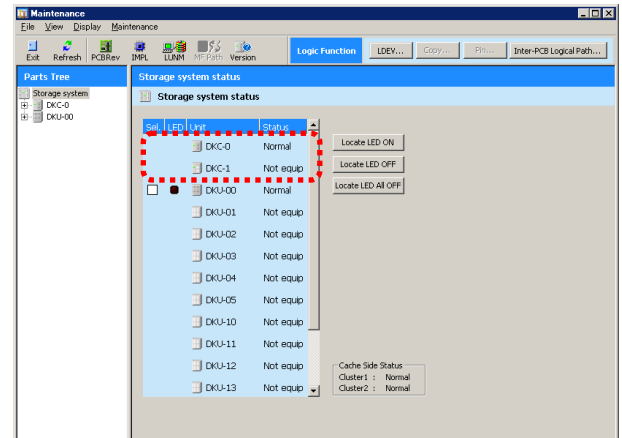
3. POST-PROCESSING of SVP

- ① Check beginning of CACHE Battery Replacement
- ② Check the battery status
- ③ Setting Battery Life
- ④ Check end of replacement

1. PRE-PROCESSING of SVP

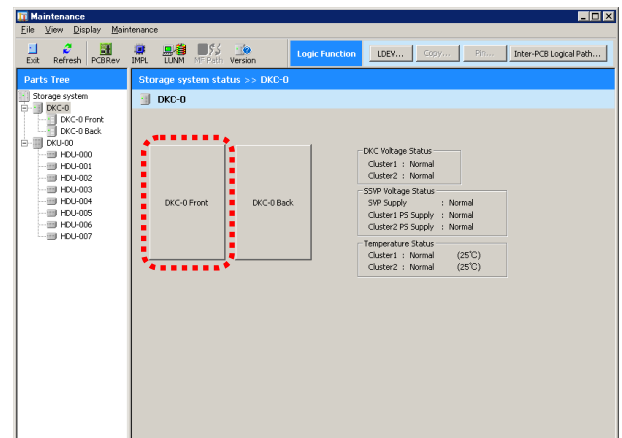
1-1. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.



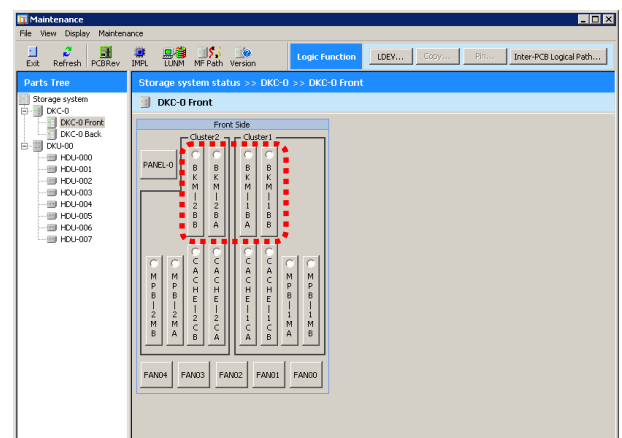
1-2. <DKC window>

Select (CL) [DKC-n Front] in the 'DKC' window.



1-3. <Select BKM>

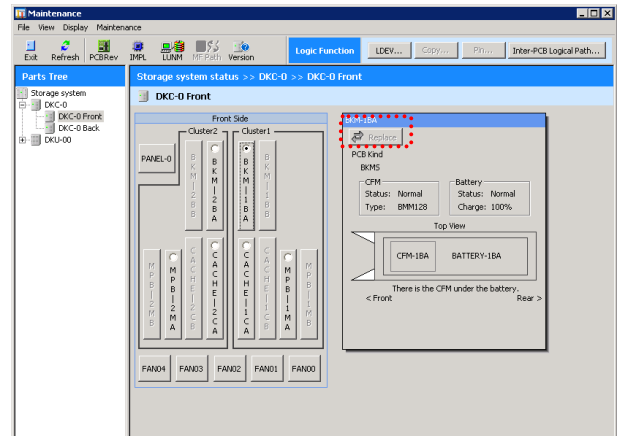
Select (CL) [BKM-nnn].



1-4. <Specify replacement of BKM>

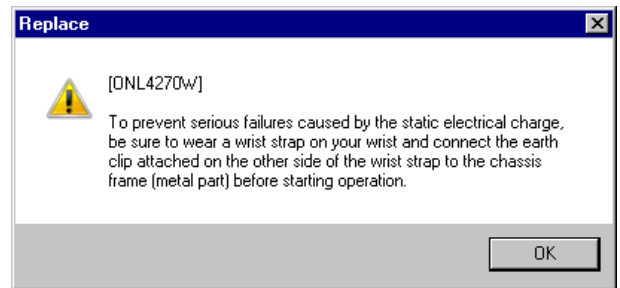
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

Check the status display.
Select (CL) [Replace].



1-5. <Wear a wrist strap>

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

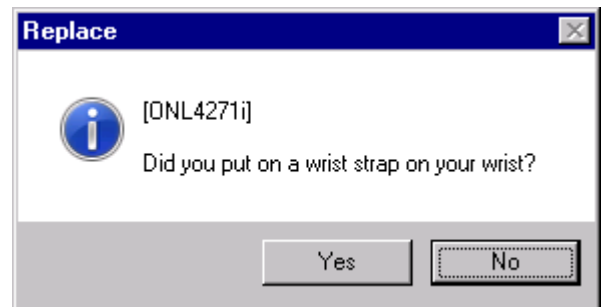


(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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



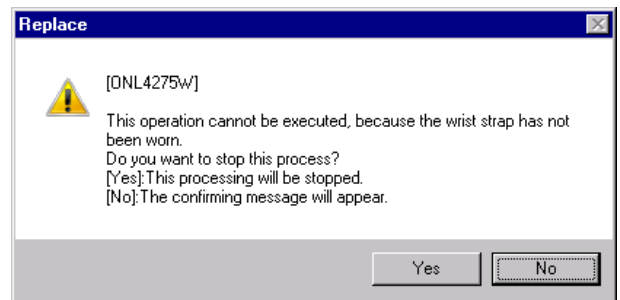
When [No] is selected (CL), go to Step (2).

(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



When [Yes] is selected (CL), returned to Step 1-4.

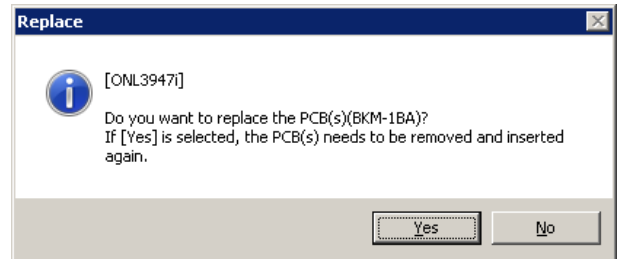
When [No] is selected (CL), returned to Step 1-5.

1-6. <BKM replace>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

Select (CL) [Yes] in response to:

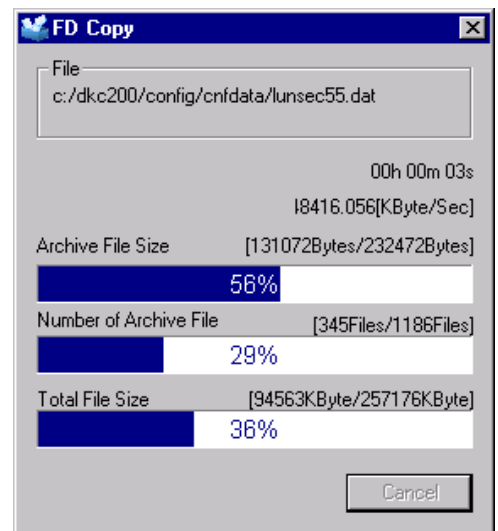
“Do you want to replace the PCB(s)(BKM-
nnn)? If [Yes] is selected, the PCB(s) needs to
be removed and inserted again.”.



1-7. <Compression of the error information>

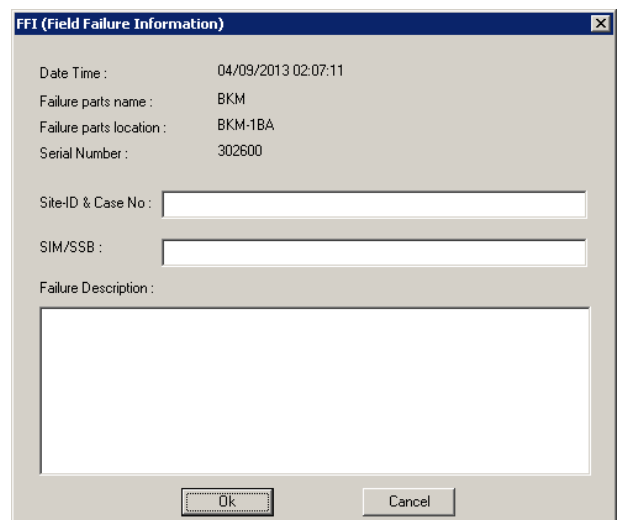
The error information is compressed.

The dialog of FD Copy is displayed.



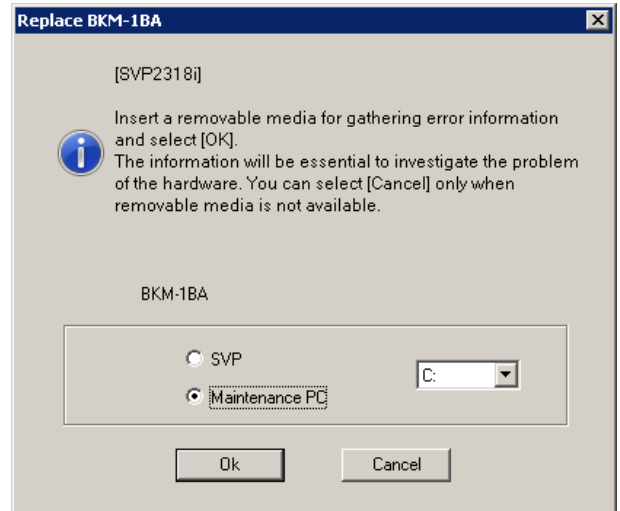
1-8. <Get the error information>

Input the Field Failure Information, and select
(CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

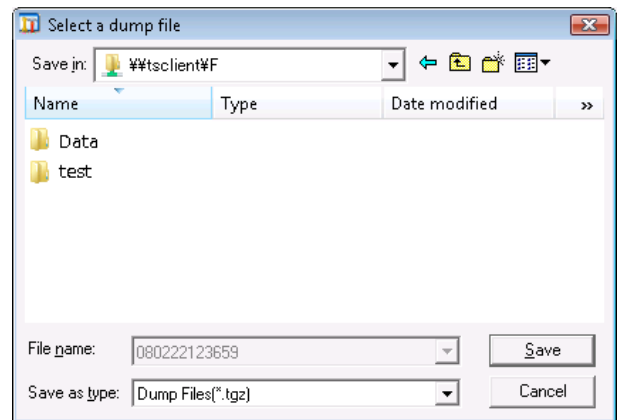
Trouble information is preserved in Maintenance PC connected with SVP. Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format “[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”. (YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

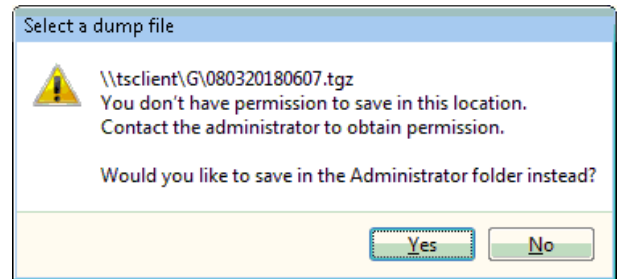
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.



Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

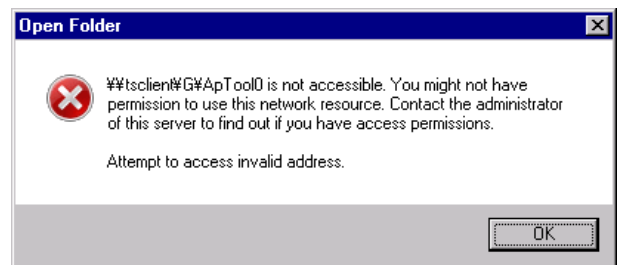
- When the destination media is write-protected.
Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



Please appoint another destination whether you remove write protect when you save it and carry it out.

- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

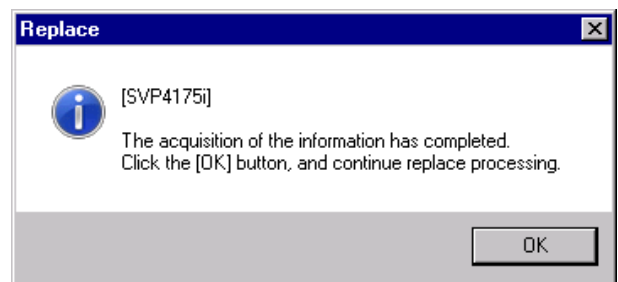
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].



At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.

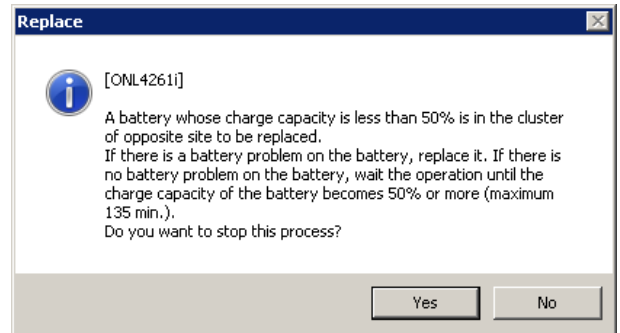


1-9. <Check battery charge opposite cluster>

Automatically, the battery's charge is measured in the opposite cluster.

- More than 50% charge capacity, or “being measured”, go to Step 1-11.

Charge capacity of less than 50%, the following message “A battery whose charge capacity is less than 50% is in the cluster of opposite site to be replaced. If there is a battery problem on the battery, replace it. If there is no battery problem on the battery, wait the operation until the charge capacity of the battery becomes 50% or more (maximum 135 min.). Do you want to stop this process?” is displayed.



If you stop for battery replacement, select (CL) [Yes], returned to Step 1-4.

To continue the replacement battery, select (CL) [No], go to Step 1-10.

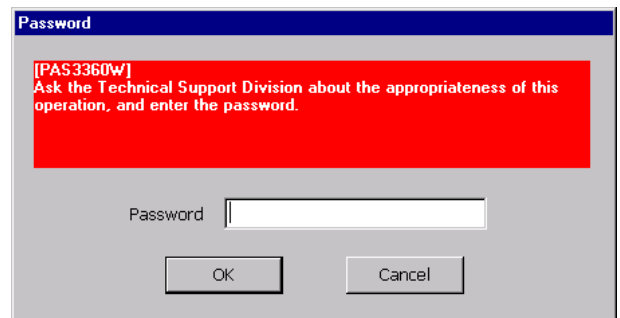
1-10. <Enter the password>

Corresponding to the following message, enter the password and select (CL) the [OK] button.

“Ask the Technical Support Division about the appropriateness of this operation, and enter the password.”

Go to Step 1-11.

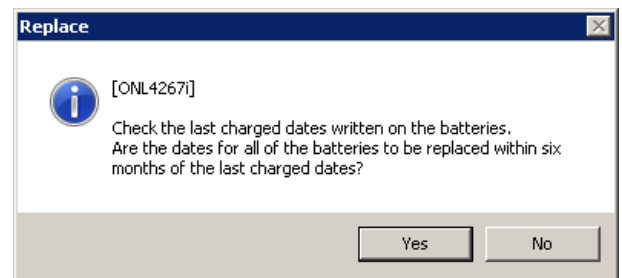
If you stop for a replacement, [Cancel].
Return to Step 1-9.



1-11. <Check with battery storage period>

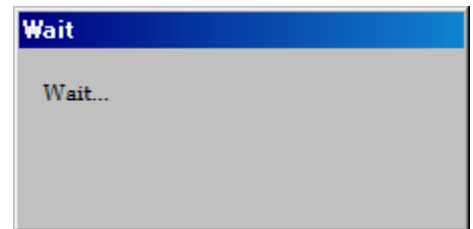
Check the date that is mentioned in the final charge to replace the battery.

“Check the last charged dates written on the batteries. Are the dates for all of the batteries to be replaced within six months of the last charged dates?” is displayed.



- Within six months from the date when the final charge, select (CL) [Yes].
- When more than 6 months from the date of the last charge, select (CL) [No].

And Processing. Go to Step 1-12.



1-12. <Check BKM blocking>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

“The BKM(BKM-nnn) is being blocked...” is displayed.

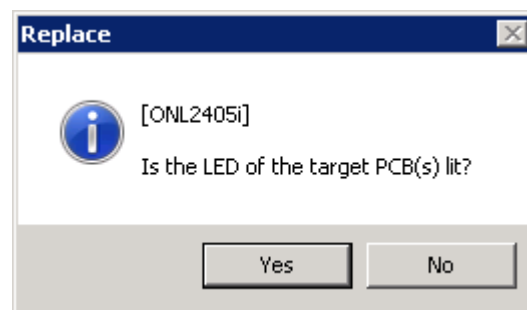
1-13. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

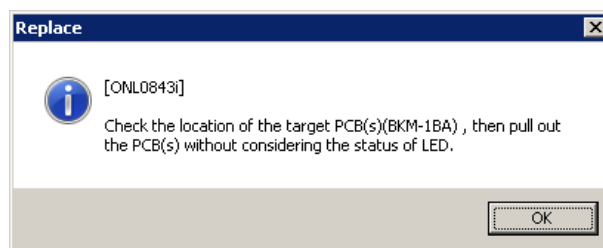
in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(BKM-nnn), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)

NOTE: Select (CL) [OK] after pulling out the PCB.



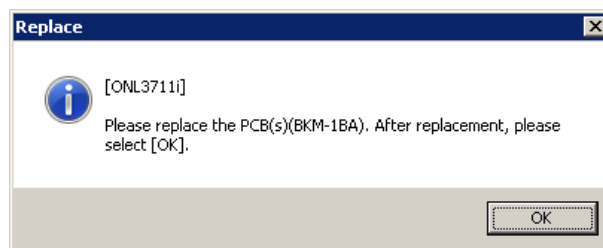
Go to Step 1-14.

1-14. <Beginning of Battery replacement>

“Please replace the PCB(s)(BKM-nnn). After replacement, please select [OK].” is displayed.

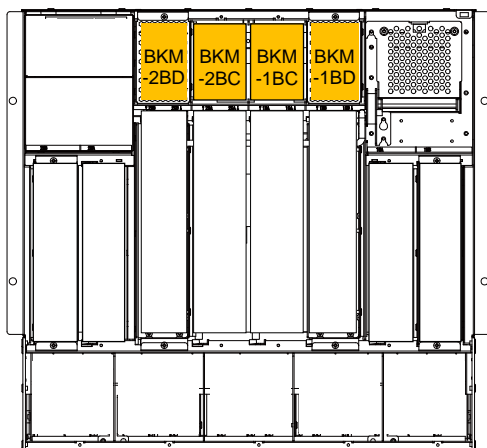
Select (CL) [OK] after replacing the Battery.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

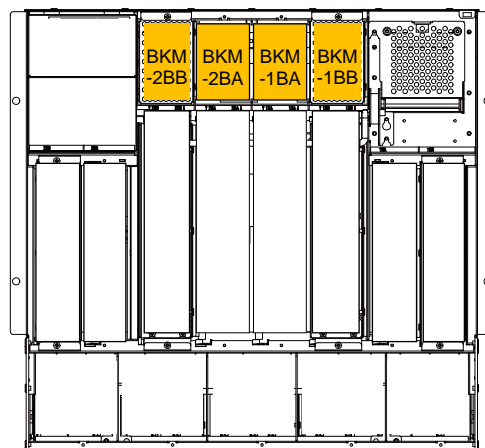


2. HARDWARE REPLACEMENT PROCESSING

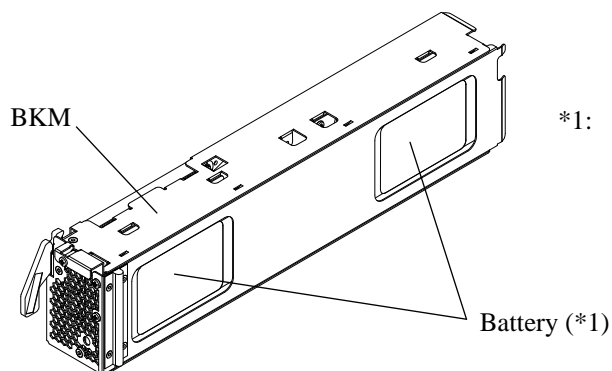
Location	Function Name of Component		Part Name
Inside of BKM	1	Battery (*1)	<ul style="list-style-type: none"> • Cache Battery (Ni-MH) (BKMS) • Cache Battery (Ni-MH) (BKML)



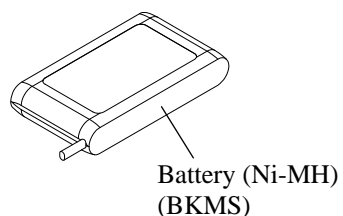
Front View of
DKC-1



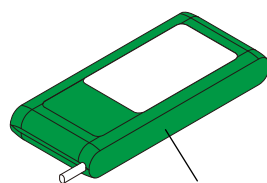
Front View of
DKC-0



*1: When replacing the batteries in the BKM, prepare two spare batteries and replace the two batteries in the BKM with the two spare batteries at the same time.



Battery (Ni-MH)
(BKMS)



Battery (Ni-MH)
(BKML)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of Battery

CAUTION

Watching for short-circuits:

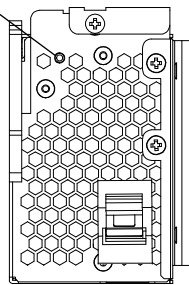
A Short-circuit may cause a fire.

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

2-1-1. Check that the Shut Down LED is on.

a. Check that the Shut Down LED is on. (only hot replace)

Shut Down LED (Red)



Front View of BKM

Fig. 3.23.2-1 Confirmation of Shut Down LED

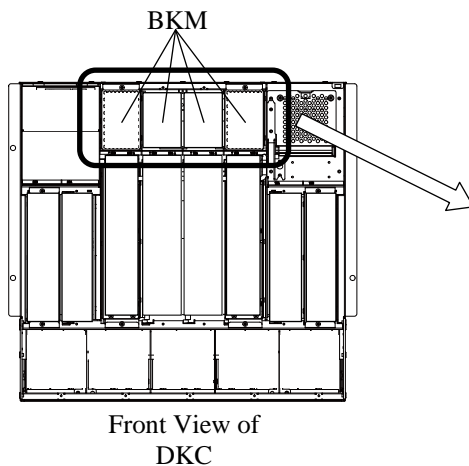
2-1-2. If the cables are attached to the BKMs, move the cables.

If the cables are not attached to the BKMs, go to Procedure 2-1-3.

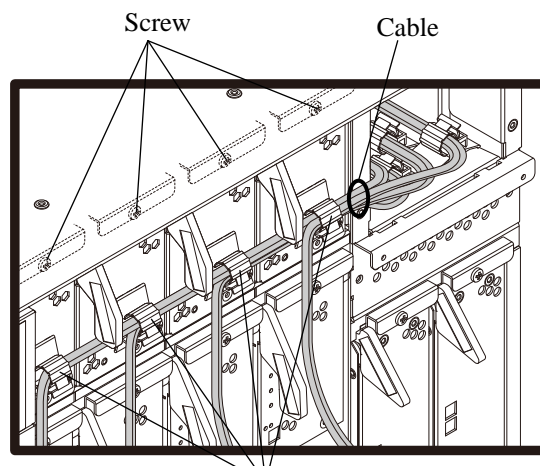
a. Check that the screws to secure the BKMs are tightened.

NOTE: If the screw is loose, the BKM may be extracted when the cables or the locking clamp is moved.

b. Open the four locking clamps and move all the cables to where they cannot obstruct removal of the BKM.



Front View of
DKC



Locking Clamp

Fig. 3.23.2-2 Moving Cables

2-1-3. Replacement of Battery

- a. Remove the screw and remove the BKM.

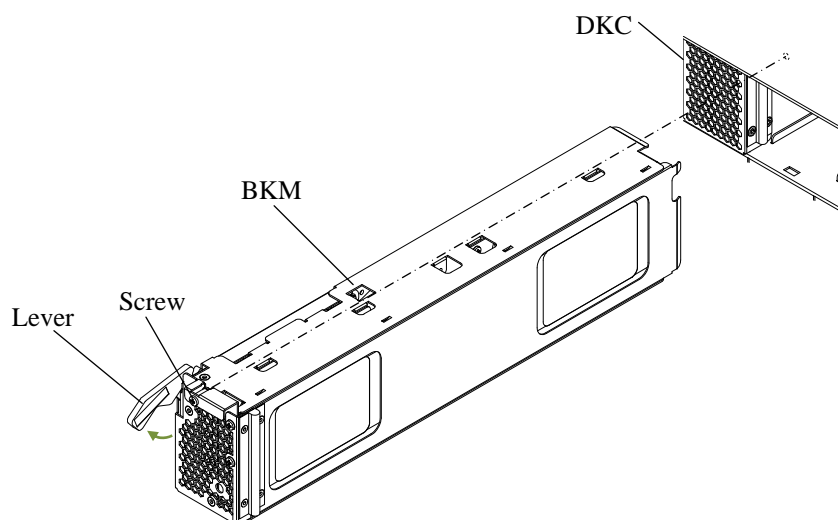
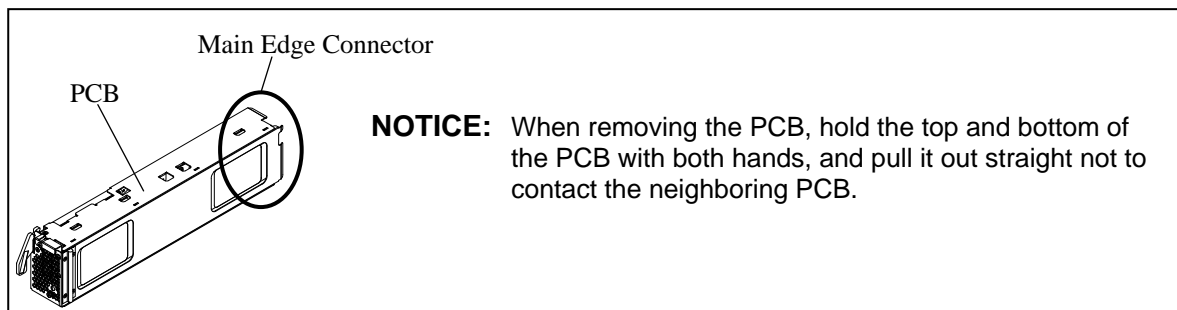


Fig. 3.23.2-3 Removal of BKM

- b. Remove the two screws and remove the cover.

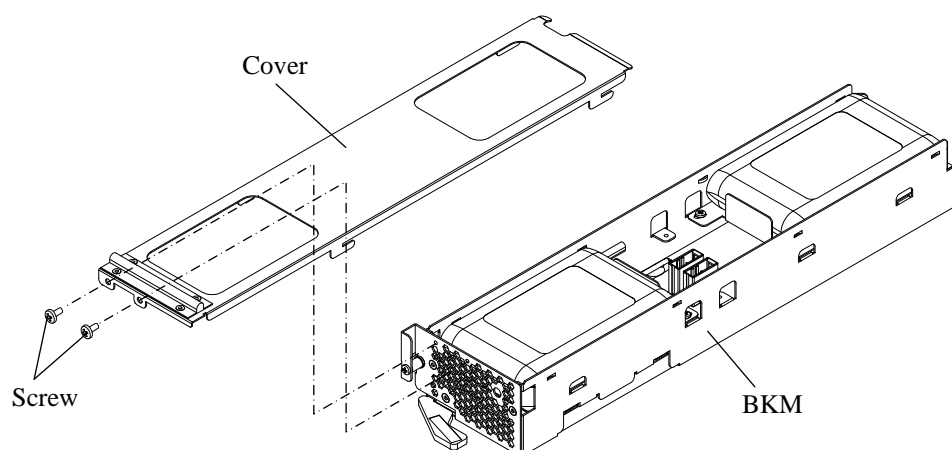


Fig. 3.23.2-4 Removal of Cover

- c. Disconnect the two cables and remove the two batteries.
- d. Attach the spare batteries and connect the cables to the BKM.
- e. Attach the cover to the BKM and tighten the two screws. (Refer to Fig. 3.23.2-4.)

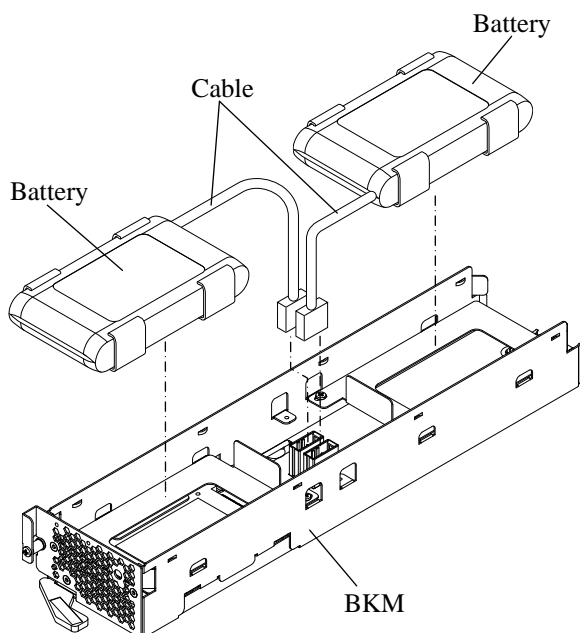
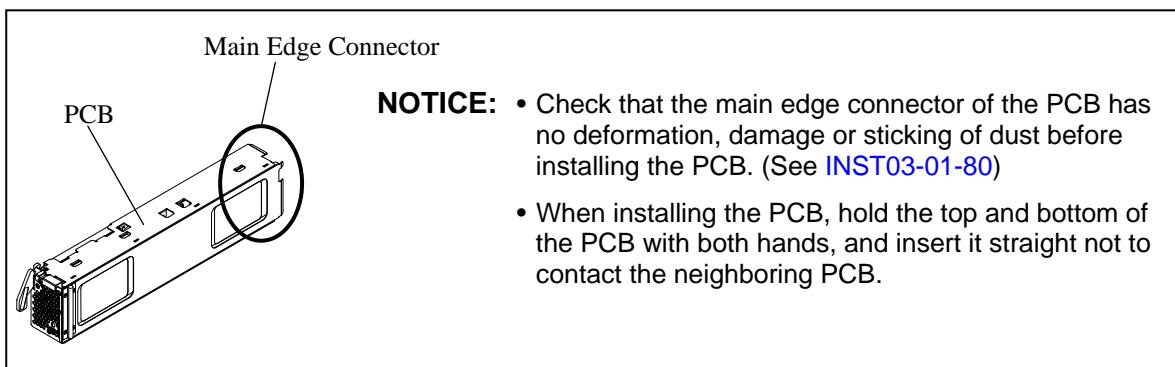


Fig. 3.23.2-5 Replacement of Batteries

2-1-4. Insert the BKM.

- a. Insert the BKM to the correct location and tighten the screw.
- b. If the cables were moved aside in Procedure 2-1-2, put them back in place.

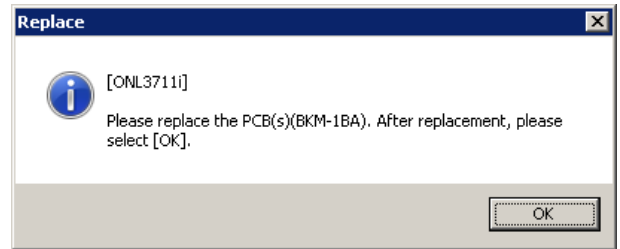


2-1-5. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. < Check replacement of BKM >

Select (CL) [OK] in response to “Please replace the PCB(s)(BKM-nnn). After replacement, please select [OK].” after replacement.



3-2. <INLINE CUDG>

“INLINE CUDG is now running...” is displayed.

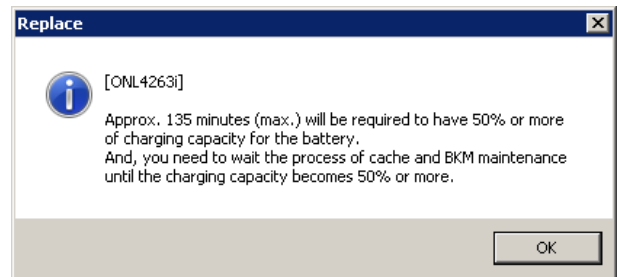
3-3. <Check the BKM recovery procedure>

“Restoring the BKM...” is displayed.

3-4. <Check the battery status>

Automatically check the status of the replaced battery.

If the storage period of the battery is more than six months from the date of the last charge, “Approx. 135 minutes (max.) will be required to have 50% or more of charging capacity for the battery. And, you need to wait the process of cache and BKM maintenance until the charging capacity becomes 50% or more.” is displayed.



Go to Step 3-5.

If the display of Battery Life Warning SIM is disabled, go to Step 3-6.

3-5. <Setting Battery Life>

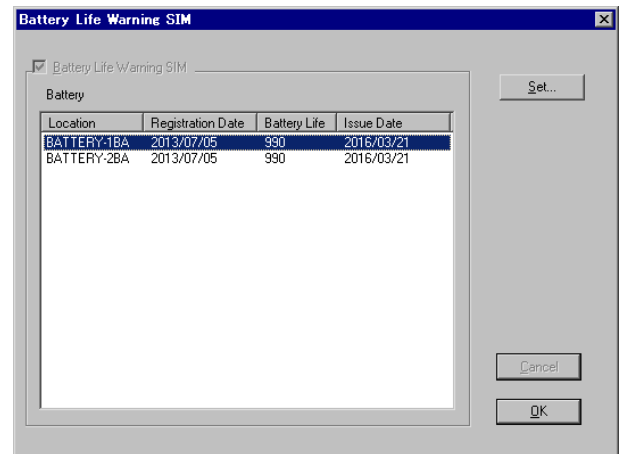
(1)

Select (CL) the target Battery in the 'Battery Life Warning SIM' screen, and then select (CL) [Set...].

Go to Step (2).

Make sure that the all input items are correct and select (CL) [OK].

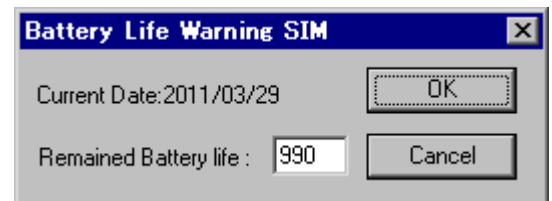
NOTE: If the date is displayed as "****/**/**", follow Step (2) to set the date.



(2)

Select (CL) [OK] after inputting the remainder days until Warning SIM is reported.

Return to Step (1).



NOTE: After executing the periodical exchange of a battery, set 33 month (990 days).

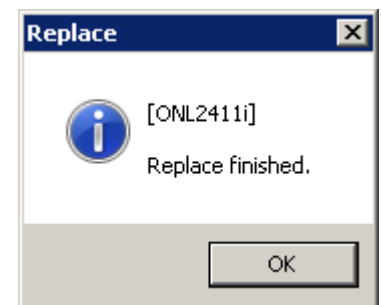
NOTE: Default value is 33 month (990 days), which is 3 month earlier than the lifetime of a battery (3 years).

Determine the number of days remained based on your maintenance plan.

NOTE: The input ranges of "Remained Battery life" are from 1 to 3650.

3-6. <Check end of replacement>

Select (CL) [OK] in response to "Replace finished."



3-7.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[DKCPS REPLACEMENT PROCESSING - RTC9]

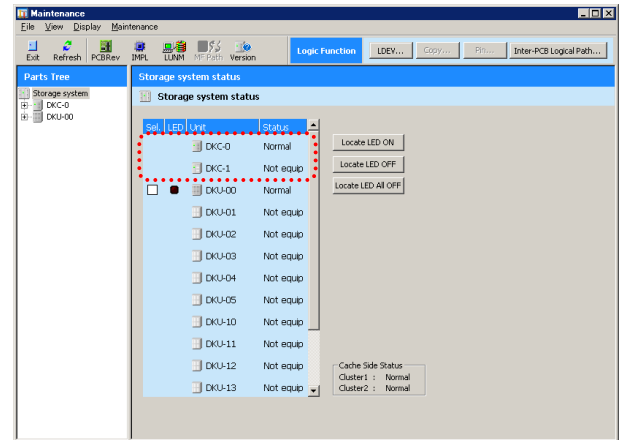
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select DKCPS (status check)
 - ② Specify Replacement
 - ③ Detach DKCPS
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of DKCPS replacement
 - ② Reinstall related parts

1. PRE-PROCESSING of SVP

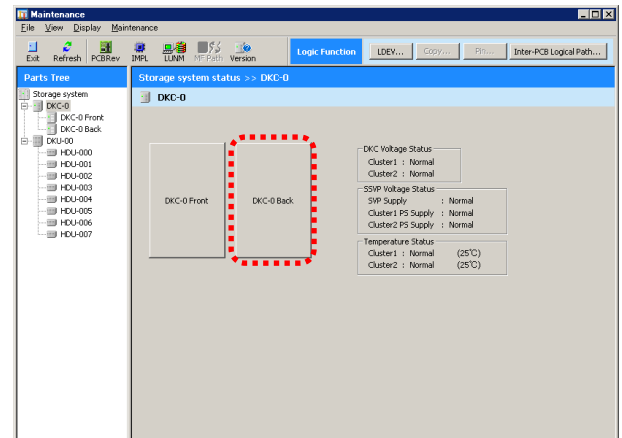
1-1. <Maintenance window>

In the 'Maintenance' window, check and select (CL) [DKC-n] to be replaced.



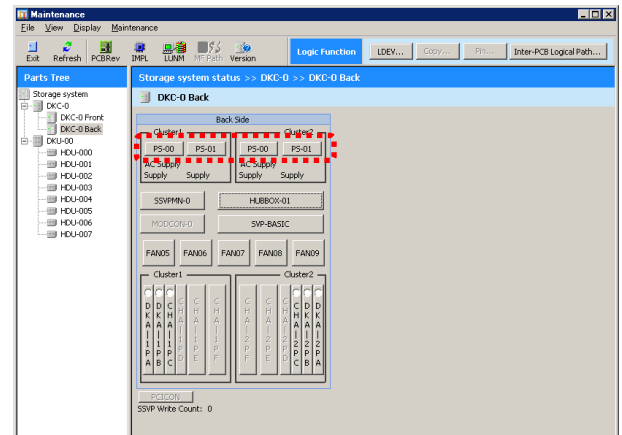
1-2. <DKC window>

Select (CL) [DKC-n Back].



1-3. <Specify DKCPS>

Select (CL) [PS-nn].

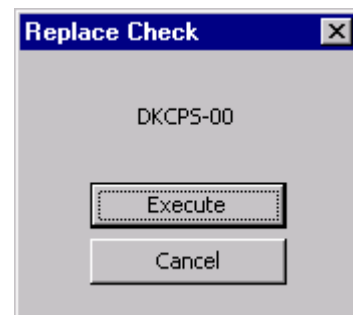


1-4. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

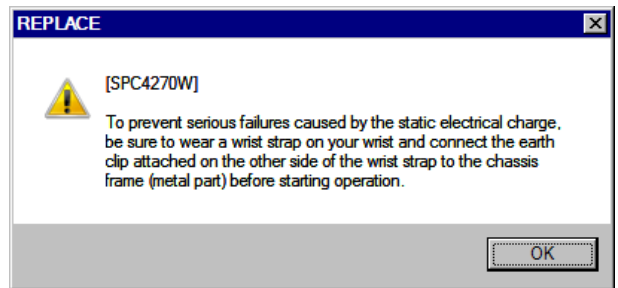
A window shown on the right is displayed.
Select (CL) [Execute].



(Eg. DKCPS-00)

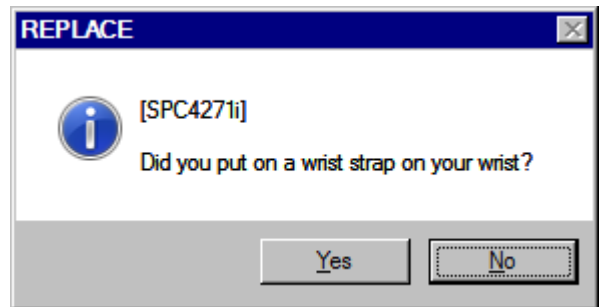
1-5. <Wear a wrist strap>

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



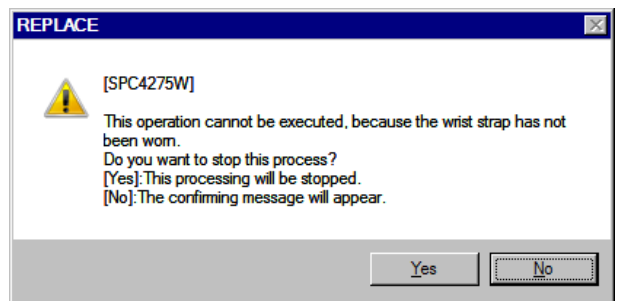
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-6.



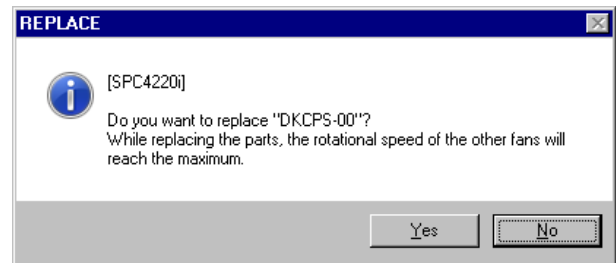
“This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?”
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.” is displayed.

When the processing will be stopped, select (CL) [Yes].



1-6. <Check beginning of DKCPS Replacement>

Select (CL) [Yes] in response to “Do you want to replace “DKCPS-nn”? While replacing the parts, the rotational speed of the other fans will reach the maximum.”.



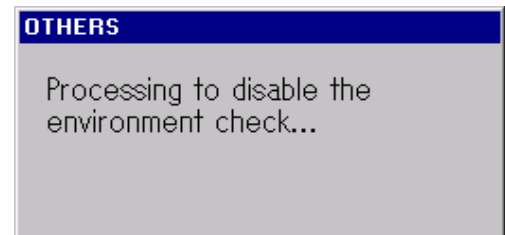
(Eg. DKCPS-00)

1-7. <Checking power supply>

The SVP automatically checks the DKC PS to see if it is replaceable.

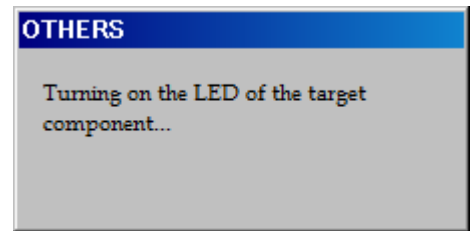
1-8. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.



1-9. <Processing before exchanges>

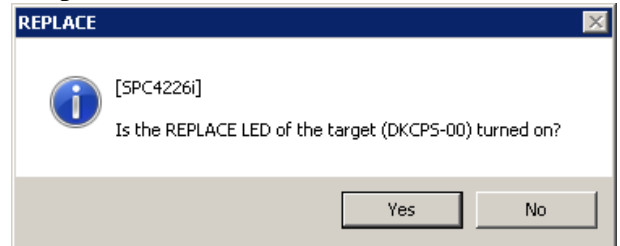
The message “Turning on the LED of the target component...” is displayed.



1-10. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (DKCPS-nn) turned on?” is displayed. When the REPLACE LED on the component to be pulled out is on, select (CL) [Yes] and go to Step 1-12.

When the REPLACE LED on the component to be pulled out is kept off, select (CL) [No] and go to Step 1-11.



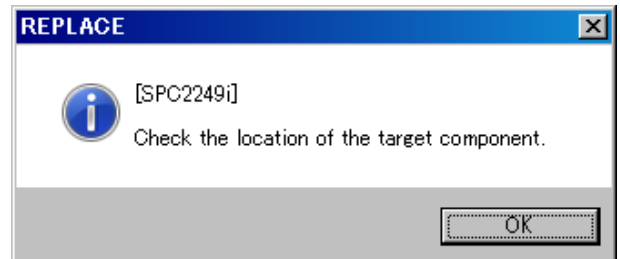
(Eg. DKCPS-00)

1-11. <Making sure of the DKCPS location>

The message “Check the location of the target component.” is displayed.

See the “2. HARDWARE REPLACEMENT PROCESSING”.

After making sure of the DKCPS location, select (CL) [OK] and go to Step 1-12.

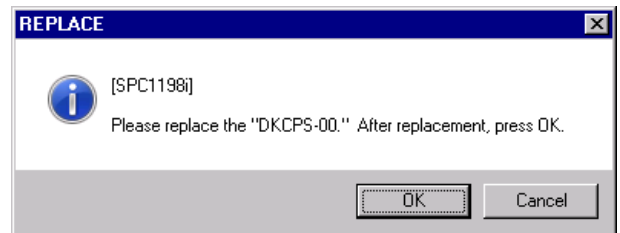


1-12. <Check beginning of DKCPS Replacement>

The message “Please replace the “DKCPS-nn.” After replacement, press OK.” is displayed.

(Reply with [OK] after replacing the special part.)

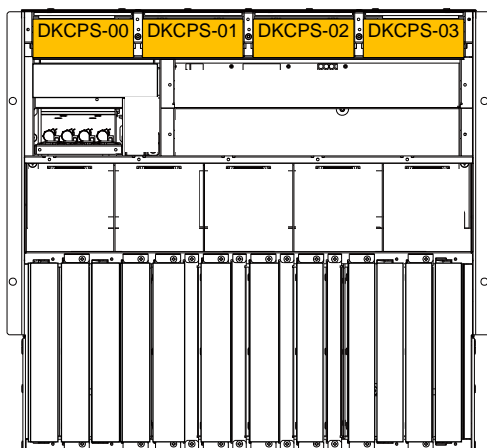
Go to “2. HARDWARE REPLACEMENT PROCESSING”.



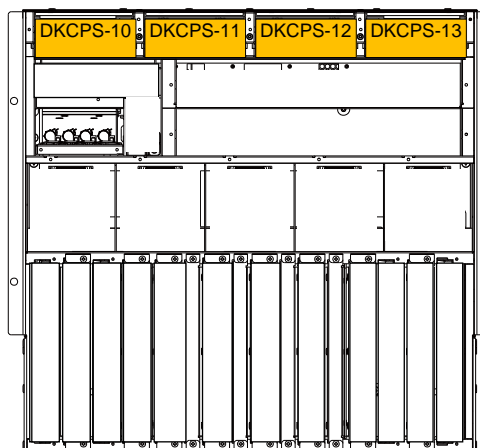
(Eg. DKCPS-00)

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of DKC	1	DKCPS	



Rear View of
DKC-0



Rear View of
DKC-1

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1	Replacement of DKCPS
-----	----------------------

2-1-1. Replacement of DKCPS

- a. Check that the REPLACE LED is on.

CAUTION

A system down may be caused by a replacement of the DKCPS other than that to be replaced. Make sure that it is a DKCPS to be replaced.

Front View of DKCPS

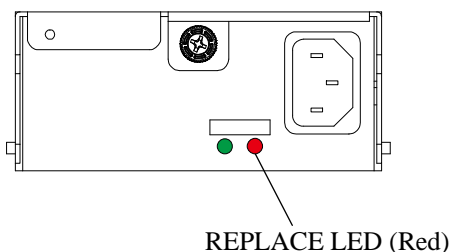


Fig. 3.24.2-1 Confirmation of REPLACE LED

- b. Pull and open the cable holder and disconnect the cable from the DKCPS.

⚠ CAUTION

Watching for short-circuits:

A Short-circuit may cause a fire.

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

- c. Loosen the screw on the front of the DKCPS and make the handle fall down.
 d. Pull the handle and detach the DKCPS from the DKC.
 e. Loosen the screw on the spare DKCPS and open the handle.
 f. Insert the spare DKCPS until the pin on it comes into contact with the mounting portion of the DKCPS.
 g. Push up the handle and fully insert the DKCPS.
 h. Tighten the screw and fix the DKCPS.
 i. Connect the cable to the DKCPS and fix the cable with the cable holder.
 j. Push the cable holder toward the DKCPS.
 k. Check that the REPLACE LED is off. (Refer to Fig. 3.24.2-1.)

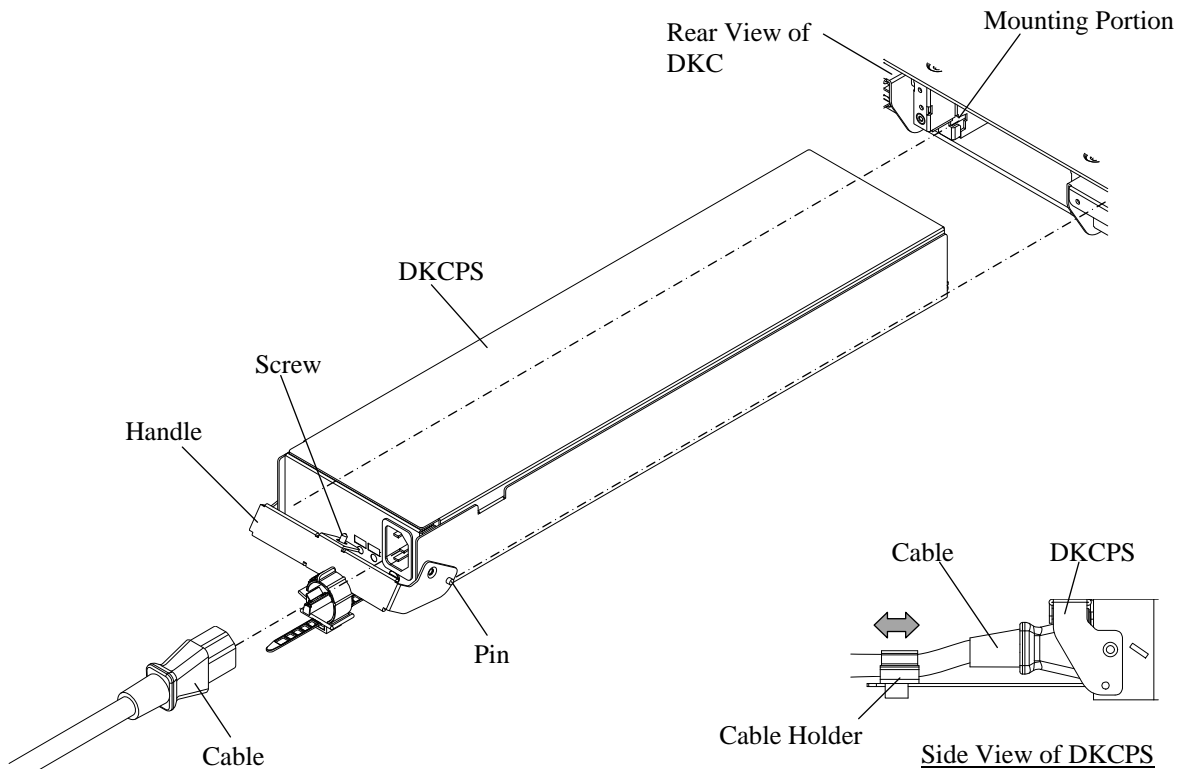


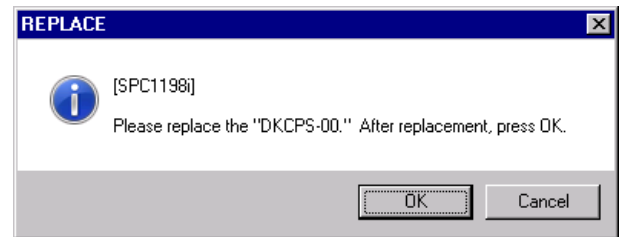
Fig. 3.24.2-2 Replacement of DKCPS

2-1-2. Go to “3.POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of DKCPS>

Select (CL) [OK] in response to “Please replace the “DKCPS-nn.” After replacement, press OK.”.

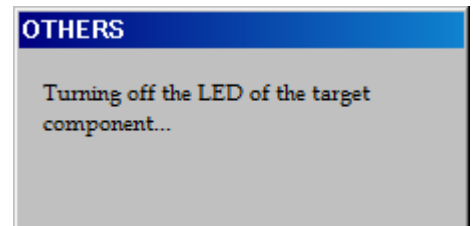


(Eg. DKCPS-00)

3-2. <Processing after exchanges>

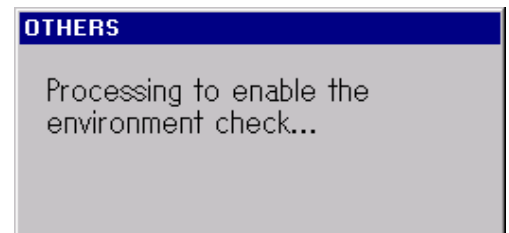
The message “Turning off the LED of the target component...” is displayed.

If the LED is lit, it turns off in this screen.



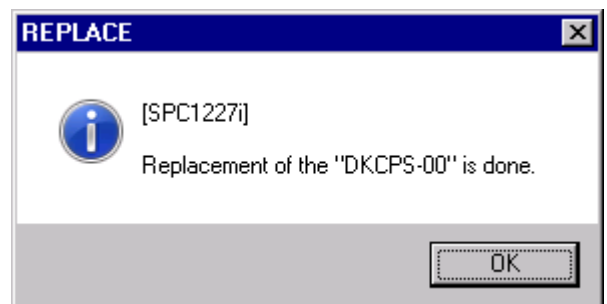
3-3. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-4. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKCPS-nn” is done.”.



(Eg. DKCPS-00)

3-5. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-6.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-6.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[SFP REPLACEMENT PROCESSING - RTCA]

— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select Port (SFP information check)
 - ② Specify Replacement
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Check the port Wave information

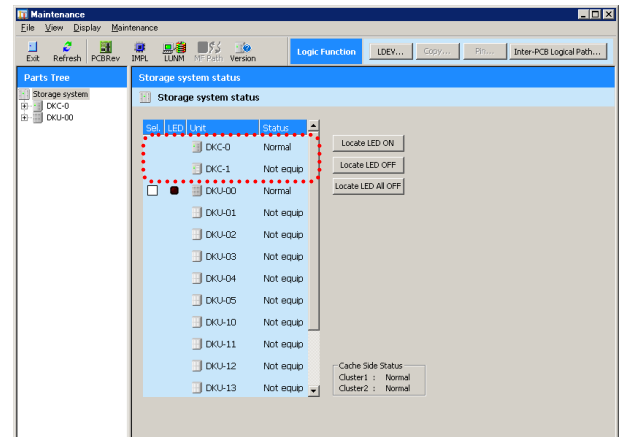
1. PRE-PROCESSING of SVP

1-1. <Set path offline>

NOTICE: The path to be placed offline is that connected with the CHA concerned.

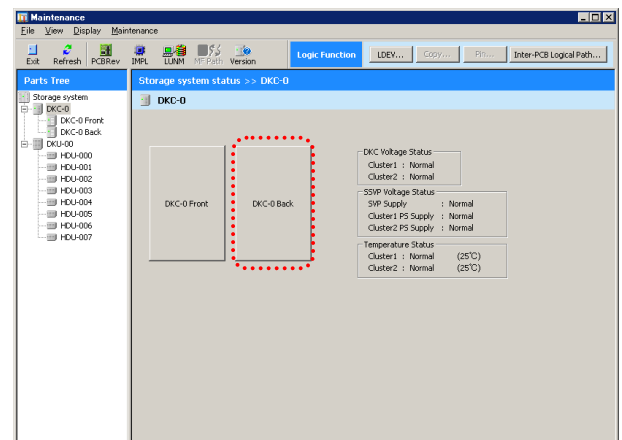
1-2. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.



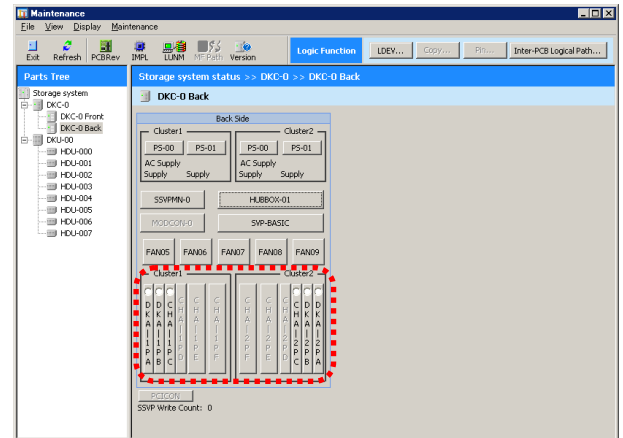
1-3. <DKC window>

Select (CL) [DKC-n Back] in the 'DKC' window.



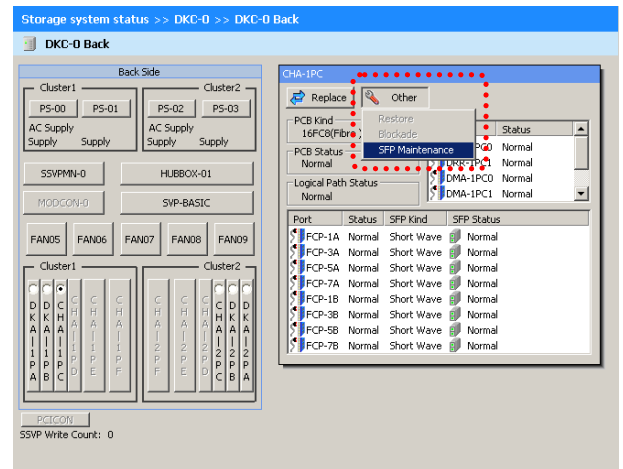
1-4. <Selecting CHA>

Select (CL) the target CHA.



1-5. <SFP Maintenance window is displayed>

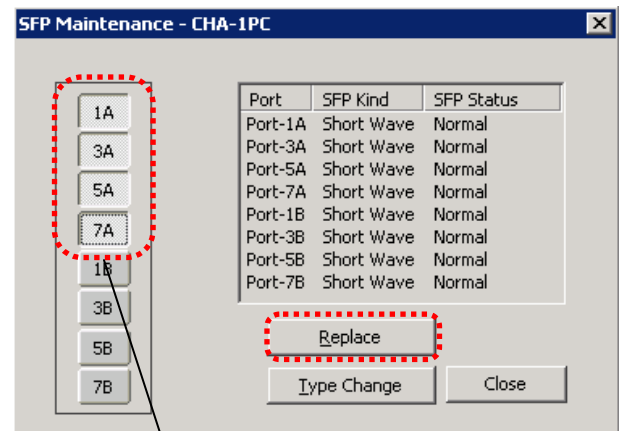
Select (CL) [Other]-[SFP Maintenance].



1-6. <Specify SFP replacement>

Select the button of the port for which the SFP is to be replaced and select (CL) the [Replace] button.

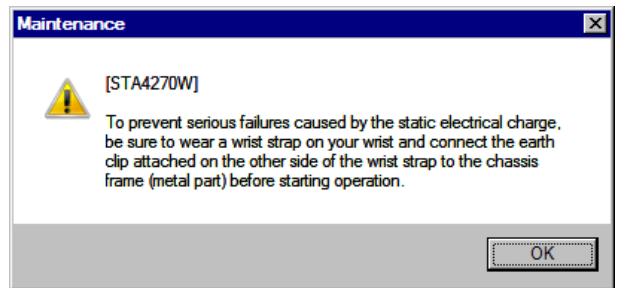
(The plural can be selected.)



port

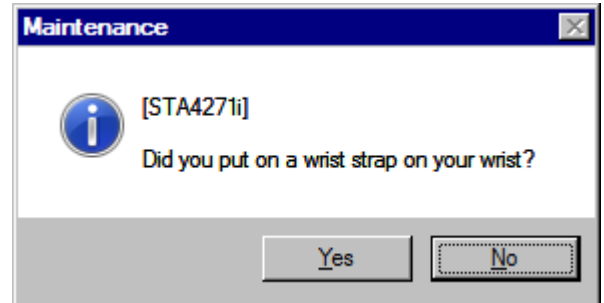
1-7. <Wear a wrist strap>

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



“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-8.

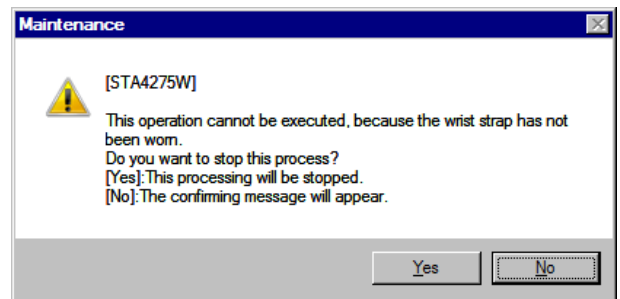


“This operation cannot be executed, because the wrist strap has not been worn.

Do you want to stop this process?

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.” is displayed.



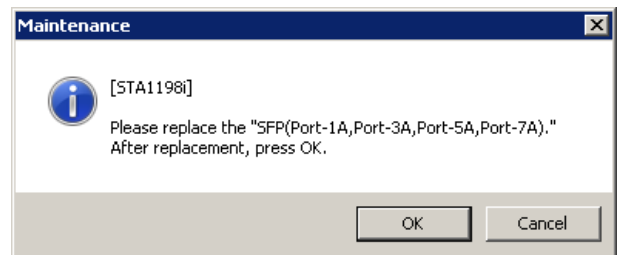
When the processing will be stopped, select (CL) [Yes].

1-8. <Replacing the SFP>

A message, “Please replace the “SFP(Port-1A, ..., ...).” After replacement, press OK.” is displayed.

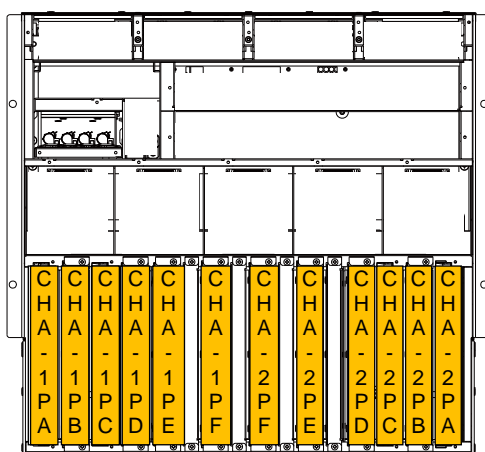
(Select (CL) [OK] after replacing the SFP.)

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

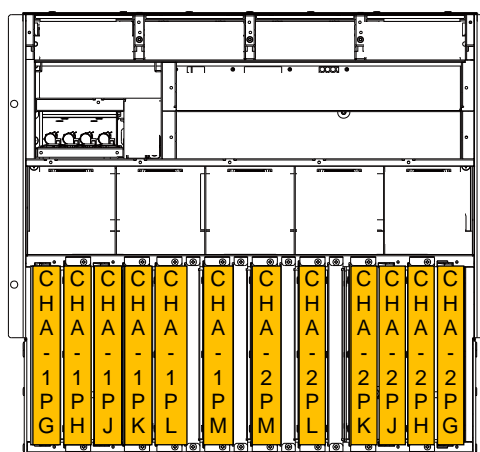


2. HARDWARE REPLACEMENT PROCESSING

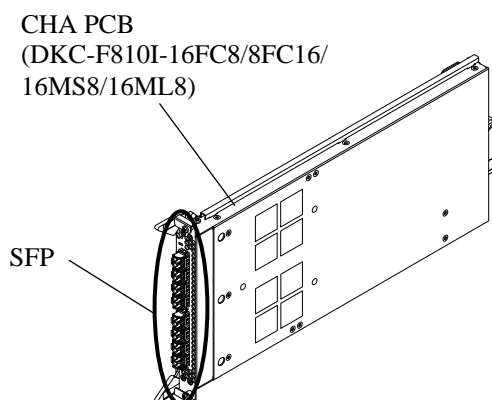
Location	Function Name of Component		Part Name
Rear of DKC	1	SFP (8Gbps) (DKC-F810I-16FC8/16MS8/16ML8)	<ul style="list-style-type: none"> • SFP (SHORT) • SFP (LONG)
	2	SFP (16Gbps) (DKC-F810I-8FC16)	<ul style="list-style-type: none"> • SFP (SHORT) • SFP (LONG)



Rear View of
DKC-0



Rear View of
DKC-1



NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 SFP

2-1-1. Replacement of SFP

- a. Make sure of the CHA and Port Locations of the SFP to be replaced. (Refer to pages [LOC04-10 through LOC04-30](#).)

⚠ CAUTION

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

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

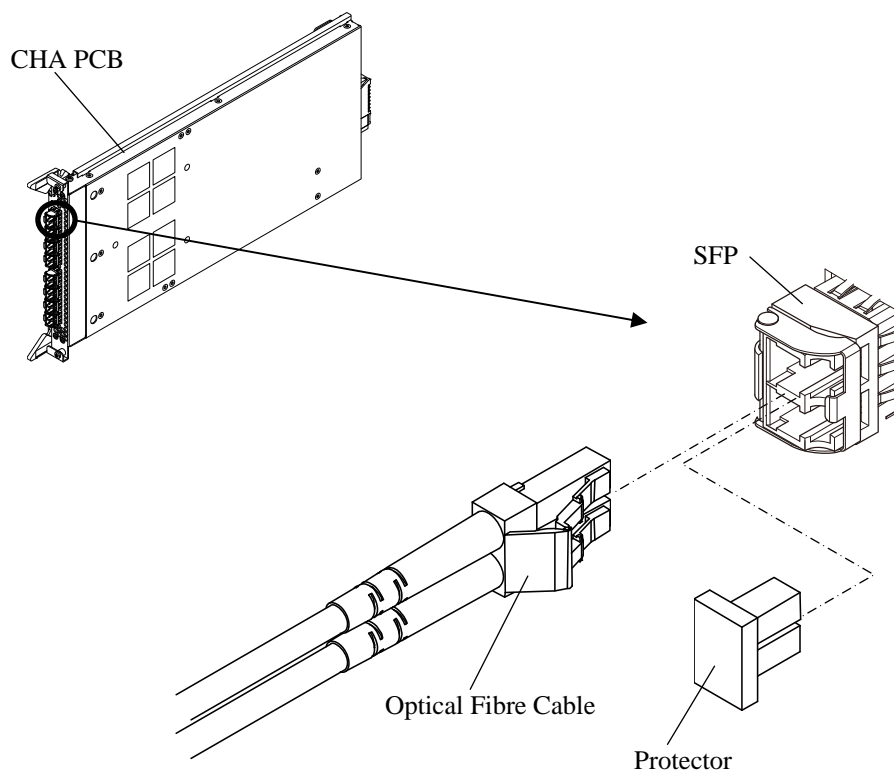


Fig. 3.25.2-1 Disconnection of Cable

- c. Open the lever on the SFP toward you with your finger.
- d. Pull the opened lever and remove the SFP.

NOTE: Be careful so that the claw of the SFP lever does not hurt your finger.

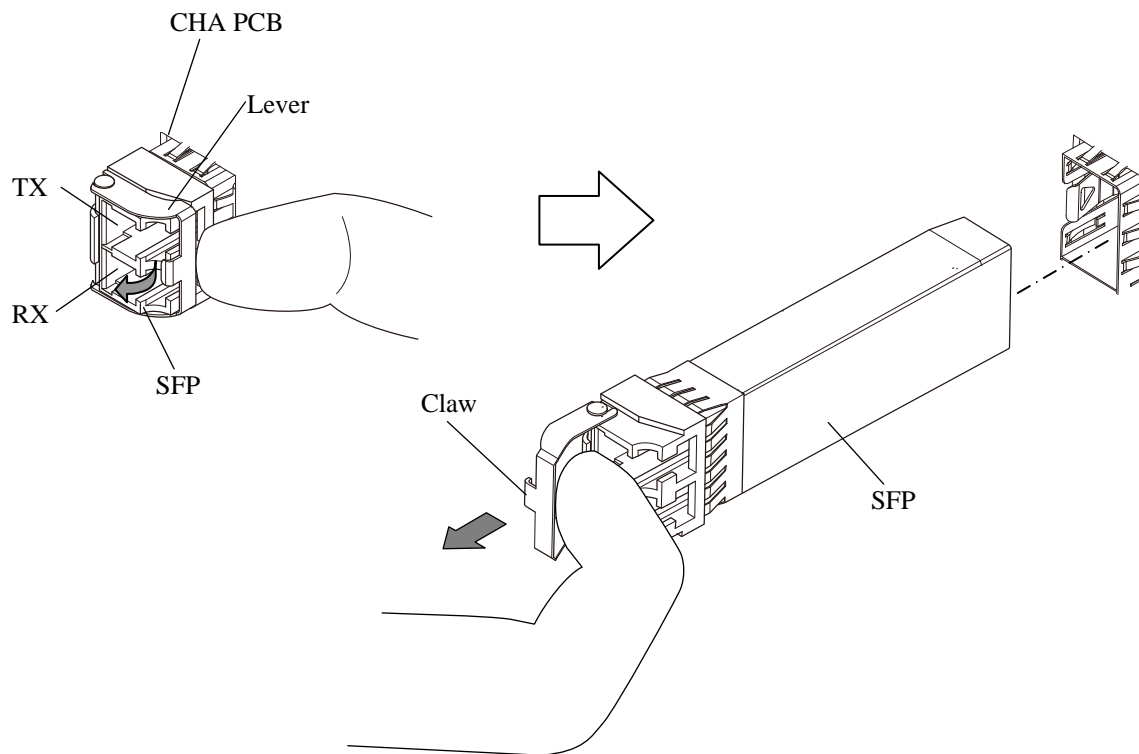


Fig. 3.25.2-2 Removal of SFP

- e. Insert the spare SFP to the CHA PCB.
- f. Connect the optical fibre cable to the SFP.

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

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

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

[Example]

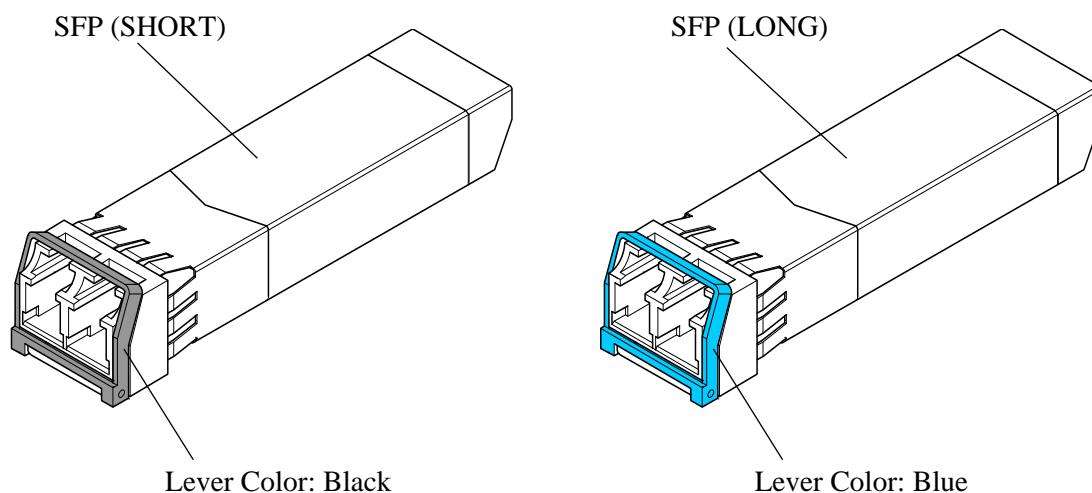


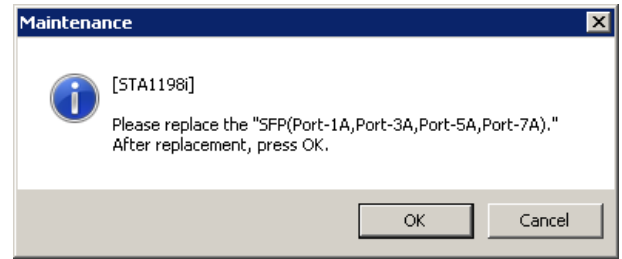
Fig. 3.25.2-3 How to distinguish between SFP (SHORT) and SFP (LONG)

2-1-2. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

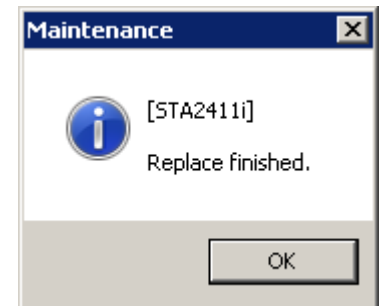
3-1. <Replacing the SFP>

Select (CL) [OK] in response to “Please replace the “SFP(Port-nn, ...).” After replacement, press OK.”.



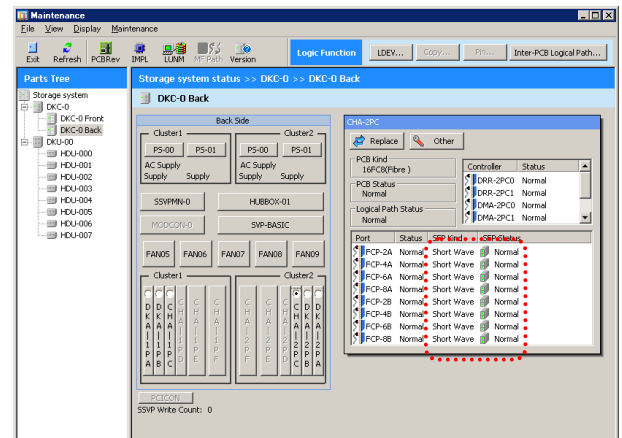
3-2. <Check the end of SFP replace>

Select (CL) [OK] in response to “Replace finished.”.



3-3. <Confirming SFP type information>

Confirm that the SFP type information on the port information list.



3-4.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[2.5 inch SSW REPLACEMENT PROCESSING - RUS1]

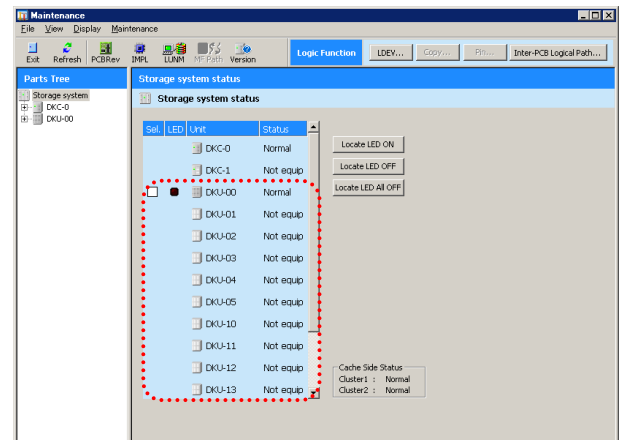
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select SSW
 - ② Specify Replacement
 - ③ Place SSW into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery of DKA Port connected to SSW

1. PRE-PROCESSING of SVP

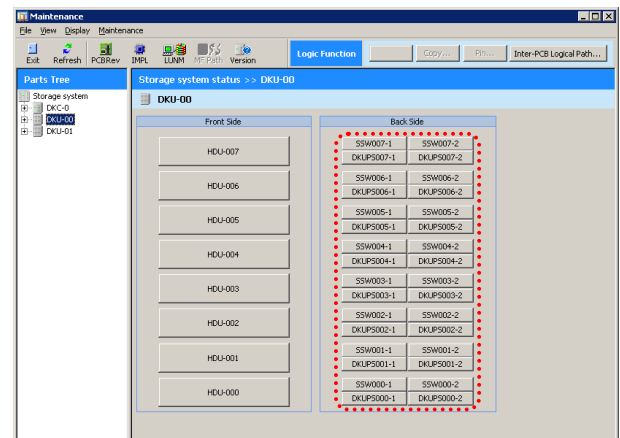
1-1. <Maintenance window>

Select (CL) the DKU information [DKU-nn] of the DKU which installs the SSW to be replaced in the 'Maintenance' window.



1-2. <Select SSW>

Check and select (CL) [SSWnnn-n] to be replaced.



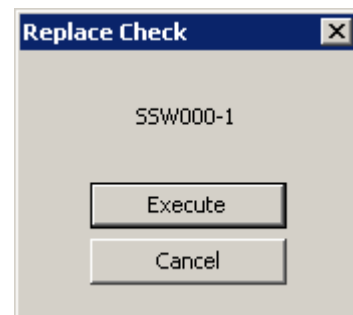
1-3. <Specify replacement>

NOTICE: When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

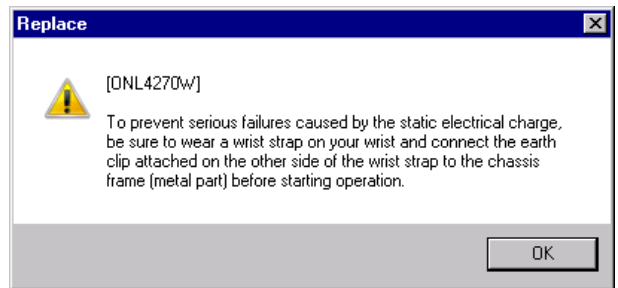
Select (CL) [Execute].

Selecting (CL) [Cancel] returns you to Step 1-2.



1-4. <Wear a wrist strap>

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



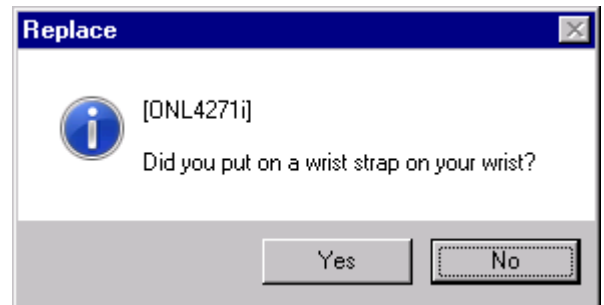
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

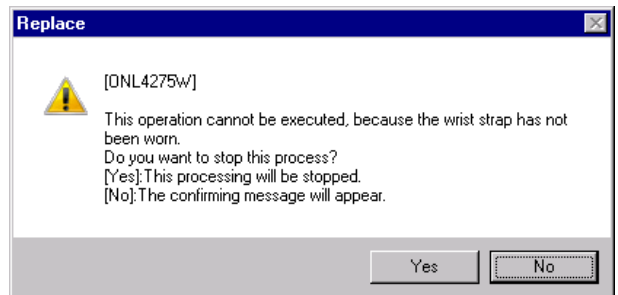


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



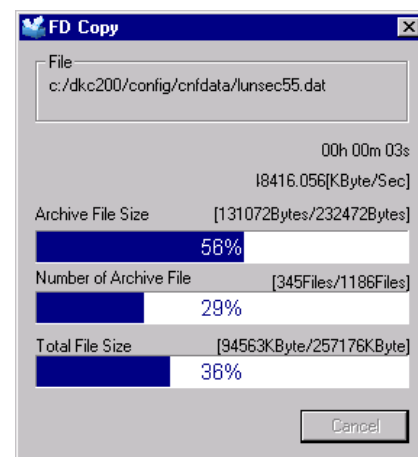
When [Yes] is selected (CL), returned to Step 1-2.

When [No] is selected (CL), returned to Step 1-4.

1-5. <Compression of the error information>

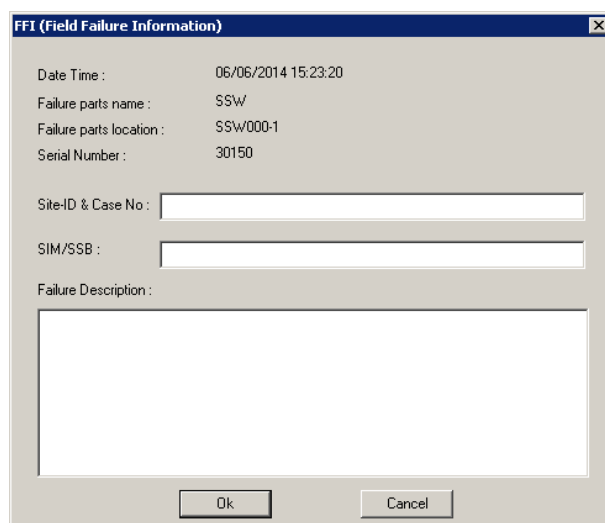
The error information is compressed.

The dialog of FD Copy is displayed.



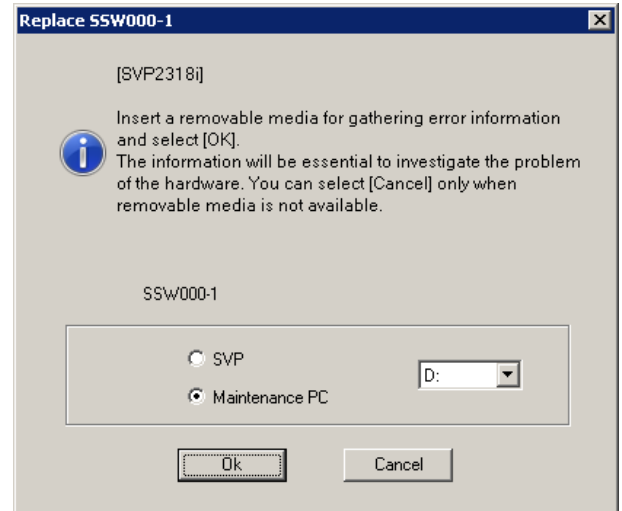
1-6. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP.
Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



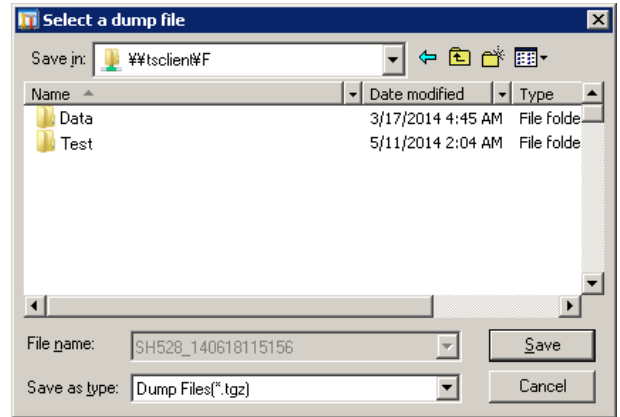
A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format “SH528_YYMMDDhhmmss.tgz”.
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

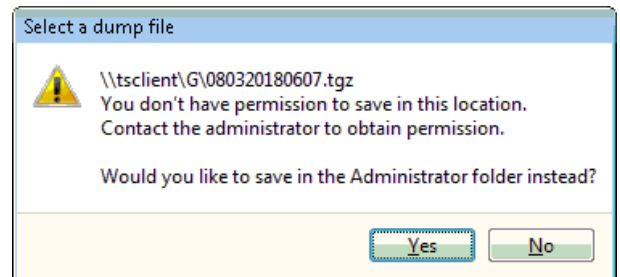


NOTE: The message is displayed two or more times. Please only operate the SSW selected by 1-3. <Specify replacement>.

- When the destination media is write-protected.

Selecting (CL) [Yes] displays the "C:\users\Administrator" folder of SVP. Selecting (CL) [No] displays the folder selected with the Maintenance PC.

Please appoint another destination whether you remove write protect when you save it and carry it out.

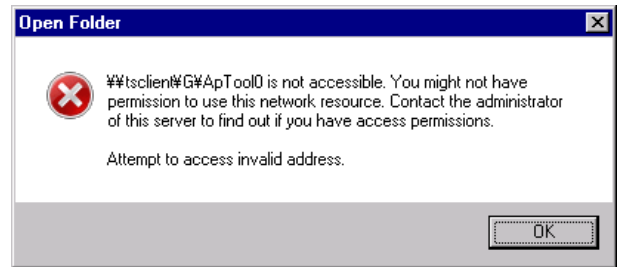


- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

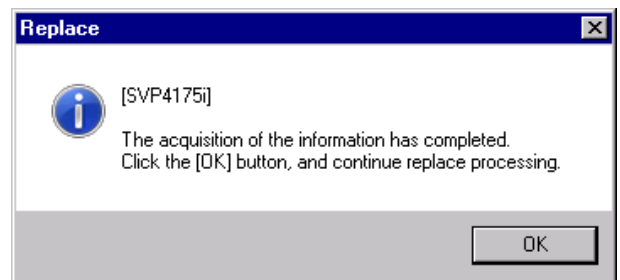
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].

At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

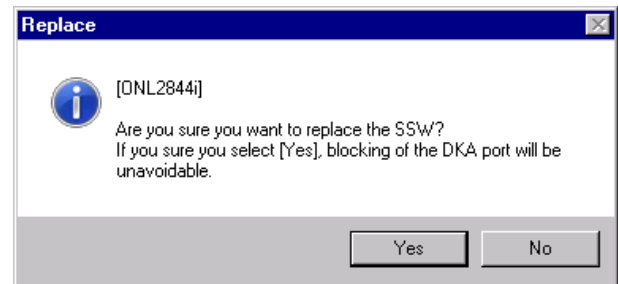


Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.



1-7. <Check beginning of DKA Port blocking>

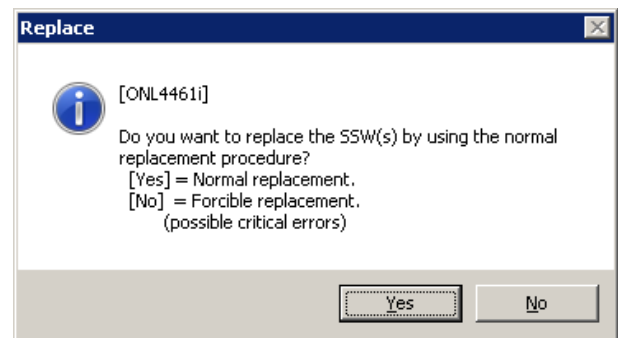
Select (CL) [Yes] in response to “Are you sure you want to replace the SSW? If you select [Yes], blocking of the DKA port will be unavoidable.”.



1-8. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

“Do you want to replace the SSW(s) by using the normal replacement procedure?
[Yes] = Normal replacement.
[No] = Forcible replacement.
(possible critical errors)”.



1-9. <Check DKA Port blocking>

“The DKA Port is being blocked...” is displayed.

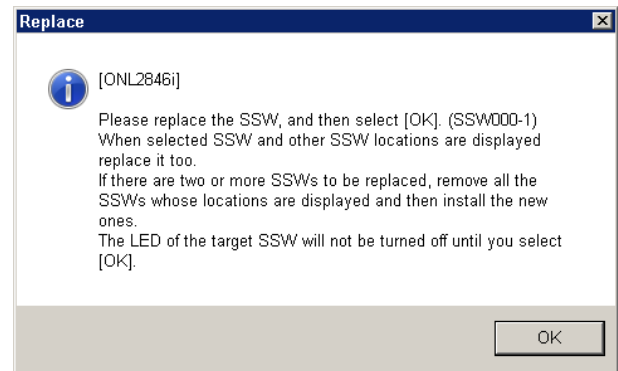
1-10. <Replace SSW>

“Please replace the SSW, and then select [OK]. (SSWnnn-n)

When selected SSW and other SSW locations are displayed replace it too.

If there are two or more SSWs to be replaced, remove all the SSWs whose locations are displayed and then install the new ones.

The LED of the target SSW will not be turned off until you select [OK].” is displayed.



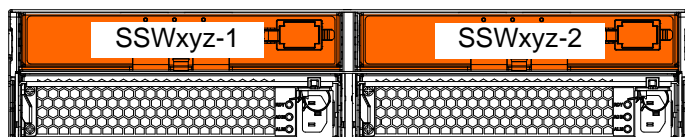
Make sure of the SSW PCB location is displayed, select (CL) the [OK] button after replaced target SSW PCB.

If the SSW LED is not turned on, please replace SSW PCB.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of SBX	1	SSW	



Rear View of
SBX

NOTE: SSW_{xyz}-1

- HDU No. (0, 1, 2,, 7)
- DKU No. (0, 1, 2, ..., 5)
- DKC No. (0, 1)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of SSW

2-1-1. Checking lighting of LED.

- a. Check Shut Down LED on the SSW.

CAUTION

A system down is caused by a replacement of the SSW other than that to be replaced. Make sure that it is the SSW to be replaced.

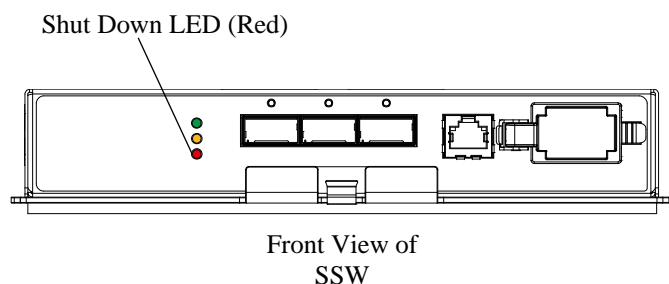


Fig. 3.26.2-1 Confirmation of Shut Down LED

2-1-2. Release of Cable.

- a. When replacing the SSW_{xyz-1}, open the loop cable tie attached to the rail on the rear left side of the SBX.
When replacing the SSW_{xyz-2}, open the loop cable tie attached to the rail on the rear right side of the SBX.

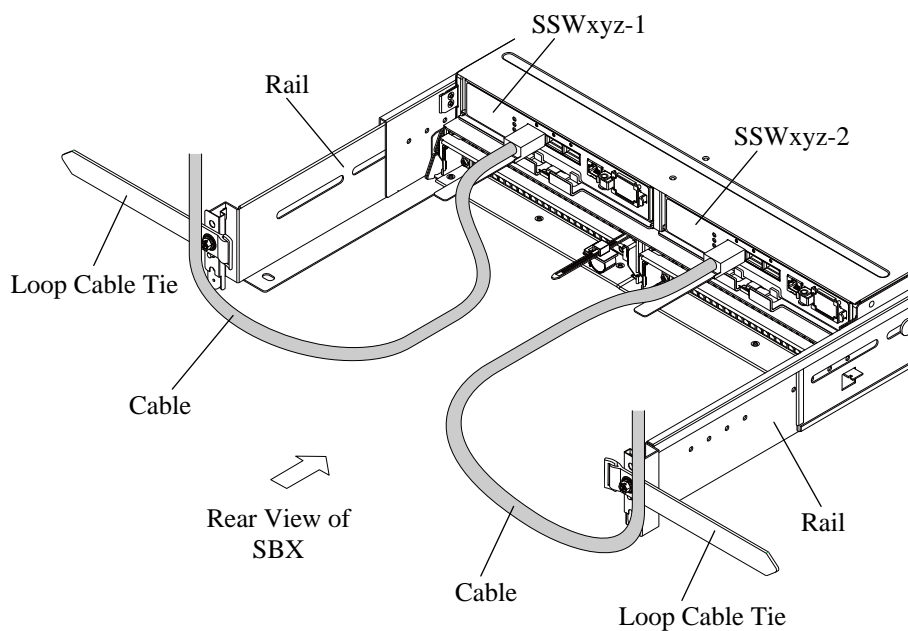


Fig. 3.26.2-2 Release of Cable

2-1-3. Removal of SSW.

- Disconnect the cables which connect to the SSW to be replaced.
- Pull the right and left levers and remove the SSW.

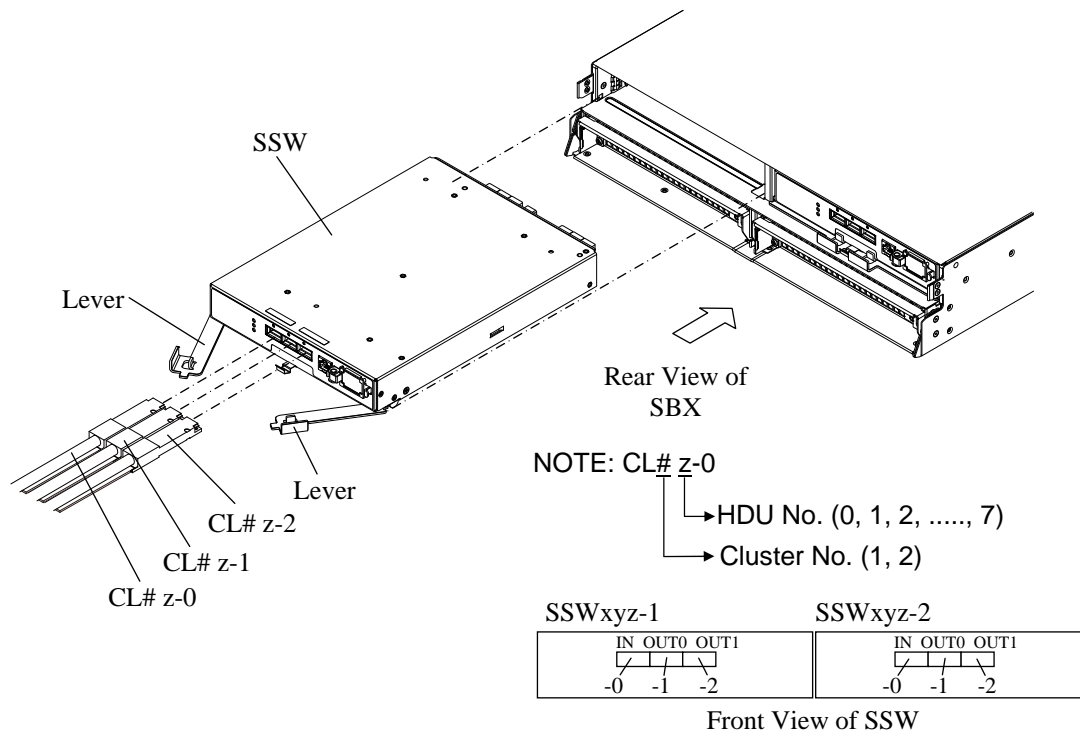


Fig. 3.26.2-3 Removal of SSW

2-1-4. Switch Settings of Spare SSW.

- Open the cover of the spare SSW.
- Set the switches in the SSW with the cover open. For switch settings, refer to [LOC06-30 through 150](#).

NOTE: Use something sharp (ex. a pen or a mini screwdriver etc.) when set the SSW switches.

- Close the cover of the SSW.

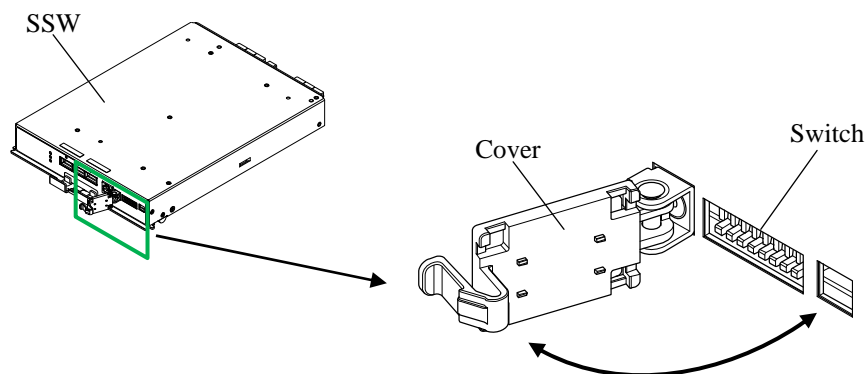
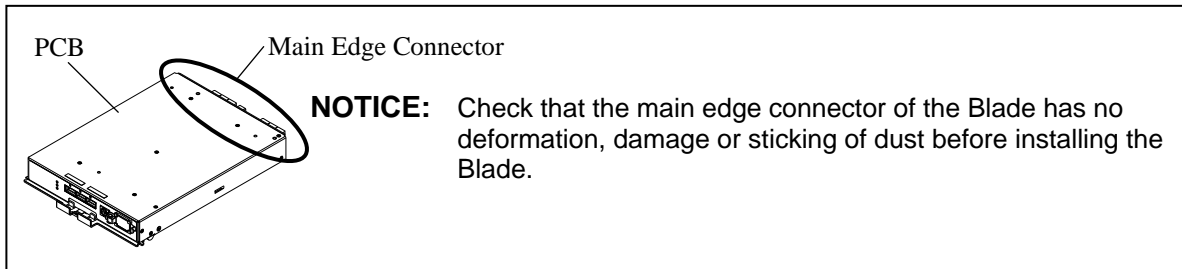


Fig. 3.26.2-4 Opening Cover

2-1-5. Attachment of SSW.

- a. Make the right and left levers of the spare SSW open. (See Fig. 3.26.2-3.)
- b. Insert the spare SSW until the edge of the lever comes in contact with the SBX.
- c. Close the right and left levers to insert the SSW completely.
- d. Connect the cables to the SSW after checking “3.1.6 Notes when connecting the DEV interface cable” ([INST03-01-180](#)).
- e. Close the loop cable tie on the rail on the rear side of the SBX to secure the cable. (See Fig. 3.26.2-2.)



2-1-6. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of SSW>

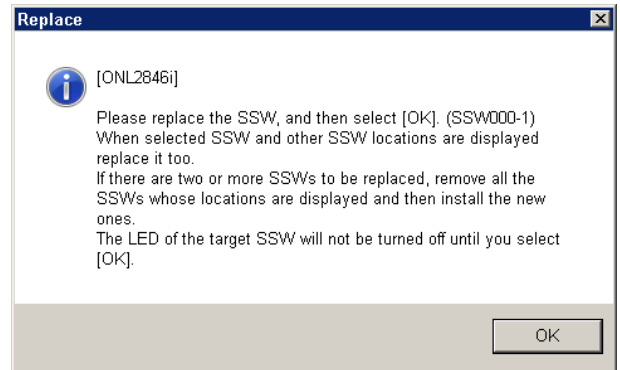
Select (CL) [OK] in response to “Please replace the SSW, and then select [OK].

(SSWnnn-n)

When selected SSW and other SSW locations are displayed replace it too.

If there are two or more SSWs to be replaced, remove all the SSWs whose locations are displayed and then install the new ones.

The LED of the target SSW will not be turned off until you select [OK].” After replacement, press OK.

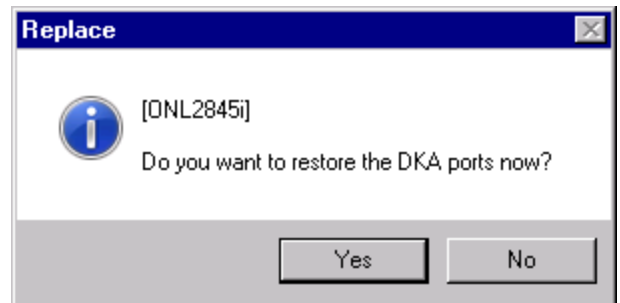


Make sure that the SSW PCB location is displayed, select (CL) the [OK] button after replacing target SSW PCBs.

Even if the SSW LED is not turned on, please replace the SSW PCBs.

3-2. <Check the beginning of DKA Port recovery>

Select (CL) [Yes] in response to “Do you want to restore the DKA ports now?”.



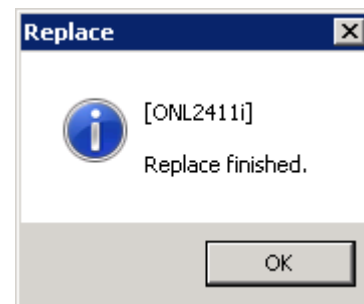
3-3. <DKU PATH INLINE>

“DKU PATH INLINE is now running...” is displayed.

NOTICE: When a failure is found during DKU PATH INLINE, the DKA Port connected to the loop are blocked.
Confirm the Diagnosis Log and solve the problem

- 3-4. <Check DKA Port recovery processing>
“Restoring the DKA Port...” is displayed.

- 3-5. <Check the end of SSW replace>
Select (CL) [OK] in response to “Replace finished.”.



- 3-6.
Go to POST-PROCEDURE ([REP04-01-10](#)).

[3.5 inch SSW REPLACEMENT PROCESSING - RUL1]

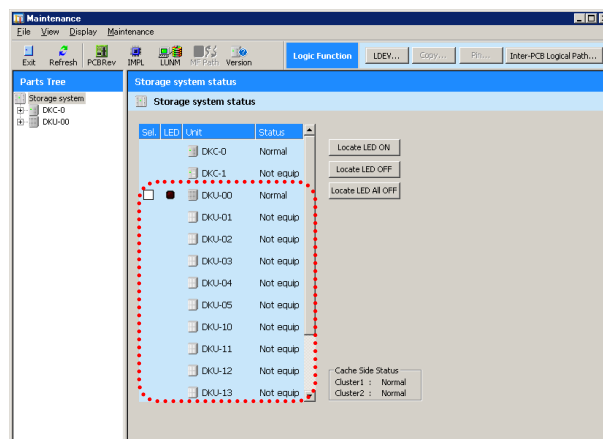
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select SSW
 - ② Specify Replacement
 - ③ Place SSW into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery of DKA Port connected to SSW

1. PRE-PROCESSING of SVP

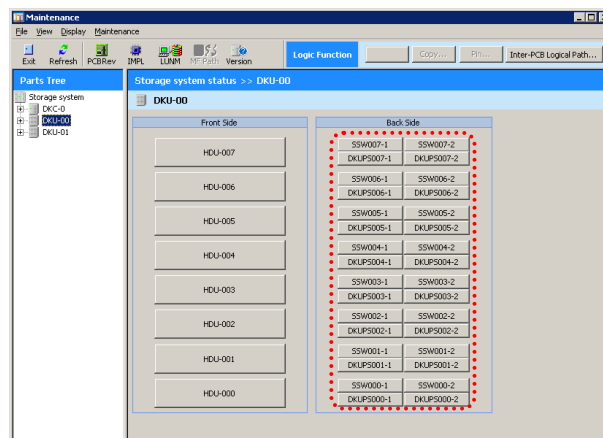
1-1. <Maintenance window>

Select (CL) the DKU information [DKU-*nn*] of the DKU which installs the SSW to be replaced in the 'Maintenance' window.



1-2. <Select SSW>

Check and select (CL) [SSWnnn-n] to be replaced.



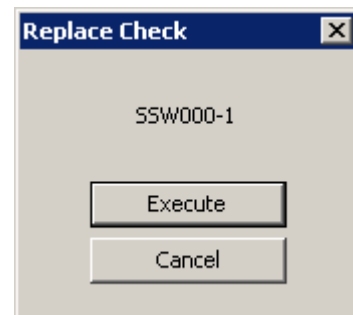
1-3. <Specify replacement>

NOTICE: When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

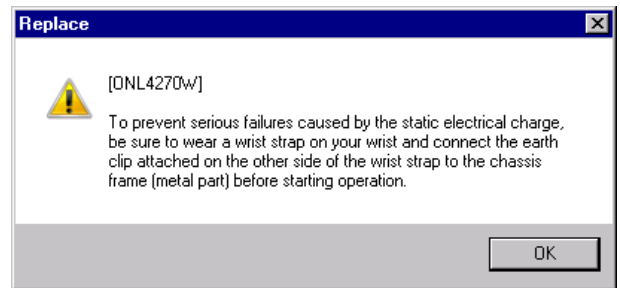
Select (CL) [Execute].

Selecting (CL) [Cancel] returns you to Step 1-2.



1-4. <Wear a wrist strap>

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



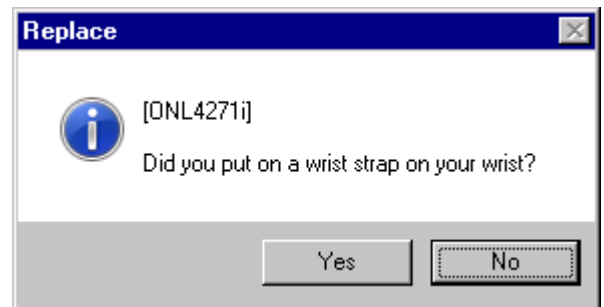
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

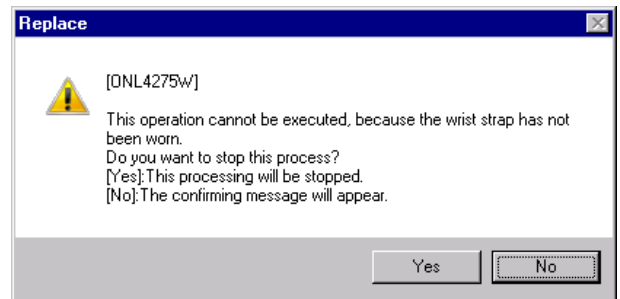


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



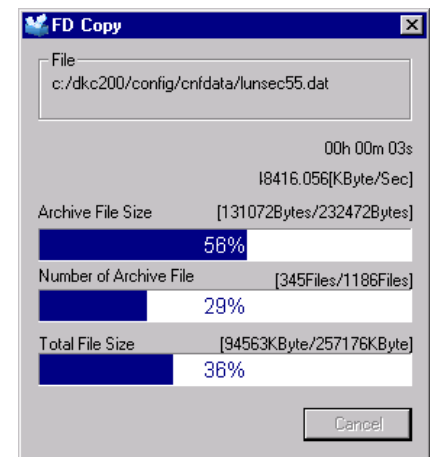
When [Yes] is selected (CL), returned to Step 1-2.

When [No] is selected (CL), returned to Step 1-4.

1-5. <Compression of the error information>

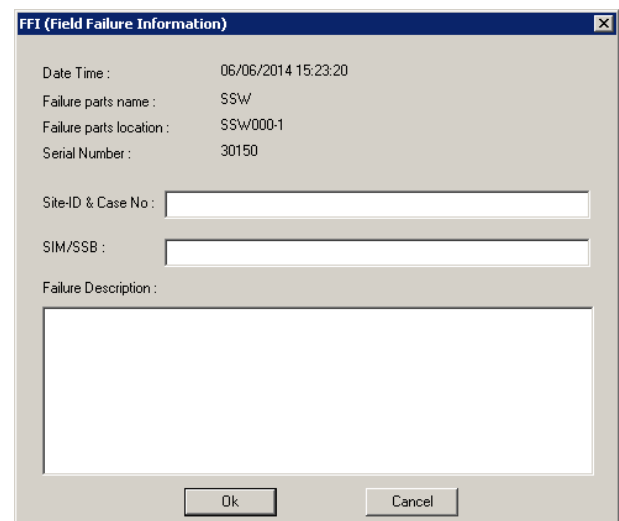
The error information is compressed.

The dialog of FD Copy is displayed.



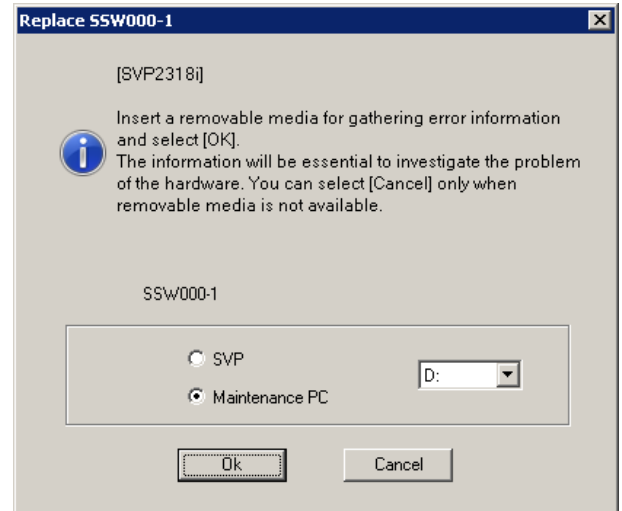
1-6. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP.
Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



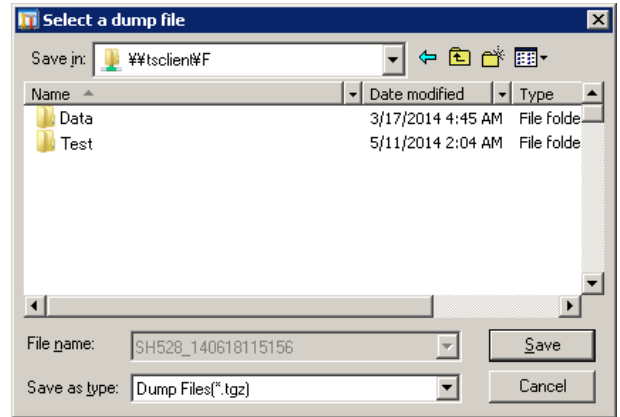
A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format “SH528_YYMMDDhhmmss.tgz”.
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

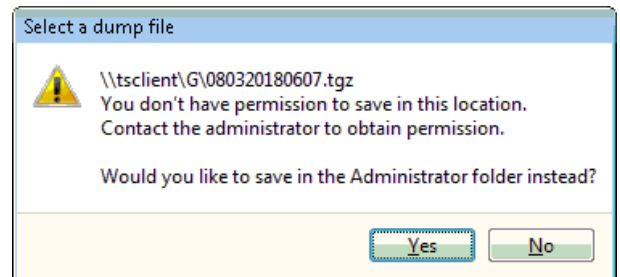


NOTE: The message is displayed two or more times. Please only operate the SSW selected by 1-3. <Specify replacement>.

- When the destination media is write-protected.

Selecting (CL) [Yes] displays the "C:\users\Administrator" folder of SVP. Selecting (CL) [No] displays the folder selected with the Maintenance PC.

Please appoint another destination whether you remove write protect when you save it and carry it out.

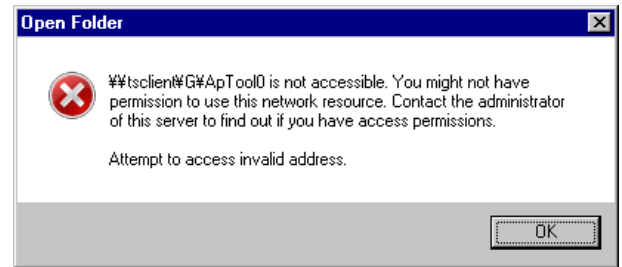


- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

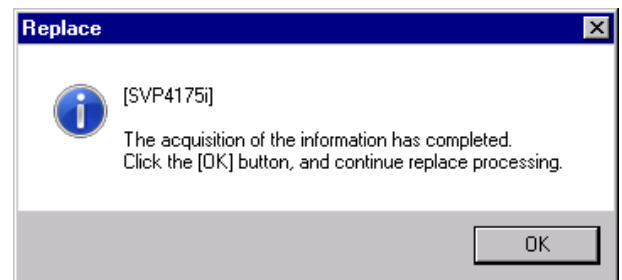
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].

At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

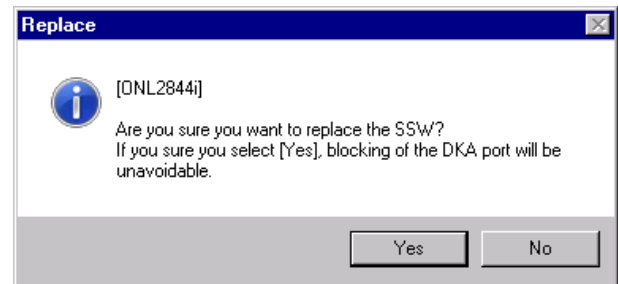


Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.



1-7. <Check beginning of DKA Port blocking>

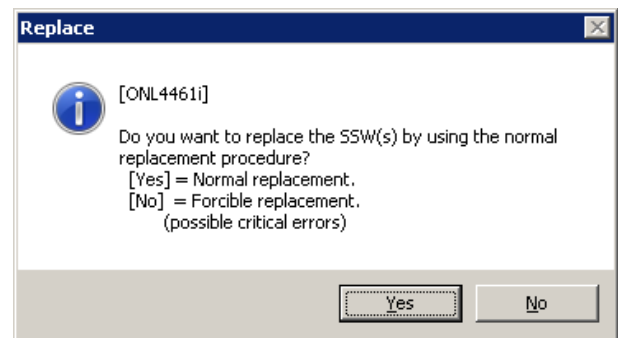
Select (CL) [Yes] in response to “Are you sure you want to replace the SSW? If you select [Yes], blocking of the DKA port will be unavoidable.”.



1-8. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

“Do you want to replace the SSW(s) by using the normal replacement procedure?
[Yes] = Normal replacement.
[No] = Forcible replacement.
(possible critical errors)”.



1-9. <Check DKA Port blocking>

“The DKA Port is being blocked...” is displayed.

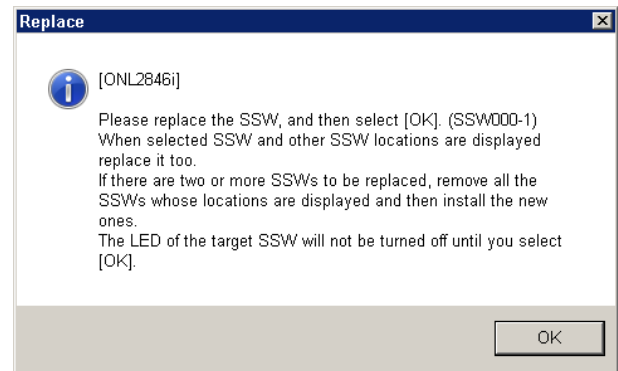
1-10. <Replace SSW>

“Please replace the SSW, and then select [OK]. (SSWnnn-n)

When selected SSW and other SSW locations are displayed replace it too.

If there are two or more SSWs to be replaced, remove all the SSWs whose locations are displayed and then install the new ones.

The LED of the target SSW will not be turned off until you select [OK].” is displayed.



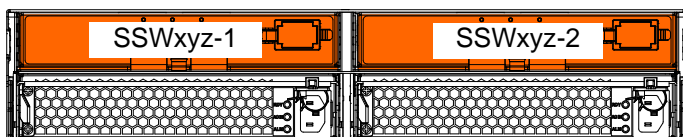
Make sure of the SSW PCB location is displayed, select (CL) the [OK] button after replaced target SSW PCB.

If the SSW LED is not turned on, please replace SSW PCB.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of UBX	1	SSW	



Rear View of
UBX

NOTE: SSWxyz-1

- HDU No. (0, 1, 2,, 7)
- DKU No. (0, 1, 2, ..., 5)
- DKC No. (0, 1)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of SSW

2-1-1. Checking lighting of LED.

- Check Shut Down LED on the SSW.

CAUTION

A system down is caused by a replacement of the SSW PCB other than that to be replaced. Make sure that it is the SSW PCB to be replaced.

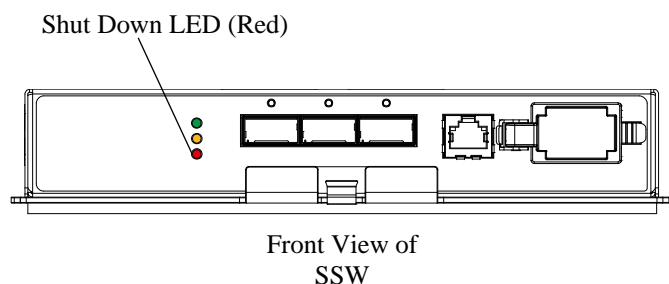


Fig. 3.27.2-1 Confirmation of Shut Down LED

2-1-2. Release of Cable.

- When replacing the SSW_{xyz-1}, open the loop cable tie attached to the rail on the rear left side of the UBX.
When replacing the SSW_{xyz-2}, open the loop cable tie attached to the rail on the rear right side of the UBX.

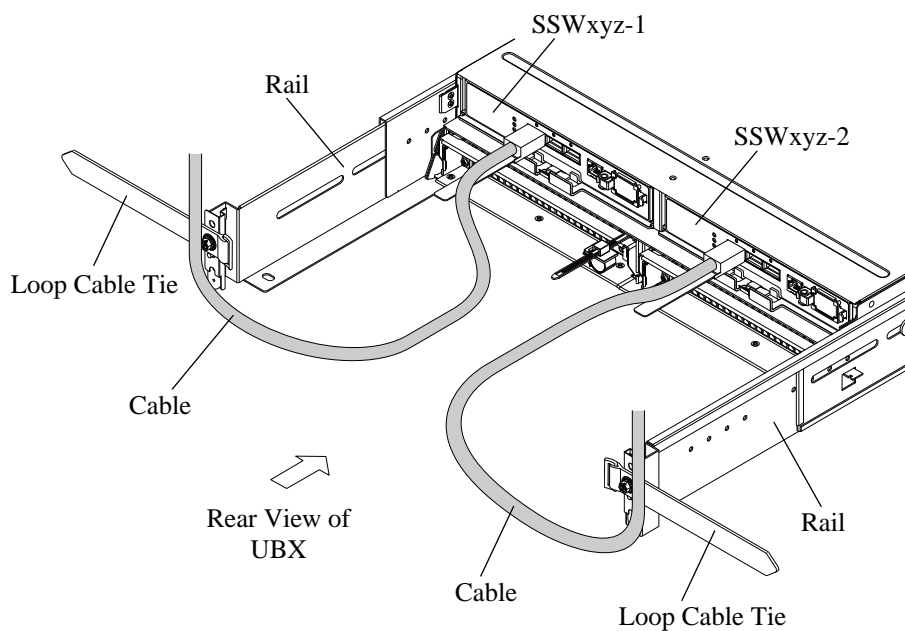


Fig. 3.27.2-2 Release of Cable

2-1-3. Removal of SSW.

- Disconnect the cables which connect to the SSW to be replaced.
- Pull the right and left levers and remove the SSW.

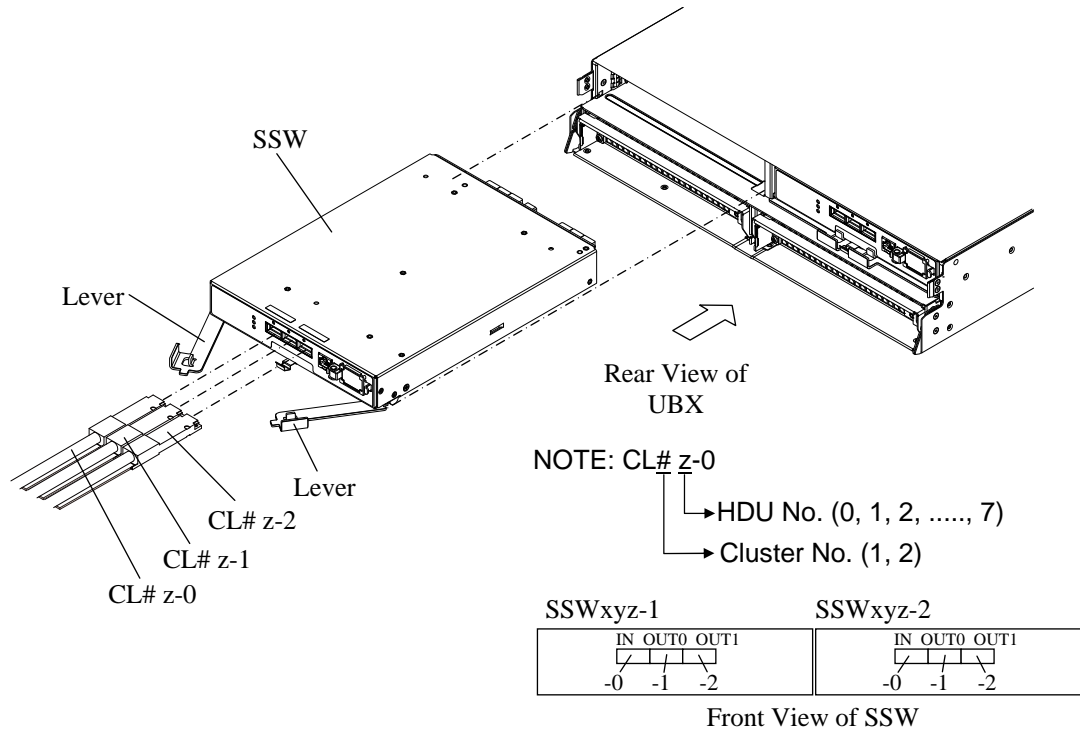


Fig. 3.27.2-3 Removal of SSW

2-1-4. Switch Settings of Spare SSW.

- Open the cover of the spare SSW.
- Set the switches in the SSW with the cover open. For switch settings, refer to [LOC06-30 through 150](#).

NOTE: Use something sharp (ex. a pen or a mini screwdriver etc.) when set the SSW switches.

- Close the cover of the SSW.

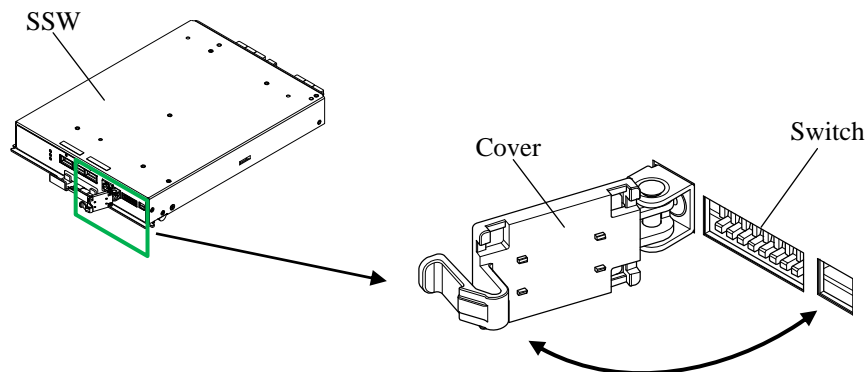
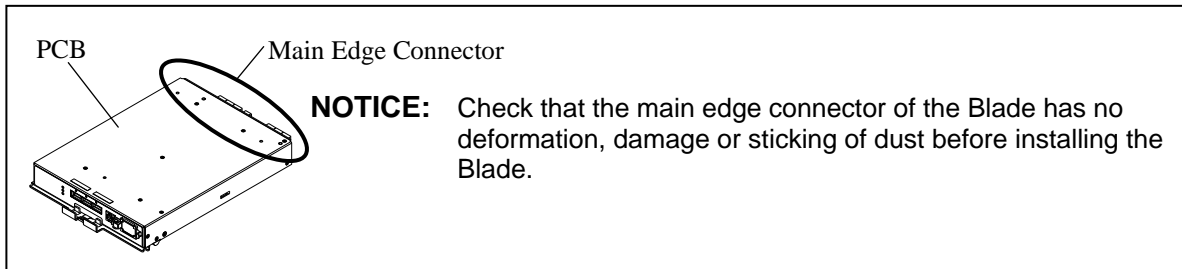


Fig. 3.27.2-4 Opening Cover

2-1-5. Attachment of SSW.

- a. Make the right and left levers of the spare SSW open. (See Fig. 3.27.2-3.)
- b. Insert the spare SSW until the edge of the lever comes in contact with the UBX.
- c. Close the right and left levers to insert the SSW completely.
- d. Connect the cables to the SSW after checking “3.1.6 Notes when connecting the DEV interface cable” ([INST03-01-180](#)).
- e. Close the loop cable tie on the rail on the rear side of the UBX to secure the cable. (See Fig. 3.27.2-2.)



2-1-6. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of SSW>

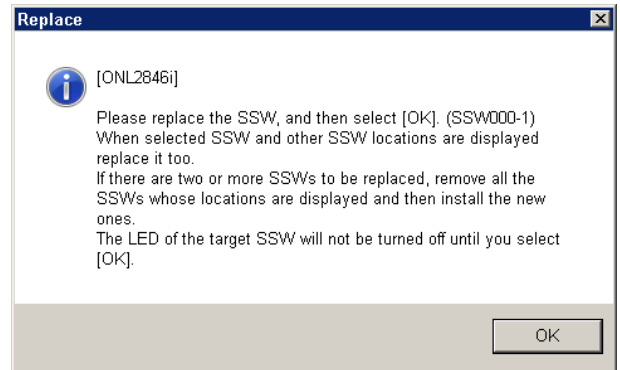
Select (CL) [OK] in response to “Please replace the SSW, and then select [OK].

(SSWnnn-n)

When selected SSW and other SSW locations are displayed replace it too.

If there are two or more SSWs to be replaced, remove all the SSWs whose locations are displayed and then install the new ones.

The LED of the target SSW will not be turned off until you select [OK].” After replacement, press OK.

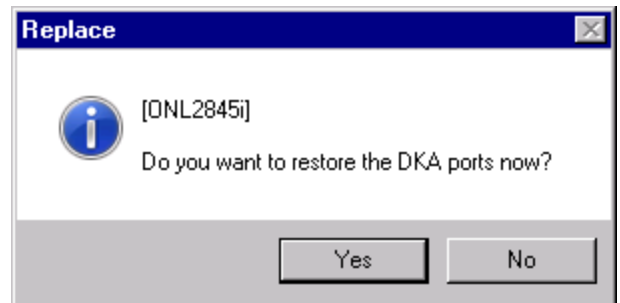


Make sure that the SSW PCB location is displayed, select (CL) the [OK] button after replacing target SSW PCBs.

Even if the SSW LED is not turned on, please replace the SSW PCBs.

3-2. <Check the beginning of DKA Port recovery>

Select (CL) [Yes] in response to “Do you want to restore the DKA ports now?”.



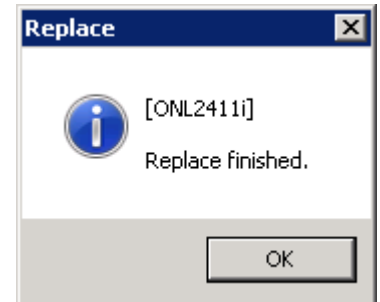
3-3. <DKU PATH INLINE>

“DKU PATH INLINE is now running...” is displayed.

NOTICE: When a failure is found during DKU PATH INLINE, the DKA Port connected to the loop are blocked.
Confirm the Diagnosis Log and solve the problem

- 3-4. <Check DKA Port recovery processing>
“Restoring the DKA Port...” is displayed.

- 3-5. <Check the end of SSW replace>
Select (CL) [OK] in response to “Replace finished.”.



- 3-6.
Go to POST-PROCEDURE ([REP04-01-10](#)).

[FBX SSW REPLACEMENT PROCESSING - RUF1]

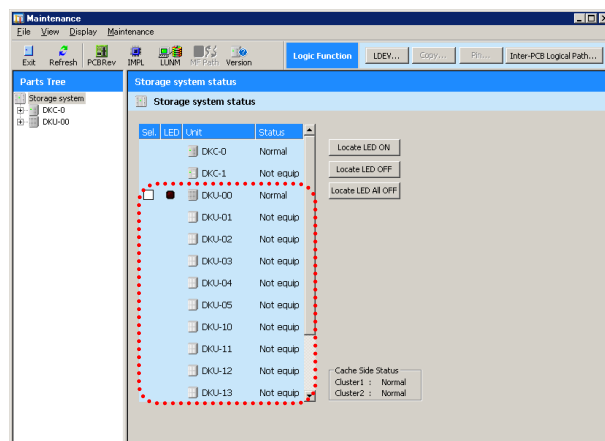
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select SSW
 - ② Specify Replacement
 - ③ Place SSW into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify recovery of DKA Port connected to SSW

1. PRE-PROCESSING of SVP

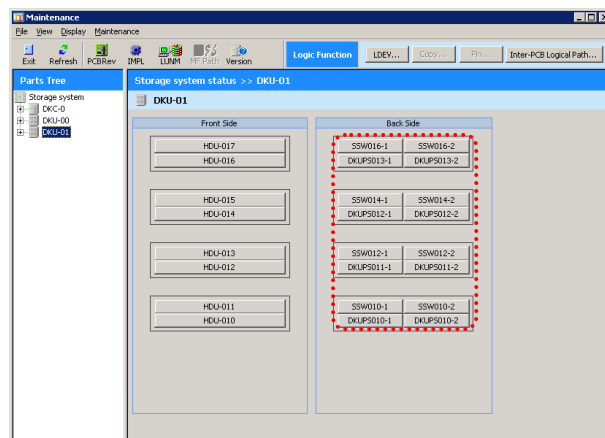
1-1. <Maintenance window>

Select (CL) the DKU information [DKU-*nn*] of the DKU which installs the SSW to be replaced in the 'Maintenance' window.



1-2. <Select SSW>

Check and select (CL) [SSWnnn-n] to be replaced.



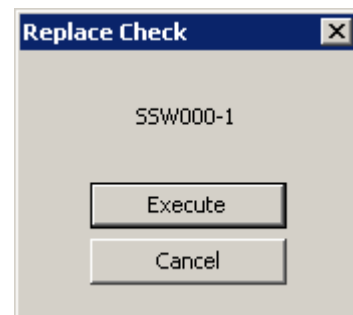
1-3. <Specify replacement>

NOTICE: When the screen requests an operator to input a password in order to prevent multiple maintenance, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

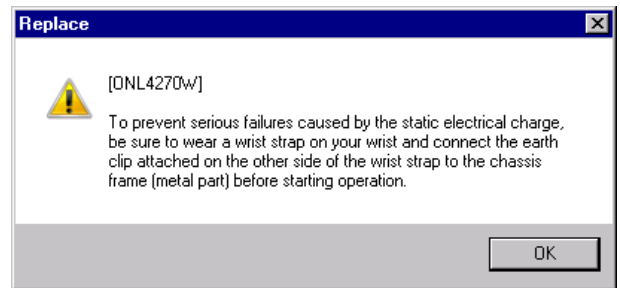
Select (CL) [Execute].

Selecting (CL) [Cancel] returns you to Step 1-2.



1-4. <Wear a wrist strap>

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



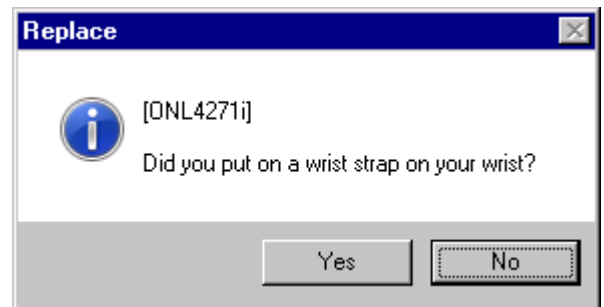
(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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

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

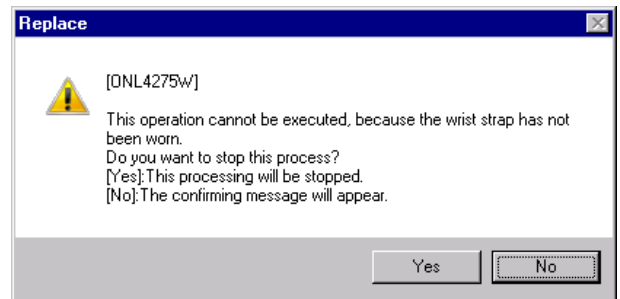


(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



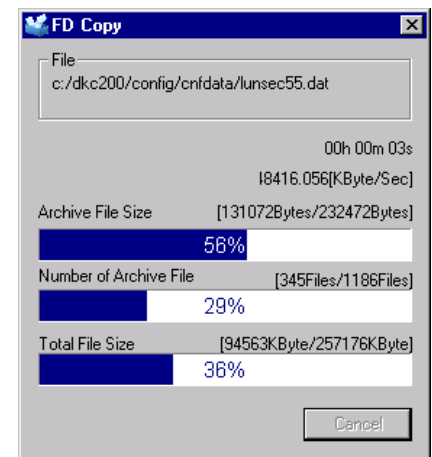
When [Yes] is selected (CL), returned to Step 1-2.

When [No] is selected (CL), returned to Step 1-4.

1-5. <Compression of the error information>

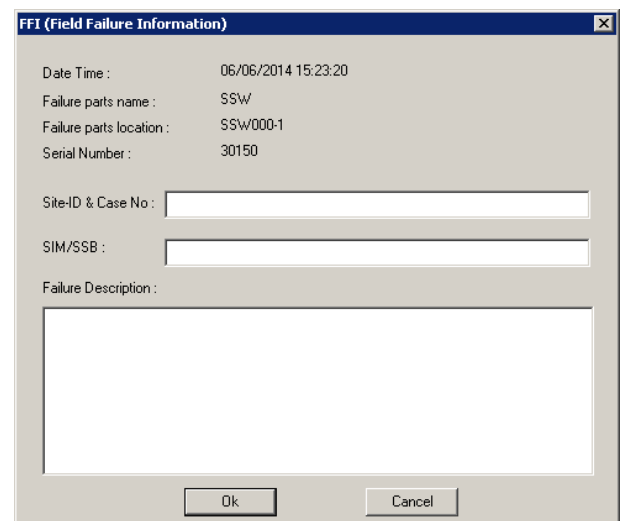
The error information is compressed.

The dialog of FD Copy is displayed.



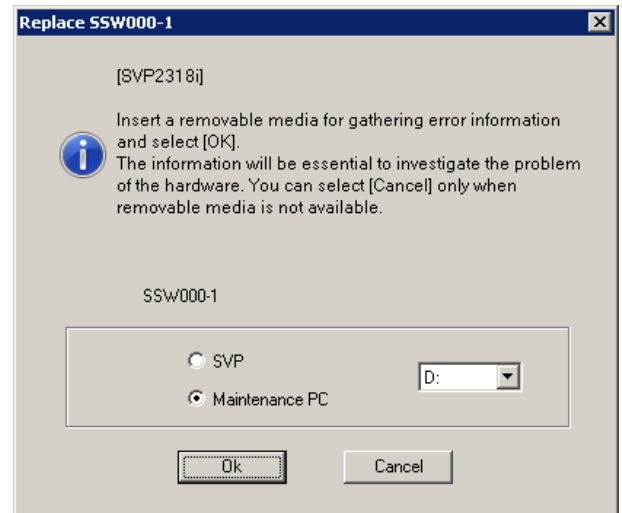
1-6. <Get the error information>

Input the Field Failure Information, and select (CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

Trouble information is preserved in Maintenance PC connected with SVP.
Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



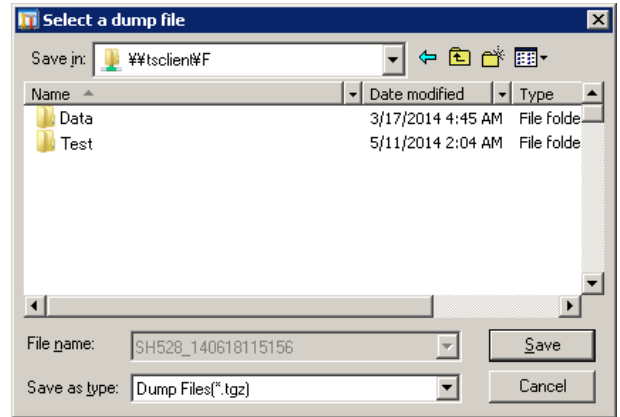
A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format “SH528_YYMMDDhhmmss.tgz”.
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.

Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

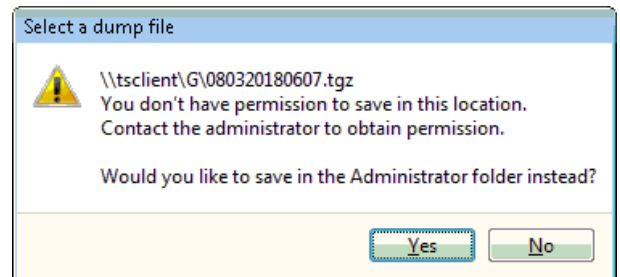


NOTE: The message is displayed two or more times. Please only operate the SSW selected by 1-3. <Specify replacement>.

- When the destination media is write-protected.

Selecting (CL) [Yes] displays the "C:\users\Administrator" folder of SVP. Selecting (CL) [No] displays the folder selected with the Maintenance PC.

Please appoint another destination whether you remove write protect when you save it and carry it out.

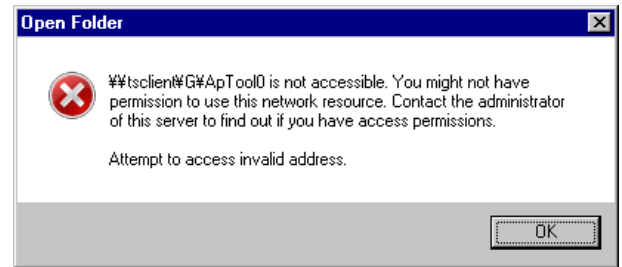


- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

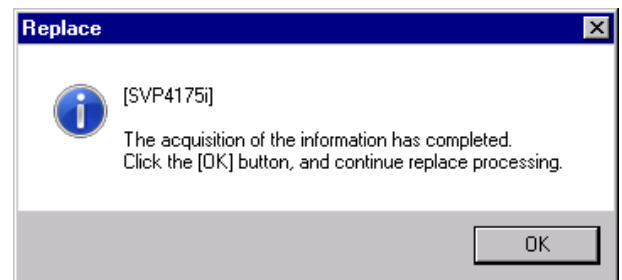
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].

At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

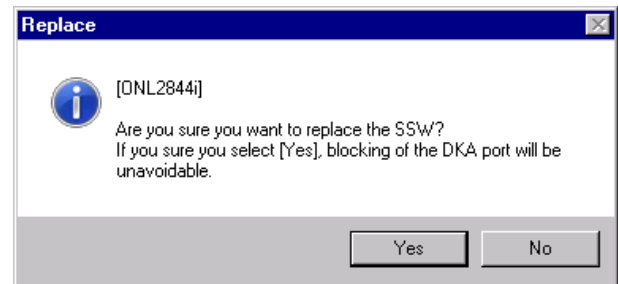


Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.



1-7. <Check beginning of DKA Port blocking>

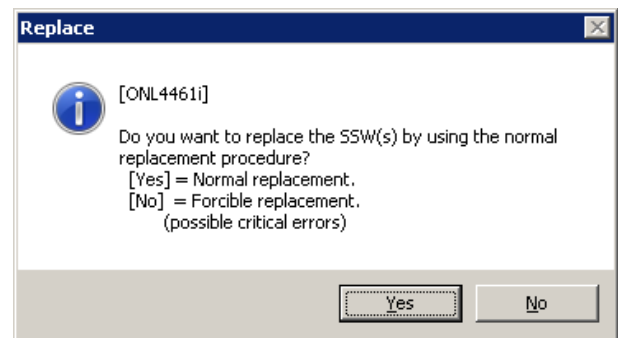
Select (CL) [Yes] in response to “Are you sure you want to replace the SSW? If you select [Yes], blocking of the DKA port will be unavoidable.”.



1-8. <Caution message for system down>

NOTICE: Select (CL) [Yes] in response to the message below.

“Do you want to replace the SSW(s) by using the normal replacement procedure?
[Yes] = Normal replacement.
[No] = Forcible replacement.
(possible critical errors)”.



1-9. <Check DKA Port blocking>

“The DKA Port is being blocked...” is displayed.

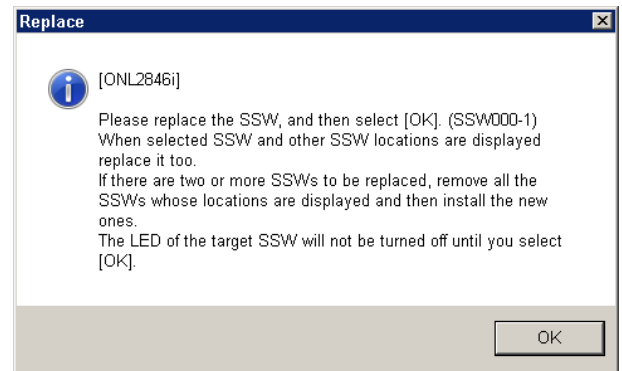
1-10. <Replace SSW>

“Please replace the SSW, and then select [OK]. (SSWnnn-n)

When selected SSW and other SSW locations are displayed replace it too.

If there are two or more SSWs to be replaced, remove all the SSWs whose locations are displayed and then install the new ones.

The LED of the target SSW will not be turned off until you select [OK].” is displayed.



Make sure of the SSW PCB location is displayed, select (CL) the [OK] button after replaced target SSW PCB.

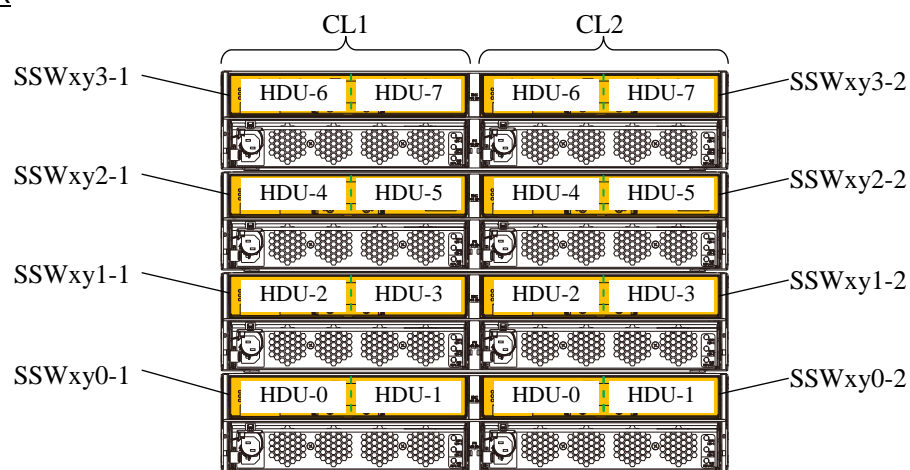
If the SSW LED is not turned on, please replace SSW PCB.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of FBX	1	SSW	

FBX



Rear View of
FBX

NOTE: SSWxy0-1

- DKU No. (0, 1, 2,, 5)
- DKC No. (0, 1)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of SSW

2-1-1. Checking lighting of LED

- a. Check Shut Down LED on the SSW.

CAUTION

A system down is caused by a replacement of the SSW PCB other than that to be replaced. Make sure that it is the SSW PCB to be replaced.

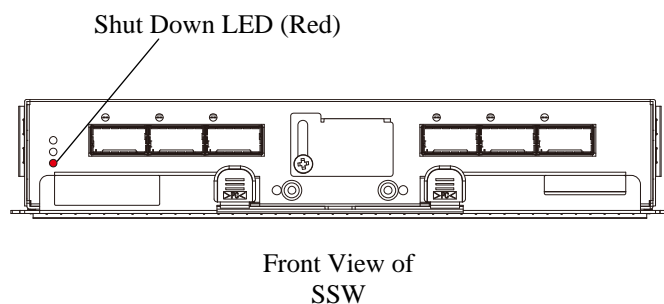


Fig. 3.28.2-1 Confirmation of Shut Down LED

2-1-2. Release of Cable

- a. When replacing the SSWxyz-1, open the loop cable tie attached to the rail on the rear left side of the FBX.
When replacing the SSWxyz-2, open the loop cable tie attached to the rail on the rear right side of the FBX.

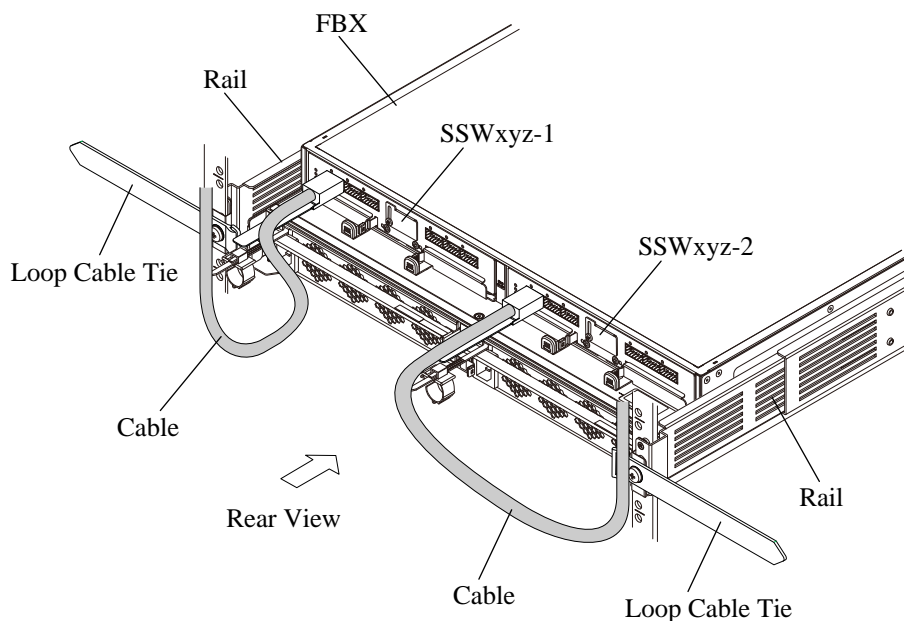


Fig. 3.28.2-2 Release of Cable

2-1-3. Removal of SSW

- Disconnect the cables from the SSW.
- Press the latches of the SSW inward to unlock the levers.
- Pull the levers of the SSW toward you and remove the SSW from the FBX.

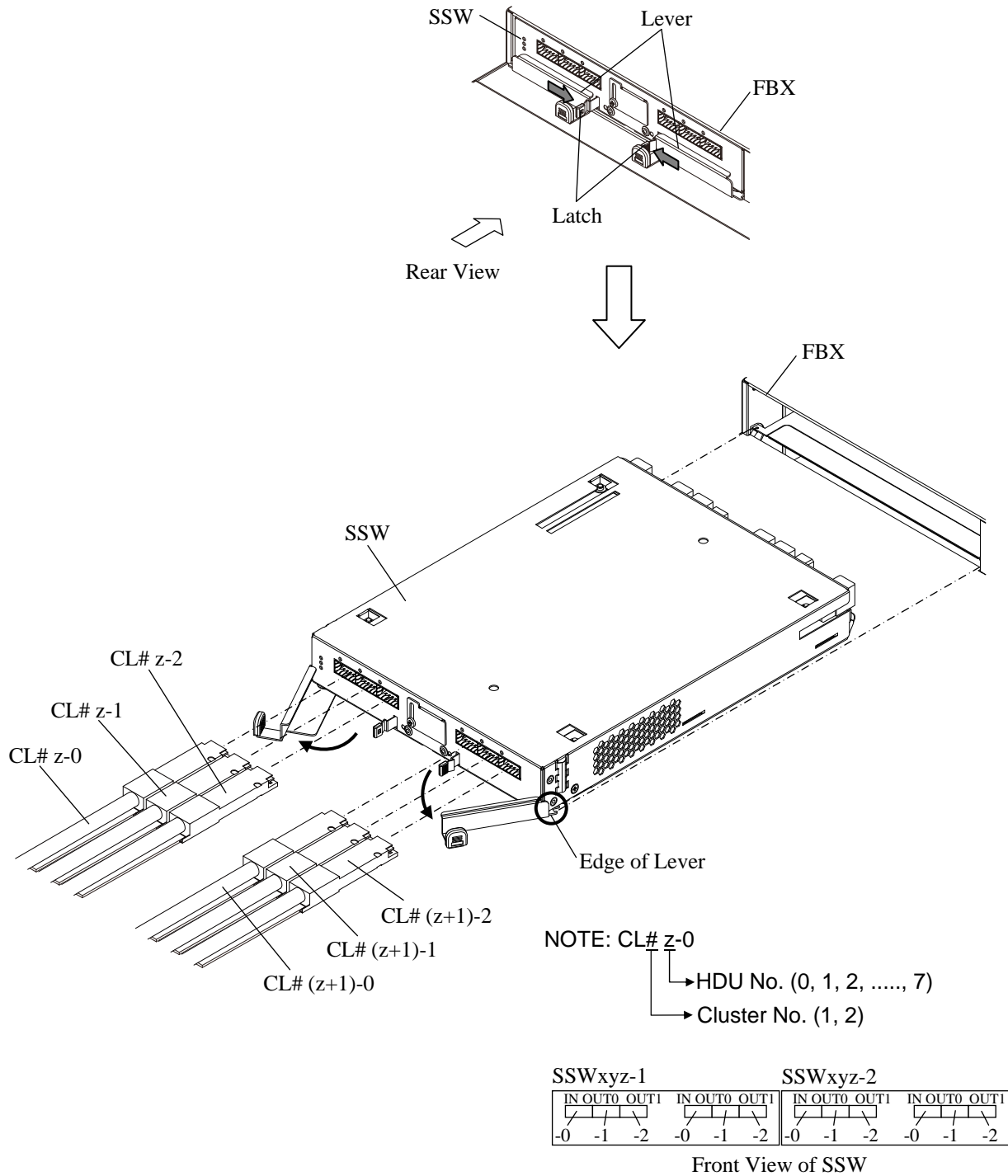


Fig. 3.28.2-3 Removal of SSW

2-1-4. Switch Settings of Spare SSW

- Loosen the screw on the spare SSW and open the cover.
- Set the switches of the spare SSW. For switch settings, refer to [LOC06-190 through 250](#).

NOTE: Use something sharp (ex. a pen or a mini screwdriver etc.) when set the SSW switches.

- Close the cover of the spare SSW and tighten the screw.

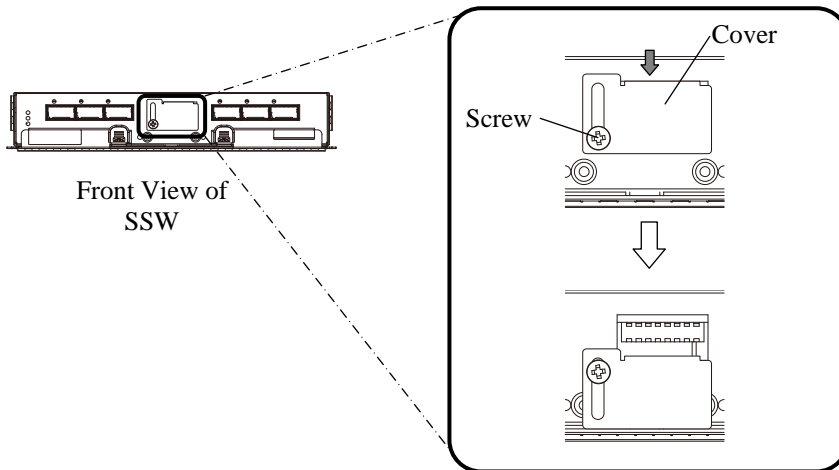
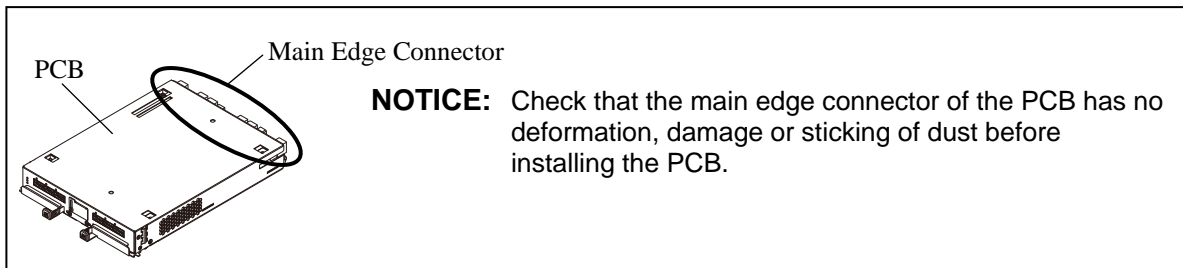


Fig. 3.28.2-4 Opening Cover

2-1-5. Attachment of SSW

- Fully open the levers of the spare SSW. (Refer to Fig. 3.28.2-3.)
- Insert the SSW until the edge of the levers comes in contact with the FBX.



- Close the levers and completely insert the SSW. Then confirm that the latches hold the levers.
- Connect the cables to the SSW after checking “3.1.6 Notes when connecting the DEV interface cable” ([INST03-01-180](#)).
- Close the loop cable tie on the rail on the rear side of the FBX to secure the cable. (See Fig. 3.28.2-2.)

2-1-6. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check replacement of SSW>

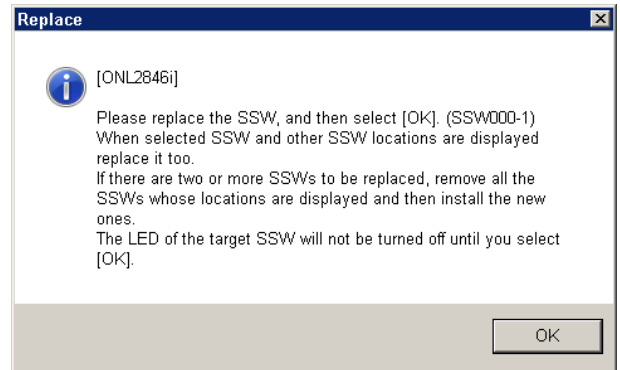
Select (CL) [OK] in response to “Please replace the SSW, and then select [OK].

(SSWnnn-n)

When selected SSW and other SSW locations are displayed replace it too.

If there are two or more SSWs to be replaced, remove all the SSWs whose locations are displayed and then install the new ones.

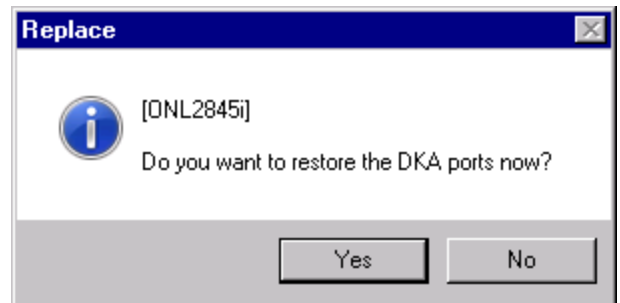
The LED of the target SSW will not be turned off until you select [OK].” After replacement, press OK.



Please only replace the SSW selected by 1-3. <Specify replacement>. Make sure that the SSW PCB location is displayed, select (CL) the [OK] button after replacing target SSW PCBs. Even if the SSW LED is not turned on, please replace the SSW PCBs.

3-2. <Check the beginning of DKA Port recovery>

Select (CL) [Yes] in response to “Do you want to restore the DKA ports now?”.



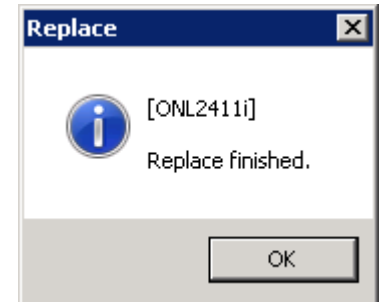
3-3. <DKU PATH INLINE>

“DKU PATH INLINE is now running...” is displayed.

NOTICE: When a failure is found during DKU PATH INLINE, the DKA Port connected to the loop are blocked.
Confirm the Diagnosis Log and solve the problem

- 3-4. <Check DKA Port recovery processing>
“Restoring the DKA Port...” is displayed.

- 3-5. <Check the end of SSW replace>
Select (CL) [OK] in response to “Replace finished.”.



- 3-6.
Go to POST-PROCEDURE ([REP04-01-10](#)).

[2.5 inch DKUPS REPLACEMENT PROCESSING - RUS2]

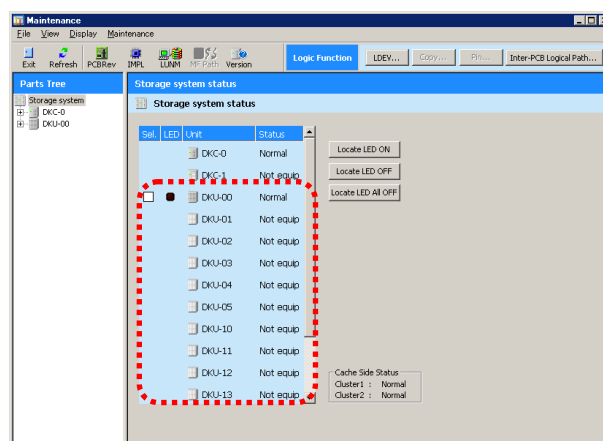
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select 2.5 inch DKUPS (status check)
 - ② Specify Replacement
 - ③ Detach 2.5 inch DKUPS
 - ④ Place part into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of 2.5 inch DKUPS replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

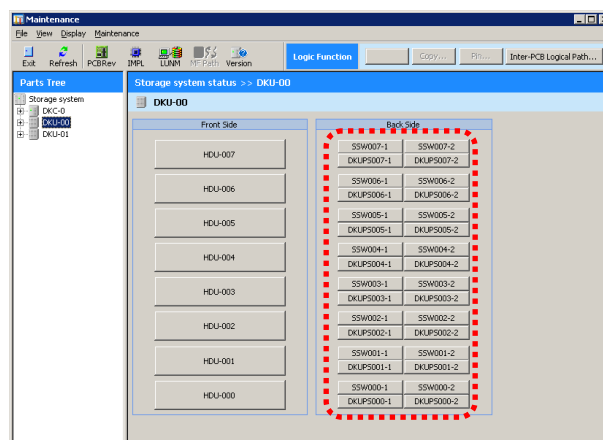
1-1. <Maintenance window>

Select (CL) [DKU-nn] in the 'Maintenance' window.



1-2. <Specify DKUPS>

Select (CL) [DKUPSnnn-n].

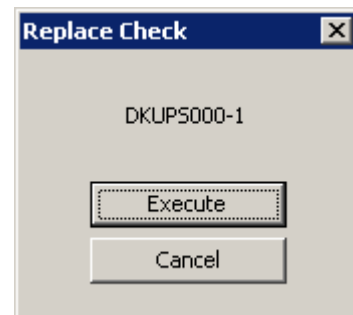


1-3. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction

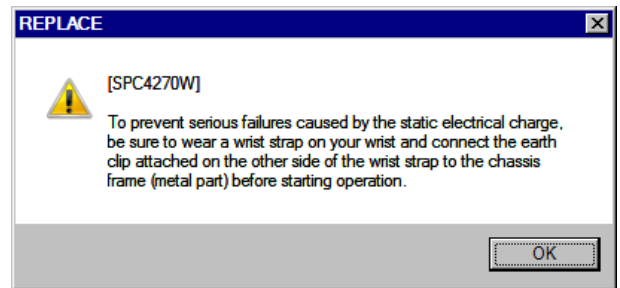
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

A window shown on the right is displayed.
Select (CL) [Execute].



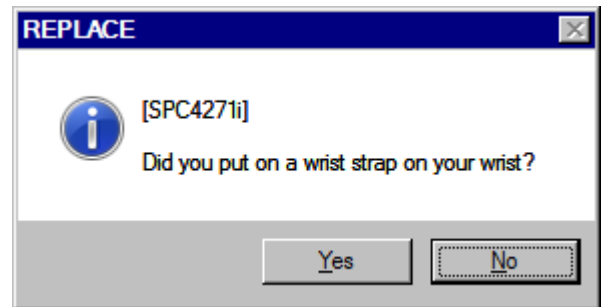
1-4. <Wear a wrist strap>

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



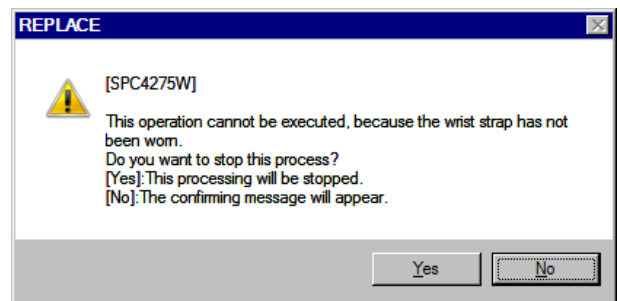
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-5.



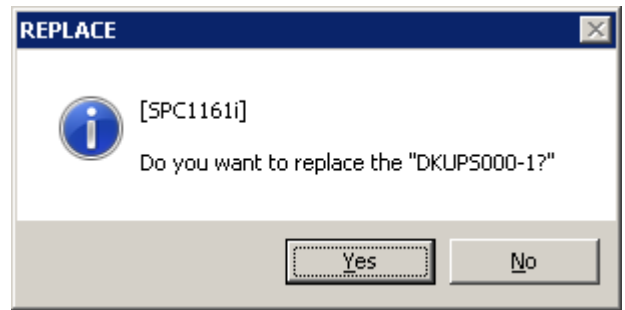
“This operation cannot be executed, because the wrist strap has not been worn.
Do you want to stop this process?
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.”
is displayed.

When the processing will be stopped, select (CL) [Yes].



1-5. <Check beginning of DKUPS Replacement>

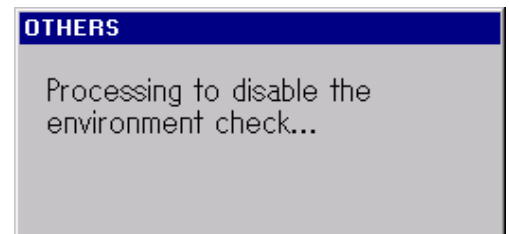
Select (CL) [Yes] in response to “Do you want to replace the “DKUPSnnn-n?””.



(Eg. DKUPS000-1)

1-6. <Check environment monitor stopped state>

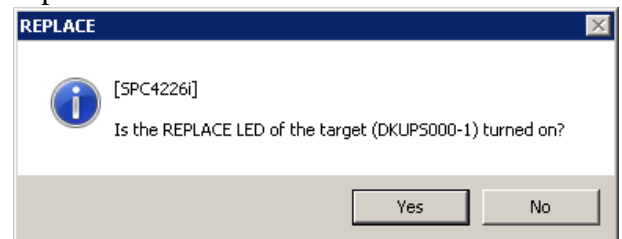
The message “Processing to disable the environment check...” is displayed.

**1-7. <Checking lighting of the LED on the PCB to be pulled out>**

The message “Is the REPLACE LED of the target (DKUPSnnn-n) turned on?” is displayed.

When the LED on the PCB to be pulled out is on, select (CL) [Yes] and go to Step 1-9.

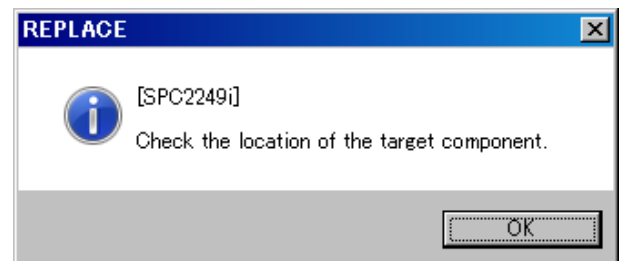
When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 1-8.

**1-8. <Making sure of the DKUPS location>**

The message “Check the location of the target component.” is displayed.

See “2. HARDWARE REPLACEMENT PROCESSING”.

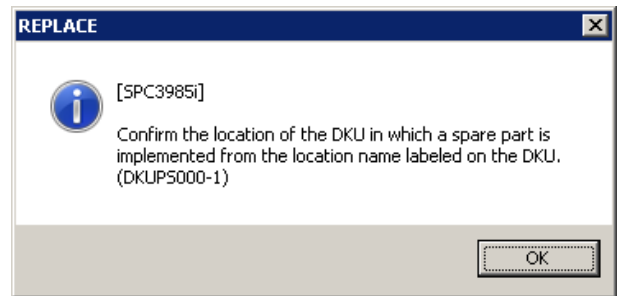
After making sure of the DKUPS location, select (CL) [OK] and go to Step 1-9.



1-9. <Check beginning of DKUPS replacement>

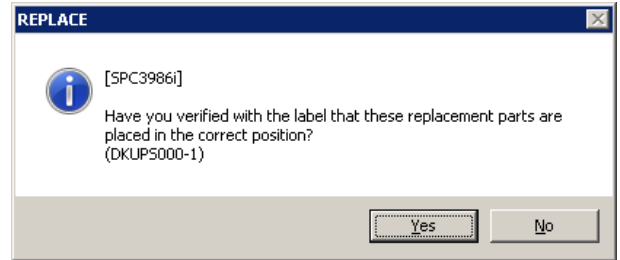
The message “Confirm the location of the DKU in which a spare part is implemented from the location name labeled on the DKU. (DKUPSnnn-n)” is displayed.

Select (CL) [OK] after you confirmed the content.



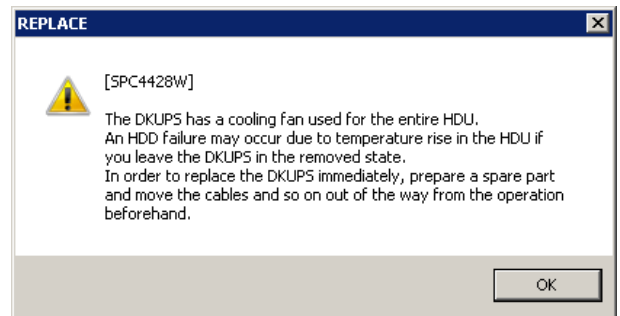
The message “Have you verified with the label that these replacement parts are placed in the correct position? (DKUPSnnn-n)” is displayed.

Select (CL) [Yes] after you confirmed the content.



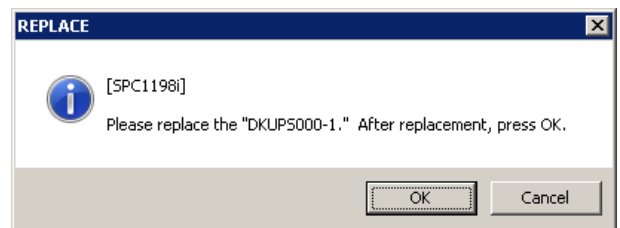
The message to warn of the influence of the DKUPS removal is displayed.

According to the message, select (CL) [OK] after getting ready in advance.



The message “Please replace the “DKUPSnnn-n.” After replacement, press OK.” is displayed.

Reply with [OK] after replacing the special part.

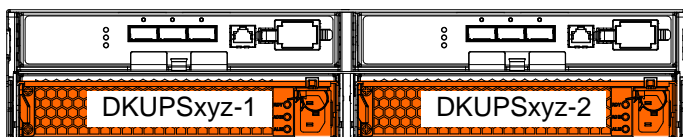


(Eg. DKUPS000-1)

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of SBX	1	DKUPS	



Rear View of SBX

NOTE: DKUPS_{xyz-1}

- HDU No. (0, 1, 2, ..., 7)
- DKU No. (0, 1, 2, ..., 5)
- DKC No. (0, 1)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

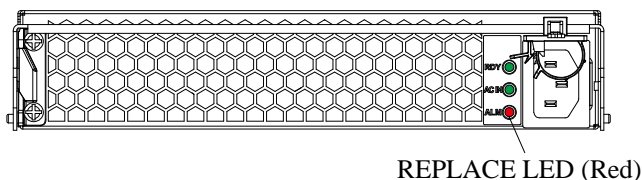
2-1 Replacement of DKUPS

2-1-1. Checking lighting of LED

- a. Check that the REPLACE LED is on.

CAUTION

A system down is caused by a replacement of the DKUPS other than that to be replaced. Make sure that it is the DKUPS to be replaced.



Front View of DKUPS

Fig. 3.29.2-1 Check of REPLACE LED

2-1-2. Release of Cable

- a. When replacing the DKUPSxyz-1, open the loop cable tie attached to the rail on the rear left side of the SBX.
When replacing the DKUPSxyz-2, open the loop cable tie attached to the rail on the rear right side of the SBX.

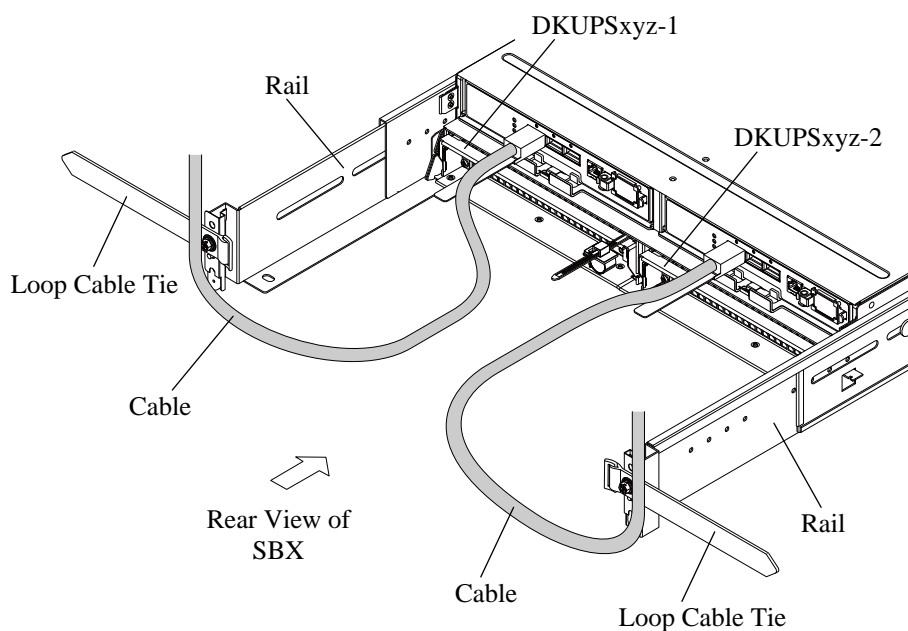


Fig. 3.29.2-2 Release of Cable

- b. When replacing the DKUPSxyz-1, remove the binder from the rail of the rear left side of the SBX.
When replacing the DKUPSxyz-2, remove the binder from the rail of the rear right side of the SBX.

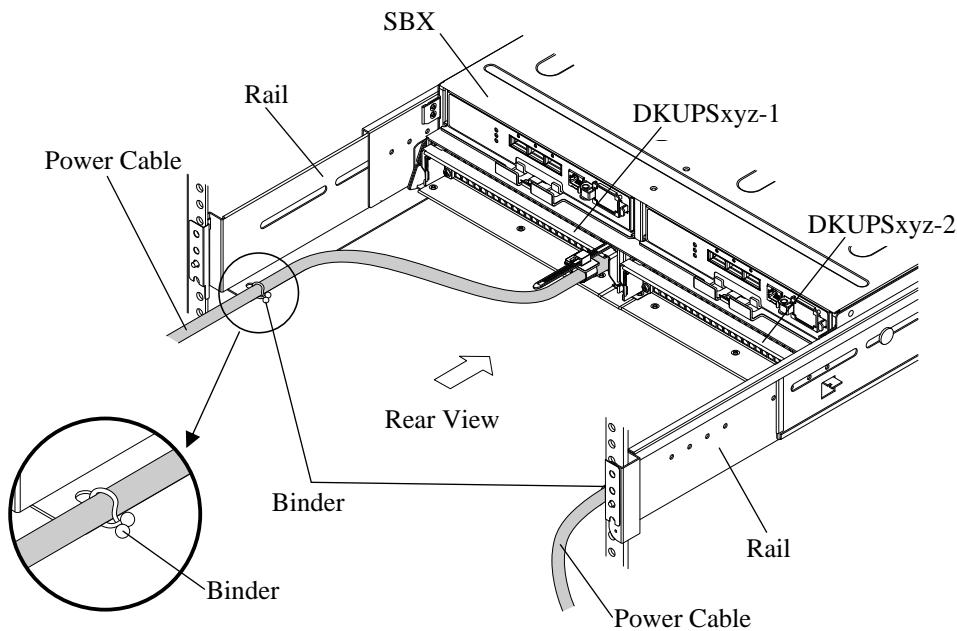


Fig. 3.29.2-3 Removal of Binder

2-1-3. Replacement of DKUPS

- Pull and open the cable holder.
- Disconnect the power cable from the DKUPS.

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.

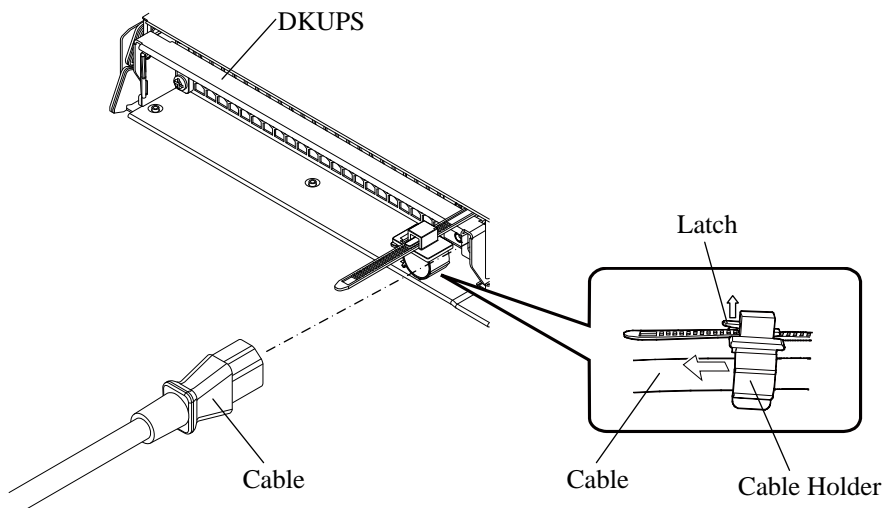


Fig. 3.29.2-4 Disconnection of Cable

- c. Bring the handle down and forward (②) while pushing the latch of the DKUPS inward (①).
- d. Pull the DKUPS and remove it from the SBX.
- e. Make the handle completely fall down and forward.
- f. Insert the spare DKUPS into the slot and push it to the full.
- g. Completely raise the handle and fix the DKUPS.
- h. Connect the power cable to the DKUPS and fasten it with the cable holder. (See Fig. 3.29.2-4.)
- i. Push the cable holder toward the DKUPS until it stops.
- j. Attach the binder to the rail of the rear side of the SBX to fix the power cable. (See Fig. 3.29.2-3.)
- k. Close the loop cable tie on the rail on the rear side of the SBX to secure the cable. (See Fig. 3.29.2-2.)

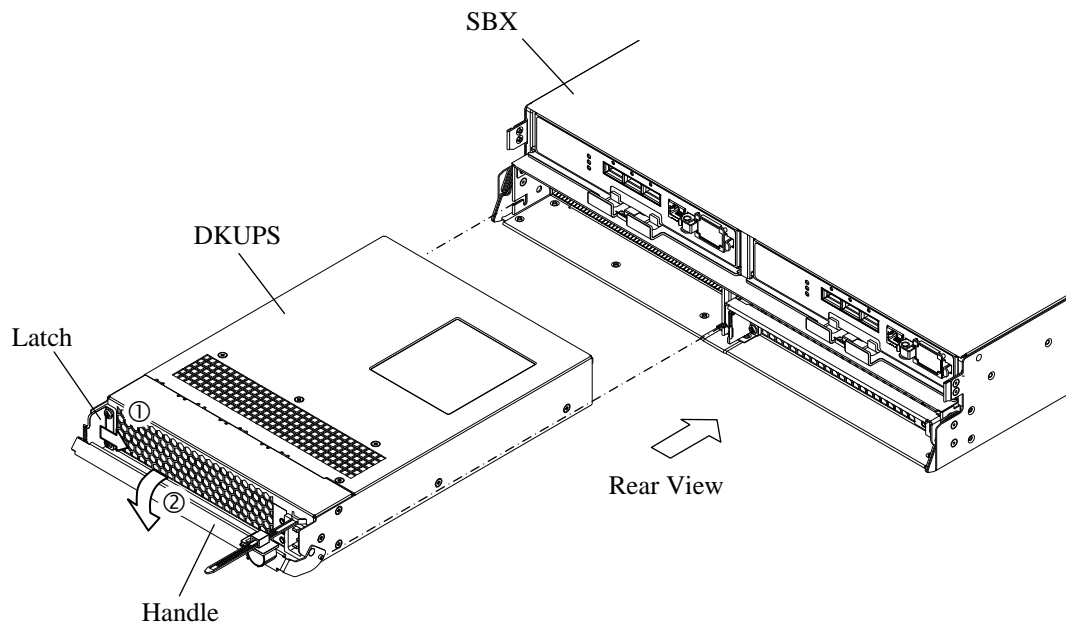


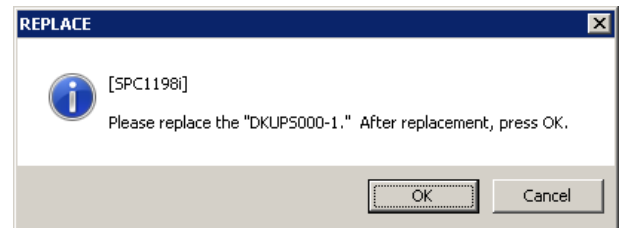
Fig. 3.29.2-5 Replacement of DKUPS

2-1-4. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check beginning of DKUPS Replacement>

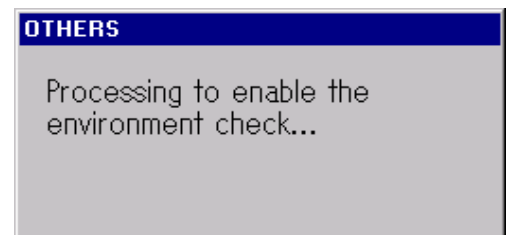
Select (CL) [OK] in response to “Please replace the “DKUPSnnn-n.” After replacement, press OK.”



(Eg. DKUPS000-1)

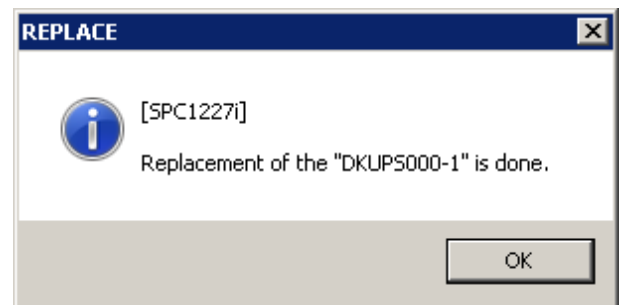
3-2. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-3. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKUPSnnn-n” is done.”



(Eg. DKUPS000-1)

3-4. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-5.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-5.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[3.5 inch DKUPS REPLACEMENT PROCESSING - RUL2]

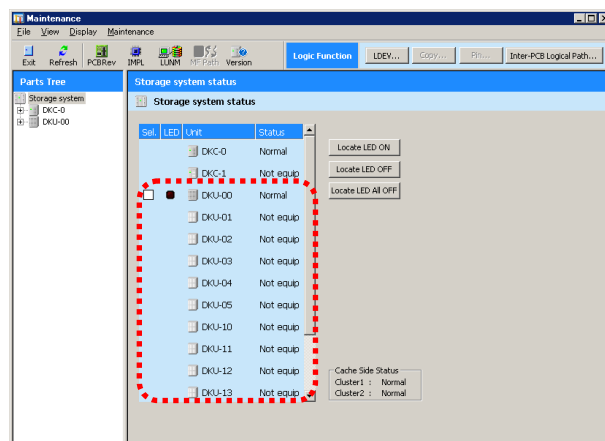
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select 3.5 inch DKUPS (status check)
 - ② Specify Replacement
 - ③ Detach 3.5 inch DKUPS
 - ④ Place part into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of 3.5 inch DKUPS replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

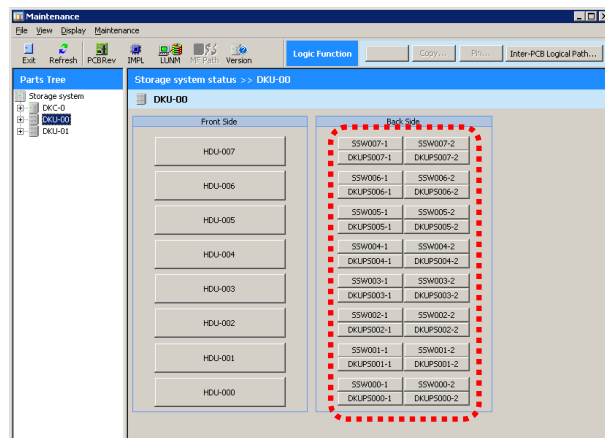
1-1. <Maintenance window>

Select (CL) [DKU-nn] in the 'Maintenance' window.



1-2. <Specify DKUPS>

Select (CL) [DKUPSnnn-n].

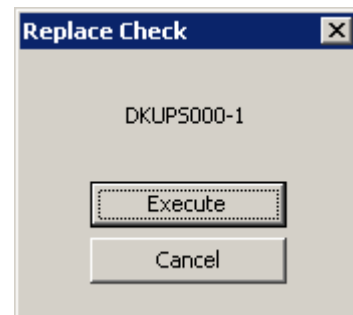


1-3. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction

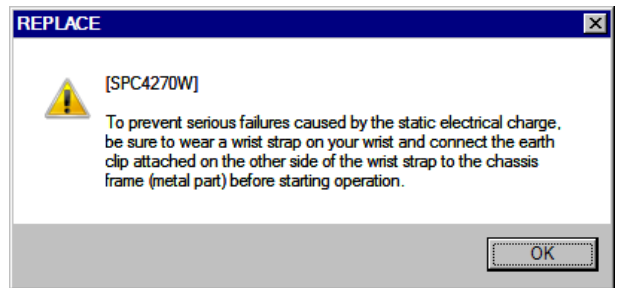
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

A window shown on the right is displayed.
Select (CL) [Execute].



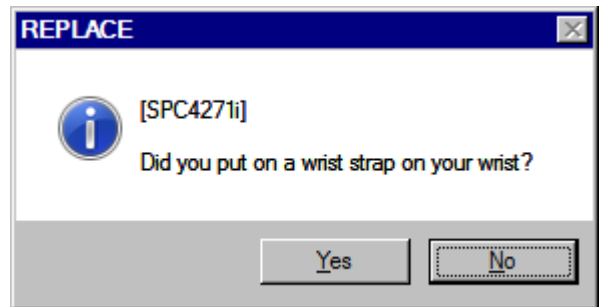
1-4. <Wear a wrist strap>

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



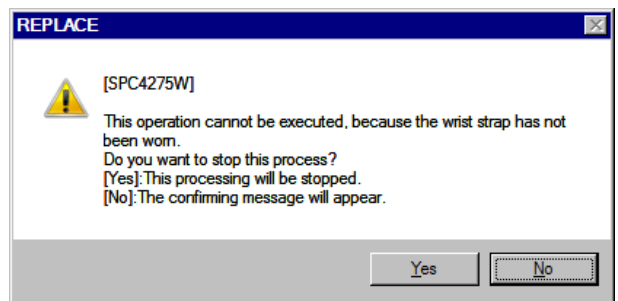
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-5.



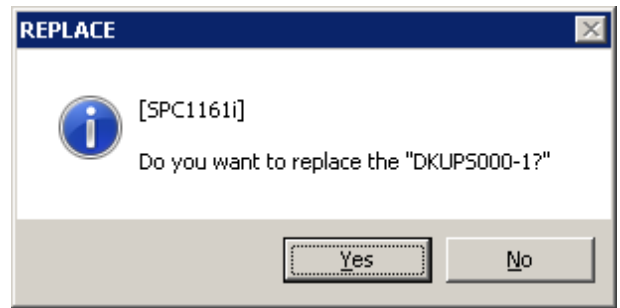
“This operation cannot be executed, because the wrist strap has not been worn. Do you want to stop this process?”
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.” is displayed.

When the processing will be stopped, select (CL) [Yes].



1-5. <Check beginning of DKUPS Replacement>

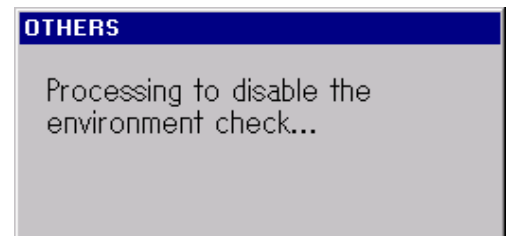
Select (CL) [Yes] in response to “Do you want to replace the “DKUPSnnn-n”?”



(Eg. DKUPS000-1)

1-6. <Check environment monitor stopped state>

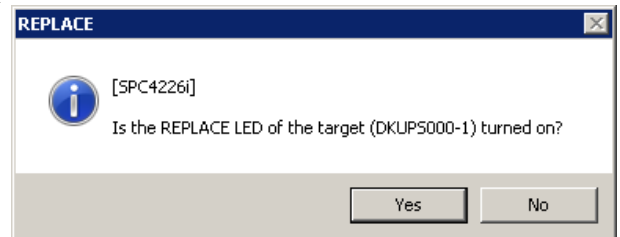
The message “Processing to disable the environment check...” is displayed.

**1-7. <Checking lighting of LED on the PCB to be pulled out>**

The message “Is the REPLACE LED of the target (DKUPSnnn-n) turned on?” is displayed.

When the LED on the PCB to be pulled out is on, select (CL) [Yes] and go to Step 1-9.

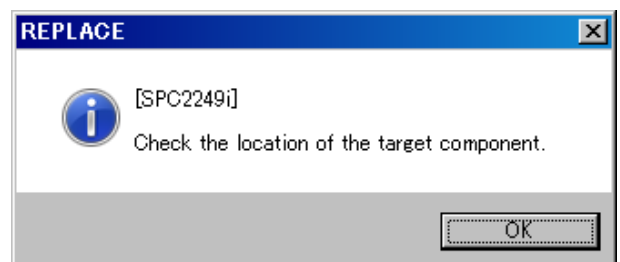
When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 1-8.

**1-8. <Making sure of the DKUPS location>**

The message “Check the location of the target component.” is displayed.

See “2. HARDWARE REPLACEMENT PROCESSING”.

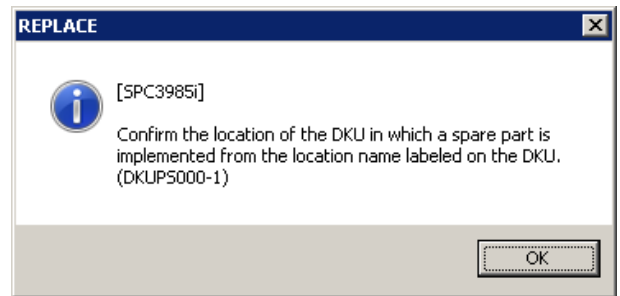
After making sure of the DKUPS location, select (CL) [OK] and go to Step 1-9.



1-9. <Check beginning of DKUPS Replacement>

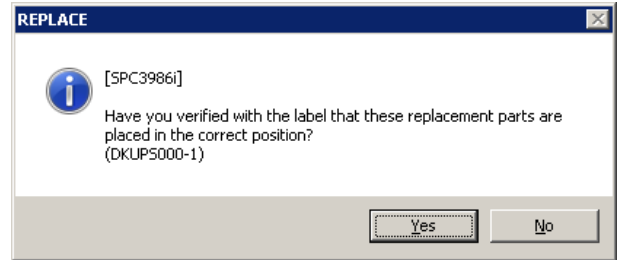
The message “Confirm the location of the DKU in which a spare part is implemented from the location name labeled on the DKU. (DKUPSnnn-n)” is displayed.

Select (CL) [OK] after you confirmed the content.



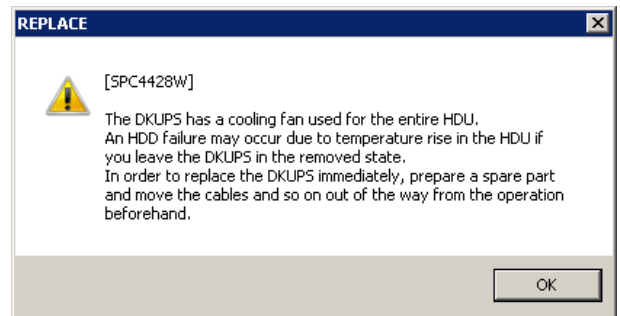
The message “Have you verified with the label that these replacement parts are placed in the correct position? (DKUPSnnn-n)” is displayed.

Select (CL) [Yes] after you confirmed the content.



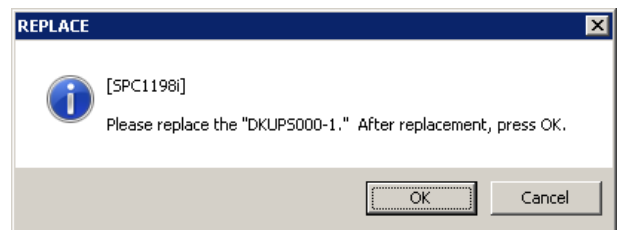
The message to warn of the influence of the DKUPS removal is displayed.

According to the message, select (CL) [OK] after getting ready in advance.



The message “Please replace the “DKUPSnnn-n.” After replacement, press OK.” is displayed.

Reply with [OK] after replacing the special part.

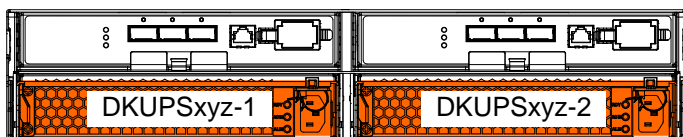


(Eg. DKUPS000-1)

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of UBX	1	DKUPS	



Rear View of UBX

NOTE: DKUPSxyz-1

- HDU No. (0, 1, 2,, 7)
- DKU No. (0, 1, 2, ..., 5)
- DKC No. (0, 1)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

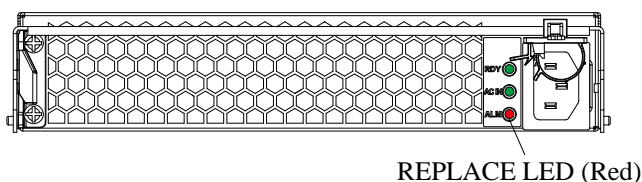
2-1 Replacement of DKUPS

2-1-1. Checking lighting of LED

- Check that the REPLACE LED is on.

CAUTION

A system down is caused by a replacement of the DKUPS other than that to be replaced. Make sure that it is the DKUPS to be replaced.



Front View of DKUPS

Fig. 3.30.2-1 Check of REPLACE LED

2-1-2. Release of Cable

- When replacing the DKUPSxyz-1, open the loop cable tie attached to the rail on the rear left side of the UBX.
When replacing the DKUPSxyz-2, open the loop cable tie attached to the rail on the rear right side of the UBX.

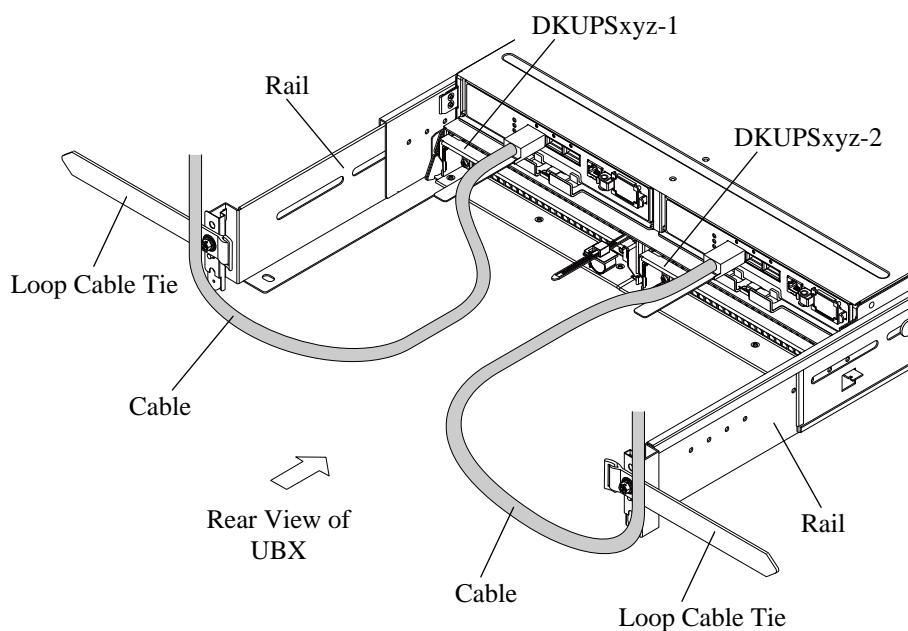


Fig. 3.30.2-2 Release of Cable

- b. When replacing the DKUPSxyz-1, remove the binder from the rail of the rear left side of the UBX.
When replacing the DKUPSxyz-2, remove the binder from the rail of the rear right side of the UBX.

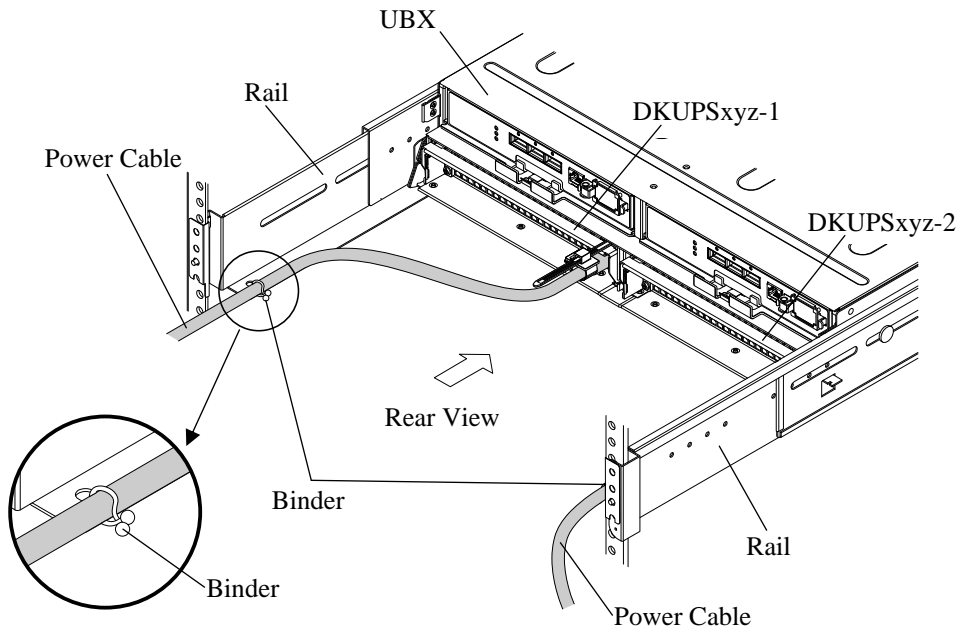


Fig. 3.30.2-3 Removal of Binder

2-1-3. Replacement of DKUPS

- Pull and open the cable holder.
- Disconnect the power cable from the DKUPS.

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.

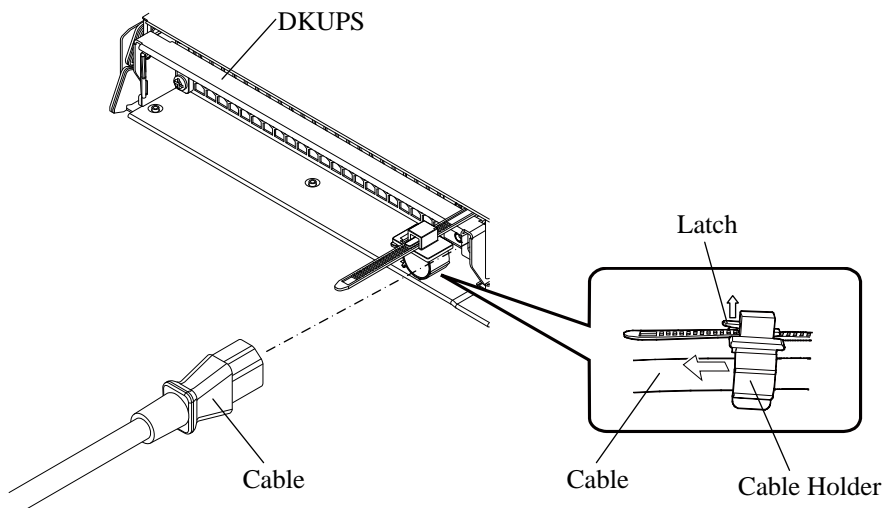


Fig. 3.30.2-4 Disconnection of Cable

- c. Bring the handle down and forward (②) while pushing the latch of the DKUPS inward (①).
- d. Pull the DKUPS and remove it from the UBX.
- e. Make the handle completely fall down and forward.
- f. Insert the spare DKUPS into the slot and push it to the full.
- g. Completely raise the handle and fix the DKUPS.
- h. Connect the power cable to the DKUPS and fasten it with the cable holder. (See Fig. 3.30.2-4.)
- i. Push the cable holder toward the DKUPS until it stops.
- j. Attach the binder to the rail of the rear side of the UBX to fix the power cable. (See Fig. 3.30.2-3.)
- k. Close the loop cable tie on the rail on the rear side of the UBX to secure the cable. (See Fig. 3.30.2-2.)

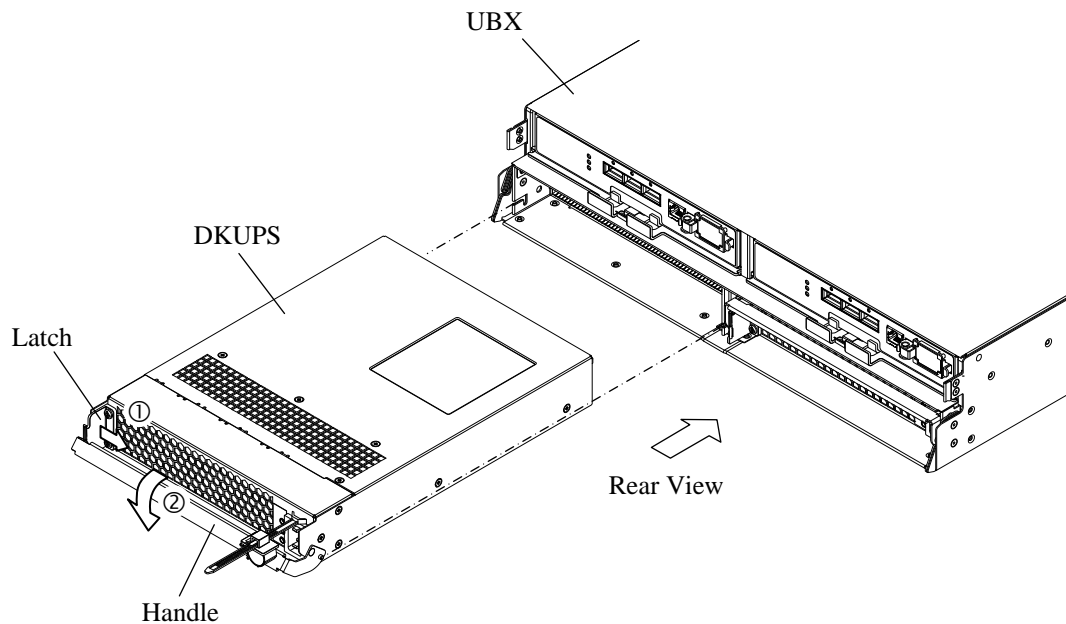


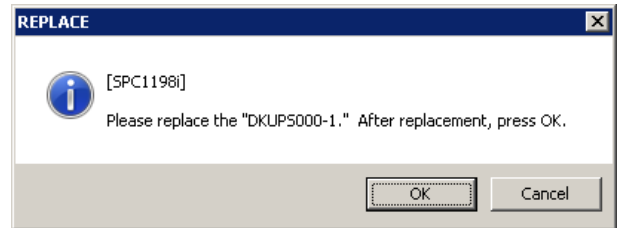
Fig. 3.30.2-5 Replacement of DKUPS

2-1-4. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check beginning of DKUPS Replacement>

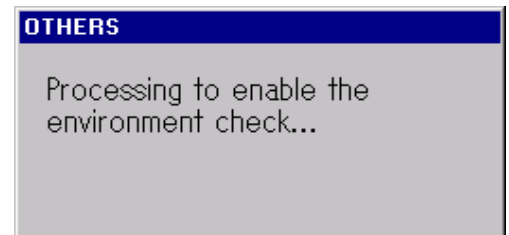
Select (CL) [OK] in response to “Please replace the “DKUPSnnn-n.” After replacement, press OK.”



(Eg. DKUPS000-1)

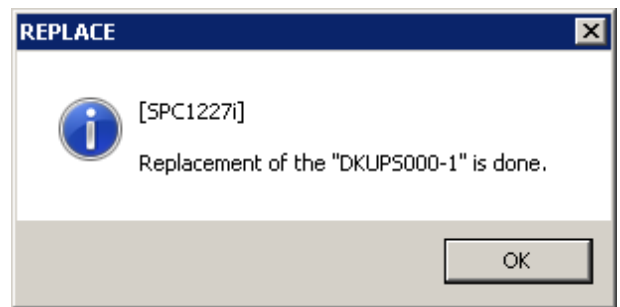
3-2. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-3. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKUPSnnn-n” is done.”



(Eg. DKUPS000-1)

3-4. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-5.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-5.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[FBX DKUPS REPLACEMENT PROCESSING - RUF2]

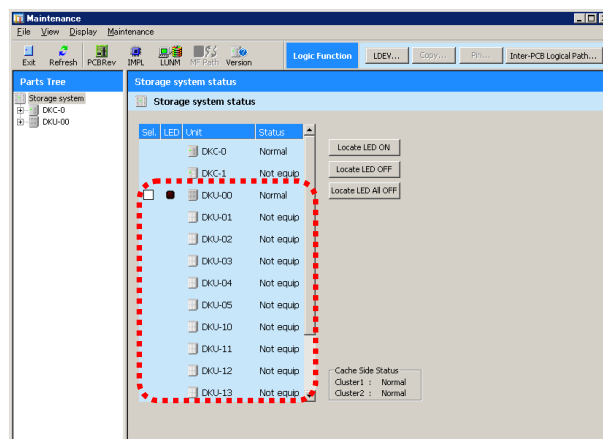
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select FBX DKUPS (status check)
 - ② Specify Replacement
 - ③ Detach FBX DKUPS
 - ④ Place part into unpluggable state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Specify end of FBX DKUPS replacement
 - ② Reinstall related parts
 - ③ Start environment monitor

1. PRE-PROCESSING of SVP

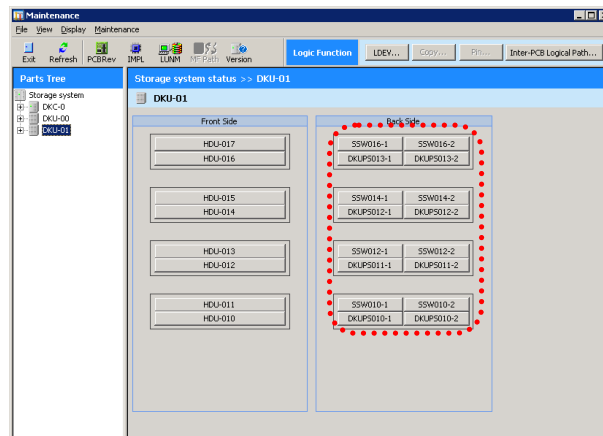
1-1. <Maintenance window>

Select (CL) [DKU-nn] in the 'Maintenance' window.



1-2. <Specify DKUPS>

Select (CL) [DKUPSnnn-n].

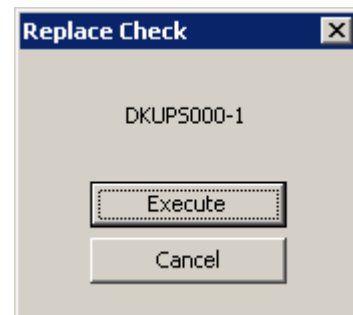


1-3. <Execute>

NOTICE: When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction

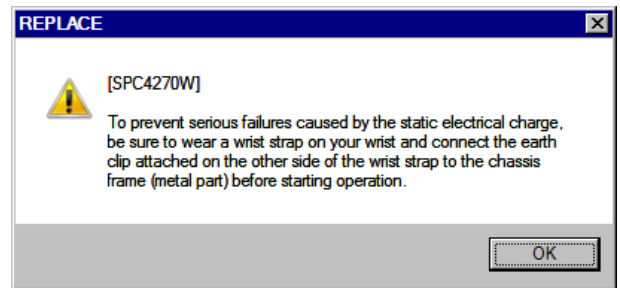
If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

A window shown on the right is displayed.
Select (CL) [Execute].



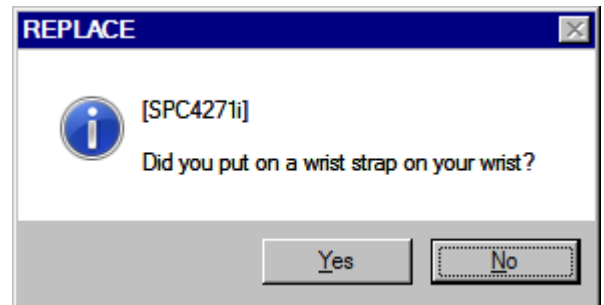
1-4. <Wear a wrist strap>

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



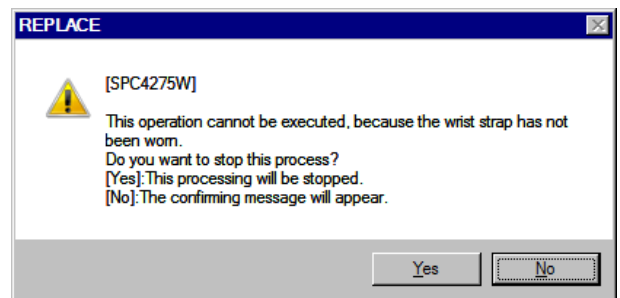
“Did you put on a wrist strap on your wrist?” is displayed.

Select (CL) [Yes] and go to Step 1-5.



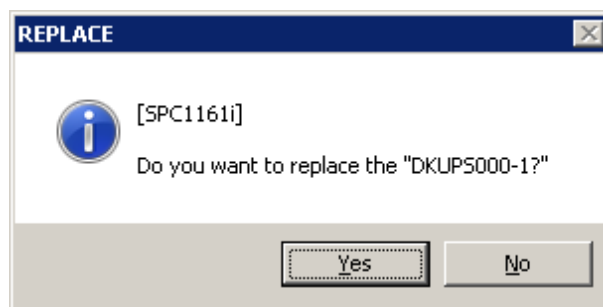
“This operation cannot be executed, because the wrist strap has not been worn.
Do you want to stop this process?
[Yes]: This processing will be stopped.
[No]: The confirming message will appear.”
is displayed.

When the processing will be stopped, select (CL) [Yes].



1-5. <Check beginning of DKUPS Replacement>

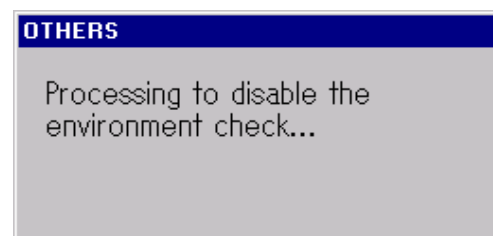
Select (CL) [Yes] in response to “Do you want to replace the “DKUPSnnn-n?””.



(Eg. DKUPS000-1)

1-6. <Check environment monitor stopped state>

The message “Processing to disable the environment check...” is displayed.

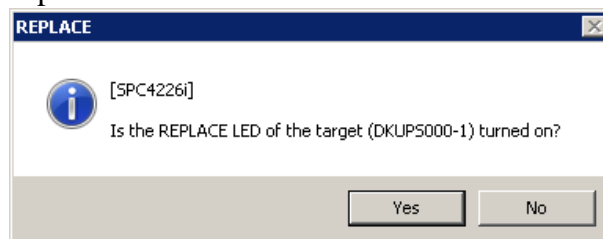


1-7. <Checking lighting of the LED on the PCB to be pulled out>

The message “Is the REPLACE LED of the target (DKUPSnnn-n) turned on?” is displayed.

When the LED on the PCB to be pulled out is on, select (CL) [Yes] and go to Step 1-9.

When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 1-8.



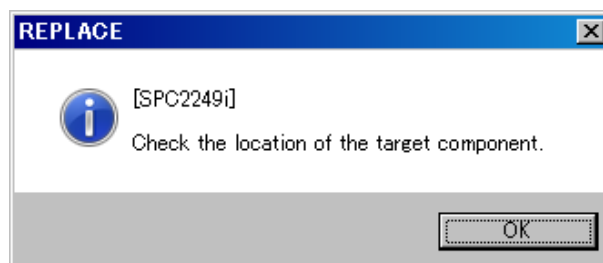
(Eg. DKUPS000-1)

1-8. <Making sure of the DKUPS location>

The message “Check the location of the target component.” is displayed.

See “2. HARDWARE REPLACEMENT PROCESSING”.

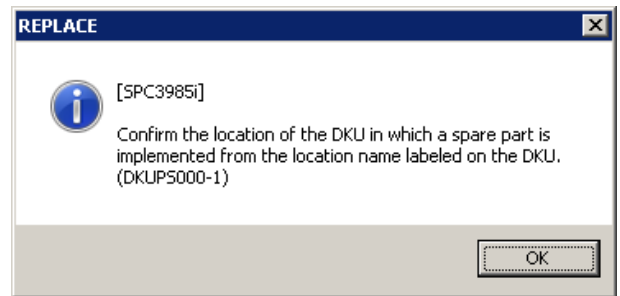
After making sure of the DKUPS location, select (CL) [OK] and go to Step 1-9.



1-9. <Check beginning of DKUPS replacement>

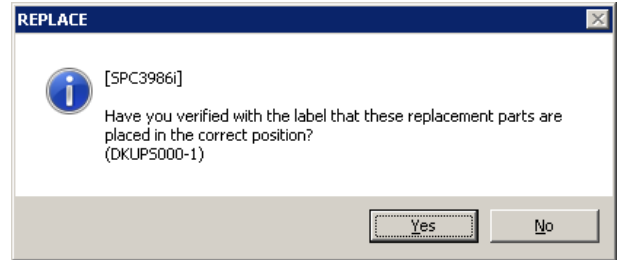
The message “Confirm the location of the DKU in which a spare part is implemented from the location name labeled on the DKU. (DKUPSnnn-n)” is displayed.

Select (CL) [OK] after you confirmed the content.



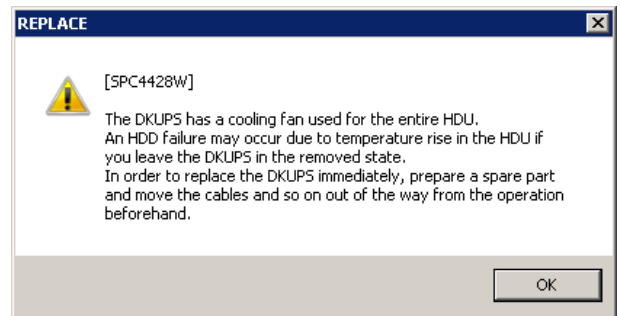
The message “Have you verified with the label that these replacement parts are placed in the correct position? (DKUPSnnn-n)” is displayed.

Select (CL) [Yes] after you confirmed the content.



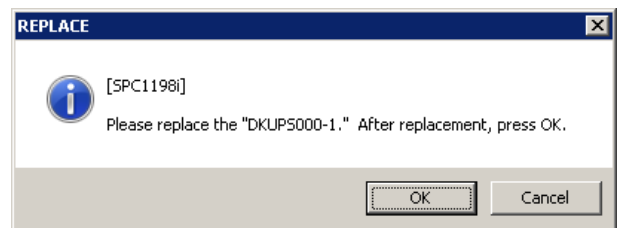
The message to warn of the influence of the DKUPS removal is displayed.

According to the message, select (CL) [OK] after getting ready in advance.



The message “Please replace the “DKUPSnnn-n.” After replacement, press OK.” is displayed.

Reply with [OK] after replacing the special part.



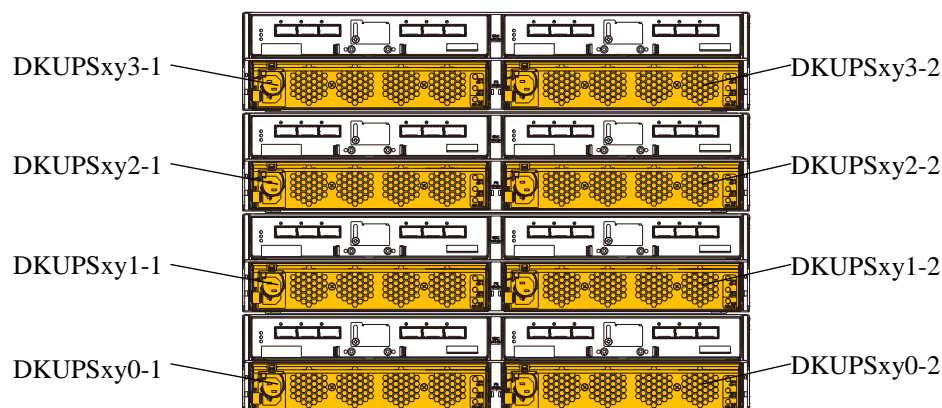
(Eg. DKUPS000-1)

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

2. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
Rear of FBX	1	DKUPS	

FBX



Rear View of
FBX

NOTE: DKUPSxy0-1

→DKU No. (0, 1, 2,, 5)

→DKC No. (0, 1)

NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

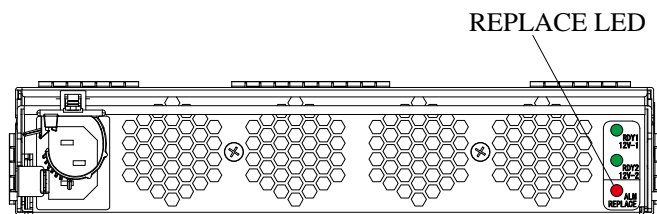
2-1 Replacement of DKUPS

2-1-1. Checking lighting of LED

- Check that the REPLACE LED is on.

CAUTION

A system down is caused by a replacement of the DKUPS other than that to be replaced. Make sure that it is the DKUPS to be replaced.



Front View of DKUPS

Fig. 3.31.2-1 Check of REPLACE LED

2-1-2. Release of Cable

- When replacing the DKUPSxyz-1, open the loop cable tie attached to the rail on the rear left side of the FBX.
When replacing the DKUPSxyz-2, open the loop cable tie attached to the rail on the rear right side of the FBX.

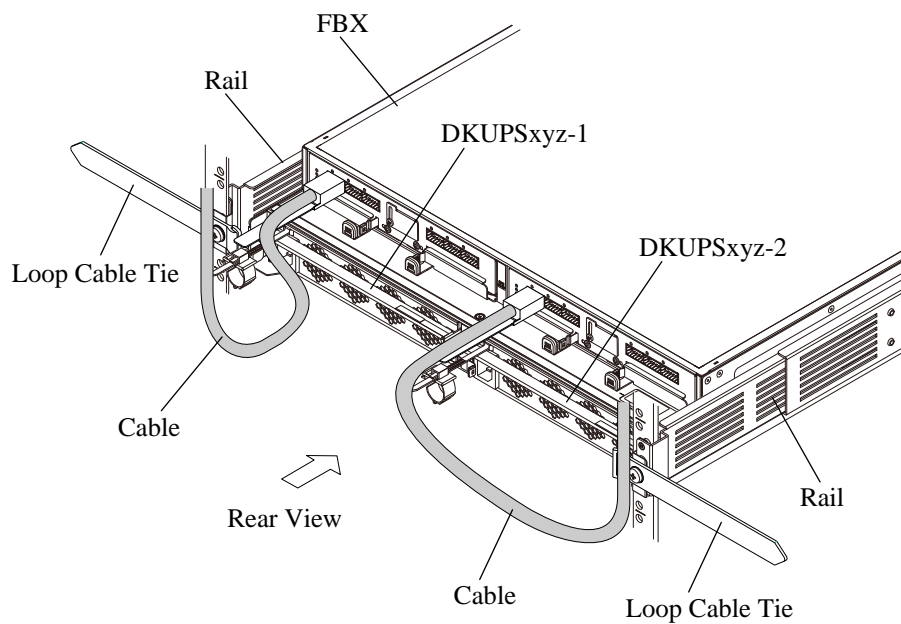


Fig. 3.31.2-2 Release of Cable

2-1-3. Replacement of DKUPS

- a. Pull and open the cable holder.
- b. Disconnect the PS cable from the DKUPS.

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.

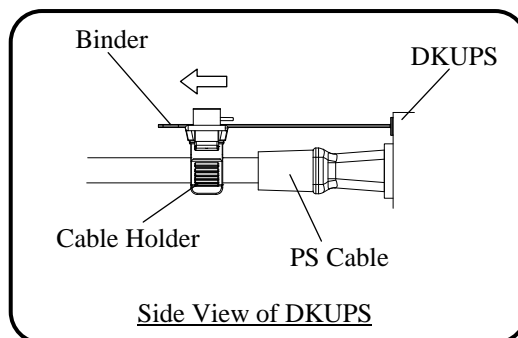
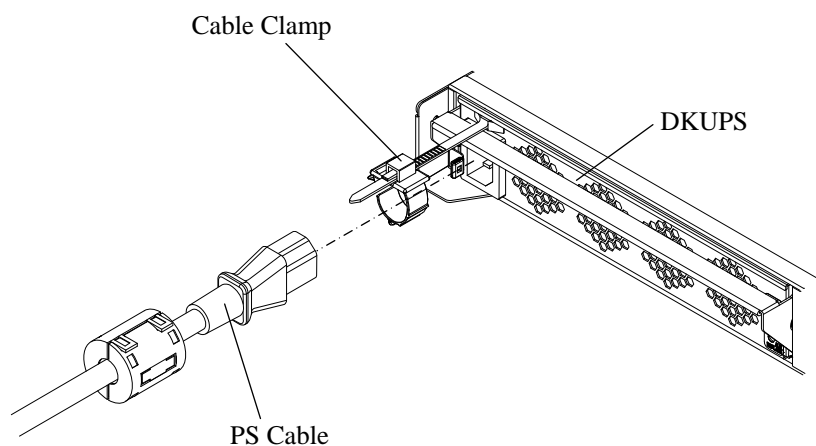


Fig. 3.31.2-3 Disconnection of PS Cable

- c. Have the handle down (②) while pressing the latches of the DKUPS to the right (①).
- d. Pull the handle and detach the DKUPS from the FBX.
- e. Open the handle on the spare DKUPS.
- f. Insert the spare DKUPS until the pin on it comes into contact with the mounting portion of the FBX.
- g. Push up the handle and fully insert the spare DKUPS. Then confirm that the latches hold the handle.
- h. Connect the PS cable to the DKUPS and fix the PS cable with the cable holder.
- i. Push the cable holder toward the DKUPS.
- j. Close the loop cable tie on the rail on the rear side of the FBX to secure the cable. (See Fig. 3.31.2-2.)

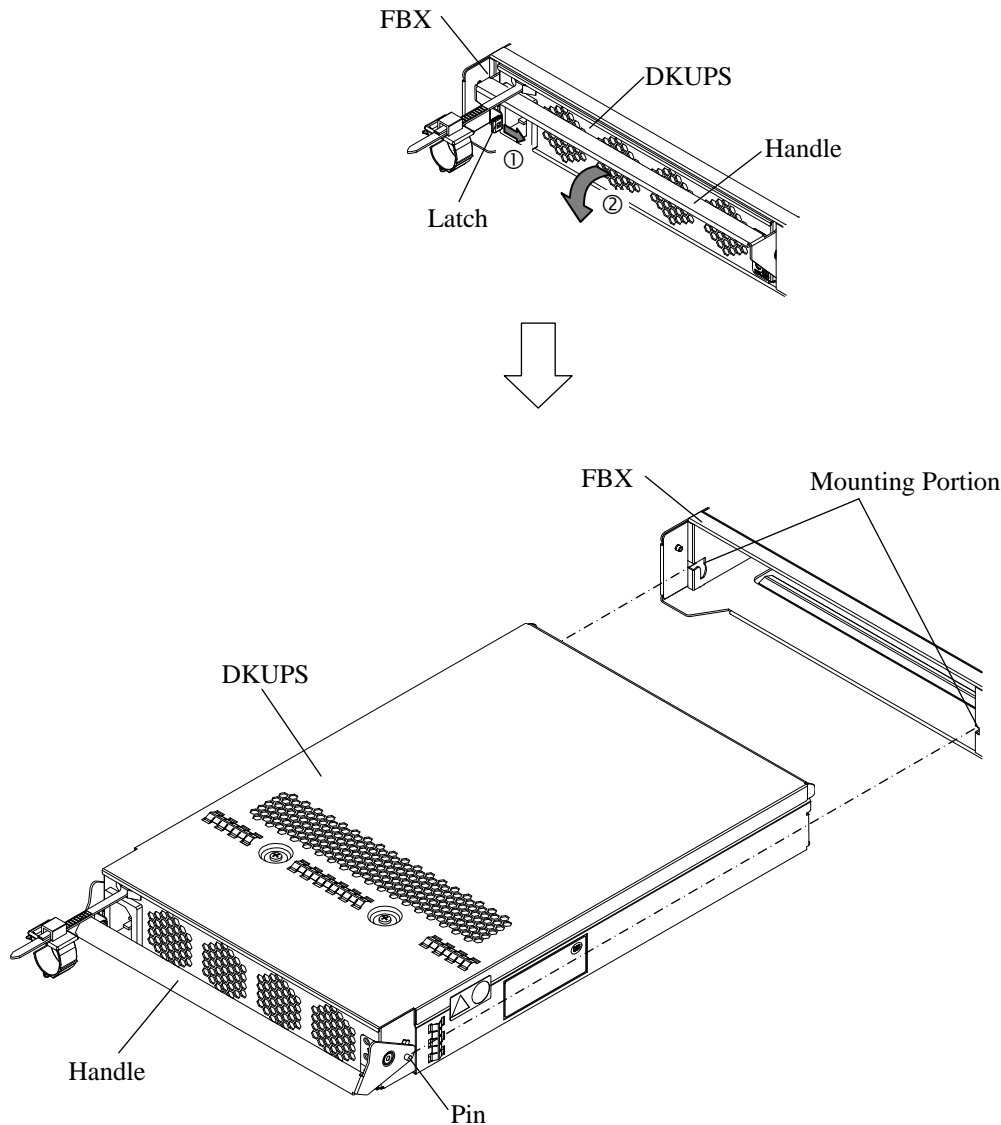


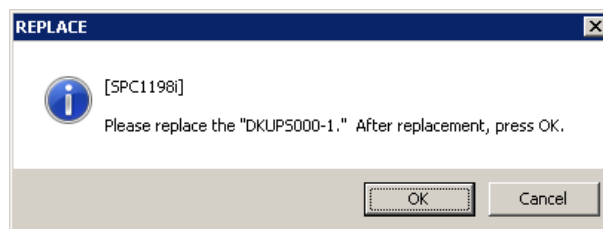
Fig. 3.31.2-4 Replacement of DKUPS

2-1-4. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. <Check beginning of DKUPS Replacement>

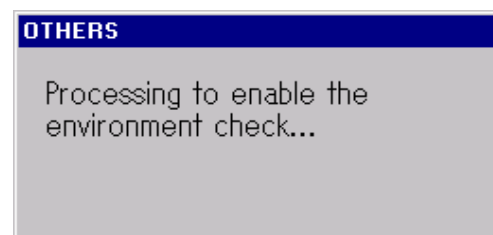
Select (CL) [OK] in response to “Please replace the “DKUPSnnn-n.” After replacement, press OK.”



(Eg. DKUPS000-1)

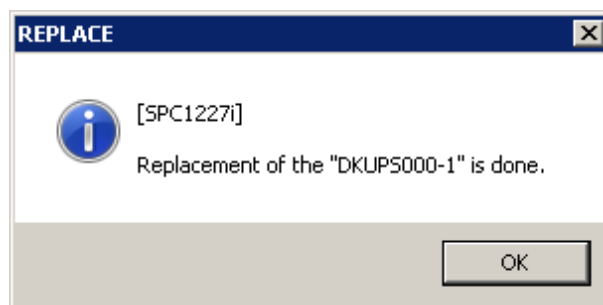
3-2. <Check environment monitor start processing>

The message “Processing to enable the environment check...” is displayed.



3-3. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “DKUPSnnn-n” is done.”



(Eg. DKUPS000-1)

3-4. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to Step 3-5.

If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

3-5.

Go to POST-PROCEDURE ([REP04-01-10](#)).

[CFM REPLACEMENT PROCESSING - RCF1]

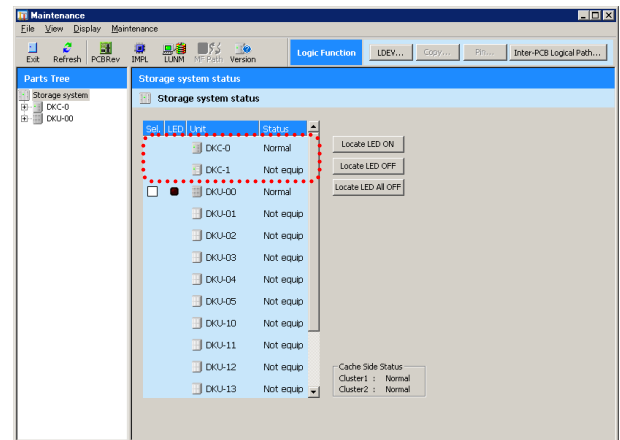
— OUTLINE —

1. PRE-PROCESSING of SVP
 - ① Select CFM (status check)
 - ② Specify Replacement
 - ③ Place PCB into blocked state
2. HARDWARE REPLACEMENT PROCESSING
3. POST-PROCESSING of SVP
 - ① Execute CUDG on CFM
 - ② Specify recovery

1. PRE-PROCESSING of SVP

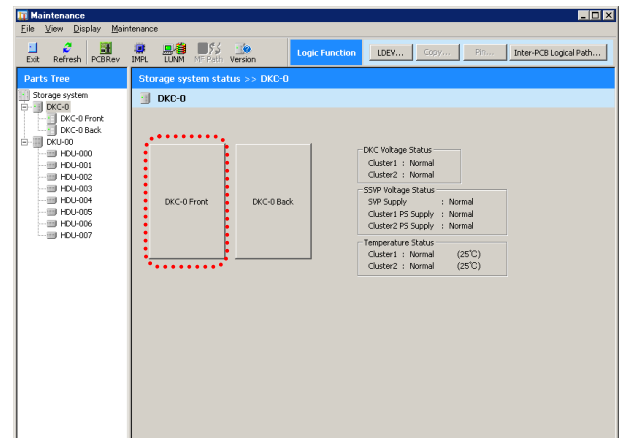
1-1. <Maintenance window>

Select (CL) [DKC-n] in the 'Maintenance' window.



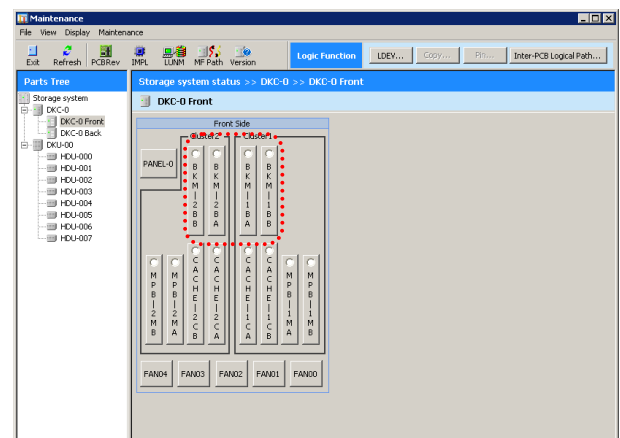
1-2. <DKC window>

Select (CL) [DKC-n Front] in the 'DKC' window.



1-3. <Select BKM>

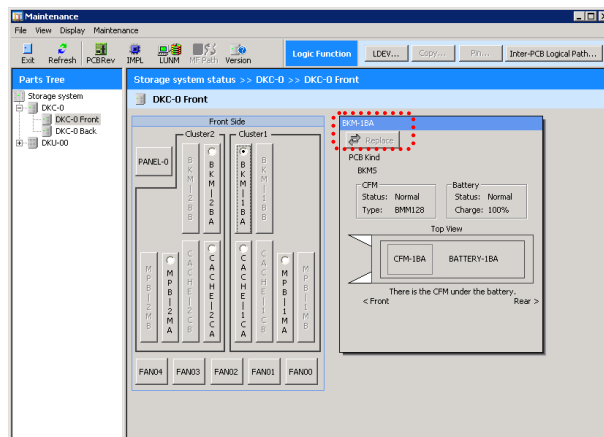
Select (CL) [BKM-nnn].



1-4. <Specify replacement of BKM>

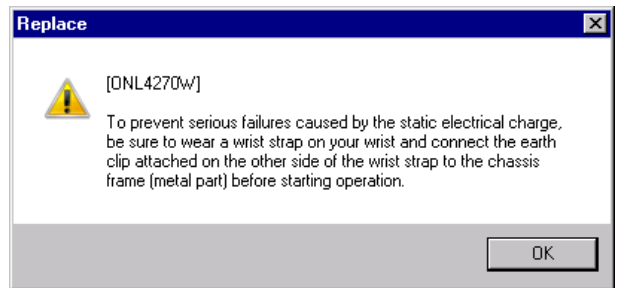
NOTICE: When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

Check the status display.
Select (CL) [Replace].



1-5. <Wear a wrist strap>

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

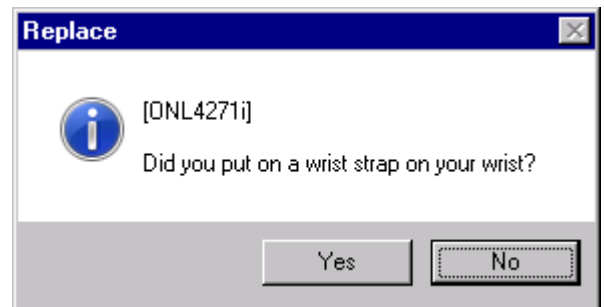


(1) <Confirm wearing wrist strap>

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

Select (CL) [Yes] when wrist strap is on your wrist.

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



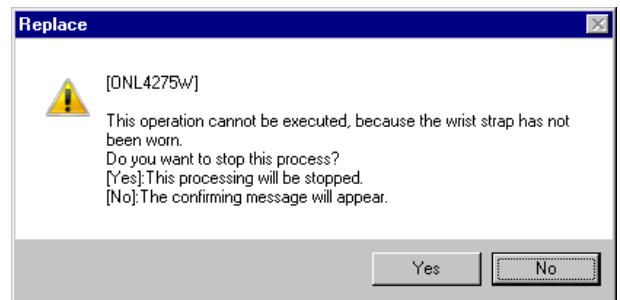
When [No] is selected (CL), go to Step (2).

(2)

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

[Yes]: This processing will be stopped.

[No]: The confirming message will appear.”



When [Yes] is selected (CL), returned to Step 1-4.

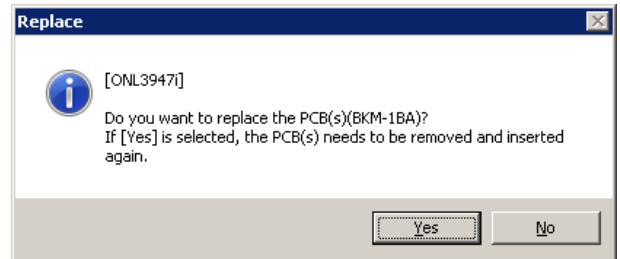
When [No] is selected (CL), returned to Step 1-5.

1-6. <BKM replace>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#)).

Select (CL) [Yes] in response to:

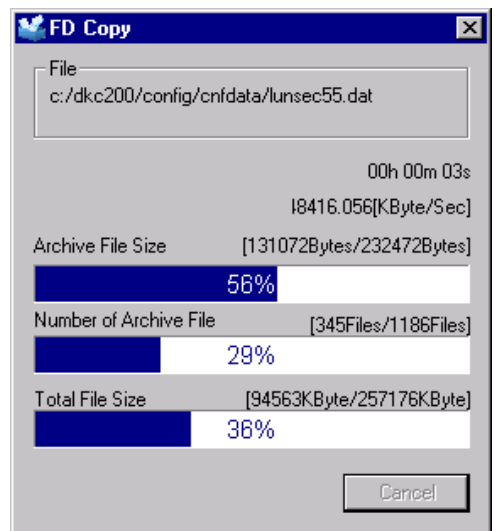
“Do you want to replace the PCB(s)(BKM-
nnn)? If [Yes] is selected, the PCB(s) needs to
be removed and inserted again.”.



1-7. <Compression of the error information>

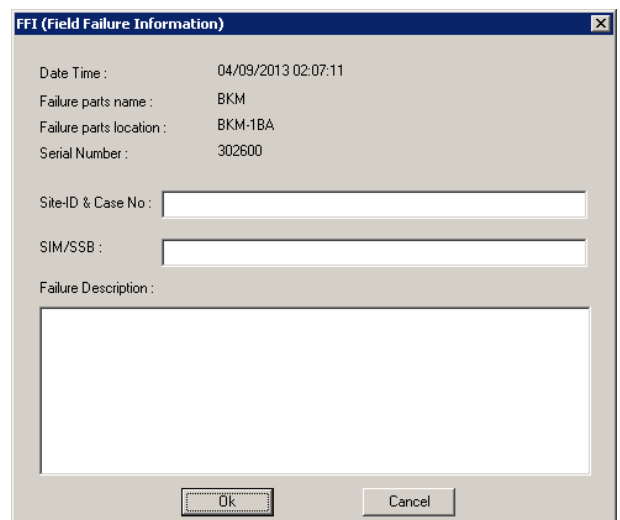
The error information is compressed.

The dialog of FD Copy is displayed.



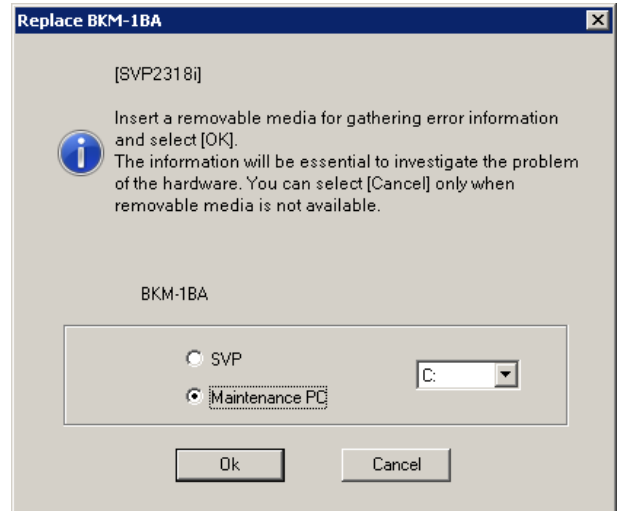
1-8. <Get the error information>

Input the Field Failure Information, and select
(CL) [Ok].



“Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available.” is displayed.

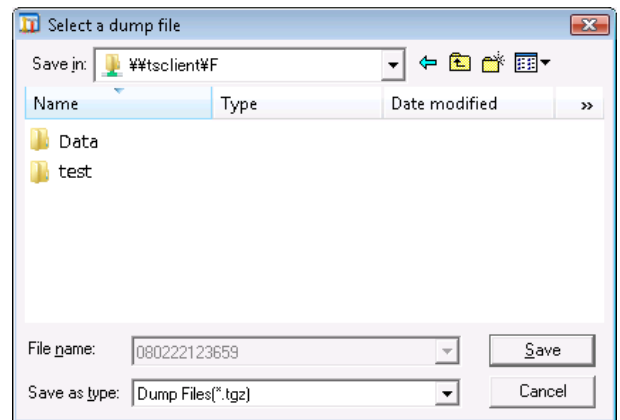
Trouble information is preserved in Maintenance PC connected with SVP. Please select the Maintenance PC radio button of the screen, and select an arbitrary drive letter from the pull-down menu. The drive letter becomes the drive letter of Maintenance PC connected with SVP.



A Primary copy is always placed on the SVP HD in the “c:\dkc200\others\pcbinfo\” directory with the following file name format “[factory_cd]_[Pcb_type]_[Pcb_SerialNo]_YYMMDDhhmmss.tgz”. (YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second)

When Maintenance PC is selected, the directory selection dialog is displayed. Please select an arbitrary directory if necessary.

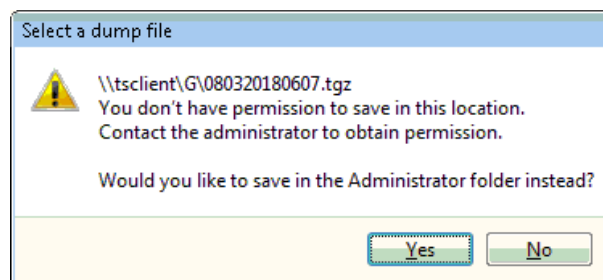
Maintenance PC that \\tsclient connects with SVP is shown when it is a directory display, and \\tsclient\F and \F shows F drive of Maintenance PC.



Select (CL) [Save] when saving a file in a specified directory.

It returns to the drive selection screen when [Cancel] is selected (CL).

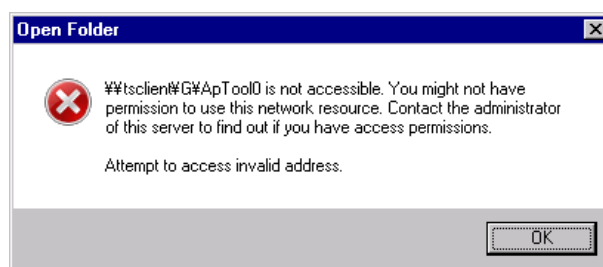
- When the destination media is write-protected.
Selecting (CL) [Yes] displays the “C:\users\Administrator” folder of SVP.
Selecting (CL) [No] displays the folder selected with the Maintenance PC.



Please appoint another destination whether you remove write protect when you save it and carry it out.

- When dialog of the destination drive specified with the Maintenance PC is open, the media is removed, and then select (CL) [Save].

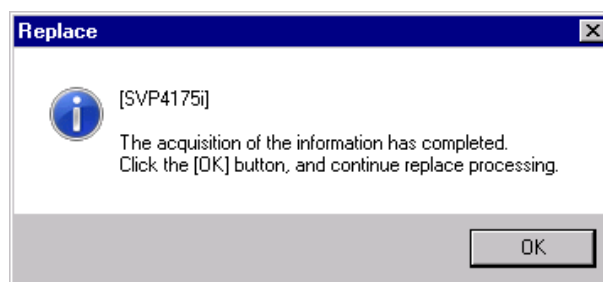
- When the memory in the destination drive specified with the Maintenance PC is corrupted.
The dialog remains displayed after selecting (CL) [OK].



At the time of the above operation completion, the information collection is not carried out.

Please choose another directory again after having closed a system message whether you reconnect the drive that you removed when you save it and carry it out.

Select (CL) [OK] in response to “The acquisition of the information has completed. Click the [OK] button, and continue replace processing.”.

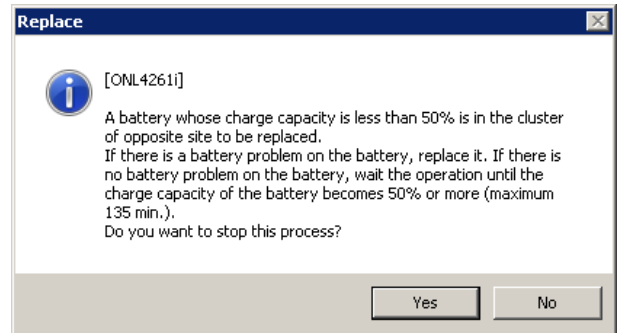


1-9. <Check battery charge opposite cluster>

Automatically, the battery's charge is measured in the opposite cluster.

- More than 50% charge capacity, or “being measured”, go to Step 1-11.

Charge capacity of less than 50%, the following message “A battery whose charge capacity is less than 50% is in the cluster of opposite site to be replaced. If there is a battery problem on the battery, replace it. If there is no battery problem on the battery, wait the operation until the charge capacity of the battery becomes 50% or more (maximum 135 min.). Do you want to stop this process?” is displayed.



If you stop for battery replacement, select (CL) [Yes], returned to Step 1-4.

To continue the replacement battery, select (CL) [No], go to Step 1-10.

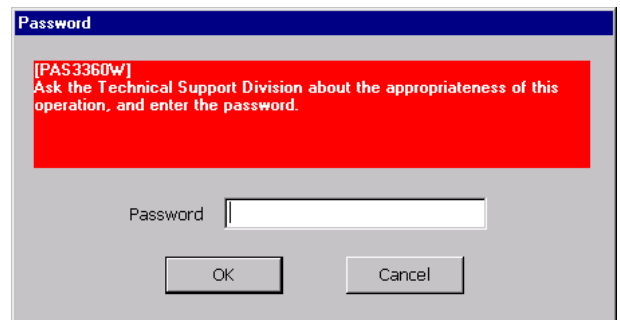
1-10. <Enter the password>

Corresponding to the following message, enter the password and select (CL) the [OK] button.

“Ask the Technical Support Division about the appropriateness of this operation, and enter the password.”

Go to Step 1-11.

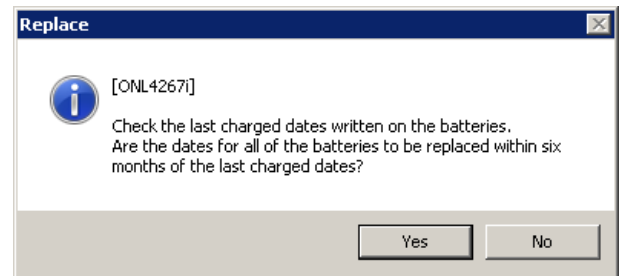
If you stop for a replacement, [Cancel].
Return to Step 1-9.



1-11. <Check with battery storage period>

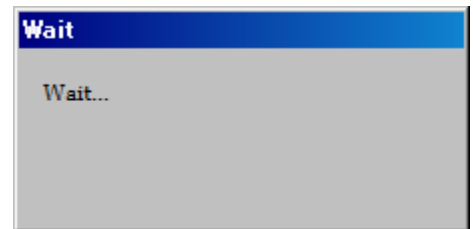
Check the date that is mentioned in the final charge to replace the battery.

“Check the last charged dates written on the batteries. Are the dates for all of the batteries to be replaced within six months of the last charged dates?” is displayed.



- Within six months from the date when the final charge, select (CL) [Yes].
- When more than 6 months from the date of the last charge, select (CL) [No].

And Processing. Go to Step 1-12.



1-12. <Check BKM blocking>

If any other message that is not explained below is displayed, see the SVP MESSAGE SECTION ([SVPMSG00-00](#))

“The BKM(BKM-nnn) is being blocked...” is displayed.

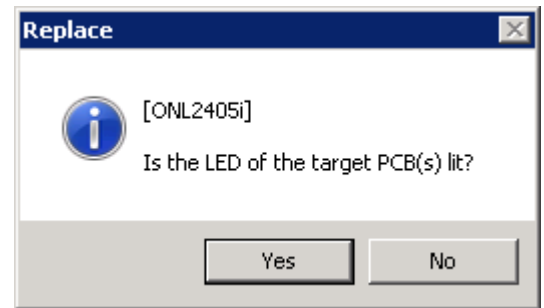
1-13. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

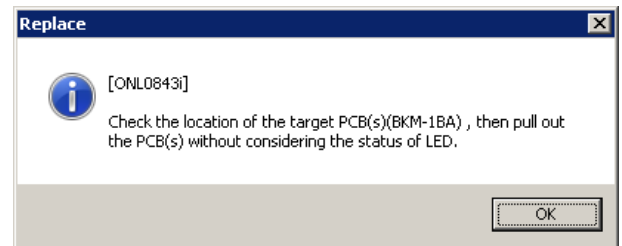
in response to “Is the LED of the target PCB(s) lit?”.



If [No] is selected:

Select (CL) [OK] in response to “Check the location of the target PCB(s)(BKM-nnn), then pull out the PCB(s) without considering the status of LED.”. (Refer to “2. HARDWARE REPLACEMENT PROCESSING”)

NOTE: Select (CL) [OK] after pulling out the PCB.



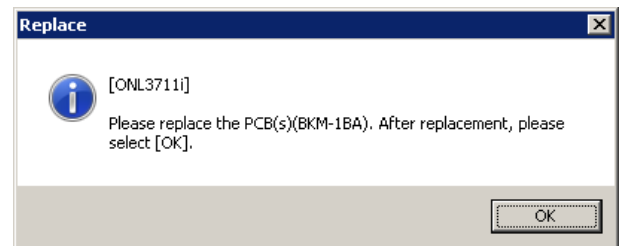
Go to Step 1-14.

1-14. <Beginning of CFM replacement>

“Please replace the PCB(s)(BKM-nnn). After replacement, please select [OK].” is displayed.

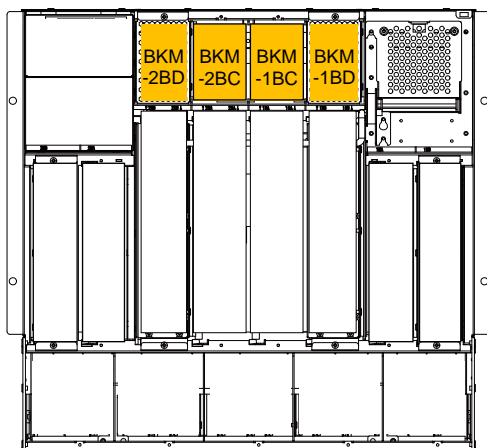
Select (CL) [OK] after replacing the CFM.

Go to “2. HARDWARE REPLACEMENT PROCESSING”.

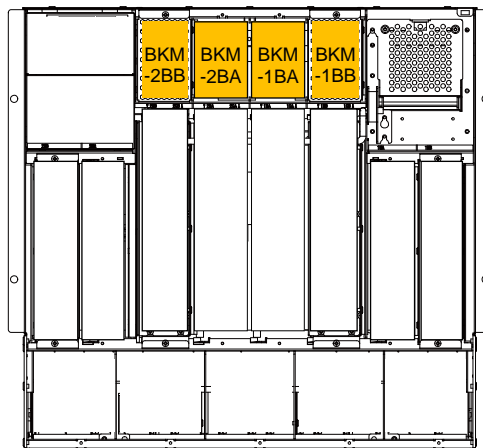


2. HARDWARE REPLACEMENT PROCESSING

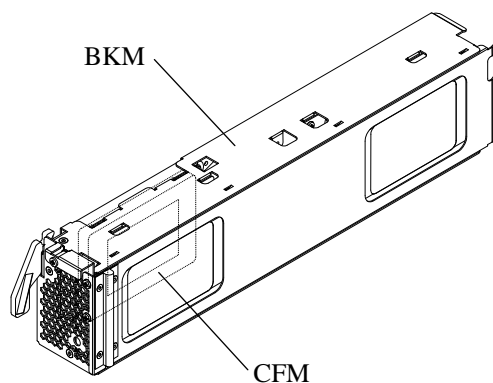
Location	Function Name of Component		Part Name
Inside of BKM	1	CFM	<ul style="list-style-type: none">• 128GB SSD (BMM128)• 256GB SSD (BMM256)



Front View of
DKC-1



Front View of
DKC-0

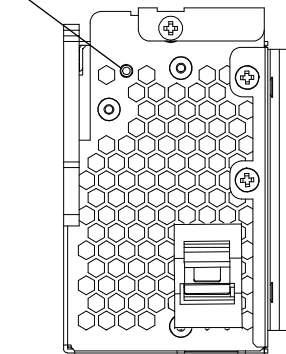


NOTICE: Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

2-1 Replacement of CFM**2-1-1. Check that the Shut Down LED is on.**

- a. Check that the Shut Down LED is on. (only hot replace)

Shut Down LED (Red)



Front View of BKM

Fig. 3.32.2-1 Confirmation of Shut Down LED

2-1-2. If the cables are attached to the BKMs, move the cables.

If the cables are not attached to the BKMs, go to Procedure 2-1-3.

- a. Check that the screws to secure the BKMs are tightened.

NOTE: If the screw is loose, the BKM may be extracted when the cables or the locking clamp is moved.

- b. Open the four locking clamps and move all the cables to where they cannot obstruct removal of the BKM.

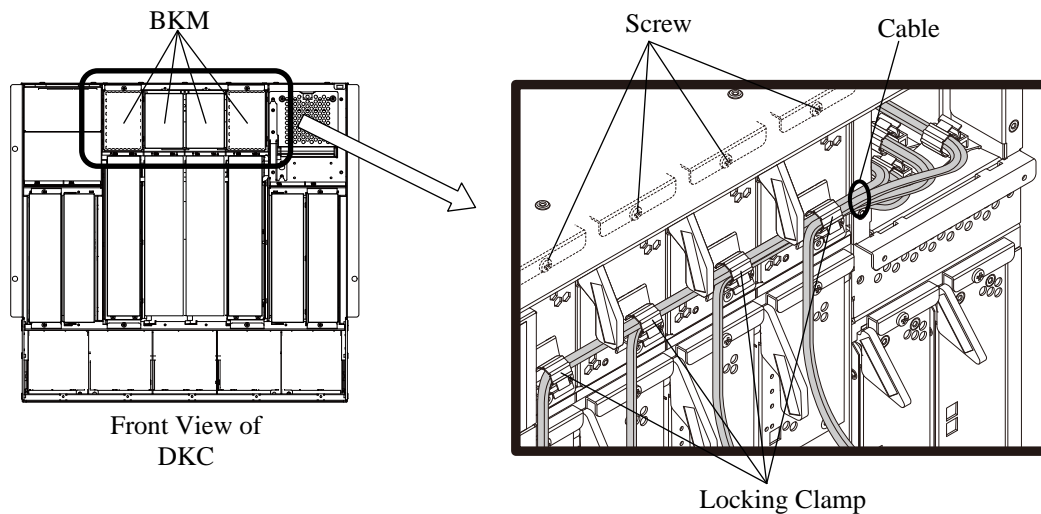


Fig. 3.32.2-2 Moving Cables

2-1-3. Replace the CFM.

- a. Remove the screw and remove the BKM.

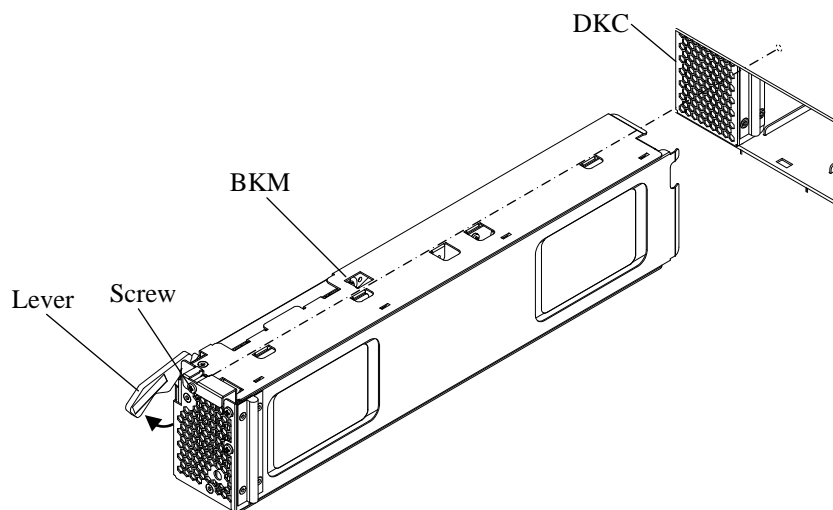
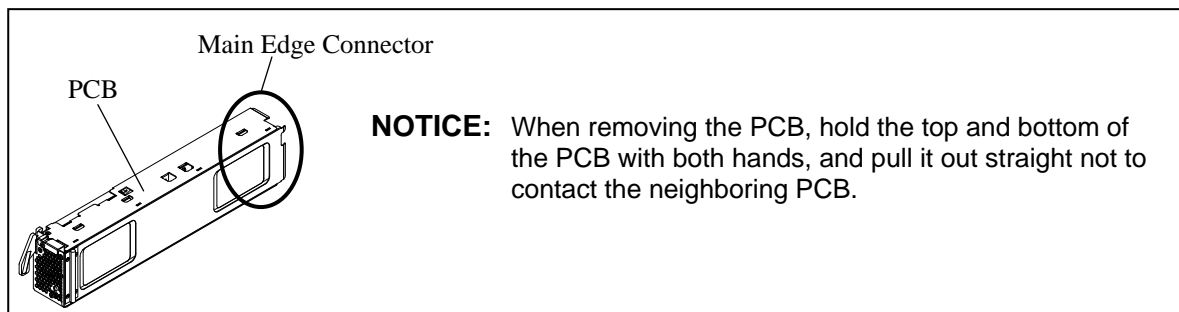


Fig. 3.32.2-3 Removal of BKM

- b. Remove the screw and remove the cover.

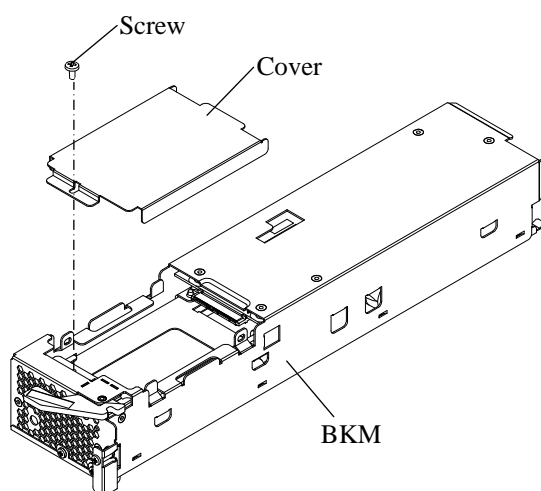


Fig. 3.32.2-4 Removal of Cover

- c. Remove the two screws and remove the CFM.
d. Attach the spare CFM and tighten the screws.
e. Attach the cover and tighten the screw.

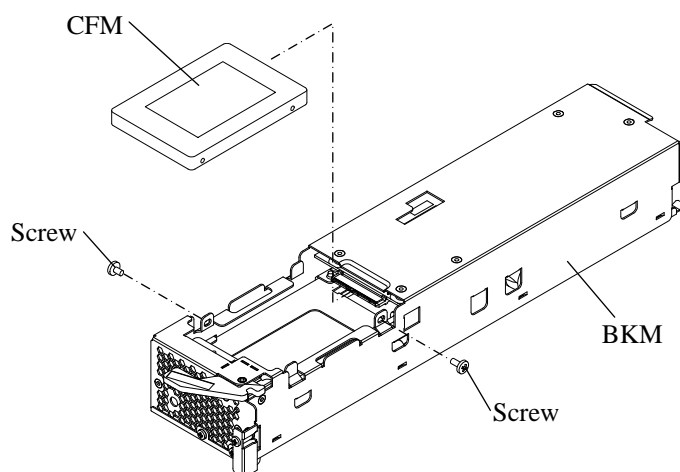
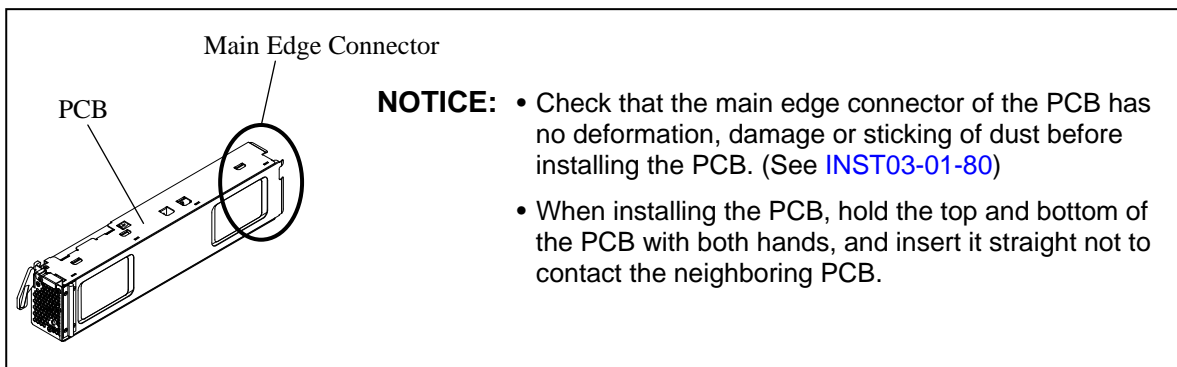


Fig. 3.32.2-5 Replacement of CFM

2-1-4. Insert the BKM.

- a. Insert the BKM to the correct location and tighten the screw.
- b. If the cables were moved aside in Procedure 2-1-2, put them back in place.

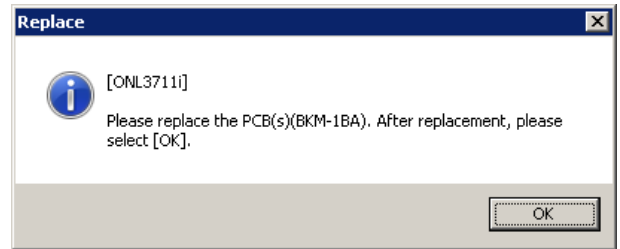


2-1-5. Go to “3. POST-PROCESSING of SVP”.

3. POST-PROCESSING of SVP

3-1. < Check replacement of BKM >

Select (CL) [OK] in response to “Please replace the PCB(s)(BKM-nnn). After replacement, please select [OK].” after replacement.



3-2. <INLINE CUDG>

“INLINE CUDG is now running...” is displayed.

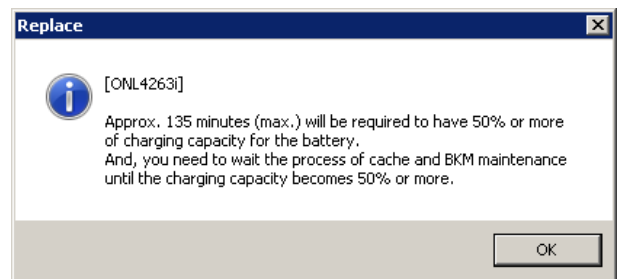
3-3. <Check the BKM recovery procedure>

“Restoring the BKM...” is displayed.

3-4. <Check the battery status>

Automatically check the status of the replaced battery.

If the storage period of the battery is more than six months from the date of the last charge, “Approx. 135 minutes (max.) will be required to have 50% or more of charging capacity for the battery. And, you need to wait the process of cache and BKM maintenance until the charging capacity becomes 50% or more.” is displayed.



Go to Step 3-5.

If the display of Battery Life Warning SIM is disabled, go to Step 3-6.

3-5. <Setting Battery Life>

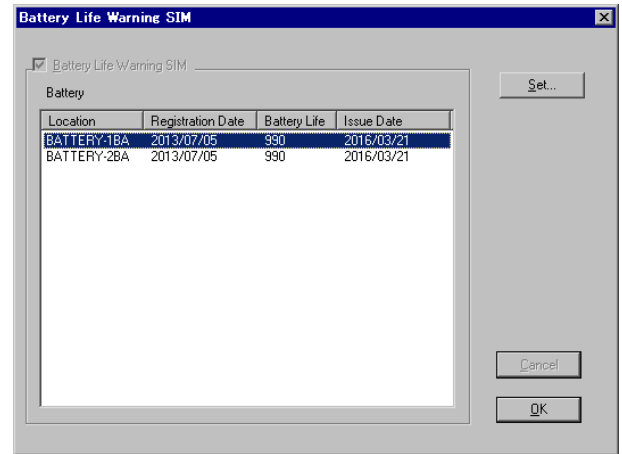
(1)

Select (CL) the target Battery in the 'Battery Life Warning SIM' screen, and then select (CL) [Set...].

Go to Step (2).

Make sure that the all input items are correct and select (CL) [OK].

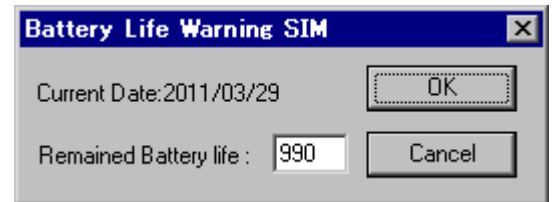
NOTE: If the date is displayed as "****/**/**", follow Step (2) to set the date.



(2)

Select (CL) [OK] after inputting the remainder days until Warning SIM is reported.

Return to Step (1).



NOTE: After executing the periodical exchange of a battery, set 33 month (990 days).

NOTE: Default value is 33 month (990 days), which is 3 month earlier than the lifetime of a battery (3 years).

Determine the number of days remained based on your maintenance plan.

NOTE: The input ranges of "Remained Battery life" are from 1 to 3650.

3-6. <Check end of replacement>

Select (CL) [OK] in response to "Replace finished."



3-7.

Go to POST-PROCEDURE ([REP04-01-10](#)).

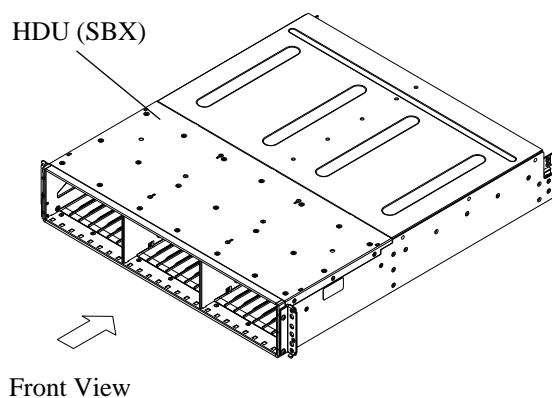
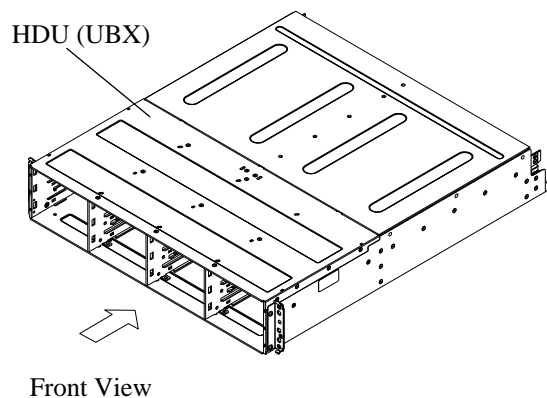
[HDU (UBX/SBX) REPLACEMENT PROCESSING]

— OUTLINE —

1. HARDWARE REPLACEMENT PROCESSING

1. HARDWARE REPLACEMENT PROCESSING

Location	Function Name of Component		Part Name
RACK	1	HDU (UBX)	• LFF SBB
	2	HDU (SBX)	• SFF SBB



- NOTICE:**
- Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.
 - Replace the HDU while the storage system is powered off. Do not replace the HDU while the storage system is powered on.

1-1 Replacement of HDU**1-1-1. Power off the RACK.****WARNING**

Hazardous voltage:

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

- a. Turn the “POWER ON/OFF” switch to “OFF”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.
- b. Check that the BS-ON LED is on and the PS-ON LED is off.

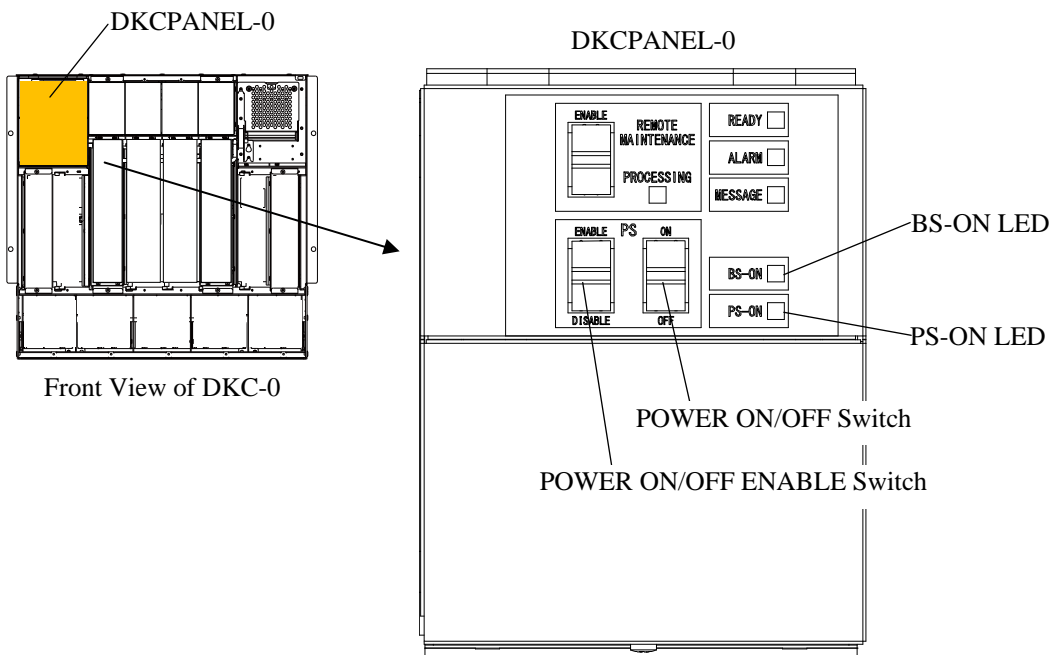


Fig. 3.40.1-1 Switch on DKCPANEL

- c. Turn off the breaker at the PDU.
- d. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the PDU.
- e. The circuit has residual voltage after turning off the breakers, so wait for one minute.

1-1-2. Remove the bezel.

- a. Remove the bezel from the HDU. (See [INST03-01-50](#).)

NOTE: When more than one HDU is replaced, replace the HDUs one by one.

And after a HDU replacement, removed drives must be installed in the same locations. Not installing removed drives in the same locations causes a serious failure that makes the system unable to start up or other failures.

1-1-3. Attach a label.

- a. Put a label on each SSW, DKUPS and drive to identify the installation location so that each removed component can be installed in the same location on the HDU to be newly installed.

It is recommended to write down each location number on each label. (See LOCATION SECTION in this maintenance manual.)

1-1-4. Remove the SSW.

- a. Open the two loop cable ties on the rails on the rear side of the HDU.

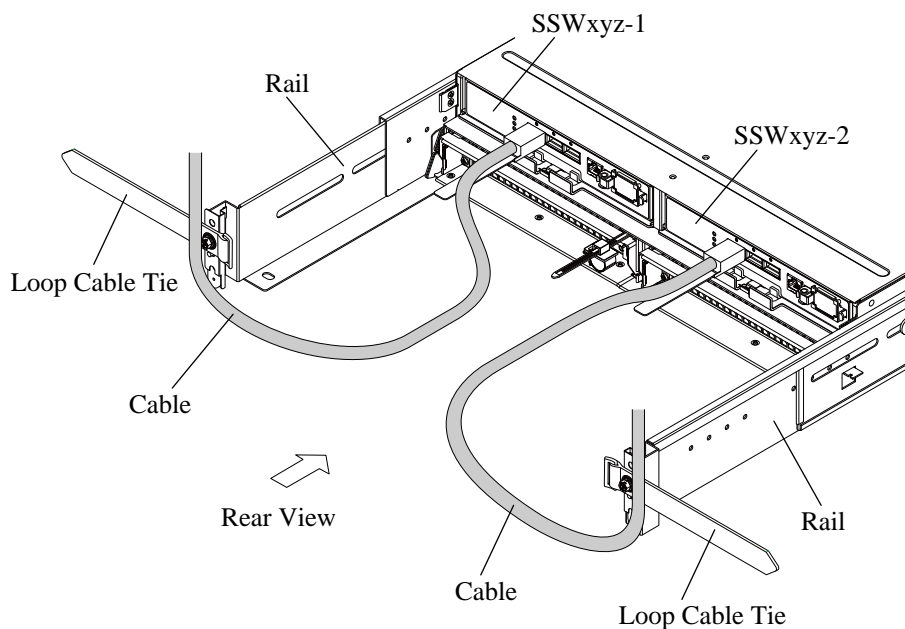


Fig. 3.40.1-2 Removal of Cables

- b. Disconnect the cables which connect to the SSW.
- c. Pull the right and left levers and remove the SSW.
- d. Remove the other SSW in the same manner.

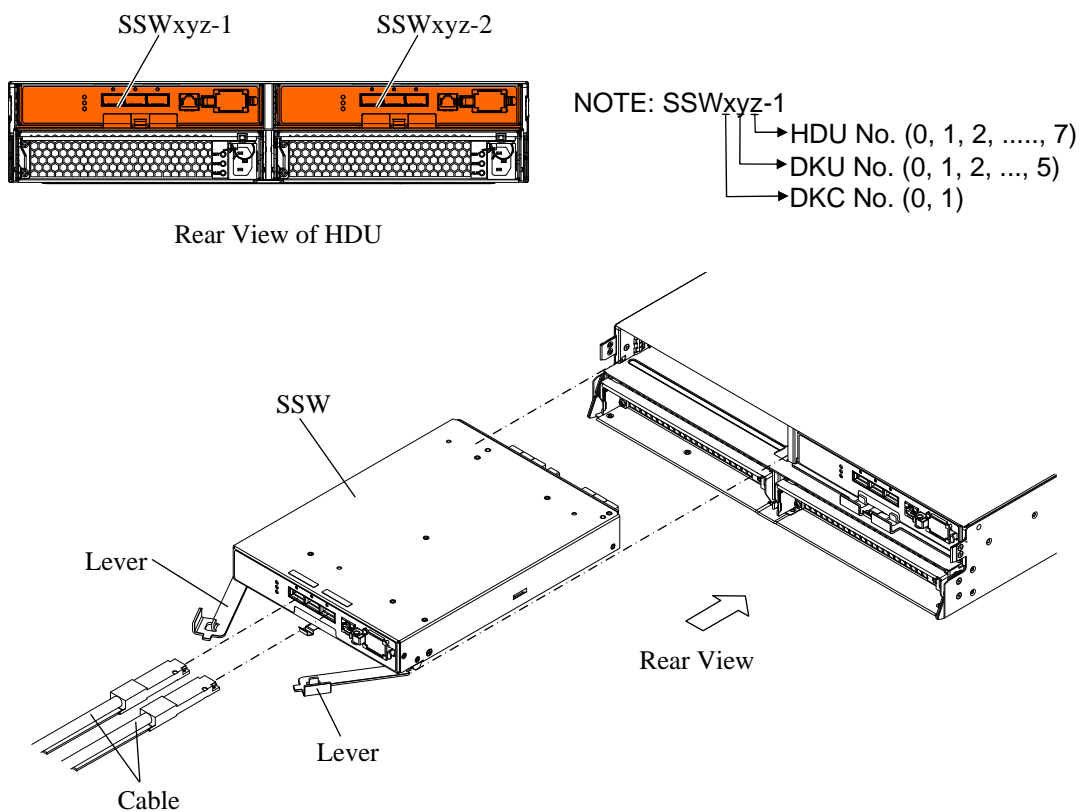


Fig. 3.40.1-3 Removal of SSW

1-1-5. Remove the DKUPS.

- a. Remove the two binders from the rail of the rear side of the HDU.

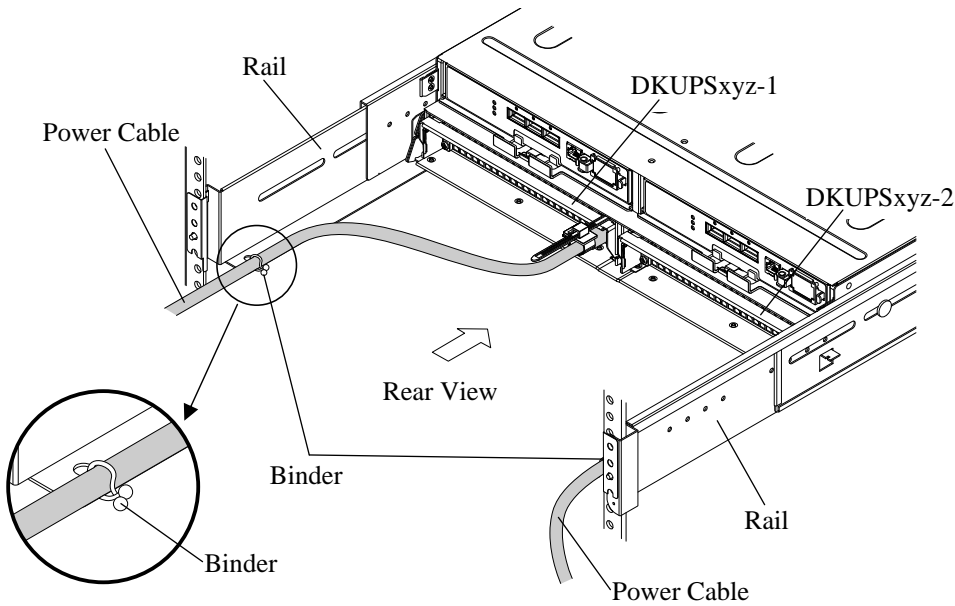
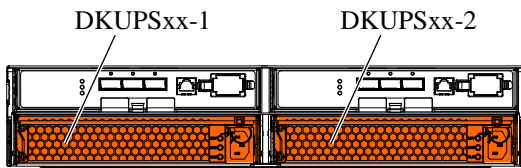


Fig. 3.40.1-4 Removal of Binders

- b. Pull and open the cable holder.
- c. Disconnect the power cable from the DKUPS.
- d. Disconnect the power cable from the other DKUPS in the same manner.



Rear View of HDU

NOTE: DKUPSxyz-1

- HDU No. (0, 1, 2,, 7)
- DKU No. (0, 1, 2, ..., 5)
- DKC No. (0, 1)

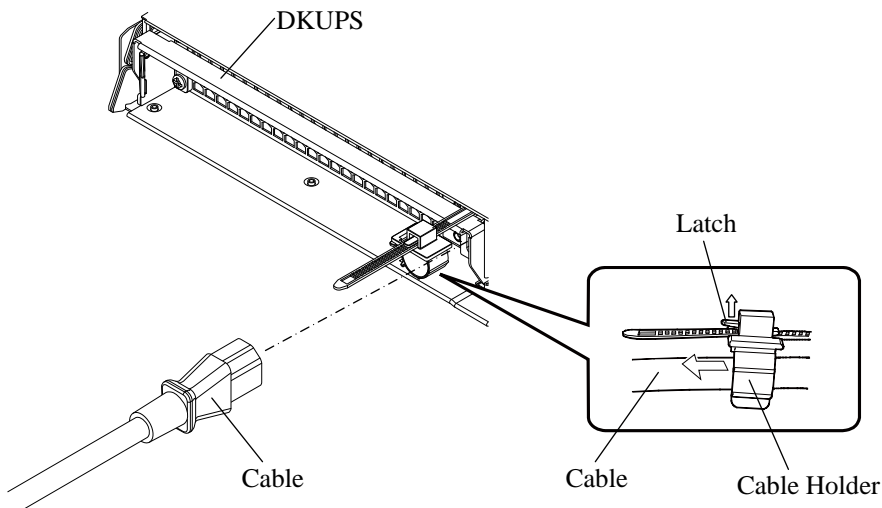


Fig. 3.40.1-5 Disconnection of Cable

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

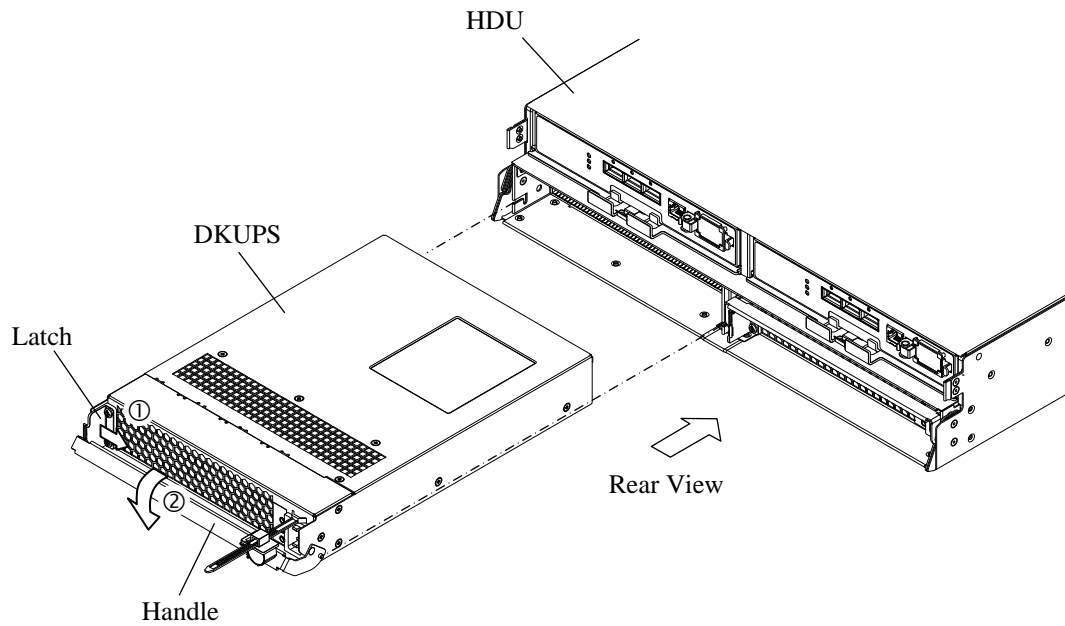


Fig. 3.40.1-6 Removal of DKUPS

1-1-6. Remove the drive.

Confirm that the label mentioned in Procedure 1-1-3 is put on the drive before removing the drive.

1-1-6.1. For UBX

- Pull the stopper of the drive handle toward you to have the lock off.
- Tilt the handle toward you, and then remove the drive by pulling it out taking care not to apply a shock to it.

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

- Remove the other drives in the same manner.

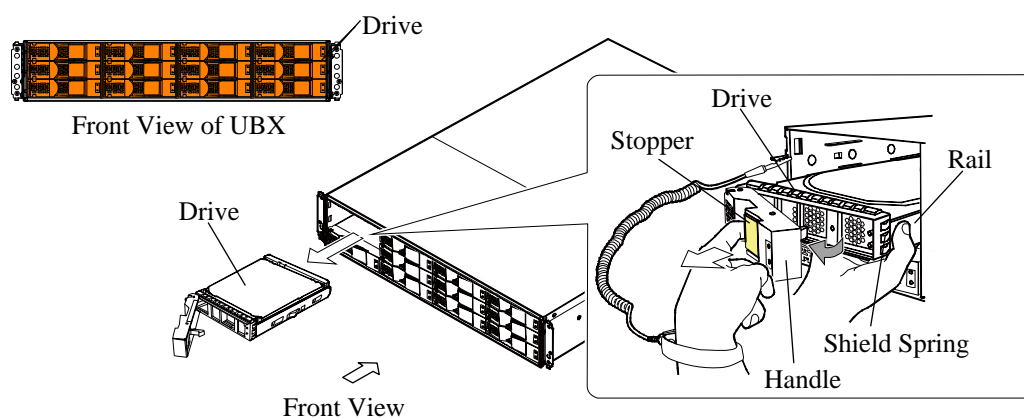


Fig. 3.40.1-7 Removal of Drive (for UBX)

1-1-6.2. For SBX

- Pull up the stopper of the drive handle toward you to release the lock.
- Open the handle toward you, and then pull out and remove the drive not to give a shock.
- Remove the other drives in the same manner.

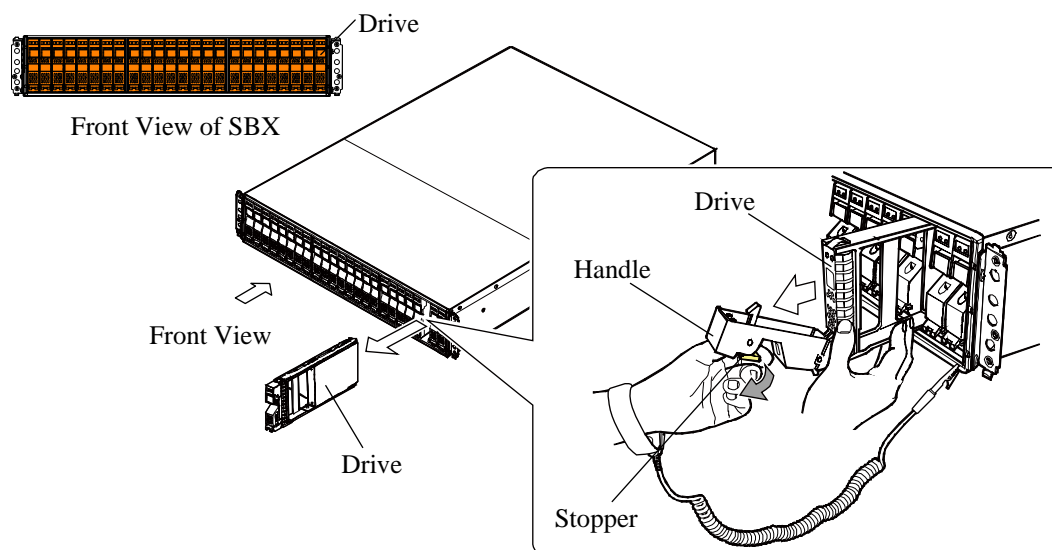


Fig. 3.40.1-8 Removal of Drive (for SBX)

1-1-7. Remove the parts.

1-1-7.1. In the case that the bezel is installed in the front of the HDU

- a. Remove the Side Cover L from the Bezel Bracket L.
- b. Remove the Side Cover R from the Bezel Bracket R.
- c. Remove the four screws and remove the Bezel Bracket L from the Nut Plate L (two).
- d. Remove the four screws and remove the Bezel Bracket R from the Nut Plate R (two).
- e. Remove the two screws from the Nut Plate L that secures the HDU to be replaced and remove the Nut Plate L from the front left side of the DKU.
- f. Remove the two screws and remove the Nut Plate R from the front right side of the DKU.

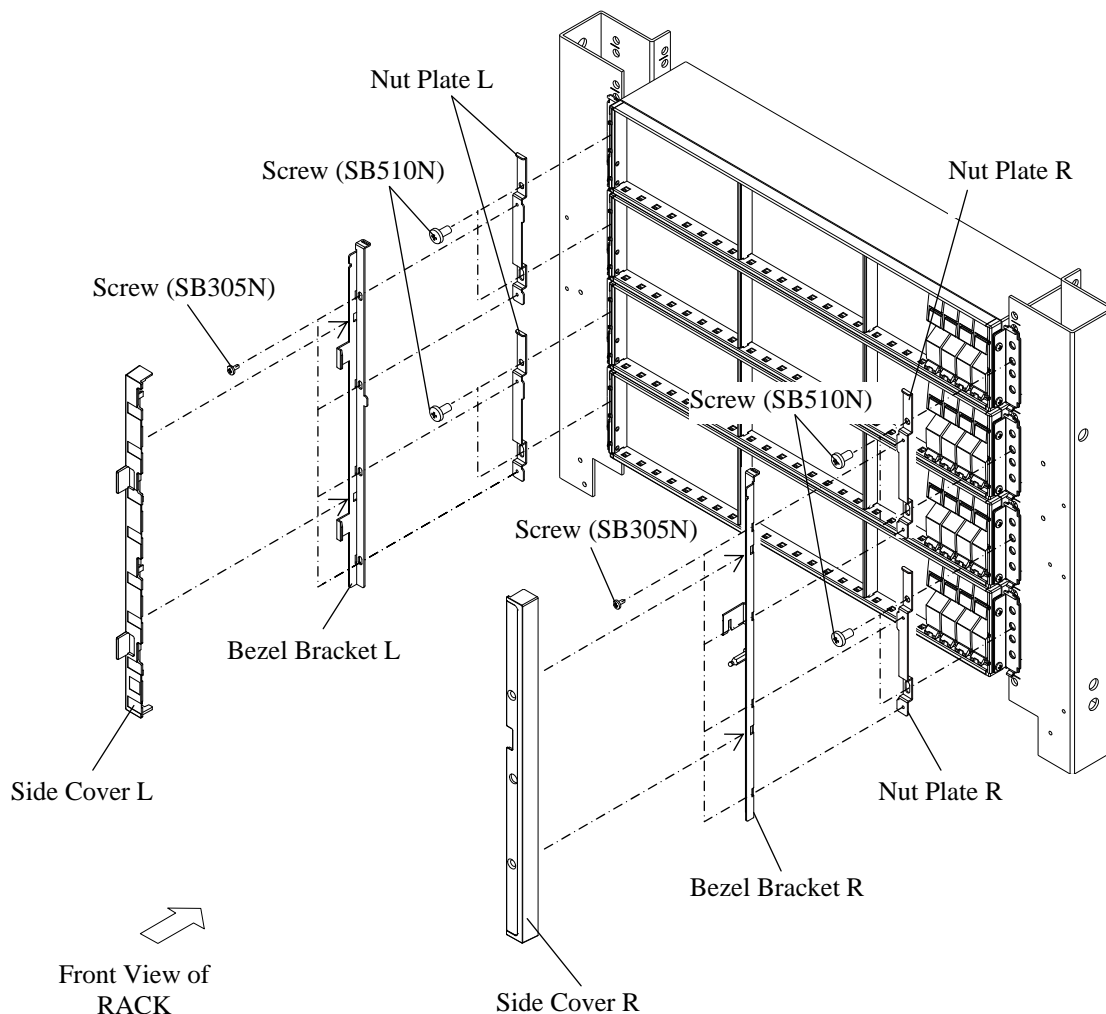


Fig. 3.40.1-9 Removal of Parts

1-1-7.2. In the case that the front door is installed in the front of the HDU

- a. Remove the Side Bezel from the left side of the front of the HDU.

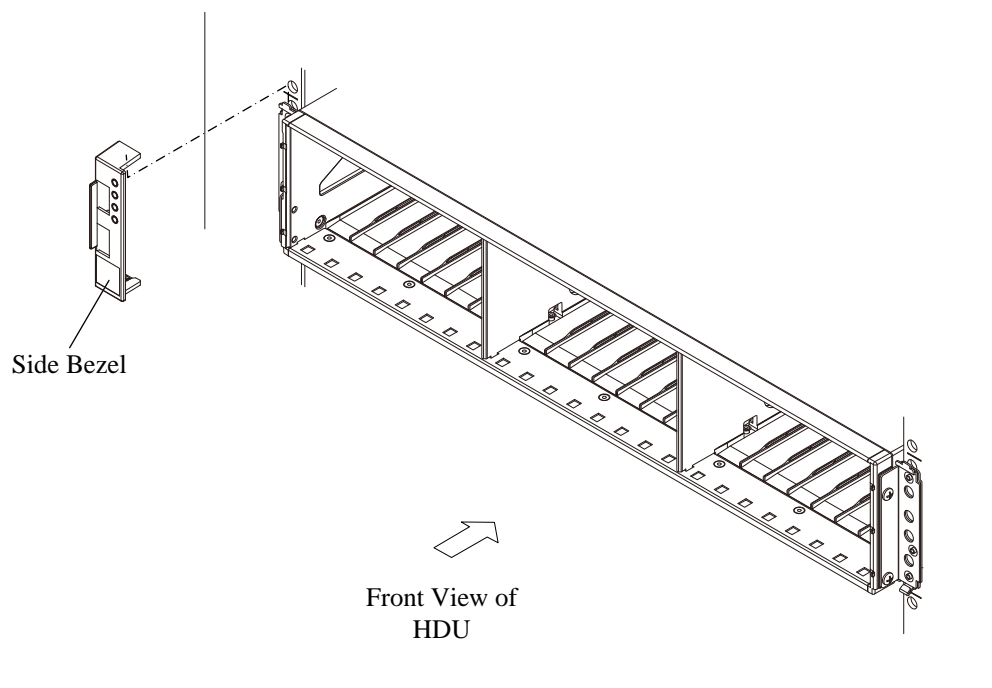


Fig. 3.40.1-10 Removal of Side Bezel

1-1-8. Replace the HDU.

**CAUTION**

Paying attention to falls:

Work carefully because the mass of the single HDU is about 13 kg.

Beware over turning and dropping:

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

- a. When the front door is installed in the front side of the rack frame, remove the two screws. When the bezel is installed in the front side of the rack frame, go to Procedure b.
- b. Remove the HDU from the Rack frame referring to mounting procedure using the special lifter. (See [INST03-15-10 through 40.](#))
- c. Install the HDU on the front side of the Rack frame.
- d. If the screws were removed in Procedure a, install the two screws.

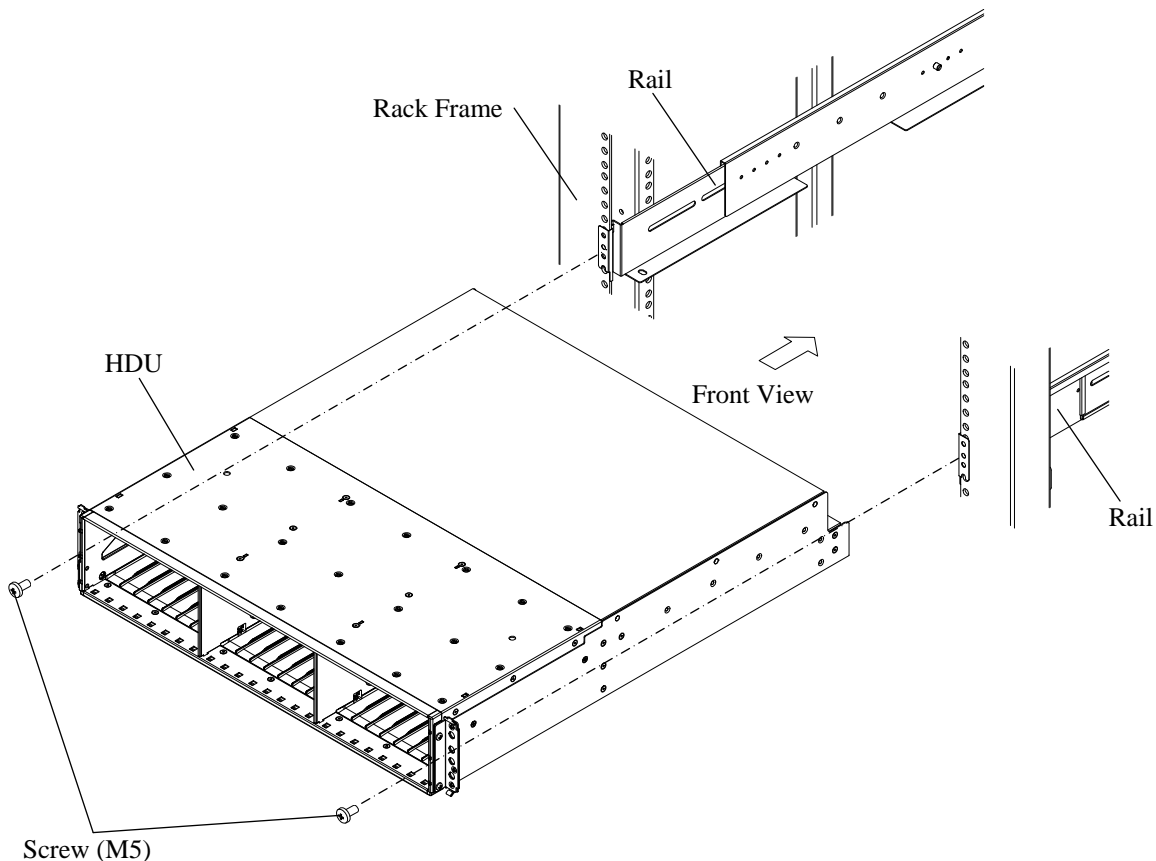


Fig. 3.40.1-11 Removal of HDU

1-1-9. Attach the parts.

1-1-9.1. In the case that the bezel is installed in the front of the HDU

- a. Secure the Nut Plate L to the front left side of the DKU with the two screws.
Tighten the screws pressing the Nut Plate L upward and inward. (See Fig. 3.40.1-9.)
- b. Secure the Nut Plate R to the front right side of the DKU with the two screws.
Tighten the screws pressing the Nut Plate R upward and inward.
- c. Hang the upper part of the Bezel Bracket L on the DKU and secure it to the Nut Plate L (two) with the four screws.
- d. Hang the upper part of the Bezel Bracket R on the DKU and secure it to the Nut Plate R (two) with the four screws.
- e. Install the Side Cover L in the Bezel Bracket L.
- f. Install the Side Cover R in the Bezel Bracket R.

1-1-9.2. In the case that the front door is installed in the front of the HDU

- a. Install the Side Bezel to the left side of the front of the HDU. (See Fig. 3.41.1-10.)

1-1-10. Install the drive.

Install all the removed drives in the same locations in the spare HDU according to the label attached to them.

1-1-10.1. For UBX

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

- Open the handle fully and fit the drive in the guide rail and slide it in the direction shown by the arrow not to give a shock.
- Push the drive in until it reaches the position where a hook of the handle can be entered into the square hole on a frame.
- Pull the stopper lightly and close the handle, and then press the stopper to have the lock on. If the handle is closed in the state where the hook of the handle cannot enter into the square hole, the drive cannot be installed correctly because it runs into the frame of the HDU.
- Install the other drives in the same manner.

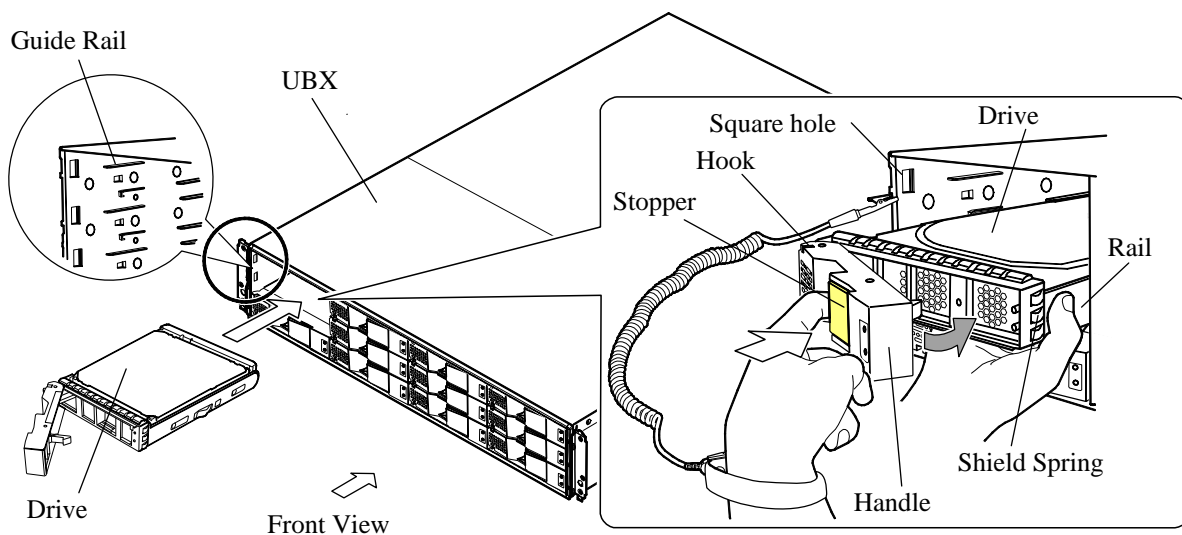


Fig. 3.40.1-12 Installation of Drive (for UBX)

1-1-10.2. For SBX

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

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

- Install the other drives in the same manner.

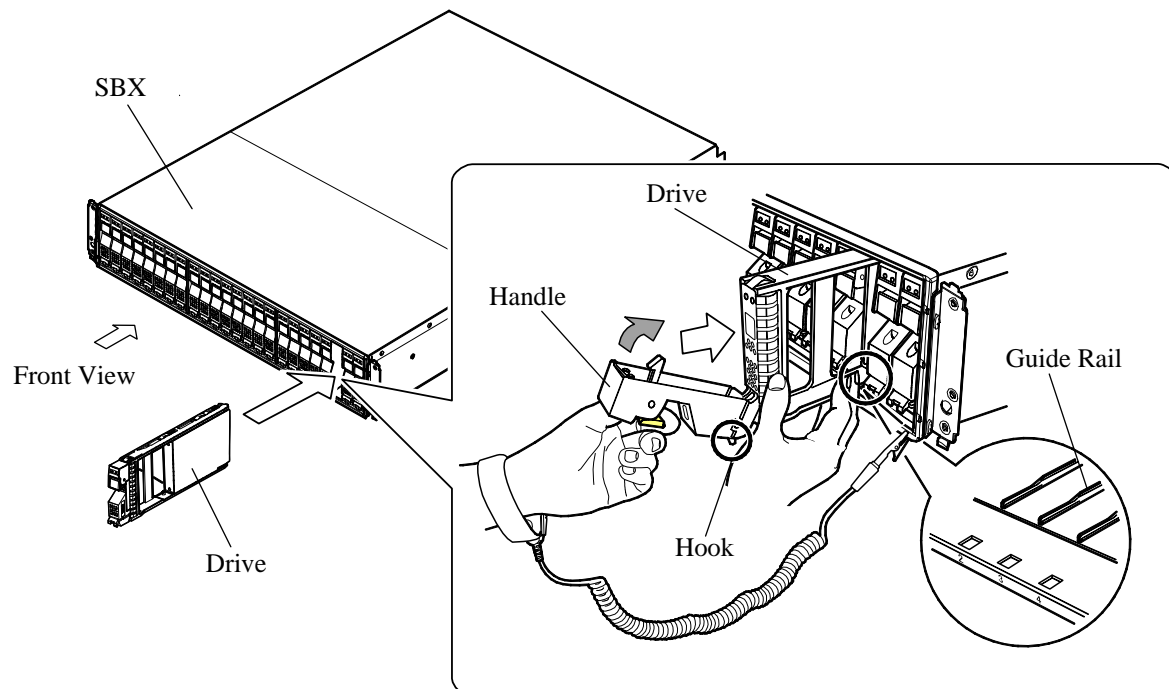


Fig. 3.40.1-13 Installation of Drive (for SBX)

1-1-11. Insert the DKUPS.

- a. Make the handle of the DKUPS completely fall down and forward. (See Fig. 3.40.1-6.)
- b. Insert the DKUPS into the slot and push it to the full.
- c. Completely raise the handle and fix the DKUPS.
- d. Connect the power cable to the DKUPS and fasten it with the cable holder. (See Fig. 3.40.1-5.)
- e. Push the cable holder toward the DKUPS until it stops.
- f. Install the other DKUPS in the same manner.
- g. Attach the two binders to the rail of the rear side of the HDU to fix the power cable. (See Fig. 3.40.1-4.)

1-1-12. Insert the SSW.

- a. Make the right and left levers of the SSW open. (See Fig. 3.40.1-3.)
- b. Insert the SSW until the edge of the lever comes in contact with the HDU.
- c. Close the right and left levers to insert the SSW completely.
- d. Connect the cables to the SSW after checking “3.1.6 Notes when connecting the DEV interface cable” ([INST03-01-180](#)).
- e. Install the other SSW in the same manner.
- f. Close the two loop cable ties on the rail of the rear side of the HDU to fix the cables. (See Fig. 3.40.1-2.)

1-1-13. Attach the labels and nameplate.

- a. Attach the labels to the HDU.
- b. If the nameplate is attached to the removed HDU, attach the nameplate.

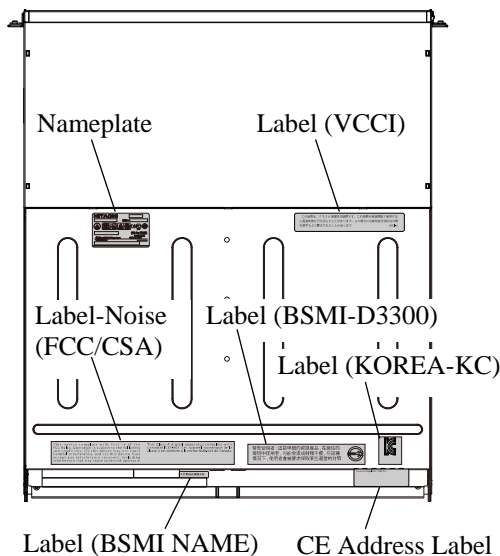
If the nameplate is not attached to the removed HDU, go to Procedure 1-1-14.

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

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

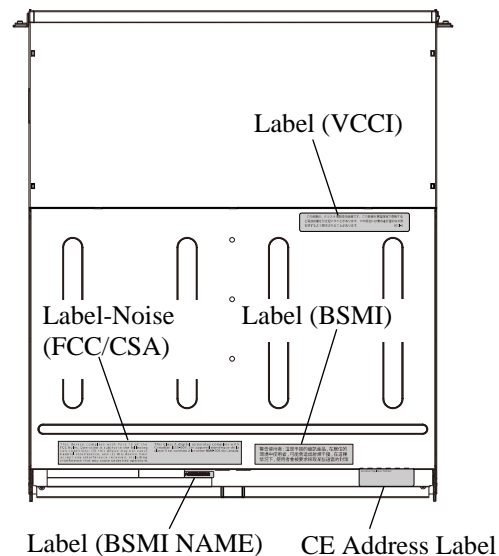
To fill in the nameplate, use the RoHS-compliant marker pen.

For HDS



Top View of HDU

For HP



Top View of HDU

Fig. 3.40.1-14 Attachment of Labels and Nameplate

1-1-14. Attach the bezel.

- a. Attach the bezel to the HDU. (See [INST03-01-60.](#))

1-1-15. Power On the component.

- a. Turn on the breaker on the power distribution panel that is connected to PDU.
- b. Turn on the breaker on the PDU.
- c. Turn the “POWER ON/OFF” switch to “ON”, while turning the POWER ON/OFF ENABLE switch to the ENABLE position.

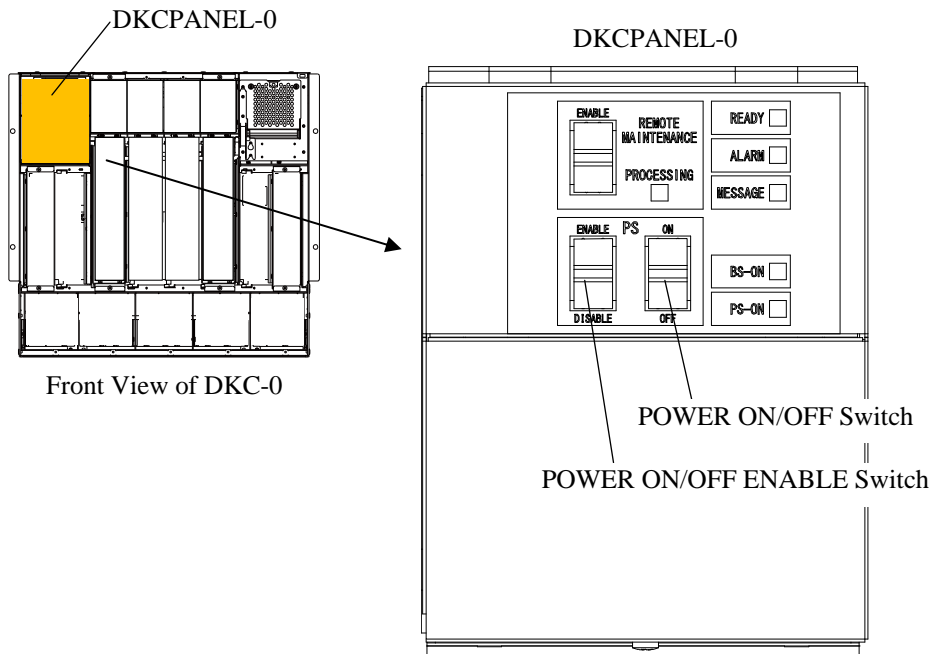


Fig. 3.40.1-15 Switch on DKCPANEL

1-1-16. End.

[POST-PROCEDURE]

— OUTLINE —

- ① SIM Log Complete
- ② Change the SVP operation mode
- ③ Maintenance Window

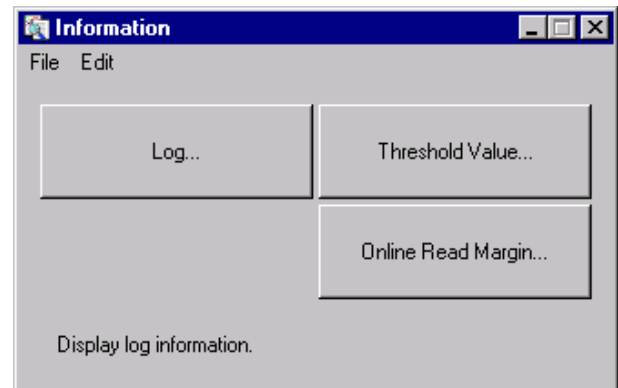
1. SIM Log Complete

(1)

Change the mode from [View Mode] to [Modify Mode].
Select (CL) [Information].

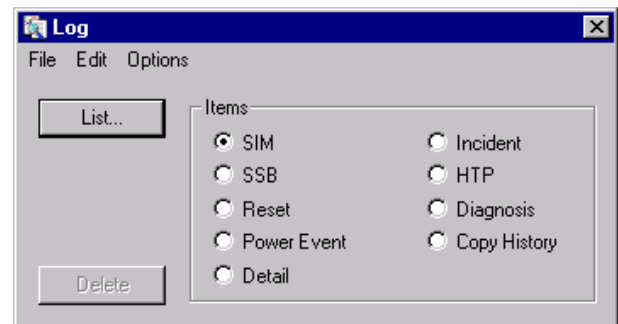
(2)

Select (CL) [Log...] in the 'Information' dialog box.



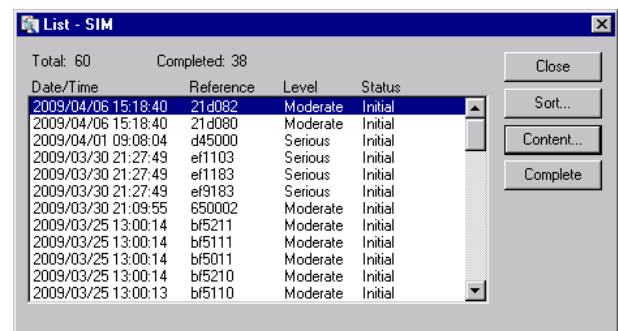
(3)

Select (CL) [SIM] and [List...] in the 'Log'.

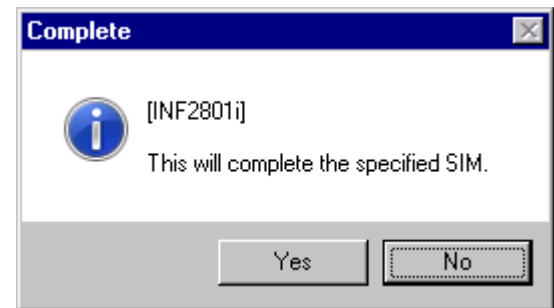


(4)

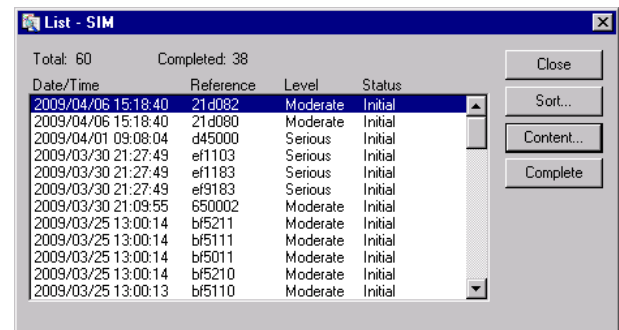
Select (CL) data to be completed in the 'List-SIM' dialog box and select (CL) [Complete].



- (5) Select (CL) [Yes] in the 'Complete' dialog box.



- (6) In the 'List-SIM' dialog box, make sure that "Completed" is displayed in the Status.



- (7) Select (CL) [Close] in the 'List-SIM' dialog box.
Close the 'Log' dialog box and close the 'Information' window.
Change the mode from [Modify Mode] to [View Mode].

NOTE: Even if SIM Complete was performed, the MESSAGE of the Operator Panel may be on. Display all the SIMs to make sure they are completed. If not, please wait for 5 minutes and operate SIM Log Complete again.

2. <Maintenance window>

In the 'Maintenance' window, check the status of storage system.

Recover the parts if the other parts are blocked.

Close the 'Maintenance' window if there is no problem.

3. <Changing the SVP operation mode>

In the 'SVP' window, change the mode to [View Mode].

Please up-load trouble information gathered in Maintenance PC to the server by using OnlineDumpTool. ([SVP02-26-10](#))

4. <Giving notice to customer>

When Encryption License Key is used, and Drive or DKA is replaced, please give notice of backup of Encryption Keys to customer.