

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 subsystem cannot operate normally. Be sure to make the revisions consistent each other.

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REP02-10 [Pre A]
REP02-30 [Pre B]
REP02-80 [Pre C]
REP02-120 [Pre D]
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REP02-220 [Pre F]
REP02-280 [Pre G]
REP02-340 [Pre H]
REP02-410 [Pre K]
REP02-450 [Pre L]
REP02-500 [Pre M]
REP02-550 [Pre T1]
REP02-810 [Pre T4]
REP02-940 [Pre V]

REP03-10 [Hardware A]
REP03-50 [Hardware B]
REP03-80 [Hardware C]
REP03-110 [Hardware D]
REP03-140 [Hardware E]
REP03-170 [Hardware F]
REP03-200 [Hardware G]
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REP03-350 [Hardware T2]
REP03-380 [Hardware T3]
REP03-410 [Hardware T4]
REP03-460 [Hardware T5]
REP03-480 [Hardware T6]
REP03-500 [Hardware T7]
REP03-550 [Hardware T8]
REP03-570 [Hardware T9]
REP03-590 [Hardware T10]
REP03-630 [Hardware T11]
REP03-710 [Hardware T13]
REP03-730 [Hardware T14]
REP03-760 [Hardware T15]
REP03-800 [Hardware T16]
REP03-830 [Hardware T17]
REP03-850 [Hardware T18]
REP03-1010 [Hardware T19]
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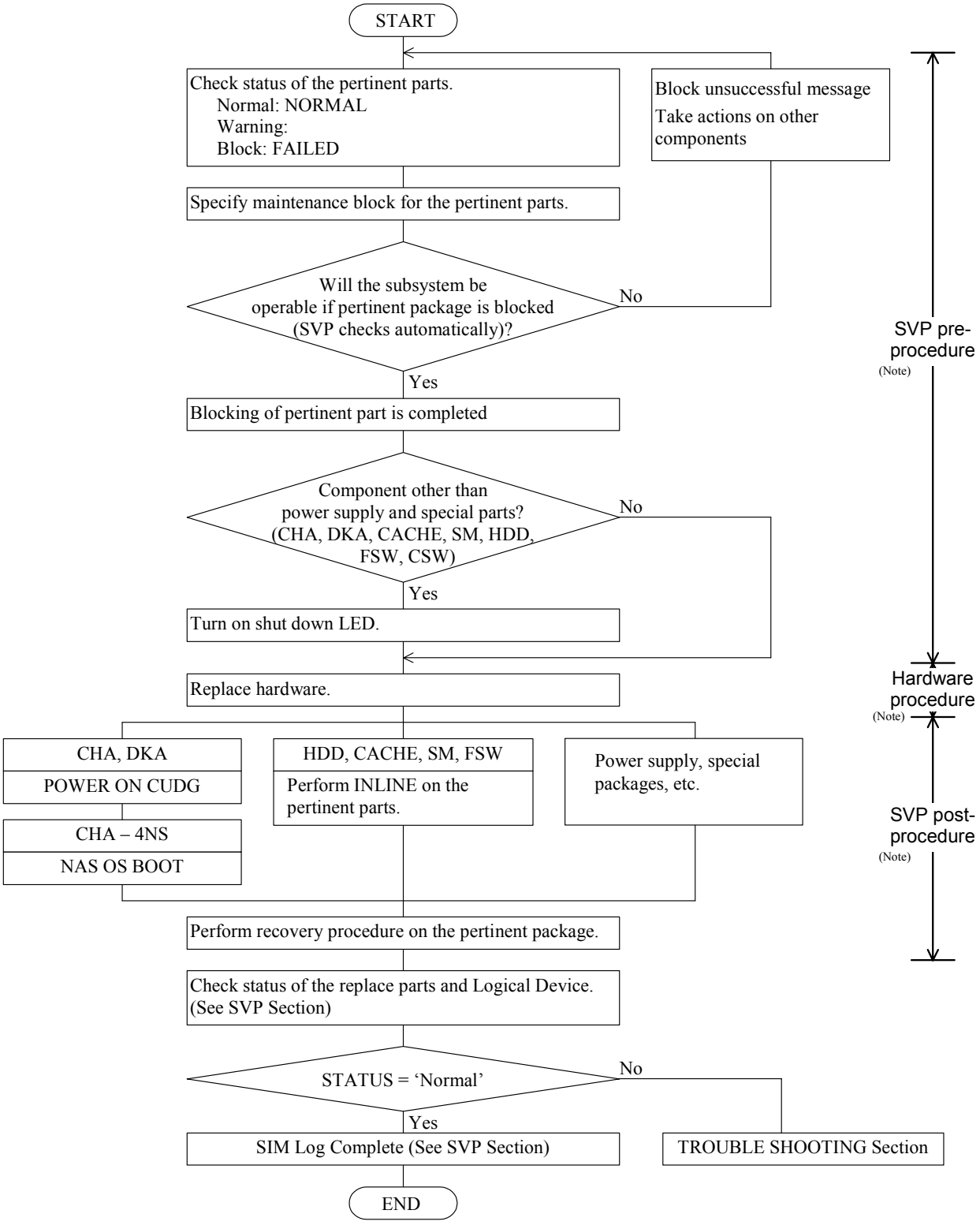
REP04-10 [Post a]
REP04-50 [Post b]
REP04-90 [Post c]
REP04-150 [Post d]
REP04-180 [Post f]
REP04-200 [Post g]
REP04-220 [Post h]
REP04-280 [Post j]
REP04-310 [Post k]
REP04-330 [Post t1]
REP04-890 [Post t4]
REP04-980 [Post u]
REP04-1020 [Post z]

1. Hot Replace

1.1 Hot Replace Flowchart



Note :

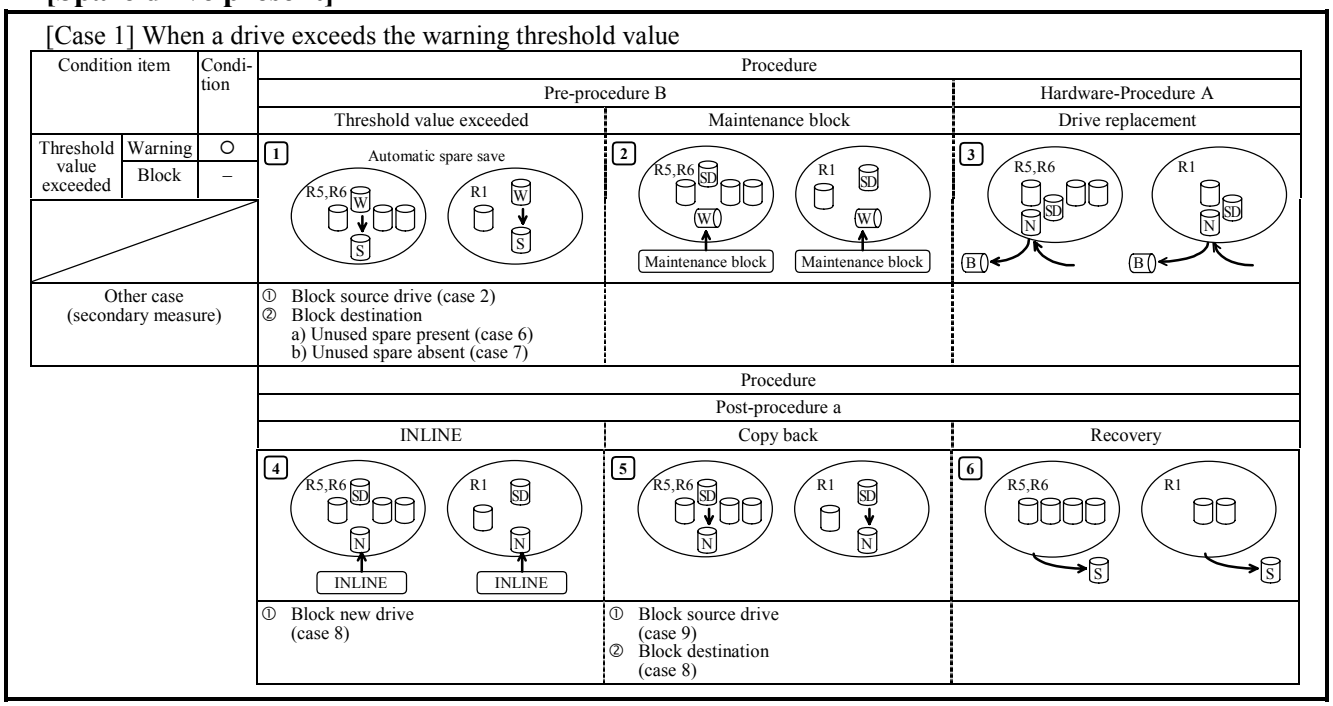
SVP pre-procedure:	An SVP (PC) process of issuing a maintenance block instruction after checking the status of the parts to be replaced so that the live parts can be removed and replaced.
Hard ware procedure:	A process of removing a parts to be replaced (shut down LED on) and installing a maintenance 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 subsystem.

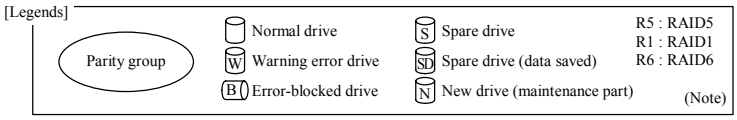
1.2 Concept of Drive Maintenance

[Spare drive present]

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

Condition item		Condition	Procedure		
			Pre-procedure B		Hardware-Procedure A
			Threshold value exceeded	Maintenance block	Drive replacement
Threshold value exceeded	Warning	○	1 Automatic spare save	2	3
	Block	–			
Other case (secondary measure)			① Block source drive (case 2) ② Block destination a) Unused spare present (case 6) b) Unused spare absent (case 7)		
			Procedure		
			Post-procedure a		
			INLINE	Copy back	Recovery
			4	5	6
			① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	





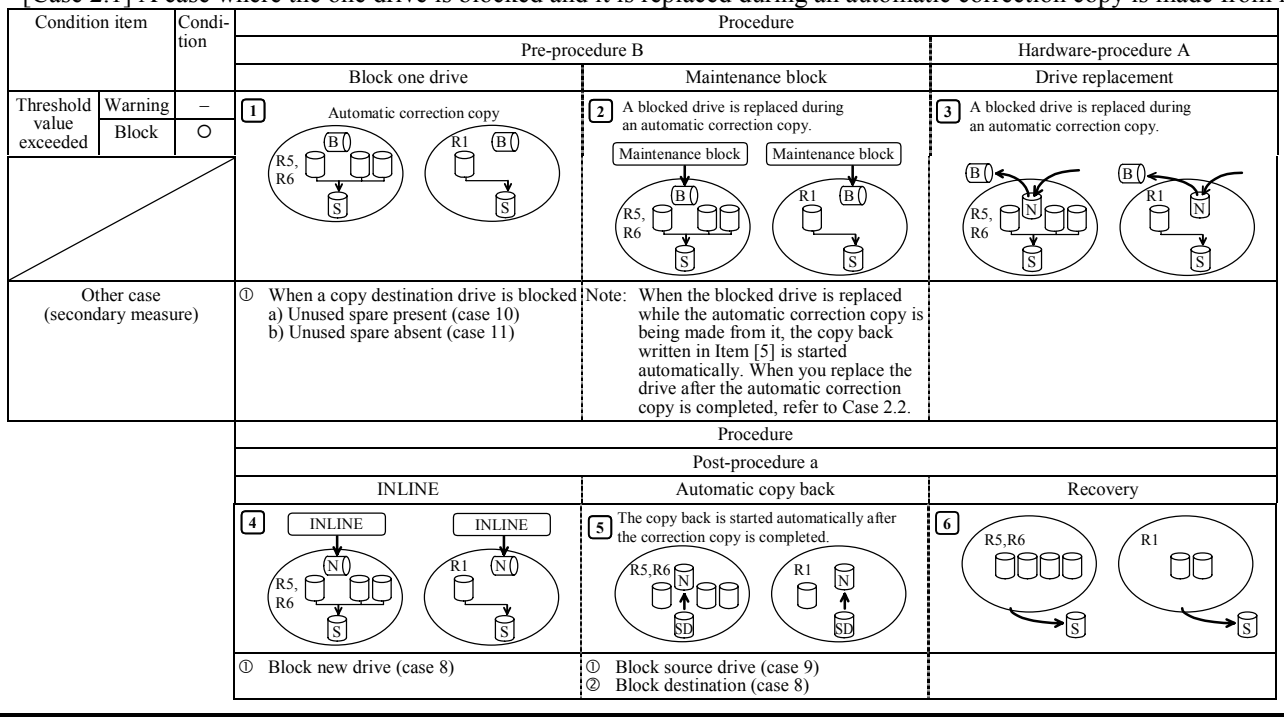
Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

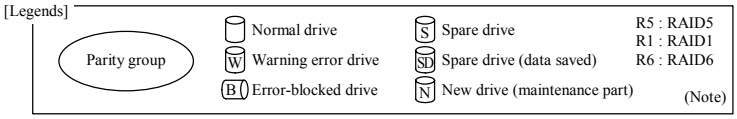
[Spare drive present]

[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

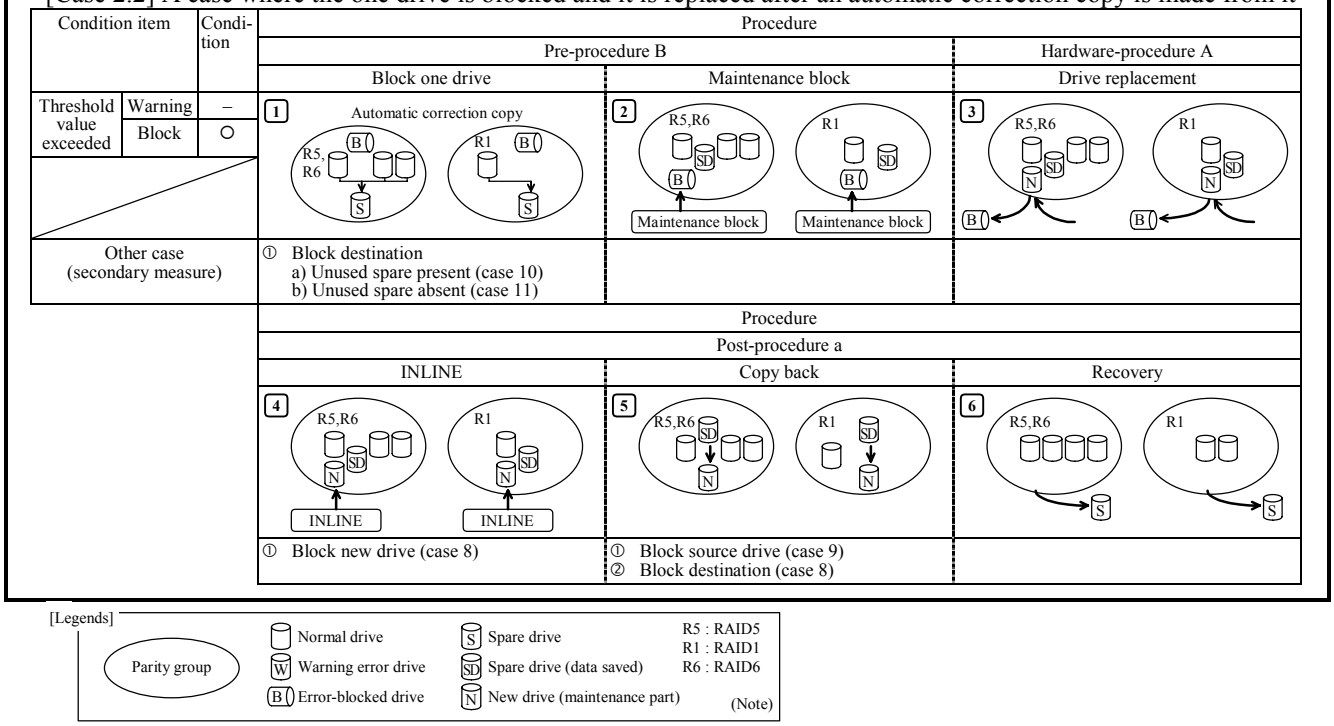




Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[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



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. The RAID 6 system consists of eight drives practically.

[Spare drive absent]

[Case 3] When a drive exceeds the warning threshold value (without spare drive)

Condition item		Condition	Procedure		
			Pre-procedure D		Hardware-Procedure A
			Threshold value exceeded	Maintenance block	Drive replacement
Threshold value exceeded	Warning	○	1 Warning SIM (R5,R6 W) Warning SIM (R1 W)	2 (R5,R6 W) (R1 W) Maintenance block Maintenance block	3 (R5,R6 N) (R1 N) B B
	Block	–			
Other case (secondary measure)					

Procedure		
Post-procedure b		
INLINE	Correction copy	Recovery
4 (R5,R6 N) (R1 N) INLINE INLINE	5 (R5,R6 N) (R1 N)	6 (R5,R6) (R1)
① Block new drive (case 5)	① Block destination (case 5)	

[Case 4] When a drive is blocked (without spare drive)

Condition item		Condition	Procedure		
			Pre-procedure D		Hardware-Procedure A
			Block one drive	Maintenance block	Drive replacement
Threshold value exceeded	Warning	–	1 (R5,R6 B) (R1 B)	2 (R5,R6 B) (R1 B) Maintenance block Maintenance block	3 (R5,R6 N) (R1 N) B B
	Block	○			
Other case (secondary measure)					

Procedure		
Post-procedure b		
INLINE	Correction copy	Recovery
4 (R5,R6 N) (R1 N) INLINE INLINE	5 (R5,R6 N) (R1 N)	6 (R5,R6) (R1)
① Block new drive (case 5)	① Block destination (case 5)	

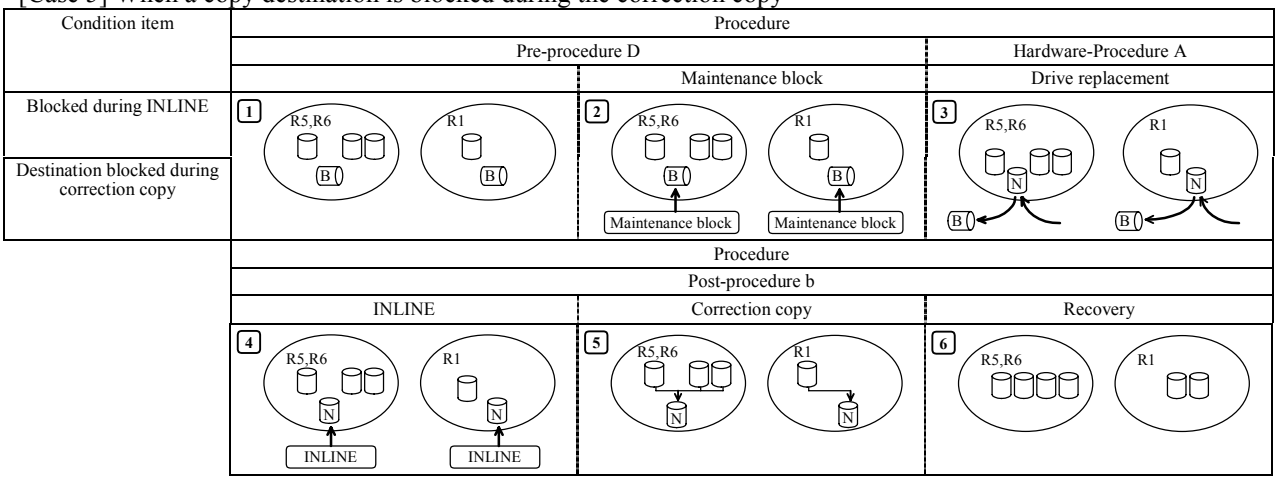
[Legends]
Parity group
Normal drive
Warning error drive
Error-blocked drive
New drive (maintenance part)
R5 : RAID5
R1 : RAID1
R6 : RAID6
(Note)

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. The RAID 6 system consists of eight drives practically.

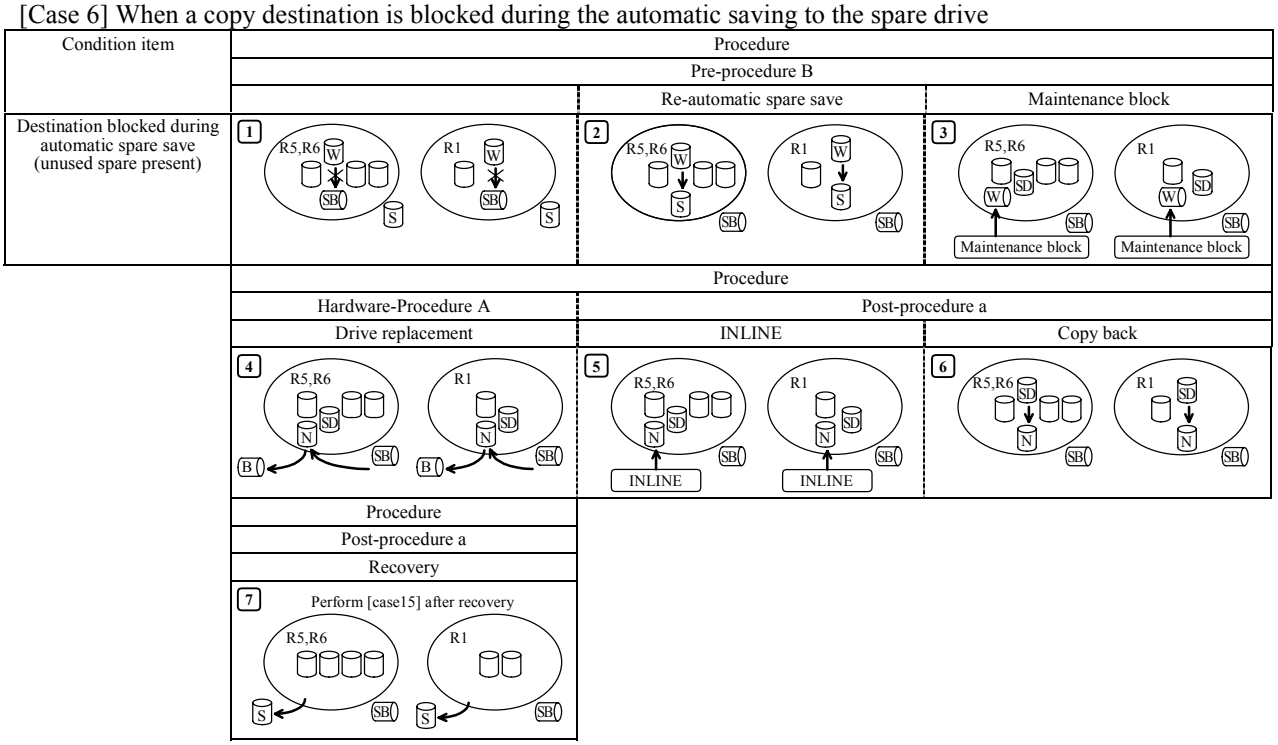
Go to next page

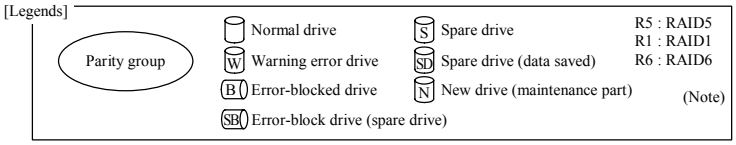
[Case in which a secondary error occurred during error]

[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

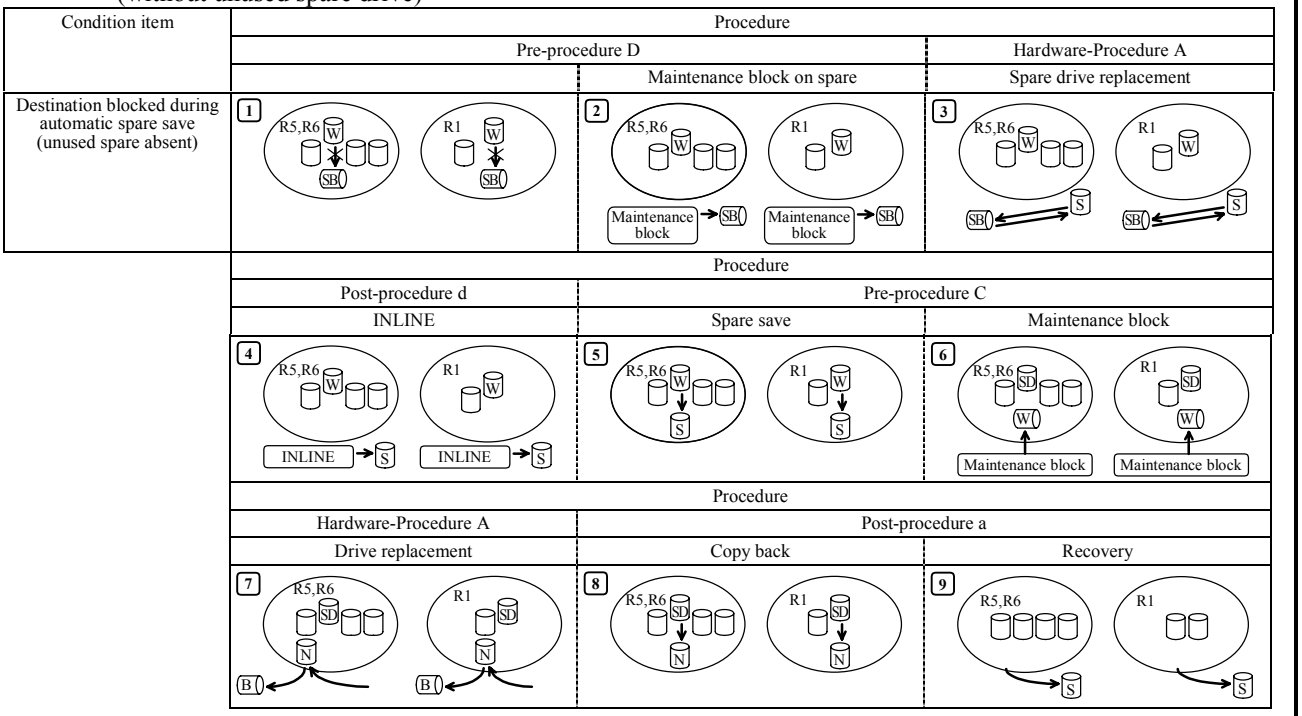




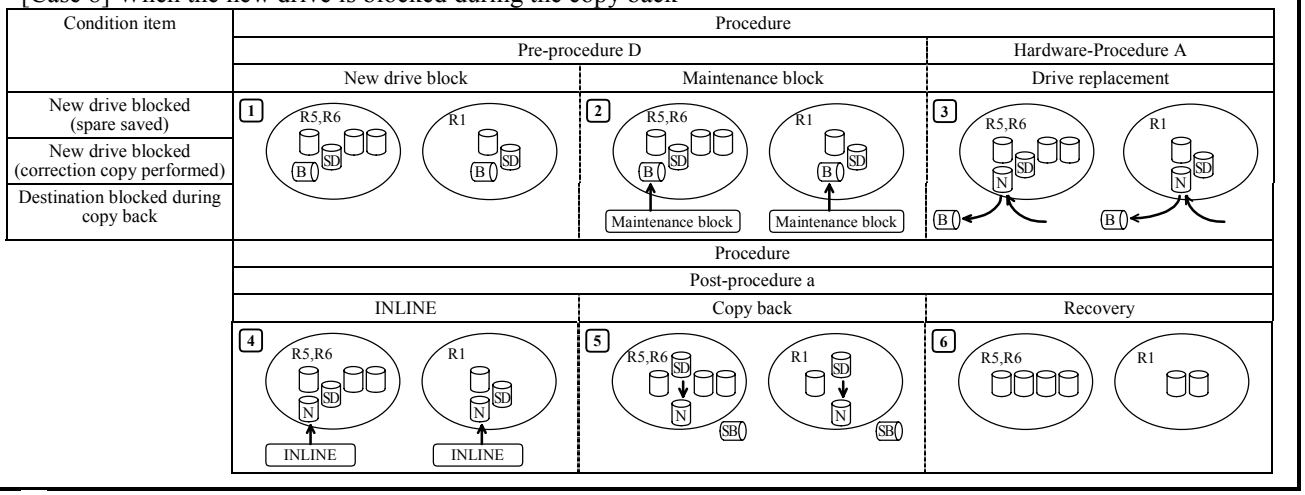
Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

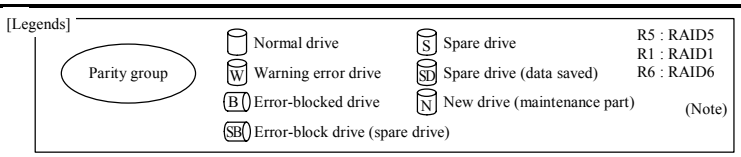
[Case in which a secondary error occurred during error recovery]

[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

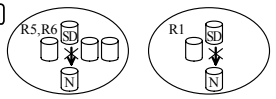
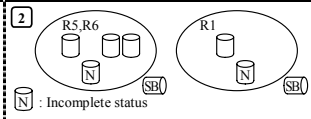


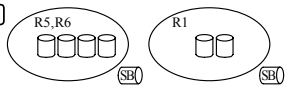


Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

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

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

Condition item	Procedure		
	Pre-procedure D		Post-procedure b
			Correction Copy
Source blocked during copyback	1 	2 	3 

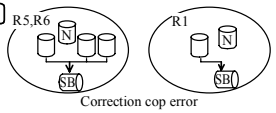
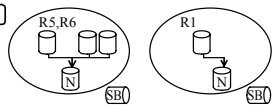
Procedure
Post-procedure b
Correction Copy
4 

After recovering execute [Case 15].

[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.

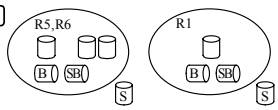
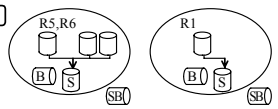
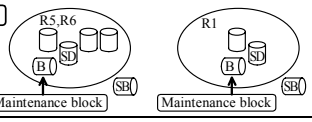
[Case 10.1] When the blocked drive has been replaced through performance of the operation for Case 2.1

Condition item	Procedure		
	Pre-procedure B		
		Starting collection copy automatically	Maintenance block
Destination blocked during automatic correction copy (unused spare present)	1 	2 	3 

Correction cop error

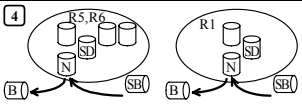
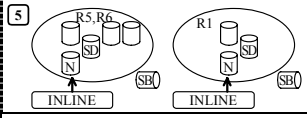
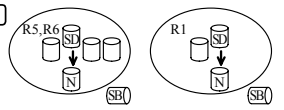
Perform [case 15] after recovery.

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

Condition item	Procedure		
	Pre-procedure B		
		Re-automatic correction copy	Maintenance block
Destination blocked during automatic correction copy (unused spare present)	1 	2 	3 

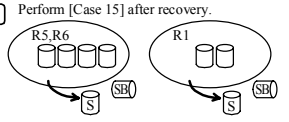
Maintenance block

Maintenance block

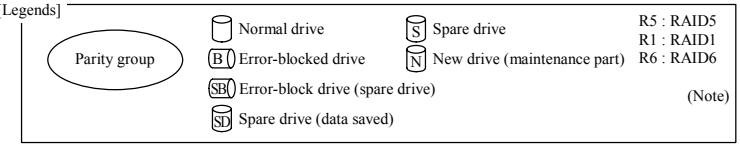
Procedure		
Hardware-procedure A	Post-procedure a	
Drive replacement	INLINE	Copy back
4 	5 	6 

INLINE

INLINE

Procedure
Post-procedure g
Recovery
7 Perform [Case 15] after recovery. 

[Legends]

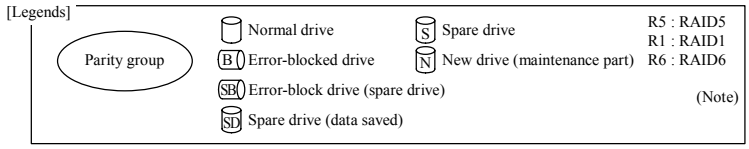


Note: In the RAID system, two drives form a mirroring pair and the two mirroring pairs (four drives) compose the RAID. In the above diagram, only the two mirroring pairs are shown. The RAID 6 system consists of eight drives practically.

[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)

Condition item	Procedure		
	Pre-procedure D	Maintenance block	Hardware-procedure A
			Drive replacement
Destination blocked during automatic correction copy (unused spare absent)	1 R5,R6 B SB; R1 B SB Note: When the blocked drive is replaced in the case 2, same as a case 10.1, collection copy starting automatically.	2 R5,R6 B SB; R1 B SB Maintenance block; Maintenance block	3 R5,R6 N SB B; R1 N SB B
	Procedure		
	Post-procedure b		
	INLINE	Correction copy	Recovery
	4 R5,R6 N SB INLINE; R1 N SB INLINE	5 R5,R6 N SB; R1 N SB	6 Perform [Case15] after recovery R5,R6; R1 SB SB



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. The RAID 6 system consists of eight drives practically.

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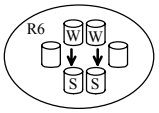
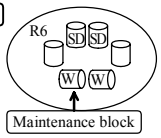
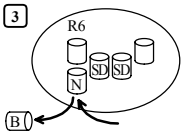
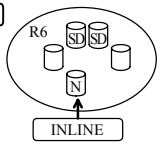
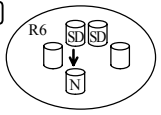
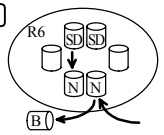
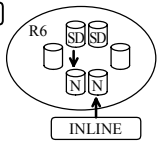
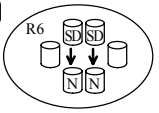
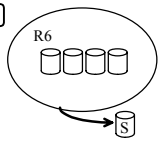
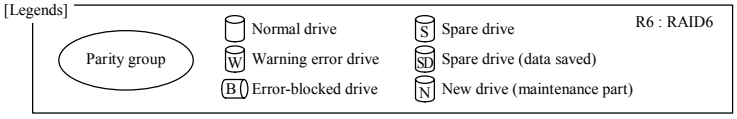
[Spare drive present]

[Case 12] RAID6 When two drives exceed the warning threshold value

Condition item		Condition	Procedure		
			Pre-procedure B		Hardware-Procedure A
			Threshold value exceeded	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	○	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 
	Block	–			
Other case (secondary measure)			① Block source drive (case 2) ② Block destination a) Unused spare present (case 6) b) Unused spare absent (case 7)		

Procedure		
Post-procedure a		Hardware-Procedure A
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		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 	8 	9 
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	



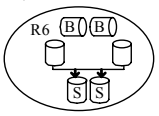
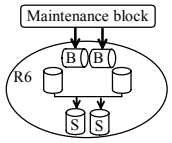
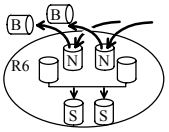
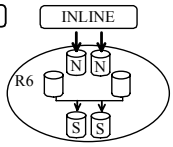
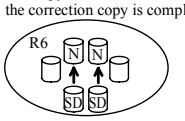
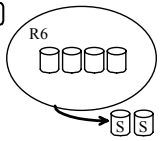
Note: In the RAID 6 system, eight drives compose a parity group.

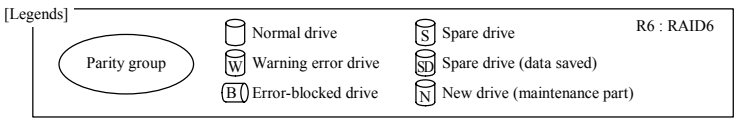
[Spare drive present]

[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

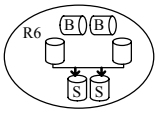
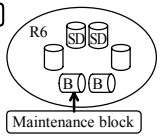
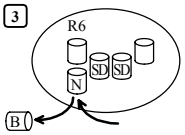
Condition item		Condition	Procedure		
			Pre-procedure B		Hardware-procedure A
			Detachment of the two drives	Maintenance block	Replacement of the first drive
Threshold value exceeded	Warning	–	1 Automatic correction copy (allowed to be made up to twice) 	2 A blocked drive is replaced during an automatic correction copy. 	3 A blocked drive is replaced during an automatic correction copy. 
	Block	○			
Other case (secondary measure)			① Block destination a) Unused spare present (case 10) b) Unused spare absent (case 11)	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.	
			Procedure		
			Post-procedure a		
			INLINE test of the first drive	Copy back to the first drive	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)	

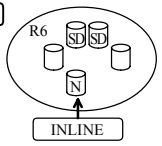
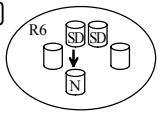
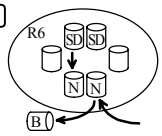


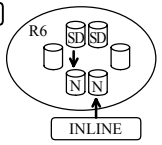
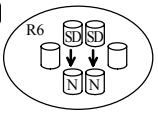
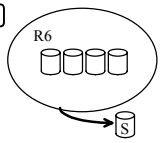
Note: In the RAID 6 system, eight drives compose a parity group.

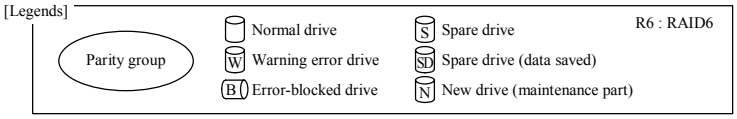
[Spare drive present]

[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		Condition	Procedure		
			Pre-procedure B		Hardware-procedure A
			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		
Post-procedure a		Hardware-procedure A
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)	

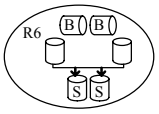
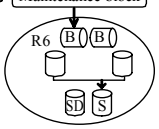
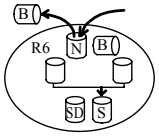
Procedure		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 	8 	9 
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

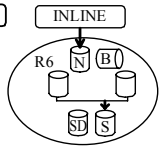
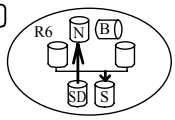
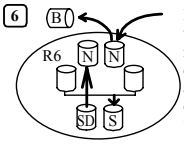


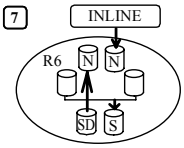
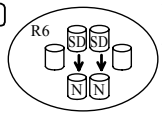
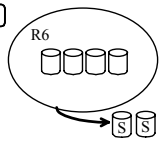
Note: In the RAID 6 system, eight drives compose a parity group.

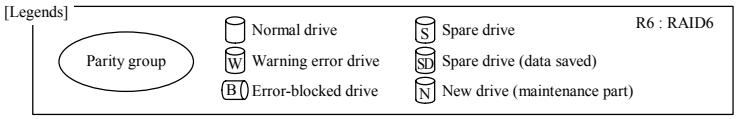
[Spare drive present]

[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		Condition	Procedure		
			Pre-procedure B		Hardware-procedure A
			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		
Post-procedure a		Hardware-procedure A
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 INLINE 	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		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 INLINE 	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)	

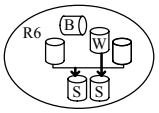
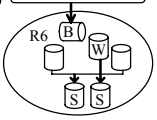
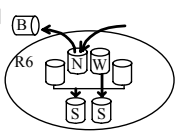


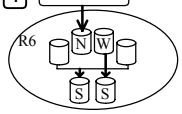
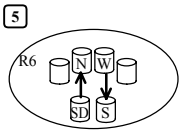
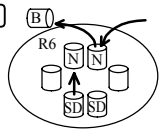
Note: In the RAID 6 system, eight drives compose a parity group.

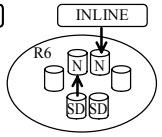
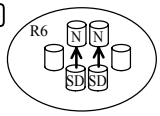
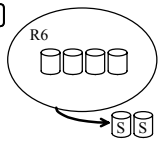
[Spare drive present]

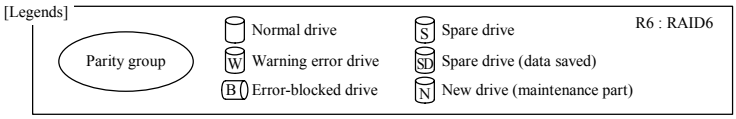
[Case 14] RAID6 When a drive is blocked and another drive exceeds the warning threshold value
When replacing a blocked drive while an automatic correction copy is being made from it, go to Case 14.1.
When replacing a blocked drive after the automatic correction copy from it is completed, go to Case 14.2.

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

Condition item		Condition	Procedure		
			Pre-procedure B		Hardware-procedure A
			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 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		
Post-procedure a		Hardware-procedure A
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 INLINE 	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)	

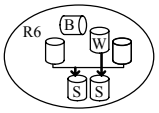
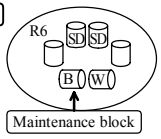
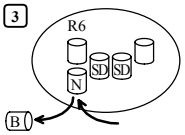
Procedure		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 INLINE 	8 	9 
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

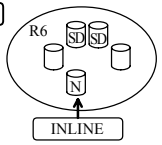
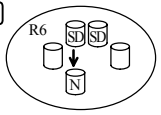
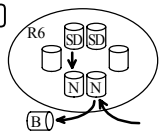


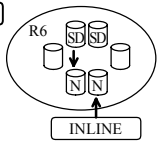
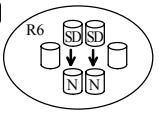
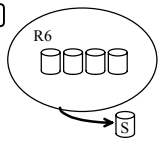
Note: In the RAID 6 system, eight drives compose a parity group.

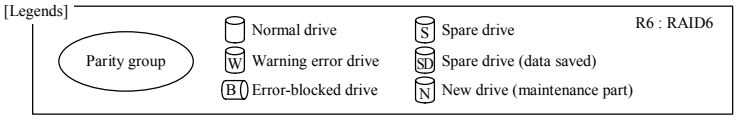
[Spare drive present]

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

Condition item		Condition	Procedure		
			Pre-procedure B		Hardware-procedure A
			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		
Post-procedure a		Hardware-procedure A
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		
Post-procedure a		
INLINE test of the second drive	Copy back to the second drive	Recovery
7 	8 	9 
① Block new drive (case 8)	① Block source drive (case 9) ② Block destination (case 8)	

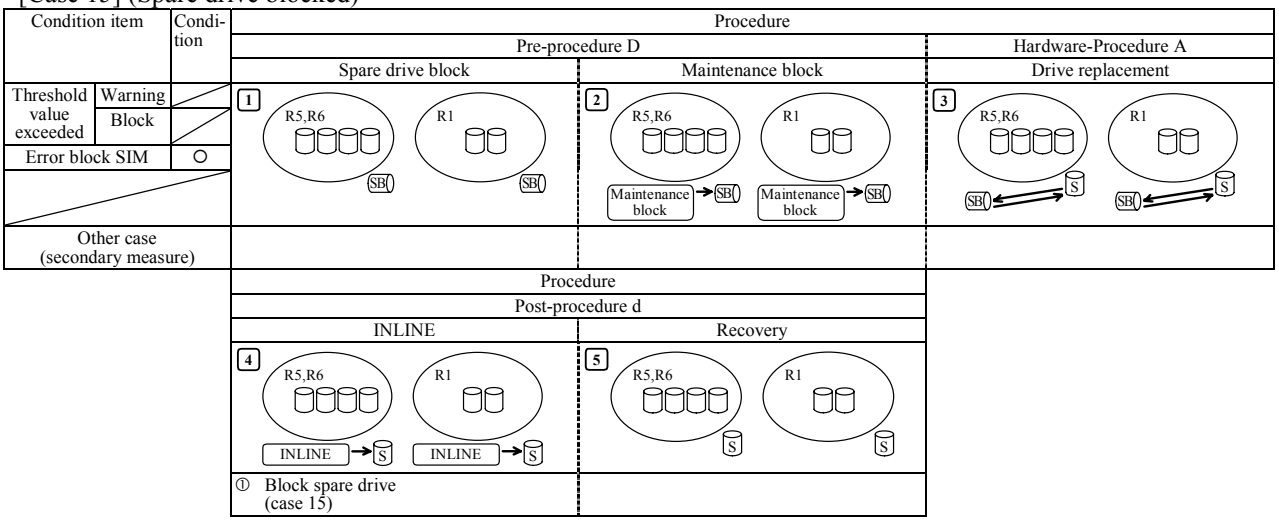


Note: In the RAID 6 system, eight drives compose a parity group.

Go to next page

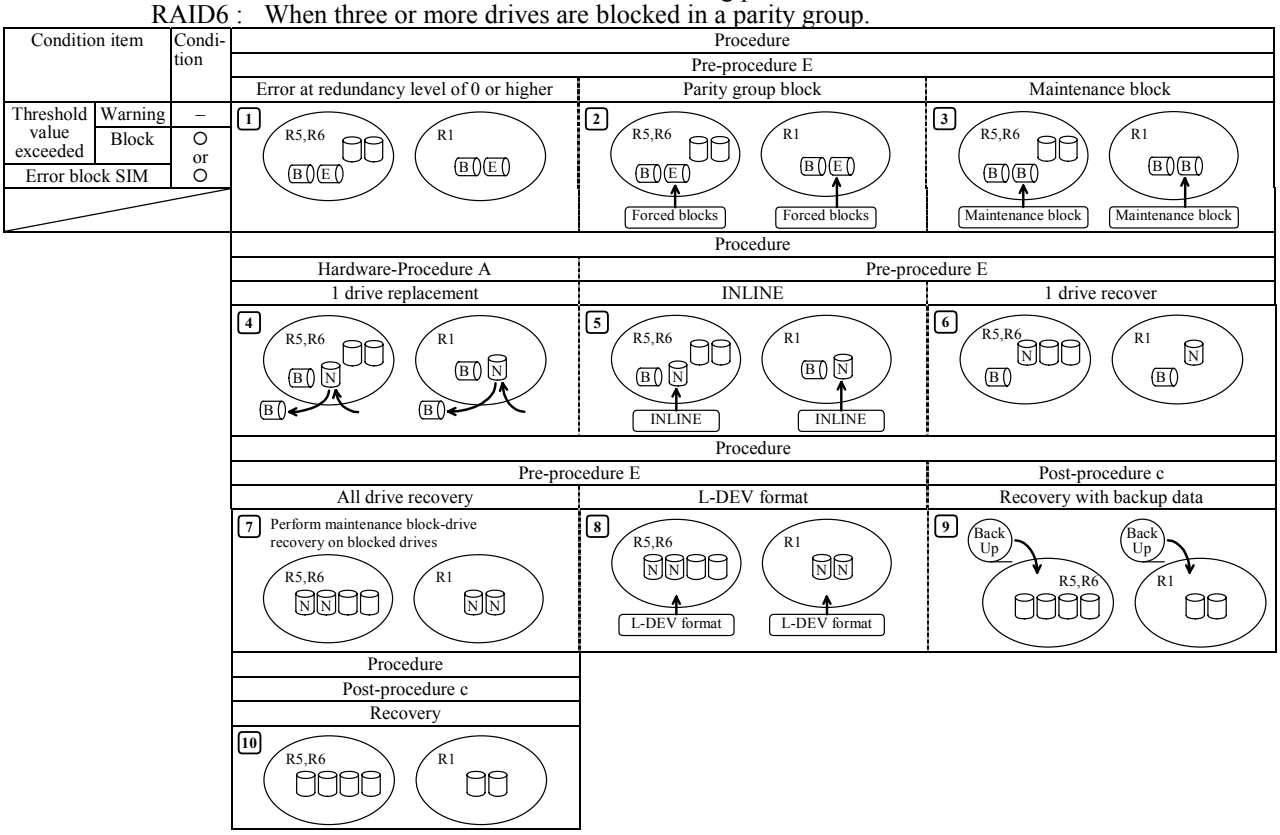
[Other Cases]

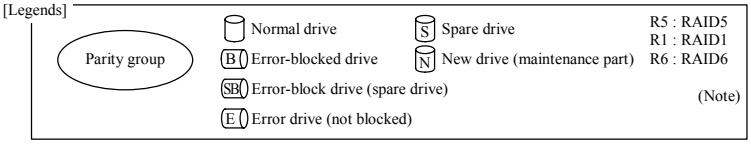
[Case 15] (Spare drive blocked)



[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.





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. The RAID 6 system consists of eight drives practically.

[Other Cases]

[Case 17] (Preventive drive replacement 1)

Condition item		Condition
Threshold value exceeded	Warning	–
	Block	–
Others (unusual noise, etc.)		○
Spare drive		○

Procedure		
Pre-procedure C		
Replacement	Spare save	Maintenance block
1 Unusual noise, etc. (R5,R6) Unusual noise, etc. (R1)	2 R5,R6 S, R1 S	3 R5,R6 SD B, R1 SD B, Maintenance block, Maintenance block
	① Block source drive (case 2) ② Block destination drive a) Unused spare present (case 6) b) Unused spare absent (case 7)	

Other case (secondary measure)

Procedure		
Hardware-Procedure A	Post-procedure a	
Drive replacement	INLINE	Copy back
4 R5,R6 SD N B, R1 SD N B	5 R5,R6 SD N INLINE, R1 SD N INLINE	6 R5,R6 SD N, R1 SD N
	① Block new drive (case 8)	① Block source drive (case 9) ② Block destination drive (case 8)

Procedure
Post-procedure a
Recovery
7 R5,R6 S, R1 S

[Case 18] (Preventive drive replacement 2)

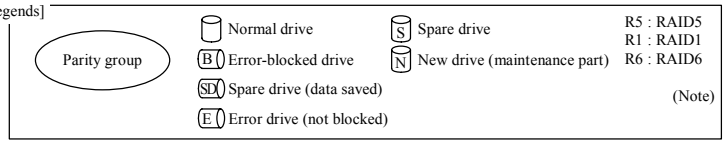
Condition item		Condition
Threshold value exceeded	Warning	–
	Block	–
Others (unusual noise, etc.)		○
Spare drive		–

Procedure		
Pre-procedure D		Hardware-Procedure A
Replacemant	Maintenance block	Drive replacement
1 Unusual noise, etc. (R5,R6) Unusual noise, etc. (R1)	2 R5,R6, R1, Maintenance block, Maintenance block	3 R5,R6 N B, R1 N B

Other case (secondary measure)

Procedure		
Post-procedure b		
INLINE	Correction copy	Recovery
4 R5,R6 N INLINE, R1 N INLINE	5 R5,R6 N, R1 N	6 R5,R6, R1
① Block new drive (case 5)	② Block destination drive (case 5)	

[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. The RAID 6 system consists of eight drives practically.

1.3 Concept of Cache Maintenance

[Case 1]

Condition item		Condition
Threshold value exceeded	Warning	
	Block	○
CACHE (WP541-A)		○
SM (WP551-A, WP552-A)		–
CACHE space: 4G ~ 128G		

Procedure		
Pre-procedure A, F		Hardware-Procedure C
Block	Maintenance block	PCB replacement
1 FRONT LOGIC BOX, REAR LOGIC BOX, Block 1 module	2 FRONT LOGIC BOX, REAR LOGIC BOX, Maintenance block, Block 1 package	3 FRONT LOGIC BOX, REAR LOGIC BOX, Replace module

Procedure	
Post-procedure f	
INLINE	Recovery
4 FRONT LOGIC BOX, REAR LOGIC BOX, INLINE	5 FRONT LOGIC BOX, REAR LOGIC BOX

[Case 2]

Condition item		Condition
Threshold value exceeded	Warning	
	Block	○
CACHE (WP541-A)		–
SM (WP551-A, WP552-A)		○
CACHE space: 4G ~ 128G		

Procedure		
Pre-procedure A, G		Hardware-Procedure B
Block	Maintenance block	PCB replacement
1 FRONT LOGIC BOX, REAR LOGIC BOX, Warn or block 1 module	2 FRONT LOGIC BOX, REAR LOGIC BOX, Maintenance block, Block 1 package, Block one side	3 FRONT LOGIC BOX, REAR LOGIC BOX, Replace module, Block one side

Procedure	
Post-procedure g	
INLINE	Recovery
4 FRONT LOGIC BOX, REAR LOGIC BOX, INLINE, Block one side	5 FRONT LOGIC BOX, REAR LOGIC BOX

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(FPC) (refer to FPC list on page ACC04-10) from Parts Replacement Process Table on page REP01-160. 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 ACC(FPC, and error details) from Parts Replacement Process Table on page REP01-160.
- Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

Note : See page REP01-140 for the procedure for searching a work ID to replace a drive. When replacing a drive, be sure to see page REP01-120 and REP01-130.

[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 REP01-160.

② Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

Note : See page REP01-140 for the procedure for searching the work ID to replace a drive. When replacing a drive, be sure to see page REP01-120 and REP01-130.

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

Condition to replace

SIM was reported

Work ID corresponding to SIM ACC FPC 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>

Work ID	Part Name	Procedure			Replacing Time
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RCA1	Shared Memory (WP551/552-A)	Pre A (REP02-10), Pre F (REP02-220)	Hardware B (REP03-50)	Post f (REP04-180), Post z (REP04-1020)	15 min
RCA2					

PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY

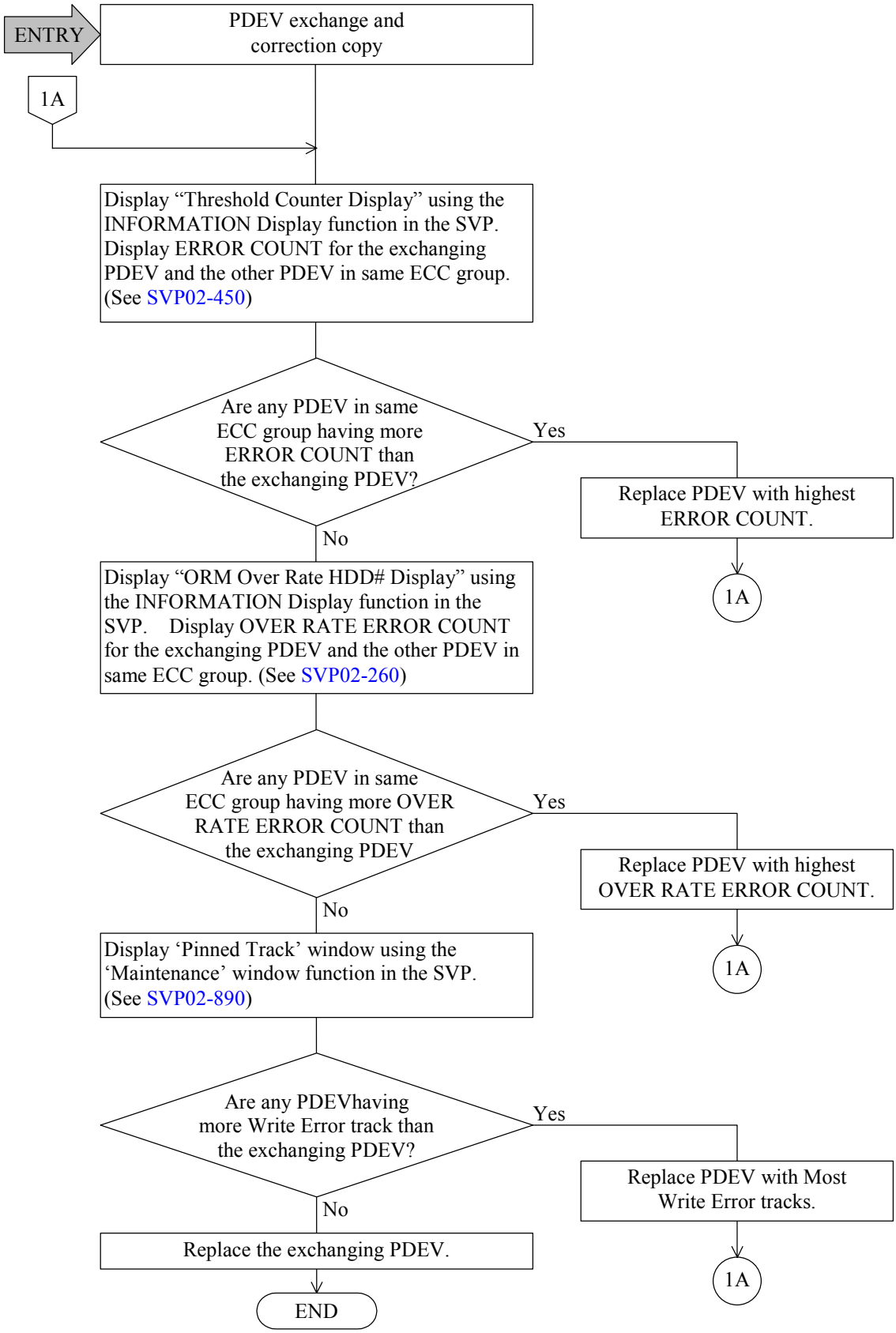
Instructions before blocking and exchanging PDEV with a drive failure error is listed below:

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.

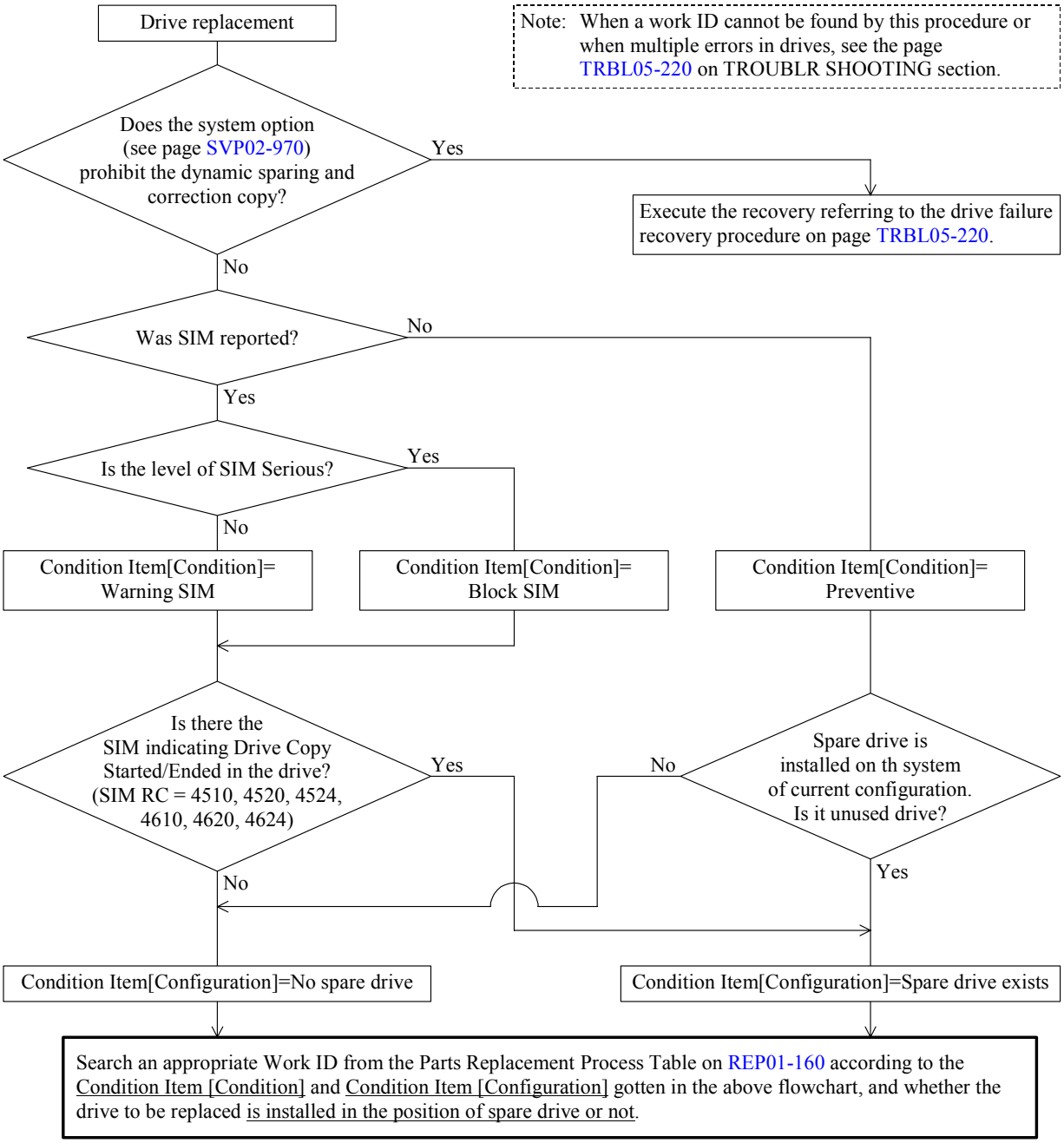
Table1.4-1 Before PDEV exchange, following items are checked.

#	Items checked	Procedure
1	Error Count	“Threshold Counter Display” (See SVP02-450)
2	ORM Over Rate	“ORM Over Rate HDD# Display” (See SVP02-260)
3	Write Error	“Pinned Track Display” (See SVP02-890)

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”

* 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	SVP pre-procedure	Hardware procedure	SVP post-procedure	Replacing time	Outline	Case
		Failure		Preventive	Unused Spare drive						
		Warning SIM	Block SIM								
RDK1	Data Drive	×	—	—	Yes	Pre A (REP02-10), Pre B (REP02-30)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1020)	20 min	Drive replace ~ Copy back	Case1
RDK2	Data Drive	—	×	—	Yes						

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	SVP pre-procedure	Hardware procedure	SVP post-procedure	Replacing time *2 *8 *9	Outline	Case *1
		Failure		Preventive	Unused Spare drive						
		Warning SIM	Block SIM								
RDK1	Data Drive *3	×	—	—	Yes	Pre A (REP02-10), Pre B (REP02-30)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1020)	20 min	Drive replace ~ Copy back	Case1
RDK2	Data Drive *3	—	×	—	Yes	Pre A (REP02-10), Pre B (REP02-30)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1020)	20 min	Drive replace ~ Copy back	Case 2
RDK3	Data Drive *3	—	—	×	Yes	Pre A (REP02-10), Pre C (REP02-80), Pre B (REP02-30)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-1020)	—	Copy to Spare drive ~ Drive replace ~ Copy back	Case 17
RDK4	Data Drive *3, *6	×	—	—	No	Pre A (REP02-10), Pre D (REP02-120)	Hardware A (REP03-10)	Post b (REP04-50), Post z (REP04-1020)	20 min	Drive replace ~ Correction copy	Case 3
RDK5	Data Drive *3, *6	—	×	—	No	Pre A (REP02-10), Pre D (REP02-120)	Hardware A (REP03-10)	Post b (REP04-50), Post z (REP04-1020)	20 min	Drive replace ~ Correction copy	Case 4
RDK6	Data Drive *3, *6	—	—	×	No	Pre A (REP02-10), Pre D (REP02-120)	Hardware A (REP03-10)	Post b (REP04-50), Post z (REP04-1020)	20 min	Drive replace ~ Correction copy	Case 18
RDK7 *4, *5	Data Drive *3	*4				Pre A (REP02-10), Pre E (REP02-170)	Hardware A (REP03-10)	Post c (REP04-90), Post z (REP04-1020)	—	LDEV formatting after replacing all the HDDs blocked in a parity group *5	Case 16
RDK8	Spare Drive *3	—				Pre A (REP02-10), Pre D (REP02-120)	Hardware A (REP03-10)	Post d (REP04-150), Post z (REP04-1020)	20 min	Spare drive replace	Case 15

*1: Refer to REP01-20

*2: This time does not include copy back time of data in HDD. Refer to *8 for the HDD copy time.

*3: Parts Name is 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: RDK7 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 TRBL05-420.

*5: Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See page SVP03-130 for the procedure for referring to SVP STATUS

*6: See “PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY” (REP01-120).

*7: In case of RAID6, when two HDDs were blocked in the parity group, you can start the replacement from either of two HDDs.

Note : If a Work ID cannot be found or if multiple drive error is occurring, see page TRBL05-220 on TROUBLE SHOOTING section.

*8: HDD copy time (High Performance model, 2ACP configuration)

(1) No IO, Other than OPEN-V Copy Mode = Interleave Medium

HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)
J300 (10Krpm)	Drive copy	2h30m	←	←	←
	Correction copy	↑	6h00m	8h40m	8h10m
K146 (15Krpm)	Drive copy	1h05m	←	←	←
	Correction copy	↑	2h50m	4h20m	4h15m
J146 (10Krpm)	Drive copy	1h20m	←	←	←
	Correction copy	↑	2h55m	4h30m	4h15m
J072 (10Krpm)	Drive copy	40m	←	←	←
	Correction copy	↑	1h20m	2h00m	1h55m
K072 (15Krpm)	Drive copy	35m	←	←	←
	Correction copy	↑	1h15m	2h05m	2h05m
K300 (15Krpm)	Drive copy	2h	←	←	←
	Correction copy	↑	5h	7h	7h

(2) No IO, OPEN-V Copy Mode = Interleave Medium

HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)
J300 (10Krpm)	Drive copy	2h10m	←	←	←
	Correction copy	↑	3h05m	4h20m	4h20m
K146 (15Krpm)	Drive copy	55m	←	←	←
	Correction copy	↑	1h35m	2h20m	2h15m
J146 (10Krpm)	Drive copy	1h10m	←	←	←
	Correction copy	↑	1h50m	2h40m	2h30m
J072 (10Krpm)	Drive copy	35m	←	←	←
	Correction copy	↑	45m	1h05m	1h05m
K072 (15Krpm)	Drive copy	30m	←	←	←
	Correction copy	↑	45m	1h05m	1h15m
K300 (15Krpm)	Drive copy	1h45m	←	←	←
	Correction copy	↑	2h30m	3h30m	3h30m

- In the case of RAID1 (2D+2D), the copy time of the primary HDD and that of the secondary HDD are the same.
- The copy time of RAID1 (4D+4D) is the same as RAID1 (2D+2D).
- When CVS is used, the copy time is proportional to the amount of LDEV assigned in the parity group.
  (EX: If the amount of LDEV assigned is 50%, the copy time is half the above-mentioned values.)
- N/A: The configuration is currently not supported.

*9: When the DKC microprogram is V05 or later, 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. (Because there is a case where a failure occurs in the copy source drive and the copy time is delayed in the usual form that performs copying from the drive of which the failure occurred.)
However, the copy back (copy from the spare drive to the data drive) is copied from the spare drive as usual.

<Cache>

Work ID	Part Name	Procedure			Replacing Time (*1)(*2)
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RCA1	Shared Memory Shared Memory Module (*3)	Pre Z (REP02-990) (*3), Pre A (REP02-10), Pre G (REP02-280)	Hardware B (REP03-50)	Post g (REP04-200), Post z (REP04-1020)	50 min
RCA2	CACHE Memory CACHE Memory Module (*3)	Pre Z (REP02-990) (*3), Pre A (REP02-10), Pre F (REP02-220)	Hardware C (REP03-80)	Post f (REP04-180), Post z (REP04-1020)	20 min

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

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

*3: The USB memory is not attached to the Memory Module in spare parts.
It is not required to obtain DUMP for the USB memory, when replacing the Memory Module. Therefore, skip the SVP Pre-procedure Z, and start from the Pre-procedure A.

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

<Channel Adapter, Disk Adapter, FSW, and CARB Switch>

Work ID	Part Name	Procedure			Replacing Time (*2)
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RCH1	Serial CHA	Pre Z (REP02-990), Pre A (REP02-10), Pre H (REP02-340)	Hardware D (REP03-110)	Post h (REP04-220), Post z (REP04-1020)	20 min
RCH2	Fibre-T CHA	Pre Z (REP02-990), Pre A (REP02-10), Pre H (REP02-340)	Hardware E (REP03-140)	Post h (REP04-220), Post z (REP04-1020)	20 min
RCH3	Mainframe Fibre CHA	Pre Z (REP02-990), Pre A (REP02-10), Pre H (REP02-340)	Hardware F (REP03-170)	Post h (REP04-220), Post z (REP04-1020)	20 min
RCH4	NAS CHA	Pre Z (REP02-990), Pre A (REP02-10), Pre H (REP02-340)	Hardware G (REP03-200)	Post h (REP04-220), Post z (REP04-1020)	30 min
RCH5	iSCSI CHA	Pre Z (REP02-990), Pre A (REP02-10), Pre H (REP02-340)	Hardware H (REP03-230)	Post h (REP04-220), Post z (REP04-1020)	20 min
RDA1	DKA	Pre Z (REP02-990), Pre A (REP02-10), Pre H (REP02-340)	Hardware J (REP03-260)	Post h (REP04-220), Post z (REP04-1020)	20 min
RFS1	FSW	Pre Z (REP02-990), Pre A (REP02-10), Pre L (REP02-450)	Hardware T16 (REP03-800)	Post j (REP04-280), Post z (REP04-1020)	10 min
RCS1	CSW	Pre Z (REP02-990), Pre A (REP02-10), Pre M (REP02-500)	Hardware K (REP03-290)	Post k (REP04-310), Post z (REP04-1020)	13 min

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

If a failure occurs in replacing a channel adaptor or a disk adaptor, see “Error Recovery Procedure during CHA/DKA replacement” (TRBL05-140).
If a failure occurs in replacing a CSW PCB, see “Recovery procedure for failed CSW PCB replacement” (TRBL05-570).

<DKC, special P/K, Fan, Others>

Work ID	Part Name	Procedure			Replacing Time
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RT1	DKC-PANEL	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T1 (REP03-320)	Post t1 (REP04-330), Post z (REP04-1020)	16 min
RT2	EPO SW	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T2 (REP03-350)	Post t1 (REP04-330), Post z (REP04-1020)	12 min
RT3	DKCMN	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T3 (REP03-380)	Post t1 (REP04-330), Post z (REP04-1020)	22 min
RT4	PCI CON *1	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T4 (REP03-410)	Post t1 (REP04-330), Post z (REP04-1020)	16 min
RT5	FAN Assembly(DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T5 (REP03-460)	Post t1 (REP04-330), Post z (REP04-1020)	8 min
RT6	Thermostat Assembly	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T6 (REP03-480)	Post t1 (REP04-330), Post z (REP04-1020)	8 min
RT7	SVP	Pre A (REP02-10), Pre T1 (REP02-550) *2	Hardware T7 (REP03-500)	Post t1 (REP04-330), Post z (REP04-1020)	40 min
RT8	SSVP	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T8 (REP03-550)	Post t1 (REP04-330), Post z (REP04-1020)	29 min
RT10	DKC Battery Box	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T10 (REP03-590)	Post t1 (REP04-330), Post z (REP04-1020)	11 min
RT11	DKC PS	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T11 (REP03-630)	Post t1 (REP04-330), Post z (REP04-1020)	11 min
RT12	PC Breaker Box	—	Hardware T13 (REP03-710)	—	8 min
RT14	AC BOX (3 Phase/30A DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T18 (REP03-850)	Post t1 (REP04-330), Post z (REP04-1020)	28 min
RT15	AC BOX (Single Phase/30A DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T19 (REP03-1010)	Post t1 (REP04-330), Post z (REP04-1020)	28 min
RT16	AC BOX (Single Phase/50A DKC)	Pre A (REP02-10), Pre T1 (REP02-550)	Hardware T20 (REP03-1150)	Post t1 (REP04-330), Post z (REP04-1020)	28 min
RT24	Fibre SFP Transceiver	Pre A (REP02-10), Pre T5 (REP02-931)	Hardware T21 (REP03-1290)	Post t5 (REP04-971)	5 min

*1: All connected devices to DKC510I are powered off by EPO signal of PCI when the PCI CON PCB is removed.
Prevent the trouble for connected devices from EPO signal.

*2: When SVP is not able to operate, start from Hardware procedure. (When SVP High Reliability Kit is not installed.)

<DKU, Special P/K, Power Supply, Fan>

Work ID	Part Name	Procedure			Replacing Time
		SVP Pre-procedure	Hardware procedure	SVP post-procedure	
RT17	ALPA	Pre A (REP02-10), Pre T4 (REP02-810)	Hardware T17 (REP03-830)	Post t4 (REP04-890), Post z (REP04-1020)	10 min
RT18	DKU PS	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T15 (REP03-760)	Post t4 (REP04-890), Post z (REP04-1020)	10 min
RT19	HDD FAN Assembly	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T14 (REP03-730)	Post t4 (REP04-890), Post z (REP04-1020)	15 min
RT20	AC BOX (3 Phase/30A DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T18 (REP03-850)	Post t4 (REP04-890), Post z (REP04-1020)	30 min
RT21	AC BOX (Single Phase/30A DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T19 (REP03-1010)	Post t4 (REP04-890), Post z (REP04-1020)	30 min
RT22	AC BOX (Single Phase/50A DKU)	Pre A (REP02-10), Pre T4 (REP02-810) *1	Hardware T20 (REP03-1150)	Post t4 (REP04-890), Post z (REP04-1020)	30 min
RT23	Battery Box	Pre A (REP02-10), Pre T4 (REP02-810)	Hardware T10 (REP03-590)	Post t4 (REP04-890)	11 min

*1: When SVP is not able to operate, start from Hardware procedure.

1.6 Availability of the online maintenance when HRC/HORC is used

Component	Maintenance Type	Condition	HRC path established		During initial copy		After completing initial copy		Suspend	
			MCU	RCU	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 or SM	Replace	—	×	×	SVP2059W	SVP2079W	× (*1)(*2)	× (*2)	×	×
CHE or CHF	Replace	With Alternate path.	×	×	×	SVP2038W	×	SVP2038W	×	SVP2038W
		Without Alternate path.	×	×	SVP2073W	SVP2038W	SVP2074W	SVP2038W	×	SVP2038W
DKA	Replace	—	×	×	×	×	×	×	×	×
CSW PCB	Replace	—	×	×	×	×	×	×	×	×
DKC	Replace	With Alternate path.	×	×	SVP2059W	SVP2079W		SVP2038W	×	SVP2038W
		Without Alternate path.	×	×	SVP2059W	SVP2079W	SVP2074W	SVP2038W	×	SVP2038W

Component	Maintenance Type	Condition	Suspending		Deleting	
			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 or SM	Replace	—	× (*1)	×	× (*1)	×
CHE or CHF	Replace	With Alternate path.	×	SVP2038W	×	SVP2038W
		Without Alternate path.	SVP2075W	SVP2038W	SVP2075W	SVP2038W
DKA	Replace	—	×	×	×	×
CSW PCB	Replace	—	×	×	×	×
DKC	Replace	With Alternate path.	×	SVP2038W	×	SVP2038W
		Without Alternate path.	SVP2075W	SVP2038W	SVP2075W	SVP2038W

×: 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.
Refer to "11. Procedures for online microprogram exchange and CHF replacement using alternate path" (MICRO-FC11-10).

*1 : For HRC ASYNC Pairs, a maintenance with the cache blockage is recommended to operate with capacities of Sidefile and Write Pending Data being 20% below. If the above maintenance is Performed with high capacities of Sidefile and Write Pending Data, the operation will take long and way cause impact such as MIH occurrence on the host operation. Besides, in the case of cache de-install operation, you must suspend ASYNC HRC pairs by RMC (SVP) before operation regardless of the capacities of Sidefile and Write Pending Data. If you don't suspend the ASYNC pairs as above, available cache capacity will decrease to suspend the pairs.
Refer to "Monitoring" in the SVP SECTION for the Sidefile monitor.

*2 : 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.

1.7 Availability of the online maintenance when HODM is used

Component	Maintenance Type	Condition	HODM path established		During initial copy		Waiting to erased		Suspend	
			MCU	RCU	MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blockade	—	×		SVP2031W		SVP2031W		SVP2031W	
	Recovery	—	×		SVP2031W		SVP2031W		SVP2031W	
	Format	—	×		SVP2031W		SVP2031W		SVP2031W	
	Verify	—	×		×		×		×	
HDD canister	Replace	—	×		SVP2059W		×		×	
Cache PCB	Replace	—	×		SVP2059W		×		×	
CHE	Replace	With Alternate path.	×		×		×		×	
		Without Alternate path.	×		SVP2076W		SVP2078W		SVP2077W	
CHT	Replace	—	×		×		×		×	
DKA	Replace	—	×		×		×		×	
CSW PCB	Replace	—	×		×		×		×	

Component	Maintenance Type	Condition	During R-Vol Erasing		Erasing Error	
			MCU	RCU	MCU	RCU
Logical Device	Blockade	—	SVP2031W		SVP2031W	
	Recovery	—	SVP2031W		SVP2031W	
	Format	—	SVP2031W		SVP2031W	
	Verify	—	×		×	
HDD canister	Replace	—	SVP2059W		×	
Cache PCB	Replace	—	SVP2059W		×	
CHE	Replace	With Alternate path.	×		×	
		Without Alternate path.	SVP2078W		SVP2078W	
CHT	Replace	—	×		×	
DKA	Replace	—	×		×	
CSW PCB	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 to be replaced is connected to a path, please confirm that the Path is deleted from MCU.
After the replacement, please reconnect the path.
Refer to “11. Procedures for online microprogram exchange and CHF replacement using alternate path” (MICRO-FC11-10).

1.8 Availability of the online maintenance when HMRCF/HOMRCF is used

Component	Maintenance Type	Cond-ition	Reserve-Volume	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	—	SVP2484W	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	—	×	×		×		×		×	
DKA	Replace	—	×	×		×		×		×	

1.9 Availability of the online maintenance when HXRC 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	×	×	×	×	×	×
LTM PCB	Replace	×	×	×	×	×	×

× : Maintenance is available

* : When a maintenance operation is needed while HXRC is being used, I/O's for HXRC pair volumes or HXRC itself should be stopped before the maintenance operation.
If the maintenance operation must be done while HXRC is being used, you must confirm that the usage of Sidefile monitor is less than 20% of total Cache capacity 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 "Monitoring" in the SVP SECTION 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 HXRC is being used, HXRC should be stopped before the maintenance operation.

1.10 Availability of the online maintenance when UR is used

JNL-GROUP

Component	Maintenance Type	Condition	HRC 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 or SM	Replace	—	×	×	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×
DKA	Replace	—	×	×	×	×	×	×
CSW	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×	×	×
		Without Alternate path	×	×	×	×	×	×

Component	Maintenance Type	Condition	Halt		Halting	
			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 or SM	Replace	—	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Replace	—	×	×	×	×
CSW	Replace	—	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×

Component	Maintenance Type	Condition	Stop		Stopping	
			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 or SM	Replace	—	×	×	×	×
CHE or CHF	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×
DKA	Replace	—	×	×	×	×
CSW	Replace	—	×	×	×	×
DKC	Replace	With Alternate path	×	×	×	×
		Without Alternate path	×	×	×	×

DATA-VOL

Component	Maintenance Type	Condition	HRC 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 or SM	Replace	—	×	×	SVP2059W	SVP2079W	×	×
CHE or CHF	Replace	With Alternate path	×	×	SVP3848W	× (*1)	SVP3848W	× (*1)
		Without Alternate path	×	×	SVP3848W	SVP2073W (*1)	SVP3848W	SVP2074W (*1)
DKA	Replace	—	×	×	×	×	×	×
CSW	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	SVP3848W	× (*1)	SVP3848W	× (*1)
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W

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 or SM	Replace	—	×	×	×	×	×	×
CHE or CHF	Replace	With Alternate path	SVP3848W	×	SVP3848W	× (*1)	SVP3848W	× (*1)
		Without Alternate path	SVP3848W	×	SVP3848W	SVP2075W (*1)	SVP3848W	SVP2075W (*1)
DKA	Replace	—	×	×	×	×	×	×
CSW	Replace	—	×	×	×	×	×	×
DKC	Replace	With Alternate path	SVP3848W	×	SVP3848W	× (*1)	SVP3848W	× (*1)
		Without Alternate path	SVP3848W	×	SVP3848W	SVP2075W (*1)	SVP3848W	SVP2075W (*1)

× : Maintenance is available

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

*1: When RCU-TARGET is defined in port(s) of CHA to be maintained, SVP displays a warning message with SVP 3289W.

[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).

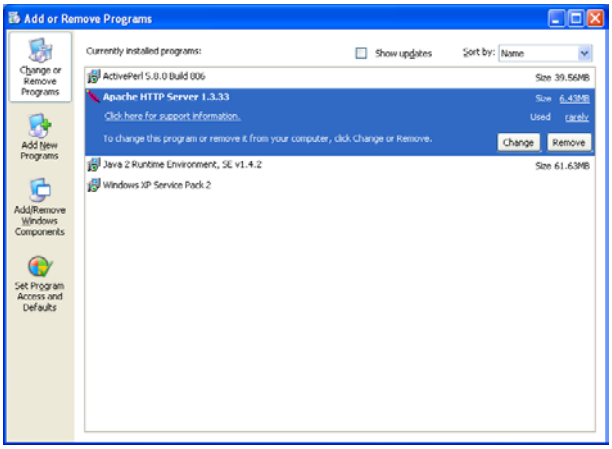
2. <Checking Apache version >
   To replace other than the SVP, go to the next step.
   To replace the SVP, you may need to replace the Apache.
   Apache 1.3.27 or 1.3.33 is installed in the SVP after replacement by default.
   When the option WEB server (Apache 2.0.54 or OpenSA) is installed in the SVP before replacement, you need to install the option WEB server to the SVP after replacement.
   Use the following procedure to check the Apache version installed in the SVP before replacement.

   (1)
   Select (DR) [Start]-[Control Panel].

   (2)
   Select (DC) [Add or Remove Programs].

(3)

Check the content of [Currently installed programs] in the [Add or Remove Programs] panel.
If [OpenSA web server 1] exists, OpenSA has been installed.
If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 has been installed.



If OpenSA or Apache 2.0.54 is installed, install OpenSA or Apache 2.0.54 respectively in the section 6 in [6] SVP in [POST-PROCEDURE t1] (REP04-620).

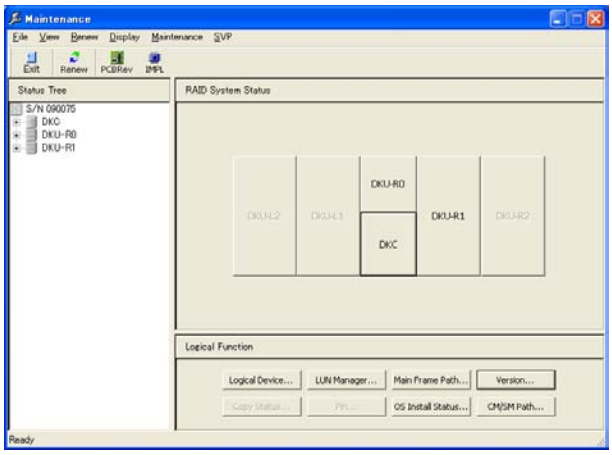
When the Apache version check is completed, select (CL) the [×] button.

---

3. <Operation mode change>
Change the mode to [Modify Mode].
Select (CL) [Maintenance].

---

4. <Maintenance window>
The 'Maintenance' window is displayed.

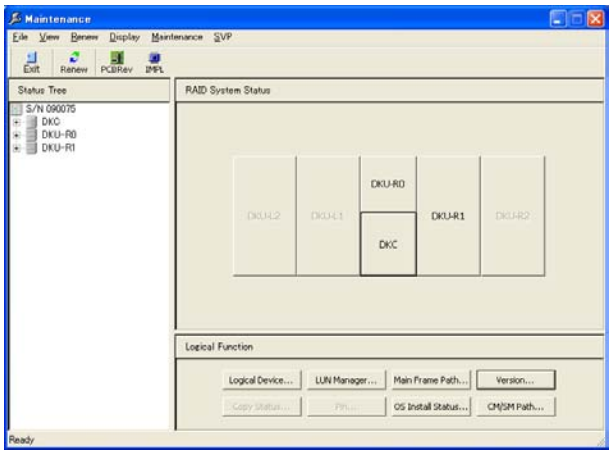


[PRE-PROCEDURE B]

— OUTLINE —

① Select drive (status check)
② Check progress of copy processing
③ Specify Replacement
④ Place HDD into unpluggable state

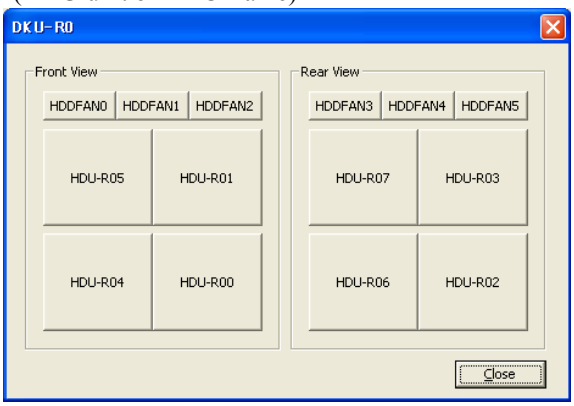
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



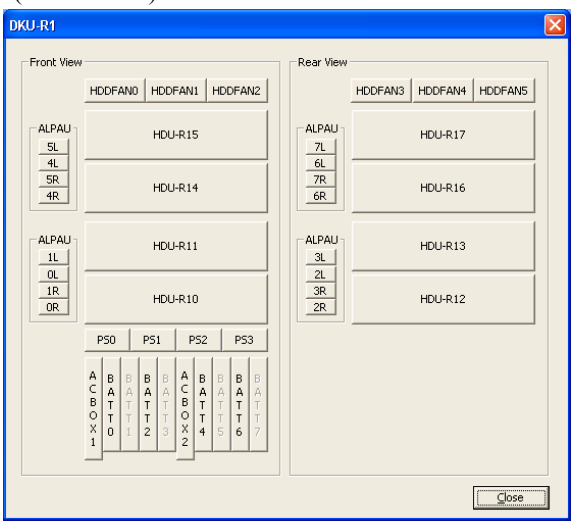
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting (CL) [Close] returns you to step 1.

(DKU unit of DKC frame)

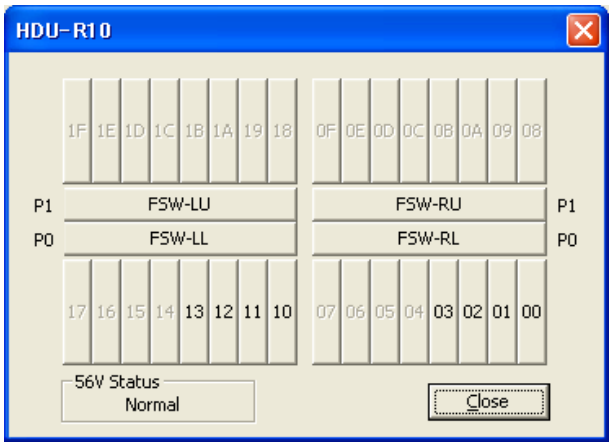


(DKU frame)

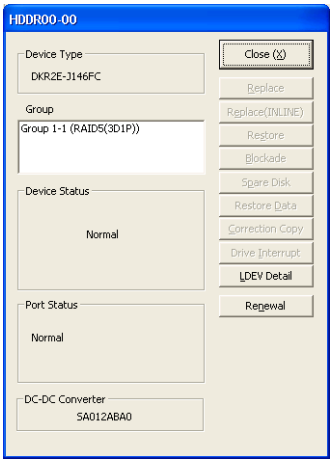


3. <Select HDD>
   Check and select (CL) [nn] to be replaced.

   Selecting (CL) [Close] returns you to step 2.



4. <Specify replacement on HDD>
   Make sure that the status is [FAILED] or [WARNING] or [Reserved].
   Select (CL) [Replace].



5. <Checking the P-DEV status>
"Checking..." is displayed.

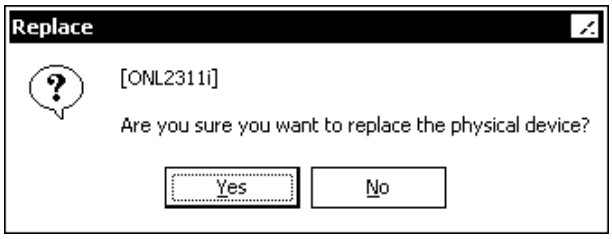
6. <P-DEV blocking>

CAUTION

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).

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

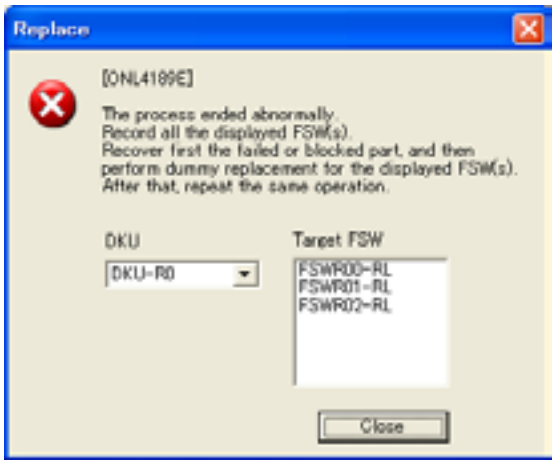


7. <Blocking the Physical device>
"Blocking..." is displayed.

8. <Spin down the Physical device>
"Spinning down..." is displayed.

Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

Retry the replacement after completing the dummy replacement of FSW.



9. <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.

10. <Confirm Replacement>
Select (CL) [OK] in response to "The LED of some other disk drive might be on. Please check the location of the disk drive that you want to replace. After that, please replace the disk drive and then select OK." after the unit is replaced.

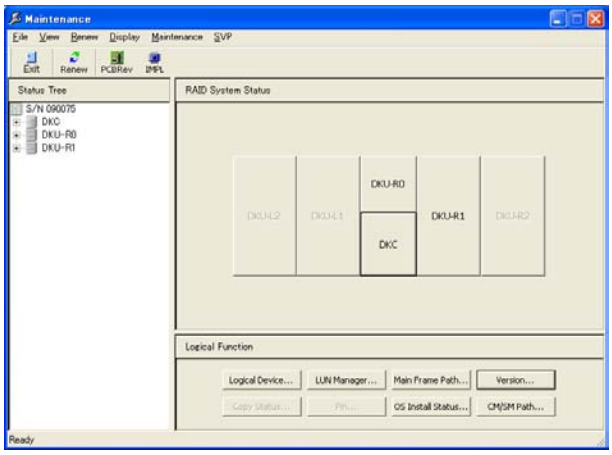
11. <Replace HDD>
Replace HDD.
See HARDWARE A (REP03-10).

[PRE-PROCEDURE C]

— OUTLINE —

① Select drive (status check)
② Specify Replacement
③ Save Spare

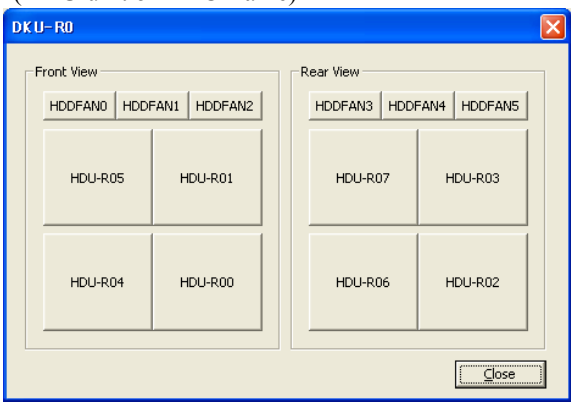
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



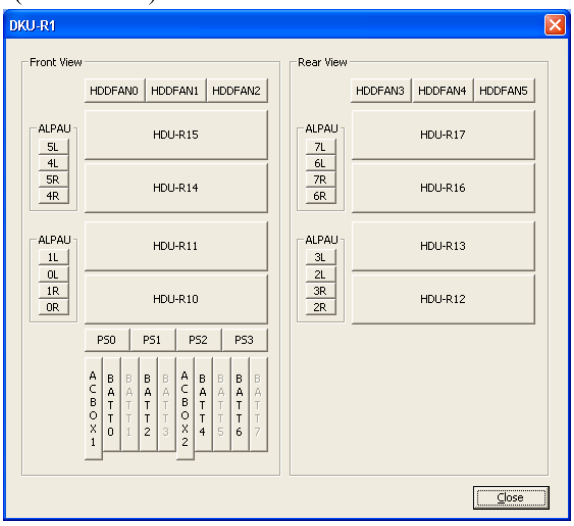
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting (CL) [Close] returns you to step 1.

(DKU unit of DKC frame)

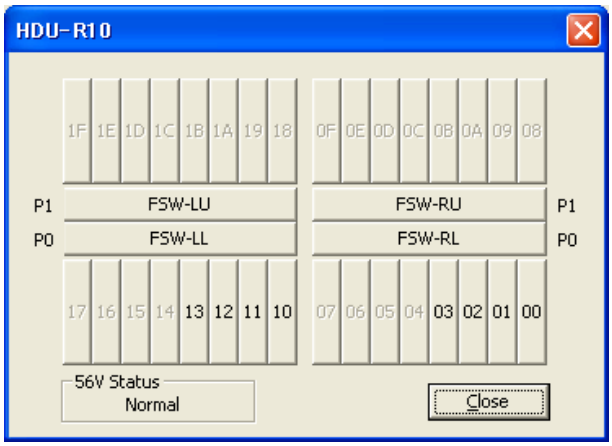


(DKU frame)



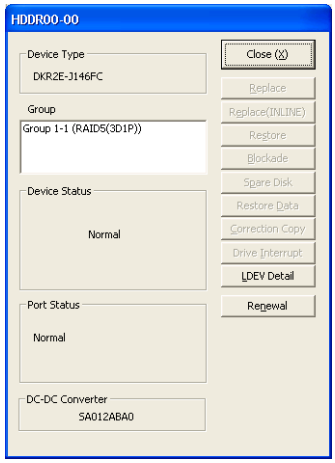
3. <Select HDD>
   Check and select (CL) [nn] to be replaced.

   Selecting (CL) [Close] returns you to step 2.



4. <Specify replacement on HDD>
   Make sure that the status is [FAILED] or [WARNING].

   Select (CL) [Spare Disk].



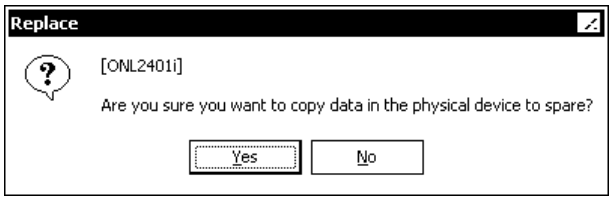
5. <Checking the P-DEV status>

> **⚠ CAUTION**
> 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).

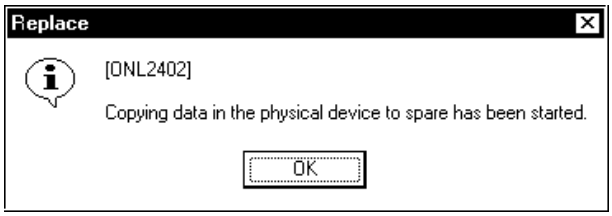
"Checking..." is displayed.

6. <Saving the spare>
   Select (CL) [Yes] in response to "Are you sure you want to copy data in the physical device to spare?".

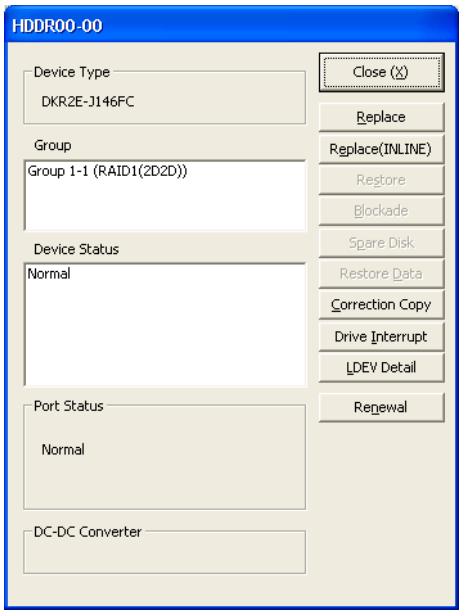


7. <Saving in process>
   "Copying..." is displayed.

8. <End of spare saving>
   Select (CL) [OK] in response to "Copying data in the physical device to spare has been started.".



9.
   When interrupting a copy, select (CL) the [Drive Interrupt] button.



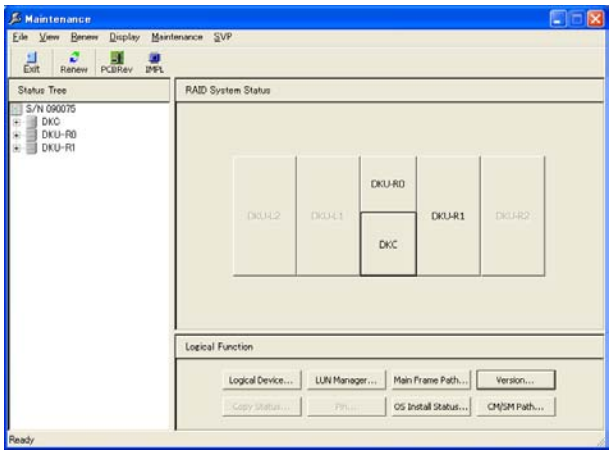
10.
   Please execute Pre procedure B after finishing copy. (REP02-30)

[PRE-PROCEDURE D]

— OUTLINE —

① Select P-DEV (status check)
② Specify Replacement
③ Place HDD into unpluggable state

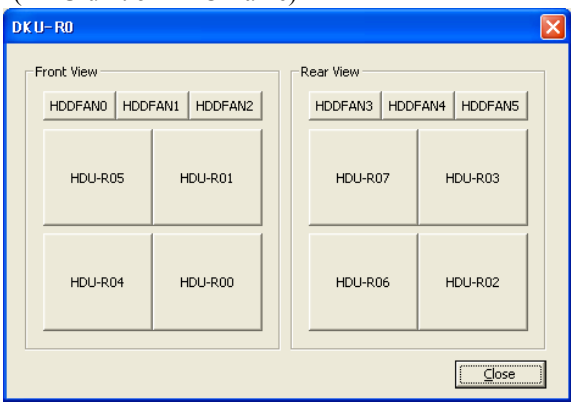
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



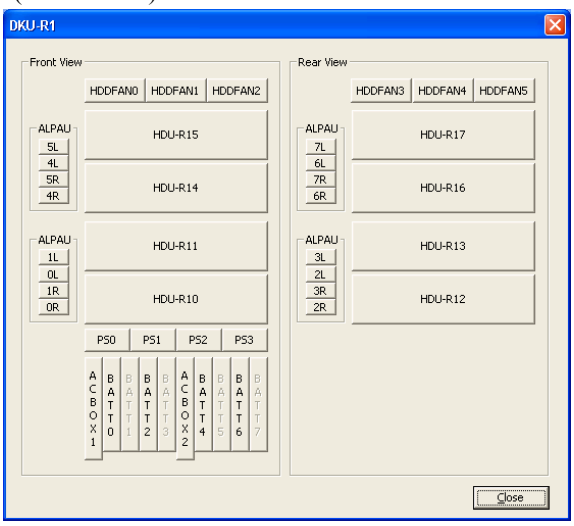
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting [Close] (CL) returns you to step 1.

(DKU unit of DKC frame)

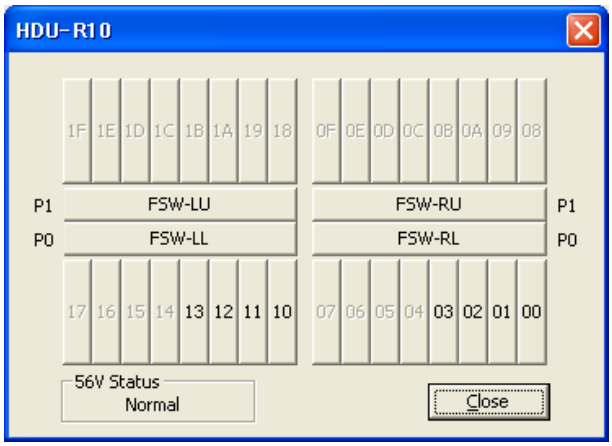


(DKU frame)



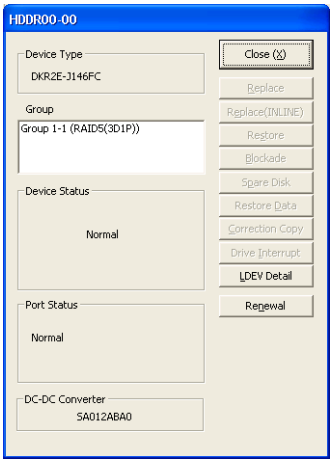
3. <Select HDD>
   Check and select (CL) [nn] to be replaced.

   Selecting (CL) [Close] returns you to step 2.



4. <Specify replacement on HDD>
   Make sure that the status is [FAILED] or [WARNING].

   Select (CL) [Replace].



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

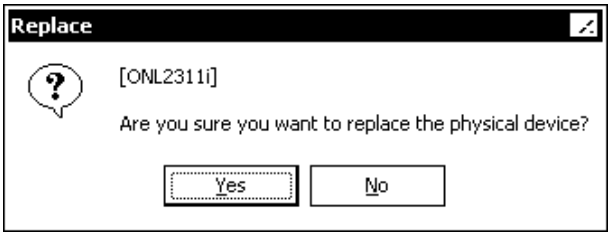
CAUTION

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.

6. <P-DEV blocking>
Select (CL) [Yes] in response to "Are you sure you want to replace the physical device?".

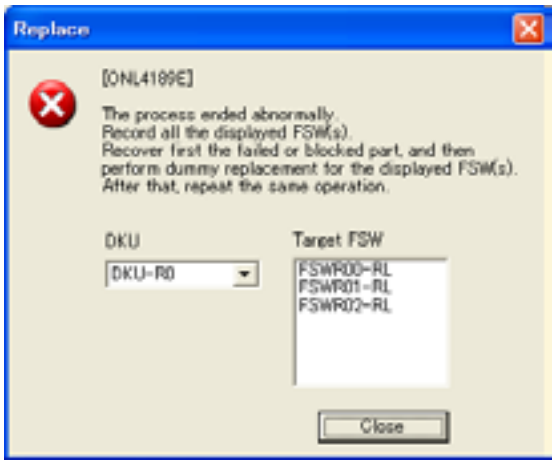


7. <Blocking the Physical device>
"Blocking..." is displayed.

8. <Spin down the Physical device>
"Spinning down..." is displayed

Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

Retry the replacement after completing the dummy replacement of FSW.



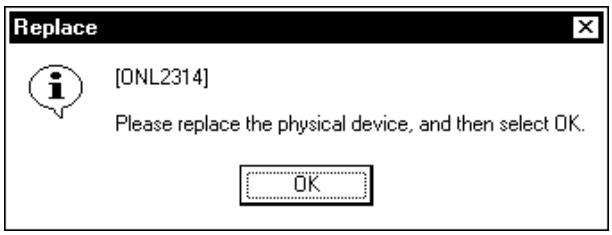
9. <Check shut down LED>

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.

10. <Confirmation of replace>
Select (CL) [OK] in response to "Please replace the physical device, and then select OK." after the unit is replaced (Step 11).



11. <Replace HDD>
Replace HDD.
See HARDWARE A (REP03-10).

[PRE-PROCEDURE E]

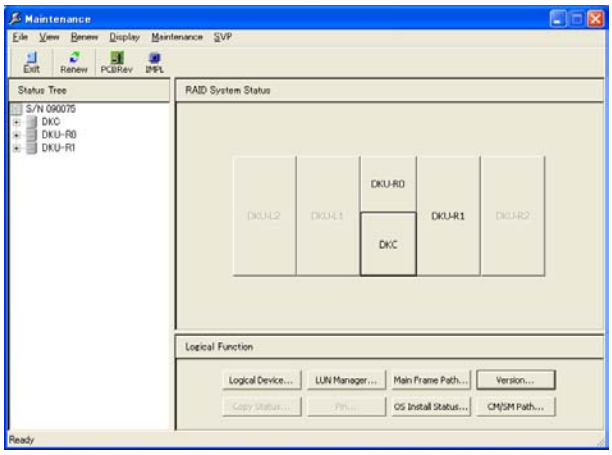
— OUTLINE —

① Select HDD (status check)
② Specify Replacement
③ Block parity group (enter password)
④ Place HDD into unpluggable state
⑤ Replace HDD
⑥ Perform steps ② to ⑤ on blocked drives in parity group

⚠ 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.

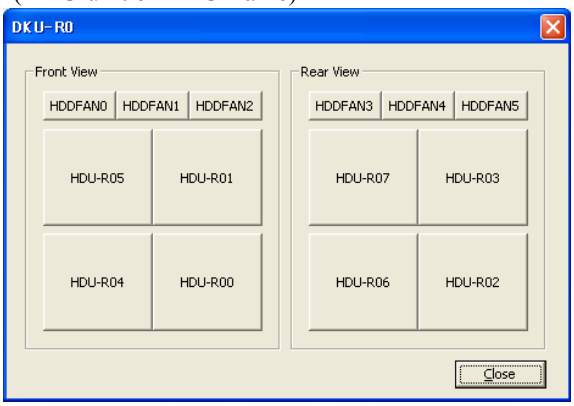
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



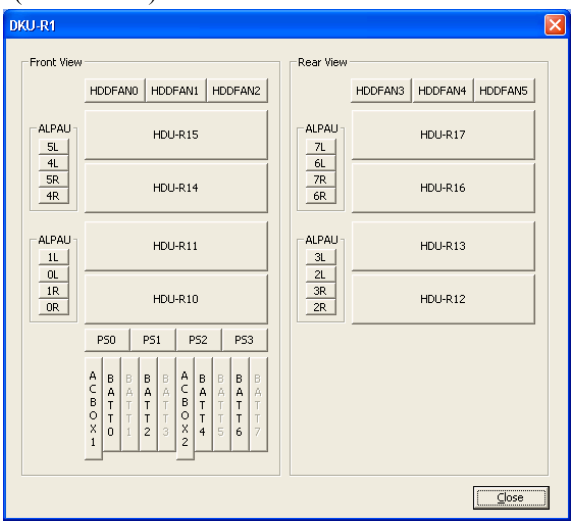
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting [Close] (CL) returns you to step 1.

(DKU unit of DKC frame)

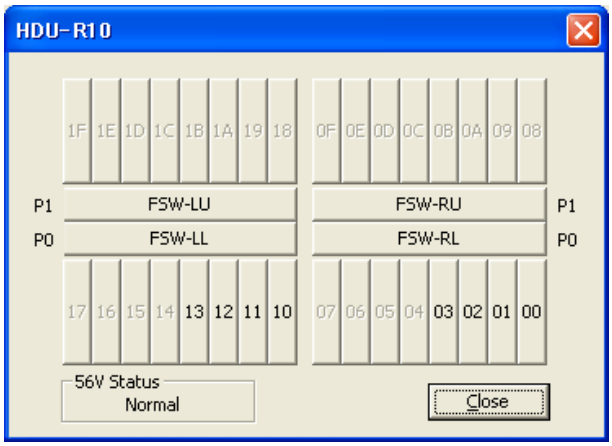


(DKU frame)



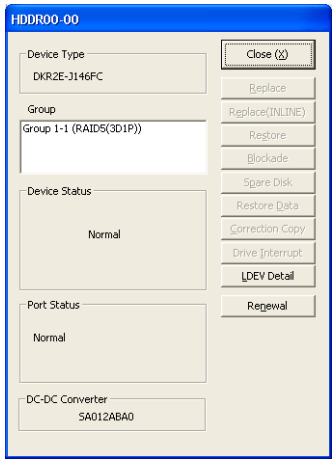
3. <Select HDD>
Check and select (CL) [nn] to be replaced.

Selecting [Close] (CL) returns you to step 2.



4. <Specify replacement on HDD>
Make sure that the status is FAILED.

Select (CL) [Replace].

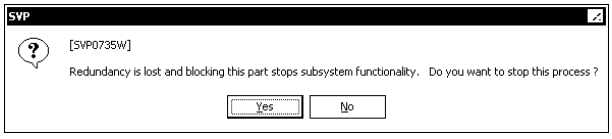


5. <Confirm lost data>

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 “Redundancy is lost and blocking this part stops subsystem functionality. Do you want to stop this process?”.

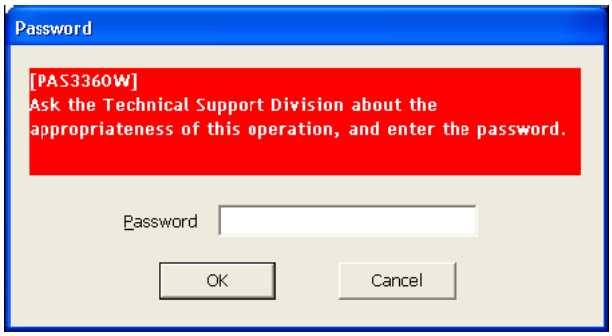


6. <Enter password>

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.

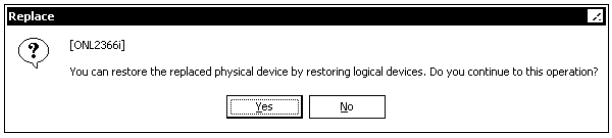


7. <Checking the P-DEV status>

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

"Checking..." is displayed.

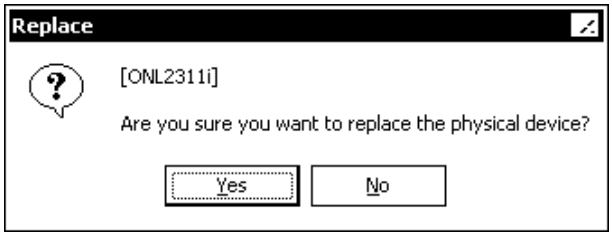
When "You can restore the replaced physical device by restoring logical devices. Do you continue to this operation?" is displayed, PDEV is automatically recovered by recovering LDEV.



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 (SVP02-850).

8. <P-DEV blocking>

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

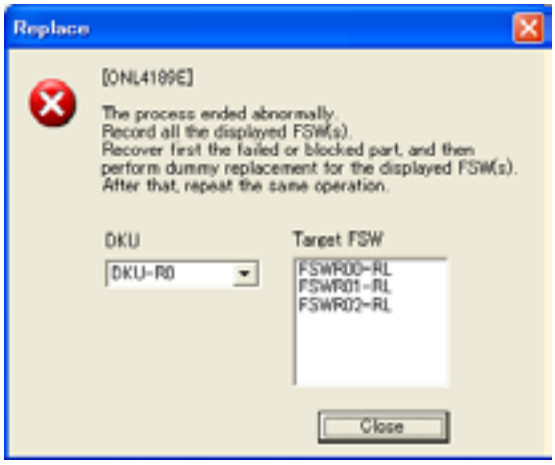


9. <Blocking the Physical device>
"Blocking..." is displayed.

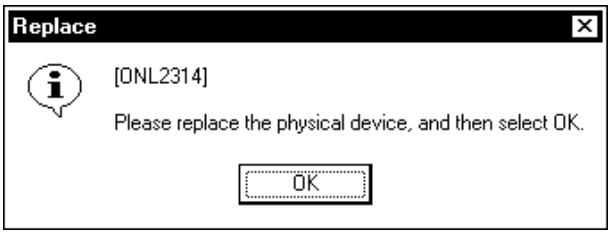
10. <Spin down the Physical device>
"Spinning down..." is displayed.
The Shut down LED is lit.

Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

Retry the replacement after completing the dummy replacement of FSW.



11. <Replace HDU>
Select (CL) [OK] in response to "Please replace the physical device, and then select OK." after the unit is replaced.
(See HARDWARE A (REP03-10))



12. <Replace HDD>
Replace HDD.
See HARDWARE A (REP03-10).

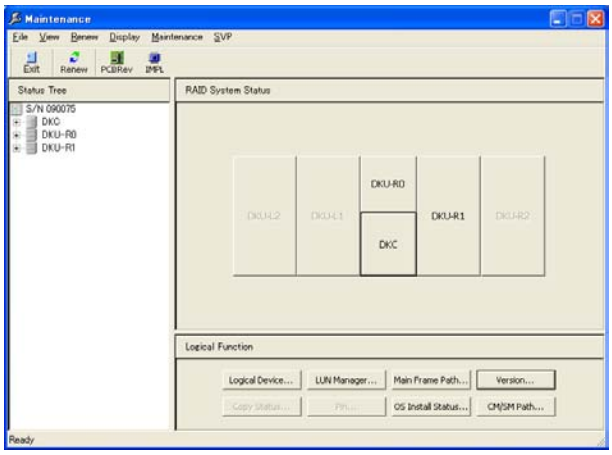
[PRE-PROCEDURE F]

— OUTLINE —

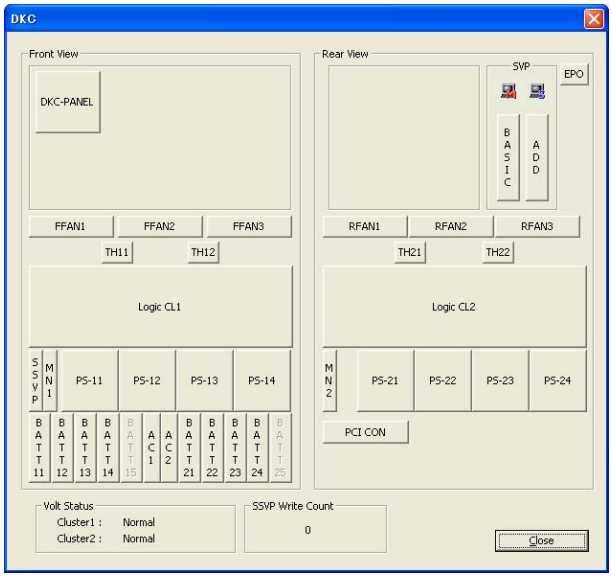
① Select cache (status check)
② Specify Replacement
③ Place PCB into unpluggable state

1. <Maintenance window>
   The ‘Maintenance’ window is displayed.

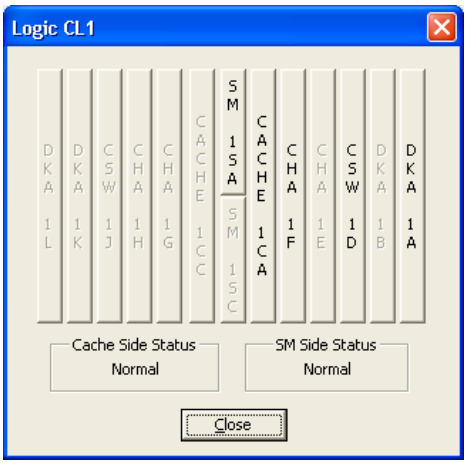
   In the ‘Maintenance’ window, check and select (CL) [DKC] to be replaced.



2. <DKC window>
   Select (CL) [Logic CLx] in the ‘DKC’.



3. <Select Cache>
   Select (CL) Cache.



   Selecting (CL) [Close] returns you to step 2.

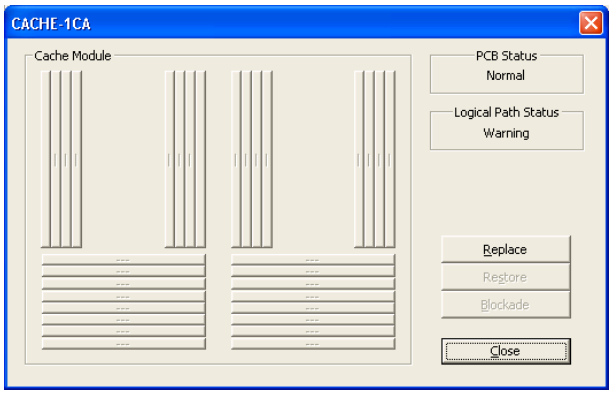
4. <Specify replacement of cache>

CAUTION

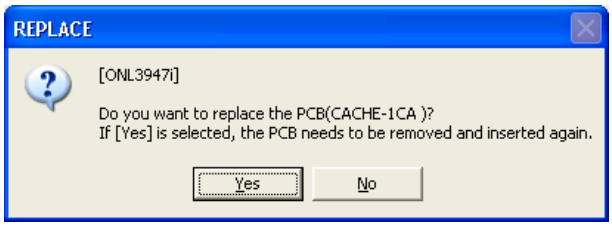
When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

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

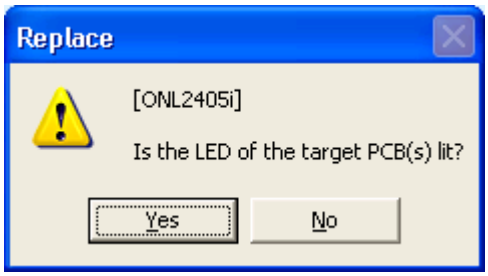


5. <Check the beginning of cache replace>
Select (CL) [Yes] after making sure that the package to be replaced is correct in response to "Do you want to replace the PCB(CACHE-nnn)? If [Yes] is selected, the PCB needs to be removed and inserted again.".



6. <Cache blocking>
"The Cache Memory PCB (CACHE-nnn) is being blocked." is displayed.

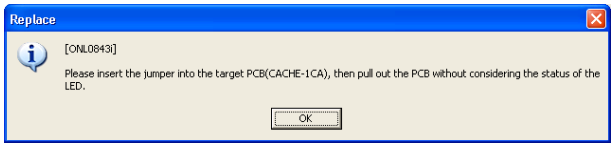
7. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB(s) lit?”.
   When [No] is selected , the same message is displayed again.
   Check the LED and then reply to a message.



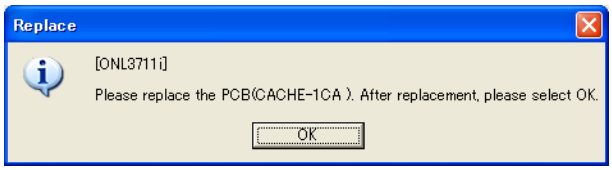
   <Forcing shut down LED on>

⚠ CAUTION
If the jumper is inserted in the wrong PCB, a system down may be caused.

   If [No] is selected:
   Insert a jumper in response to “Please insert the jumper into the target PCB (CACHE-nnn), then pull out the PCB without considering the status of the LED”. (Refer REP03-90)
   Go to step 9.



8. <Cache Replacement>
   "Please replace the PCB (CACHE-nnn). After replacement, please select OK." is displayed. (Select (CL) [OK] after replacing the PCB.)



9. <Replace cache PCB>
   Replace cache.

   For CACHE see HARDWARE C (REP03-80)

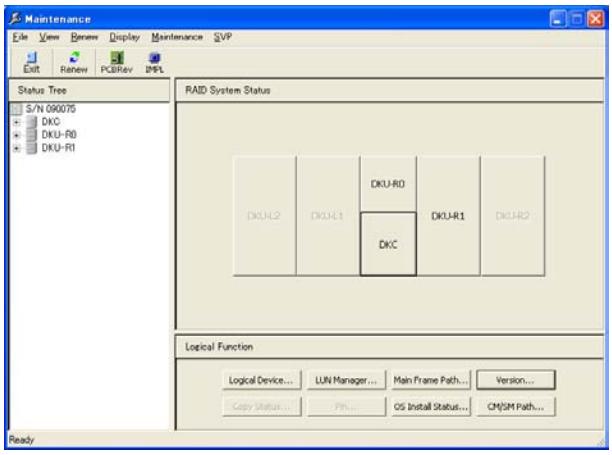
[PRE-PROCEDURE G]

— OUTLINE —

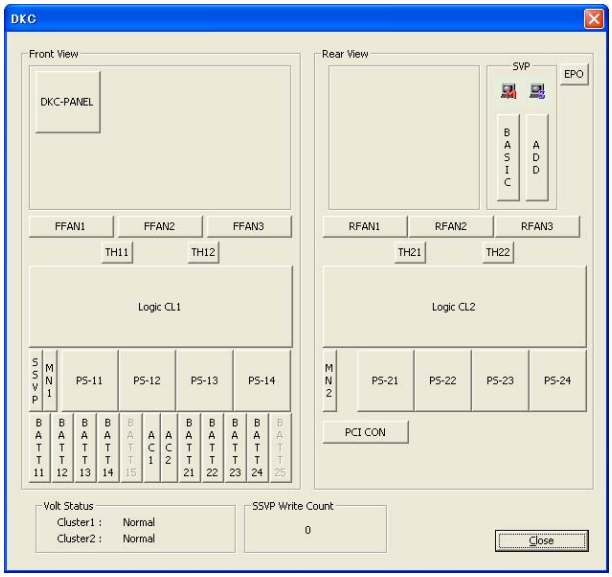
① Select SM (status check)
② Specify Replacement
③ Place PCB into unpluggable state

1. <Maintenance window>
   The 'Maintenance' window is displayed.

   In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

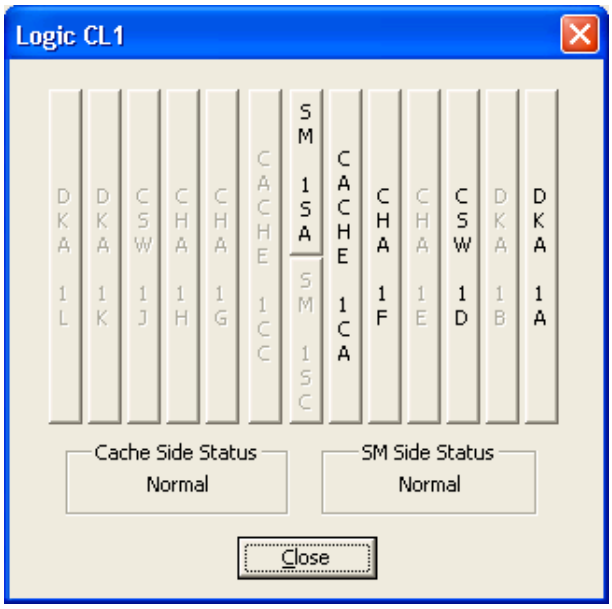


2. <DKC window>
   Select (CL) [Logic CLx] in the 'DKC'.



3. <Select SM>
   Select (CL) SM.

   Selecting (CL) [Close] returns you to step 2.

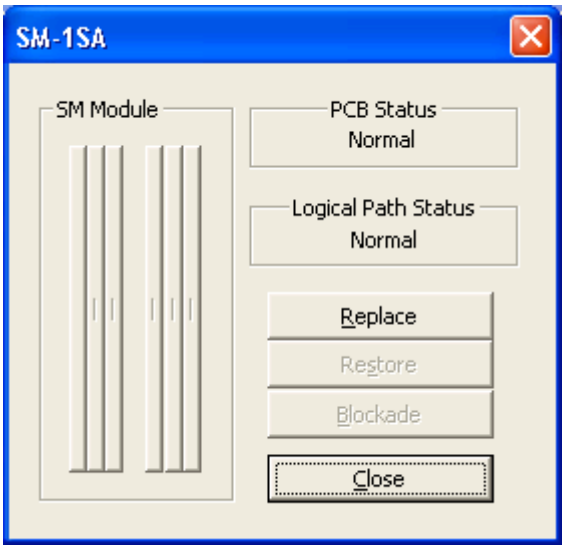


4. <Specify replacement of SM>

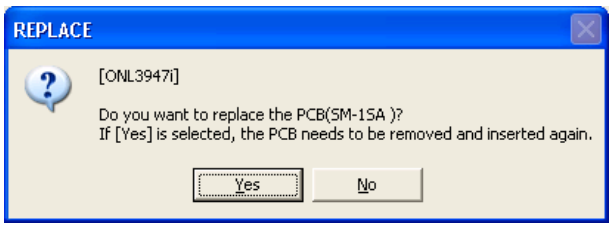
> **CAUTION**
> When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

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

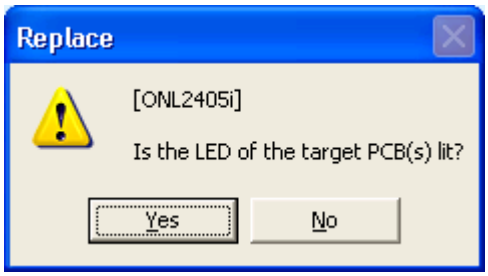


5. <Check the beginning of SM replace>
Select (CL) [Yes] after making sure that the package to be replaced is correct in response to "Do you want to replace the PCB(SM-nnn)? If [Yes] is selected, the PCB needs to be removed and inserted again.".



6. <SM blocking>
"The Shared Memory PCB (SM-nnn) is being blocked." is displayed.

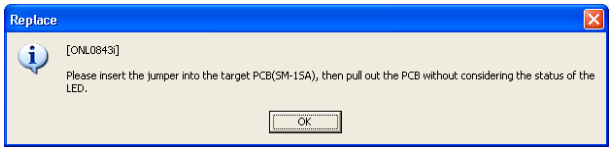
7. <Check shut down LED>
   Select (CL)
   * [Yes] if LED is on
   * [No] if LED is off
   in response to “Is the LED of the target PCB(s) lit?”.
   When [No] is selected , the same message is displayed again.
   Check the LED and then reply to a message.



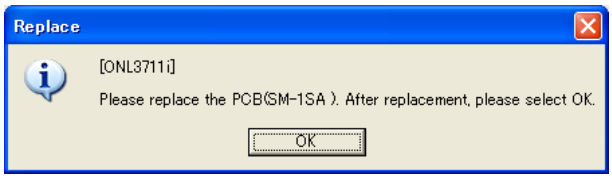
   <Forcing shut down LED on>

⚠ CAUTION
If the jumper is inserted in the wrong PCB, a system down may be caused.

   If [No] is selected:
   Insert a jumper in response to “Please insert the jumper into the target PCB (SM-nnn), then pull out the PCB without considering the status of the LED”. (Refer REP03-50)
   Go to step 9.



8. <SM Replacement>
"Please replace the PCB (SM-nnn). After replacement, please select OK." is displayed. (Select (CL) [OK] after replacing the PCB.)



9. <Replace SM PCB>
Replace SM.

For SM see HARDWARE B (REP03-50)

[PRE-PROCEDURE H]

— OUTLINE —

① Select CHA/DKA (status check)
② Specify Replacement
③ Place PCB into blocked state

1. <Set path offline>

⚠ CAUTION

The path to be placed offline is that connected with the CHA concerned.

[Notes for the case where DKN-200-NGW1 (NAS Unit) is connected to this device]

[Points to be checked in advance]

Prior to this operation, if all of the following three cases applies to this device, execute [Correspondence when connecting the NAS Unit].

1. NAS Unit is connected to this device. (*1)
2. NAS Unit is in operation. (*2)
3. A failure has not occurred on the NAS Unit. (*3)

*1: Confirm with the disk array device administrator to check whether the NAS Unit is connected or not.

*2: Confirm with the NAS Unit administrator to check whether the NAS service is operating or not.

*3: Ask the NAS Unit administrator to check whether failure has occurred or not by checking with the NAS administration software, NAS Manager GUI, List of RAS Information, etc. In case of failure, execute the maintenance operation together with the NAS maintenance personnel.

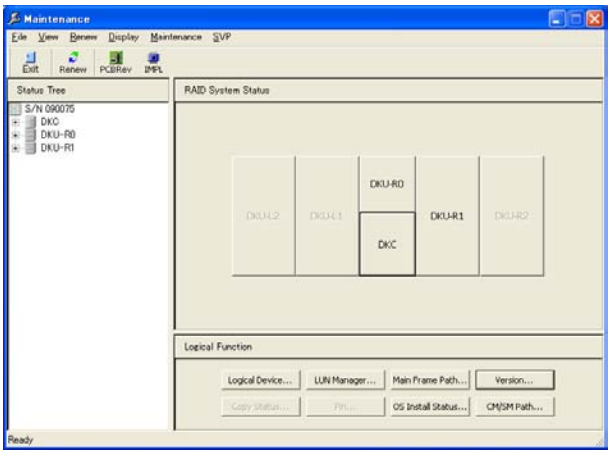
[Correspondence when connecting the NAS Unit]

Confirm with the NAS Unit administrator whether it is possible to terminate the NAS service. Determine how to react according to the confirmation result.

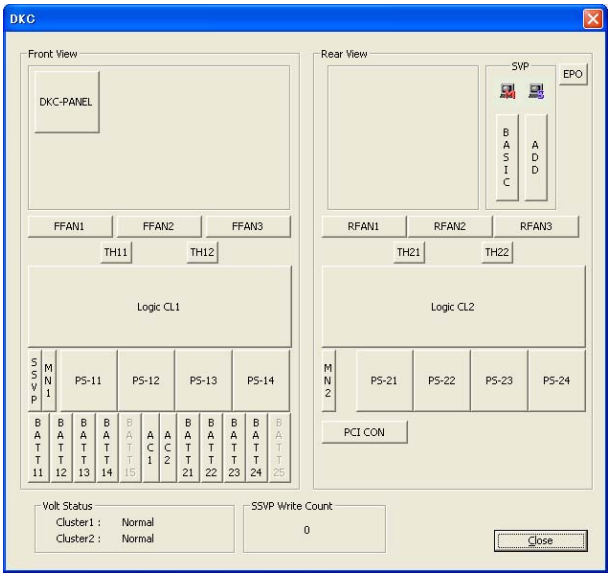
1. If the NAS service can be terminated:
   Before starting this operation, ask the NAS Unit administrator for the planned shutdown of the NAS Unit.
   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
2. If the NAS service cannot be terminated:
   When the replacement operation of CHA used by the NAS Unit is completed, the Fibre Channel path (FC path) of the NAS Unit might go into the Failure status. Before starting the operation of the next CHA replacement, contact the NAS Unit administrator, refer to “Recovering from FC path errors” of “Hitachi NAS Manager User’s Guide”, confirm the FC path status and, if the status is Failure, ask for the recovery of the FC path.

In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to “NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)” in “DKN-200-NGW1 NAS Unit Maintenance Manual”, and ask to check the status of the FC path and to recover the FC path if it is in a failure status after completing the replacement operation of CHA used by the NAS Unit.

2. <Maintenance window>
In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

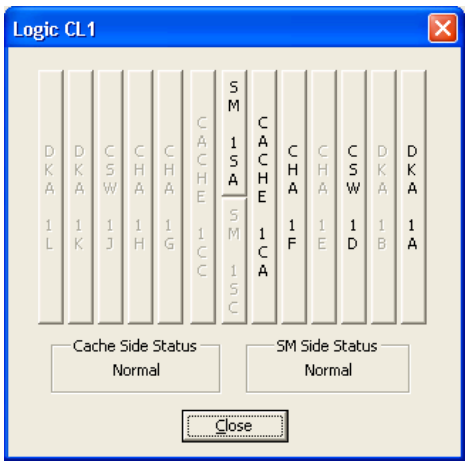


3. <DKC window>
Select (CL) [Logic CLx] in the 'DKC'.



4. <Select CHA/DKA>
Select (CL) CHA/DKA.

Selecting (CL) [Close] returns you to step 3.



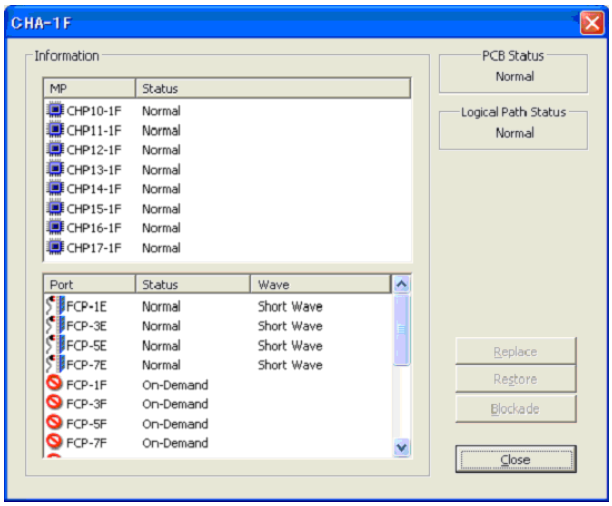
5. <Specify Replacement of CHA/DKA>

CAUTION

- When the path to the PCB to be replaced is online, ask the customer to place it offline. (For CHA replacement)
- When the CUIR function is executed when Mainframe Fibre CHA is replaced, an online path need not be made offline.
- 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.

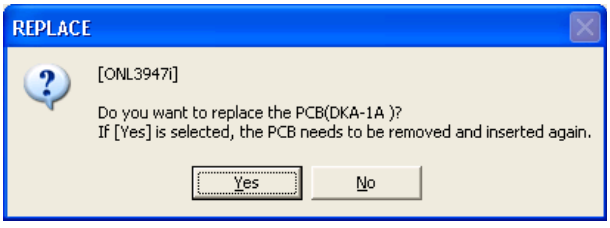
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Make sure that the status is WARNING.
Select (CL) [Replace].



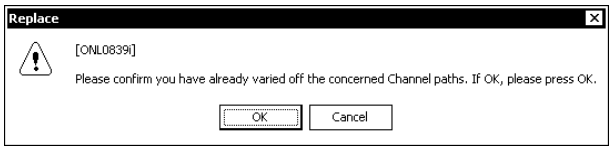
6. <CHA/DKA replace>
Select (CL) [Yes] in response to:
"Do you want to replace the PCB(DKA-nn)?
If [Yes] is selected, the PCB needs to be removed and inserted again."

* For CHA---------Go to step 7.
* For DKA---------Go to step 8.

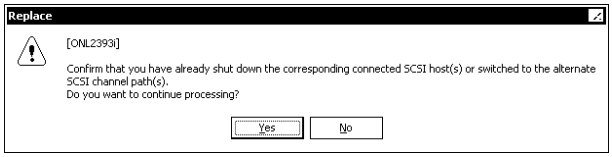


(Eg. DKA)

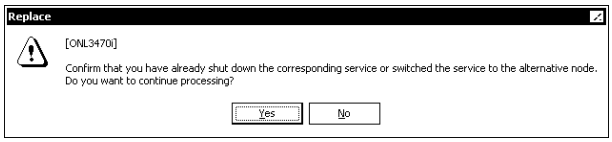
7. <Confirm Channel Path offline>
Select (CL) [OK] in response to:
"Please confirm you have already varied off the concerned Channel paths. If OK, please press OK."



If Fibre channel adapter is installed:
After you confirm that you have stopped the concerned SCSI channel paths, select (CL) [Yes].

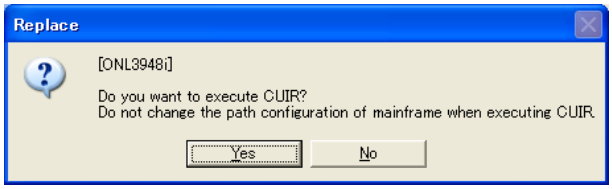


If a NAS adapter is installed:
After you confirm that you have stopped concerned service, select (CL) [Yes].

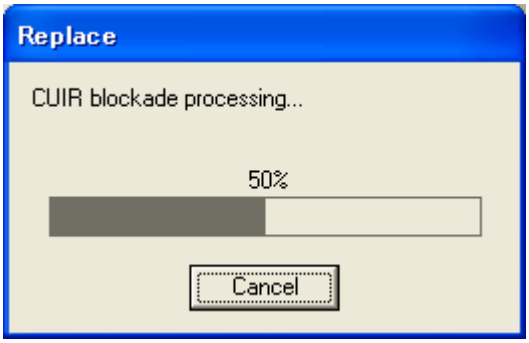


*For Mainframe Fibre CHA
The channel path offline confirmation message is not displayed when the CUIR function is effective, and the following messages are displayed.

Select (CL) [Yes] in response to:
"Do you want to execute CUIR? Do not change the path configuration of mainframe when executing CUIR".



"CUIR blockade processing..." is displayed.

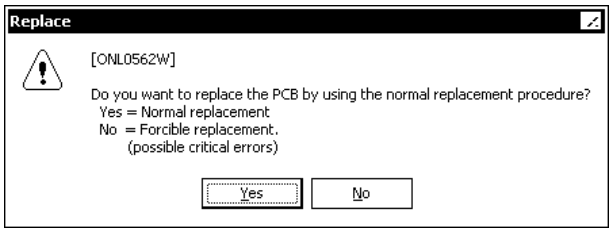


8. <Caution message for system down>

CAUTION

Select (CL) [Yes] in response to the message below.

"Do you want to replace the PCB by using the normal replacement procedure?
Yes = Normal replacement
No = Forcible replacement.
(Possible critical errors)"



9. <CHA/DKA blocking>

* For CHA

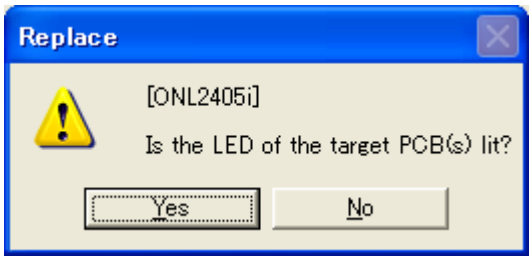
"CHA-xx is being blocked... Usually, several minutes (maximum 15 minutes)"
"CHA-xx is lighting the LED..."

* For DKA

"DKA is being blocked..."
"DKA-xx is lighting the LED..."

10. <Check to see if the shut down LED is lit>

Select (CL)
* [Yes] if LED is on
* [No] if LED is off
in response to “Is the LED of the target PCB lit?”.
If [No] is selected:
Select in response to “Is the LED of the target PCB(s) lit?” again.

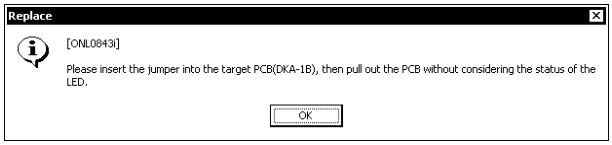


<Forcing shut down LED on>

CAUTION

If the jumper is inserted in the wrong PCB, a system down may occur.

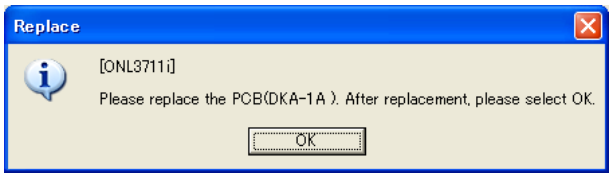
If [No] is selected twice:
Insert a jumper in response to “Please insert the jumper into the target PCB (CHA-nn/DKA-nn), then pull out the PCB without considering the status of the LED”. (Refer REP03-80)



(Eg. DKA)

For Serial CHA (REP03-110)
For Fibre CHA (REP03-140)
For MF Fibre CHA (REP03-170)
For NAS CHA (REP03-200)
For iSCSI CHA (REP03-230)
For DKA (REP03-260)

11. <Beginning of CHA/DKA Replacement>
"Please replace the PCB (CHA-nn/DKA-nn). After replacement, please select OK." is displayed. Select (CL) [OK] after replacing the PCBs.



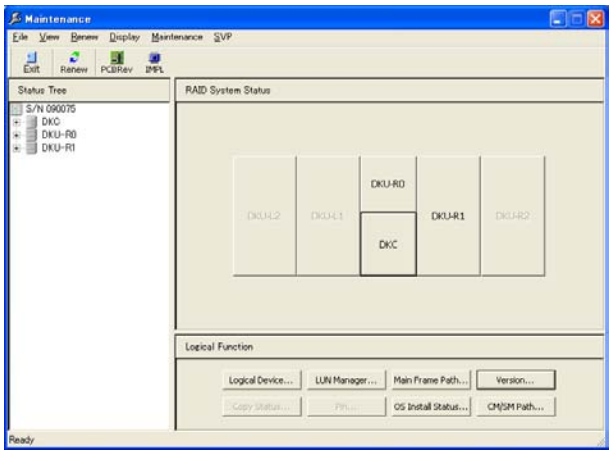
(Eg. DKA-1A)

[PRE-PROCEDURE K]

— OUTLINE —

① Select drive (status check)
② Check progress of copy processing
③ Specify Correction Copy
④ Save Spare

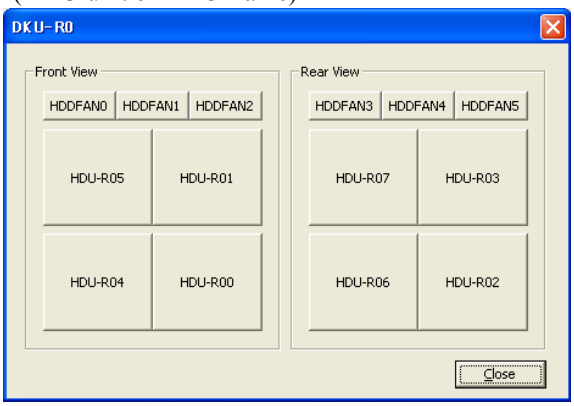
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



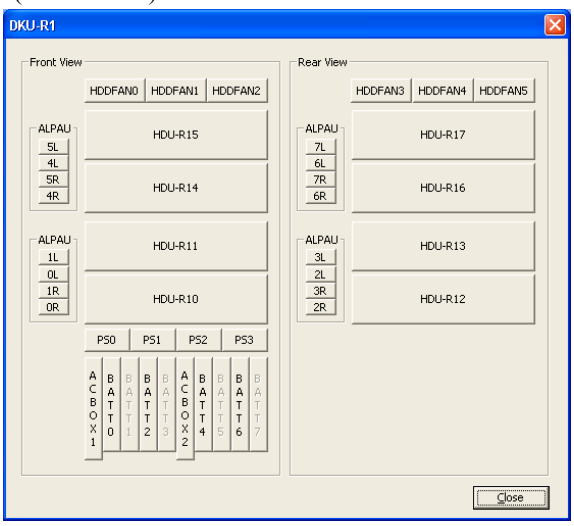
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting (CL) [Close] returns you to step 1.

(DKU unit of DKC frame)

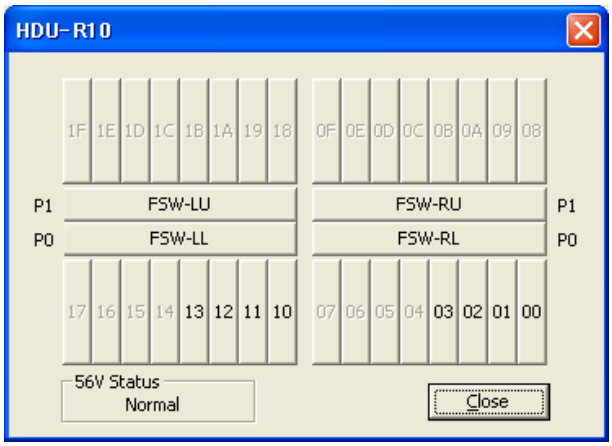


(DKU frame)



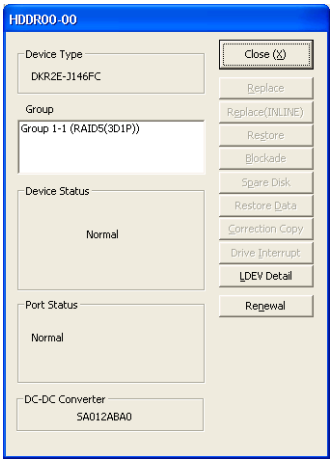
3. <Select HDD>
   Check and select [nn] to be replaced.

   Selecting (CL) [Close] returns you to step 2.



4. <Specify replacement on HDD>
   Make sure that the status is [FAILED] or [WARNING].

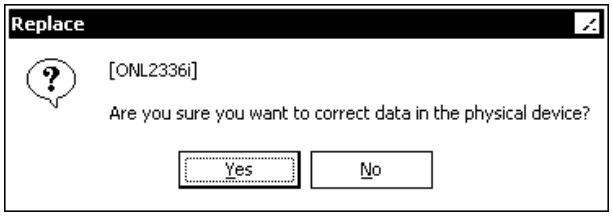
   Select (CL) [Correction Copy].



5. <Reading the subsystem configuration data and Checking the P-DEV status>
   If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

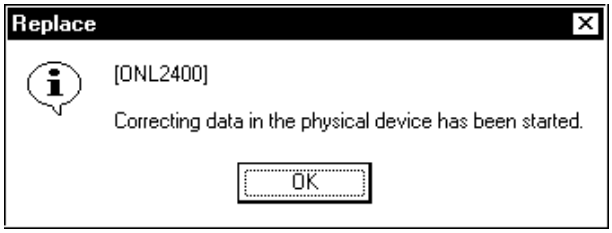
   "Checking..." is displayed.

6. <Saving the spare>
   Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".

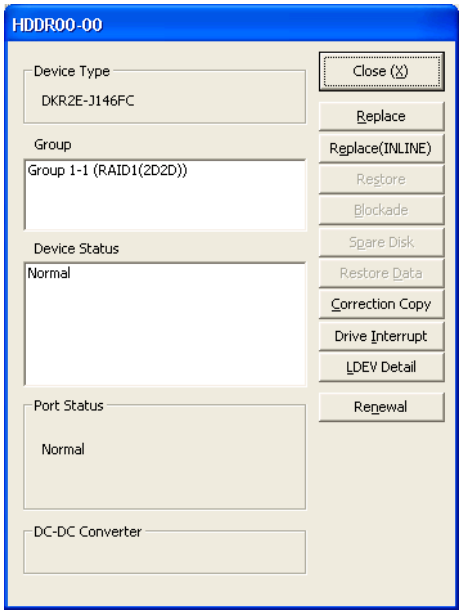


7. <Correction copy in progress>
   "Correcting..." is displayed.

8. <End of starting correction copy>
   Select (CL) [OK] in response to "Correcting data in the physical device has been started.".



9.
   When interrupting the correction copy, select the PDEV to which the copy is being made and select (CL) the [Drive Interrupt] button.

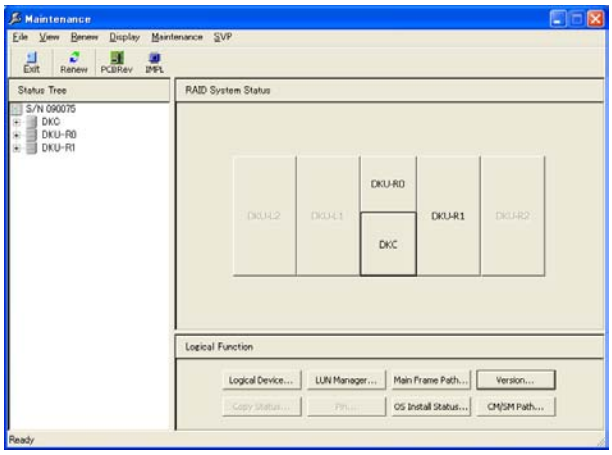


[PRE-PROCEDURE L]

— OUTLINE —

① Select FSW
② Specify Replacement
③ Please FSW into unplugable state

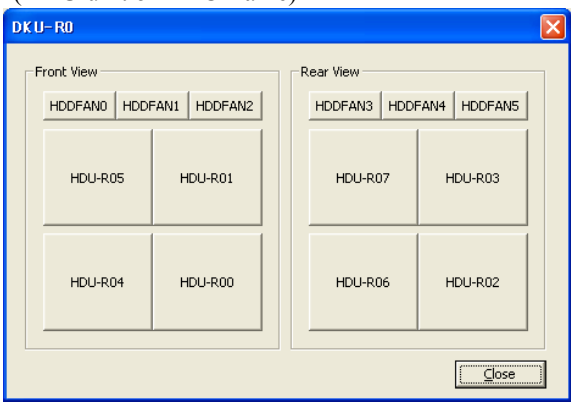
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



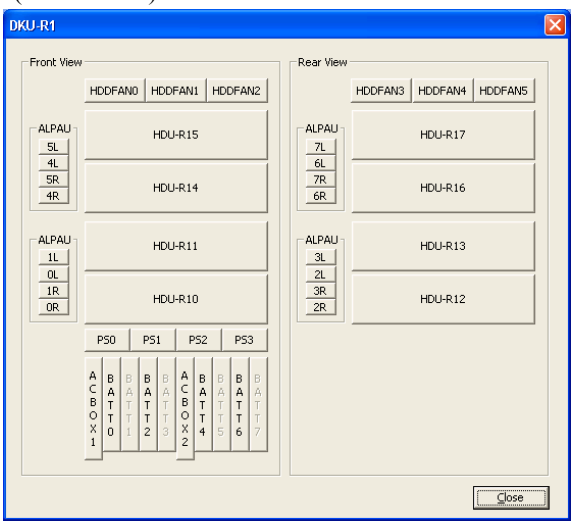
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting (CL) [Close] returns you to step 1.

(DKU unit of DKC frame)

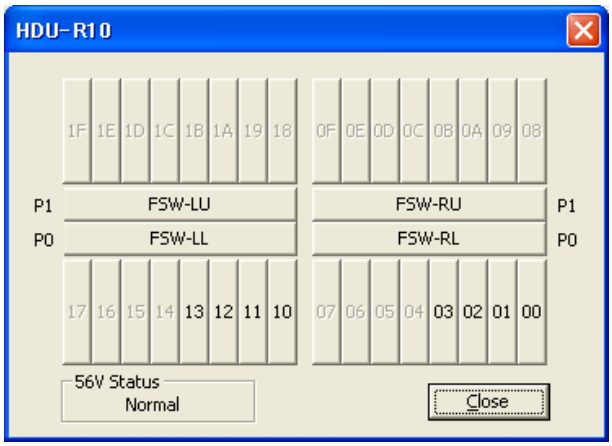


(DKU frame)



3. <Select FSW>
   Select (CL) [FSW-XX] to be replaced.

   Selecting (CL) [Close] returns you to step 2.



4. <Specify replacement>

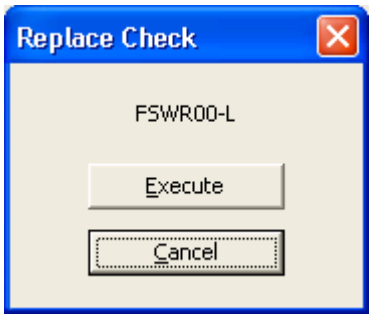
CAUTION

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.

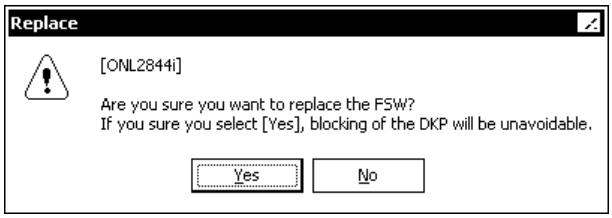
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Select (CL) [Execute].

Selecting (CL) [Cancel] returns you to step 3.



5. <Check beginning of DKP blocking>
Select (CL) [Yes] in response to "Are you sure you want to replace the FSW? If you select [Yes], blocking of the DKP will be unavoidable.".

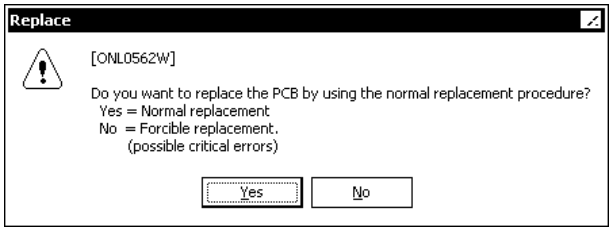


6. <Check system down>

CAUTION

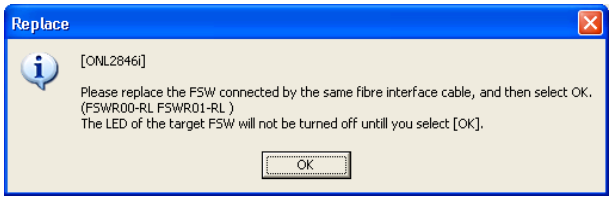
Select (CL) [Yes] in response to the message below.

"Do you want to replace the PCB by using the normal replacement procedure?
Yes = Normal replacement
No = Forcible replacement.
(Possible critical errors)"



7. <Check DKP blocking>
   "The DKP is being blocked..." is displayed.

8. <Replace FSW>
   "Please replace the FSW connected by the same fibre interface cable, and then select OK. (FSWxnn-xx) The LED of the target FSW will not be turned off until you select [OK]." is displayed.



   Make sure of the FSW PCB location is displayed, select (CL) the [OK] button after replaced all target FSW PCB.
   If the FSW LED is not turned on, please replace FSW PCB.

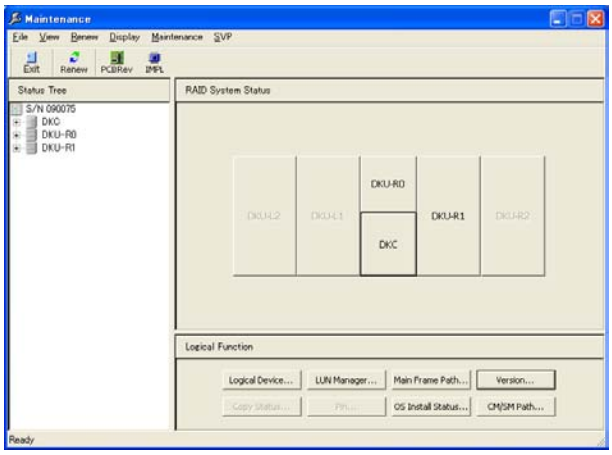
   Refer HARDWARE T16 (REP03-800)

[PRE-PROCEDURE M]

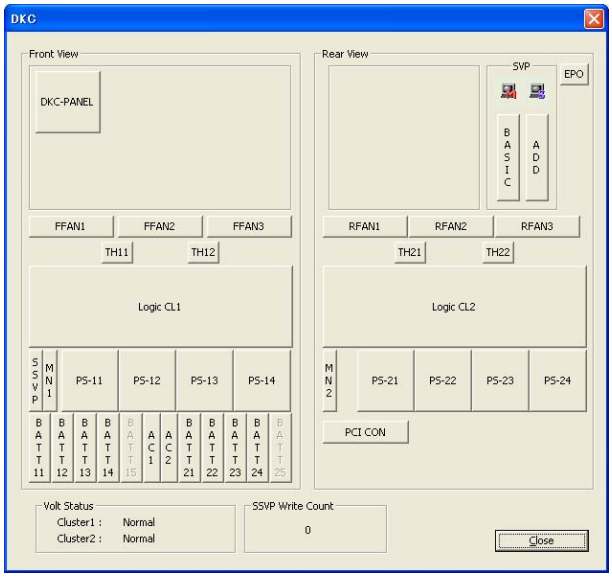
— OUTLINE —

① Select CSW (status check)
② Specify Replacement
③ Place PCB into blocked state

1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.

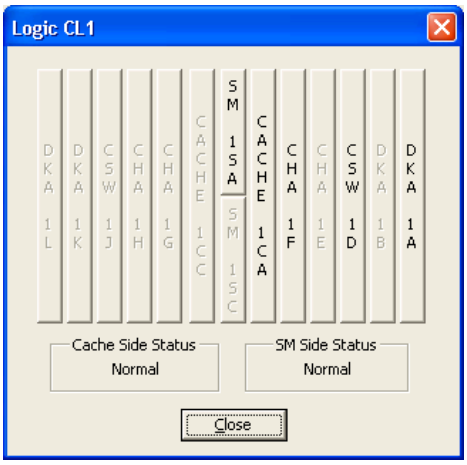


2. <DKC window>
   Select (CL) [Logic CLx] in the 'DKC'.



3. <Select CSW>
   Select (CL) [CSW].

   Selecting (CL) [Close] returns you to step 2.



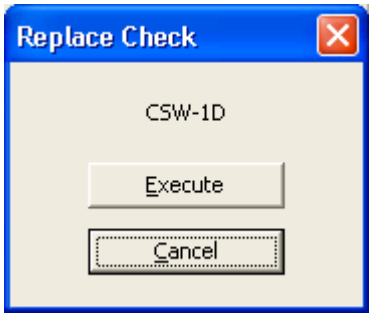
4. <Specify replacement>

CAUTION

Be sure to operate procedure 5 to 7 within thirty minutes.

   Select (CL) [Execute].

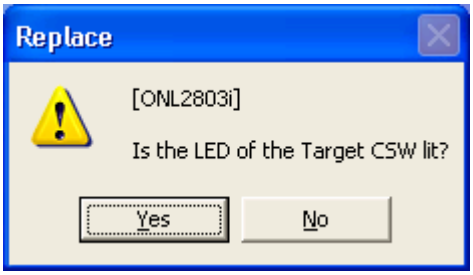
   Selecting (CL) [Cancel] returns you to step 3.



5. <Check CSW blocking>
   If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

   "Blocking the CSW..." is displayed.

6. <Check to see if shut down LED is lit>
   Select (CL)
   * [Yes] if the LED is on
   * [No] if the LED is off
   in response to "Is the LED of the Target CSW lit?".



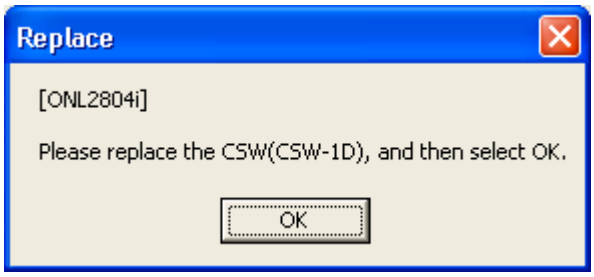
   <Forcing shut down LED on>

CAUTION
If the jumper is inserted in the wrong PCB, a system down may be caused.

   If [No] is selected twice:
   Insert a jumper in response to "Please insert the jumper into the target PCB (CSW-nn), then pull out the target PCB without considering the status of the LED". (Refer REP03-210)

7. <Beginning of CSW replacement>
   "Please replace the CSW (CSW-nn), and then select OK." is displayed.
   Select (CL) [OK] after replacing the CSW.

   Go to HARDWARE K (REP03-290)



CAUTION

If you take procedure 5 to 7 operation, the 'ONL0117E' message will be displayed on SVP after you select [OK]. Please start PRE-PROCEDURE M all over again.

[PRE-PROCEDURE T1]

— OUTLINE —

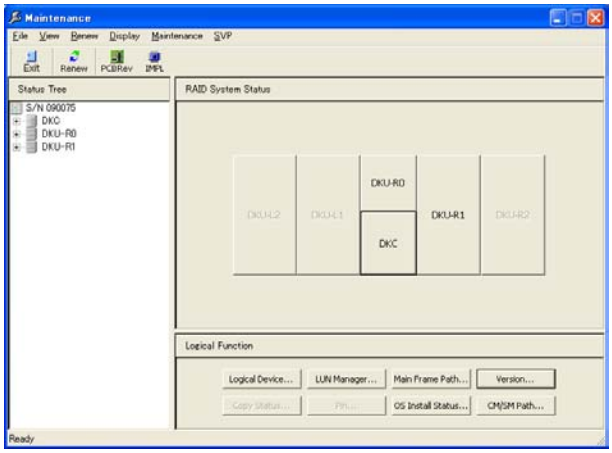
① Select special (DKC) part (status check)
② Specify Replacement
③ Detach parts related to special part

[1] Select special part

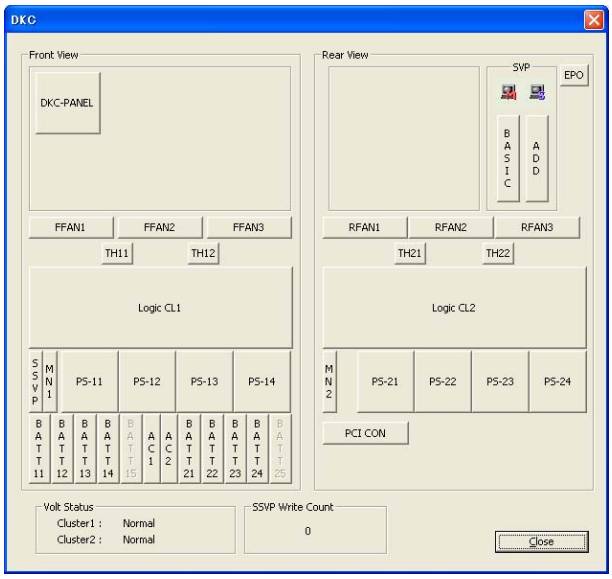
⚠ CAUTION

<When the parts to be replaced is the SVP>
When the AuditLog information which is not downloaded remains, ask the customer to download the AuditLog information as needed.
Also, check if the customer is using the Syslog function of AuditLog.
When the Syslog function is used, ask him/her to reset the Syslog server after the replacement.

1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKC] to be replaced.



2. <Specify special part>
Select (CL) part [XXXXX] to be replaced from 'DKC'.



Valid [XXXXX] values are listed below.

- DKC-PANEL -------- [DKC-PANEL] [2] (REP02-580)
- DKCMN ---------- [MN 1/2] [3] (REP02-590)
- PCI CON ---------- [PCI CON] [4] (REP02-620)
- EPO SW ---------- [EPO] [5] (REP02-650)
- SVP (Basic) ---------- [BASIC] [6] (REP02-660)
- SVP (Addition) ------- [ADDITION] [6] (REP02-660)
- SSVP ---------- [SSVP] [7] (REP02-700)
- DKCFAN ---------- [FFANn/RFANn] [8] (REP02-720)
- Thermostat ---------- [THnn] [9] (REP02-740)
- DKCPS ---------- [PS-nn] [10] (REP02-750)
- DKC Battery Box ---- [BATTnn] [11] (REP02-770)
- DKC AC BOX ------- [ACn] [12] (REP02-790)

[2] DKC-PANEL

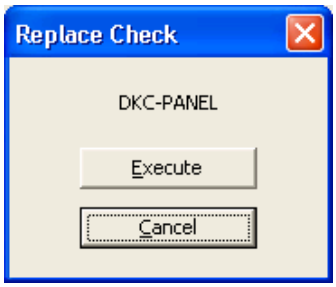
1. <Execute>

CAUTION

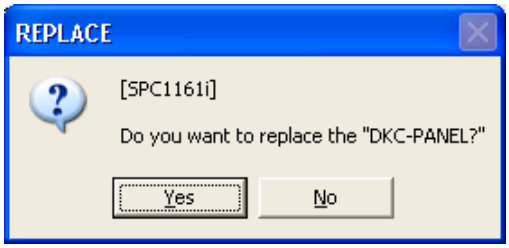
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

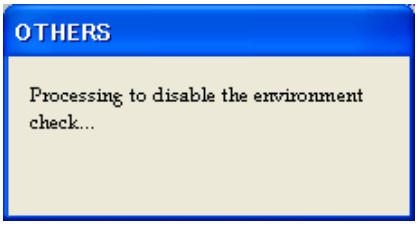
A window shown on the right is displayed.
Select (CL) [Execute].



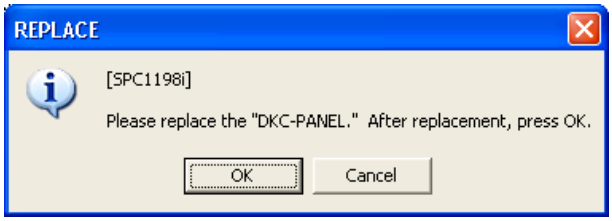
2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "DKC-PANEL?"".



3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



4. <Check beginning of special part Replacement>
The message "Please replace the "DKC-PANEL." After replacement, press OK." is displayed.
(Reply with [OK] after replacing the special part.)



See HARDWARE T1 (REP03-320)

[End of PRE-PROCEDURE]

[3] DKCMN

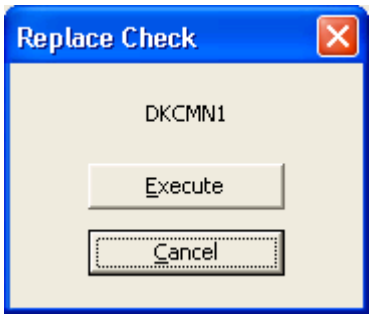
1. <Execute>

⚠ CAUTION

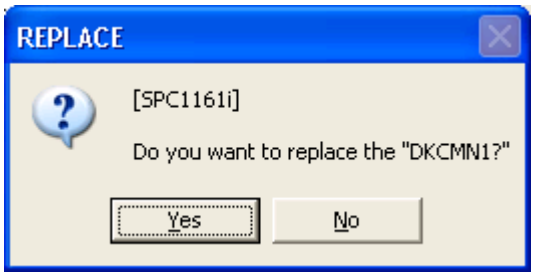
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

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].

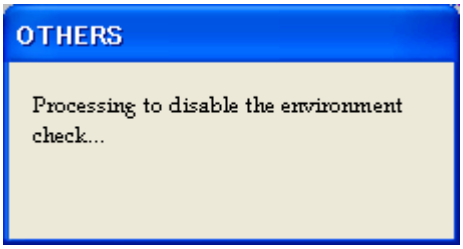


2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "DKCMNn?"".

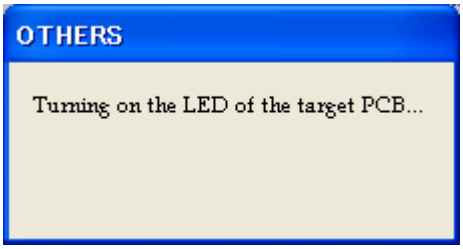


(Eg. DKCMN1)

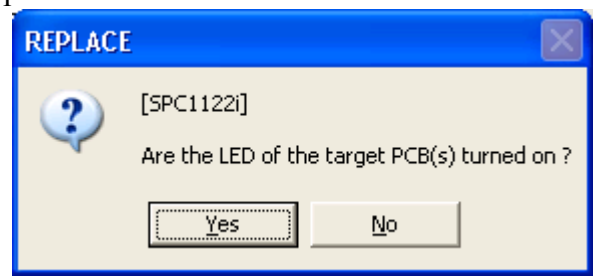
3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



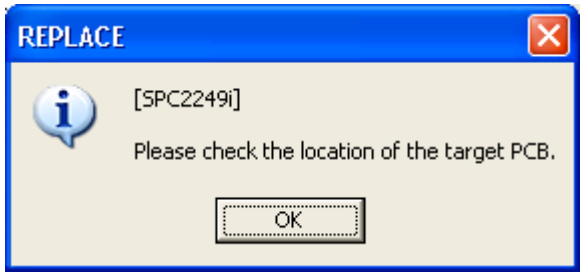
4. <Lighting of the LED on the PCB to be pulled out>
The message "Turning on the LED of the target PCB..." is displayed.

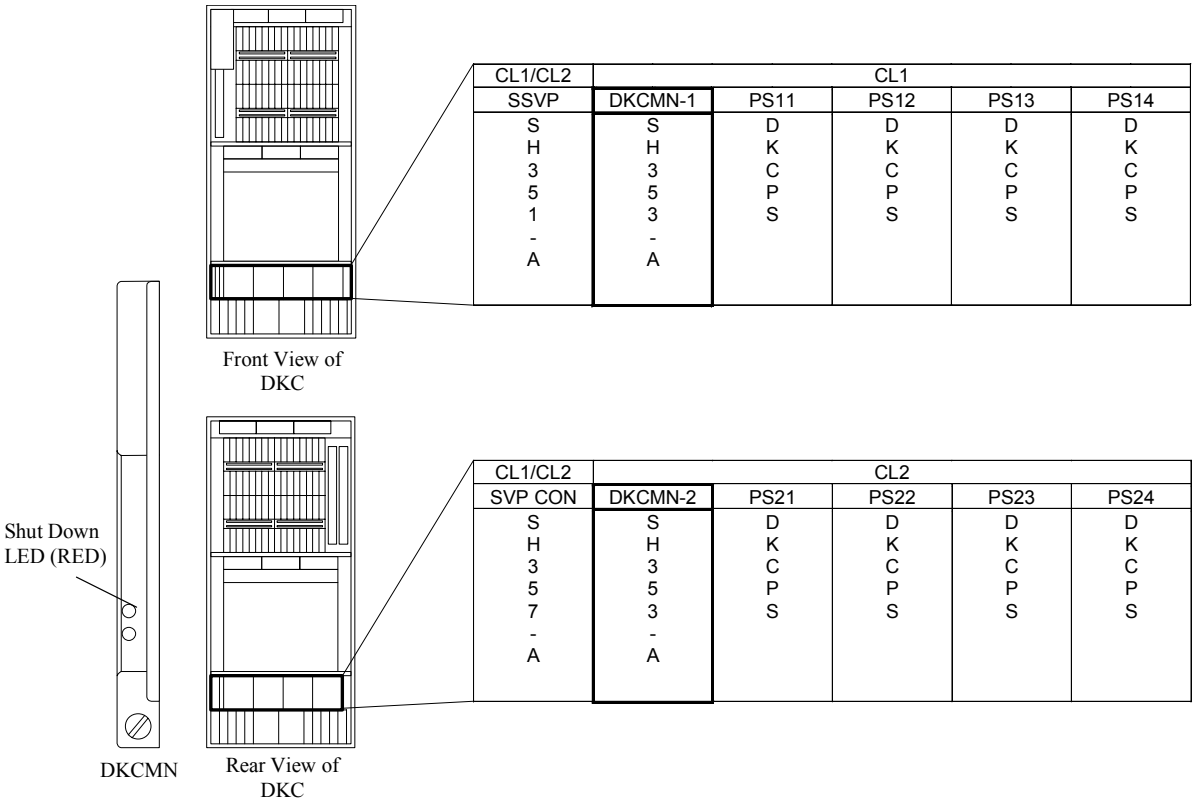


5. <Checking lighting of the LED on the PCB to be pulled out>
The message, "Are the LED of the target PCB(s) turned on?" is displayed.
When the LED on the PCB to be pulled out is on, select (CL) [Yes] and go to Step 7.
When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 6.



6. <Making sure of a location of the DKCMN>
Since a message shown on the right is displayed, make sure of a location of the DKCMN.





CL1/CL2	CL1				
SSVP	DKCMN-1	PS11	PS12	PS13	PS14
SH351-A	SH351-A	DKCPS	DKCPS	DKCPS	DKCPS

CL1/CL2	CL2				
SVP CON	DKCMN-2	PS21	PS22	PS23	PS24
SH357-A	SH357-A	DKCPS	DKCPS	DKCPS	DKCPS

After making sure of the location of the DKCMNn to be replaced, select (CL) [OK] and go to Step 7.

7. <Check beginning of special part Replacement>
   The message “Please replace the “DKCMNn.” After replacement, press OK.” is displayed.
   (Reply with [OK] after replacing the special part.)

   (Eg. DKCMN1)

   See HARDWARE T3 (REP03-380)

   [End of PRE-PROCEDURE]

[4] PCI CON / PCI BOX

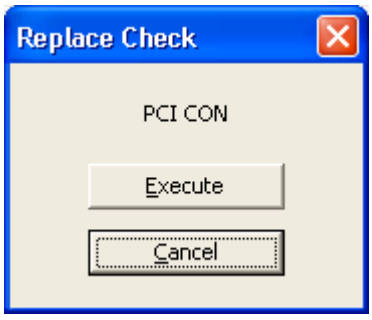
1. <Execute>

⚠ CAUTION

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].



2. <Check beginning of special part Replacement>

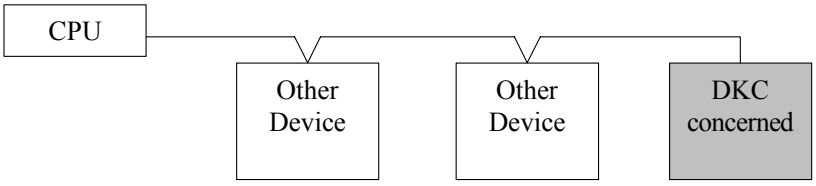
⚠ CAUTION

< When the part concerned is the PCI CON / PCI BOX>

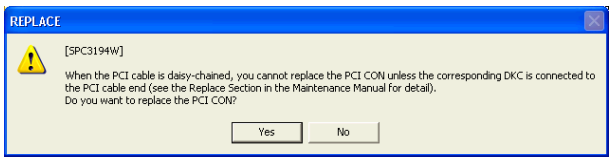
Replacement of PCI CON Panel / PCI BOX causes other devices running on the same PCI connection line to be powered off except a) and b) shown below (because giving the EPO instruction is assumed). Therefore, stop the other device before performing replacement.

a) If PCI cable is not connected to the replacing DKC.

b) If the replacing DKC (DKC concerned) is connected to the end of the PCI cable as shown below.

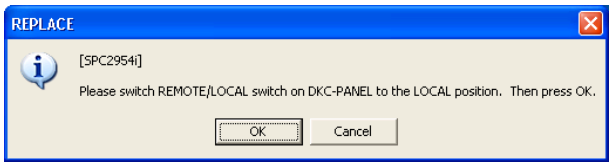


If you find no problem concerning the message, "When the PCI cable is daisy-chained, you cannot replace the PCI CON unless the corresponding DKC is connected to the PCI cable end (see the Replace Section in the Maintenance Manual for detail). Do you want to replace the PCI CON?" select (CL) [Yes].

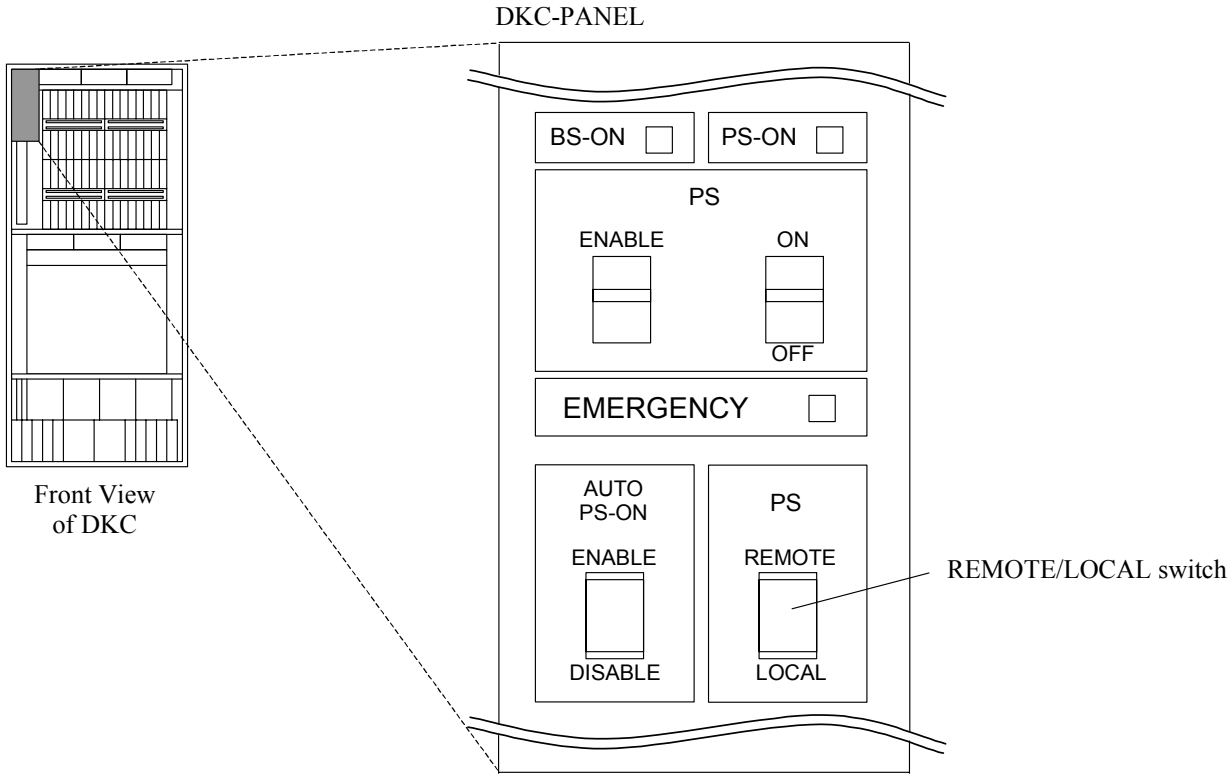


(Eg. PCI CON)

3. <Checking switch on the DKC-PANEL>

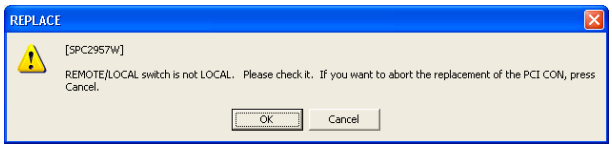


The SVP reads the setting of the REMOTE/LOCAL switch on the DKC-PANEL automatically.
When the REMOTE/LOCAL switch is set to LOCAL, go to Step 5.
When the REMOTE/LOCAL switch is set to REMOTE, reset the switch to LOCAL and select (CL) [OK] in response to the message, "Please switch REMOTE/LOCAL switch on DKC-PANEL to the LOCAL position. Then press OK."



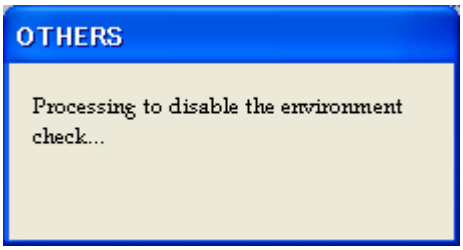
Go to Step 5.
When the REMOTE/LOCAL switch is not set to LOCAL, go to Step 4.

4. <Check if the REMOTE/LOCAL switch on the DKC-PANEL is set to LOCAL>

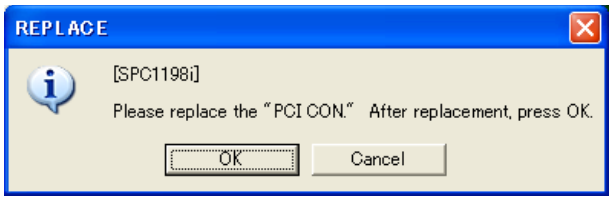


When the REMOTE/LOCAL switch is not set to LOCAL, the message, "REMOTE/LOCAL switch is not LOCAL. Please check it. If you want to abort the replacement of the PCI CON, press Cancel." is displayed. Reset the switch to LOCAL and select (CL) [OK] or select (CL) [Cancel] to abort the replacement.
When the REMOTE/LOCAL switch is not set to LOCAL, re-execute Step 4.

5. <Check environment monitor stopped state>
   The message “Processing to disable the environment check...” is displayed.



6. <Check beginning of special part Replacement>
   The message “Please replace the “PCI CON.” After replacement, press OK.” is displayed. (Reply with [OK] after replacing the special part.)



(Eg. PCI CON)

   See HARDWARE T4 (REP03-410)

   [End of PRE-PROCEDURE]

[5] EPO SW

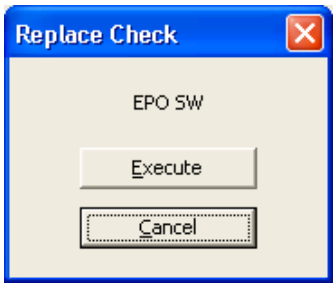
1. <Execute>

CAUTION

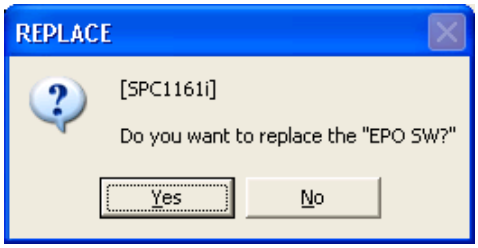
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

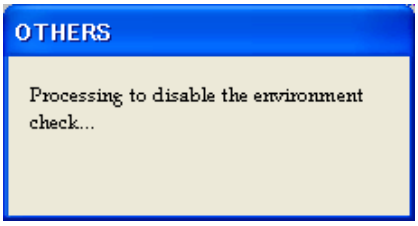
A window shown on the right is displayed.
Select (CL) [Execute].



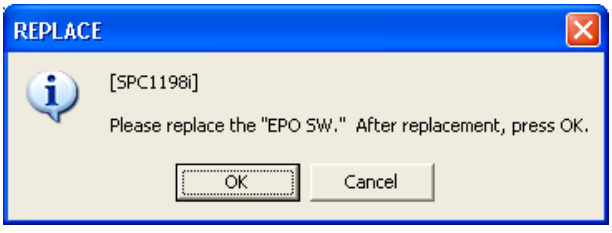
2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "EPO SW?"".



3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



4. <Check beginning of special part Replacement>
The message "Please replace the "EPO SW." After replacement, press OK." is displayed. (Reply with [OK] after replacing the special part.)



See HARDWARE T2 (REP03-350)

[End of PRE-PROCEDURE]

[6] SVP

1. <Execute>

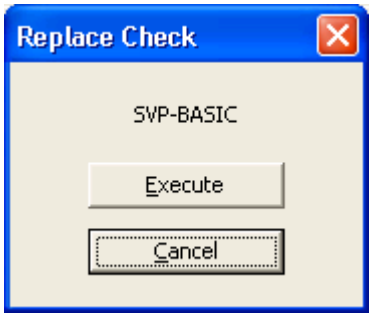
CAUTION

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 not been added>

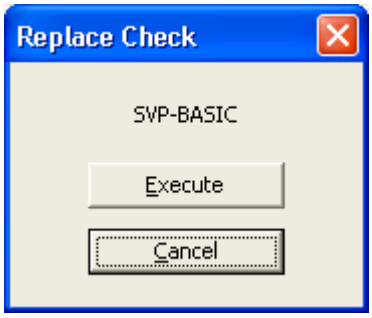
A window shown on the right is displayed.
Select (CL) [Execute].
Go to Step 2.



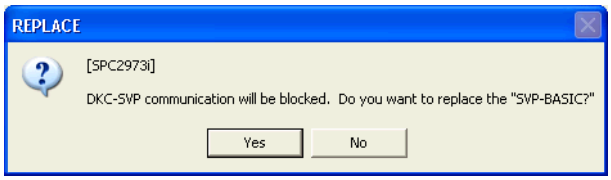
<When the SVP High Reliability Support Kit has been added>
The SVP to be replaced must be a standby SVP. When the SVP to be replaced is a master SVP, replace it after switching its status to standby. (See SVP02-1150) Replace the master SVP only when the SVP status cannot be switched to standby.

• In the case of a standby SVP
Check the location of the SVP to be replaced.
Power off the SVP to be replaced if the SVP is powered on.
Refer to SVP section (SVP01-110 “1.10 Power Off”)
Go to Step 7.

• In the case of a master SVP
A window shown on the right is displayed.
Select (CL) [Execute].
Go to Step 2.

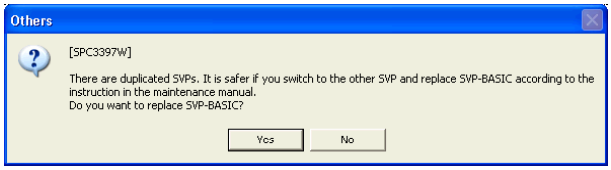


2. <Check beginning of special part Replacement>
<When the SVP High Reliability Support Kit has not been added>
The message, "DKC-SVP communication will be blocked. Do you want to replace the "SVP-BASIC?"" is displayed.
When you perform the replacement, select (CL) [OK].
Go to Step 3.



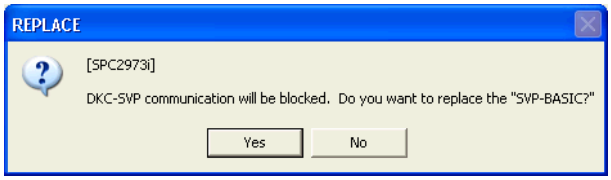
(Eg. SVP-BASIC)

<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) [OK].



(Eg. SVP-BASIC)

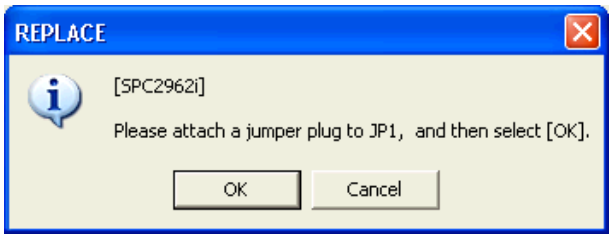
The message, "DKC - SVP communication will be blocked. Do you want to replace the SVP-BASIC?" is displayed.
When you perform the replacement, select (CL) [OK].

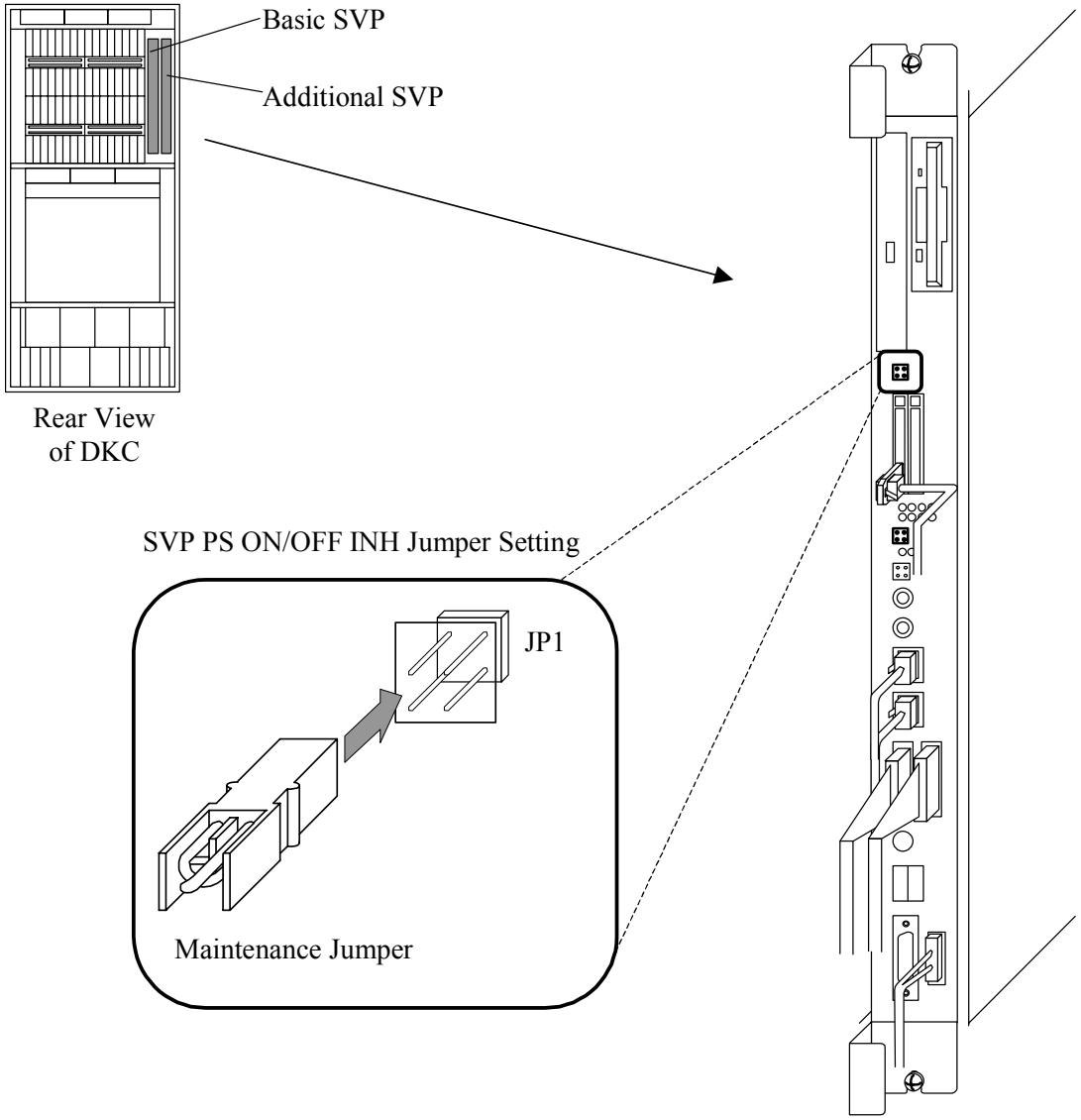


(Eg. SVP-BASIC)

Go to Step 3.

3. <Attaching a jumper plug>
   Attach a maintenance jumper plug to the jumper pin JP1 of the SVP to be replaced and select (CL) [OK] following the message, "Please attach a jumper plug to JP1, and then select [OK]."

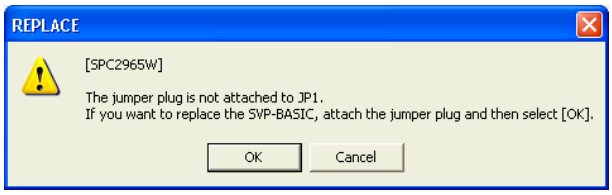




Go to Step 5.
When the maintenance jumper plug is not attached, go to Step 4.

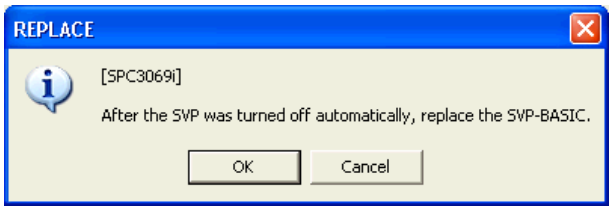
When the maintenance jumper plug is inserted in the jumper pin JP1, a SIM bf85a2 is reported. To refer to the SIM, select [Information] and [Log] in this order.

4. <Checking re-attachment of the jumper plug>
When the jumper plug is not attached, the message, “The jumper plug is not attached to JP1. If you want to replace the SVP-BASIC, attach the jumper plug and then select [OK].” is displayed. Attach the jumper plug to the jumper pin JP1 of the SVP to be replaced and select (CL) [OK].
Go to Step 5.
When the jumper plug is not attached, re-execute Step 4.



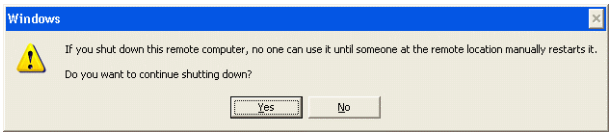
(Eg. SVP-BASIC)

5. <Powering off the SVP>
The message, “After the SVP was turned off automatically, replace the SVP-BASIC.” is displayed.
When a CD-ROM is inserted in the CD-ROM drive, take it out.
Select (CL) [OK].



(Eg. SVP-BASIC)

6. <The check of Console 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].



7. <Special parts replacement>
Replace the SVP after checking that the SVP PS is turned off.

See HARDWARE T7 (REP03-500)

[End of PRE-PROCEDURE]

[7] SSVP

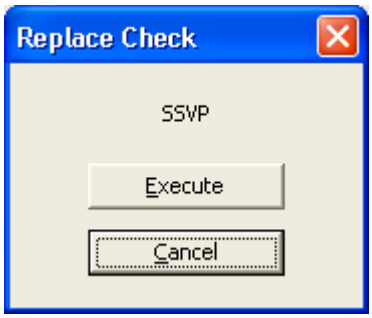
1. <Execute>

CAUTION

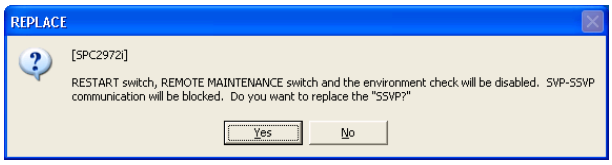
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

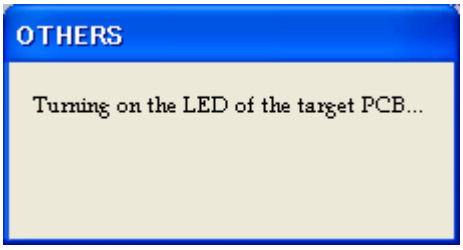
A window shown on the right is displayed.
Select (CL) [Execute].



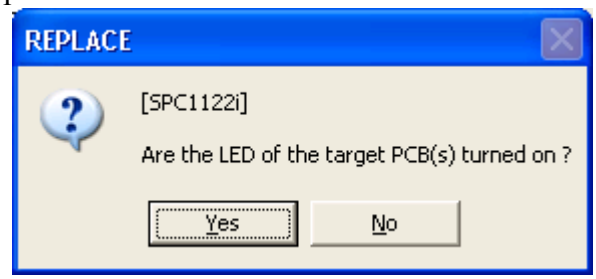
2. <Check beginning of special part Replacement>
The message "RESTART switch, REMOTE MAINTENANCE switch and the environment check will be disabled. SVP-SSVP communication will be blocked. Do you want to replace the "SSVP?"" is displayed.
Select (CL) [OK].



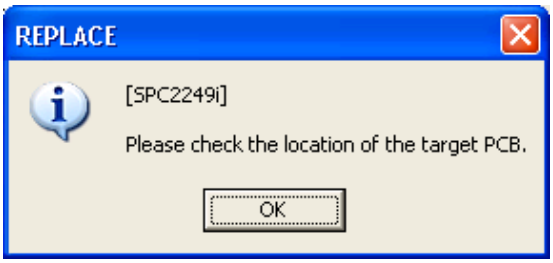
3. <Check environment monitor stopped state>
The message "Turning on the LED of the target PCB..." is displayed.

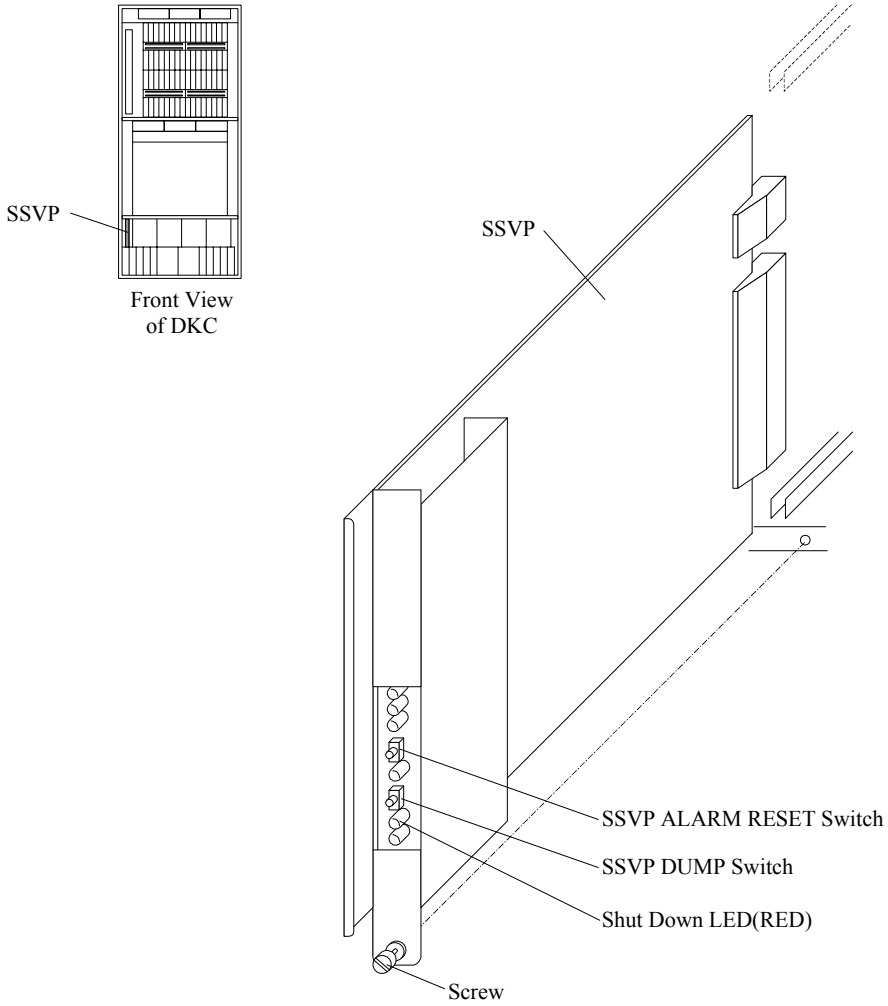


4. <Checking lighting of the LED on the PCB to be pulled out>
The message, "Are the LED of the target PCB(s) turned on?" is displayed.
When the LED on the PCB to be pulled out is on, select (CL) [Yes] and go to Step 6.
When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 5.



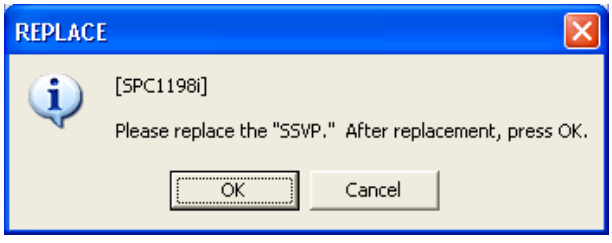
5. <Making sure of the SSVP location>
Since a message shown on the right is displayed, make sure of a location of the SSVP.





After making sure of the SSVP location, select (CL) [OK] and go to Step 6.

6. <Check beginning of special part Replacement>
The message “Please replace the “SSVP.” After replacement, press OK.” is displayed. (Reply with [OK] after replacing the special part.)



See HARDWARE T8 (REP03-550)

[End of PRE-PROCEDURE]

[8] DKCFAN

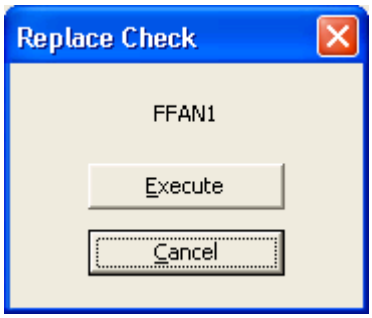
1. <Execute>

CAUTION

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.

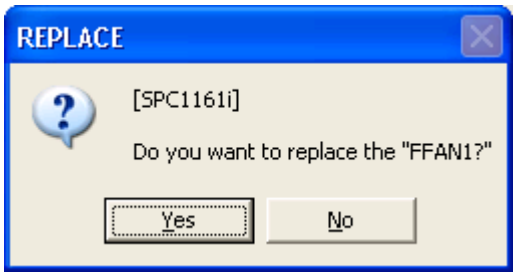
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].



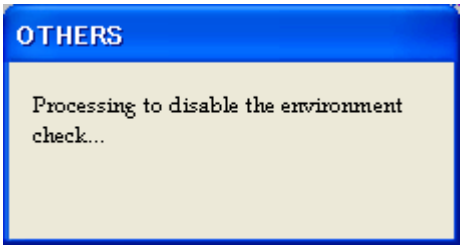
2. <Checking the FAN>
The SVP automatically checks the DKC Fan to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "nFANn?"".



(Eg. FFAN1)

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



5. <Check beginning of special part Replacement>
   The message “Please replace the “nFANn.” After replacement, press OK.” is displayed. (Reply with [OK] after replacing the special part.)

   See HARDWARE T5 (REP03-460)

(Eg. FFAN1)

   [End of PRE-PROCEDURE]

[9] Thermostat

1. <Execute>

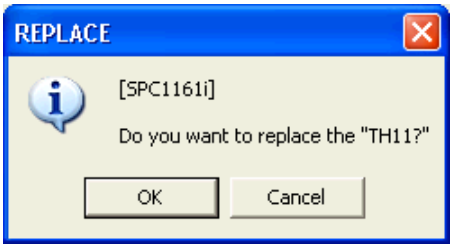
CAUTION

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).

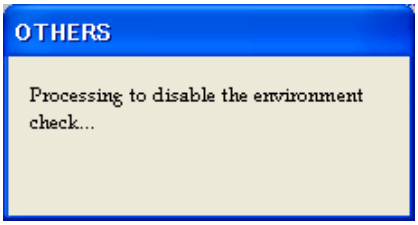
A window shown on the right is displayed.
Select (CL) [Execute].

2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "THFnn?"".



(Eg. TH11)

3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



4. <Check beginning of special part Replacement>
The message "Please replace the "THnn." After replacement, press OK." is displayed. (Reply with [OK] after replacing the special part.)

See HARDWARE T6 (REP03-480)

[End of PRE-PROCEDURE]

(Eg. TH11)

[10] DKCPS

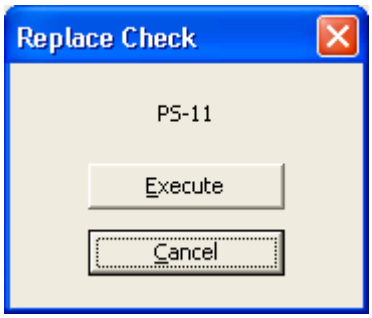
1. <Execute>

⚠ CAUTION

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.

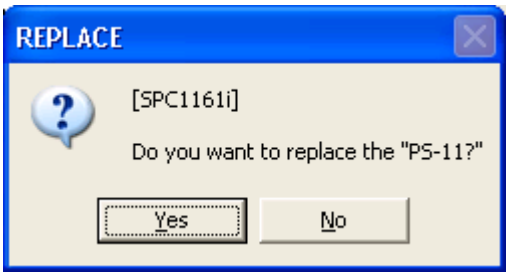
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].



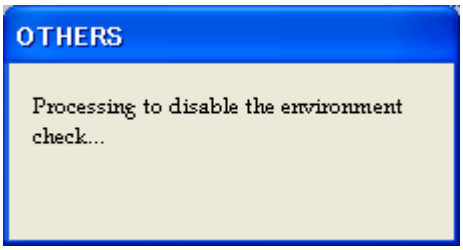
2. <Checking power supply>
The SVP automatically checks the DKC PS to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "PS-nn?"".

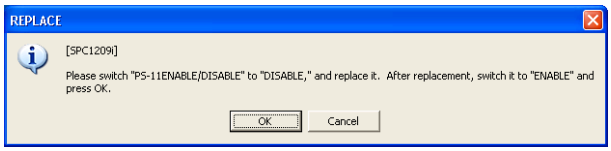


(Eg. PS-11)

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



5. <Check beginning of special part Replacement>
   The message “Please switch “PS-nnENABLE/DISABLE” to “DISABLE,” and replace it. After replacement, switch it to “ENABLE” and press OK.” is displayed. (Reply with [OK] after replacing the special part.)

   (Eg. PS-11)

   See HARDWARE T11 (REP03-630)

   [End of PRE-PROCEDURE]

[11] DKC Battery Box

1. <Execute>

⚠ CAUTION

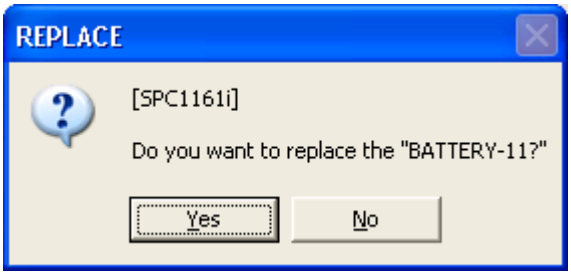
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

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].

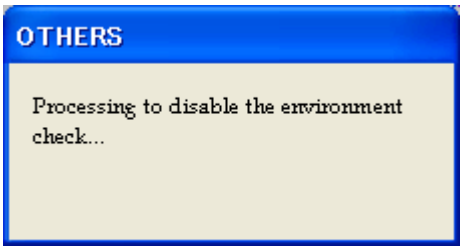
2. <Checking power supply>
The SVP automatically checks the DKC Battery to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "BATTERY-nn?"".

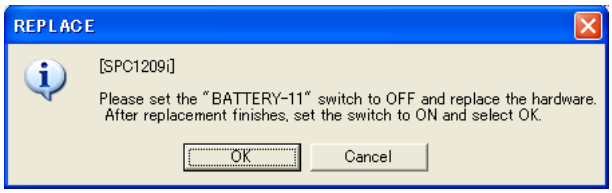


(Eg. BATTERY-11)

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



5. <Check beginning of special part Replacement>
   The message “Please set the “BATTERY-nn” switch to OFF and replace the hardware. After replacement finishes, set the switch to ON and select OK.” is displayed.
   (Reply with [OK] after replacing the special part.)



(Eg. BATTERY-11)

See HARDWARE T10 (REP03-590)

[End of PRE-PROCEDURE]

[12] DKC AC BOX

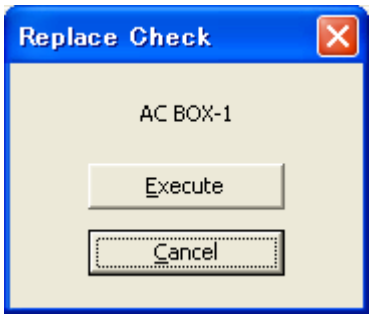
1. <Execute>

CAUTION

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.

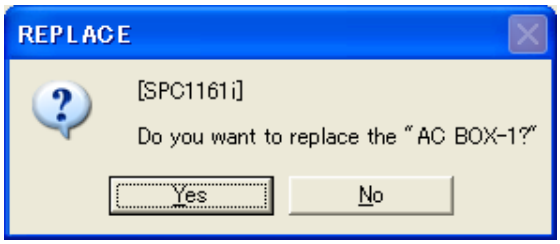
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].



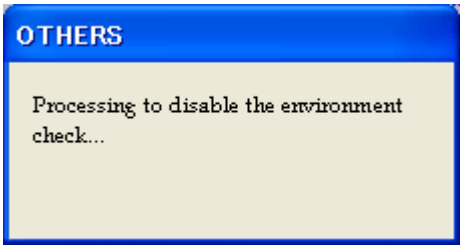
2. <Checking power supply>
The SVP automatically checks the DKC AC Box to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "AC BOX-n?"".

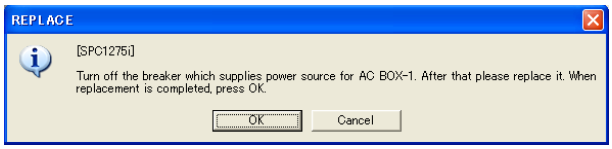


(Eg. AC BOX-1)

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



5. <Check beginning of special part Replacement>
The message “Turn off the breaker which supplies power source for AC BOX-n. After that please replace it. When replacement is completed, press OK.” is displayed.
(Reply with [OK] after replacing the special part.)



(Eg. AC BOX-1)

AC BOX (Three phase power supply 30A) ----- see HARDWARE T18 (REP03-850)
AC BOX (Single phase power supply 30A)----- see HARDWARE T19 (REP03-1010)
AC BOX (Single phase power supply 50A)----- see HARDWARE T20 (REP03-1150)

[End of PRE-PROCEDURE]

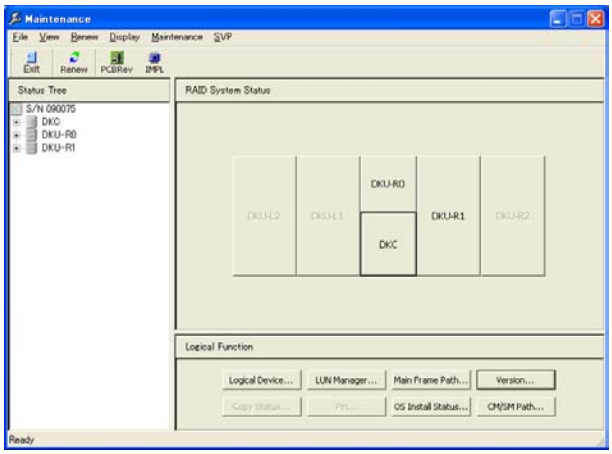
[PRE-PROCEDURE T4]

— OUTLINE —

① Select special (DKU) part (status check)
② Specify Replacement
③ Detach parts related to special part
④ Place part into unpluggable state

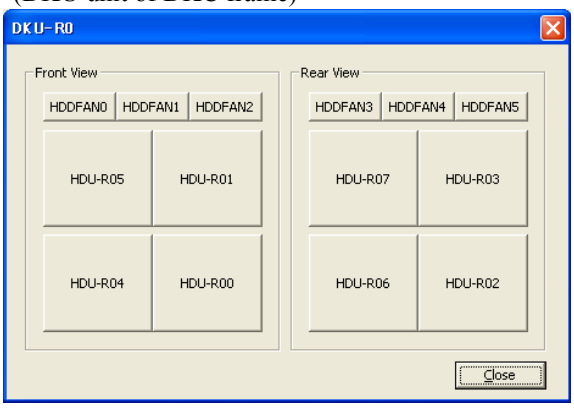
[1] Select special part

1. <Maintenance window >
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.

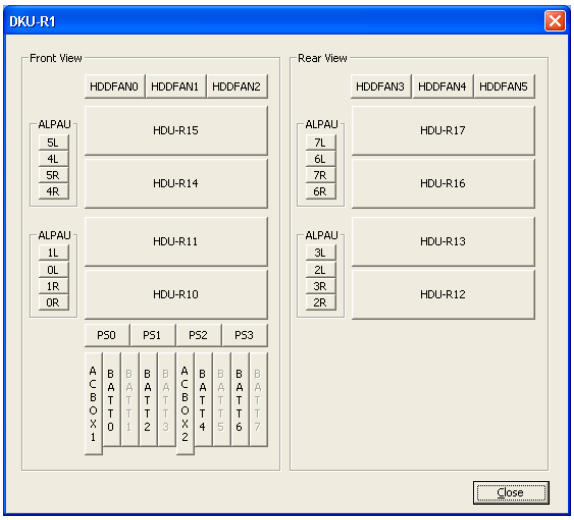


2. <Specify special part>
   Select part [XXXXX] to be Replaced.

(DKU unit of DKC frame)



(DKU frame)



Valid [XXXXX] values are listed below.

- HDDFAN ---------- [HDDFANn] [2] (REP02-840)
- ALPA ---------- [XX] [3] (REP02-860)
- DKUPS ---------- [PSn] [4] (REP02-880)
- DKU Battery Box ---- [BATTnn] [5] (REP02-900)
- DKU AC BOX ------- [ACBOXn] [6] (REP02-920)

[2] HDDFAN

1. <Execute>

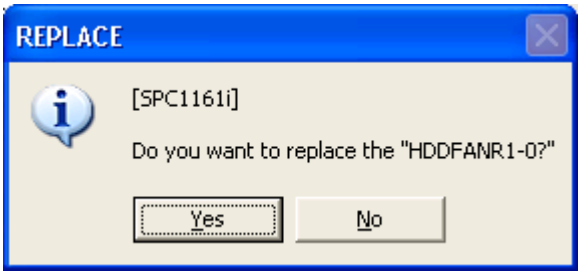
CAUTION

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).

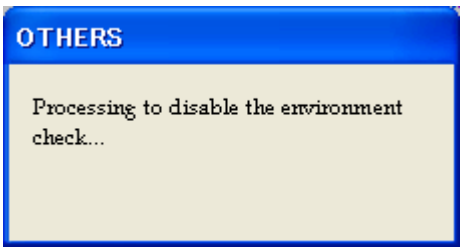
A window shown on the right is displayed.
Select (CL) [Execute].

2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "HDDFANnn-n?"".

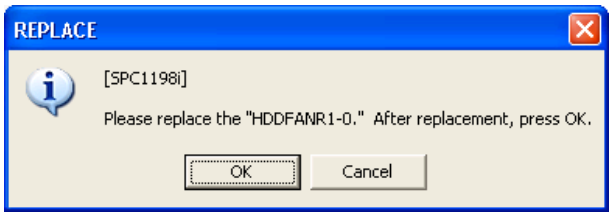


(Eg. HDDFANR1-0)

3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



4. <Check beginning of special part Replacement>
   The message “Please replace the “HDDFANnn-n.” After replacement, press OK.” is displayed.
   (Reply with [OK] after replacing the special part.)

   (Eg. HDDFANR1-0)

   See HARDWARE T14 (REP03-730)

   [End of PRE-PROCEDURE]

[3] ALPA

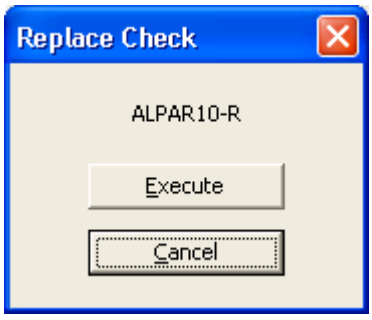
1. <Execute>

CAUTION

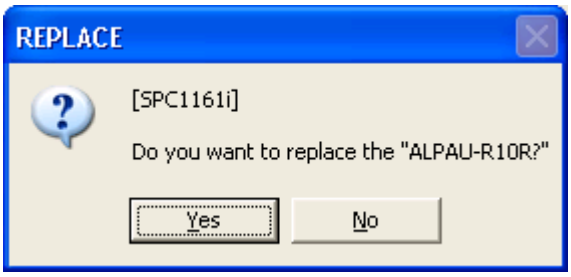
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

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].

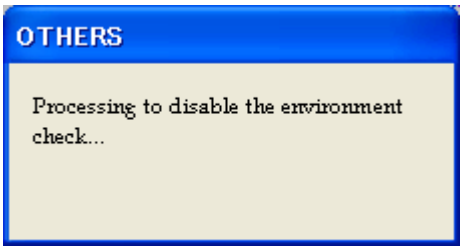


2. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "ALPAU-nnnn?"".



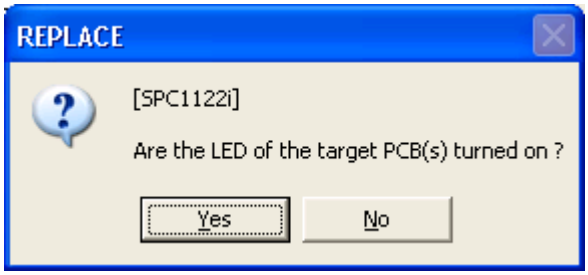
(Eg. ALPAU-R10R)

3. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



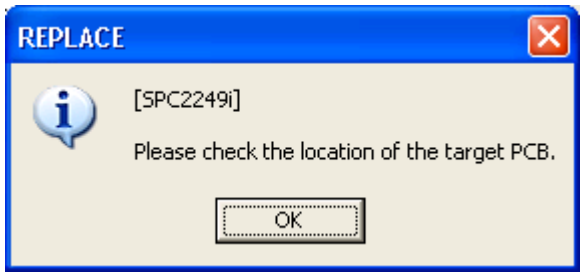
4.

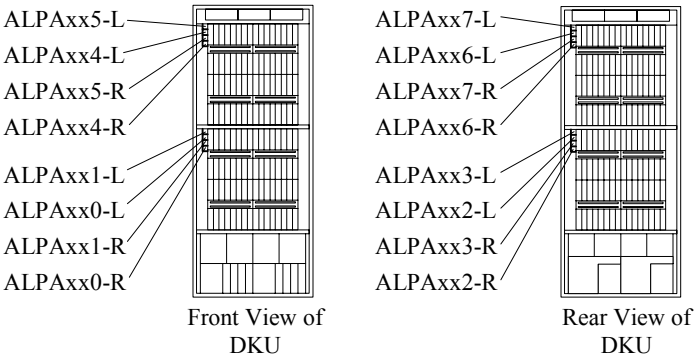
The message "Are the LED of the target PCB(s) turned on?" is displayed.
If you select (CL) [Yes], go to step 6.
If you select (CL) [No], go to step 5.



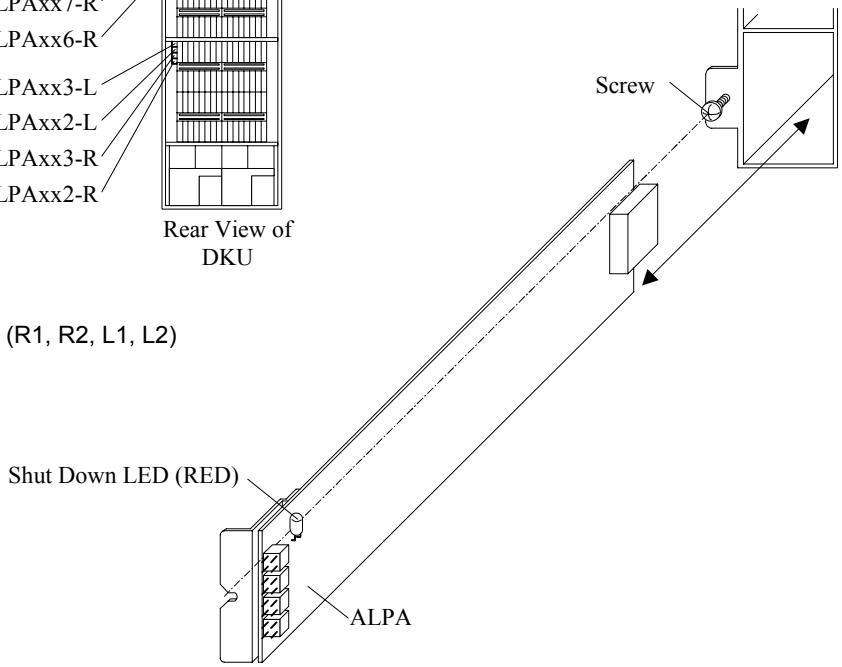
5.

The message shown on the right is displayed.
Check the location of the ALPA.





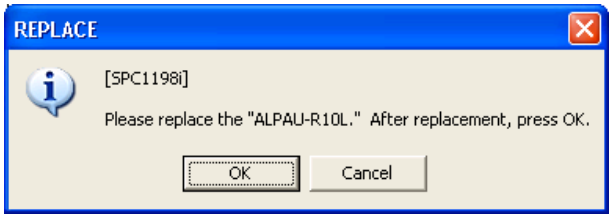
Note: ALPAxx0-L
xx: DKU Location (R1, R2, L1, L2)



Select (CL) [OK].

---

6. <Check beginning of special part Replacement>
The message "Please replace the "ALPAU-nnnn." After replacement, press OK." is displayed.
(Reply with [OK] after replacing the special part.)



(Eg. ALPAU-R10L)

See HARDWARE T17 (REP03-830)

[End of PRE-PROCEDURE]

[4] DKUPS

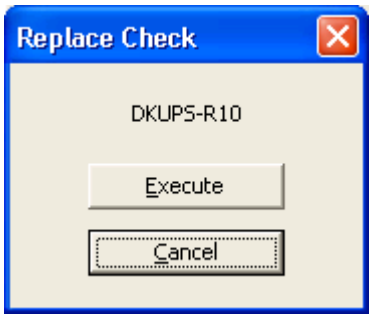
1. <Execute>

CAUTION

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.

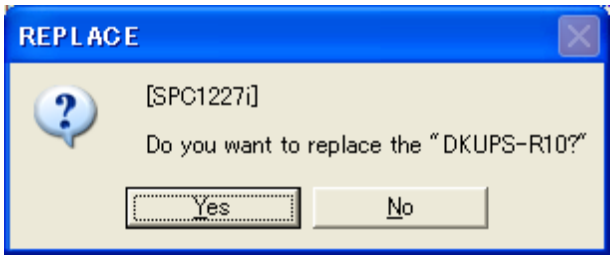
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].



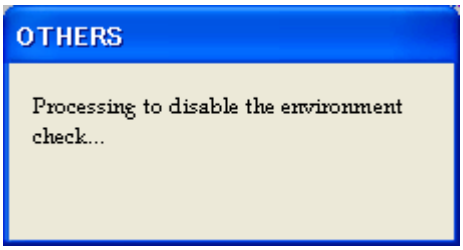
2. <Checking DKU PS>
The SVP automatically checks the DKU PS to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "DKUPS-nnn?"".

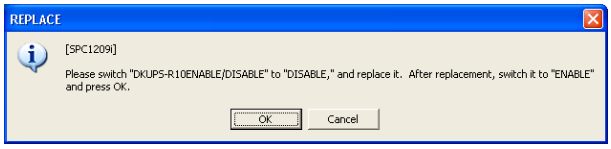


(Eg. DKUPS-R10)

4. <Check environment monitor stopped state>
   The message “Processing to disable the environment check...” is displayed.



5. <Check beginning of special part Replacement>
   The message “Please switch “DKUPS-nENABLE/DISABLE” to “DISABLE,” and replace it. After replacement, switch it to “ENABLE” and press OK.” is displayed. (Reply with [OK] after replacing the special part.)



(Eg. DKUPS-R10)

   See HARDWARE T15 (REP03-760)

   [End of PRE-PROCEDURE]

[5] DKU Battery Box

1. <Execute>

CAUTION

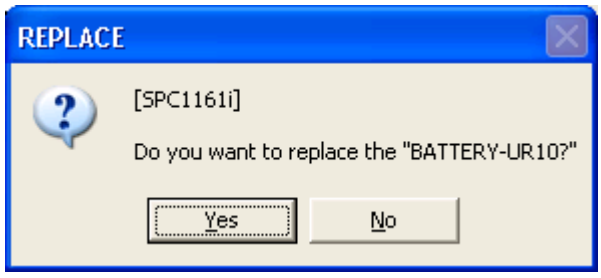
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

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].

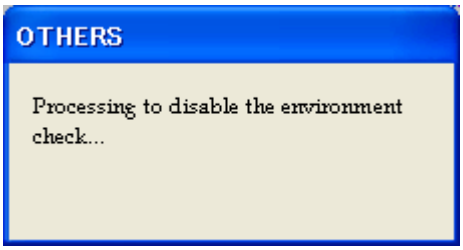
2. <Checking DKU BATTERY>
The SVP automatically checks the DKU Battery to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "BATTERY-Unnn?"".

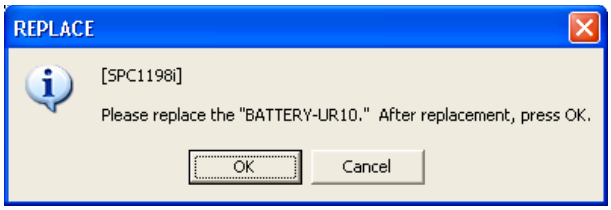


(Eg. BATTERY-UR10)

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



5. <Check beginning of special part Replacement>
   The message “Please replace the “BATTERY-Unnn.” After replacement, press OK.” is displayed.
   (Reply with [OK] after replacing the special part.)

   (Eg. BATTERY-UR10)

   See HARDWARE T10 (REP03-590)

   [End of PRE-PROCEDURE]

[6] DKU AC BOX

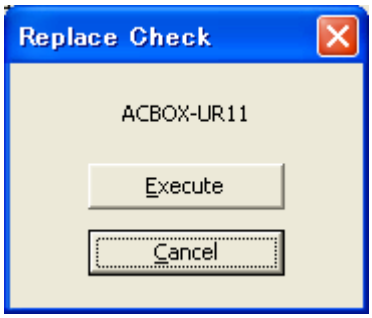
1. <Execute>

CAUTION

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.

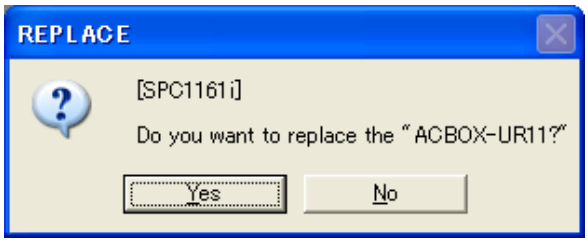
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

A window shown on the right is displayed.
Select (CL) [Execute].



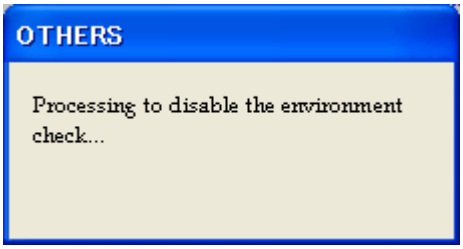
2. <Checking DKU AC Box>
The SVP automatically checks the DKU AC Box to see if it is replaceable.

3. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to "Do you want to replace the "ACBOX-Unnn?"".

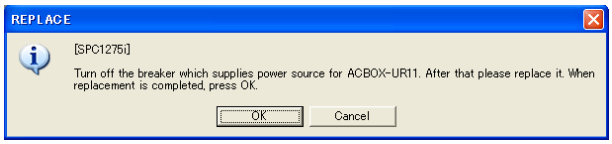


(Eg. ACBOX-UR11)

4. <Check environment monitor stopped state>
The message "Processing to disable the environment check..." is displayed.



5. <Check beginning of special part Replacement>
The message “Turn off the breaker which supplies power source for ACBOX-Unnn. After that please replace it. When replacement is completed, press OK.” is displayed.
(Reply with [OK] after replacing the special part.)



(Eg. ACBOX-UR11)

AC BOX (Three phase power supply 30A) ----- See HARDWARE T18 (REP03-850)
AC BOX (Single phase power supply 30A)----- See HARDWARE T19 (REP03-1010)
AC BOX (Single phase power supply 50A)----- See HARDWARE T20 (REP03-1150)

[End of PRE-PROCEDURE]

[PRE-PROCEDURE T5]

— OUTLINE —

① Select Port (SFP information check)
② Specify Replacement

1. <Set path offline>

⚠ CAUTION

The path to be placed offline is that connected with the CHA concerned.

[Notes for the case where DKN-200-NGW1 (NAS Unit) is connected to this device]

[Points to be checked in advance]

Prior to this operation, if all of the following three cases applies to this device, execute [Correspondence when connecting the NAS Unit].

1. NAS Unit is connected to this device. (*1)
2. NAS Unit is in operation. (*2)
3. A failure has not occurred on the NAS Unit. (*3)

*1: Confirm with the disk array device administrator to check whether the NAS Unit is connected or not.

*2: Confirm with the NAS Unit administrator to check whether the NAS service is operating or not.

*3: Ask the NAS Unit administrator to check whether failure has occurred or not by checking with the NAS administration software, NAS Manager GUI, List of RAS Information, etc. In case of failure, execute the maintenance operation together with the NAS maintenance personnel.

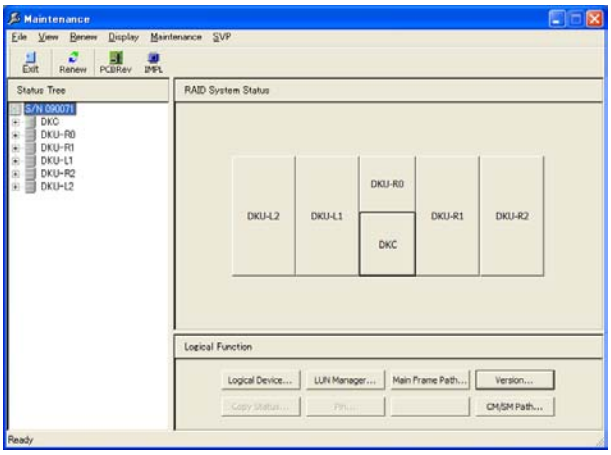
[Correspondence when connecting the NAS Unit]

Confirm with the NAS Unit administrator whether it is possible to terminate the NAS service. Determine how to react according to the confirmation result.

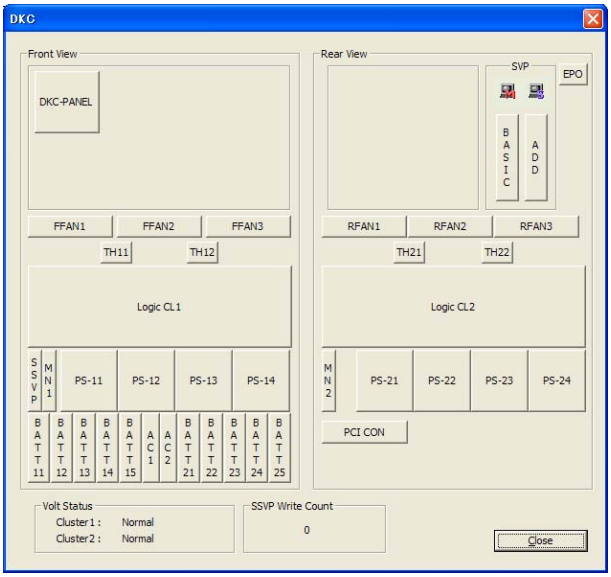
1. If the NAS service can be terminated:
   Before starting this operation, ask the NAS Unit administrator for the planned shutdown of the NAS Unit.
   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
2. If the NAS service cannot be terminated:
   When the replacement operation of SFP used by the NAS Unit is completed, the Fibre Channel path (FC path) of the NAS Unit might go into the Failure status. Before starting the operation of the next SFP replacement, contact the NAS Unit administrator, refer to “Recovering from FC path errors” of “Hitachi NAS Manager User’s Guide”, confirm the FC path status and, if the status is Failure, ask for the recovery of the FC path.

In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to “NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)” in “DKN-200-NGW1 NAS Unit Maintenance Manual”, and ask to check the status of the FC path and to recover the FC path if it is in a failure status after completing the replacement operation of SFP used by the NAS Unit.

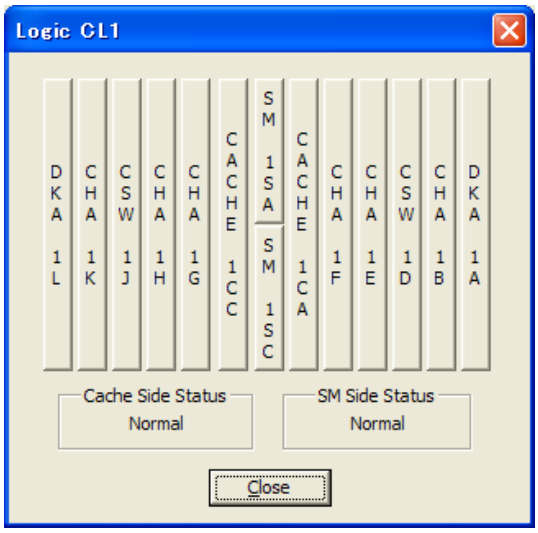
2. <Maintenance window>
Select (CL) the [DKC] button in the 'Maintenance' window.



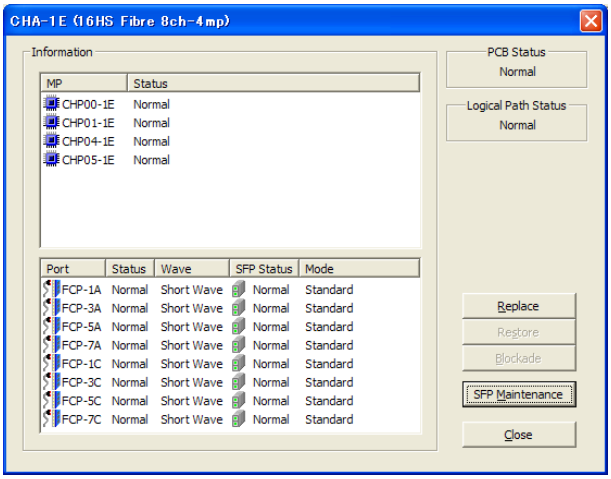
3. <DKC window>
Select (CL) the [Logic CLx] button in the 'DKC' window.



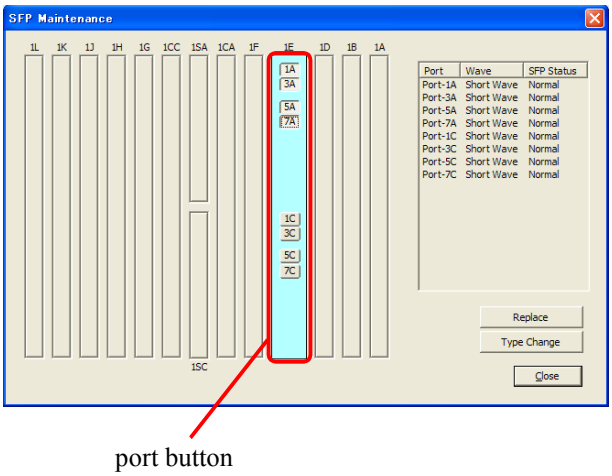
4. <Selecting CHA>
Select (CL) the CHA for which the type change is to be made.



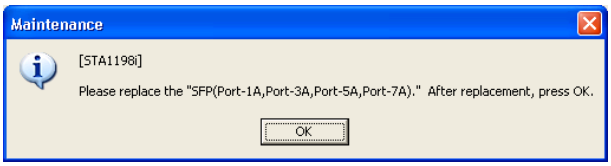
5. <CHA window>
Select (CL) the [SFP Maintenance] button in the 'CHA' window.



6. <SFP replace instruction>
Select the button of the port for which the type is to be replaced and select (CL) the [Replace] button.
(The plural can be selected.)



7. <Replacing the SFP>
   A message, “Please replace the “SFP(Port-nn, ...).” After replacement, press OK.” is displayed.



   (Select (CL) [OK] after replacing the SFP.)
   Refer to the hardware part replacement procedure T21 (on page REP03-1290).

[PRE-PROCEDURE V]

— OUTLINE —

① Select P-DEV (status check)
② Specify Replacement
③ Place HDD into unpluggable state

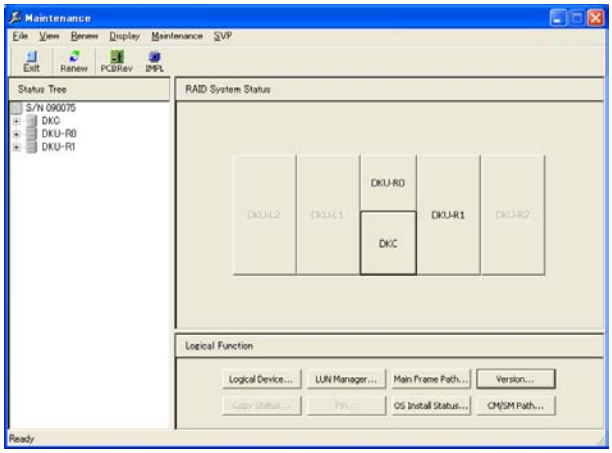
⚠ CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

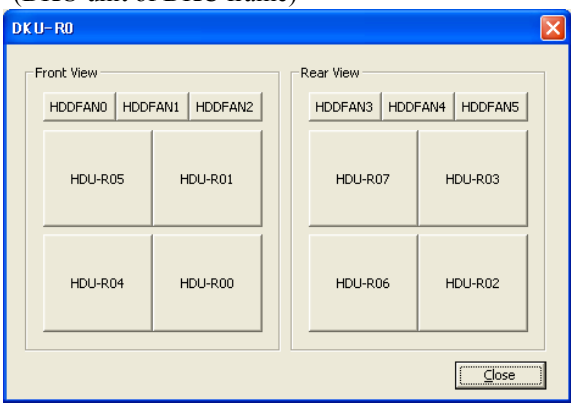
1. <Maintenance window>
   In the 'Maintenance' window, check and select (CL) [DKU-Rn] or [DKU-Ln] to be replaced.



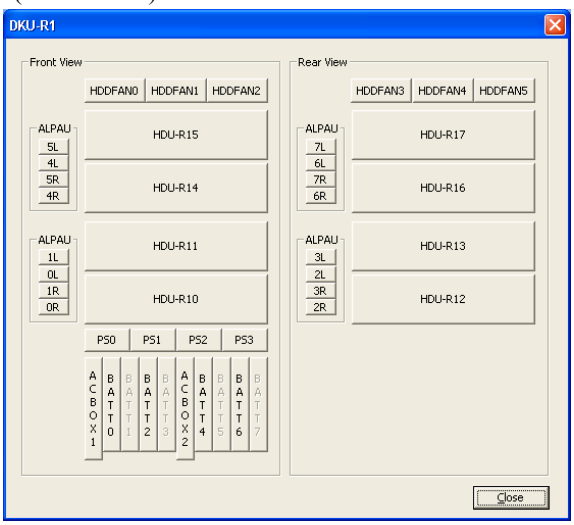
2. <Select HDU-BOX>
   Check and select (CL) [HDU-Rnn] or [HDU-Lnn] to be replaced.

   Selecting (CL) [Close] returns you to step 1.

(DKU unit of DKC frame)



(DKU frame)

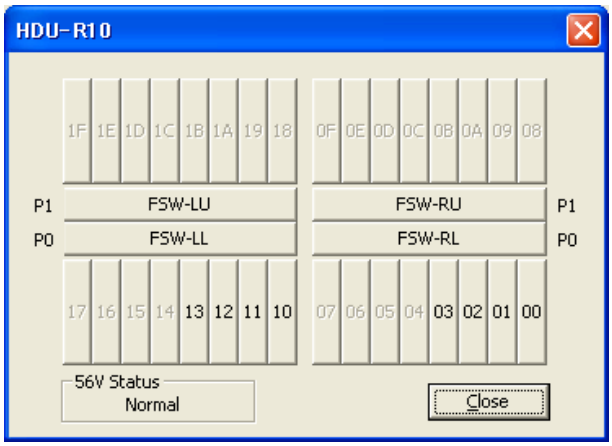


CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

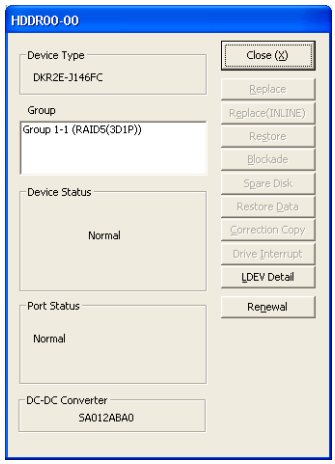
3. <Select HDD>
   Check and select (CL) [nn] to be replaced.

   Selecting (CL) [Close] returns you to step 2.



4. <Specify replacement on HDD>
   Make sure that the status is [FAILED] or [WARNING].

   Select (CL) [Replace (INLINE)].



CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

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

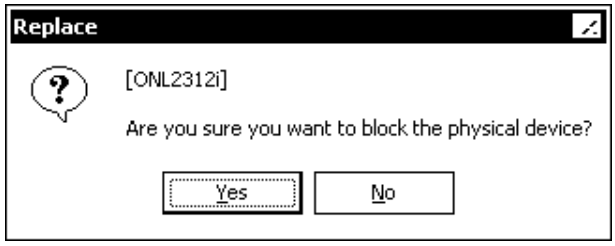
CAUTION

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.

6. <P-DEV blocking>
Select (CL) [Yes] in response to "Are you sure you want to block the physical device?".

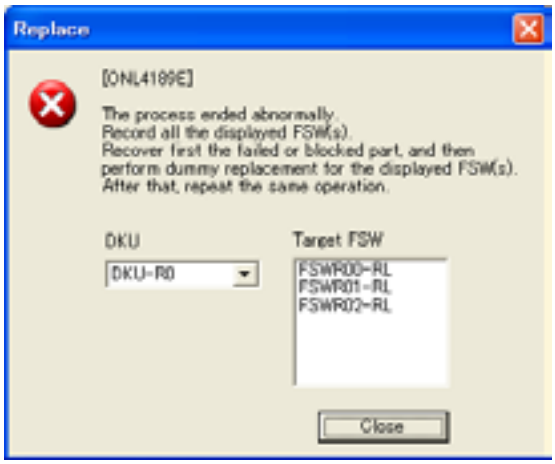


7. <Blocking the Physical device>
"Blocking..." is displayed.

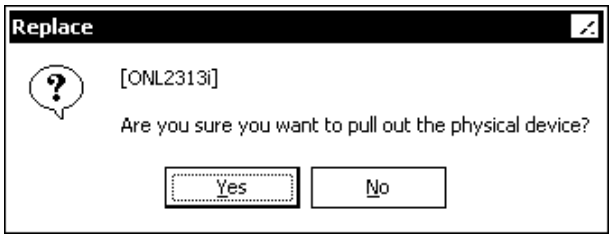
8. <Spin down the Physical device>
"Spinning down..." is displayed

Perform the dummy replacement of the displayed FSW(s) when the window is displayed. Select the DKU list and record the target FSW(s) because two or more DKU might be listed.
Select (CL) [Close] button and perform the dummy replacement of the target FSW(s).

Retry the replacement after completing the dummy replacement of FSW.



9. <P-DEV pull out>
Select (CL) [Yes] in response to "Are you sure you want to pull out the physical device?".



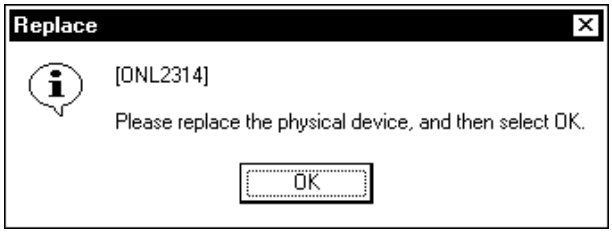
CAUTION
This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

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.

11. <Confirmation of replace>
Select (CL) [OK] in response to "Please replace the physical device, and then select OK." after the unit is replaced (Step 12).



12. <Replace HDD>
Replace HDD.
See HARDWARE A (REP03-10).

[PRE-PROCEDURE Z]

— OUTLINE —

① Dump
② Recovering the USB memory

A USB memory is being provided with each replacement FSW,CACHE,SM-PK,CSW, DKA and CHAs assembly to collect more detailed information about transient failures. The following procedure for collecting failure information and storing it in the USB memory before replacing the failed PCB is to be used for all replacements of above PCBs.
Return the USB memory that contains the failure information together with the failed PCB after the failed PCB replacement.

1. <Dump>
   Collect the failure information to the USB memory by using the Dump/AutoDump function. For the detailed procedure, refer to step 2 "Dump/AutoDump."

   Note: The USB memory to be used is connected to the USB port of the maintenance processor (SVP).
   (It is not required to obtain DUMP, since the USB memory is not attached to the Memory Module.)

   (i) In the normal case (Time required: 15 to 60 minutes)
   Store the "hdcp.tgz" file in the USB memory by executing the AutoDump (Dump type: Normal; Medium: Removable Disk) through SVP operation.

   (ii) In the case where you have no time enough (Time required: About five minutes)
   Store the "hdcp.tgz" file in the USB memory by executing the AutoDump (Dump type: Rapid; Medium: Removable Disk).
   Because contents of the "hdcp.tgz" file created through the AutoDump in the Rapid mode is limited to that for the initial analysis, it is necessary to copy other dump information to the USB memory individually. In this case, execute Step 3, "Individual copying to the USB memory" before removing the USB memory after the dump is completed.

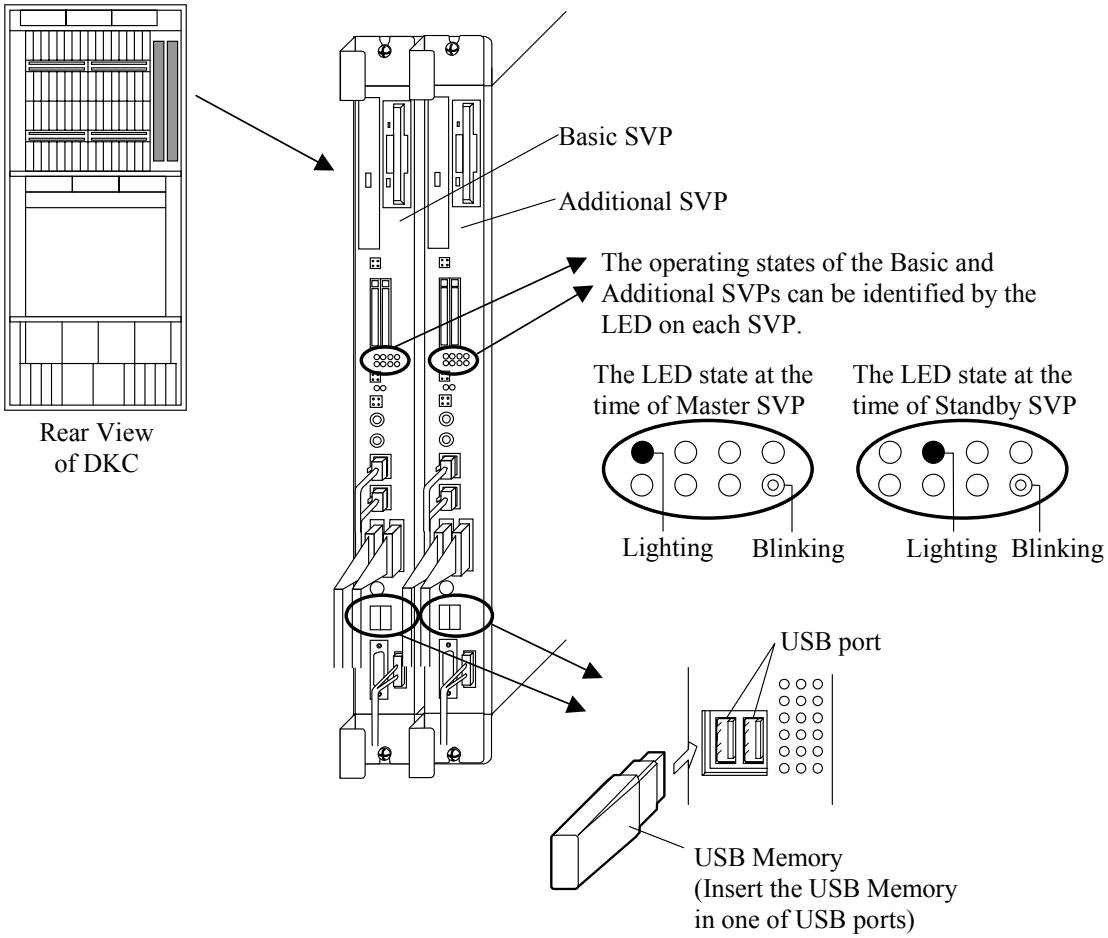
2. Dump/AutoDump

Use the Auto Dump feature to collect the dump and store it in the 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.



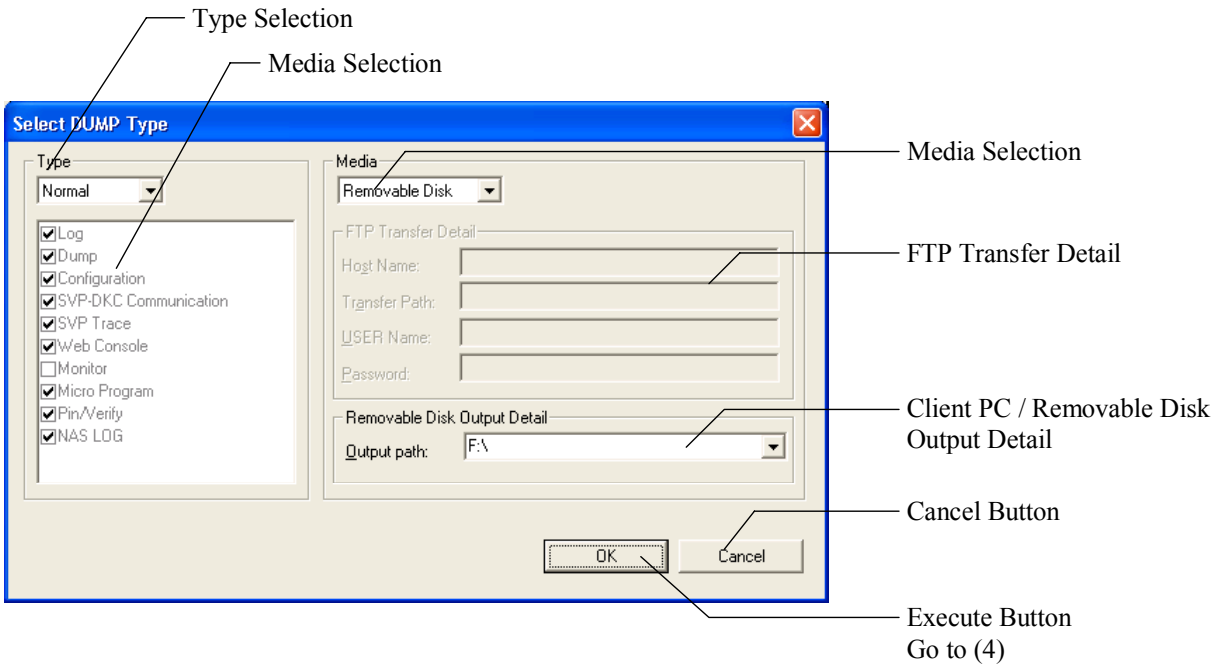
(2)

Select (CL) [AutoDump] button on the SVP screen.

---

(3)

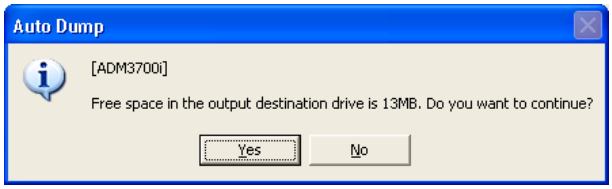
Select Normal as the dump type and Removable Disk as the Media option for output, select the USB memory in the Output path field and then select (CL) the [OK] button.



Note: Please check that automatic connection of a local disk drive is set up in the case of connection to SVP. (At the time of SVP Connect Utility use, it is set up automatically.)

(3-1)

If the 'Free space in the output destination drive is xxxMB. Do you want to continue?' is displayed, select (CL) the [Yes] button.



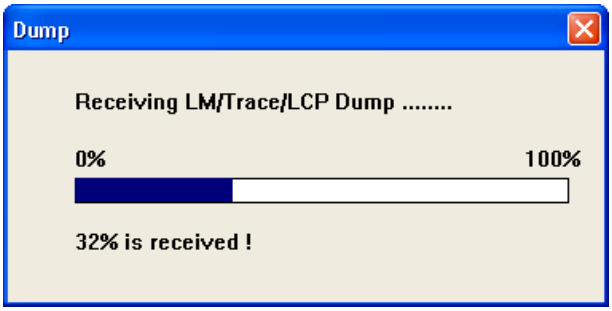
(4)

The dump window is displayed.
Select (CL) the [Dump] button.

Go to Step (4-1-1).

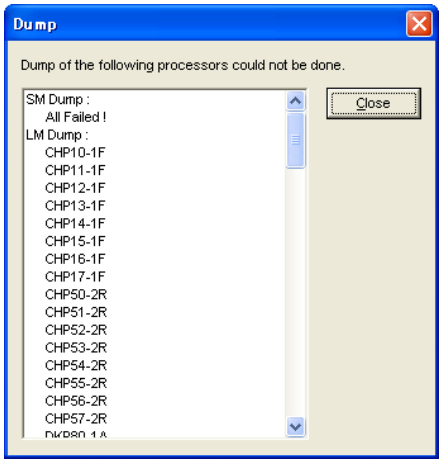
(4-1-1)

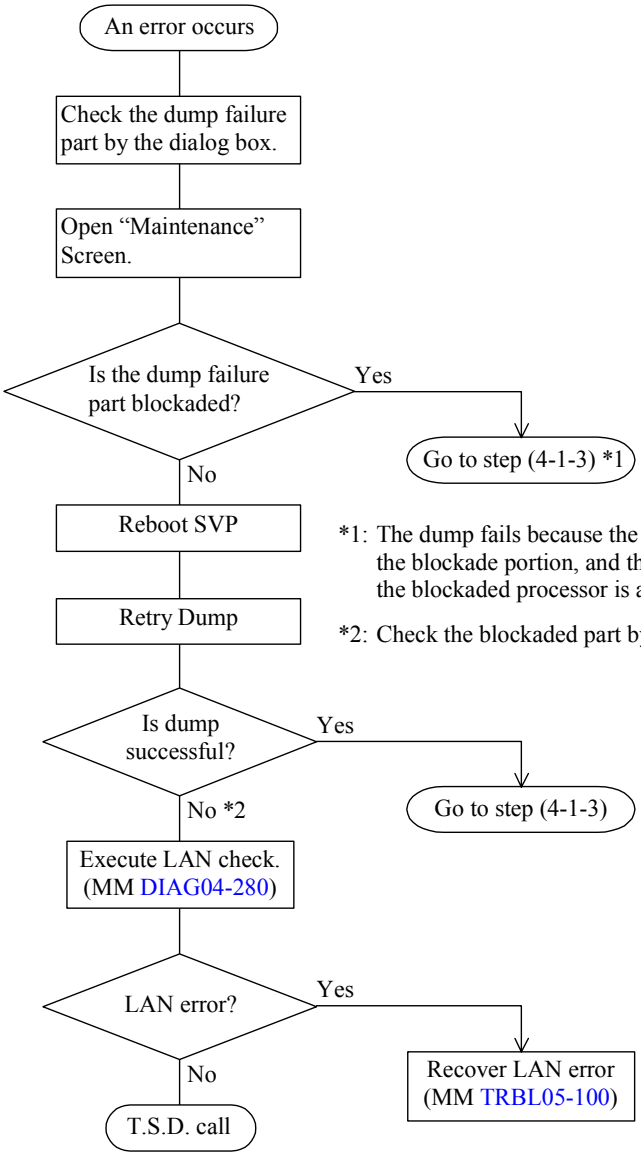
A box indicating progress of the dump is displayed.
When the dump terminates normally, go to step (4-1-3).



(4-1-2)

When an error occurs, the following dialog box is displayed.
Perform the following procedure and retry the dump.





*1: The dump fails because the dumping is impossible for the blockade portion, and the LCP/FCP dump linked to the blockaded processor is also impossible.

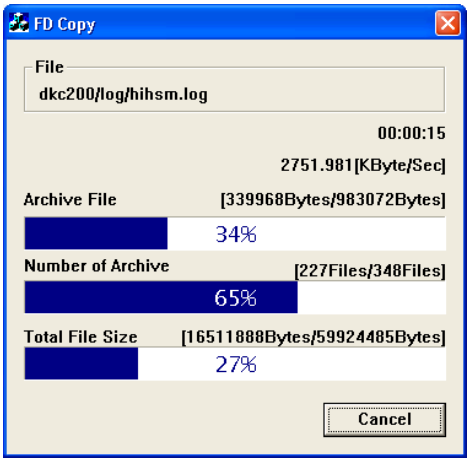
*2: Check the blockaded part by the Maintenance.

(4-1-3)

A data compression is done.
Go to Step (4-2).

(4-2) Data compression

The 'FD Copy' window is displayed and a data compression is done.

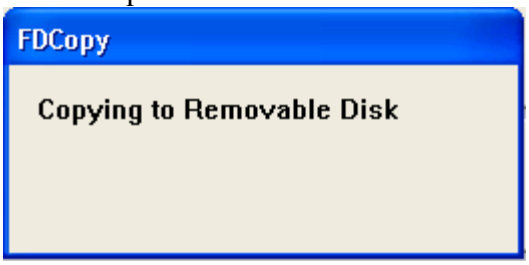


(5) Output to a selected medium.

An output is done to a Removable disk.

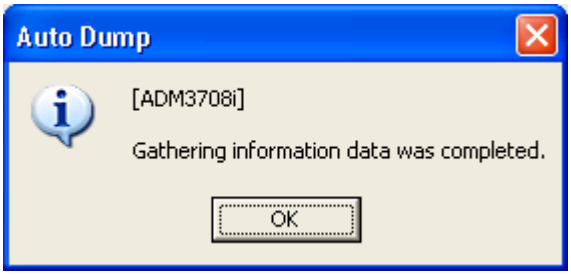
(5-1) When the Removable Disk is selected as an medium for the output

"Copying to Removable Disk" is displayed and a copying to the Removable Disk is done.



(5-2)

A message, "Gathering information data was completed." is displayed. Select (CL) the [OK] button. If the Rapid Dump Type was selected instead of normal, go to step 3 "Individual copying to the USB memory." Otherwise, go to step 4 "Remove the USB memory".



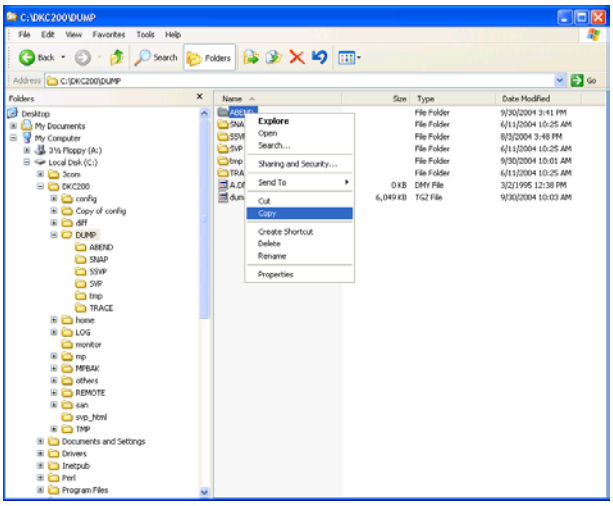
3. Individual copying to the USB memory

When the dump was done in the Rapid mode, copy the failure information by executing the following procedure.

When the dump was done in a mode other than Rapid, go to Step 4, “Remove the USB memory.” (REP02-1080)

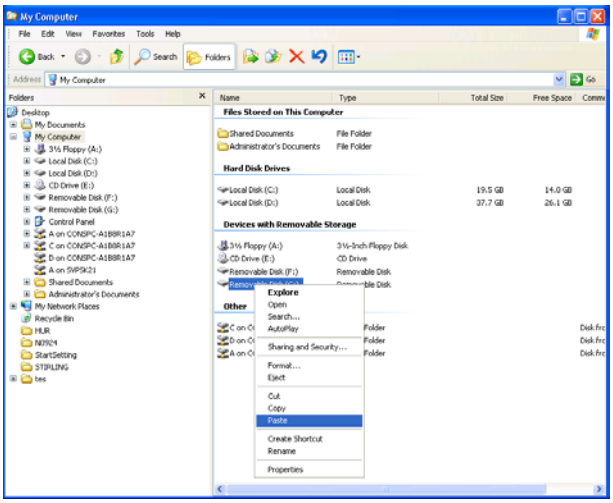
(1)

Select (CL) “C:\DKC200\DUMP\ABEND\” using Windows Explorer and select (CL) “Copy” with the right mouse button.



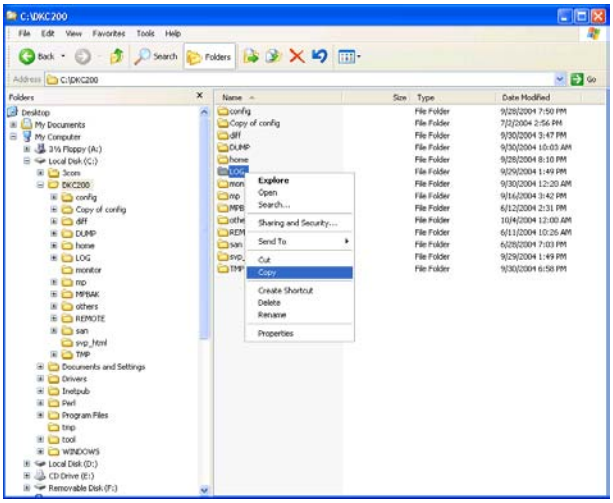
(2)

Select (CL) the drive of the USB memory installed in the SVP using Windows Explorer and select (CL) “Paste” with the right mouse button.



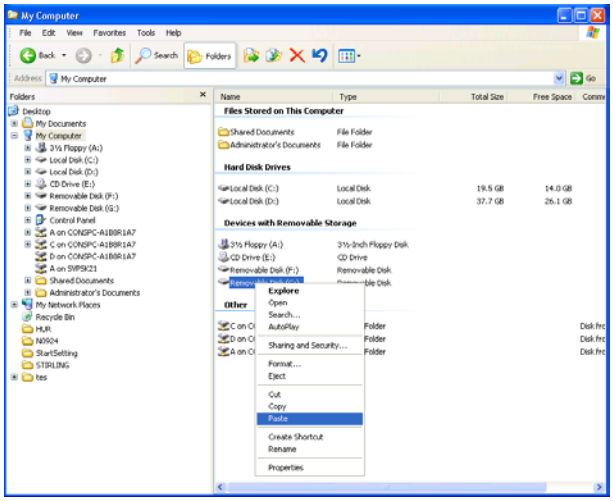
(3)

Select (CL) “C:\DKC200\LOG\” using Windows Explorer and select (CL) “Copy” with the right mouse button.



(4)

Select (CL) the drive of the USB memory installed in the SVP using Windows Explorer and select (CL) “Paste” with the right mouse button.

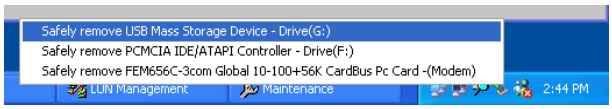


4. Remove the USB memory.

(1) Remove the USB memory from SVP PC

Select (CL) the "Safely Remove Hardware" icon in the task tray.

Since the menu bar is displayed, select (CL) "Safely remove USB Mass Storage Device - Drive (G:)."



*1: "G:" is a drive letter of the USB memory.

*2: When a device other than the USB memory is selected, the other devices will stop. If a wrong selection is made, insert the device that has been selected by mistake again.

Remove the USB memory from the USB port of the SVP when the SVP has displayed a message that it is safe to remove the USB memory.

---

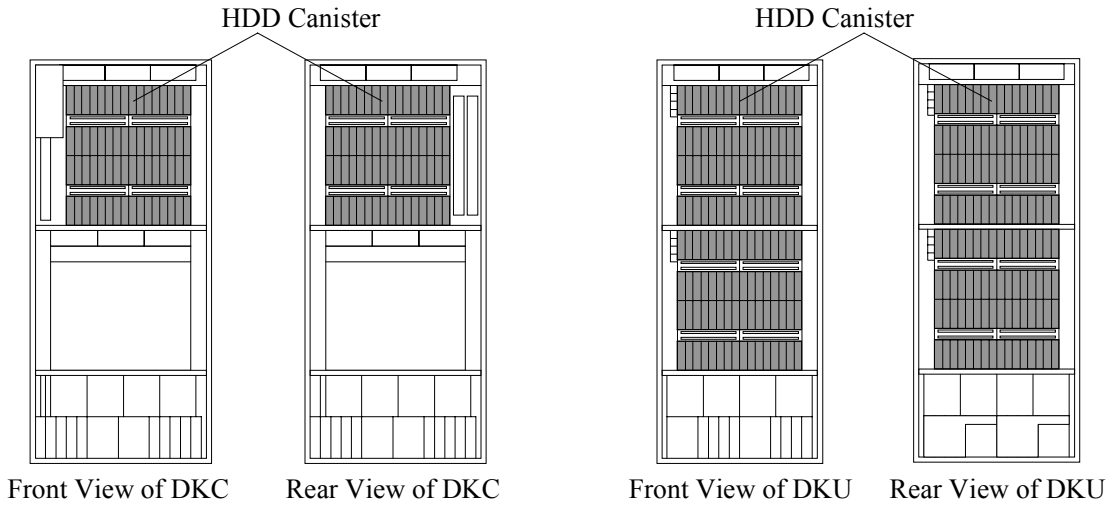
5. Returning the USB memory

Return the USB memory that stores with the failed PCB.
Stick the USB Memory on the Static Shielding(ESD) Bag of failed PCB.
Return the USB Memory with failed PCB to parts distribution center.

[HARDWARE A]

Location	Function Name of Component		Part Name	HDA Label
HDU Box	1	HDD Canister (RoHS not applied)	HDU500-72KSFC	DKS2C-K72FC
			HDU500-146JSFC	DKR2E/R2F-J146FC
	2	HDD Canister (RoHS applied)	HDU500-72JSFC	DKR2F-J72FC
				DKR2G/R2J-J72FD
				DKR2x-J72Fx (*1)
			HDU500-72KSFC	DKS2D/S2E-K72FC
				DKS2F/S2G-K72FD
				DKS2x-K72Fx (*1)
			HDU500-72K1FC	DKS2D/S2E-K72FC
				DKS2F/S2G-K72FD
				DKS2x-K72Fx (*1)
			HDU500-72K2FC	DKR2F/R2G-K72FC
				DKR2J-K72FD
				DKR2x-K72Fx (*1)
			HDU500-146JSFC	DKR2F/R2G-J146FC
				DKR2J-J146FD
				DKR2x-J146Fx (*1)
			HDU500-146J1FC	DKR2F/R2G-J146FC
				DKR2J-J146FD
				DKR2x-J146Fx (*1)
			HDU500-146J2FC	DKS2D-J146FC
				DKS2E/S2G-J146FD
				DKS2x-J146Fx (*1)
			HDU500-146KSFC	DKS2D/S2E/S2F-K146FC
				DKS2G-K146FD
				DKS2x-K146Fx (*1)
			HDU500-146K1FC	DKS2D/S2E/S2F-K146FC
				DKS2G-K146FD
				DKS2x-K146Fx (*1)
			HDU500-146K2FC	DKR2F/R2G-K146FC
				DKR2J-K146FD
				DKR2x-K146Fx (*1)
			HDU500-300JSFC	DKR2F/R2G/R2J-J300FC
				DKR2x-J300Fx (*1)
			HDU500-300J1FC	DKR2F/R2G/R2J-J300FC
				DKR2x-J300Fx (*1)
			HDU500-300J2FC	DKS2D/S2E/S2G-J300FC
				DKS2x-J300Fx (*1)
			HDU500-300KSFC	DKS2E/S2F/S2G-K300FC
				DKS2x-K300Fx (*1)
			HDU500-300K1FC	DKS2E/S2F/S2G-K300FC
				DKS2x-K300Fx (*1)
			HDU500-300K2FC	DKR2G/R2H/R2J-K300FC
				DKR2x-K300Fx (*1)
			HDU500-400J1FC	DKS2E-J400FC
				DKS2G-J400FD
				DKS2x-J400Fx (*1)

*1: This drive model name shows the compatible drive.



NOTICE:
- Replace the HDD canister in the subsystem power on status only.
  Do not replace with the subsystem 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.

See "3.1.4 Working Procedure for Upgrade or Replacement of HDD Canister (INST03-01-110)" before starting the work.

1. Remove the HDD canister.
   a. Check Shut Down LED on the HDD canister.

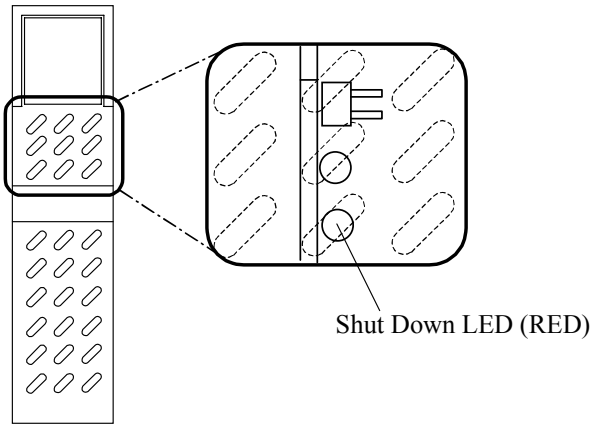


Fig. A-1 Checking of Shut Down LED

b. After pushing up the stopper on the front side of the HDD canister, pull the handle toward you to remove the HDD canister.

Note: If HDD canister can't be removed due to hitting cable cover, move cable cover to upper side or remove cable cover and remove HDD canister.

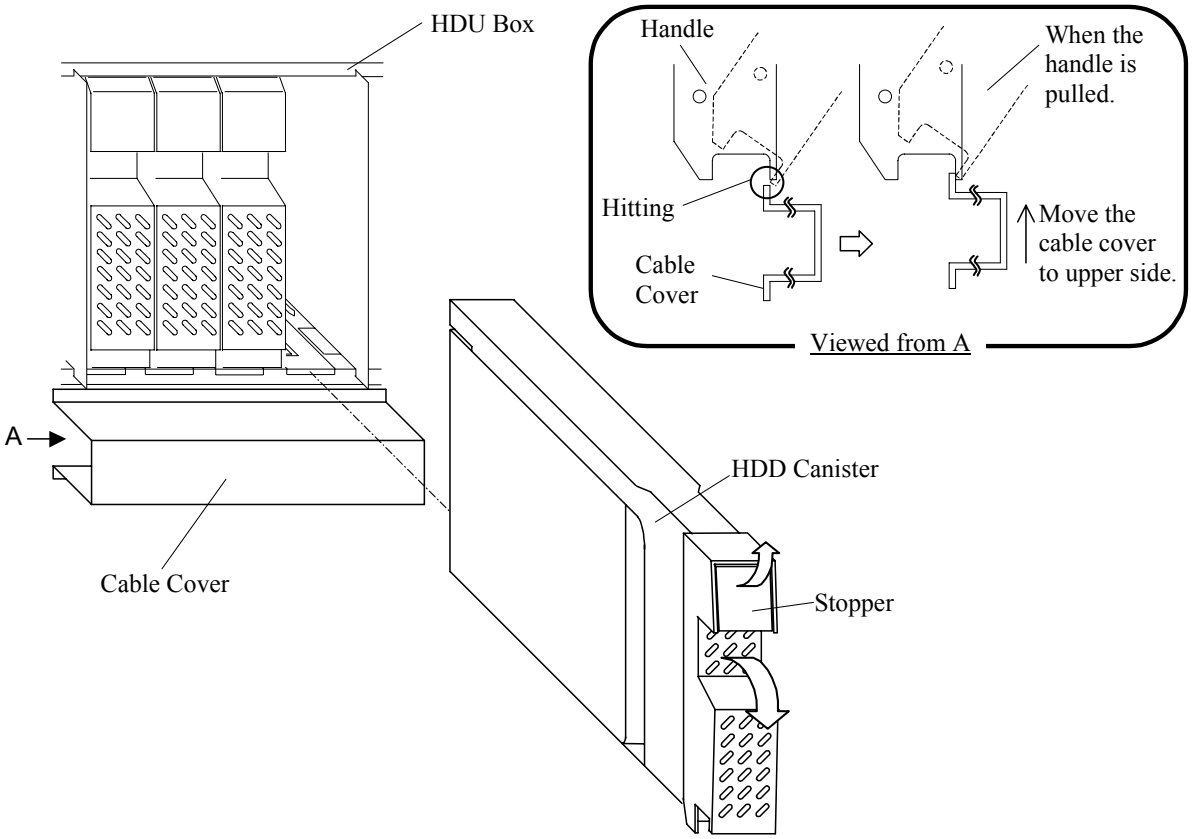
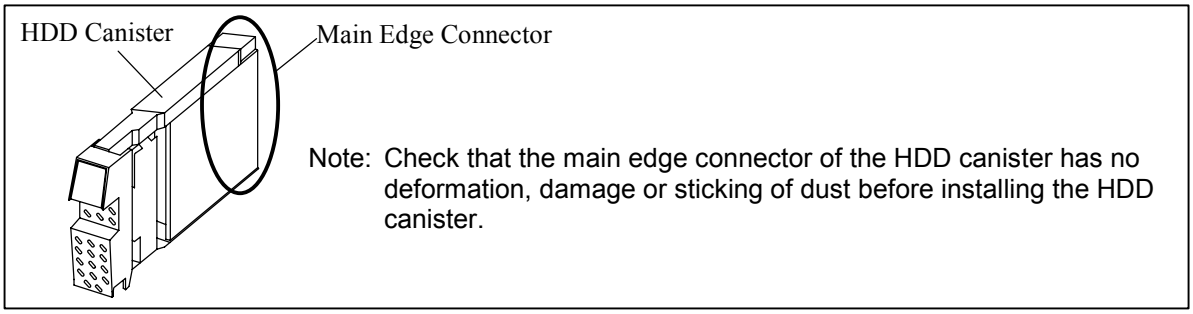


Fig. A-2 Removal of HDD Canister

2. Check the condition of the HDD canister before installing it.



a. Check that the DC/DC connector is movable up and down, and a gap exists under the DC/DC connector.

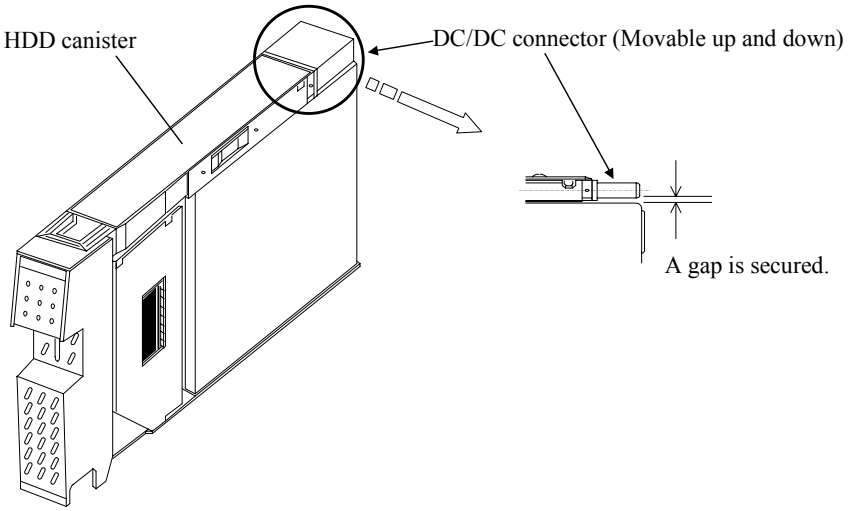


Fig. A-2A Adjustment of DC/DC Connector Condition

b. Make sure that no cable is protruding from the rectangular opening on the side of the HDD canister. If it is protruding, put it back inside the opening.

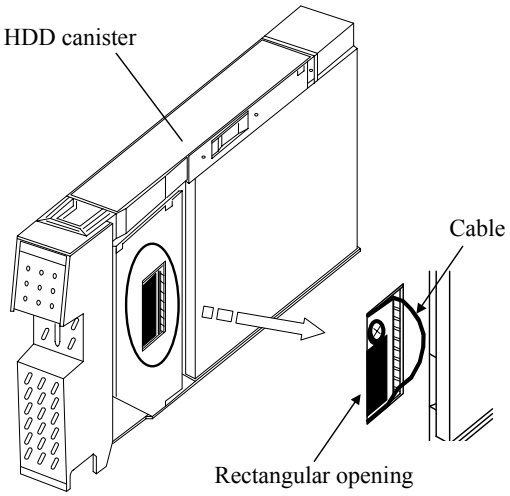


Fig. A-2B Checking Protrusion of Cable

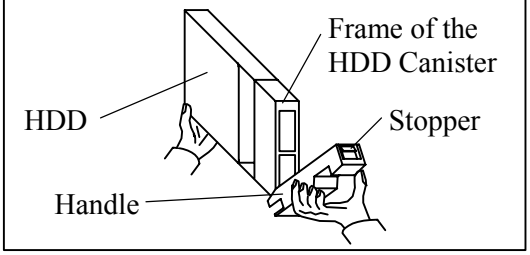
3. HDD canister install procedure (See Fig. A-3)

Note on the installation: Do not insert the HDD canister by pushing its frame.

(1) Insert the HDD canister into the HDU Box holding its handle.
(Insert the canister until the claws that are located at the bottom of the handle come in contact with the front side of the HDU Box.)

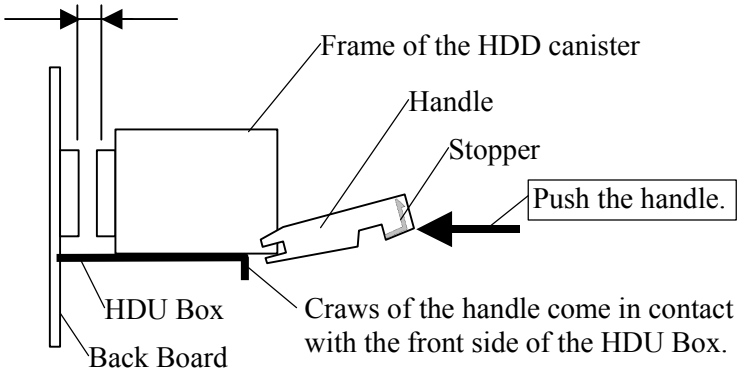
(2) Turn the handle at a stroke by pushing its top with your thumb.
(Turn the handle until it latches with the stopper. Do not stop the handle on its way of turning.)

Handling of the canister



(1) Insert the HDD canister into the HDU Box holding its handle.

A gap exists between the connectors.



(2) Turn the handle at a stroke by pushing its top with your thumb.
(Do not stop the handle on its way of turning.)

The connectors have been coupled.

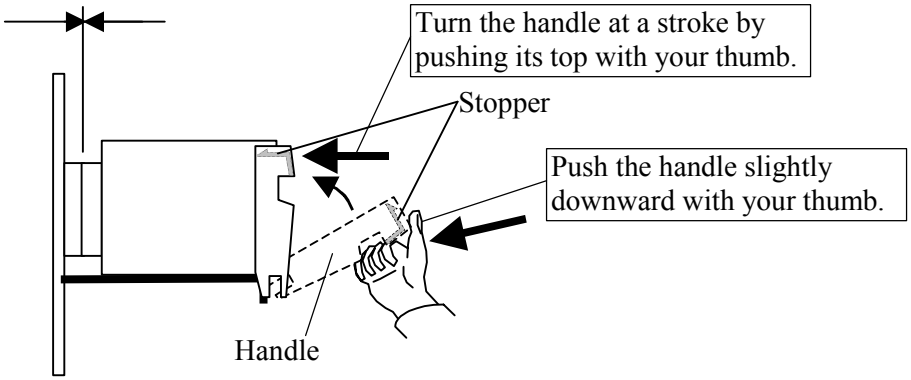


Fig. A-3 Method of Installing HDD Canister

4. See SVP post-procedure as follows.

Note: Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a floppy disk for dump, collect failure information, and return the floppy disk with the failed HDD.
A dump floppy disk is attached with a Spare HDD.

<Data drive, spare drive>

Work ID	Parts Name	Condition Item				Procedure
		Condition			Configuration	SVP post-procedure
		Failure		Preventive	Unused Spare drive	
		Warning SIM	Block SIM			
RDK1	Data Drive *1	×	—	—	Yes	Post a (REP04-10), Post z (REP04-1020)
RDK2	Data Drive *1	—	×	—	Yes	Post a (REP04-10), Post z (REP04-1020)
RDK3	Data Drive *1	—	—	×	Yes	Post a (REP04-10), Post z (REP04-1020)
RDK4	Data Drive *1, *4	×	—	—	No	Post b (REP04-50), Post z (REP04-1020)
RDK5	Data Drive *1, *4	—	×	—	No	Post b (REP04-50), Post z (REP04-1020)
RDK6	Data Drive *1, *4	—	—	×	No	Post b (REP04-50), Post z (REP04-1020)
RDK7 *2, *3	Data Drive *1	*2				Post c (REP04-90), Post z (REP04-1020)
RDK8	Spare Drive *1	—				Post d (REP04-150), Post z (REP04-1020)

*1: Parts Name is 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.

*2: RDK7 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. 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 TRBL05-420.

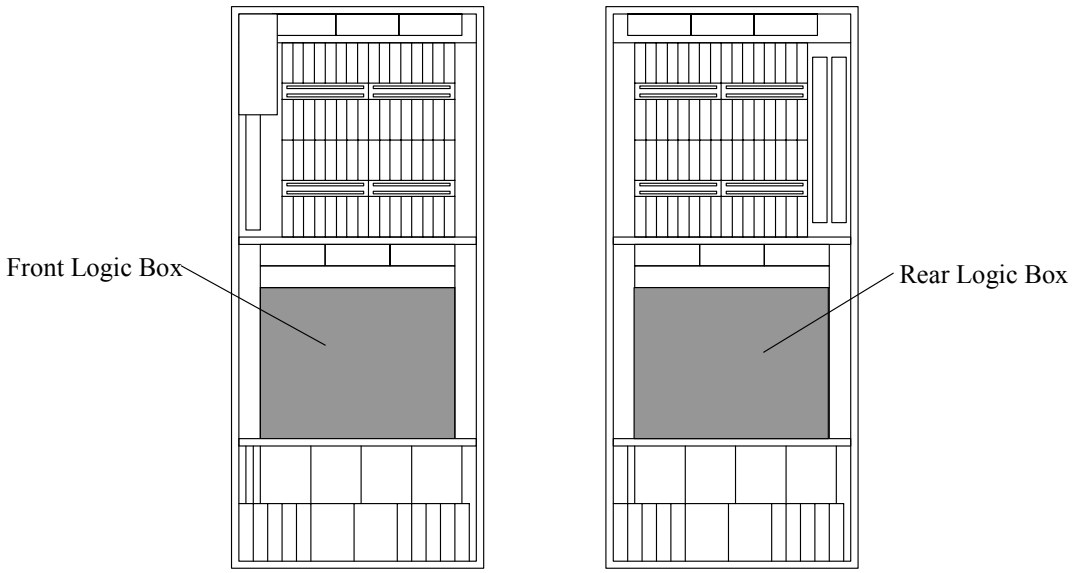
*3: Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See page SVP03-130 for the procedure for referring to SVP STATUS

*4: See “PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY” (REP01-120).

Note: If a Work ID cannot be found or if multiple drive error is occurring, see page TRBL05-220 on TROUBLE SHOOTING section.

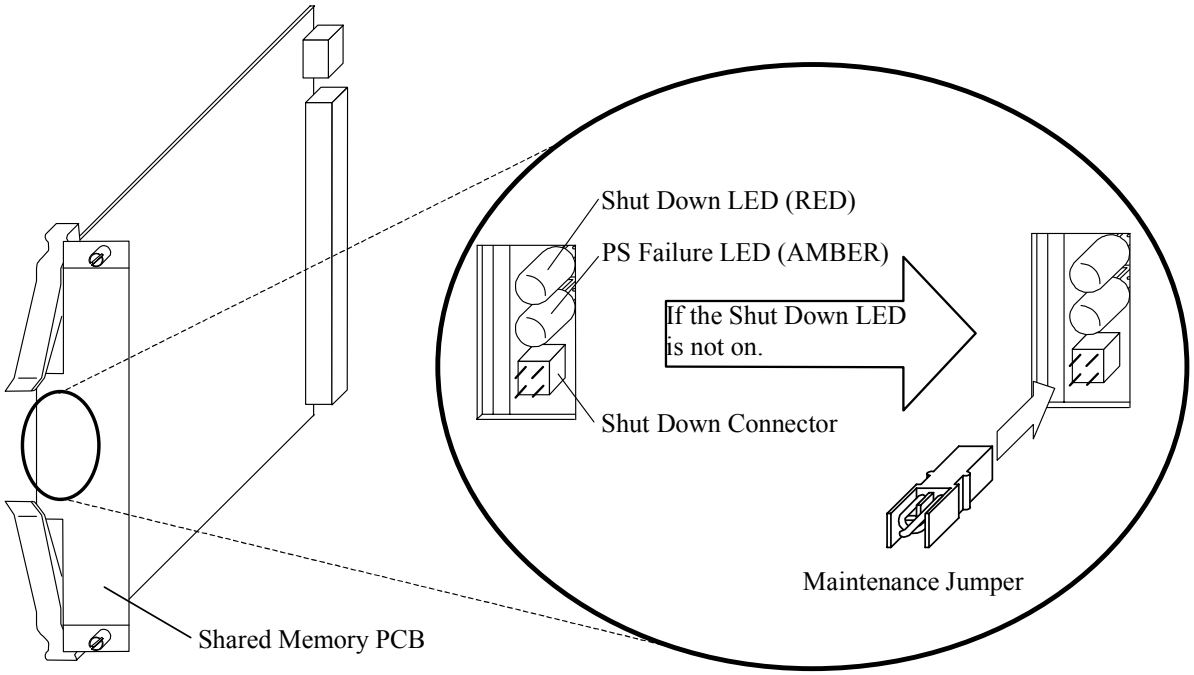
[HARDWARE B]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	Shared Memory PCB (RoHS not applied)	• WP551-A • WP552-A
	2	Shared Memory Module (RoHS not applied)	• SH341-A
	3	Shared Memory PCB (RoHS applied)	• WP551-B • WP552-B
	4	Shared Memory Module (RoHS applied)	• SH341-C • SH341-D



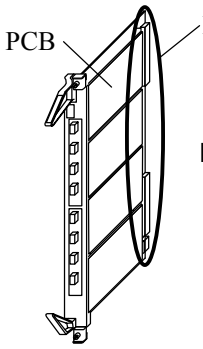
NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the Shared Memory PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

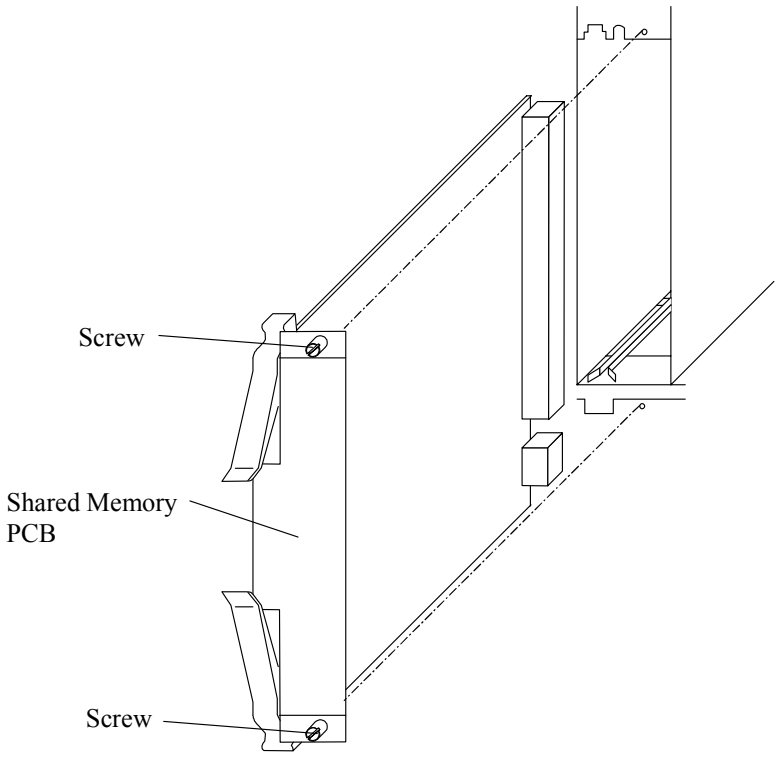


Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b. Remove the two screws and remove the Shared Memory PCB.

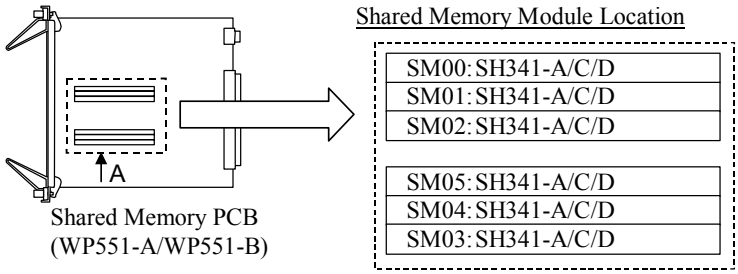


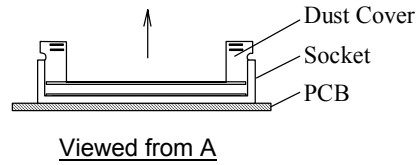
Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

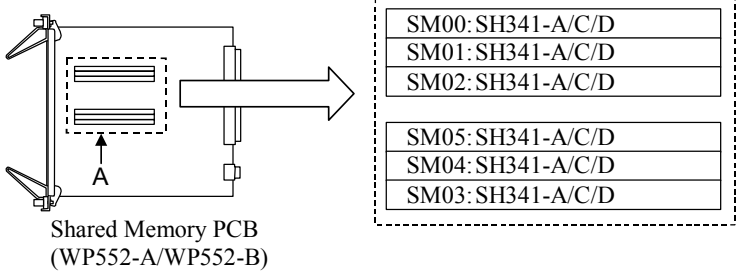


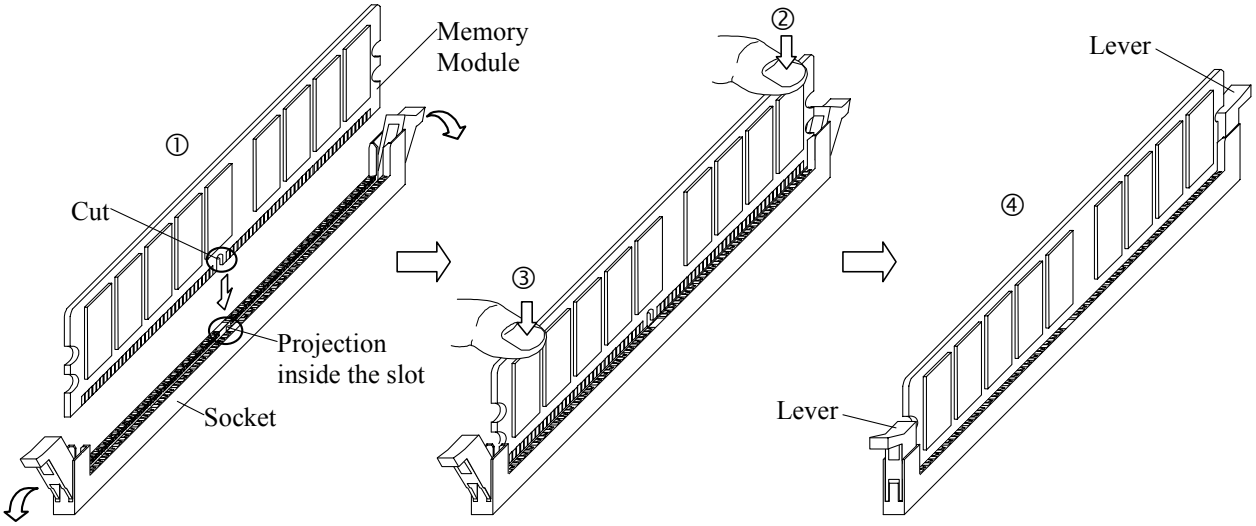
c. Remove the Maintenance Jumper if it is mounted.

2. Replace the failed part to spare part.
   a. When replacing the SM PCB, move all the shared memory modules (including dust covers if any) mounted on an extracted PCB to the same mounting positions on the spare PCB.
   b. When the failed part is Shared Memory Module, replace the Shared Memory Module.

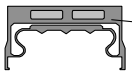








Prohibition of Use:



Do not use the DIMM Puller (Figure: 5480389-A) to install or remove the Shared Memory Module.
If the DIMM Puller is used, the Shared Memory Module may be damaged.

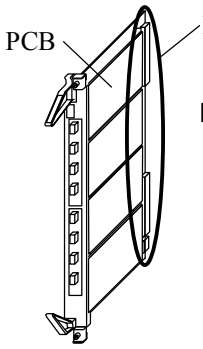
Installation

① Fit the cut of the Shared Memory Module and the projection inside the slot, and put the Shared Memory Module on the socket. (Do not insert it yet.)
② Insert one side of the Shared Memory Module into the socket by holding the both sides with your fingers.
③ Inset the other side of the Shared Memory Module into the socket by holding the both sides with your fingers.
④ Check that the slot lever fits in the Shared Memory Module.

Removal

① Press the slot lever to outside, and pull out the Shared Memory Module in the reverse order of installation step.

3. Insert the Shared Memory PCB.
   a. Insert the Shared Memory PCB and fasten the two screws.

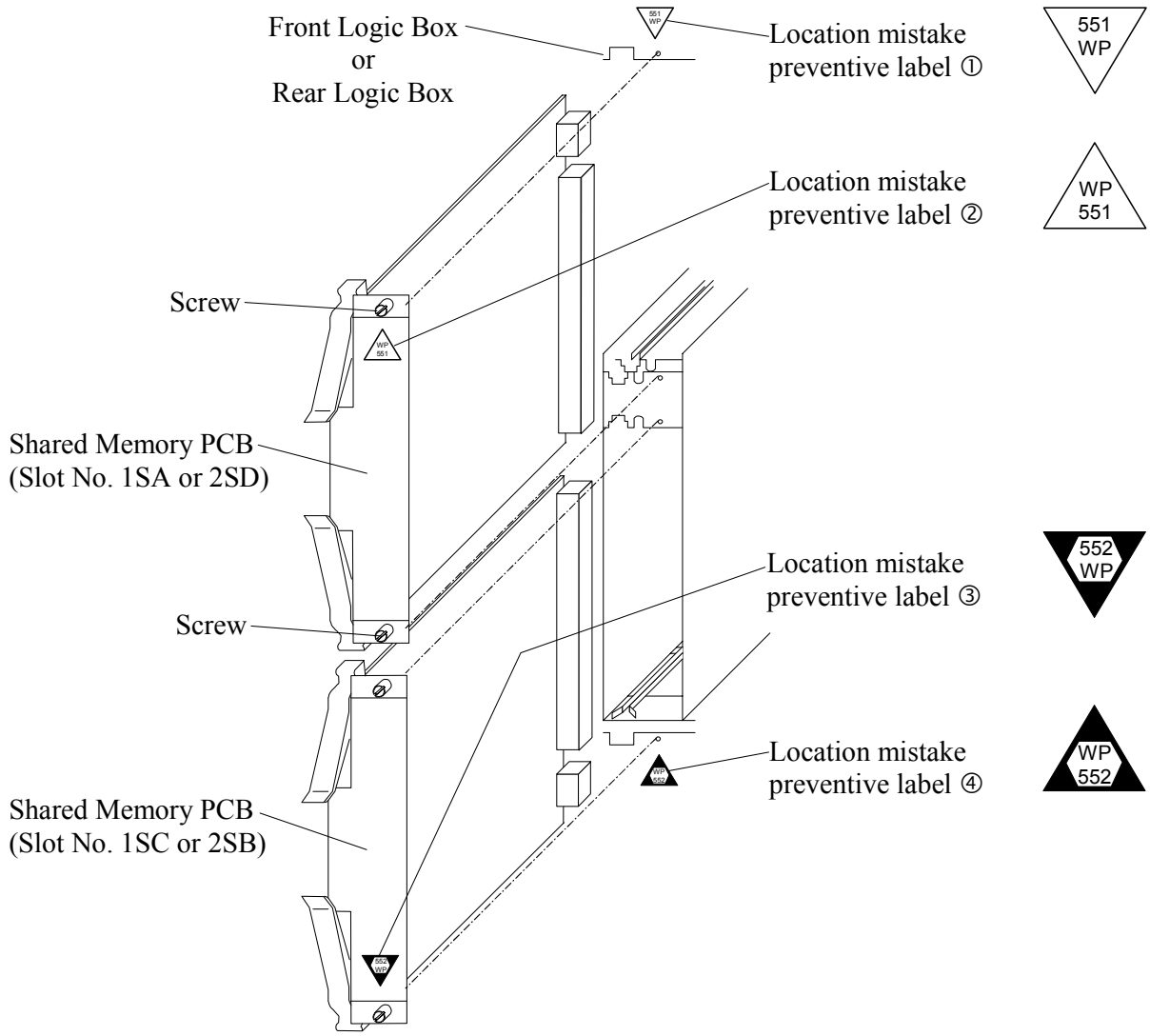


Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

CAUTION

When installing the Shared Memory PCB, do it after making sure of the PCB name indicated on the location mistake preventive label. If the PCB is installed in a wrong location, a connector of it will be damaged.

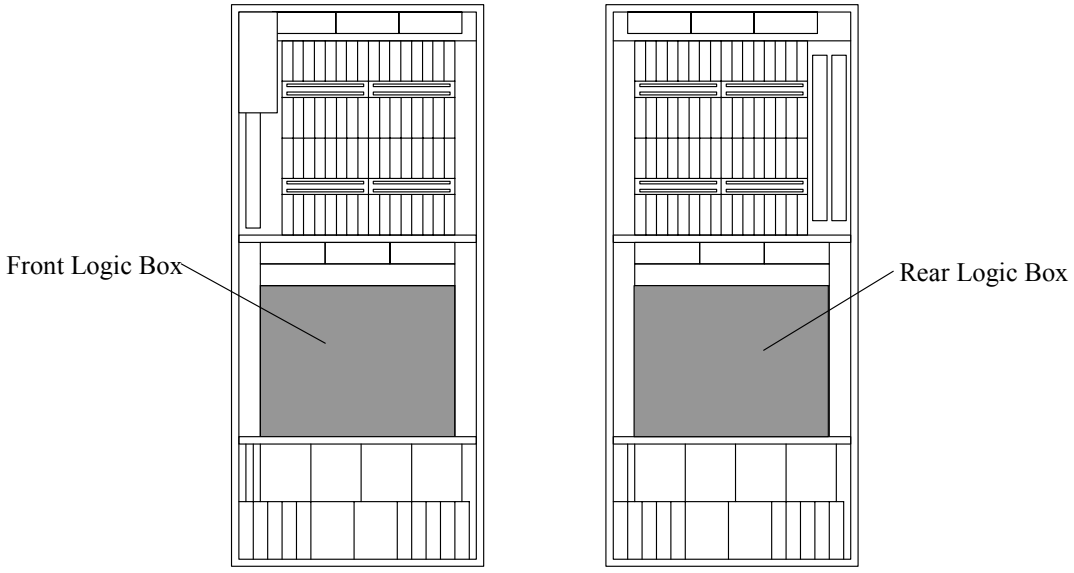


4. Go to SVP post-procedure g [REP04-200].

[HARDWARE C]

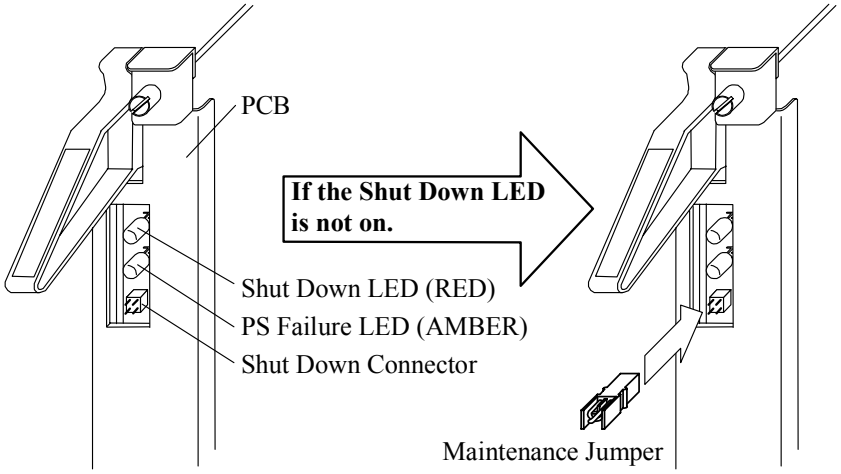
Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	Cache Memory PCB (RoHS not applied)	• WP541-A
	2	Cache Memory Module (RoHS not applied)	• SH342-A
	3	Cache Memory PCB (RoHS applied)	• WP541-B① (Port No.5524251-C) *1 • WP541-B② (Port No.5524246-C) *1
	4	Cache Memory Module (RoHS applied)	• SH342-C • SH342-D

*1: If WP541-B② (Part No. 5524246-C) is used for the PCB for the maintenance replacement of WP541-B① (Part No. 5524251-C), there is no problem because they are compatible. However, WP541-B① cannot be used for the PCB for the maintenance replacement of WP541-B②.



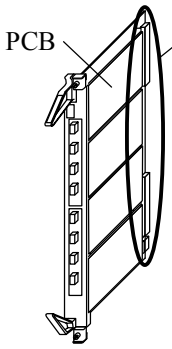
NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the Cache Memory PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

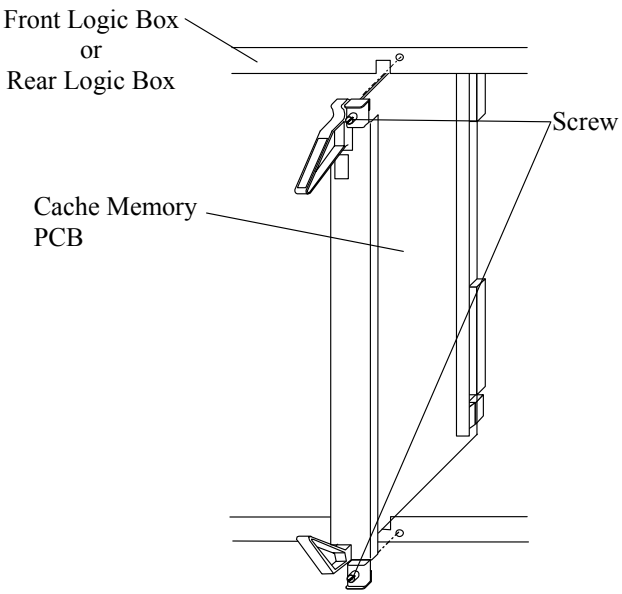


Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b. Remove the two screws and remove the Cache Memory PCB.

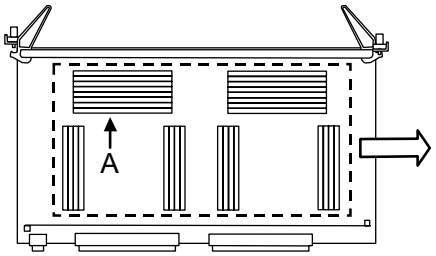


Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.



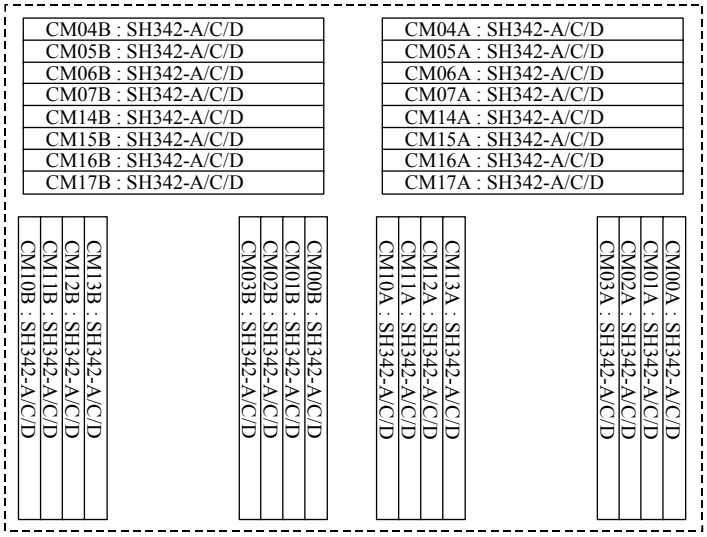
c. Remove the Maintenance Jumper if it is mounted.

2. Replace the failed part to spare part.
   a. When replacing the CM PCB, 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.
   b. When the failed part is Cache Memory Module, replace the Cache Memory Module.

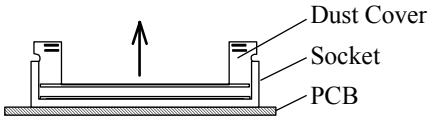


Cache Memory PCB
(WP541-A/WP541-B)

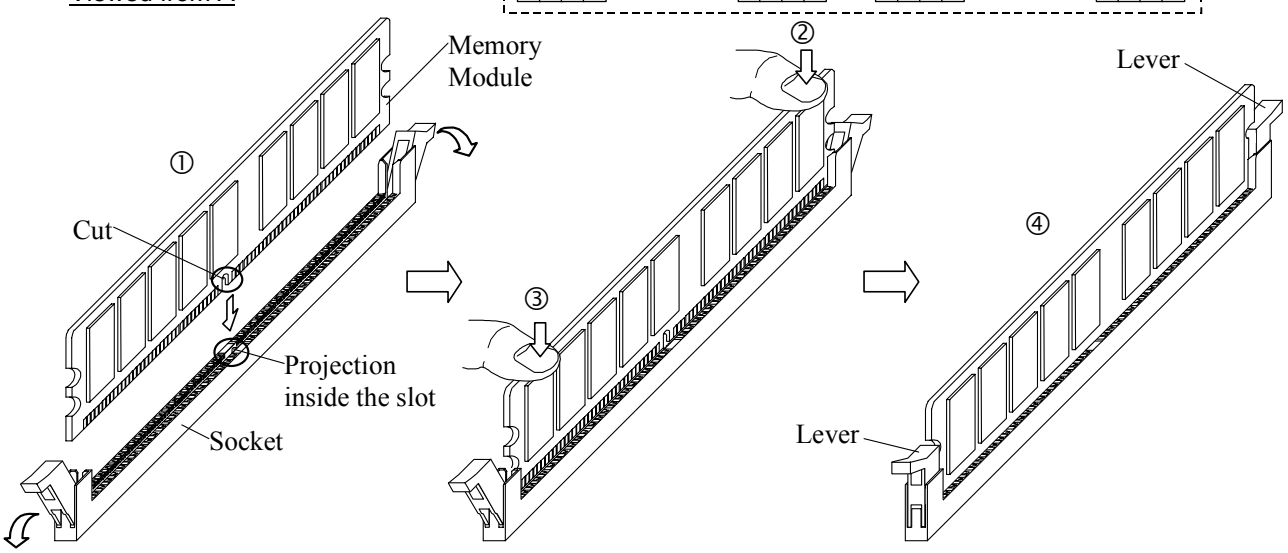
Cache Memory Module Location



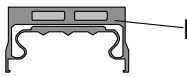
Removal of Dust Cover



Viewed from A



Prohibition of Use:



Do not use the DIMM Puller (Figure: 5480389-A) to install or remove the Cache Memory Module.
If the DIMM Puller is used, the Cache Memory Module may be damaged.

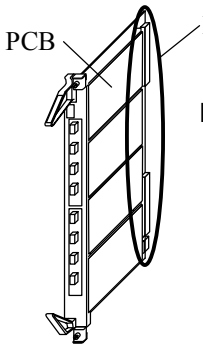
Installation

① Fit the cut of the Cache Memory Module and the projection inside the slot, and put the Cache Memory Module on the socket. (Do not insert it yet.)
② Insert one side of the Cache Memory Module into the socket by holding the both sides with your fingers.
③ Inset the other side of the Cache Memory Module into the socket by holding the both sides with your fingers.
④ Check that the slot lever fits in the Cache Memory Module.

Removal

① Press the slot lever to outside, and pull out the Cache Memory Module in the reverse order of installation step.

3. Insert the Cache Memory PCB.
   a. Insert the Cache Memory PCB and fasten the two screws.



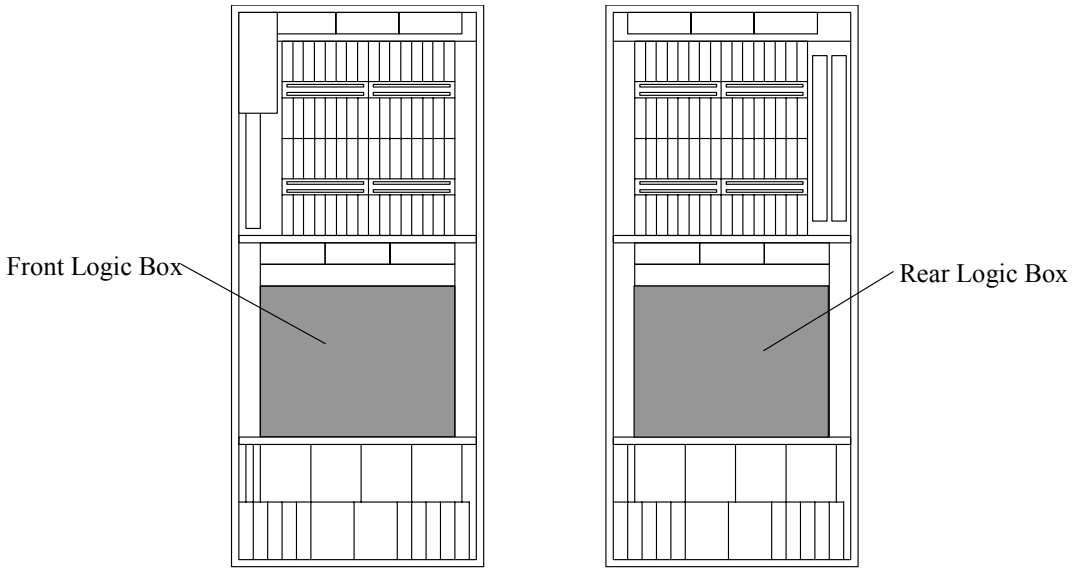
Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

4. Go to SVP post-procedure f [REP04-180].

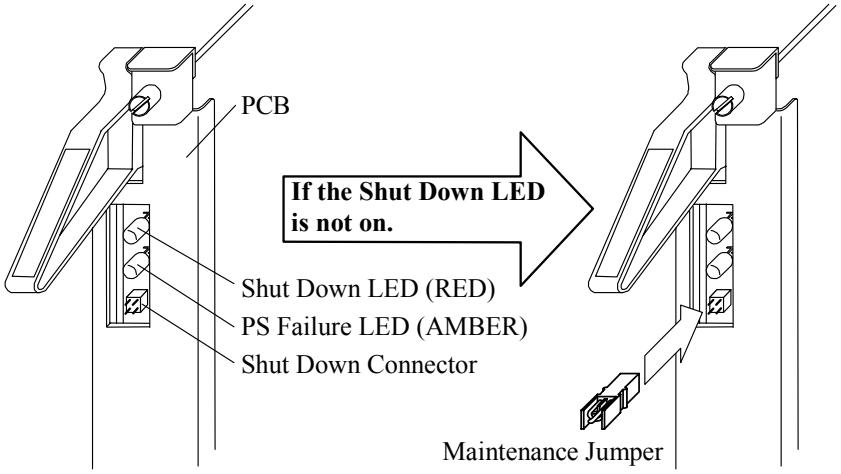
[HARDWARE D]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for Serial (Serial 8-port Adapter PCB) (RoHS not applied)	• WP512-A ×1 & SH343-A ×4 (F16S)
	2	CHA PCB for Serial (Serial 8-port Adapter PCB) (RoHS applied)	• WP512-B ×1 & SH343-B ×4 (F16S/F16SR)



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

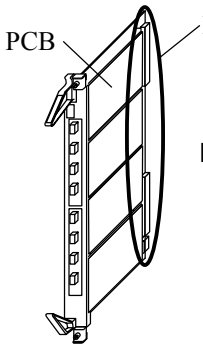
1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

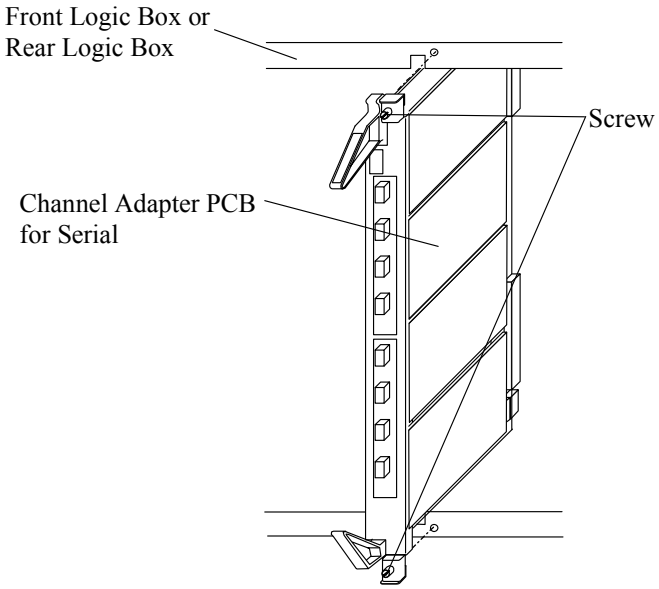
b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

c. Remove the two screws and remove the failed PCB.

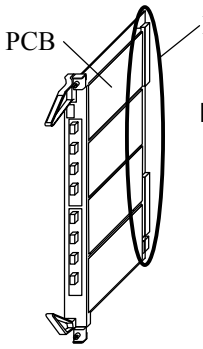


Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

d. If the Maintenance Jumper is used, remove it.



2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

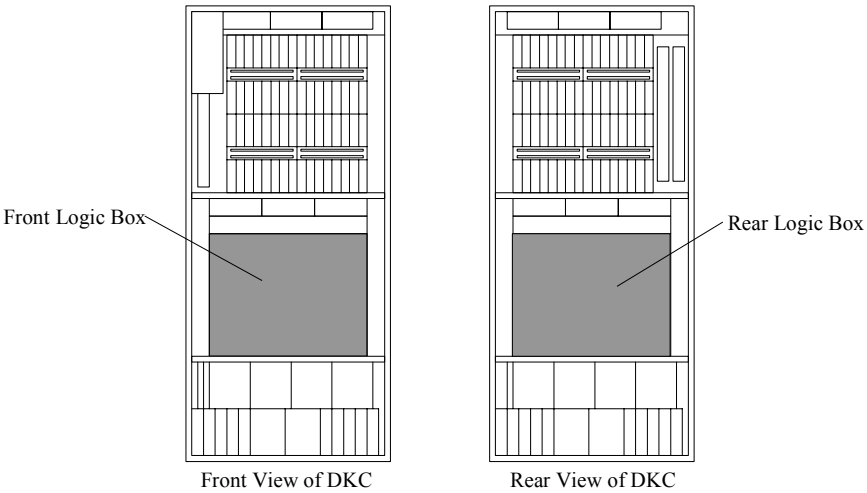
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

[HARDWARE E]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for Fibre (Fibre 16-port Adapter PCB) (RoHS not applied)	• WP513-B ×1 & SH343-A ×4 (F32HS)
	2	CHA PCB for Fibre (Fibre 8-port Adapter PCB) (RoHS not applied)	• WP513-A ×1 & SH343-A ×2 (F16HS)
	3	CHA PCB for Fibre (Fibre 16-port Adapter PCB) (RoHS applied)	• WP513-D ×1 & SH343-B ×4 (F32HS/F32HSR)
	4	CHA PCB for Fibre (Fibre 8-port Adapter PCB) (RoHS applied)	• WP513-C ×1 & SH343-B ×2 (F16HS/F16HSR)
	5	CHA PCB for Fibre (Fibre 16-port Adapter PCB) (RoHS applied)	• WP518-D ×1 & SH343-B ×4 (F32FSR)
	6	CHA PCB for Fibre (Fibre 4-port Adapter PCB) (RoHS applied)	• WP513-E ×1 & SH343-B ×2 (F8HSR)
	7	CHA PCB for Fibre (Fibre 4-port Adapter PCB) (RoHS applied)	• WP518-G ×1 & SH343-B ×2 (F8FS2R)
	8	CHA PCB for Fibre (Fibre 8-port Adapter PCB) (RoHS applied)	• WP518-E ×1 & SH343-B ×2 (F16FS2R)
	9	CHA PCB for Fibre (Fibre 16-port Adapter PCB) (RoHS applied)	• WP518-F ×1 & SH343-B ×4 (F32FS2R)

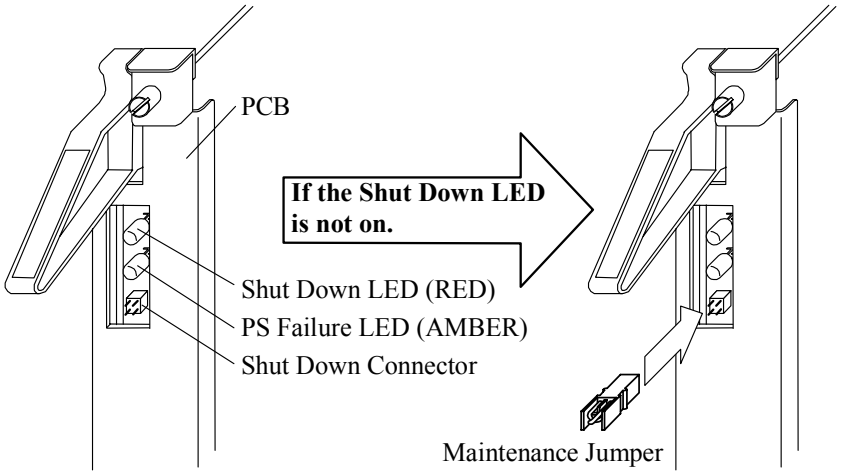


NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

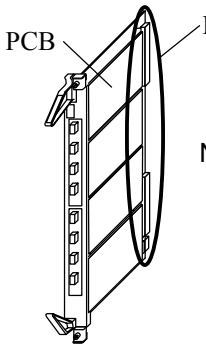
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

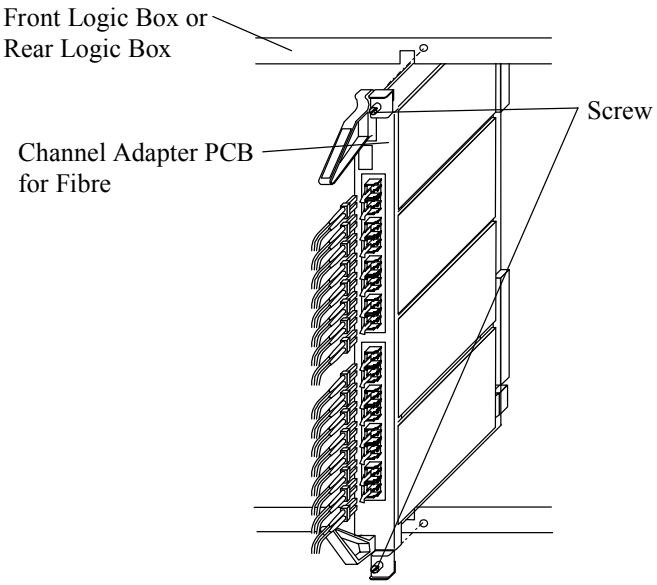
b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

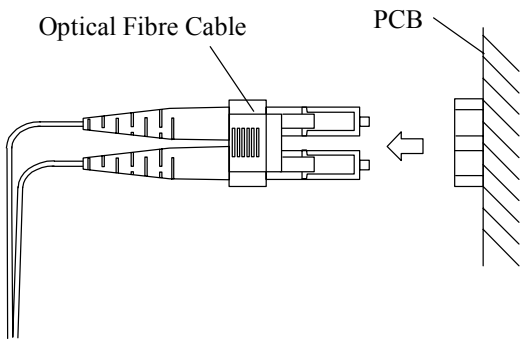
c. Remove the two screws and remove the failed PCB.



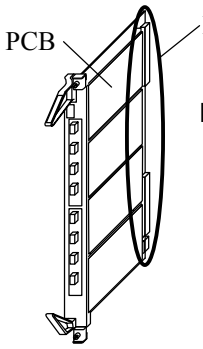
Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

d. If the Maintenance Jumper is used, remove it.





2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

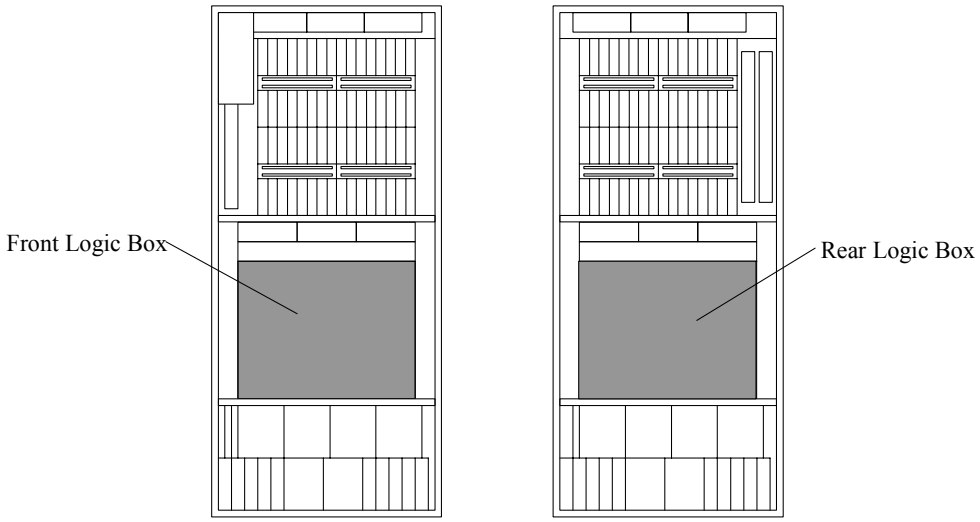
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

[HARDWARE F]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for Mainframe Fibre (MF Fibre 8-port Adapter PCB) (RoHS applied)	• WP514-D ×1 & SH343-B ×4 (F16MLR)
			• WP514-C ×1 & SH343-B ×4 (F16MSR)
	2	CHA PCB for Mainframe Fibre (MF Fibre 4-port Adapter PCB) (RoHS not applied)	• WP515-B ×1 & SH343-A ×4 (F8ML)
			• WP515-A ×1 & SH343-A ×4 (F8MS)
	3	CHA PCB for Mainframe Fibre (MF Fibre 4-port Adapter PCB) (RoHS applied)	• WP515-D ×1 & SH343-B ×4 (F8ML/F8MLR)
			• WP515-C ×1 & SH343-B ×4 (F8MS/F8MSR)
	4	CHA PCB for Mainframe Fibre (MF Fibre 8-port Adapter PCB (1-4Gbps)) (RoHS applied)	• WP514-F ×1 & SH343-B ×4 (F16MFLR)
			• WP514-E ×1 & SH343-B ×4 (F16MFSR)
			• WP514-H ×1 & SH343-B ×4 (F16MFL4R)

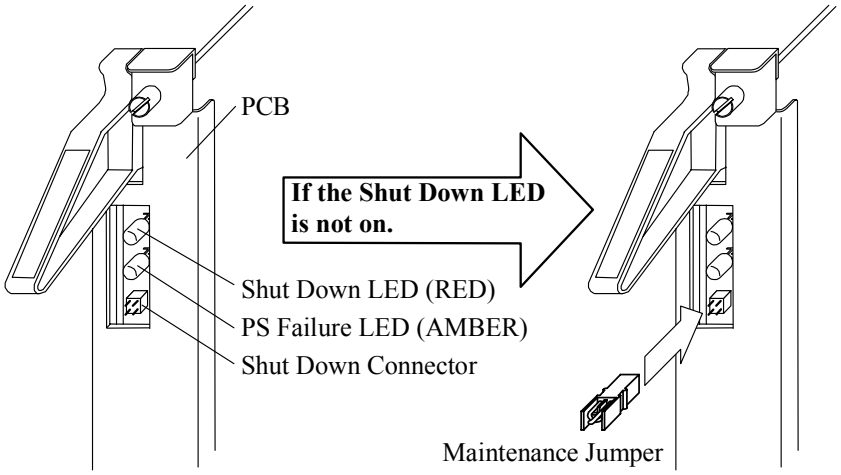


NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

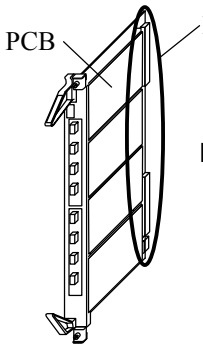
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

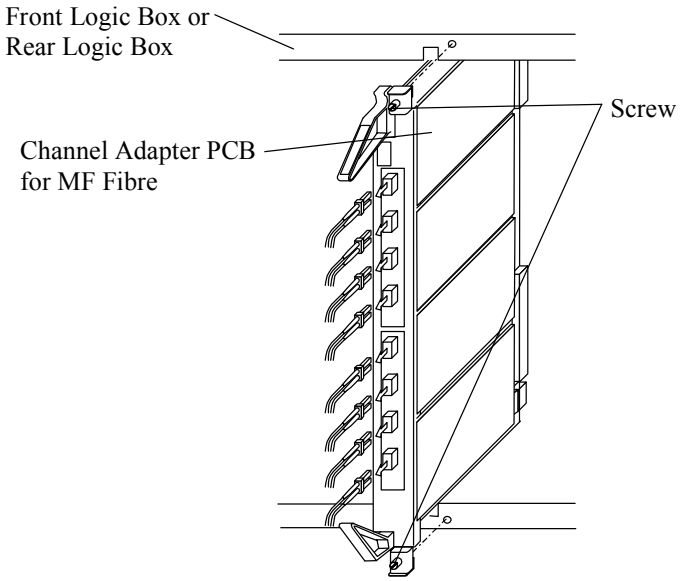
b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

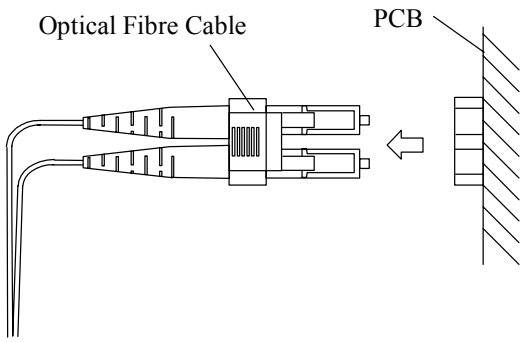
c. Remove the two screws and remove the failed PCB.



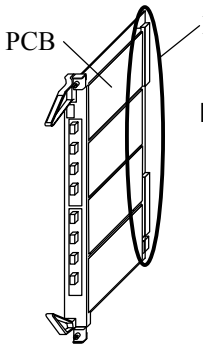
Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

d. If the Maintenance Jumper is used, remove it.





2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

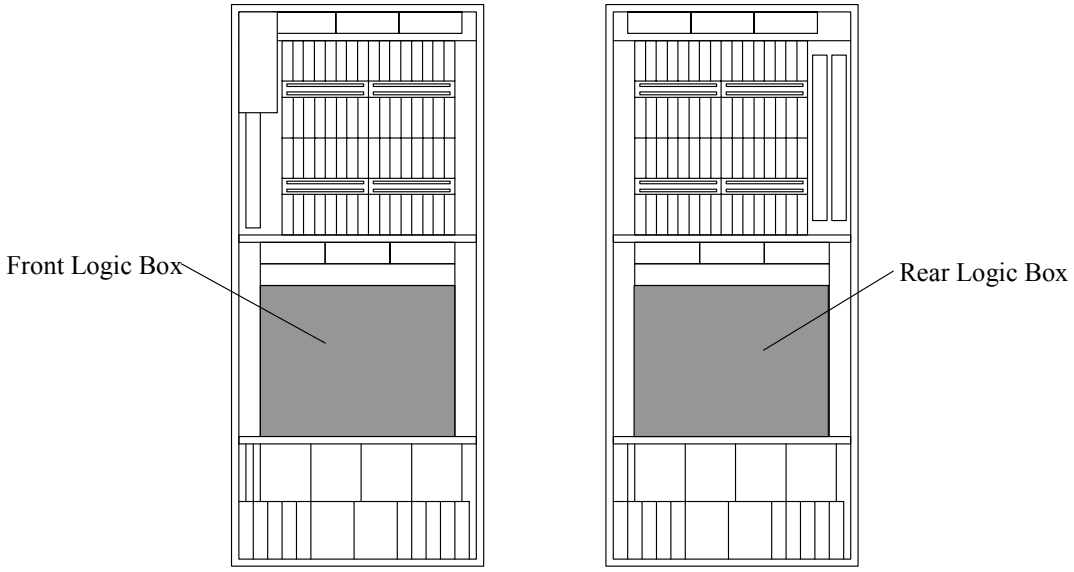
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

[HARDWARE G]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for NAS (NAS 4-port Adapter PCB) (RoHS not applied)	• WP517-A ×1 & SH343-A ×1 (F8NS)
	2	CHA PCB for NAS (NAS 4-port Adapter PCB) (RoHS applied)	• WP517-C ×1 & SH343-B ×1 (F8NS/F8NSR)

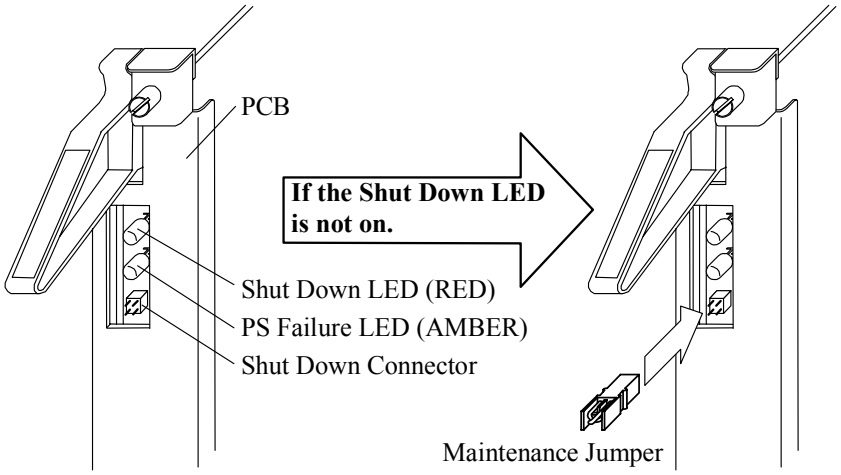


NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

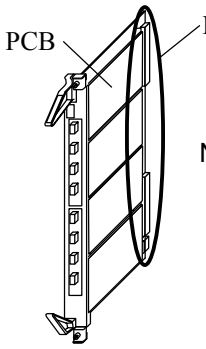
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

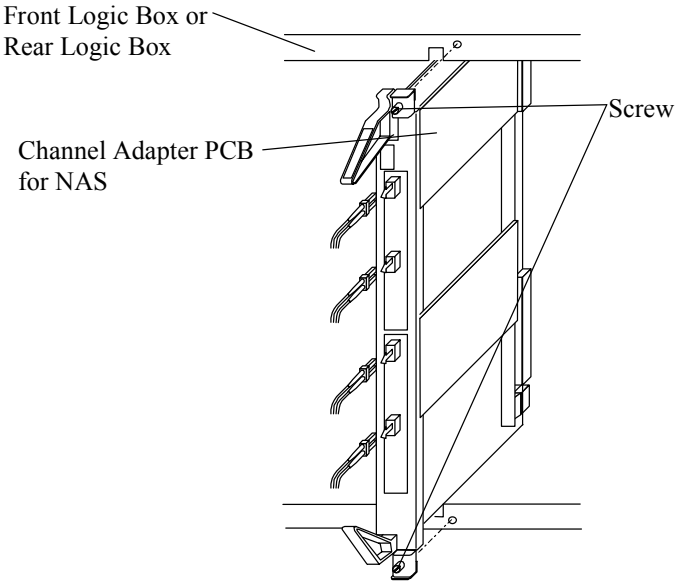
b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

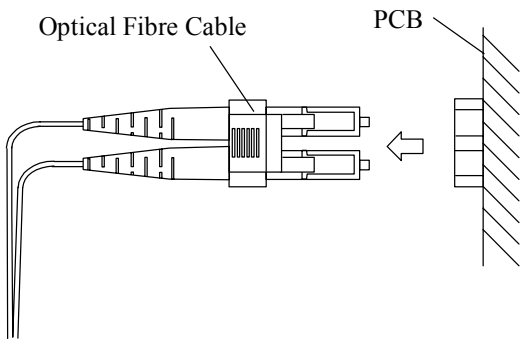
c. Remove the two screws and remove the failed PCB.



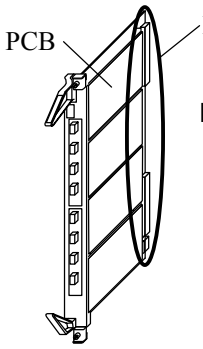
Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

d. If the Maintenance Jumper is used, remove it.





2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

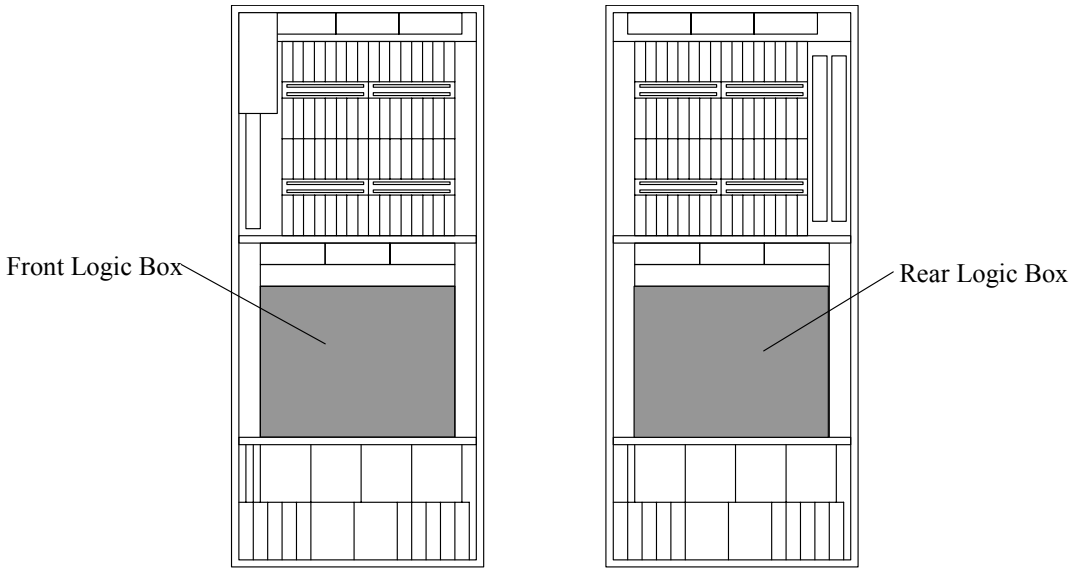
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

[HARDWARE H]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	CHA (Channel Adapter) PCB for iSCSI (iSCSI 4-port Adapter PCB)	• WP516-B ×1 & SH343-B ×2 (F8ISR)

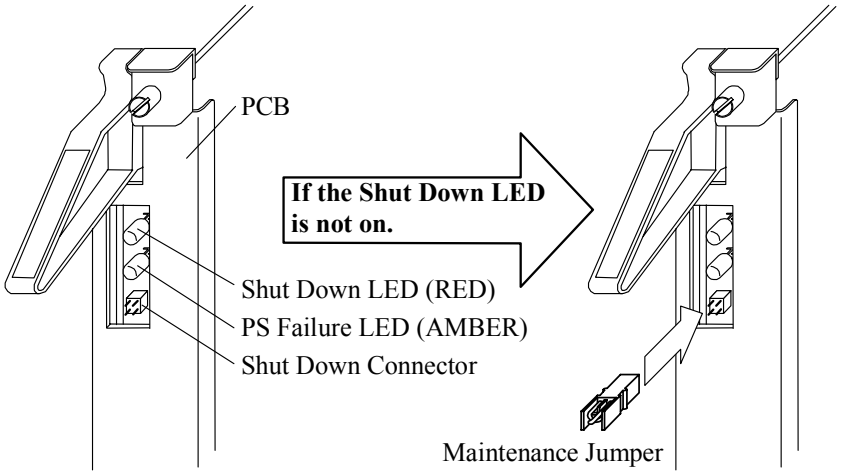


NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the Channel Adapter PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

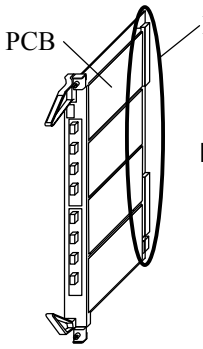
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

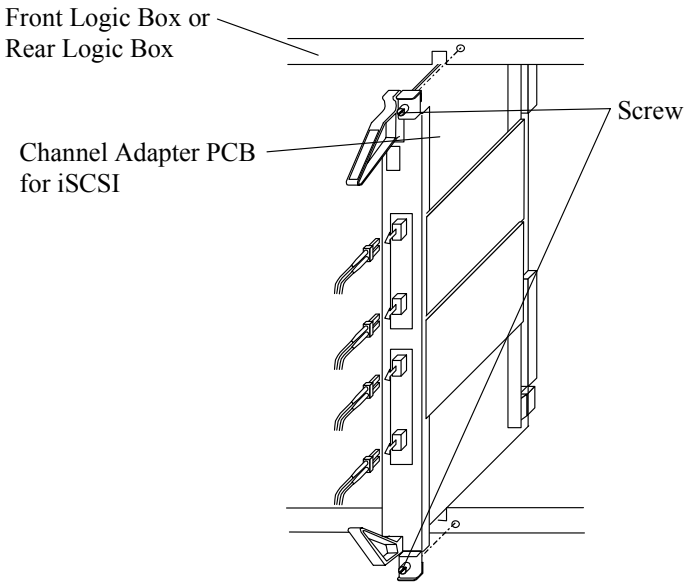
b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

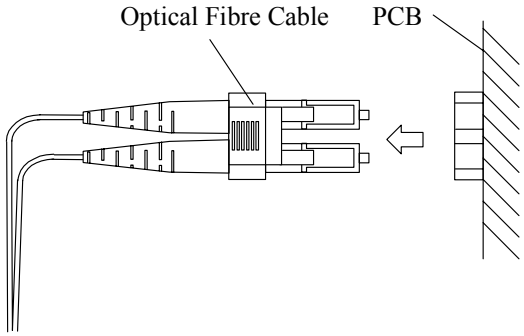
c. Remove the two screws and remove the failed PCB.



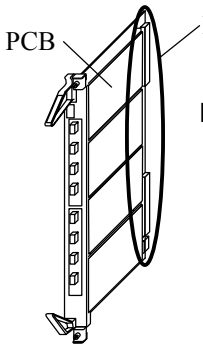
Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

d. If the Maintenance Jumper is used, remove it.





2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. Cleaning the fibre cable connectors.
   For the tools needed for the cleaning, refer to the tool list on page PARTS07-10.

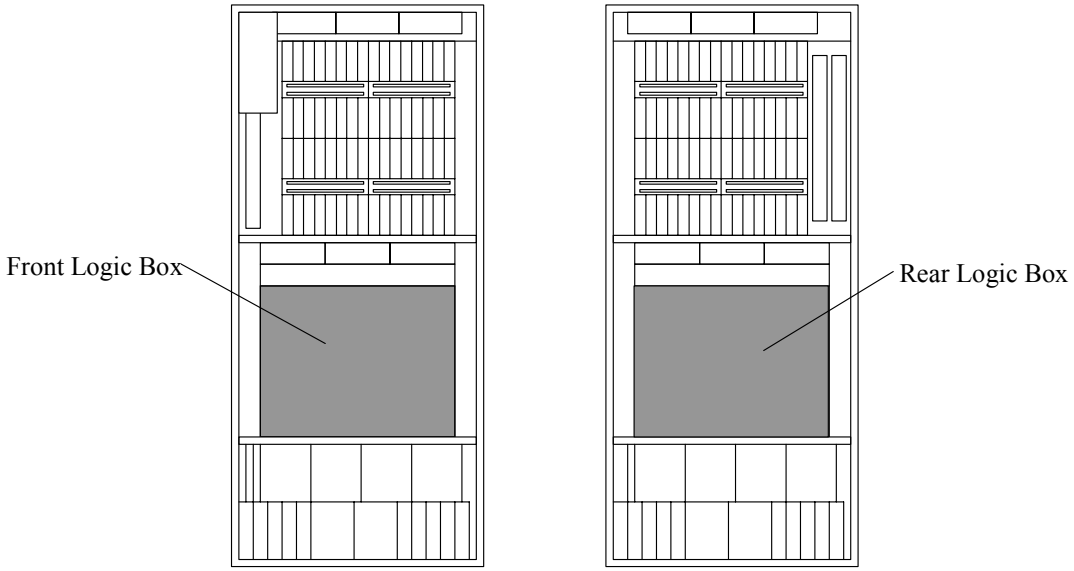
   a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
   b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
   c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)

4. Connect the optical fibre cables to the spare PCB.

5. Go to SVP post procedure h [REP04-220].

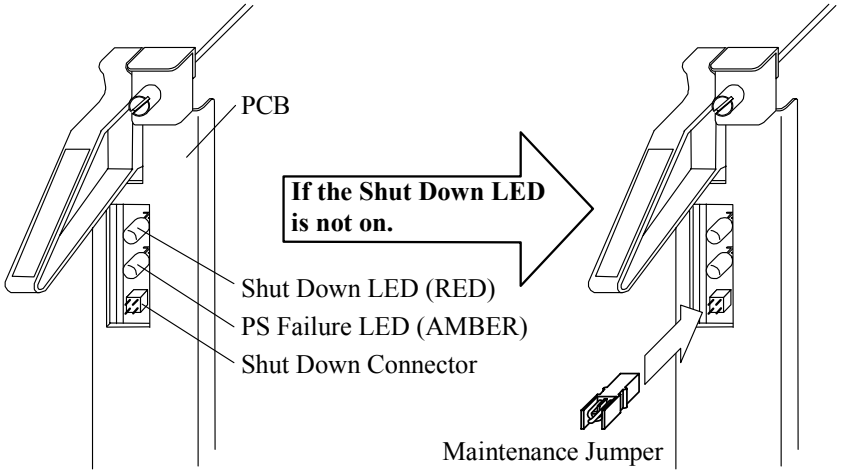
[HARDWARE J]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	DKA (Disk Adapter) PCB (RoHS not applied)	• WP520-A ×1 & SH343-A ×4
	2	DKA PCB (RoHS applied)	• WP520-C ×1 & SH343-B ×4



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

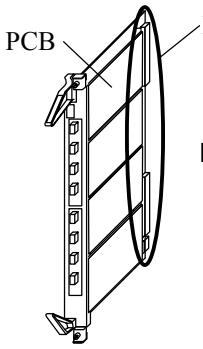
1. Remove the DKA PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

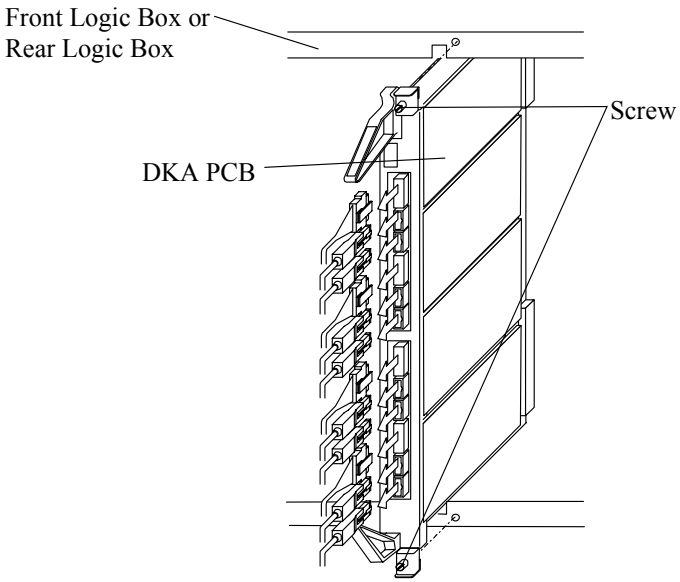
b. Disconnect the cables from the failed DKA PCB.

c. Remove the two screws and remove the failed PCB.

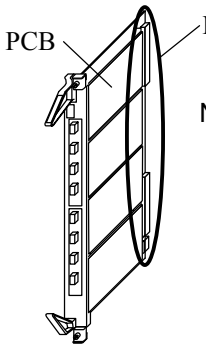


Note: When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

d. If the Maintenance Jumper is used, remove it.



2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



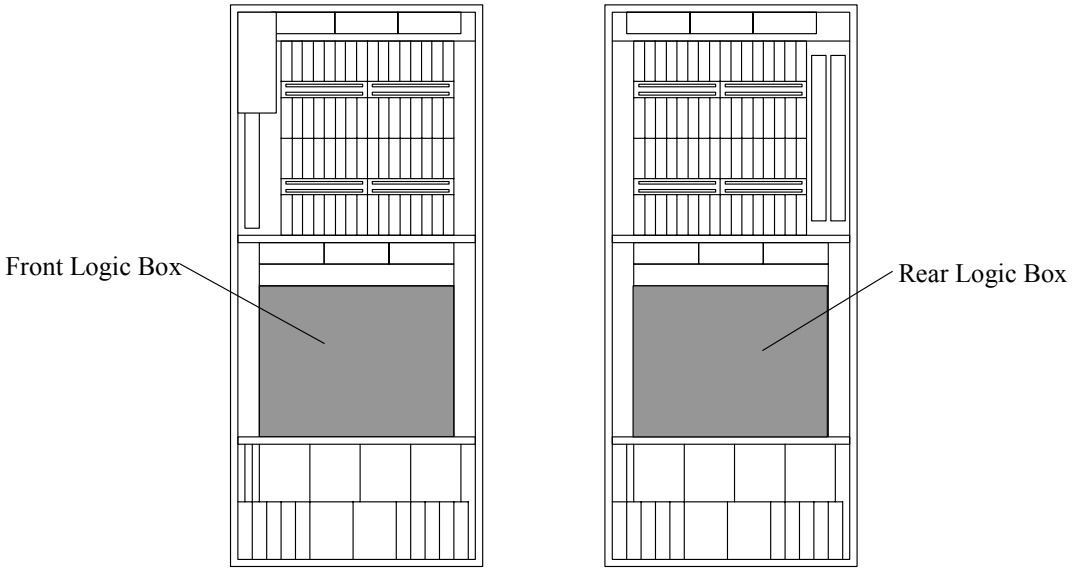
Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

   b. Connect the cables to the spare PCB.

3. Go to SVP post procedure h [REP04-220].

[HARDWARE K]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box in DKC	1	CSW PCB (RoHS not applied)	• WP530-A
	2	CSW PCB (RoHS applied)	• WP530-B

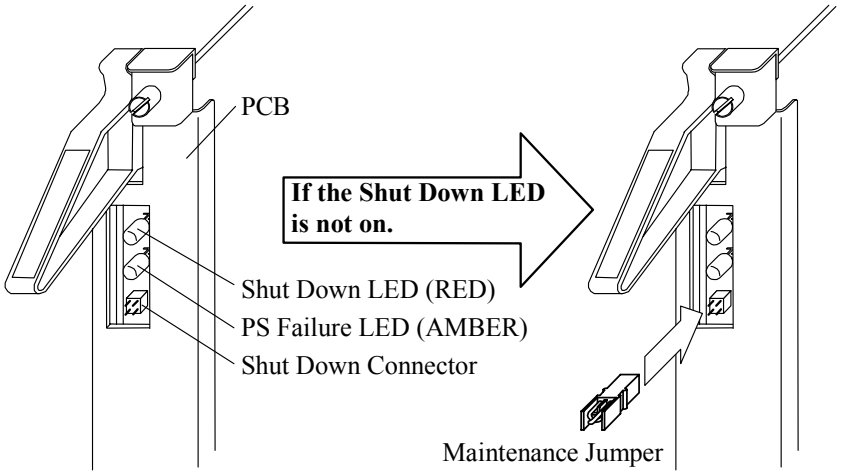


NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1. Remove the CSW PCB.
   a. Check that the Shut Down LED is on. If not, connect the Maintenance Jumper to the Shut Down Connector. (only hot replace)

⚠ CAUTION

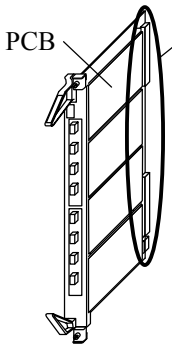
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b. If the "Slot No." of the failed CSW PCB is 1D or 2P, disconnect the cables from the failed CSW PCB.

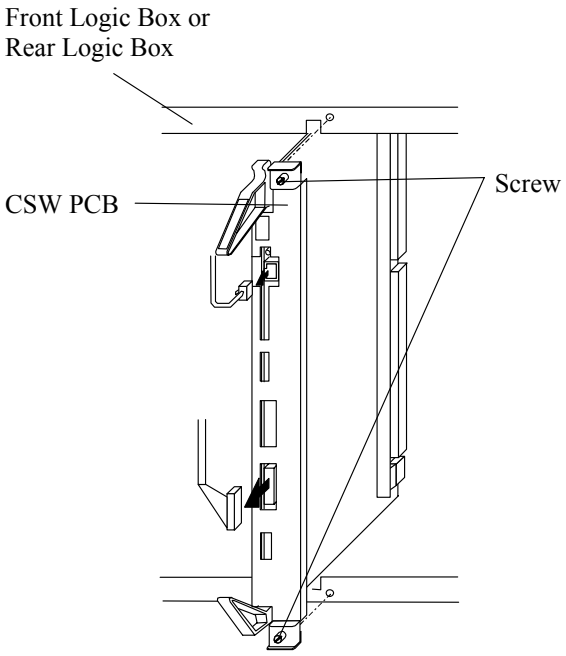
c. Remove the two screws and remove the failed PCB.



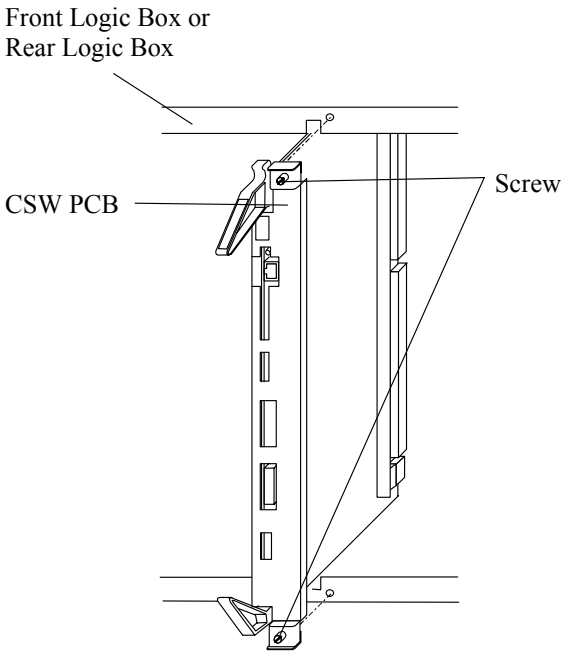
Note: 1. When removing the PCB, hold the top and bottom of the PCB with both hands, and pull it out straight not to contact the neighboring PCB.

2. To work carefully to remove and insert CSW PCB. It is required more power than other PCB.

d. If the Maintenance Jumper is used, remove it.

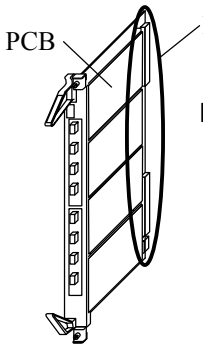


Slot No. 1D or 2P



Slot No. 1J or 2V

2. Insert the spare PCB.
   a. Insert the spare PCB to the correct location and fasten the two screws.



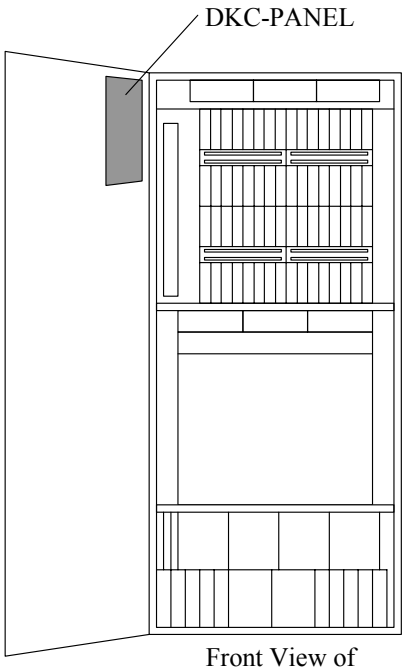
Note: 1. Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.
2. When installing the PCB, hold the top and bottom of the PCB with both hands, and insert it straight not to contact the neighboring PCB.

3. If the “Slot No.” of the spare PCB is 1D or 2P, connect the cables to the spare PCB.

4. Go to SVP post procedure k [REP04-310].

[HARDWARE T1]

Location	Function Name of Component		Part Name
Front of DKC	1	DKC-PANEL (RoHS not applied)	• SH354-A
	2	DKC-PANEL (RoHS applied)	• SH354-B



Front View of DKC

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

1	DKC-PANEL

Note: The COMP signal of PCI is turned off, if the DKC-PANEL is removed.

1. Set the switches of the spare PCB to the same positions as those of the failed PCB.

2. Replace the PCB.
   a. Loosen the four screws and remove the cover.

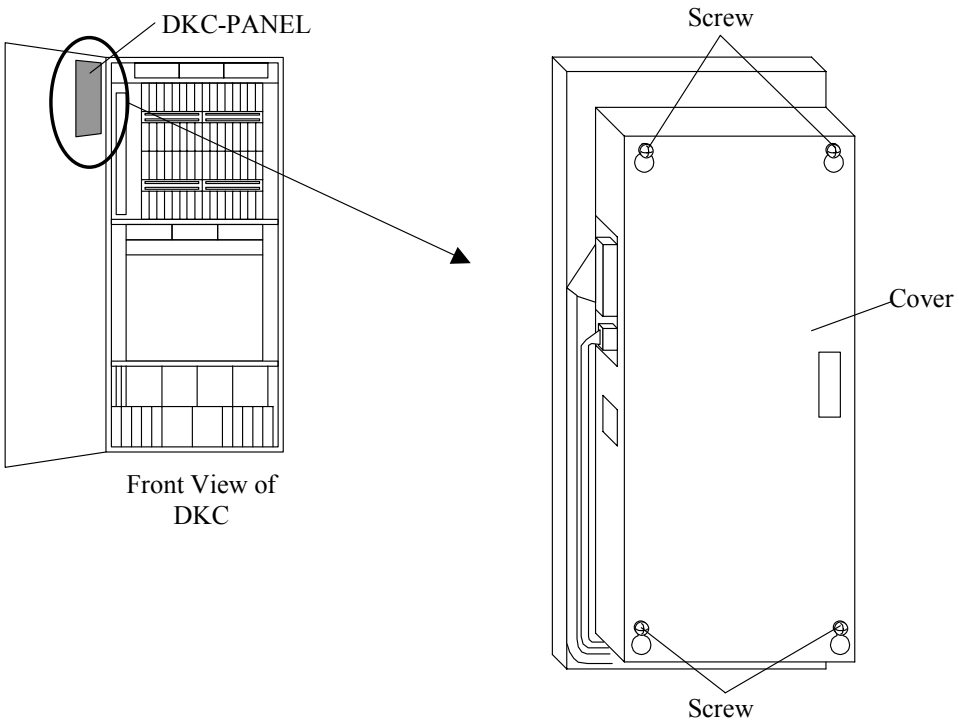


Fig. T1-1 Removal of Cover

b. Disconnect the cables from the DKC-PANEL PCB.
c. Loosen the five screws and remove the DKC-PANEL PCB.
d. Attach the spare PCB and fasten the five screws.
e. Connect the cables to the spare PCB.

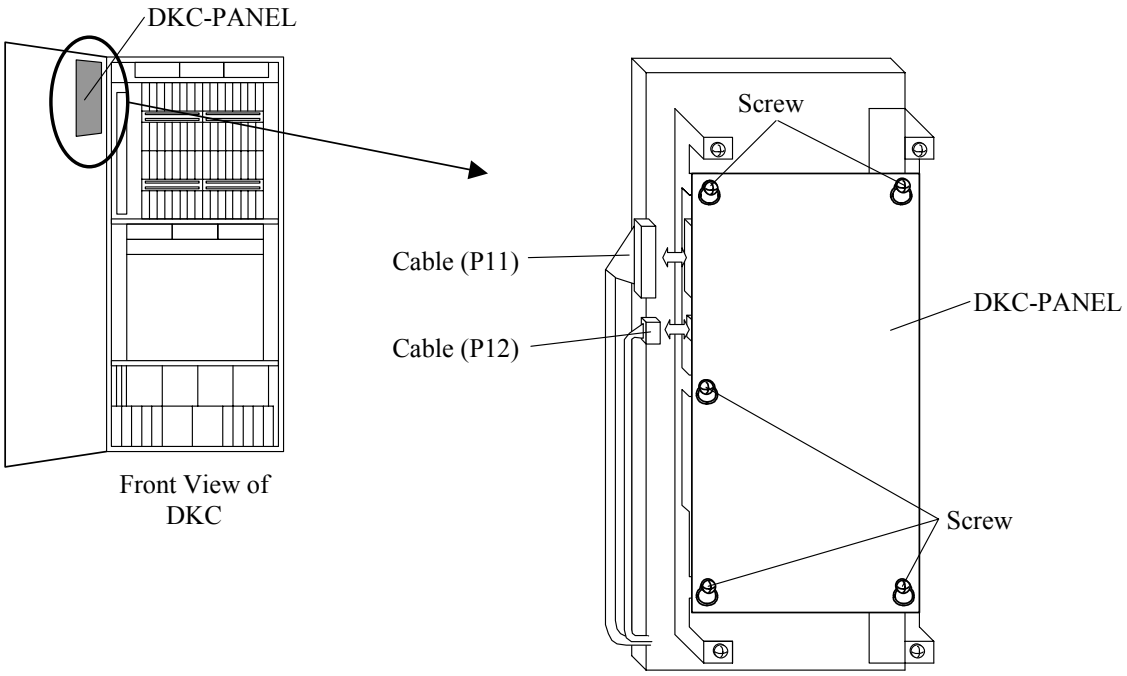


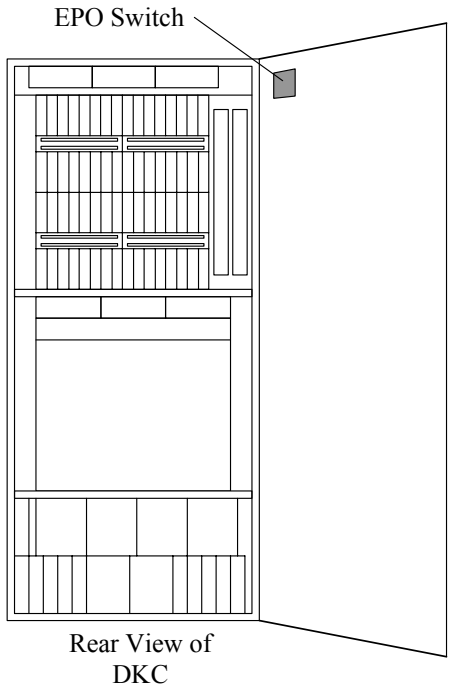
Fig. T1-2 Replace of PCB

3. Attach the Plate.
   a. Attach the cover and fasten the screw. Refer to Fig. T1-1.

4. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T2]

Location	Function Name of Component		Part Name
Rear of DKC	1	EPO Switch (RoHS not applied)	
	2	EPO Switch (RoHS applied)	



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

1	EPO Switch

1. Remove the EPO Switch.
   a. Disconnect the cable from the DKC frame.

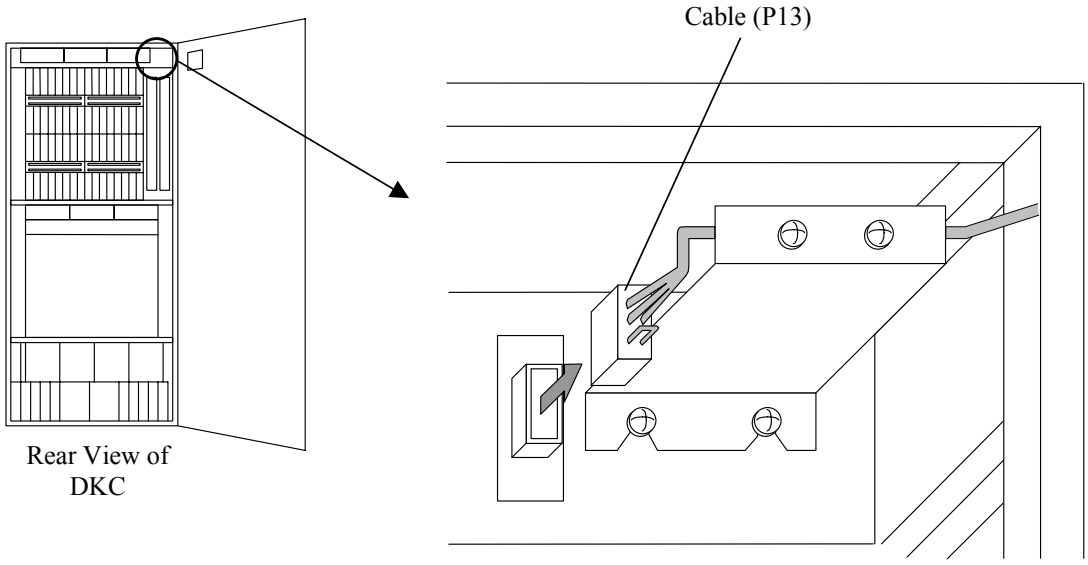


Fig. T2-1 Removal of Cable

   b. Loosen the two screws and remove the EPO switch.

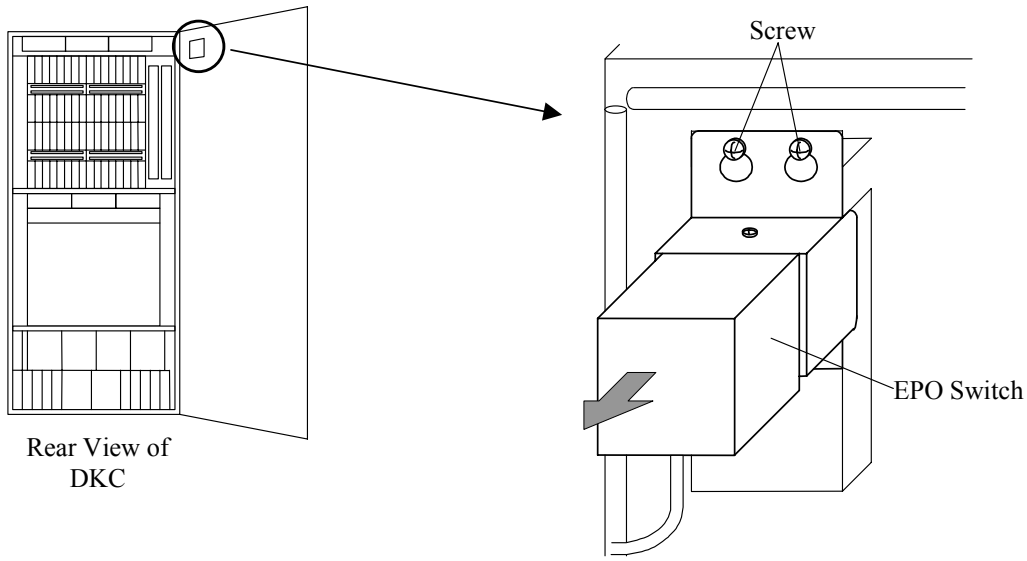


Fig. T2-2 Removal of EPO Switch

2. Attach the EPO Switch
   a. Remove the EPO switch cover from the failed EPO switch and attach it to the spare EPO switch.
   b. Attach the spare EPO switch with the two screws. Refer to Fig. T2-2.
   c. Connect the cable to the DKC-PANEL. Refer to Fig. T2-1.

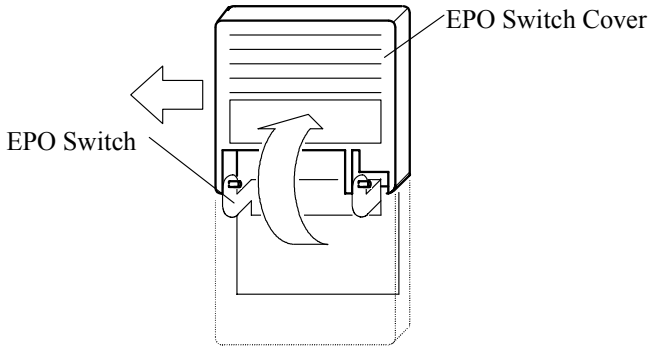


Fig. T2-3 Removal of EPO Switch Cover

3. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T3]

Location	Function Name of Component		Part Name
Front and Rear of DKC	1	DKCMN (RoHS not applied)	• SH353-A
	2	DKCMN (RoHS applied)	• SH353-B

Front View of DKC

Rear View of DKC

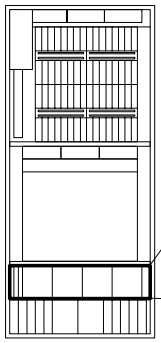
NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1	DKCMN

Note: Do not replace DKCMN1 PCB and DKCMN2 PCB at the same time.
If you want to replace the both PCB, first complete the replacement of one PCB and then start the replacement of the other.

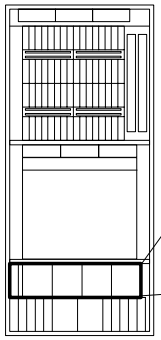
1. Check that the Shut Down LED is on. (only hot replace)

CAUTION
A system down is caused by a replacement of the DKCMN PCB other than that to be replaced. Make sure that it is the DKCMN PCB to be replaced.



CL1/CL2	CL1				
SSVP	DKCMN1	PS-11	PS-12	PS-13	PS-14
S	S	D	D	D	D
H	H	K	K	K	K
3	3	C	C	C	C
5	5	P	P	P	P
1	3	S	S	S	S
-	-				
A	A				

Front View of DKC



CL1/CL2	CL2				
SVP CON	DKCMN2	PS-21	PS-22	PS-23	PS-24
S	S	D	D	D	D
H	H	K	K	K	K
3	3	C	C	C	C
5	5	P	P	P	P
7	3	S	S	S	S
-	-				
A	A				

Rear View of DKC

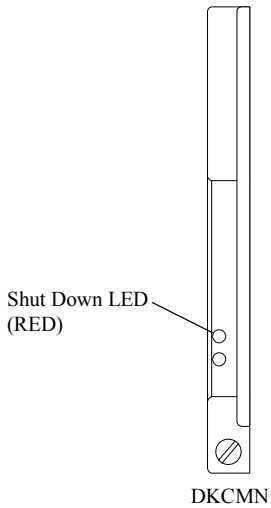
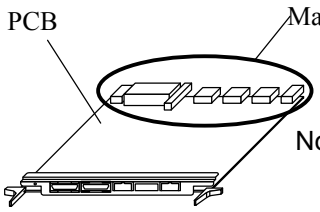


Fig. T3-1 Confirmation of Shut Down LED

2. Replace the DKCMN PCB.
   a. Loosen the screw and remove the DKCMN PCB.
   b. Insert the spare DKCMN PCB and fasten the screw.



Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

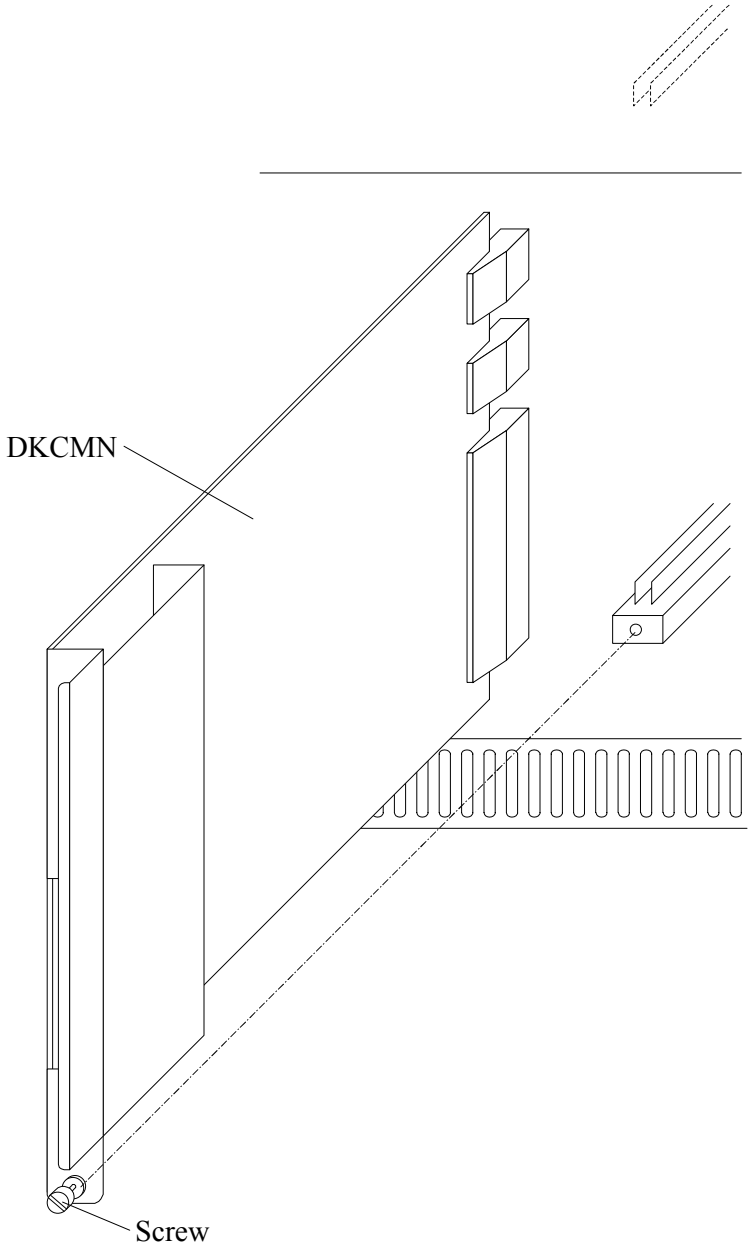
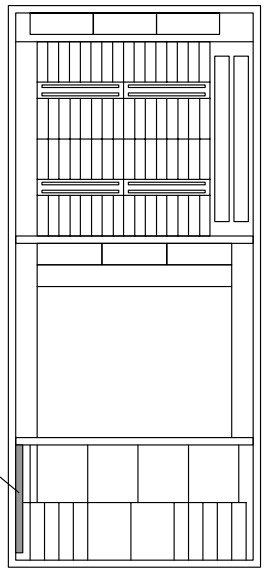


Fig. T3-2 Replacement of DKCMN

3. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T4]

Location	Function Name of Component		Part Name
Lower left rear of DKC	1	PCI CON (RoHS not applied)	• SH355-A
	2	PCI CON (RoHS applied)	• SH355-B
(Reference) The related PCB for replacement PCI CON. 1. DKC-PANEL PCB (Front of DKC)			



Rear View of DKC

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

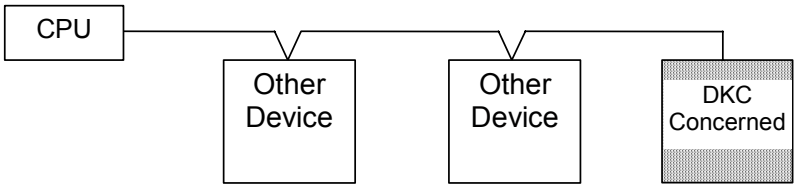
1	PCI CON

CAUTION:

1: Replacement of PCI CON causes other devices running on the same PCI connection line to be powered off except a and b shown below (because giving the EPO instruction is assumed). Therefore, stop the other device before performing replacement.

a. If PCI cable is not connected to the replacing DKC.

b. If the replacing DKC (DKC concerned) is connected to the end of the PCI cable as shown below.



2: The COMP signal of PCI is turned off, if the PCI cable is disconnected.

1. Confirm that the REMOTE/LOCAL Switch of DKC-PANEL is set to LOCAL. If not, set the REMOTE/LOCAL Switch to LOCAL.

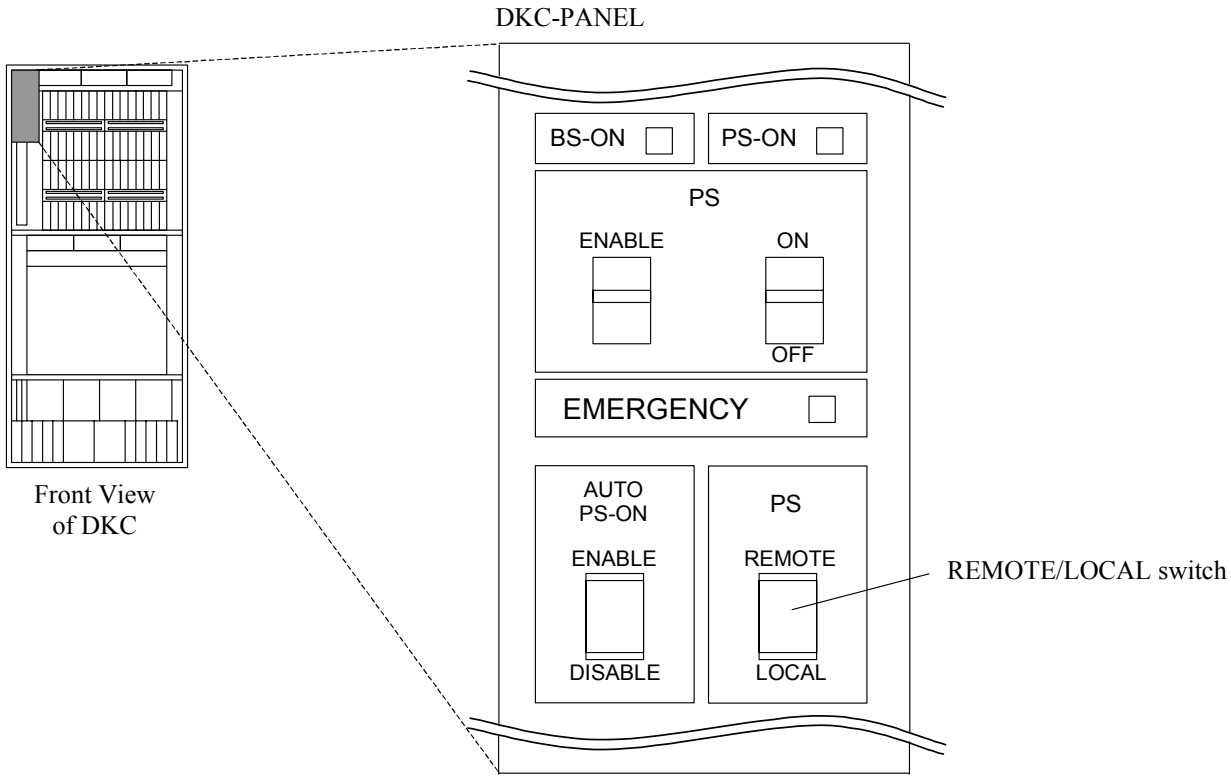


Fig.T4-1 REMOTE/LOCAL Switch on DKC-PANEL

2. Set the jumper connectors (J1 and J2) of the spare PCI CON PCB to the same positions as those of the failed PCB.

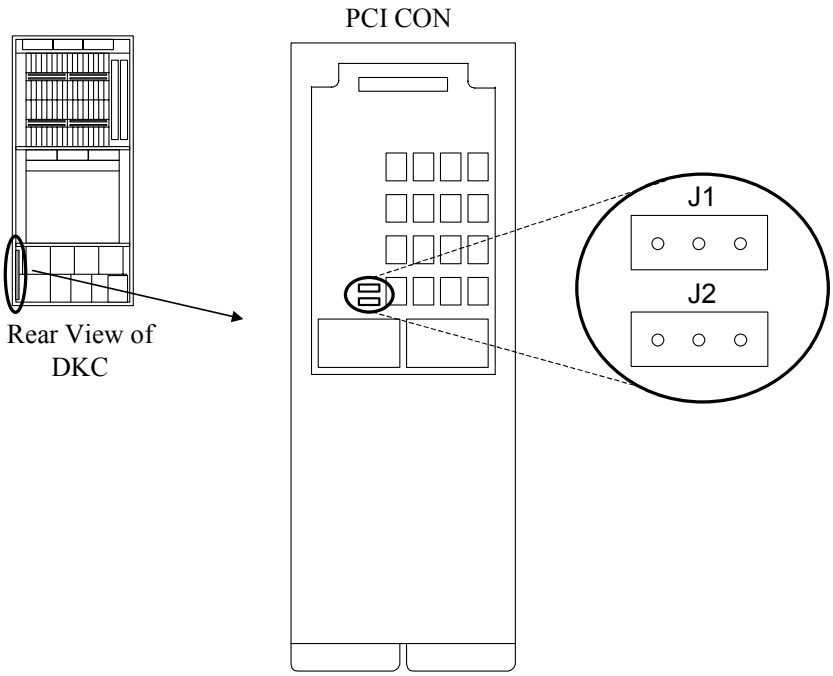


Fig.T4-2 Jumper Setting

3. Replace the PCI CON.
   a. Disconnect all cables from PCI CON.
   b. Remove the screw and remove the PCI CON.

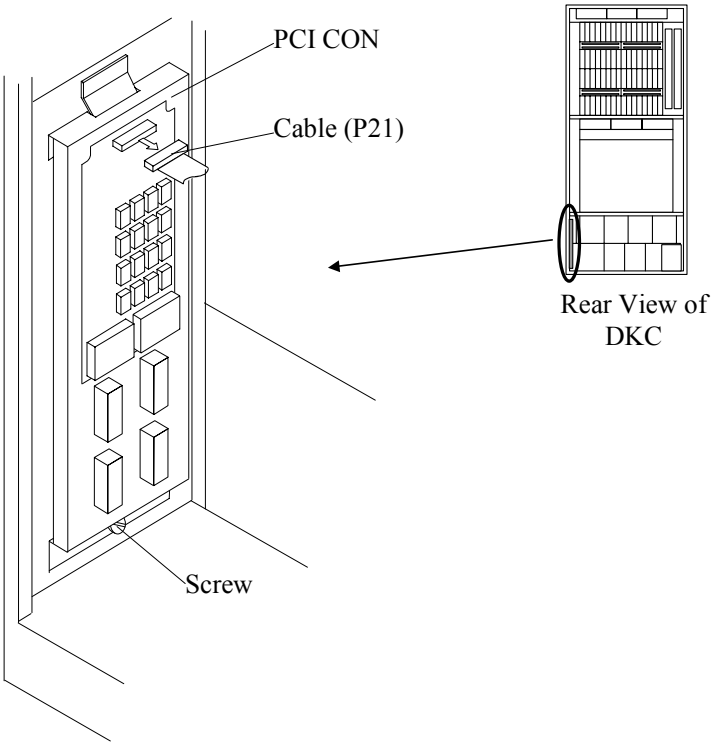


Fig.T4-3 Removal of PCI CON

4. Remove the plate from the failed PCB, and then attach them to the spare PCB.
   a. Remove the six screws and the plate from the failed PCB.
   b. Attach the plate to the spare PCB and fasten the six screws.

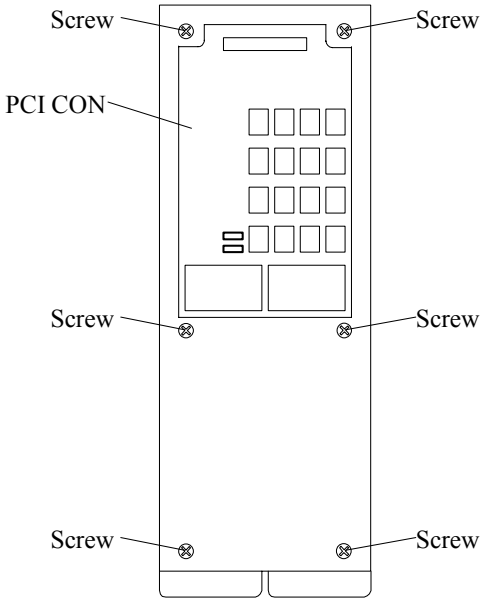


Fig.T4-4 Replacement of PCI CON PCB

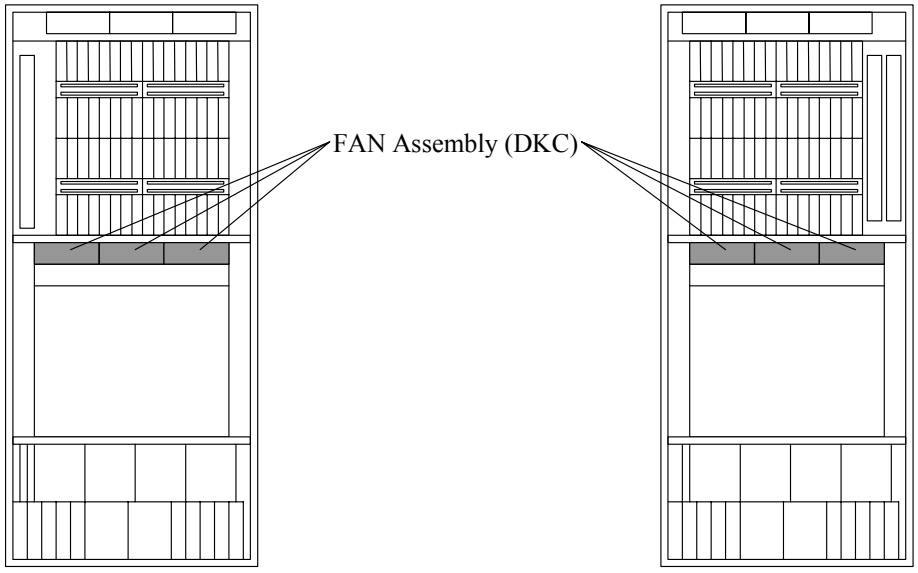
5. Attach the PCI CON.
   a. Attach the PCI CON and fasten the screw. Refer to Fig. T4-3.
   b. Connect the cables.

---

6. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T5]

Location	Function Name of Component		Part Name
Top of Front Logic Box or Rear Logic Box	1	FAN Assembly (DKC) (RoHS not applied)	
	2	FAN Assembly (DKC) (RoHS applied)	



Front View of DKC

Rear View of DKC

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

1	FAN Assembly

⚠ CAUTION

Hazardous rotating mechanism:
Can cause injury if touched. Stay clear of it when machine is running.

1. Replace the FAN Assembly.
   a. Loosen the screw.
   b. Remove the connector cover, pressing down the FAN Assembly.
   c. Disconnect the cable from the FAN Assembly.
   d. Remove the failed FAN Assembly.
   e. Remove the connector cover from the spare FAN Assembly
   f. Attach the spare FAN Assembly and connect the cable.
   g. Attach the connector cover and fasten the screw.

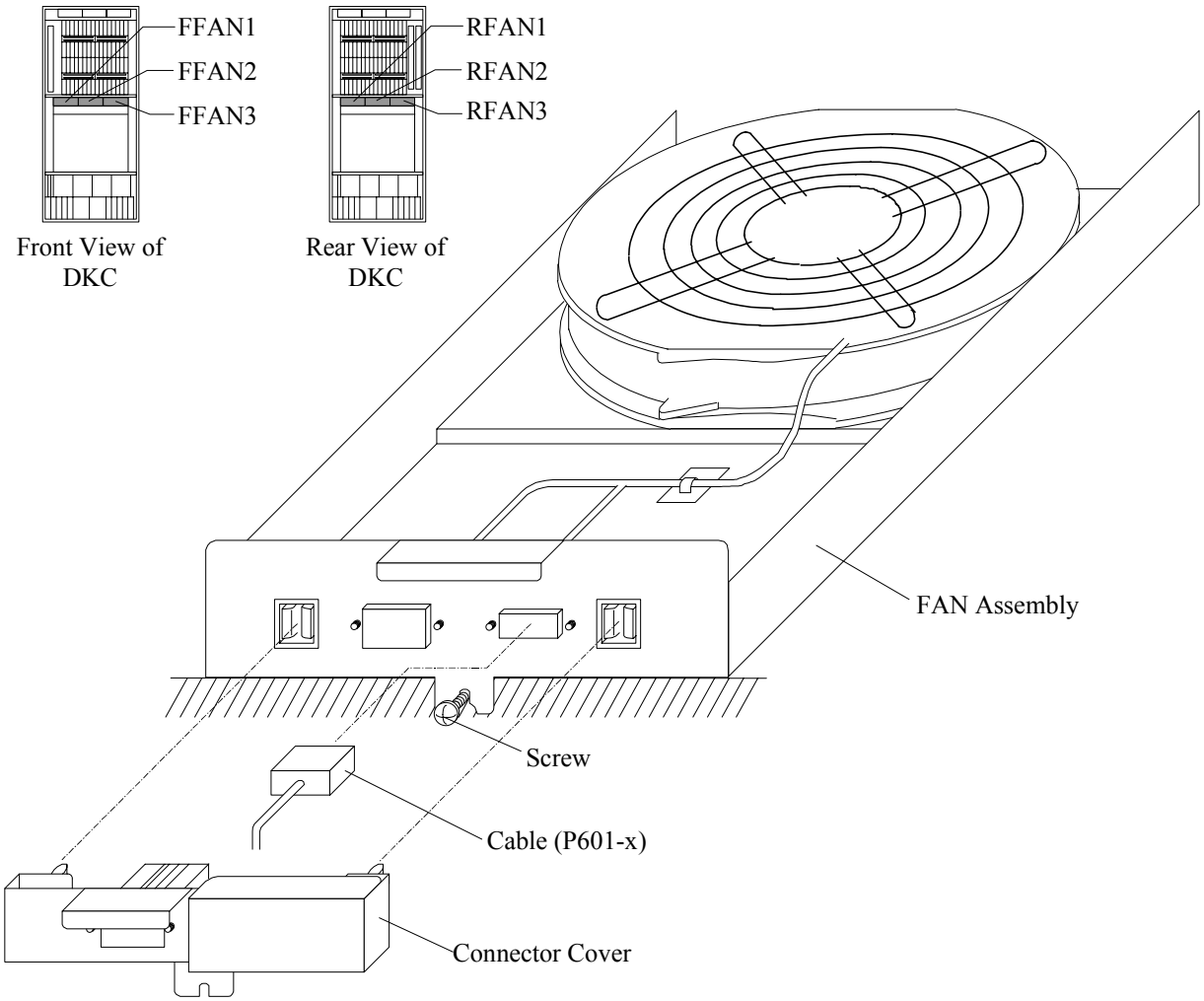
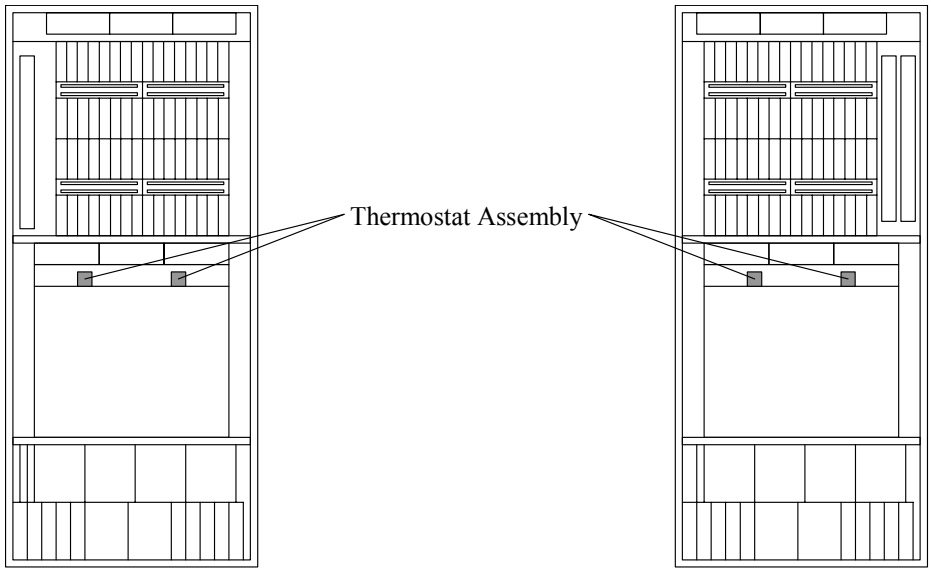


Fig. T5-1 Replacement of FAN Assembly

2. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T6]

Location	Function Name of Component		Part Name
Front Logic Box or Rear Logic Box	1	Thermostat Assembly (RoHS not applied)	
	2	Thermostat Assembly (RoHS applied)	



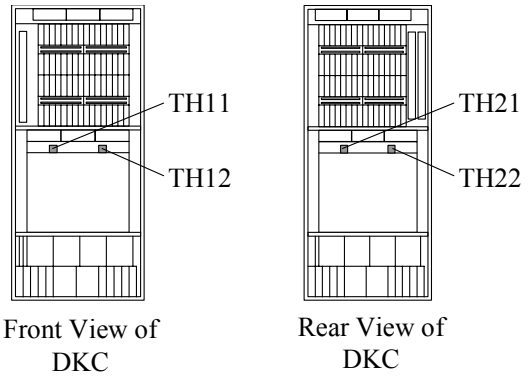
Front View of DKC

Rear View of DKC

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

1	Thermostat Assembly

1. Replace the Thermostat Assembly.
   a. Disconnect the cable.
   b. Loosen the screw and remove the Thermostat Assembly.
   c. Attach a spare Thermostat Assembly and tighten the screw.
   d. Connect the cable.



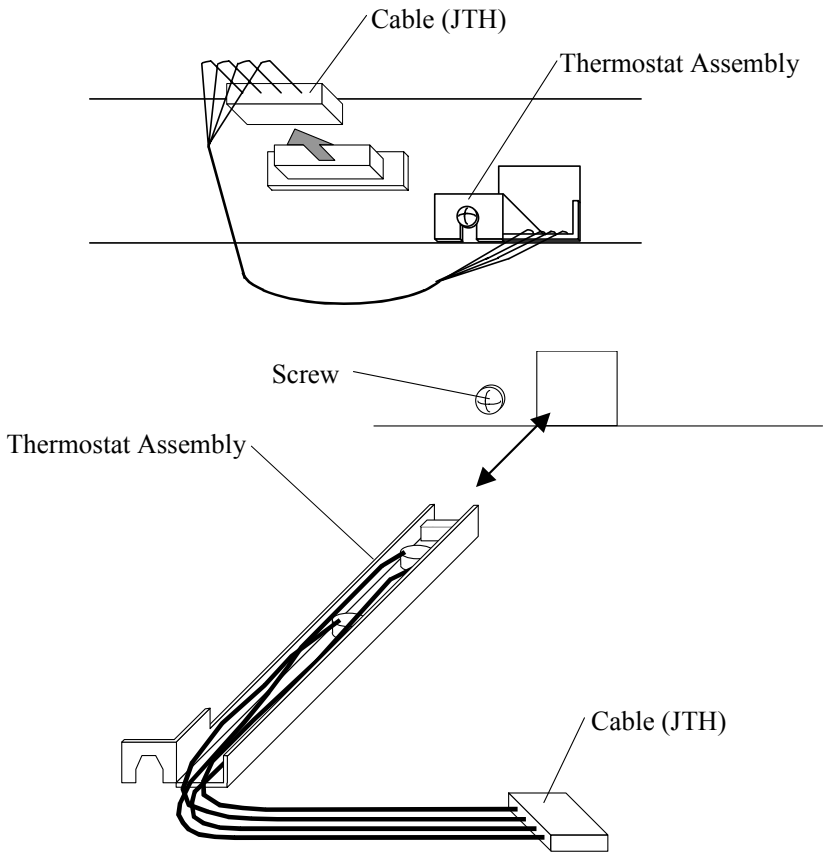
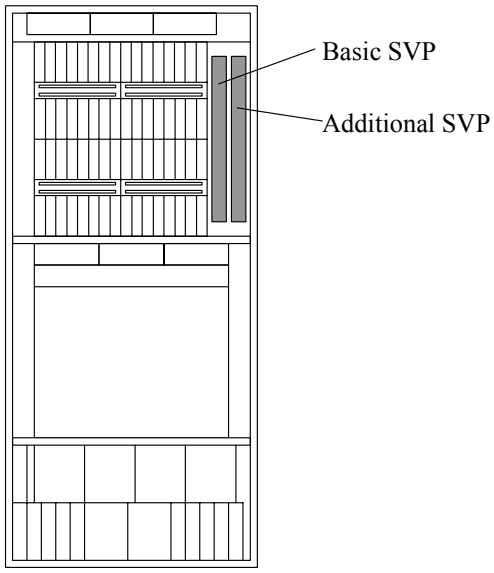


Fig. T6-1 Replacement of Thermostat Assembly

2. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T7]

Location	Function Name of Component		Part Name
Rear upside of DKC	1	SVP (RoHS not applied)	• HJ-4200-60EEA
	2	MODEM Card (LAN&MODEM Card) (RoHS not applied)	• 3CXFEM656C (3COM)
	3	SVP (RoHS applied)	•
	4	MODEM Card (RoHS applied)	• ME5614CG3 (OMRON)



Rear View of DKC

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

1	SVP

1. Insert the Jumper.
   a. Insert the maintenance jumper into JP2 on the SVP.

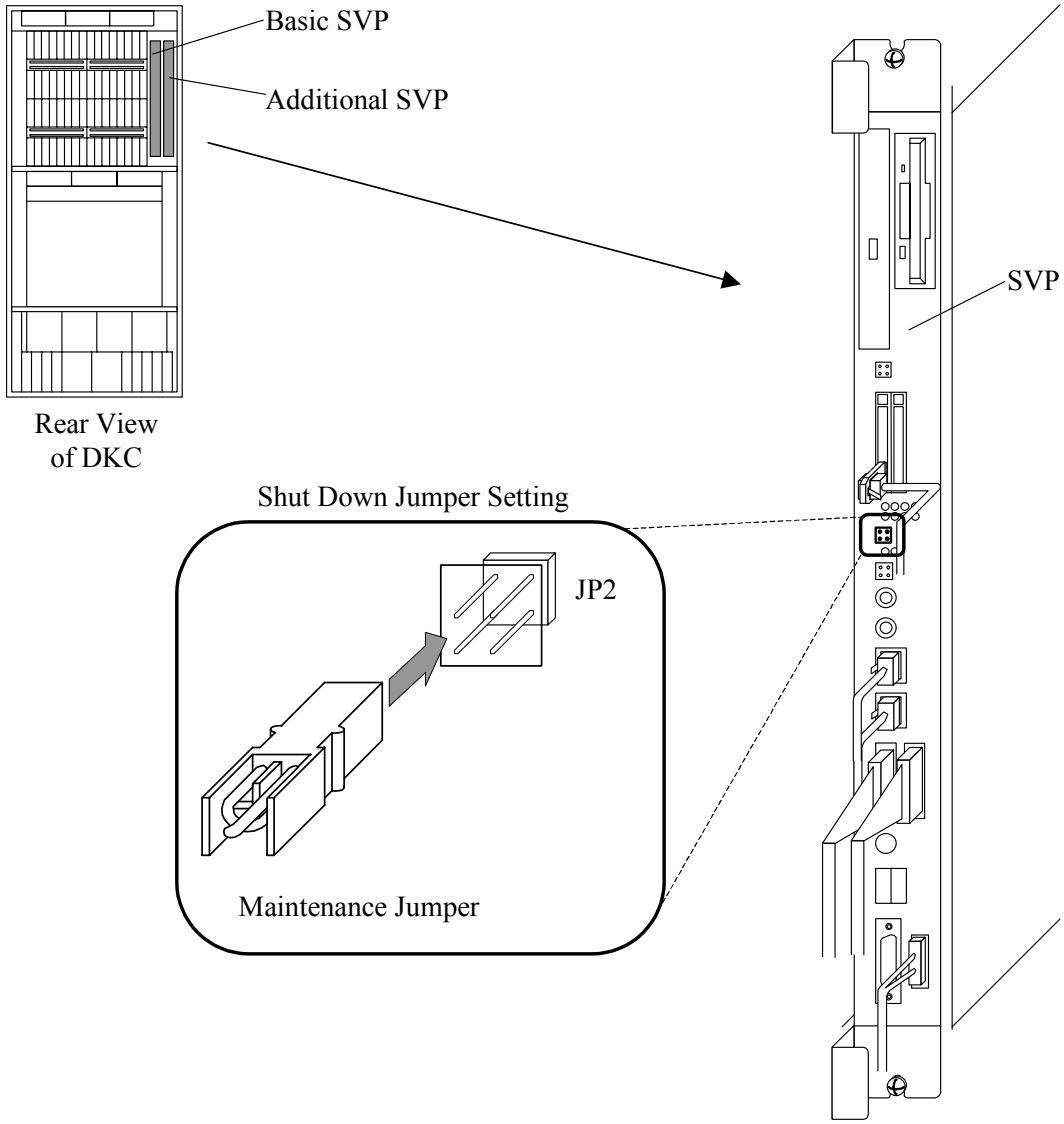


Fig. T7.1-1 Insertion of Maintenance Jumper

2. Remove the SVP.
   a. Loosen the screw ① and lift the stopper. Then fasten the screw ① to fix the stopper.
   b. Disconnect the power cable (P86-x) from the failed SVP.
   c. Disconnect the cables (P81-x, P82-x, P83-x, and P84-x) from the failed SVP.
   d. Disconnect the cable from the MODEM card.
   e. Loosen the two screws② and remove the failed SVP.

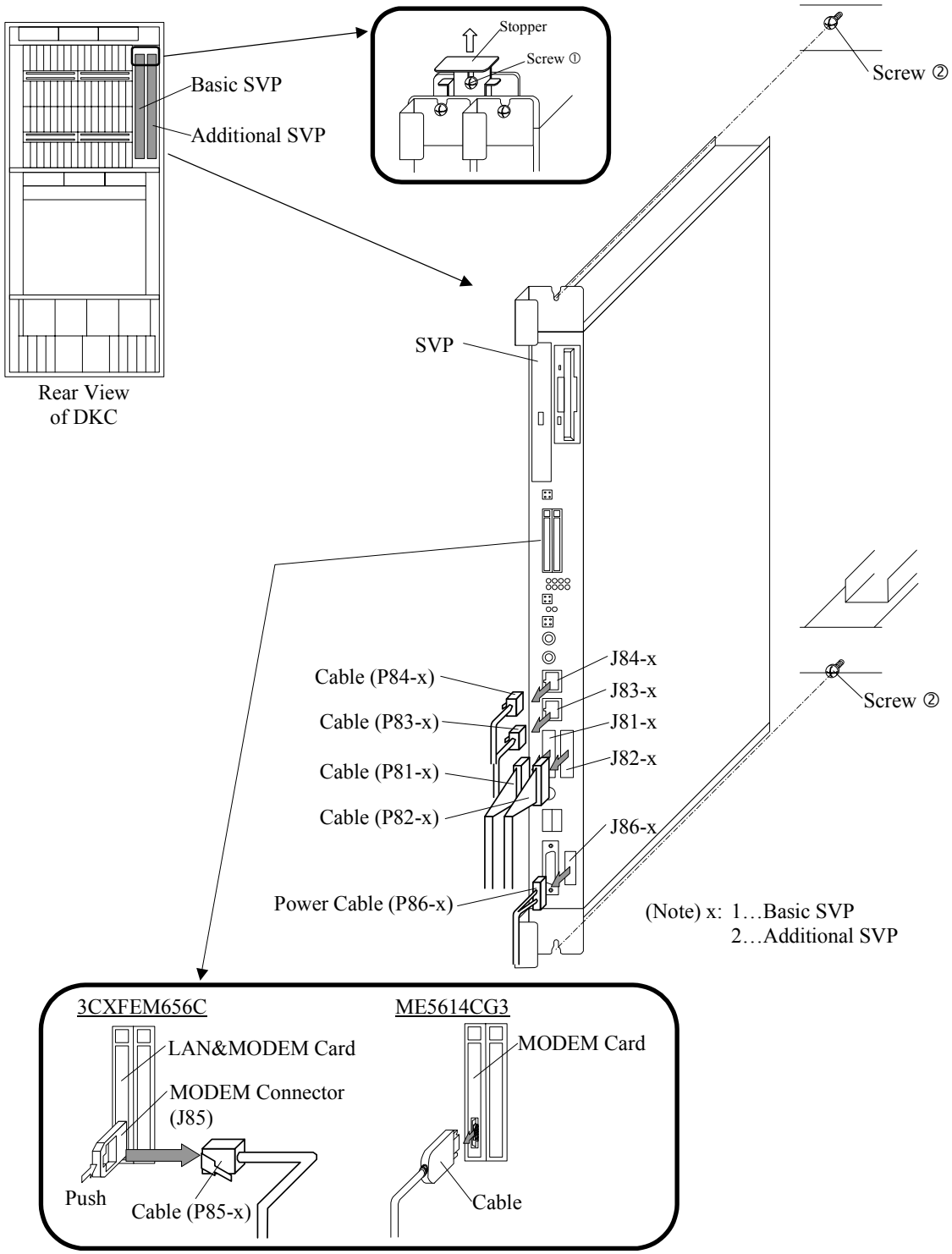


Fig. T7.1-2 Removal of SVP

3. Set the Jumpers.
   a. Remove the maintenance jumpers of the JP1 and JP2 on the failed SVP.
   b. Insert the maintenance jumpers into the JP1 and JP2 on the spare SVP.

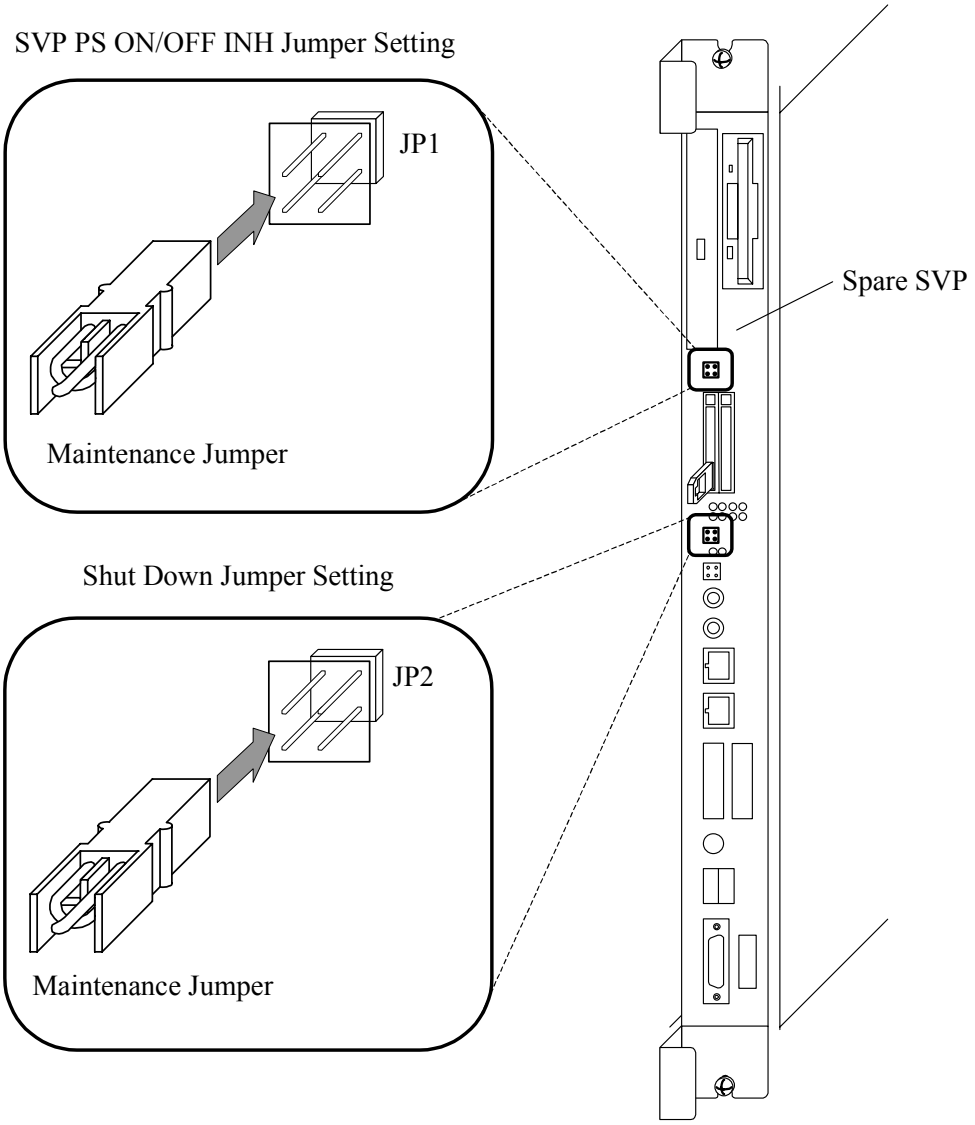


Fig. T7.1-3 Insertion of Maintenance Jumpers

4. Move the LAN&MODEM card.
   a. Push the left button on the failed SVP.
   b. Push the left button to remove LAN&MODEM Card from the failed SVP.
   c. Insert the LAN&MODEM Card to the spare SVP.

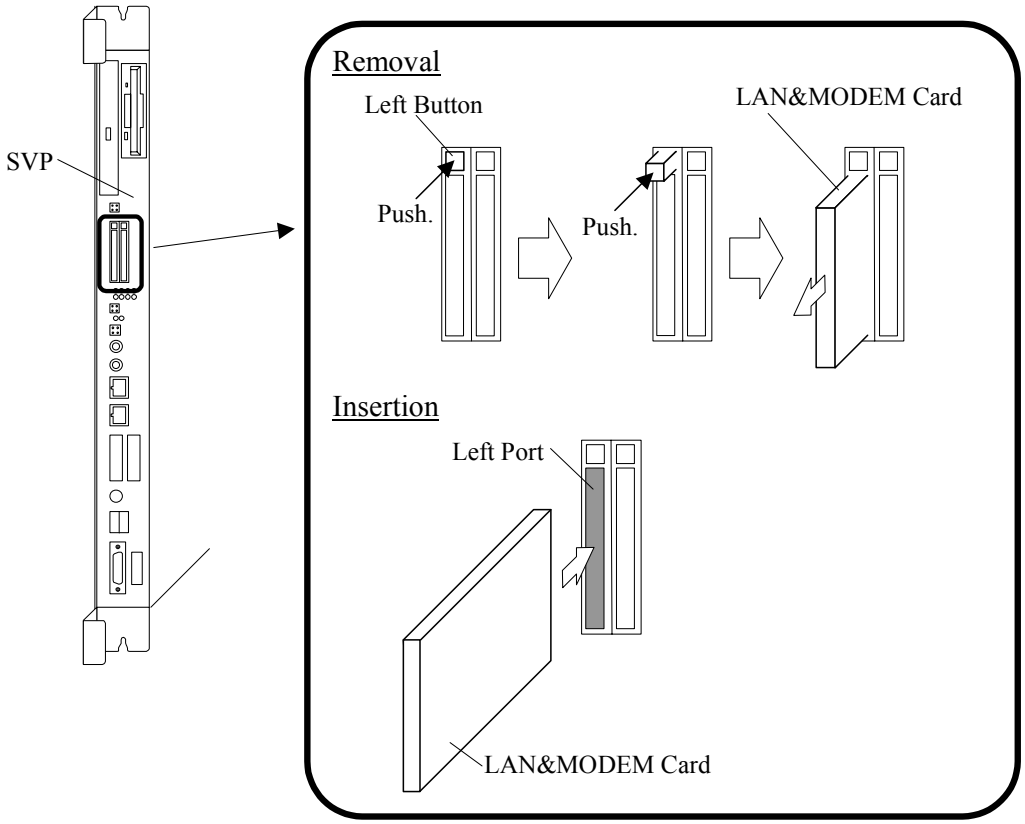


Fig. T7.1-4 Replacement of LAN&MODEM Card

5. Install the spare SVP.
   a. Install the spare SVP and fasten the two screws ②. Refer to Fig. T7.1-2.
   b. Connect the cable to the MODEM card.
   c. Connect the cables (P82-x, P83-x, and P84-x) to the spare SVP.
      The cable (P81-x) is not to be connected at this time, however.
   d. Connect the power cable (P86-x) to the spare SVP.
   e. Loosen the screw ① and lower the stopper. Then fasten the screw ①.

6. Remove the Jumper.
   a. Remove the maintenance jumper of the JP2 on the spare SVP. Refer to Fig. T7.1-1.
   b. Check that power supply of the SVP is turned on.

7. Go to SVP post procedure t1 [REP04-330].

2	Replacement of MODEM Card

1. For the replacement work of MODEM Card, the procedure is different depending on the type of OS Master revision and MODEM Card of SVP. Select the corresponding procedure from Table T7.2-1 and perform the replacement work.

Table T7.2-1 List of MODEM Card Replacement Procedure

No.	OS Master Revision	Failed MODEM Card	Spare MODEM Card	Replacement Procedure (Page)
1	P1a-02xx	3CXFEM656C	3CXFEM656C	A-1 (REP03-542)
2		3CXFEM656C	ME5614CG3	A-2 (REP03-543)
3		ME5614CG3	3CXFEM656C	A-3 (REP03-544)
4		ME5614CG3	ME5614CG3	A-1 (REP03-542)
5	P1a-03xx	3CXFEM656C or ME5614CG3	3CXFEM656C or ME5614CG3	A-1 (REP03-542)

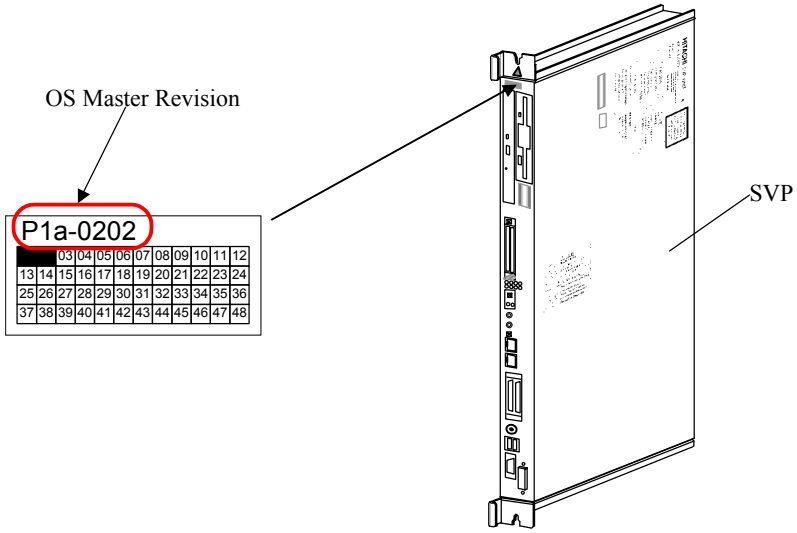


Fig.T7.2-1 How to distinguish OS Master Revision

Procedure [A-1]

1. SVP Power OFF
   When replacing the MODEM Card of Master SVP, go to step 1-1 (REP03-542A).
   When replacing the MODEM Card of Standby SVP, go to step 1-2 (REP03-542C).

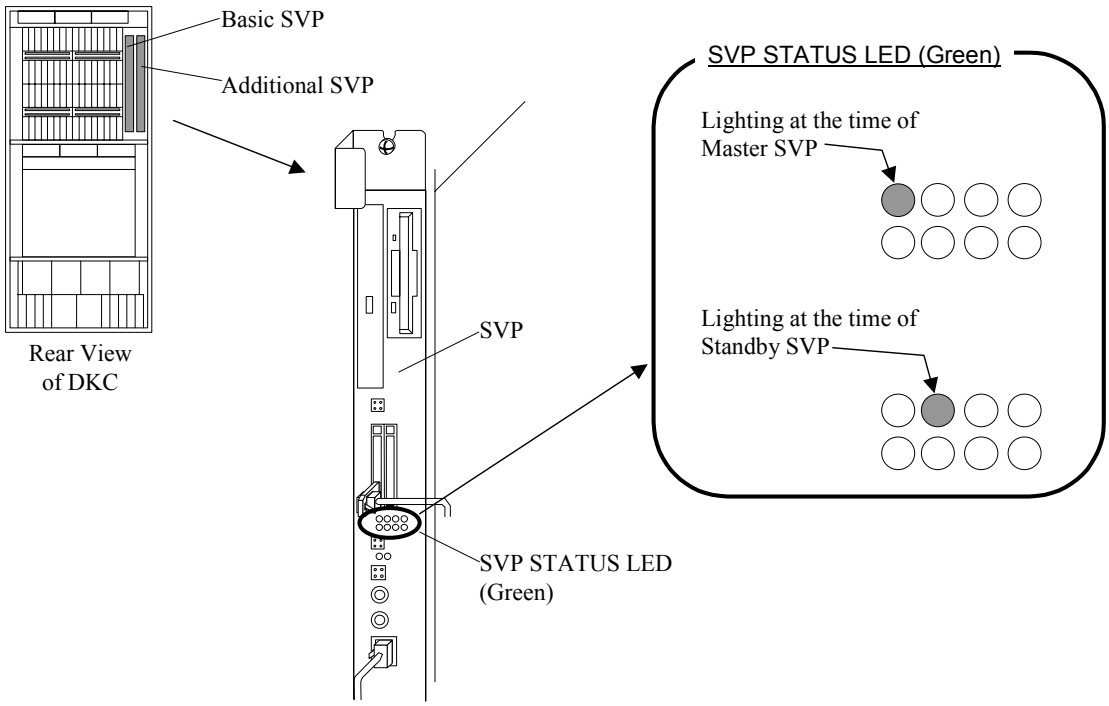


Fig. T7.2.A1-1 Confirmation of SVP STATUS LED

1-1 When replacing the MODEM Card of Master SVP

a. Insert the maintenance jumper into JP1 on the basic SVP.
When the additional SVP is installed, insert the maintenance jumper into JP1 on the additional SVP.

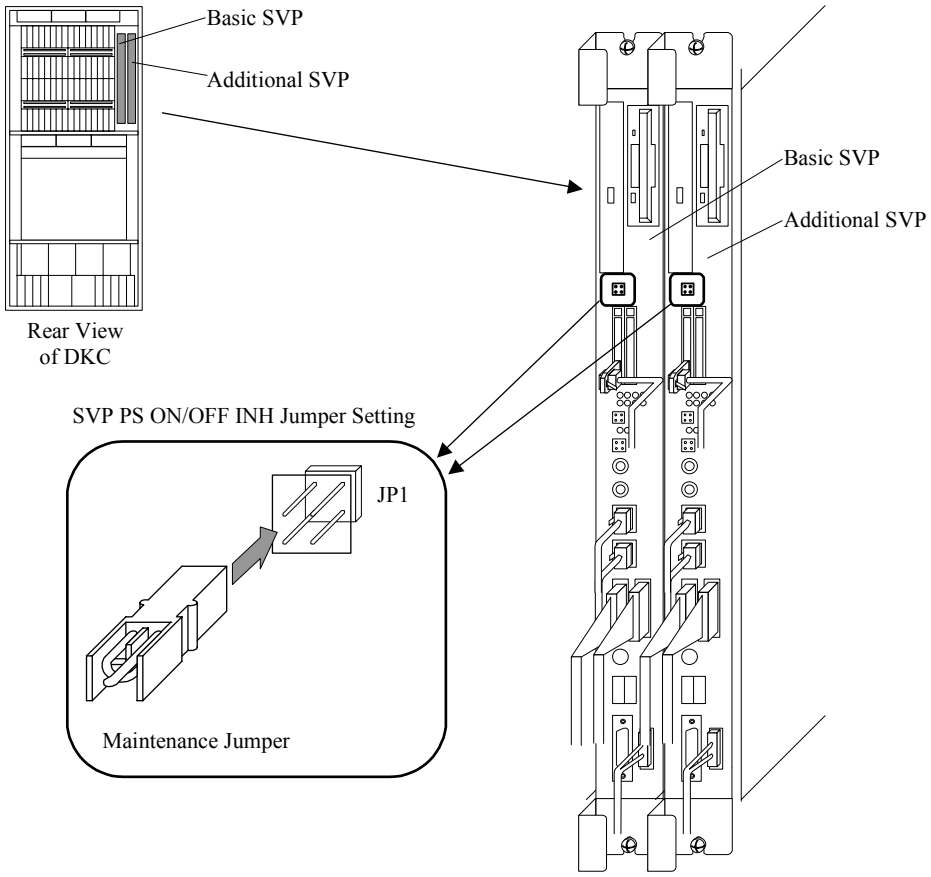
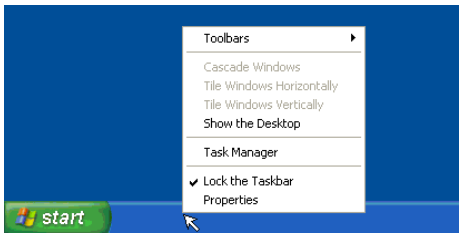
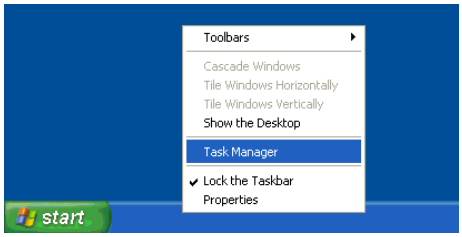


Fig. T7.2.A1-2 Insertion of Maintenance Jumper

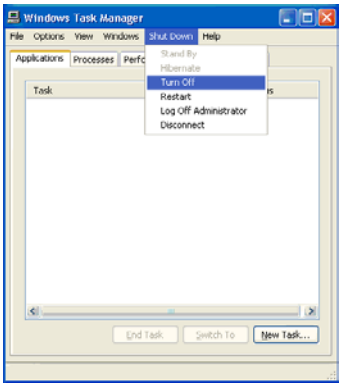
b. Click the right button of a mouse on a taskbar.



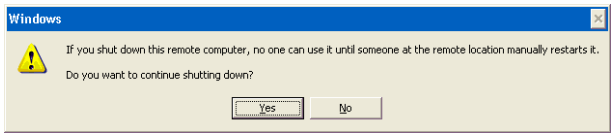
c. Select (CL) the [Task Manager].



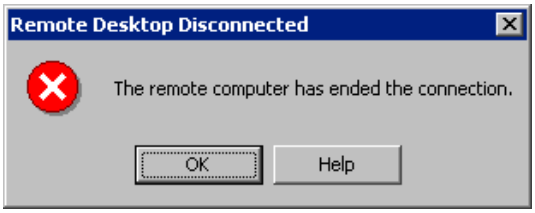
d. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



e. Select (CL) the [Yes] button.



f. Select (CL) the [OK] button.



g. It waits until SVP POWER LED puts out the light.

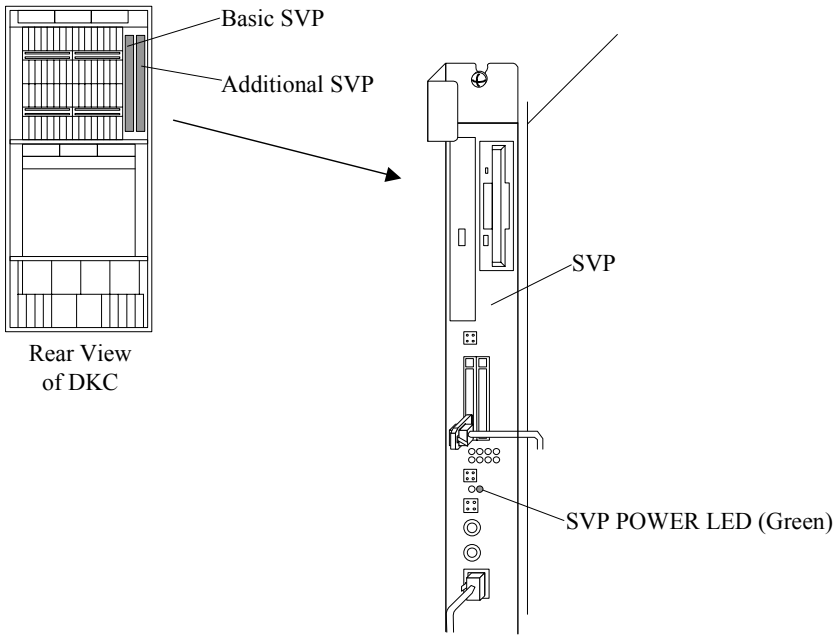


Fig. T7.2.A1-3 Location of SVP POWER LED

h. Go to step 2.

1-2 When replacing the MODEM Card of Standby SVP

a. Insert the maintenance jumper into JP1 on the basic SVP.
Insert the maintenance jumper into JP1 on the additional SVP.

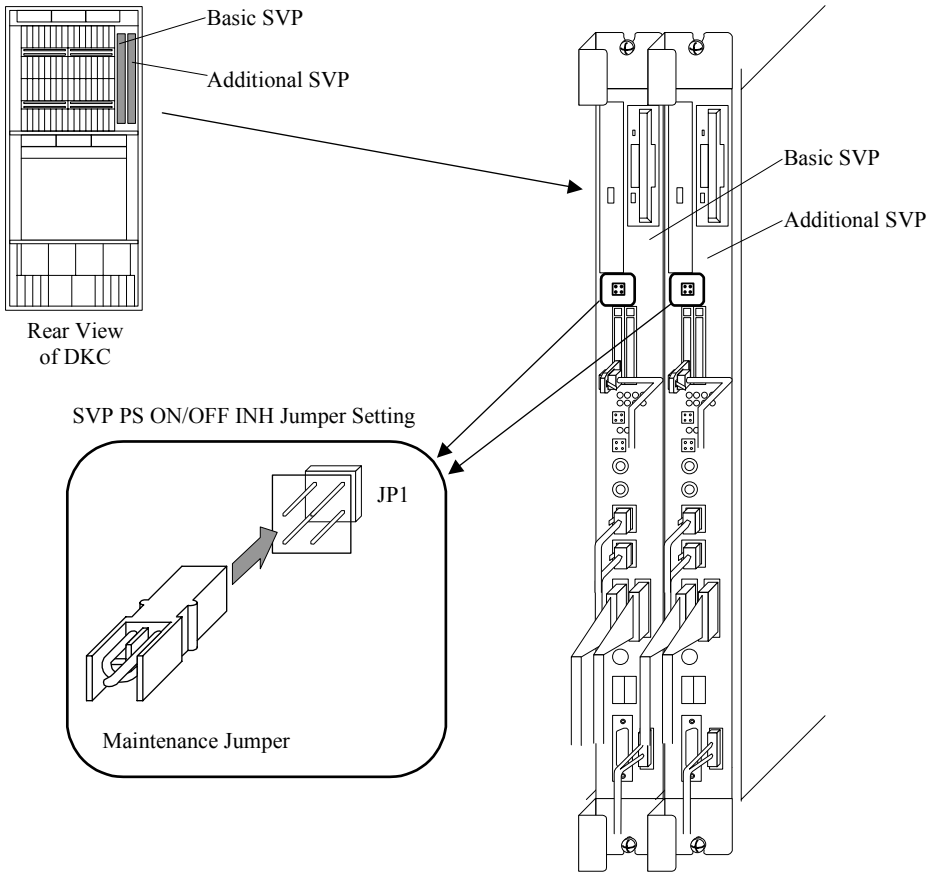
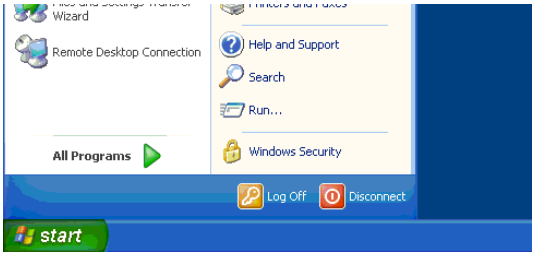
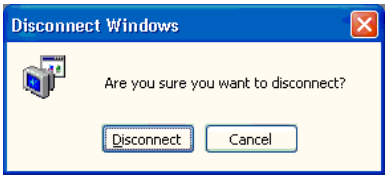


Fig. T7.2.A1-4 Insertion of Maintenance Jumper

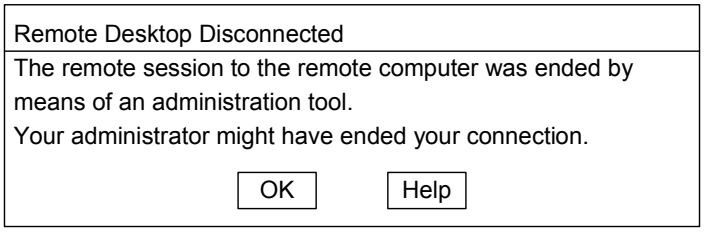
b. Change Console PC connection from the Master SVP to the Standby SVP.
b-1 Select (CL) [start], and then select (CL) the [Disconnect] button.



b-2 Select (CL) the [Disconnect] button.

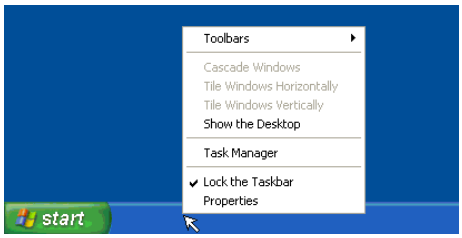


b-3 Select (CL) the [OK] button.
When the [Remote Desktop Disconnected] window is not displayed, disregard this procedure and go to next step.

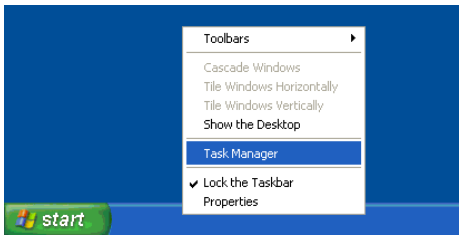


b-4 Select (CL) [Search] of the SVP Connect Utility through the Console PC.
Make sure that the SVP concerned is displayed in the list.
(See SVP01-60)
[Connection destination]
xxx.xxx.xxx.14

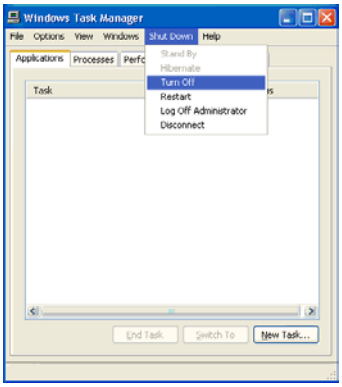
c. Click the right button of a mouse on a taskbar.



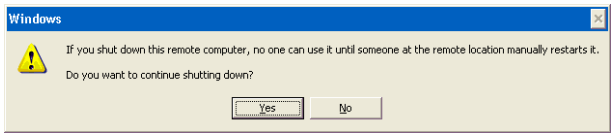
d. Select (CL) the [Task Manager].



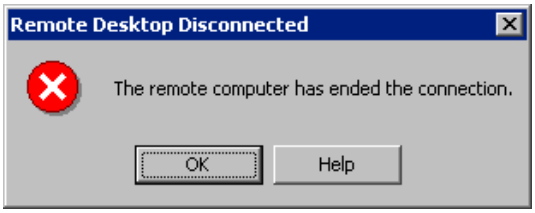
e. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



f. Select (CL) the [Yes] button.



g. Select (CL) the [OK] button.



h. It waits until SVP POWER LED puts out the light.

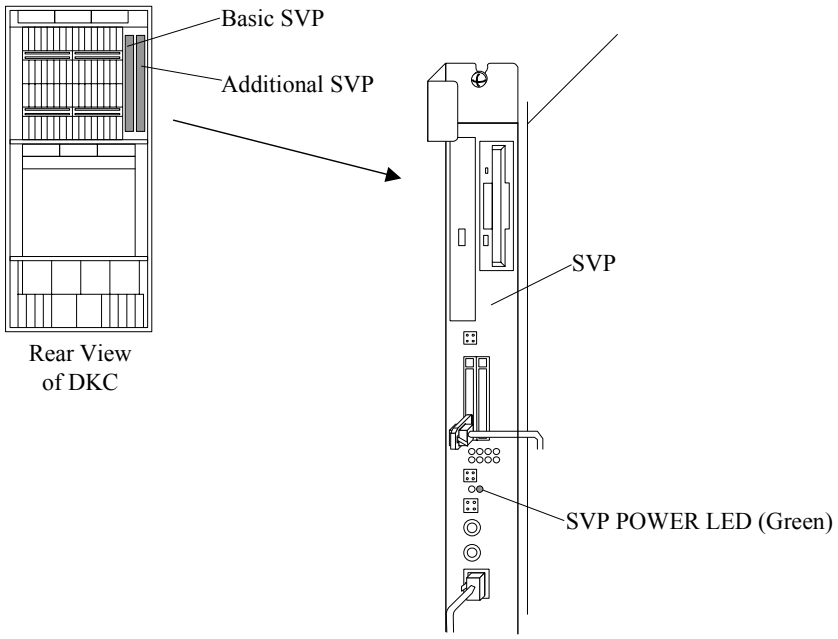


Fig. T7.2.A1-5 Location of SVP POWER LED

2. Remove the failed MODEM Card.

When failed MODEM card is 3CXFEM656C

a. Disconnect the cable (P85-x) from the modem connector.
b. Push the modem connector on the MODEM card.
c. Push the left button on the SVP.
d. Push the left button to remove MODEM card from the SVP.

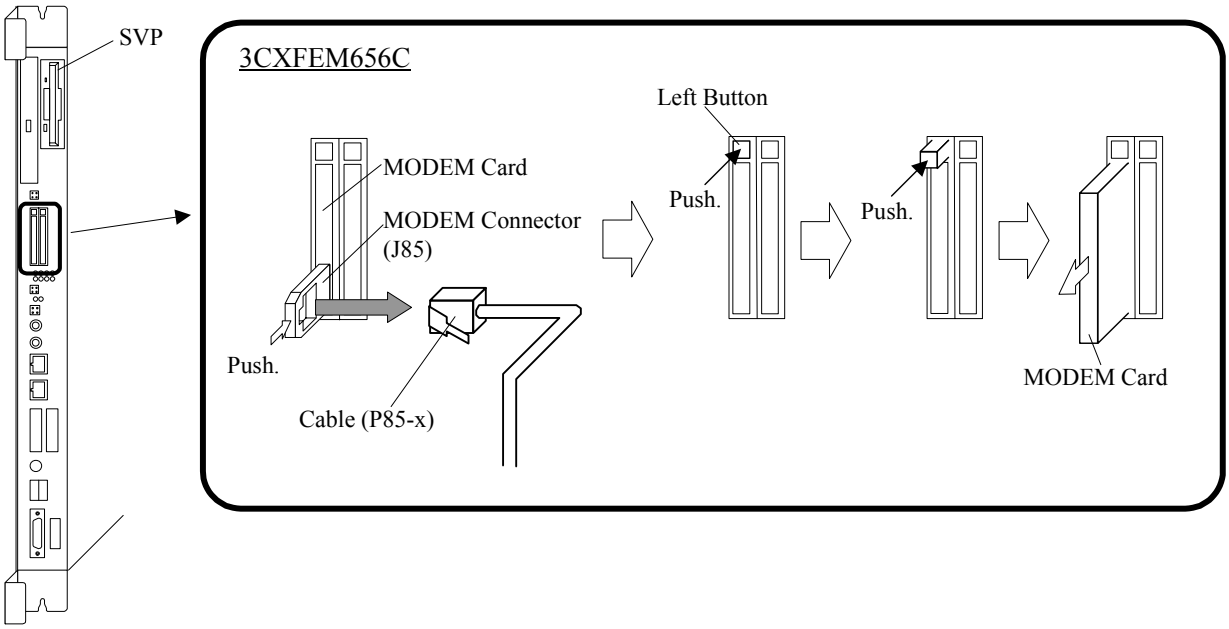


Fig. T7.2.A1-6 Removal of MODEM Card

When failed MODEM card is ME5614CG3

a. Disconnect the cable (P85-x) from the modem cable coupler.
b. Push the left button on the SVP.
c. Push the left button to remove MODEM Card from the SVP.

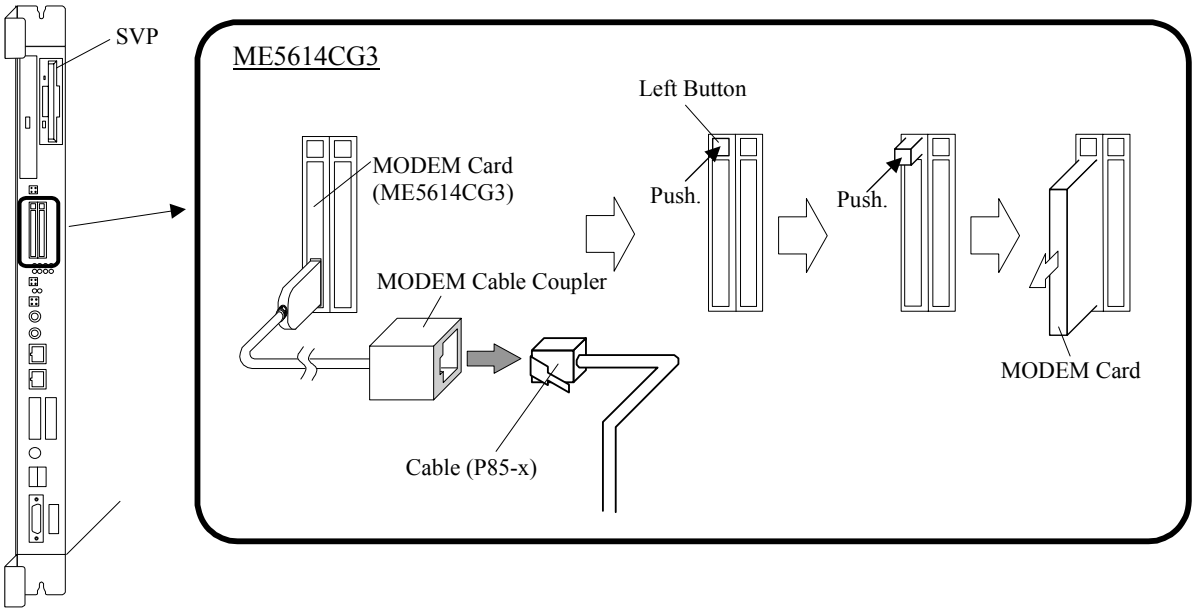


Fig. T7.2.A1-7 Removal of MODEM Card

d. Open the repeat binder and remove the modem cable.

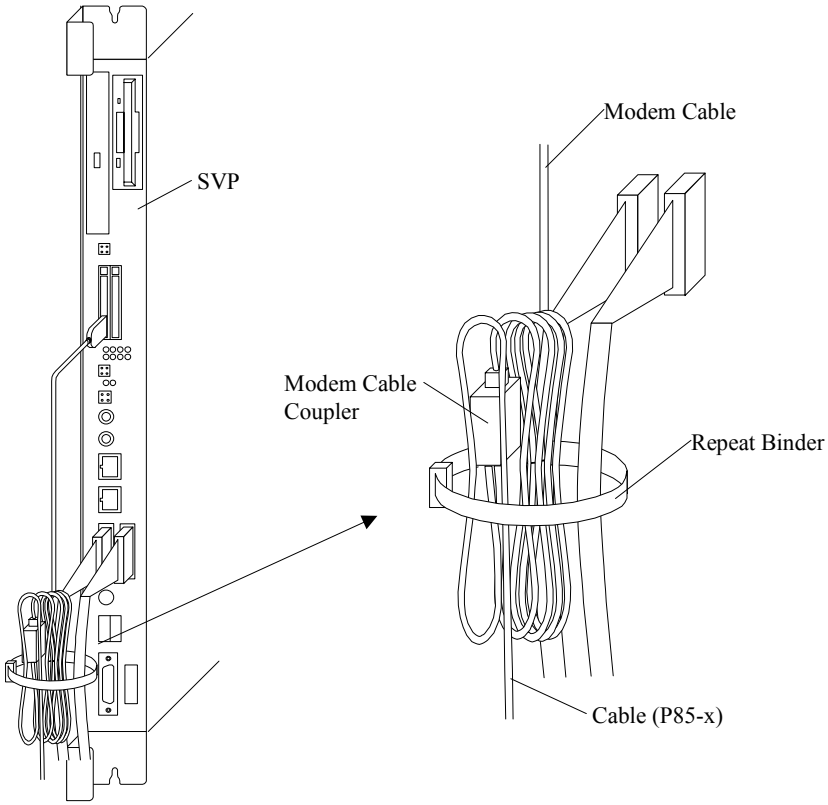


Fig. T7.2.A1-8 Removal of Modem Cable

3. Insert the spare MODEM Card.

When spare MODEM card is 3CXFEM656C

a. Insert the MODEM Card in the left port on the SVP.
b. Push the modem connector on the MODEM card.
c. Connect the cable (P85-x) to the modem connector.

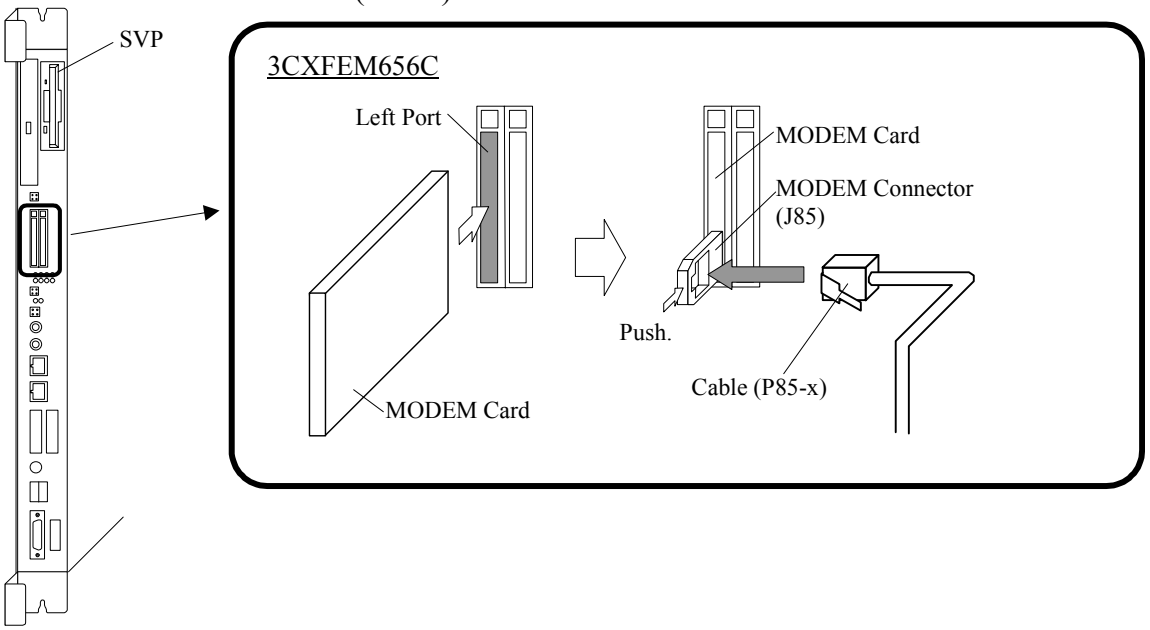


Fig. T7.2.A1-9 Insertion of MODEM Card

When spare MODEM card is ME5614CG3

a. Insert the MODEM Card in the left port on the SVP.
b. Connect the cable (P85-x) to the modem cable coupler.
c. Fix the surplus modem cable with the repeat binder. Refer to Fig. T7.2.A1-8.

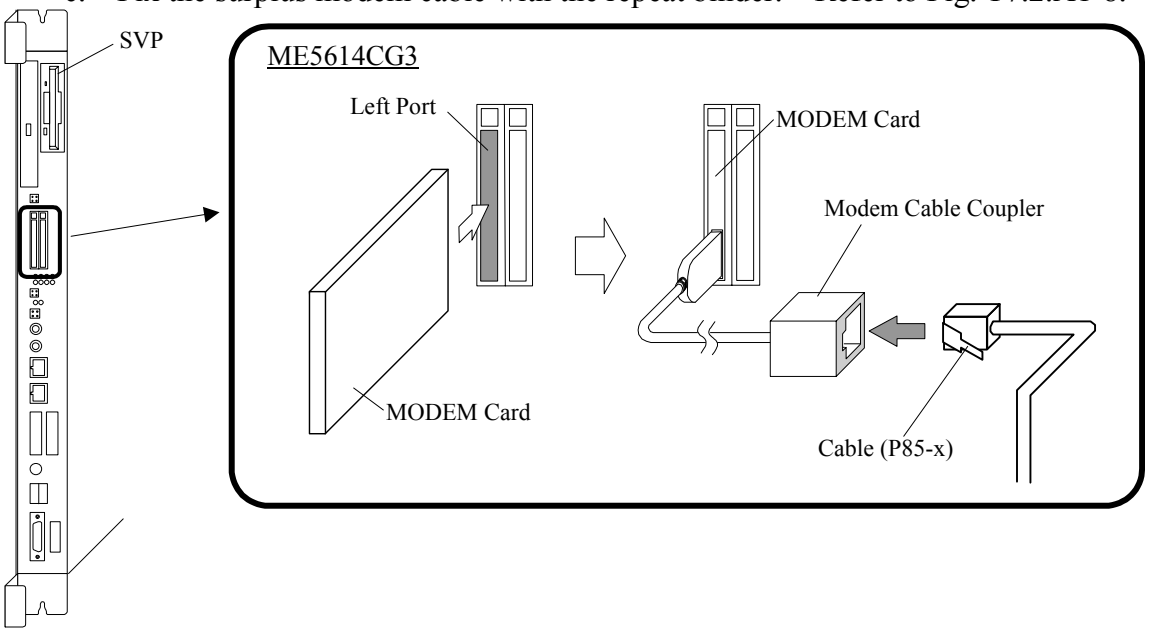


Fig. T7.2.A1-10 Insertion of MODEM Card

4. SVP Power ON.
   a. Press the SVP PS ON Switch on the SVP.

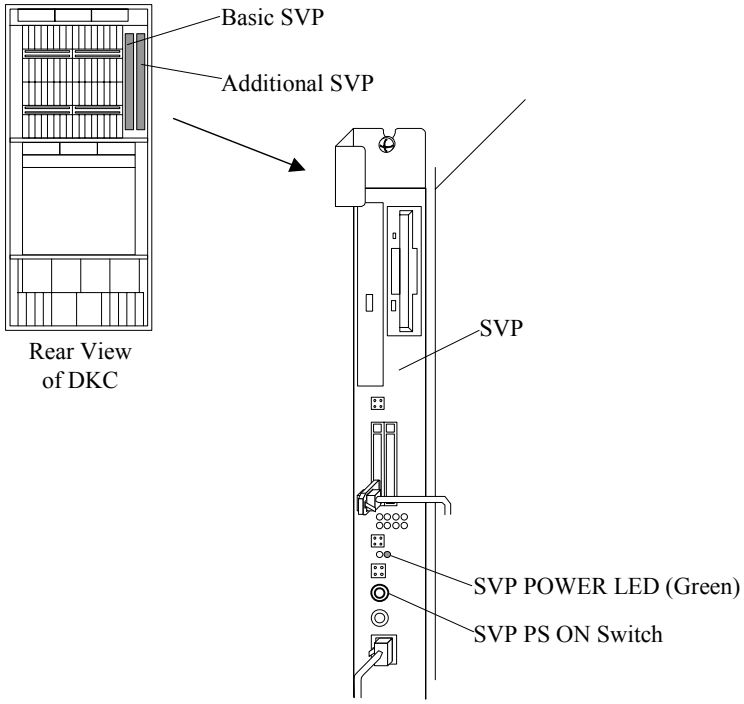


Fig. T7.2.A1-11 SVP PS ON Switch

   b. Wait for a few minutes until the Windows system starts up.

   c. Select (CL) [Search] of the SVP Connect Utility through the Console PC.
   Make sure that the SVP concerned is displayed in the list. (See SVP01-60.)
   [Connection destination]
   - When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
   - When SVP High Reliability Support Kit is set:
     When you change the MODEM Card of Master SVP: xxx.xxx.xxx.15
     When you change the MODEM Card of Standby SVP: xxx.xxx.xxx.14

   d. Remove the maintenance jumper of the JP1 on the basic SVP.
   When the additional SVP is installed, remove the maintenance jumper of the JP1 on the additional SVP. Refer to Fig. T7.2.A1-2.

5. Replacement work is end. (Post procedure is unnecessary.)

Procedure [A-2]

1. SVP Power OFF
   When replacing the MODEM Card of Master SVP, go to step 1-1 (REP03-543A).
   When replacing the MODEM Card of Standby SVP, go to step 1-2 (REP03-543C).

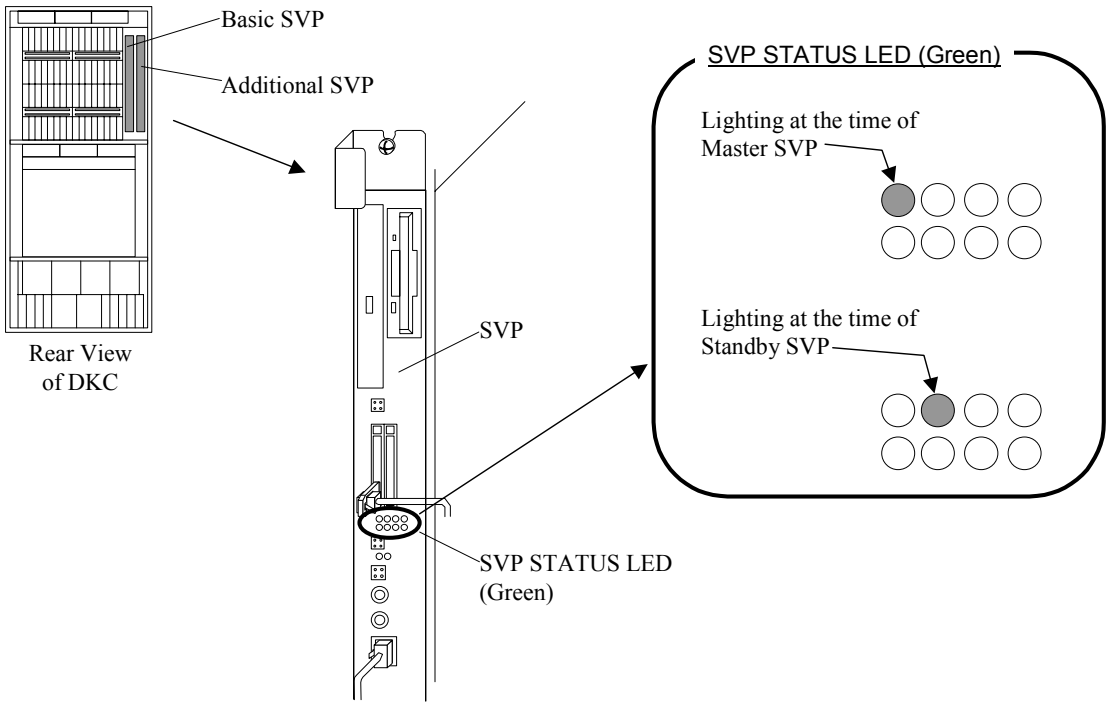


Fig. T7.2.A2-1 Confirmation of SVP STATUS LED

1-1 When replacing the MODEM Card of Master SVP

a. Insert the maintenance jumper into JP1 on the basic SVP.
When the additional SVP is installed, insert the maintenance jumper into JP1 on the additional SVP.

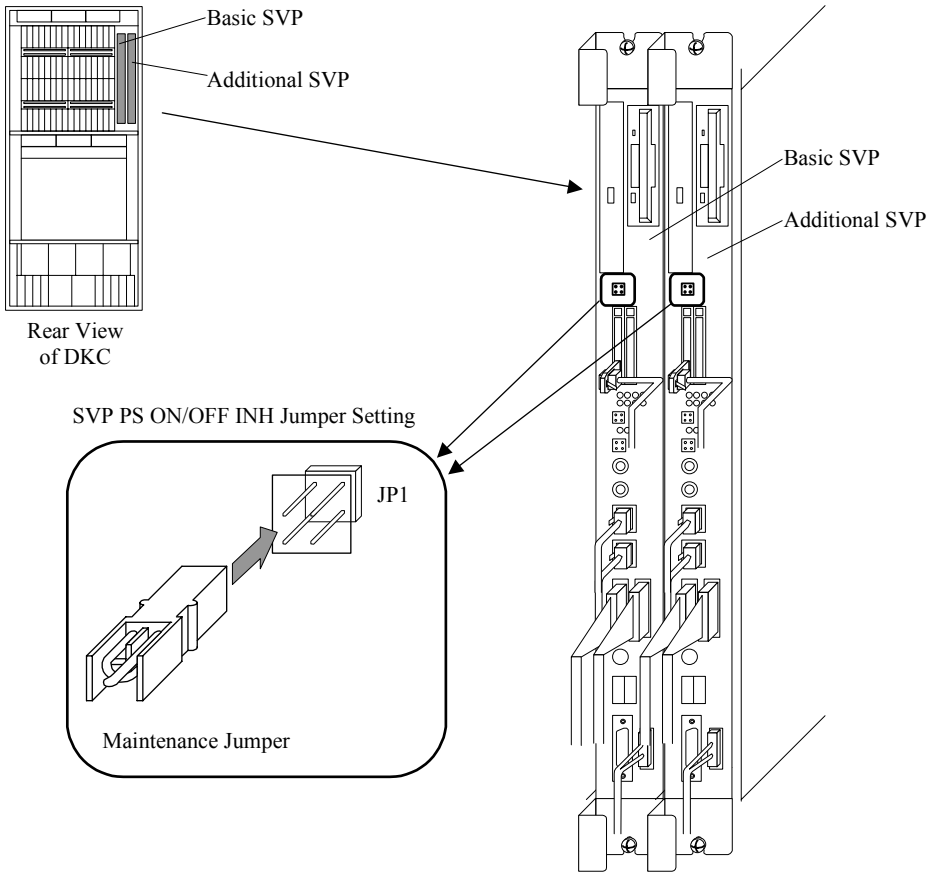
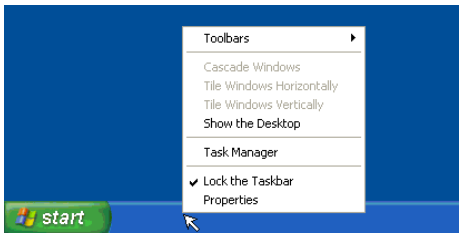
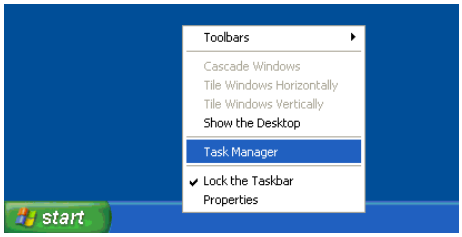


Fig. T7.2.A2-2 Insertion of Maintenance Jumper

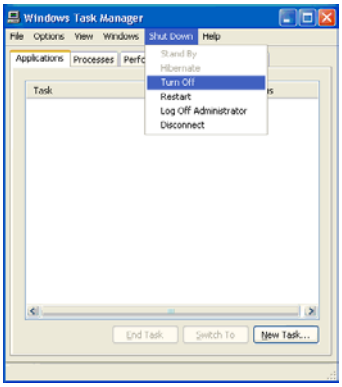
b. Click the right button of a mouse on a taskbar.



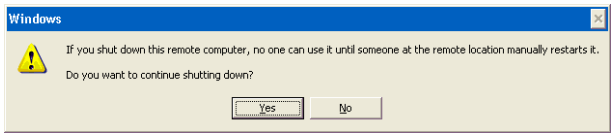
c. Select (CL) the [Task Manager].



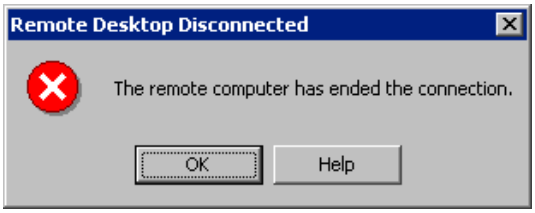
d. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



e. Select (CL) the [Yes] button.



f. Select (CL) the [OK] button.



g. It waits until SVP POWER LED puts out the light.

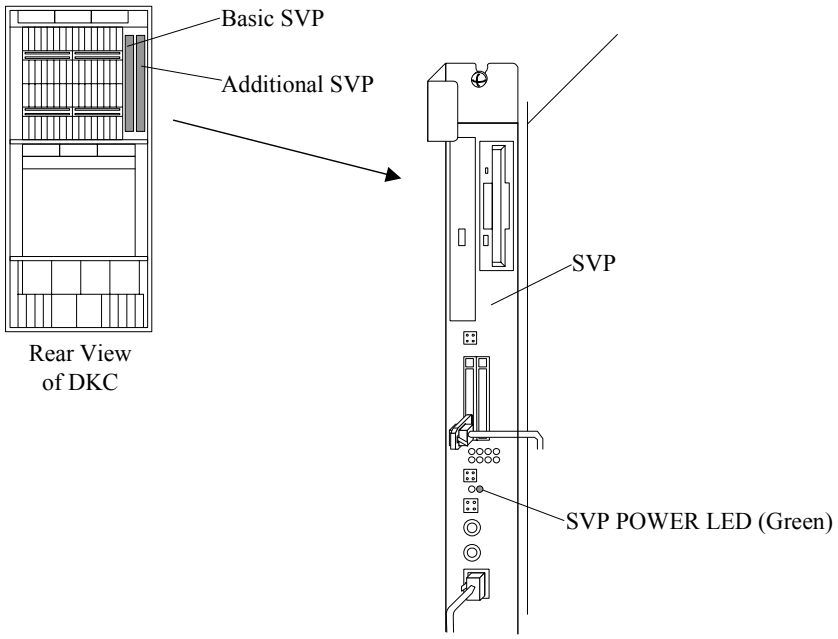


Fig. T7.2.A2-3 Location of SVP POWER LED

h. Go to step 2.

1-2 When replacing the MODEM Card of Standby SVP

a. Insert the maintenance jumper into JP1 on the basic SVP.
Insert the maintenance jumper into JP1 on the additional SVP.

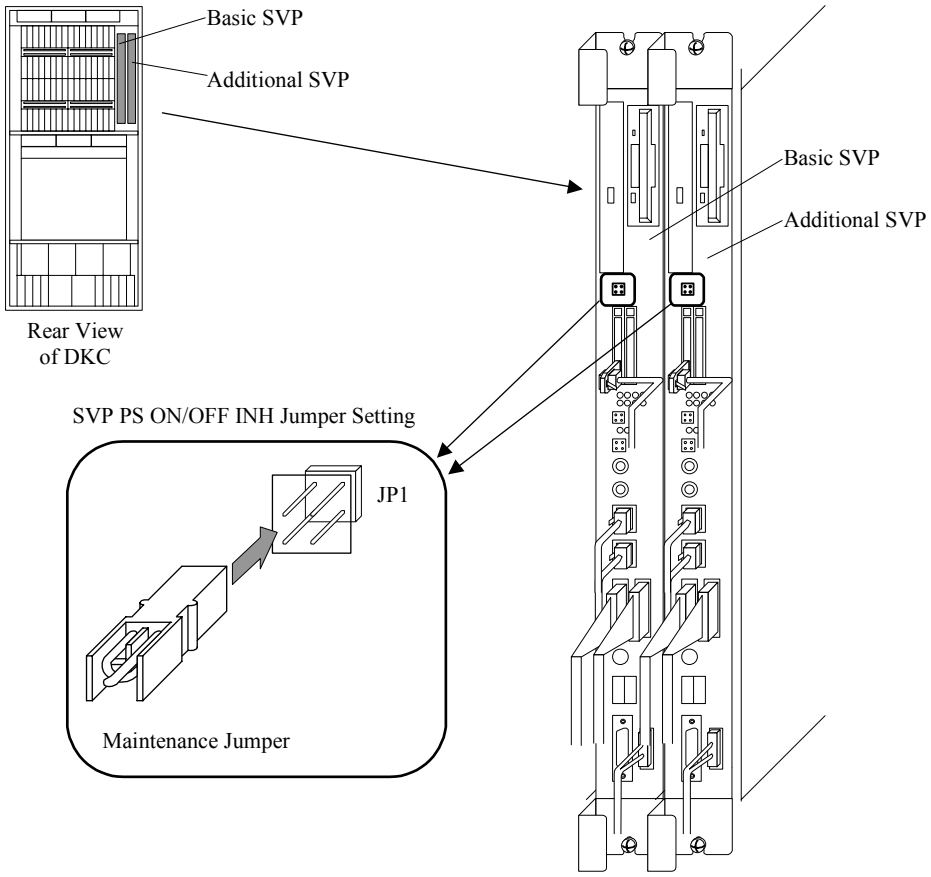
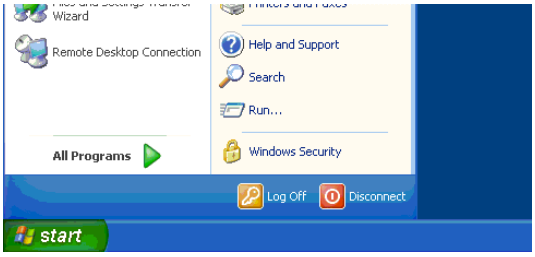
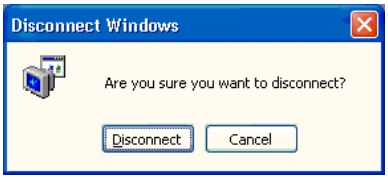


Fig. T7.2.A2-4 Insertion of Maintenance Jumper

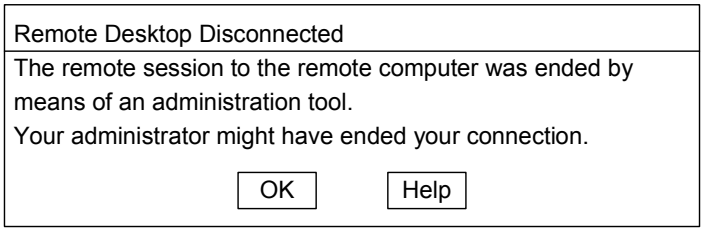
b. Change Console PC connection from the Master SVP to the Standby SVP.
b-1 Select (CL) [start], and then select (CL) the [Disconnect] button.



b-2 Select (CL) the [Disconnect] button.

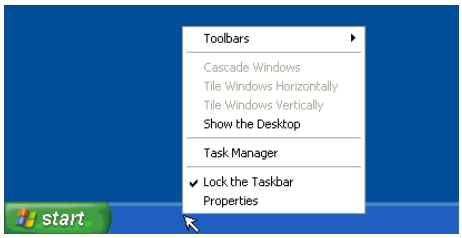


b-3 Select (CL) the [OK] button.
When the [Remote Desktop Disconnected] window is not displayed, disregard this procedure and go to next step.

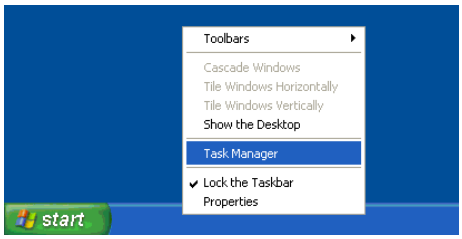


b-4 Select (CL) [Search] of the SVP Connect Utility through the Console PC.
Make sure that the SVP concerned is displayed in the list.
(See SVP01-60)
[Connection destination]
xxx.xxx.xxx.14

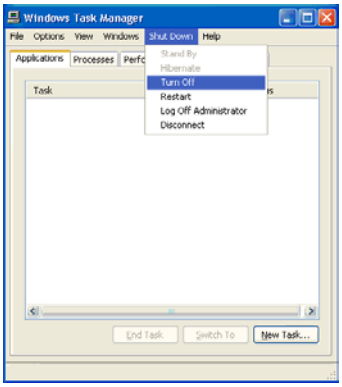
c. Click the right button of a mouse on a taskbar.



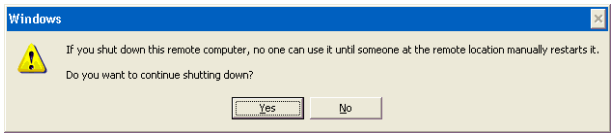
d. Select (CL) the [Task Manager].



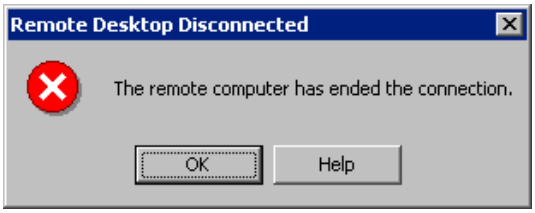
e. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



f. Select (CL) the [Yes] button.



g. Select (CL) the [OK] button.



h. It waits until SVP POWER LED puts out the light.

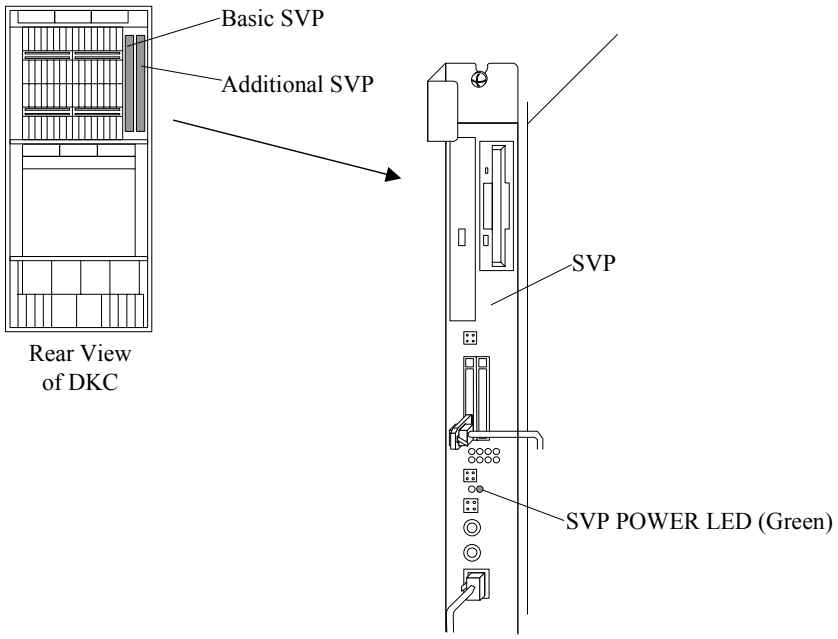


Fig. T7.2.A2-5 Location of SVP POWER LED

2. Remove the failed MODEM Card (3CXFEM656C).
   a. Disconnect the cable (P85-x) from the modem connector.
   b. Push the modem connector on the MODEM card.
   c. Push the left button on the SVP.
   d. Push the left button to remove MODEM Card from the SVP.

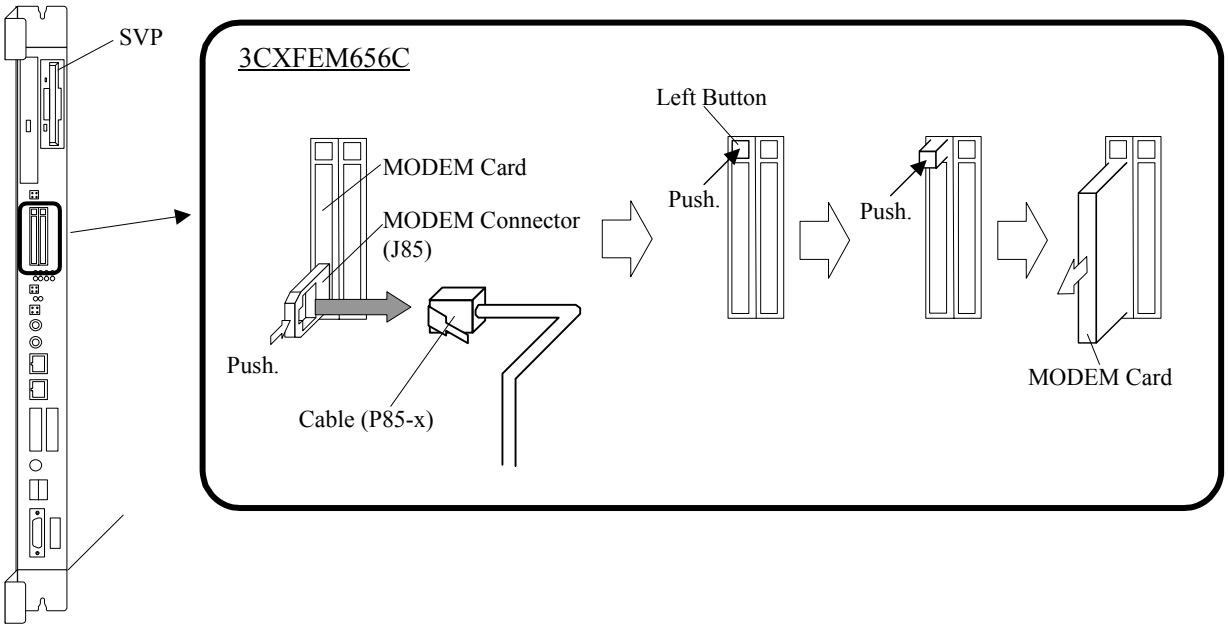


Fig. T7.2.A2-6 Removal of MODEM Card

3. SVP Power ON.
   a. Press the SVP PS ON Switch on the SVP.

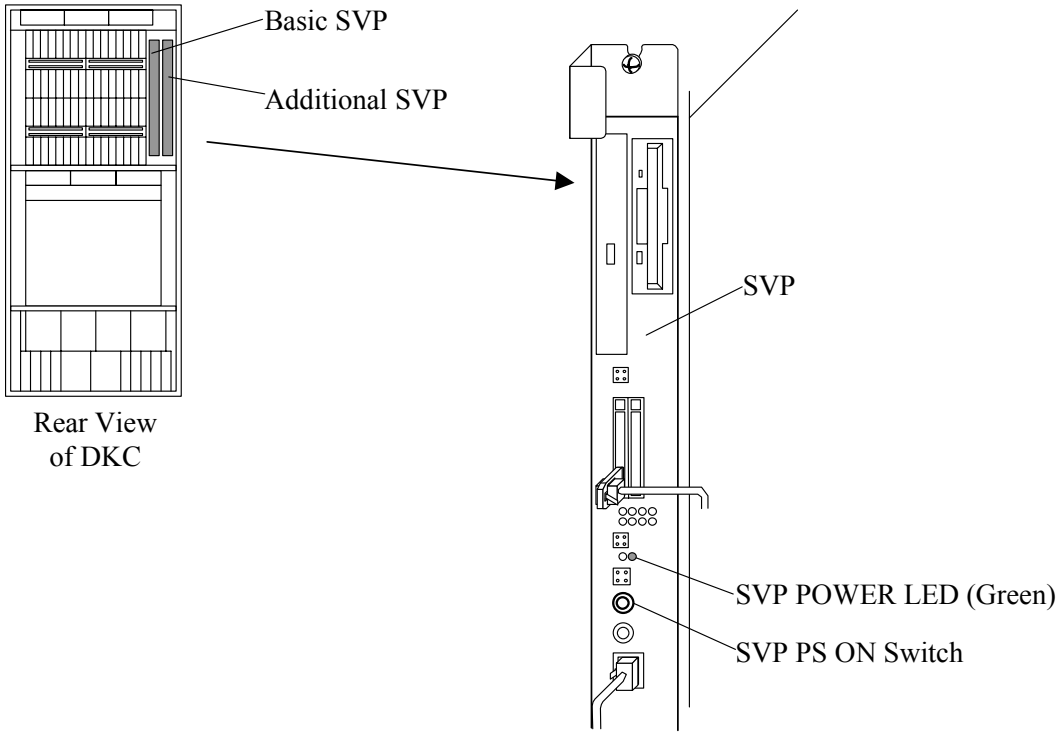


Fig. T7.2.A2-7 SVP PS ON Switch

   b. Wait for a few minutes until the Windows system starts up.

   c. Select (CL) [Search] of the SVP Connect Utility through the Console PC.
   Make sure that the SVP concerned is displayed in the list. (See SVP01-60.)
   [Connection destination]
   • When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
   • When SVP High Reliability Support Kit is set:
   When you change the MODEM Card of Master SVP: xxx.xxx.xxx.15
   When you change the MODEM Card of Standby SVP: xxx.xxx.xxx.14

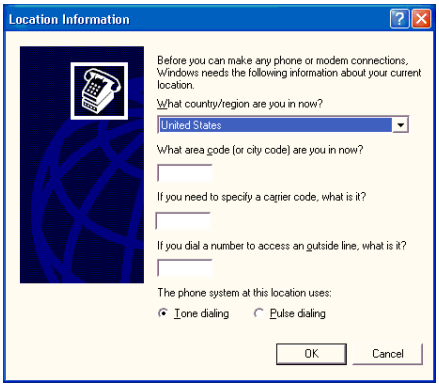
   d. Remove the maintenance jumper of the JP1 on the basic SVP.
   When the additional SVP is installed, remove the maintenance jumper of the JP1 on the additional SVP. Refer to Fig. T7.2.A2-2.

4. Select (CL) [Start] and [Control Panel] in this order.

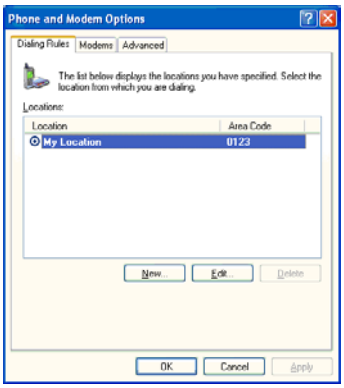
5. Select (DC) [Phone and Modem Option] icon in the [Control Panel] window.

6.

[Location Information] window is displayed.
: Select (CL) the [Cancel] button and go to step 8.

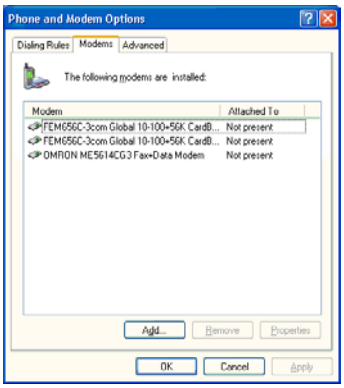


[Phone and Modem Options] is displayed.
: Go to step 7



7.

Select [Modems] tab.
Is it displayed on the Modem item as [OMRON ME5614CG3 Fax + Data Modem]?
* Yes: Select (CL) the [Cancel] button and go to step 12
* No: Go to step 8



8.

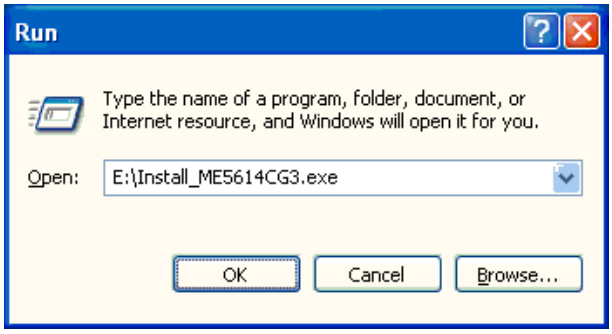
Insert the Modem driver to the CD-R drive in the SVP, and select (CL) [Run...] from the [Start] menu.

9.

Enter “E:\Install_ME5614CG3.exe” in the “Open” box. Select (CL) the [OK] button.

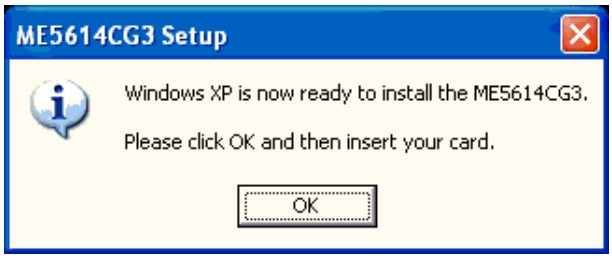
Note: In the step above, the CD-R drive in the Console PC is assigned a drive letter E.

If the CD-R drive is assigned a drive letter D, enter “D: Install_ME5614CG3.exe”.



10.

Select (CL) the [OK] button.



11.

CD-ROM is inserted in the CD-ROM drive, take it out.

12. Insert the spare MODEM Card (ME5614CG3).
    a. Insert the MODEM card in the left port on the SVP.
    b. Connect the cable (P85-x) to the modem cable coupler.

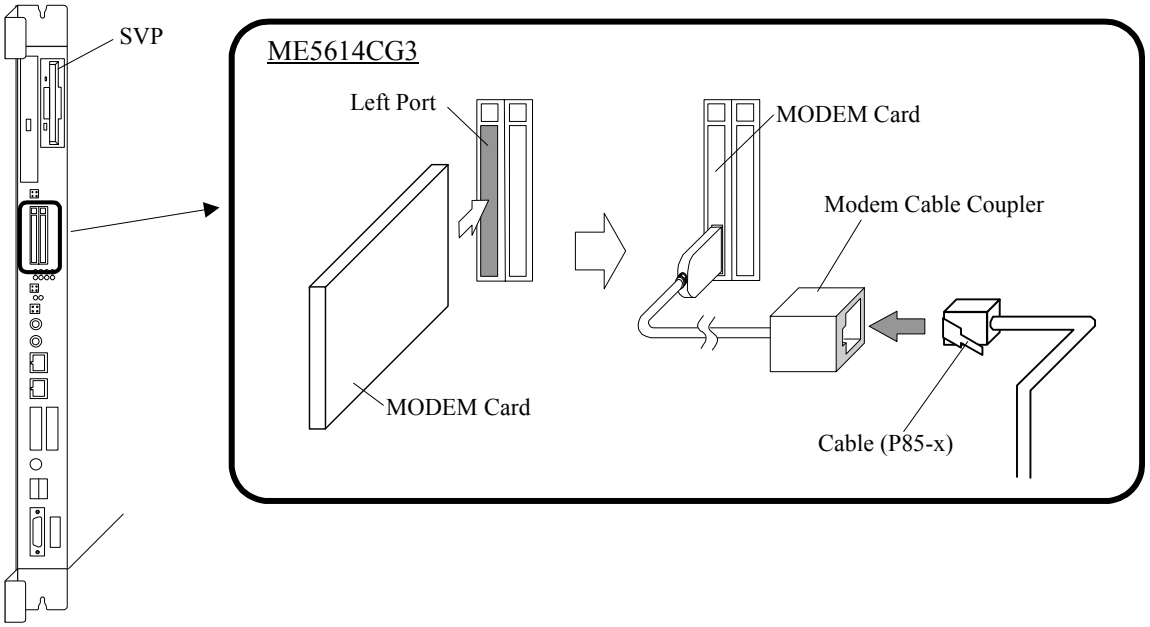


Fig. T7.2.A2-8 Insertion of MODEM Card

c. Fix the surplus modem cable with the repeat binder.

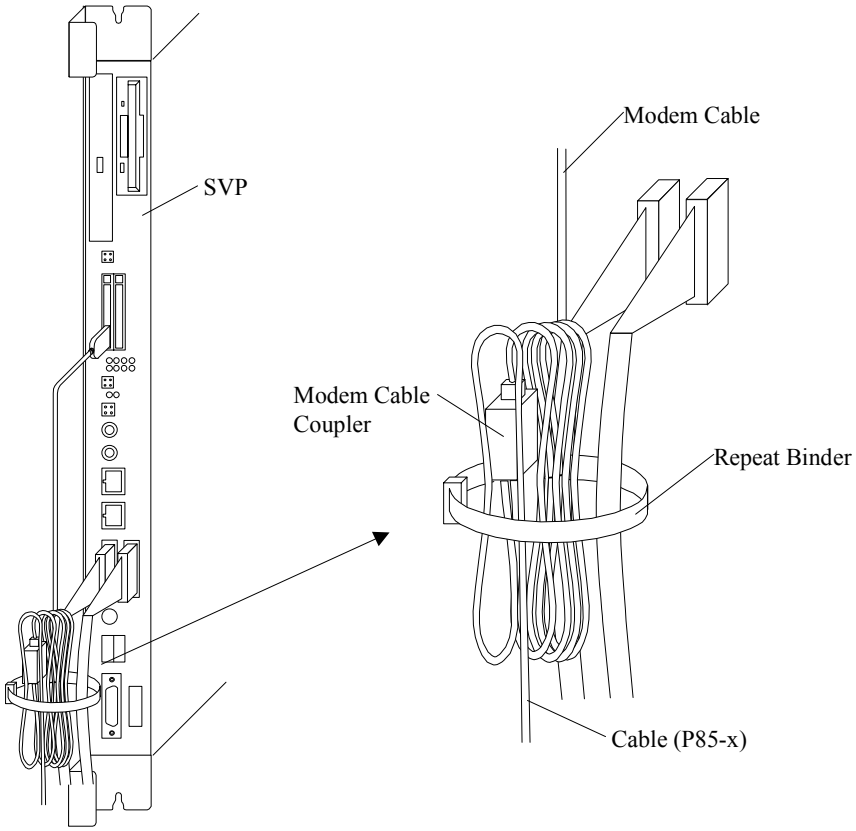
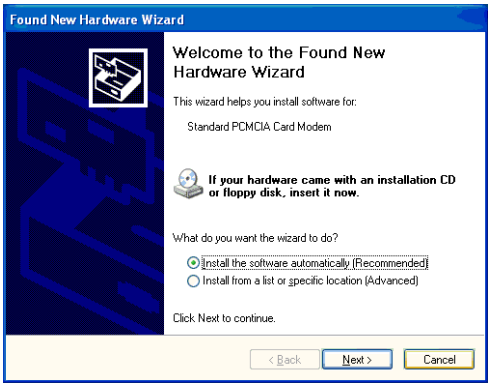


Fig. T7.2.A2-9 Fixation of Modem Cable

13.

* [Found New Hardware Wizard] window is displayed.
  : Go to step 23
* [Found New Hardware Wizard] window is not displayed. : Go to step 14



14.

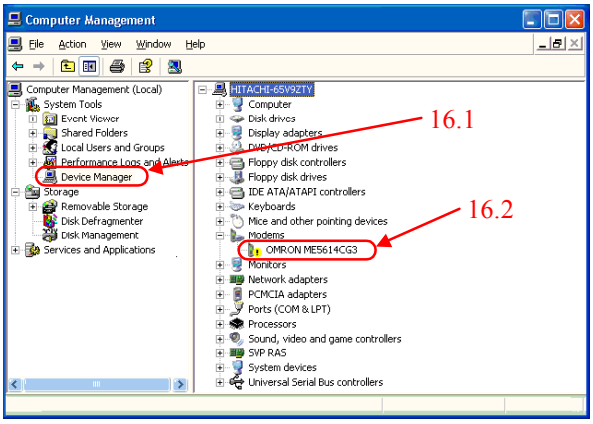
Select (CL) [Start] and [Administrative Tools] in this order.

15.

Select (DC) [Computer Management] in the [Administrative Tools] window.

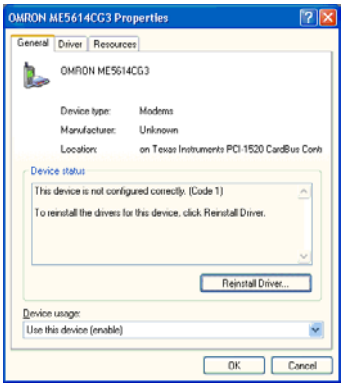
16.

16.1 Select (CL) the [Device Manager] of a left side window.
16.2 Select (DC) the [OMRON ME5614CG3].



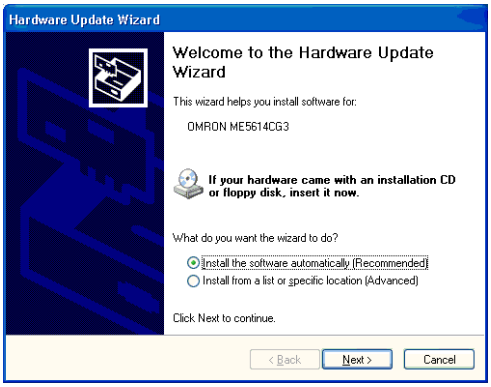
17.

Select [General] tab, and then select (CL) the [Reinstall Driver...] button.



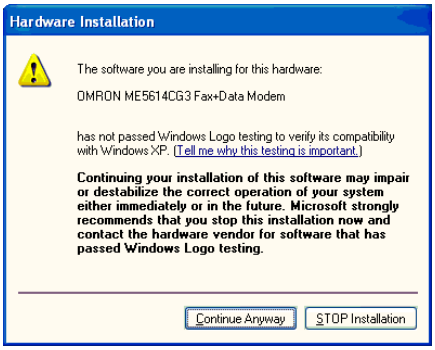
18.

After selecting “Install the software automatically (Recommended)”, press the [Next>] button.



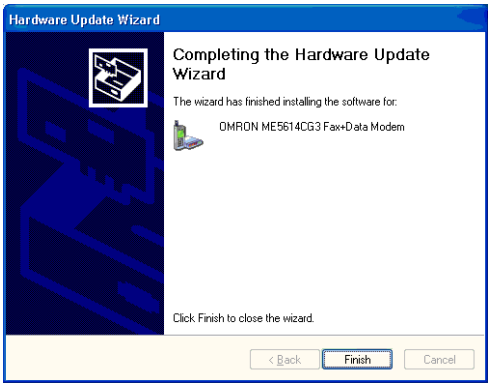
19.

Select (CL) the [Continue Anyway] button.



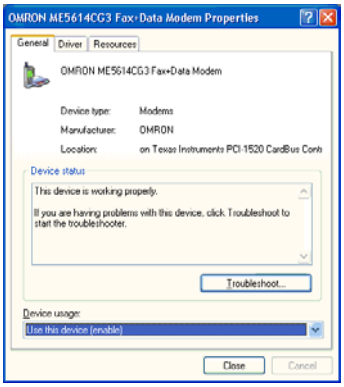
20.

Select (CL) the [Finish] button.



21.

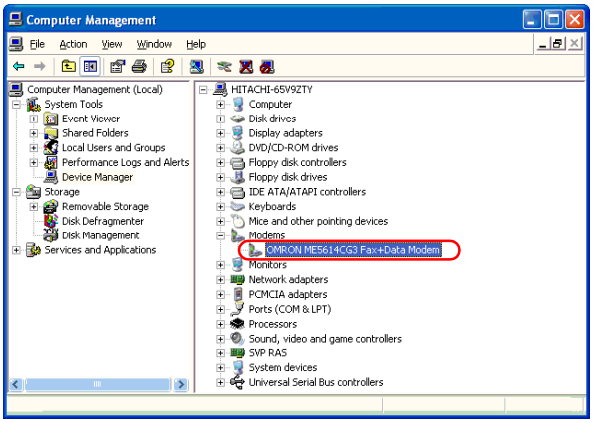
Select (CL) the [Close] button.



22.

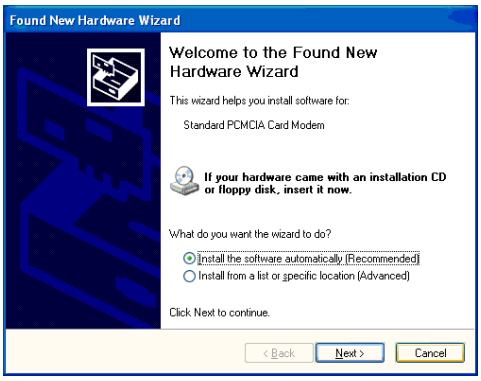
Select (DC) the [OMRON ME5614CG3 Fax + Data Modem].

Go to step 29.



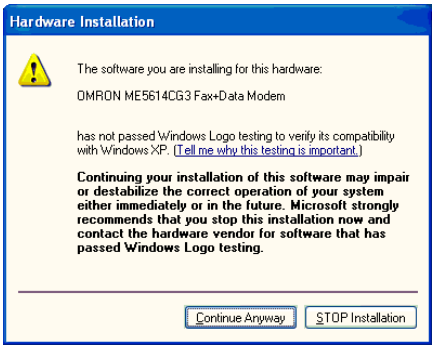
23.

After selecting “Install the software automatically (Recommended)”, press the [Next>] button.



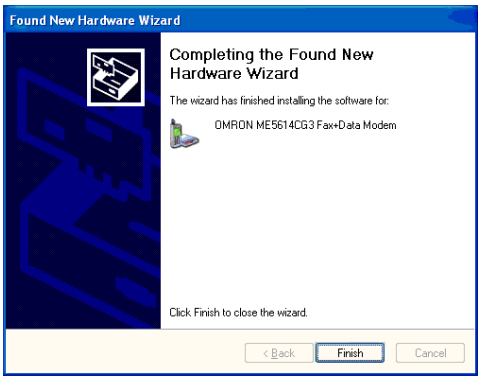
24.

Select (CL) the [Continue Anyway] button.



25.

Select (CL) the [Finish] button.



26.

Select (CL) [Start] and [Administrative Tools] in this order.

27.

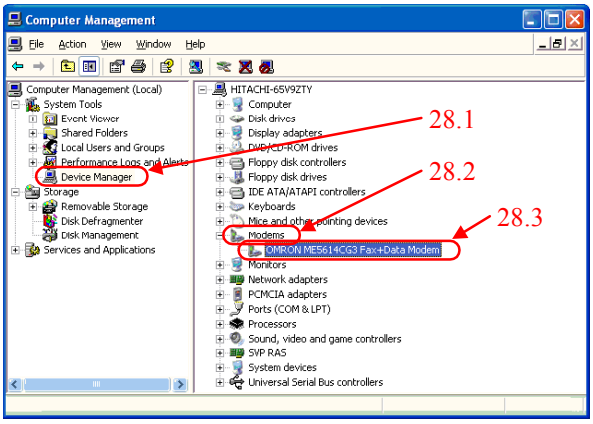
Select (DC) [Computer Management] in the [Administrative Tools] window.

28.

28.1 Select (CL) the [Device Manager] of a left side window.

28.2 Select (DC) the [Modems] of a Right side window.

28.3 Select (DC) the [OMRON ME5614CG3 Fax + Data Modem].

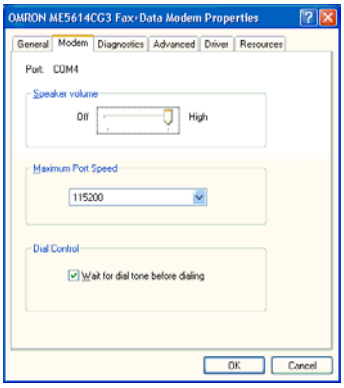


29.

Select [Modem] tab.

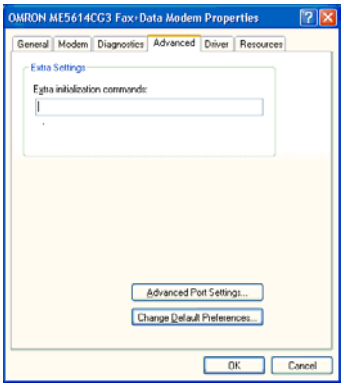
Is [Port] displayed as [COM4]?

* Displayed as [COM4]: Go to step 34.
* Those other than [COM4]: Go to step 30.



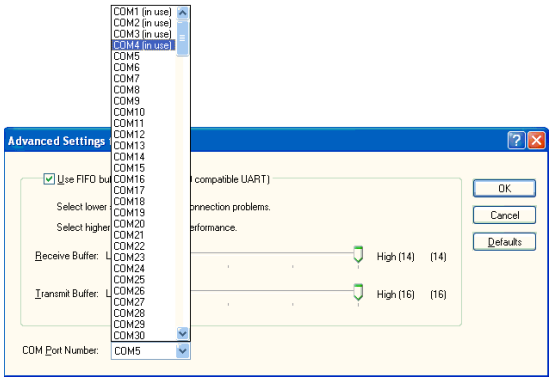
30.

Select [Advanced] tab, and then select (CL) the [Advanced Port Settings...] button.



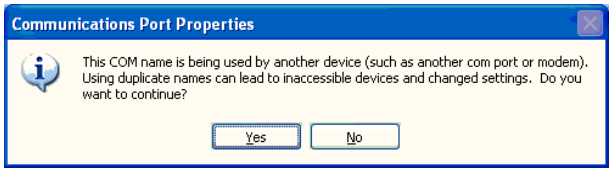
31.

Select [COM Port Number] pull down button, and then select (CL) the [COM4 (in use)].Select (CL) the [OK] button.



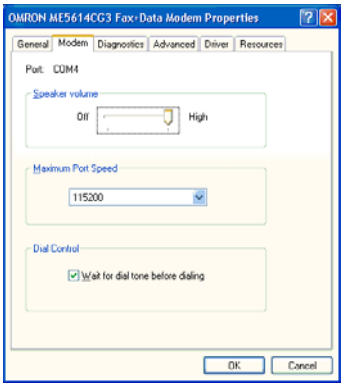
32.

Select (CL) the [Yes] button.



33.

Select [Modem] tab.
Check that the [Port] is displayed as [COM4].



34.

Select (CL) the [OK] button.

35.

Close the [Computer Management] window by selecting (CL) the [x] button.

36.

Reboot the SVP.

a. Power off the SVP in the order of step 1. (Refer to REP03-543 through 543E.)
b. Power on the SVP in the order of step 3. (Refer to REP03-543G.)

37.

Replacement work is end. (Post procedure is unnecessary.)

Procedure [A-3]

1. SVP Power OFF
   When replacing the MODEM Card of Master SVP, go to step 1-1 (REP03-544A).
   When replacing the MODEM Card of Standby SVP, go to step 1-2 (REP03-544C).

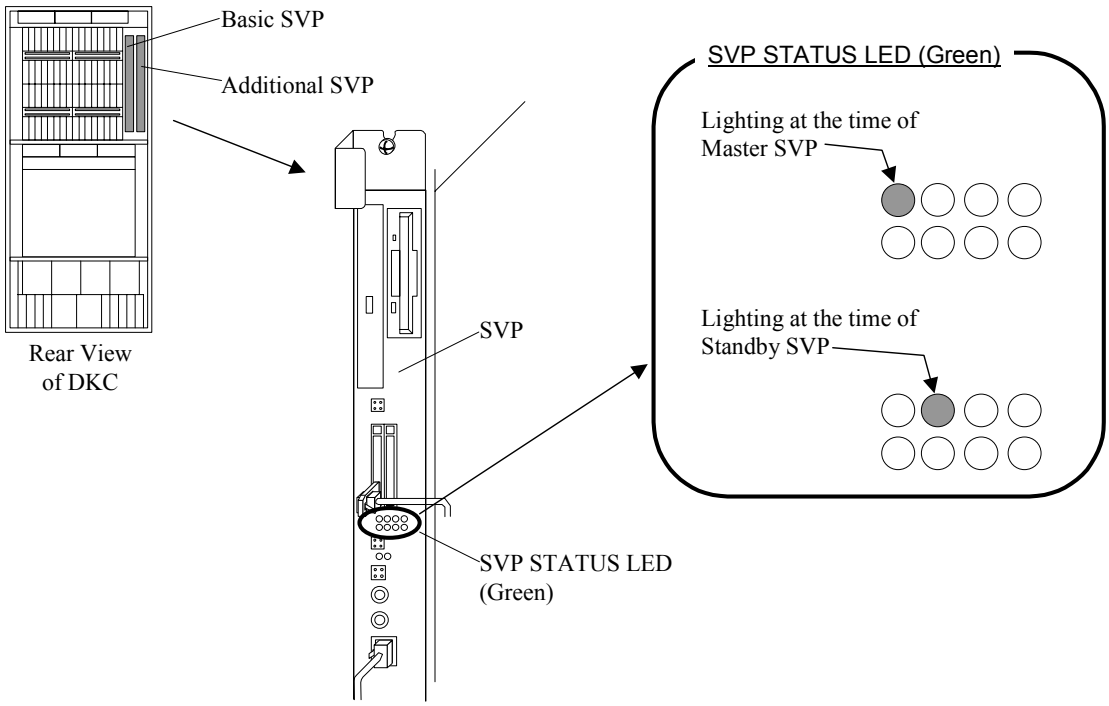


Fig. T7.2.A3-1 Confirmation of SVP STATUS LED

1-1 When replacing the MODEM Card of Master SVP

a. Insert the maintenance jumper into JP1 on the basic SVP.
When the additional SVP is installed, insert the maintenance jumper into JP1 on the additional SVP.

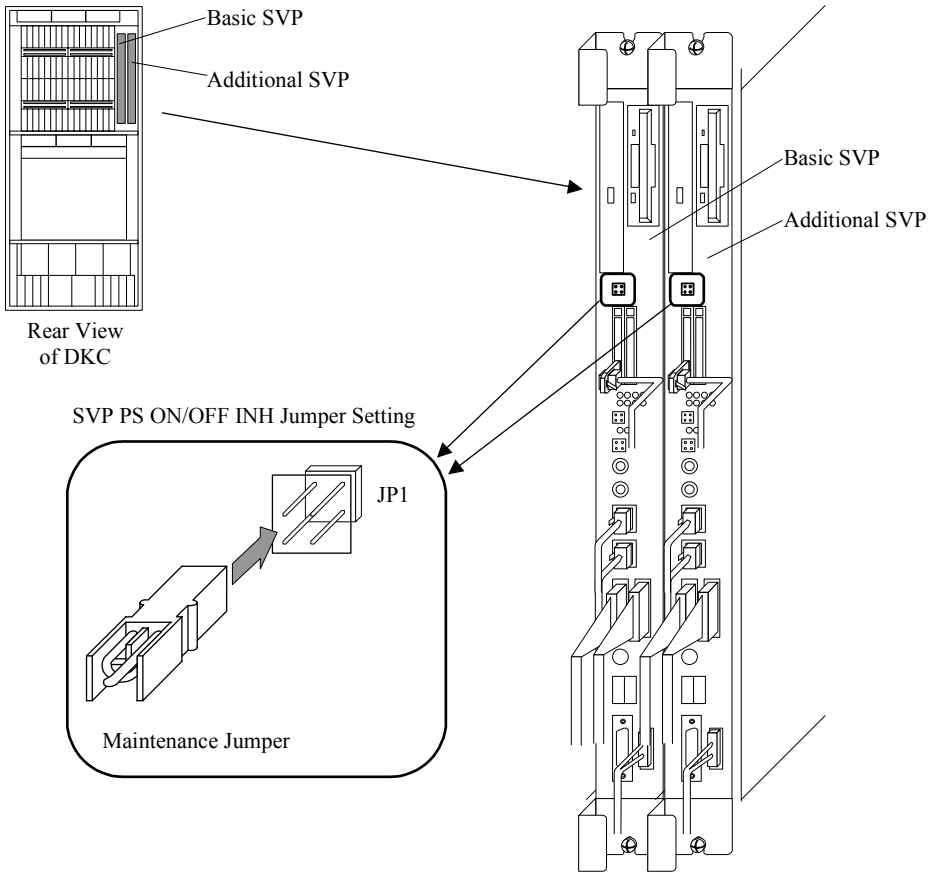
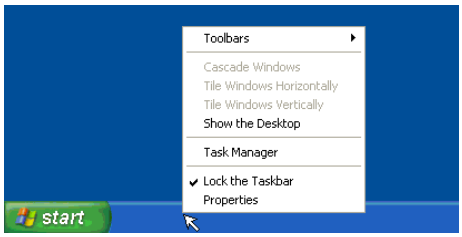
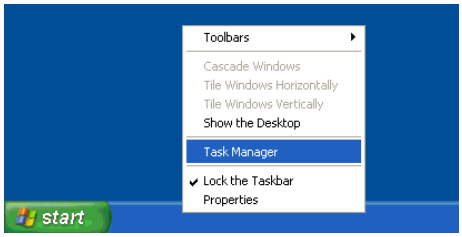


Fig. T7.2.A3-2 Insertion of Maintenance Jumper

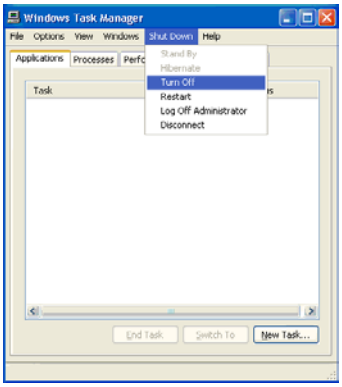
b. Click the right button of a mouse on a taskbar.



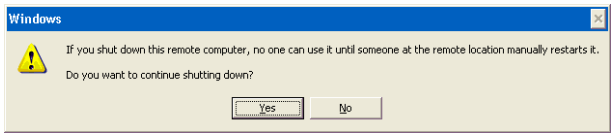
c. Select (CL) the [Task Manager].



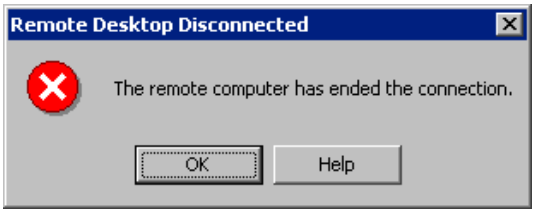
d. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



e. Select (CL) the [Yes] button.



f. Select (CL) the [OK] button.



g. It waits until SVP POWER LED puts out the light.

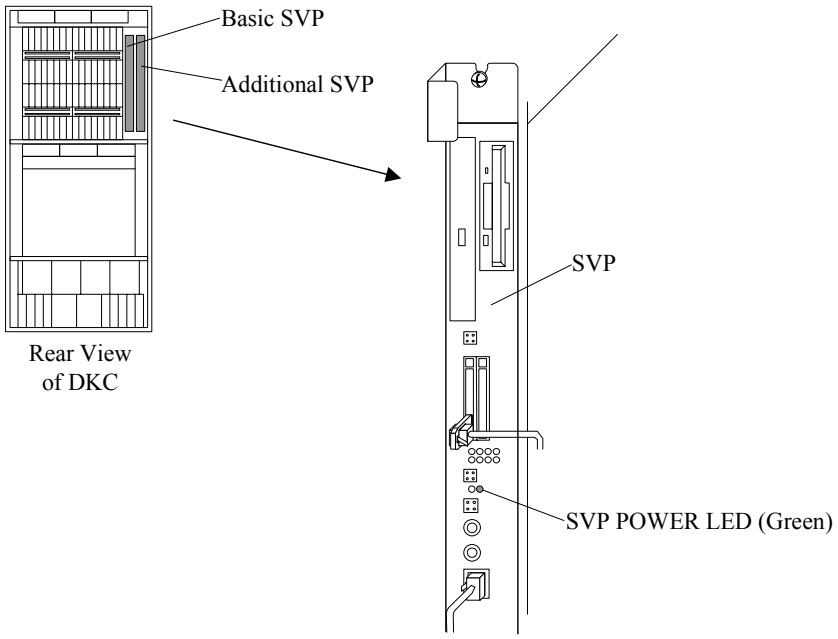


Fig. T7.2.A3-3 Location of SVP POWER LED

h. Go to step 2.

1-2 When replacing the MODEM Card of Standby SVP

a. Insert the maintenance jumper into JP1 on the basic SVP.
Insert the maintenance jumper into JP1 on the additional SVP.

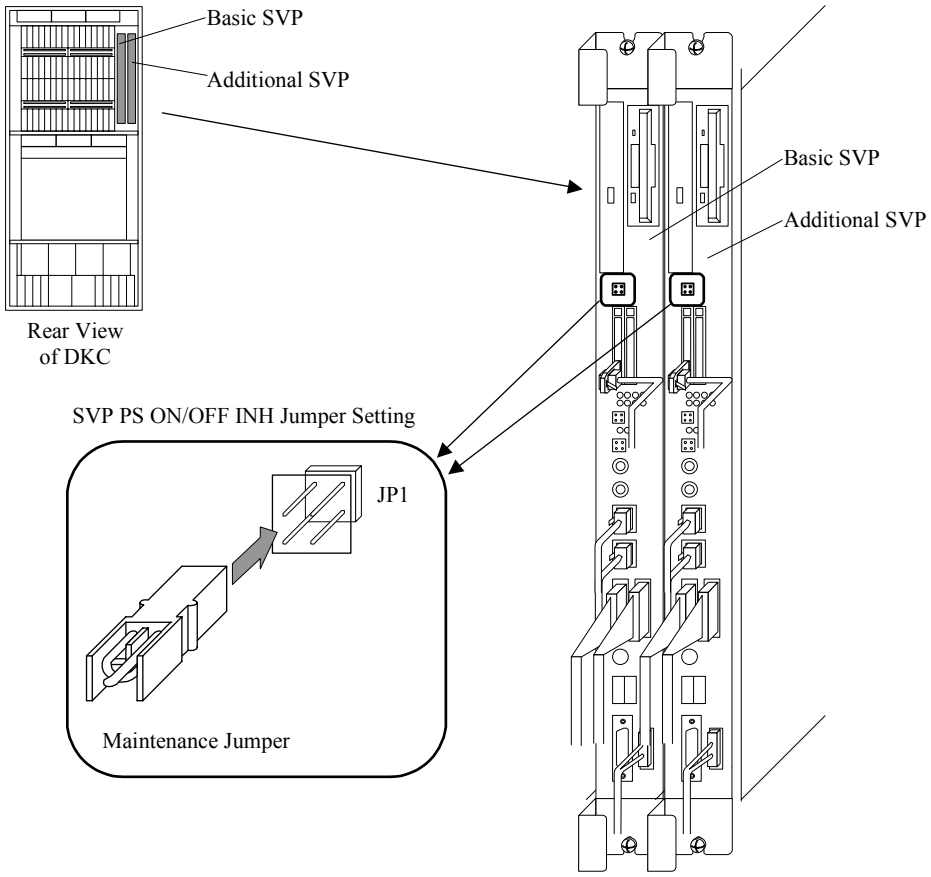
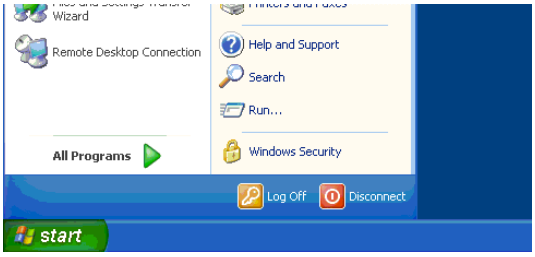
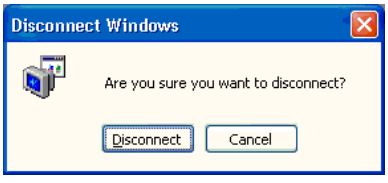


Fig. T7.2.A3-4 Insertion of Maintenance Jumper

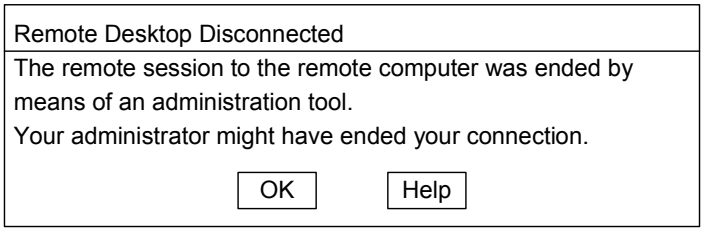
b. Change Console PC connection from the Master SVP to the Standby SVP.
b-1 Select (CL) [start], and then select (CL) the [Disconnect] button.



b-2 Select (CL) the [Disconnect] button.

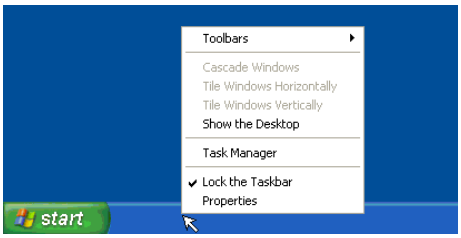


b-3 Select (CL) the [OK] button.
When the [Remote Desktop Disconnected] window is not displayed, disregard this procedure and go to next step.

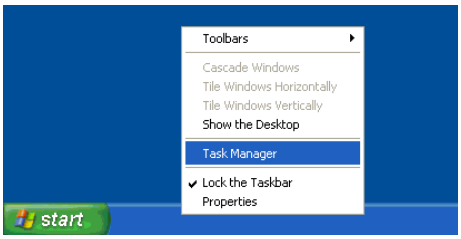


b-4 Select (CL) [Search] of the SVP Connect Utility through the Console PC.
Make sure that the SVP concerned is displayed in the list.
(See SVP01-60)
[Connection destination]
xxx.xxx.xxx.14

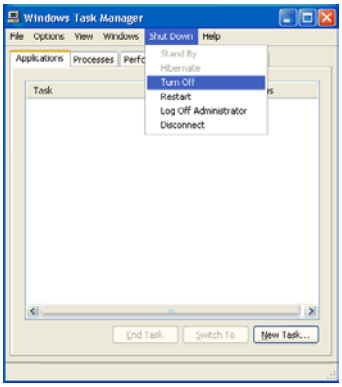
c. Click the right button of a mouse on a taskbar.



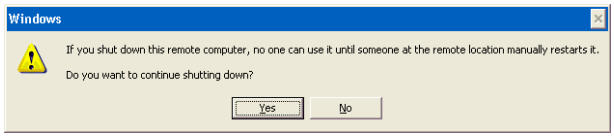
d. Select (CL) the [Task Manager].



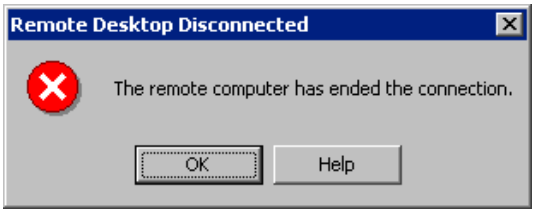
e. Select (CL) [Shut Down], and then select (CL) the [Turn Off].



f. Select (CL) the [Yes] button.



g. Select (CL) the [OK] button.



h. It waits until SVP POWER LED puts out the light.

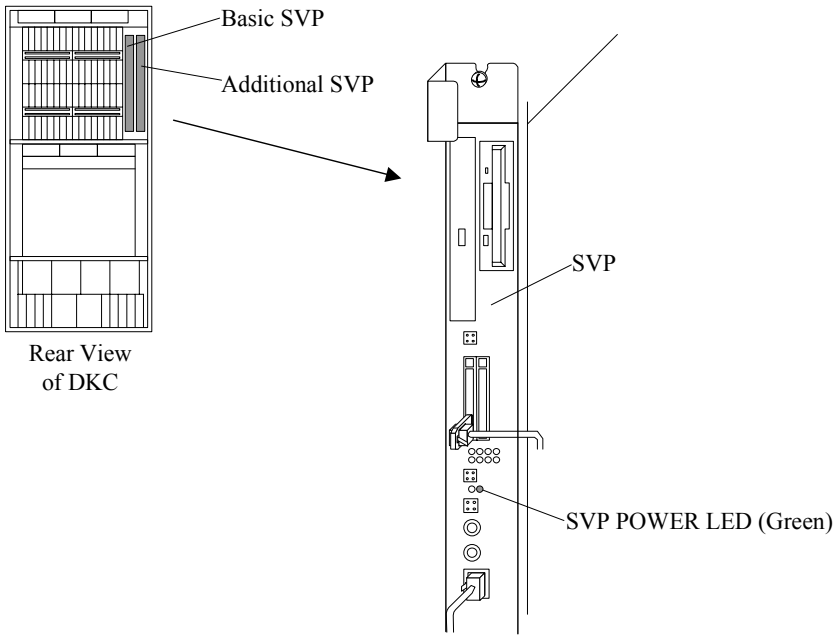


Fig. T7.2.A3-5 Location of SVP POWER LED

2. Remove the failed MODEM Card (ME5614CG3).
   a. Disconnect the cable (P85-x) from the modem cable coupler.
   b. Push the left button on the SVP.
   c. Push the left button to remove MODEM Card from the SVP.

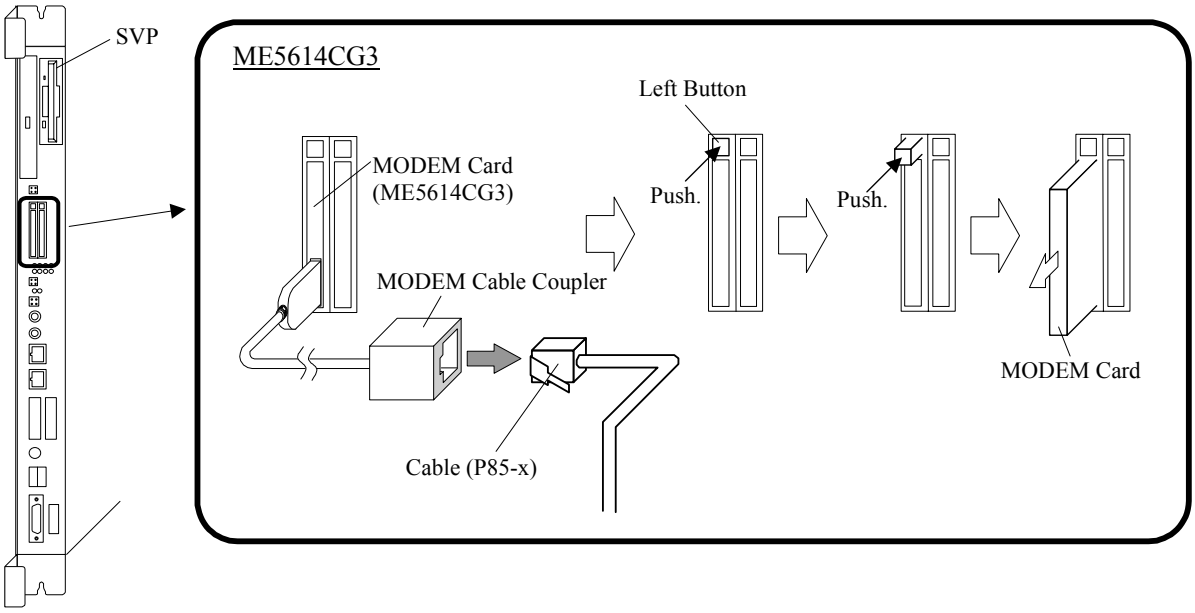


Fig. T7.2.A3-6 Removal of MODEM Card

   d. Open the repeat binder and remove the modem cable.

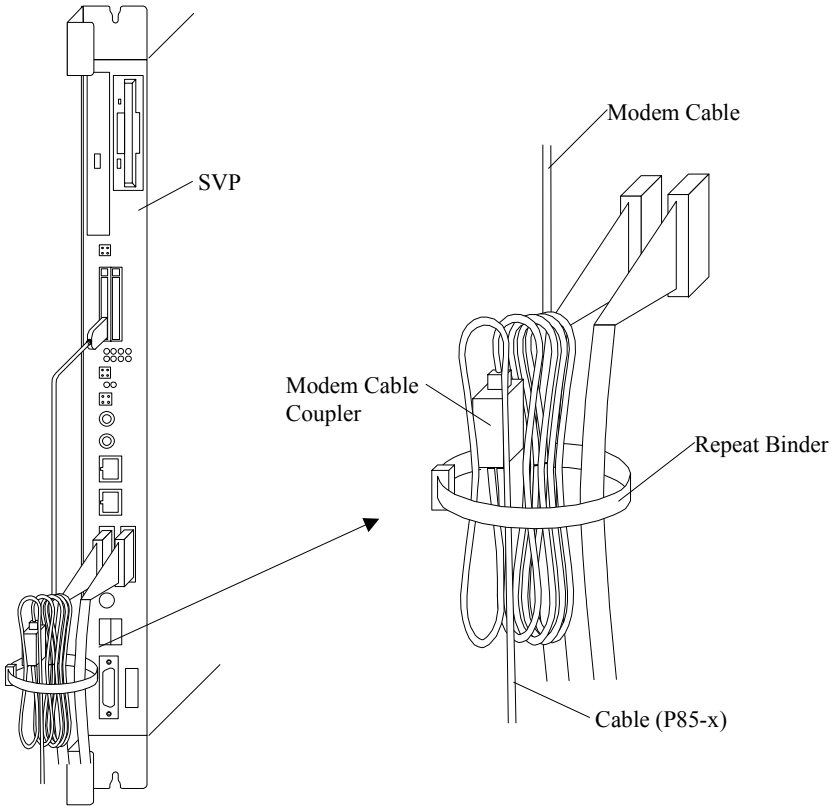


Fig. T7.2.A3-7 Removal of Modem Cable

3. Insert the spare MODEM Card (3CXFEM656C).
   a. Insert the MODEM Card in the left port on the SVP.
   b. Push the modem connector on the MODEM card.
   c. Connect the cable (P85-x) to the modem connector.

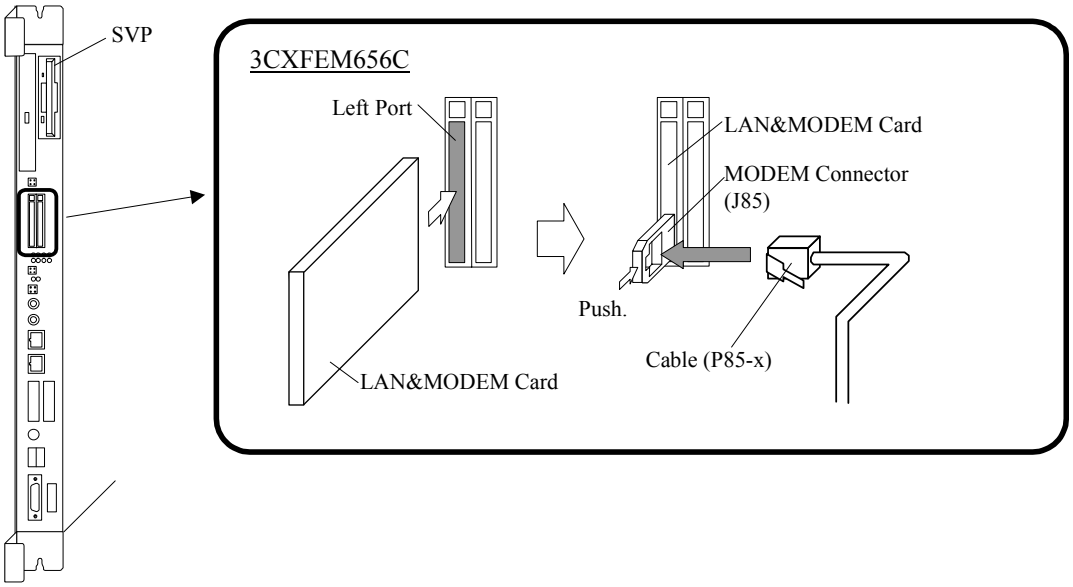


Fig. T7.2.A3-8 Insertion of MODEM Card

4. SVP Power ON.
   a. Press the SVP PS ON Switch on the SVP.

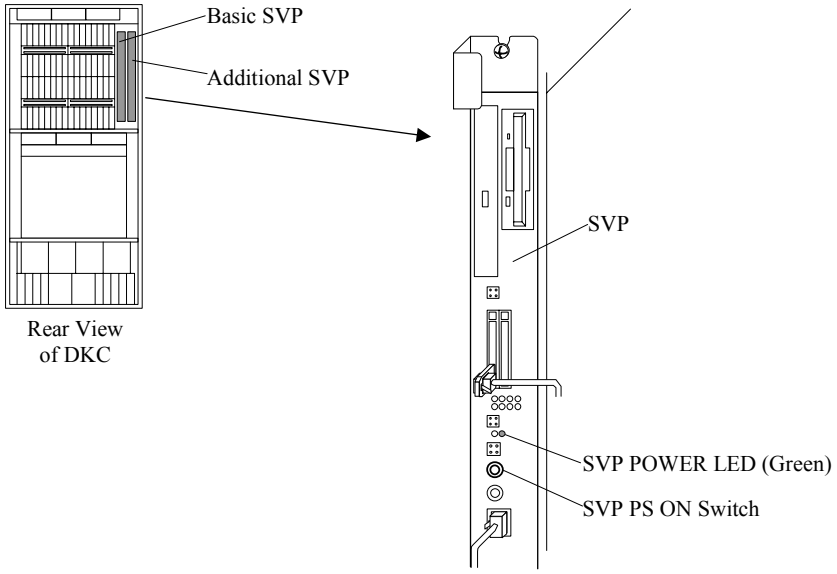


Fig. T7.2.A3-9 SVP PS ON Switch

   b. Wait for a few minutes until the Windows system starts up.

   c. Select (CL) [Search] of the SVP Connect Utility through the Console PC.
   Make sure that the SVP concerned is displayed in the list. (See SVP01-60.)
   [Connection destination]
   - When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
   - When SVP High Reliability Support Kit is set:
     When you change the MODEM Card of Master SVP: xxx.xxx.xxx.15
     When you change the MODEM Card of Standby SVP: xxx.xxx.xxx.14

   d. Remove the maintenance jumper of the JP1 on the basic SVP.
   When the additional SVP is installed, remove the maintenance jumper of the JP1 on the additional SVP. Refer to Fig. T7.2.A3-2.

5.

Select (CL) [Start] and [Administrative Tools] in this order.

6.

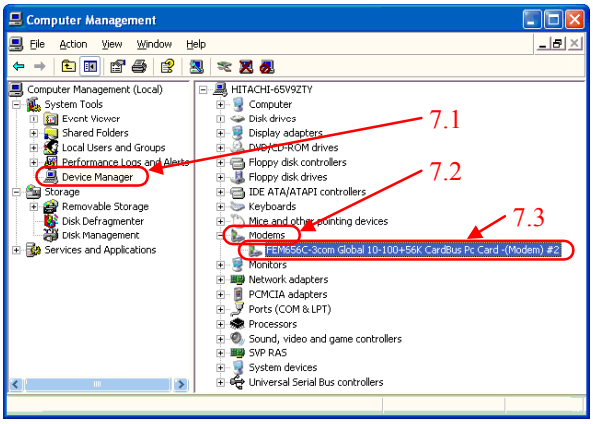
Select (DC) [Computer Management] in the [Administrative Tools] window.

7.

7.1 Select (CL) the [Device Manager] of a left side window.

7.2 Select (DC) the [Modems] of a Right side window.

7.3 Select (DC) the [FEM656C-3com Global 10-100+56K CardBus Pc Card-(Modem) #2].



8.

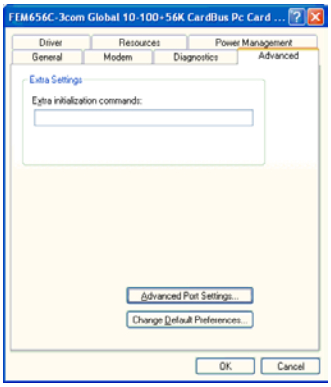
Select [Modem] tab.

Is [Port] displayed as [COM4]?

* Displayed as [COM4]: Go to step 14.
* Those other than [COM4]: Go to step 9.

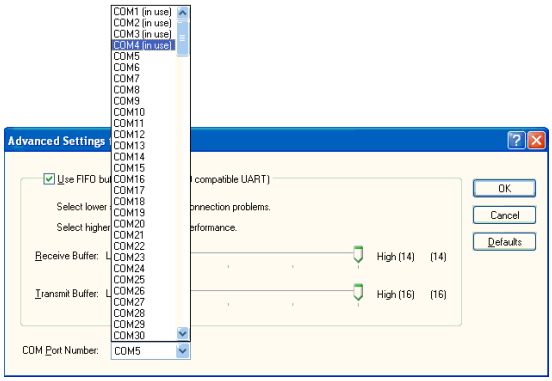
9.

Select [Advanced] tab, and then select (CL) the [Advanced Port Settings...] button.



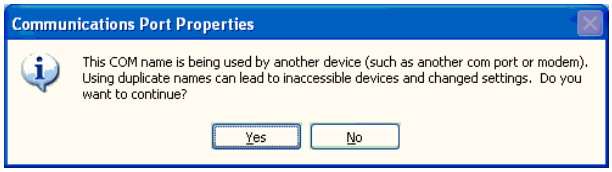
10.

Select [COM Port Number] pull down button, and then select (CL) the [COM4 (in use)].
And then Select (CL) the [OK] button.



11.

Select (CL) the [Yes] button.



12.

Select [Modem] tab.
Check that the [port] is displayed as [COM4].

13.

Select (CL) the [OK] button.

14.

Close the [Computer Management] window by selecting (CL) the [×] button.

15.

Reboot the SVP.

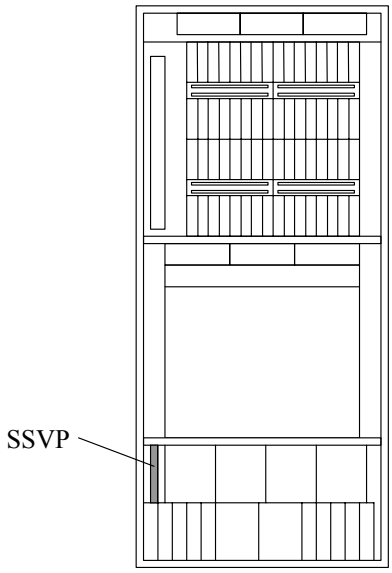
a. Power off the SVP in the order of step 1. (Refer to REP03-544 through 544E.)
b. Power on the SVP in the order of step 4. (Refer to REP03-544H.)

16.

Replacement work is end. (Post procedure is unnecessary.)

[HARDWARE T8]

Location	Function Name of Component		Part Name
Lower Front of DKC	1	SSVP (RoHS not applied)	• SH351-A
	2	SSVP (RoHS applied)	• SH351-B



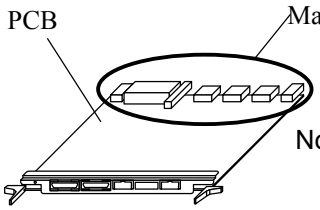
Front View of DKC

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

1	SSVP

1. Checking that the Shut Down LED is turned on.
   a. Check that the Shut Down LED on the SSVP PCB is turned on.

2. Replacing the SSVP PCB.
   a. Loosen the screw and remove the SSVP PCB.
   b. Inset the spare SSVP PCB and fix it with the screw.



Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

c. Push the SSVP ALARM RESET switch.

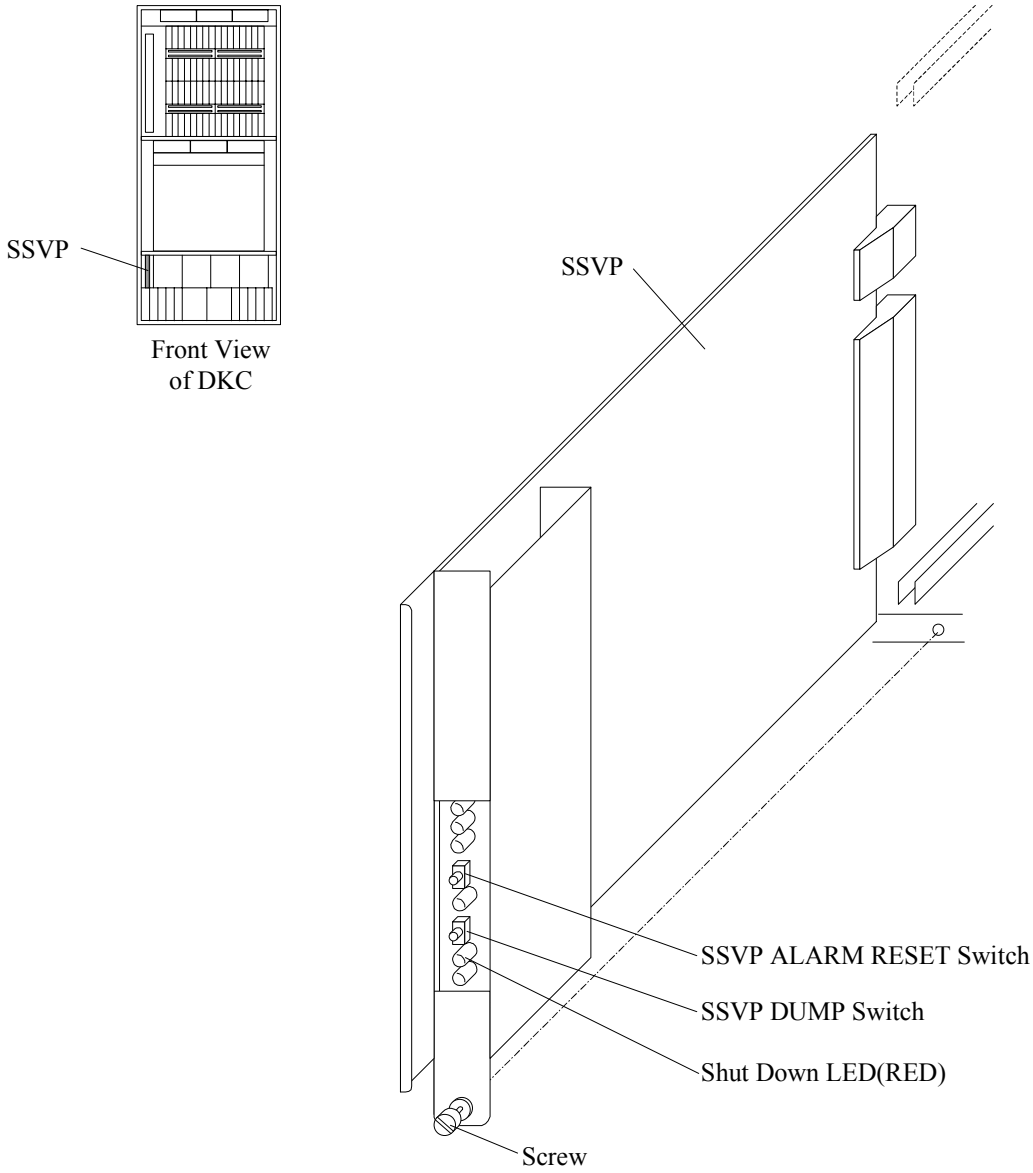
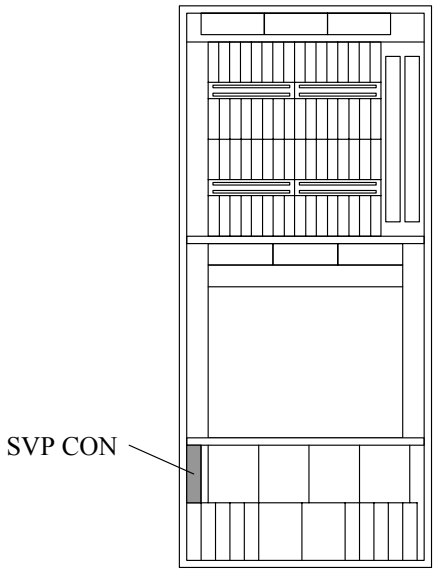


Fig. T8-1 Replacement of SSVP PCB

3. Go to SVP post procedure t1 [REP04-330].

[HARDWARE T9]

Location	Function Name of Component		Part Name
Lower Rear of DKC	1	SVP CON (RoHS not applied)	• SH357-A
	2	SVP CON (RoHS applied)	• SH357-B



Rear View of DKC

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

1	Replacement of SVP CON

1. Remove the SVP CON.
   a. Disconnect all cables from SVP CON.
   b. Loosen two screws and remove SVP CON.

2. Attach the spare SVP CON.
   a. Attach the spare SVP CON and fasten two screws.
   b. Connect all the cables.

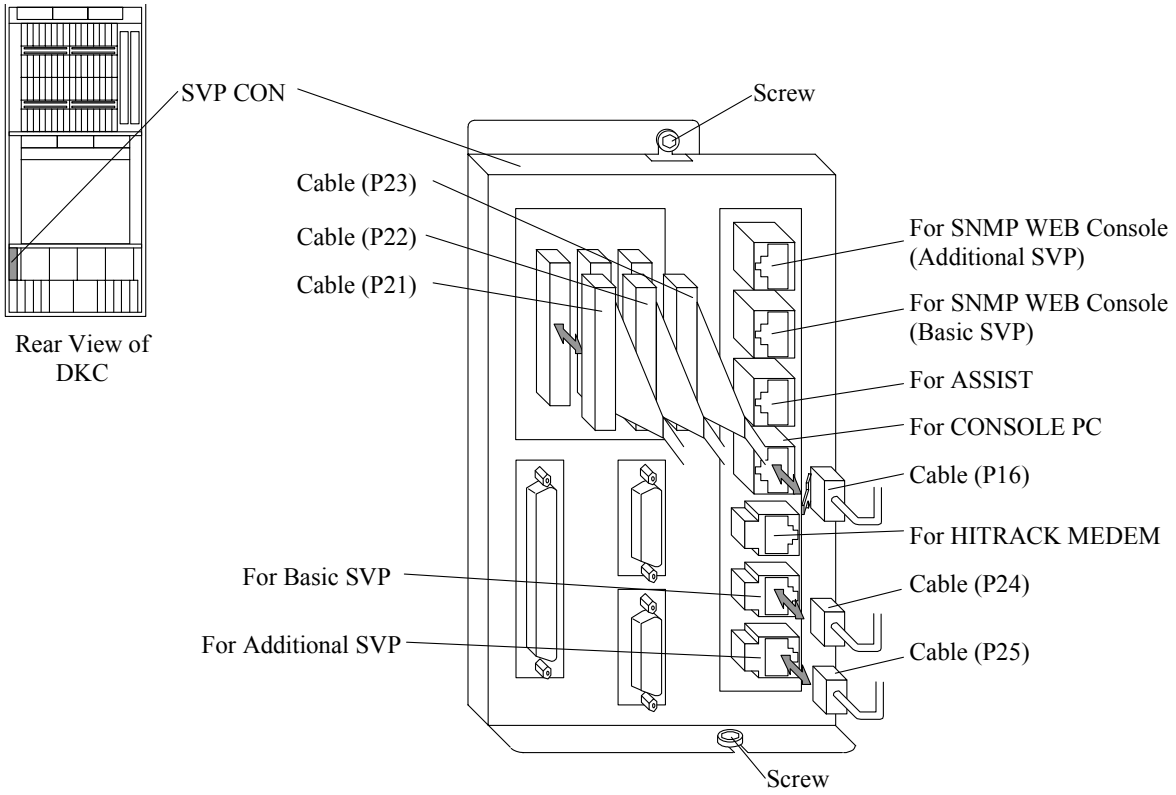
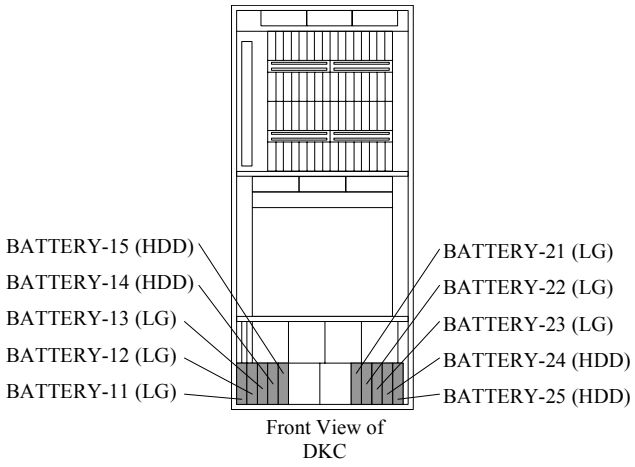
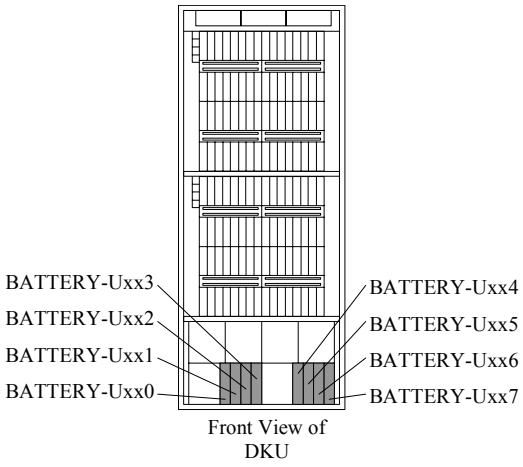


Fig. T9-1 Replacement of SVP CON

[HARDWARE T10]

Location		Function Name of Component	Part Name
Lower of DKC or DKU	1	BATTERY BOX (RoHS not applied)	
	2	BATTERY BOX (RoHS applied)	





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

1	BATTERY BOX

⚠ CAUTION

Paying attention to falls:

The weight of the battery box is 7 kg. If the battery box falls, injury may occur. Hold the battery box firmly by both hands and use caution to prevent it from falling.

⚠ 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.

1. If the BATTERY-14, 15, 21, or 22 is replaced, move the fibre cables. If not, go to step 2.
   a. Loosen the screws ① and slide the plate ① toward you.
   b. Remove the screws ② and move the plate ② to the BATTERY BOX side.
   c. Move the fibre cables and fix them with the plates ① and ②.

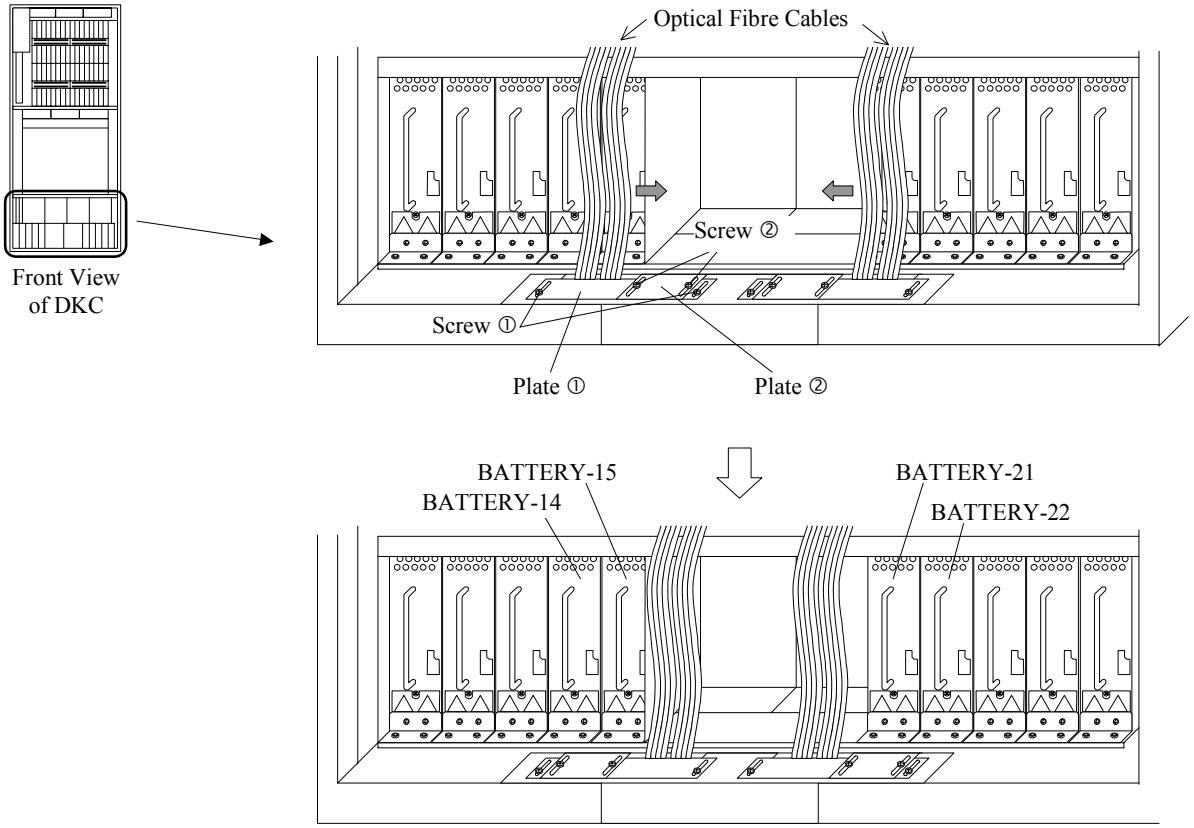


Fig. T10-1 Movement of Fibre Cables

2. Confirmation of the switch
   a. Confirm the switch on the battery box is turned off.

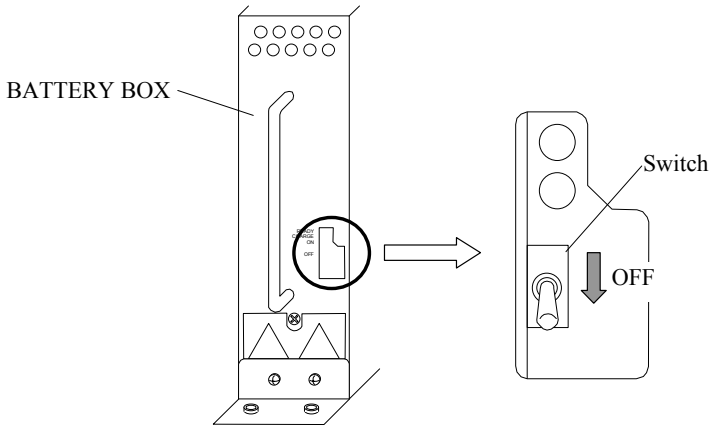


Fig. T10-2 Switch on Battery Box

3. Replacing the battery box.
   a. If the BATTERY-25 is replaced, loosen the two screws and rotate the stopper. If not, go to step b.

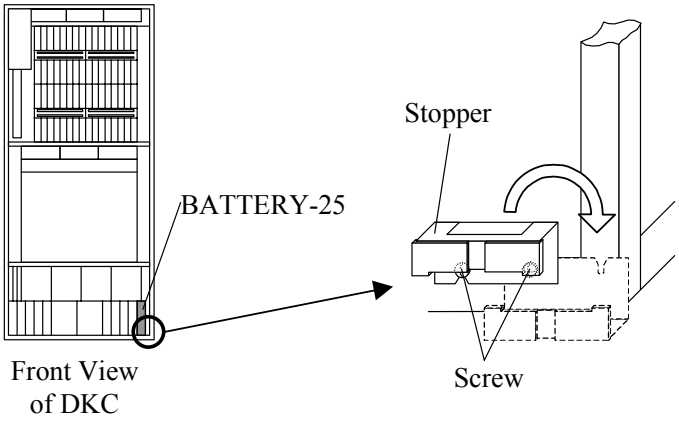
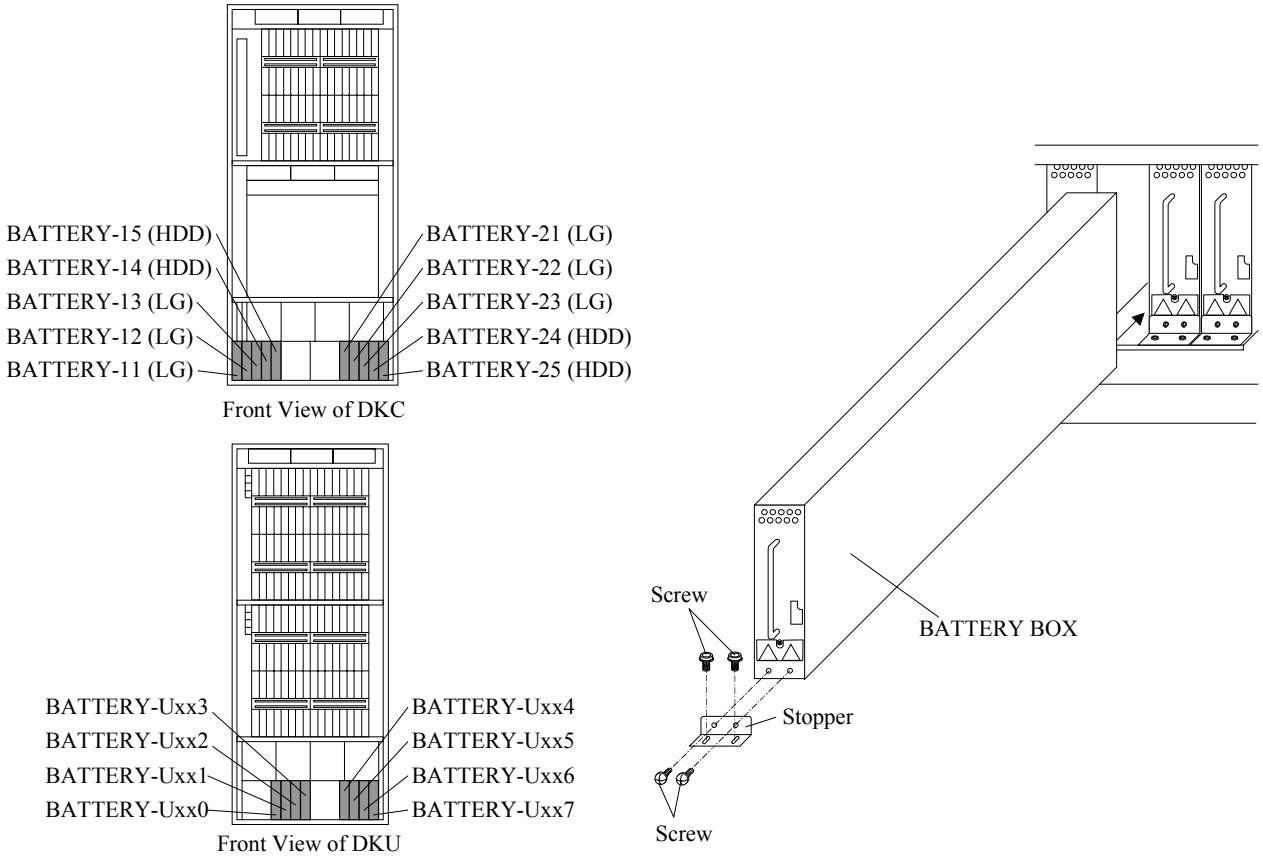


Fig. T10-3 Rotation of Stopper

b. Turn off the switch on the replaced battery box. (Refer to Fig. T10-2.)
c. Loosen the four screws and remove the stopper and battery box.
d. Insert the spare battery box and tighten with the screws and stopper.
e. If the BATTERY-25 is replace, return the stopper to original position in the reverse order of step a. If not, go to step 4. (Refer to Fig. T10-3.)



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T10-4 Replacement of Battery Box

4. Turn on the Switch.
   a. Turn on the switch on the Battery Box.

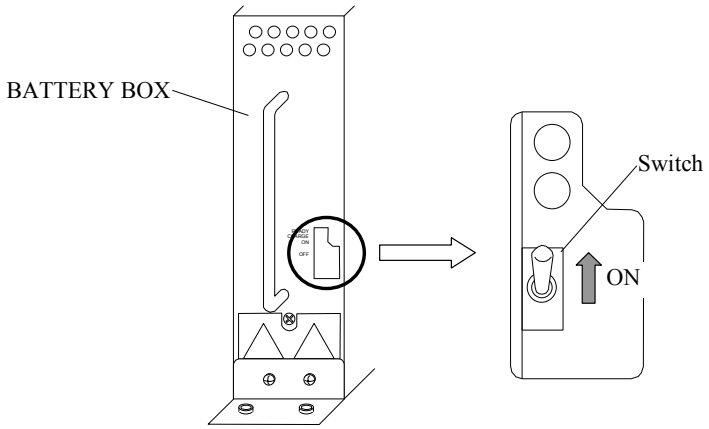


Fig. T10-5 Switch on Battery Box

5. If the fibre cables are moved in step 1, return them to the original position. If not, go to step 6.
   a. Return the fibre cables to original position in the reverse order of step 1.

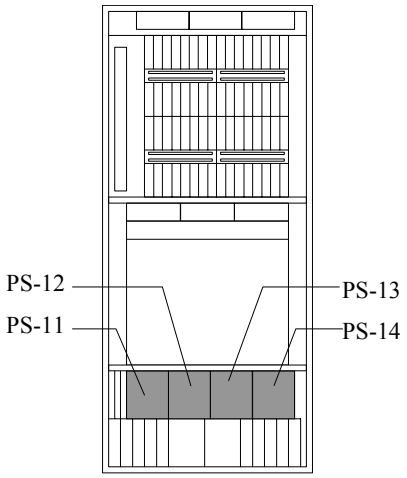
6.

- When the BATTERY BOX is installed in DKC.
  Go to SVP post procedure t1 [REP04-330].

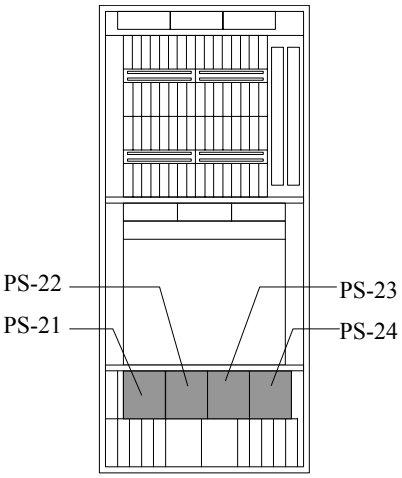
- When the BATTERY BOX is installed in DKU.
  Go to SVP post procedure t4 [REP04-890].

[HARDWARE T11]

Location	Function Name of Component		Part Name
Lower of DKC	1	DKCPS (RoHS not applied)	
	2	DKCPS (RoHS applied)	



Front View of DKC



Rear View of DKC

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

1	Replacement of DKCPS

1. Procedure for short circuit check on the DKCPS

   a. Check the DKCPS for short circuit by connecting the voltage checking jig to the short circuit check point of the DKCPS as shown below.
   b. Measure the resistance at the check points on the individual DKCPS before installation shown below. Confirm that the measured resistance values are over the value shown in the table below. If the resistance values are not over the value, replace it to the new part.

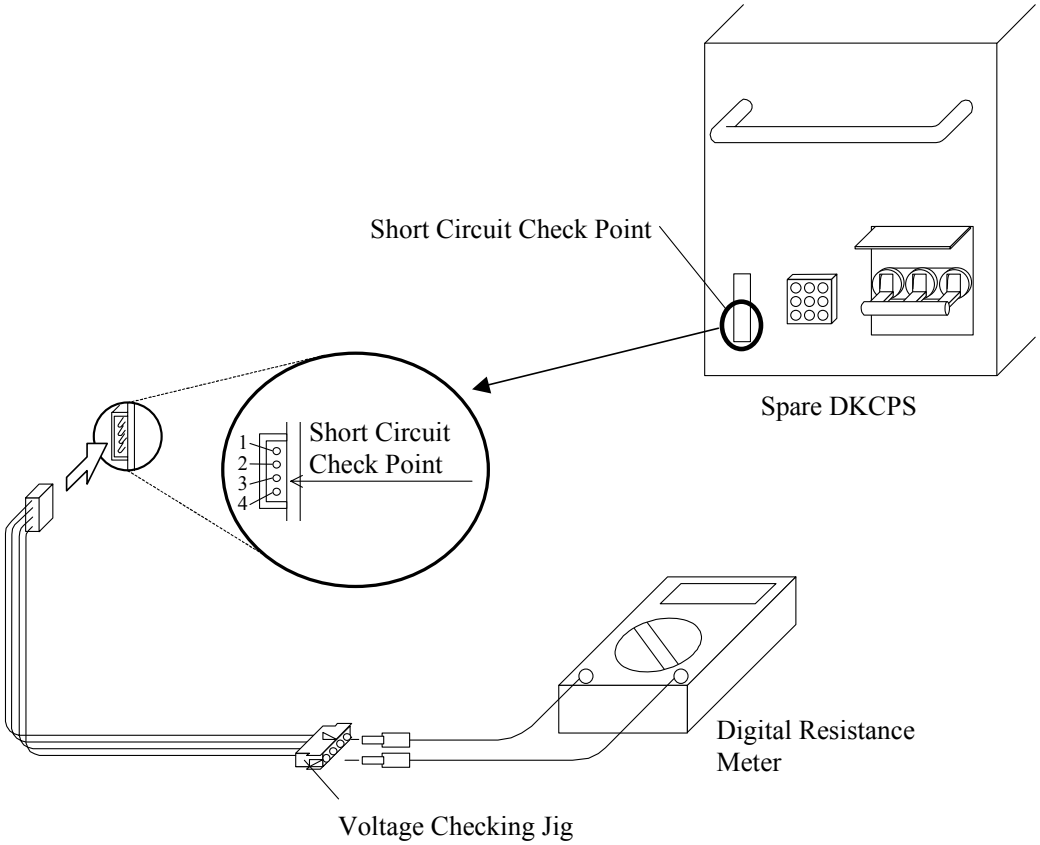


Fig. T11-1 Short Circuit Check Point

Table T11-1 Short Circuit Check Point

PS	Check pin	Resistance
DKCPS	Between 1 and 4	18 kΩ
	Between 2 and 4	18 kΩ
	Between 3 and 4	18 kΩ

Note: Pin number 4 is ground.

2. If PS-11, PS-12, PS-13 or PS-14 is replaced, lift the core rail in the front side of DKC.
   If PS-21, PS-22, PS-23 or PS-24 is replaced, lift the core rail in the rear side of DKC.

   a. Loosen the screws. Lift the core rail and fasten the screws.

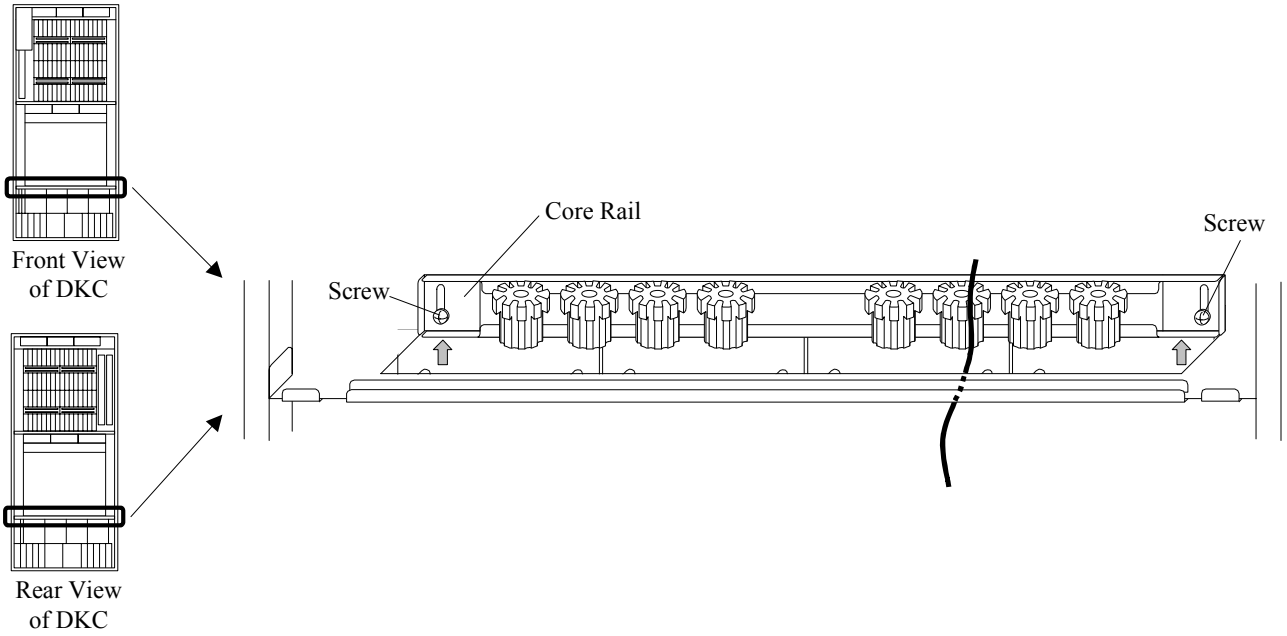


Fig. T11-2 Removal of Core Rail

3. Replace the DKCPS.
   a. Turn off the circuit breaker on the DKCPS.

⚠ CAUTION

A system down may be caused by setting the circuit breaker of the DKCPS other than that to be replaced to “OFF”. Make sure that it is a DKCPS to be replaced.

   b. Disconnect the cable.

⚠ 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 screws and remove the failed DKCPS and stopper.
   d. Confirm that circuit breaker on spare DKCPS is turned off (DOWN).
   e. Insert the spare DKCPS and fasten the screws and stopper.
   f. Connect the cable.
   g. Turn on the circuit breaker on the DKCPS (UP).
   h. Loosen the screws and lower the core rails. Fasten the screws. (Refer to Fig. T11-2.)

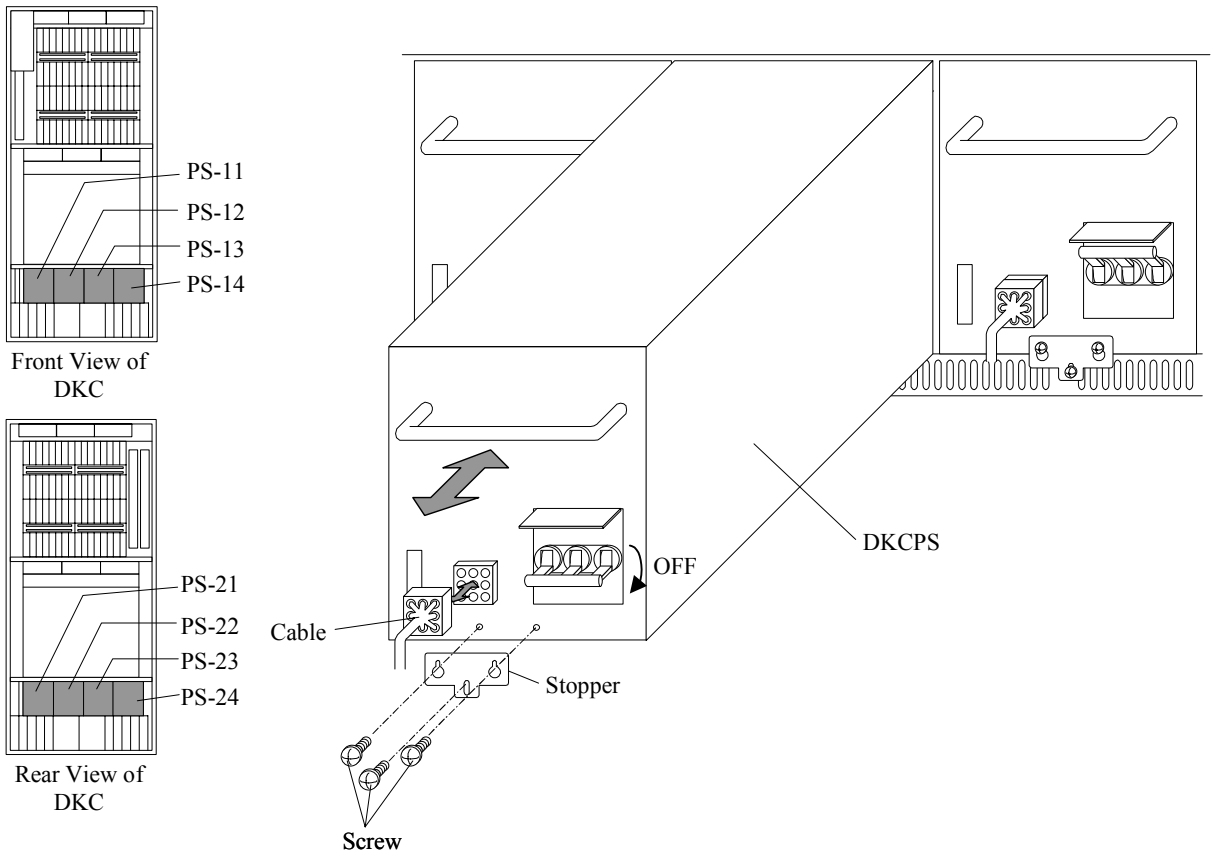


Fig. T11-3 Replacement of DKCPS

3. Go to SVP post procedure t1 [REP04-330].

Blank Sheet

Blank Sheet

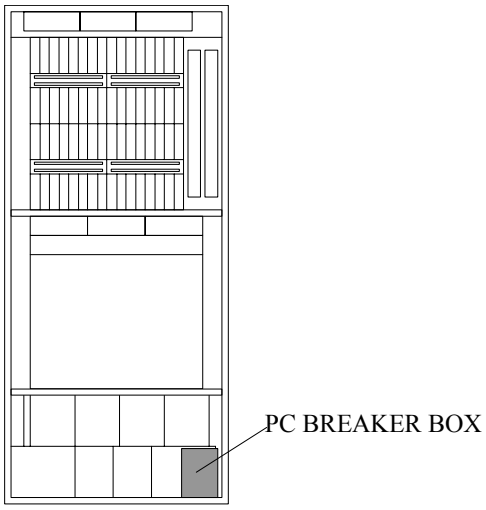
Blank Sheet

Blank Sheet

Blank Sheet

[HARDWARE T13]

Location	Function Name of Component		Part Name
Lower Front of DKC	1	PC BREAKER BOX (RoHS not applied)	
	2	PC BREAKER BOX (RoHS applied)	



Rear View of DKC

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

1	PC BREAKER BOX

1. Replacing the PC BREAKER BOX.
   a. Turn off the circuit breakers on the PC BREAKER BOX.
   b. Disconnect the cables (P71, P72, and P73) from the PC BREAKER BOX.
   c. Loosen the three screws and remove the stopper.
   d. Confirm the circuit breakers on the spare PC BREAKER BOX are turned off.
   e. Replace the PC BREAKER BOX.
   f. Attach the stopper and fasten the screws.
   g. Connect the cables to the PC BREAKER BOX.
   h. Turn on the circuit breakers on the PC BREAKER BOX.

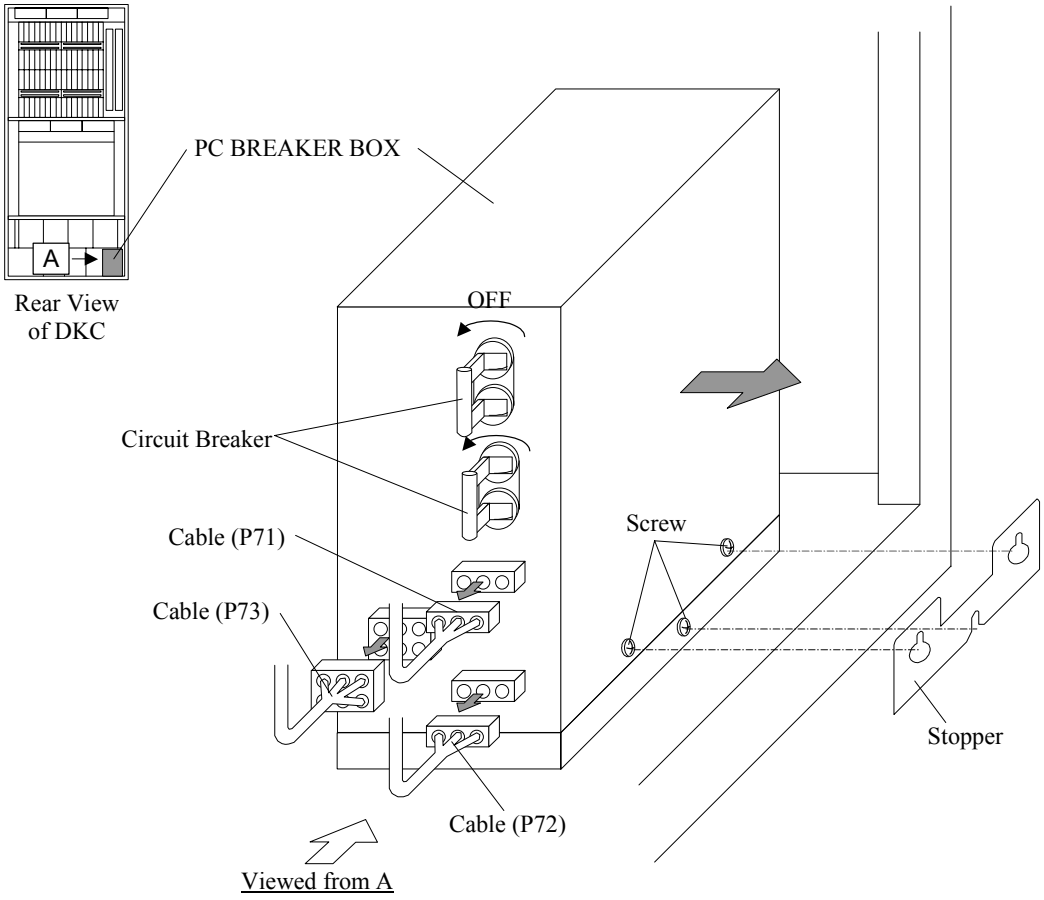
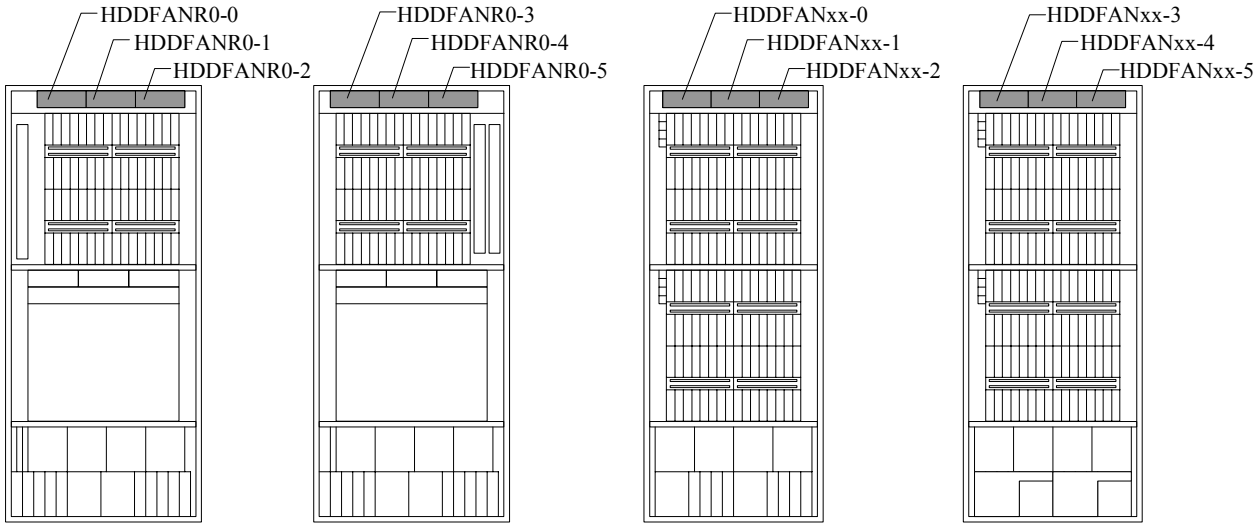


Fig. T13-1 Replacement of PC BREAKER BOX

2. Replacement work is end. (Post procedure is unnecessary.)

[HARDWARE T14]

Location	Function Name of Component		Part Name
Top of DKC or DKU	1	HDD FAN Assembly (RoHS not applied)	
	2	HDD FAN Assembly (RoHS applied)	



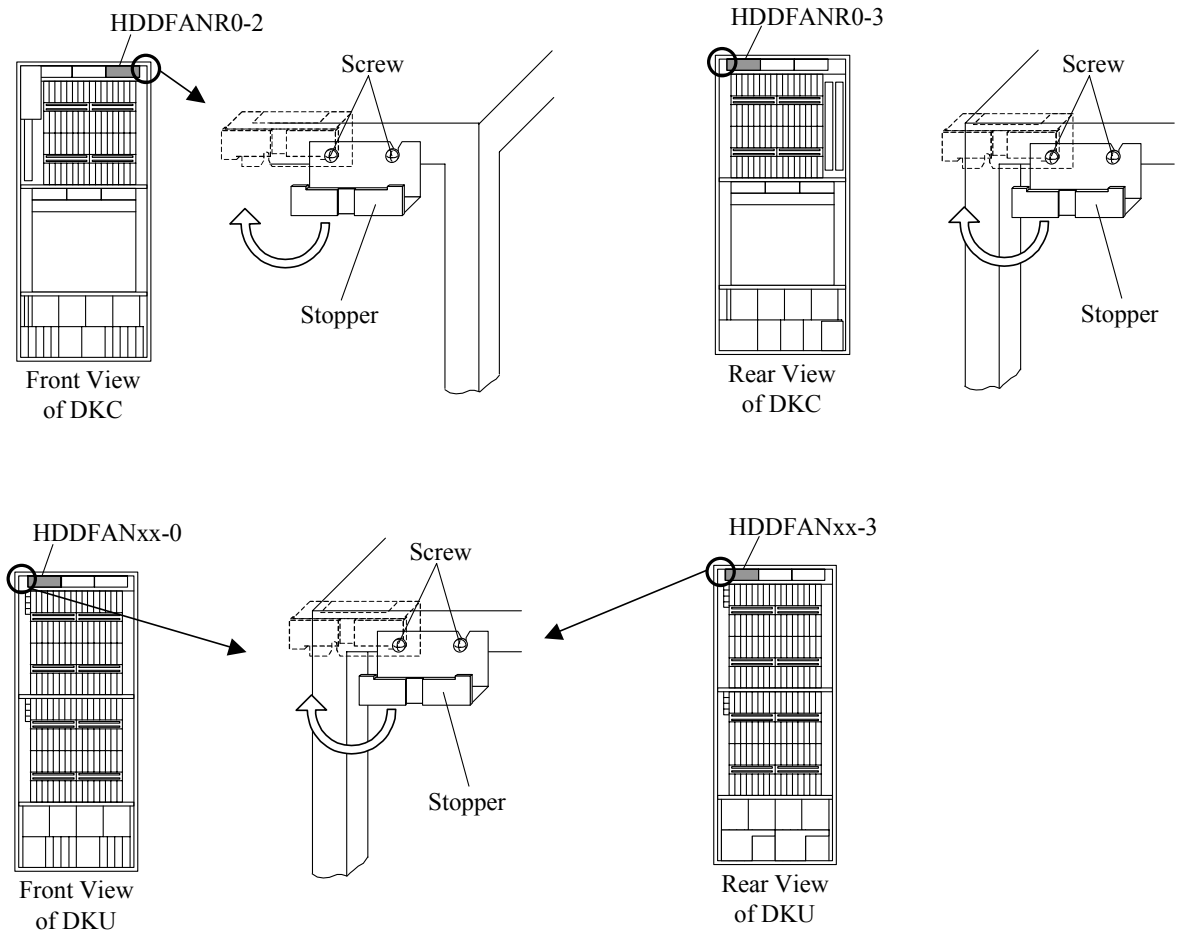
NOTICE:
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

1	HDD FAN Assembly

⚠ CAUTION

Hazardous rotating mechanism:
Can cause injury if touched. Stay clear of it when machine is running.

1. Replace the FAN Assembly.
   a. If the HDDFANR0-2, HDDFANR0-3, HDDFANxx-0 or HDDFANxx-3 is replaced, loosen the two screws and rotate the stopper. If not, go to step b.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T14-1 Rotation of Stopper

b. Disconnect the cable and dummy connector from HDD FAN Assembly.
c. Loosen the two screws and remove the HDD FAN Assembly.
d. If the HDDFANR0-2, HDDFANR0-3, HDDFANxx-0 or HDDFANxx-3 is replaced, return the stopper to original position in the reverse order of step a. If not, go to step 2. (Refer to Fig. T14-1.)

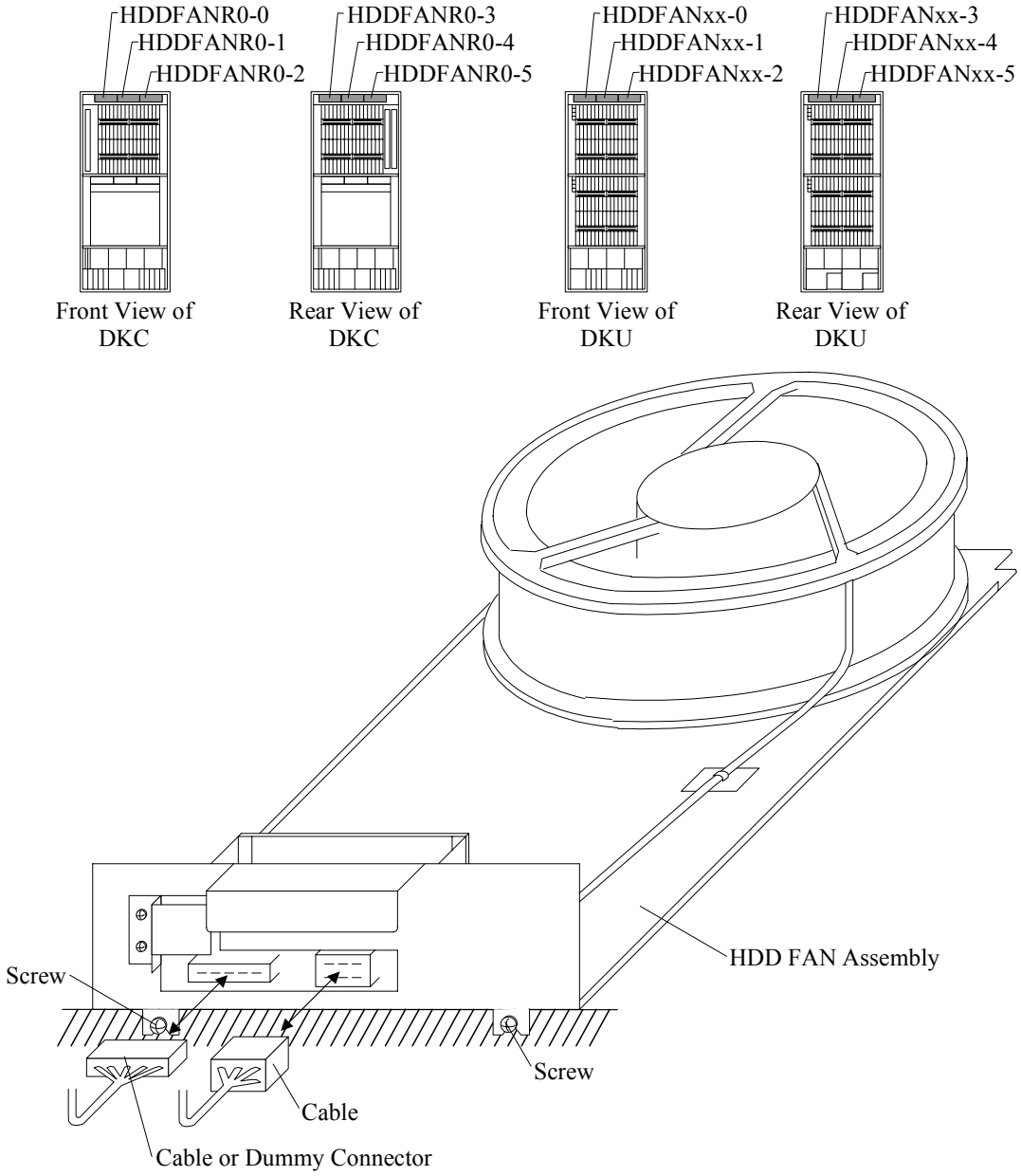


Fig. T14-2 Removal of HDD FAN Assembly

2. Set the maintenance jumpers in the HDD FAN Assembly.
   a. Loosen the two screws and rotate the cover.
   b. Set the maintenance jumpers in the HDD FAN Assembly. (Refer to LOC06-70 ~ 90.)
   c. Return the cover to original position in the reverse order of step a.

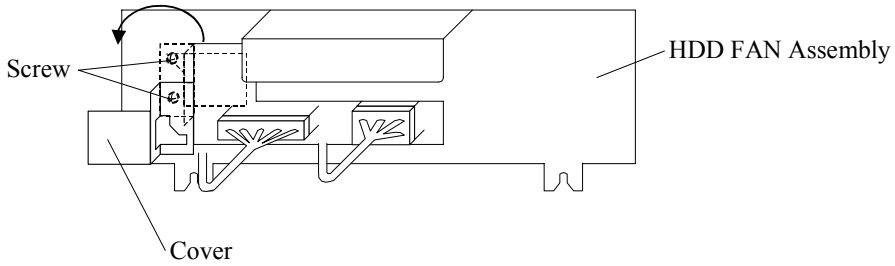


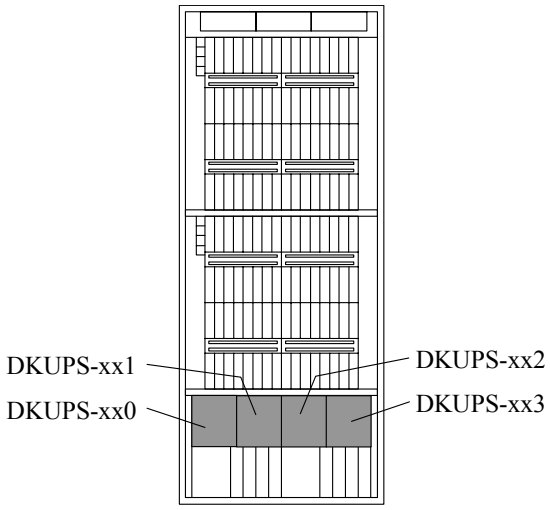
Fig. T14-3 Movement of Cover

3. Attach the spare HDD FAN Assembly.
   a. Attach the spare HDD FAN Assembly and fasten the two screws.
   b. Connect the cable and dummy connector.

4. Go to SVP post procedure t4 [REP04-890].

[HARDWARE T15]

Location	Function Name of Component		Part Name
Lower of DKU	1	DKUPS (RoHS not applied)	
	2	DKUPS (RoHS applied)	



Front View of DKU

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

1	Replacement of DKUPS

1. Procedure for short circuit check on the DKUPS

   a. Check the DKUPS for short circuit by connecting the voltage checking jig to the short circuit check point of the DKUPS as shown below.
   b. Measure the resistance at the check points on the individual DKUPS before installation shown below. Confirm that the measured resistance values are over the value shown in the table below. If the resistance values are not over the value, replace it to the new part.

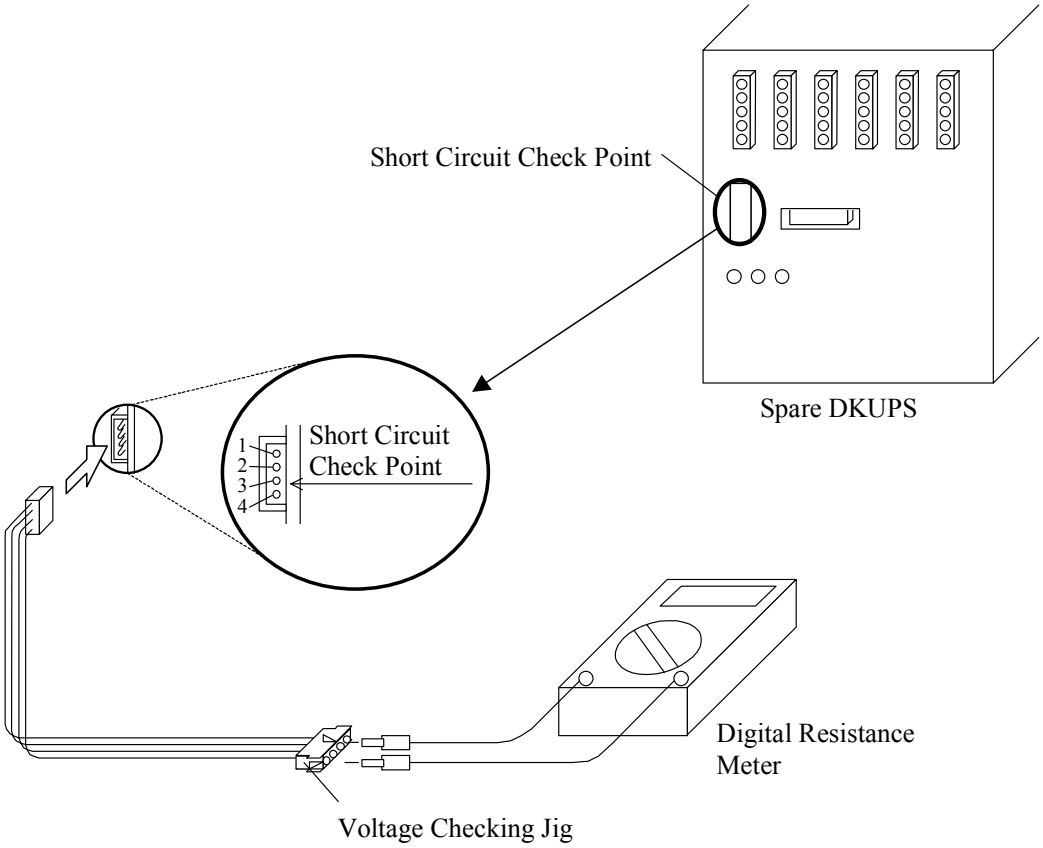


Fig. T15-1 Short Circuit Check Point

Table T15-1 Short Circuit Check Point

PS	Check pin	Resistance
DKUPS	Between 1 and 4	More than 40 kΩ
	Between 2 and 4	More than 40 kΩ

Note: Pin number 4 is ground.

2. Turn off the circuit breaker.
   a. Turn off the circuit breaker on the DKUPS.

CAUTION

A system down may be caused by setting the circuit breaker of the DKUPS other than that to be replaced to “OFF”. Make sure that it is a DKUPS to be replaced.

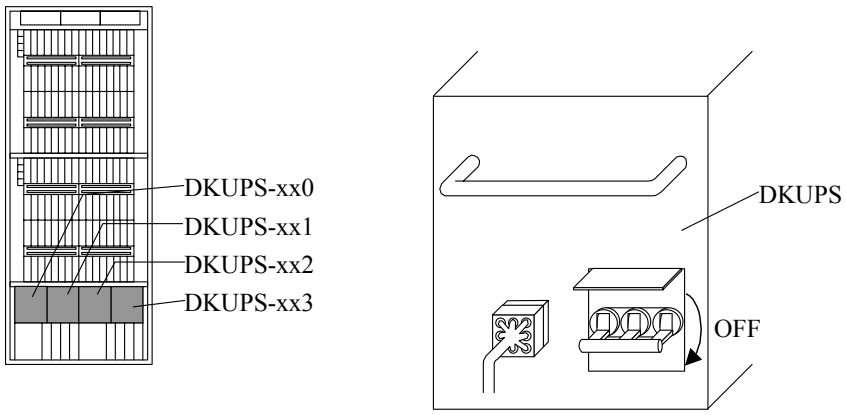


Fig. T15-2 Circuit Breaker on DKUPS

3. Replace the DKUPS.
   a. Disconnect the cables (#-P201, #-P202, #-P203, #-P204, #-P205, #-P206, and #-P207).
   b. Loosen the three screws and slide the stopper to the right side.

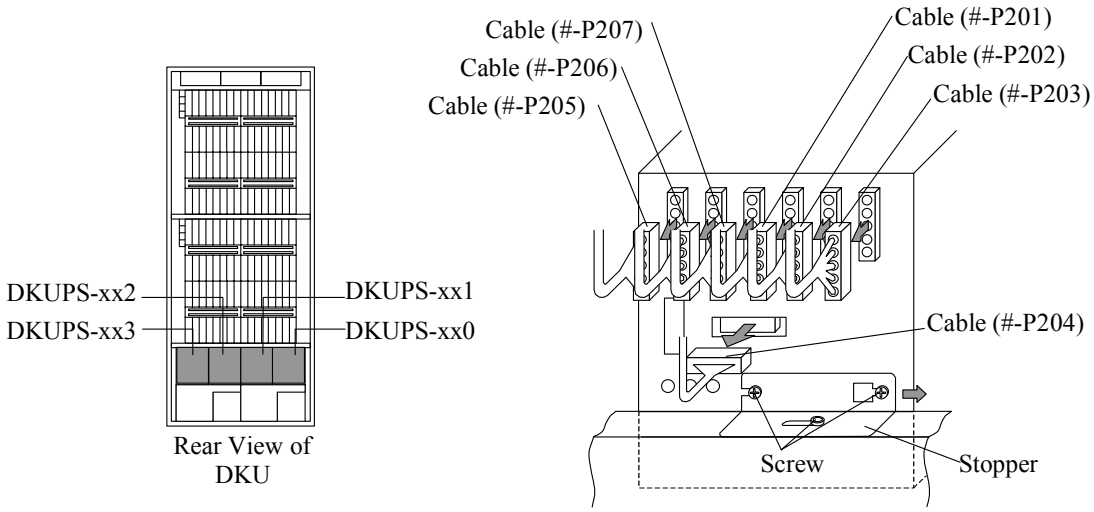


Fig. T15-3 Removal of Cables and Stopper

c. Disconnect the cable (#-P220).

⚠ 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.

d. Loosen the two screws ① and remove the stopper and two screws ②.
e. Confirm that circuit breaker on spare DKUPS is turned off (DOWN).
f. Replace the DKUPS.
g. Slide the stopper to the left side and fasten the three screws. (Refer to Fig. T15-3.)
h. Connect the cables (#-P201, #-P202, #-P203, #-P204, #-P205, #-P206, and #-P207). (Refer to Fig. T15-3.)
i. Attach the stopper and fasten the four screws.
j. Connect the cable.
k. Turn on the circuit breaker on the DKUPS (UP).

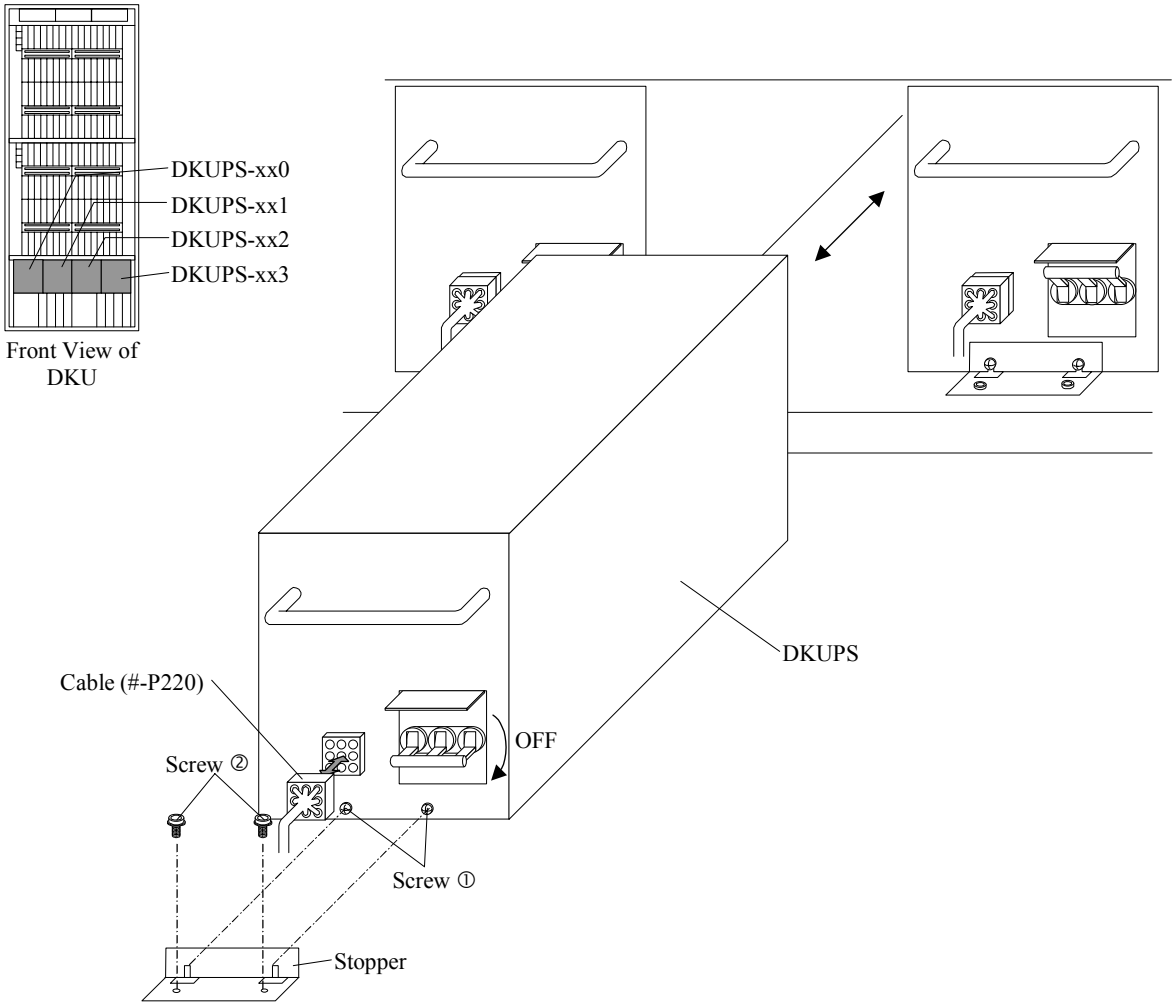
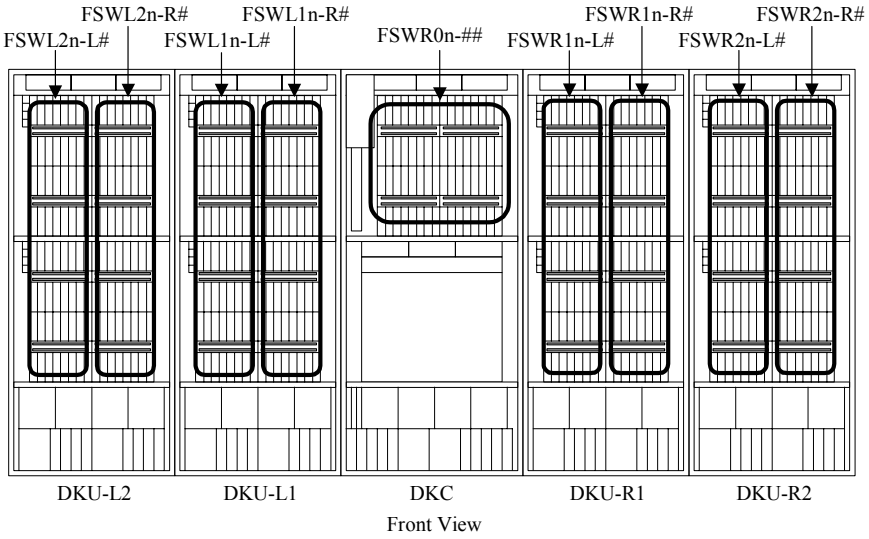


Fig. T15-4 Replacement of DKUPS

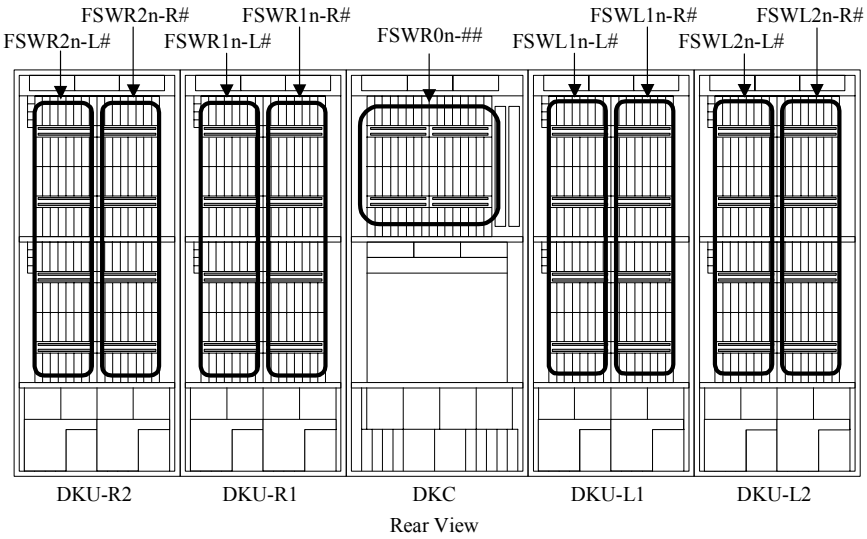
4. Go to SVP post procedure t4 [REP04-890].

[HARDWARE T16]

Location	Function Name of Component		Part Name
DKC or DKU	1	FSW (RoHS not applied)	• SH358-A
	2	FSW (RoHS applied)	• SH358-C



Front View



Rear View

NOTICE:
① 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 Replace the FSW to be replaced following the direction given in “Replace the FSW PCB”. When coupling the frames R2 and L2, remove all the FSWs (whose Shut Down LEDs are on) once and then installing them. The Shut Down LED light off when you operated post procedure on SVP.

1	FSW

1. Replace the FSW PCB.
   a. Open the hooks and remove the cable cover.

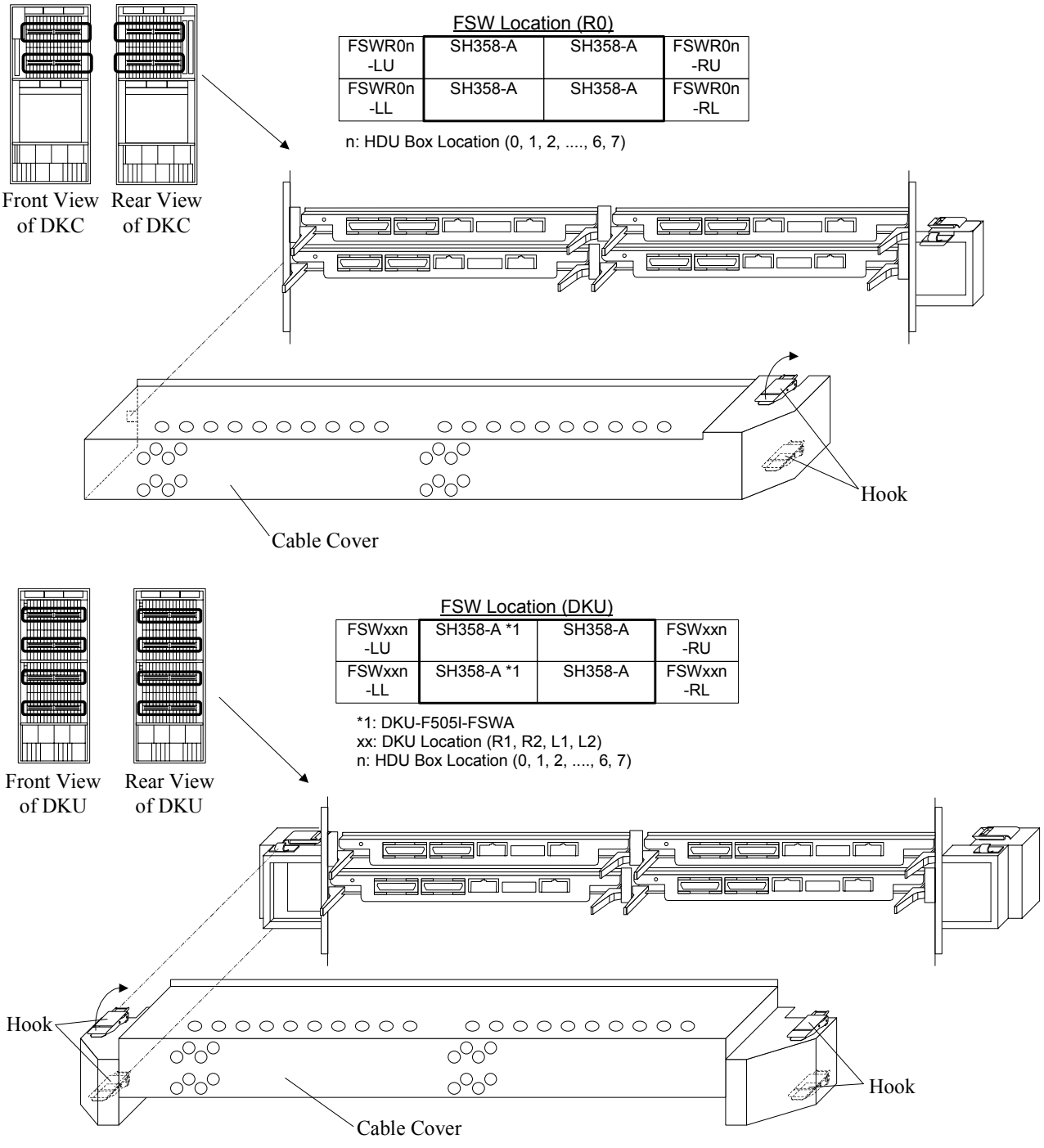


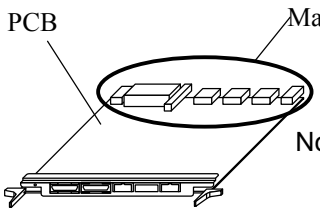
Fig. T16-1 Removal of Cable Cover

b. Check Shut Down LED on the FSW PCB.

CAUTION

A system down is caused by a replacement of the FSW PCB other than that to be replaced. Make sure that it is the FSW PCB to be replaced.

c. Disconnect the DEV interface cables.
d. Set the switches of the spare FSW PCB. For switch settings, refer to LOC06-100 through 120.
e. Replace the FSW PCB.



Note: Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB.

f. Connect the DEV interface cables.
g. Attach the cable cover with the hooks.

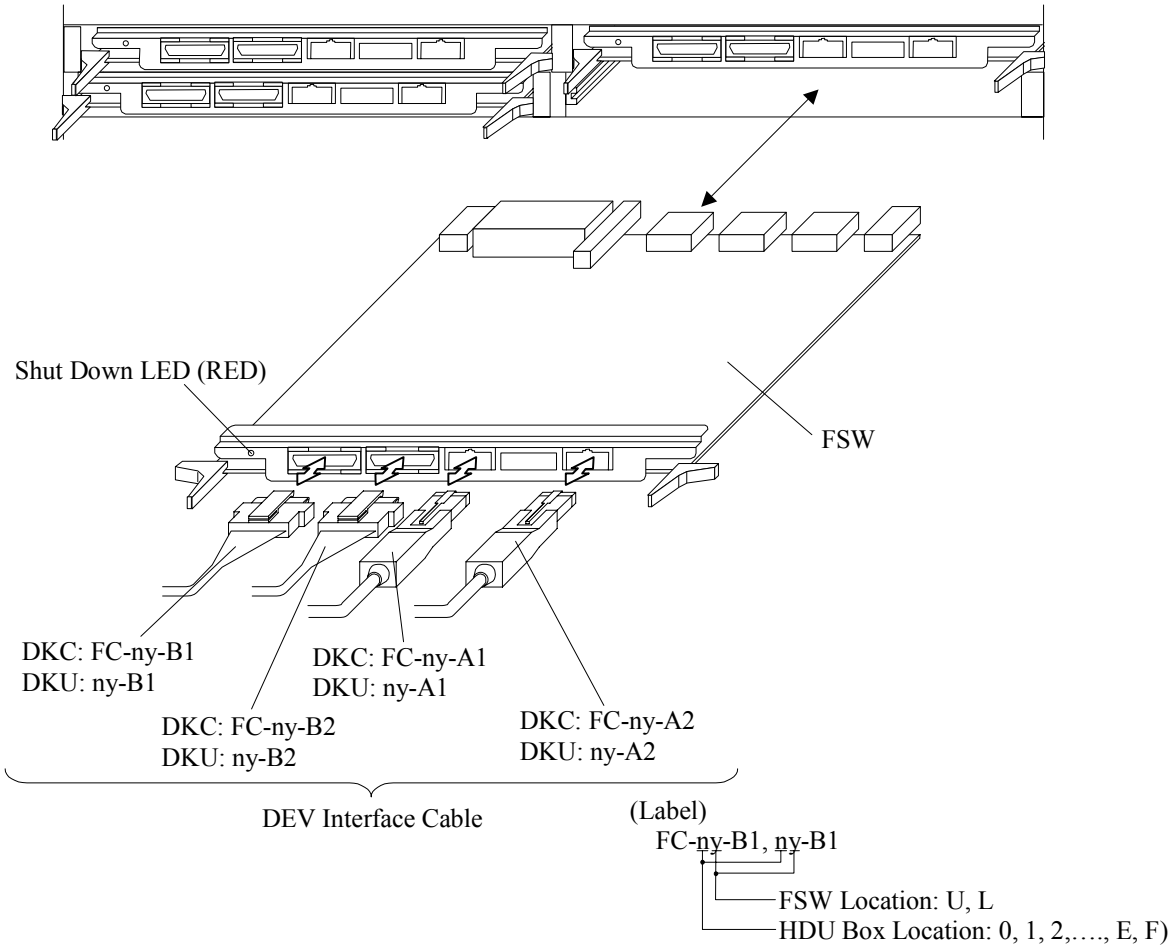
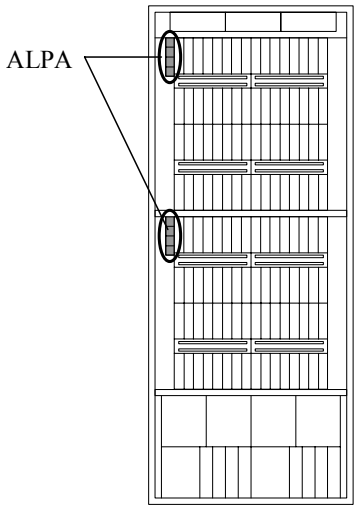


Fig. T16-2 Replacement of FSW PCB

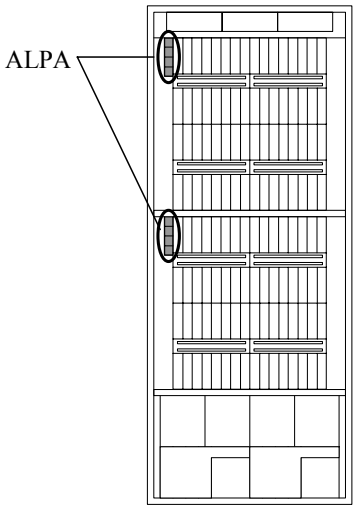
2. Go to SVP post procedure j [REP04-280].

[HARDWARE T17]

Location	Function Name of Component		Part Name
DKU	1	ALPA (RoHS not applied)	• SH360-A
	2	ALPA (RoHS applied)	• SH360-B



Front View of DKU



Rear View of DKU

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

1	Replacement of ALPA

1. Replace the ALPA.
   a. Check Shut Down LED on the ALPA PCB.
   b. Loosen the screw and remove the ALPA PCB.
   c. Remove the maintenance jumpers from the failed ALPA PCB and insert them to the spare ALPA PCB.
      For jumper settings, refer to LOC06-130 ~ 140.
   d. Replace the ALPA PCB, fasten the screw.

CAUTION: Shut Down LED light off when you operated post procedure on SVP.

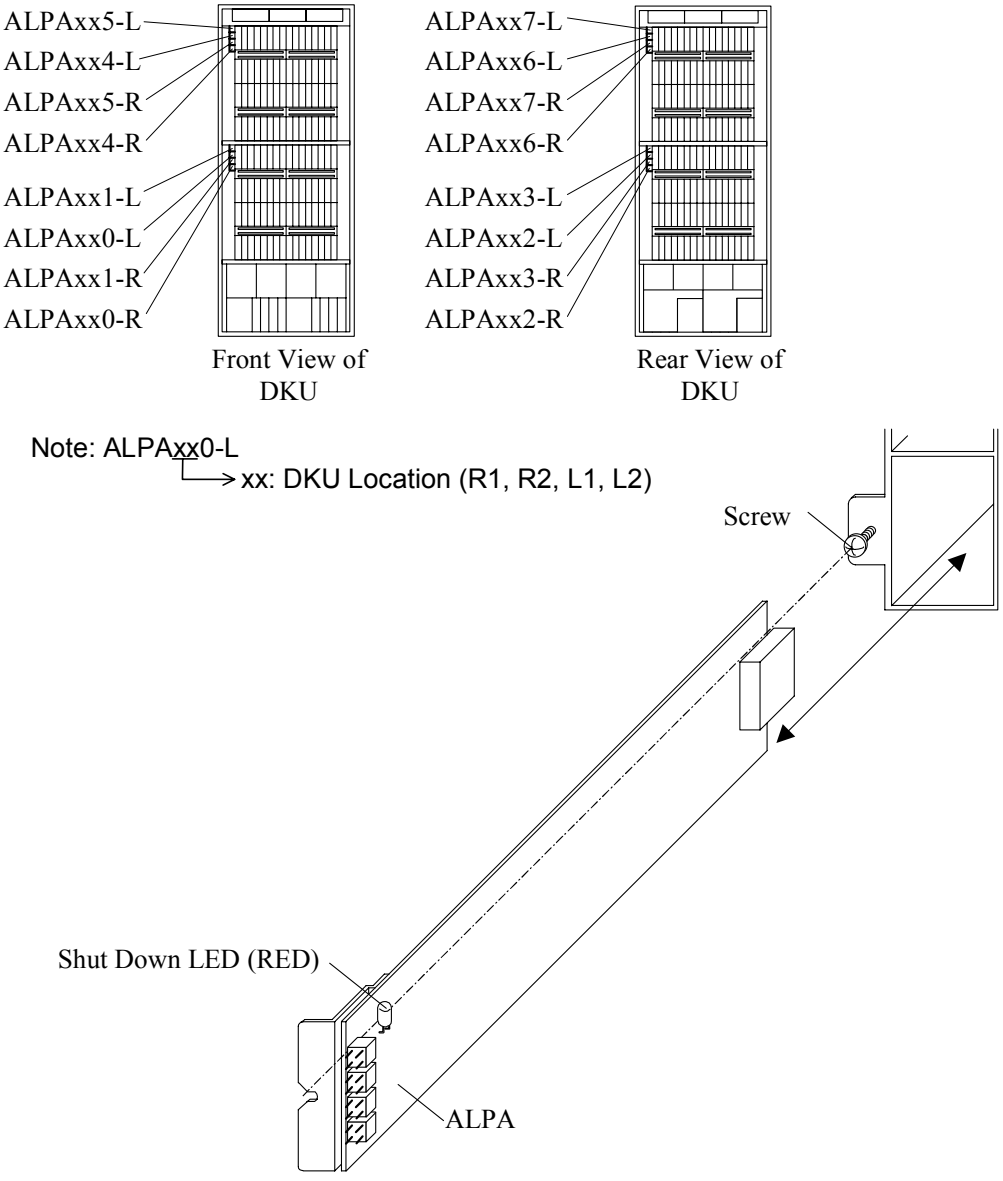


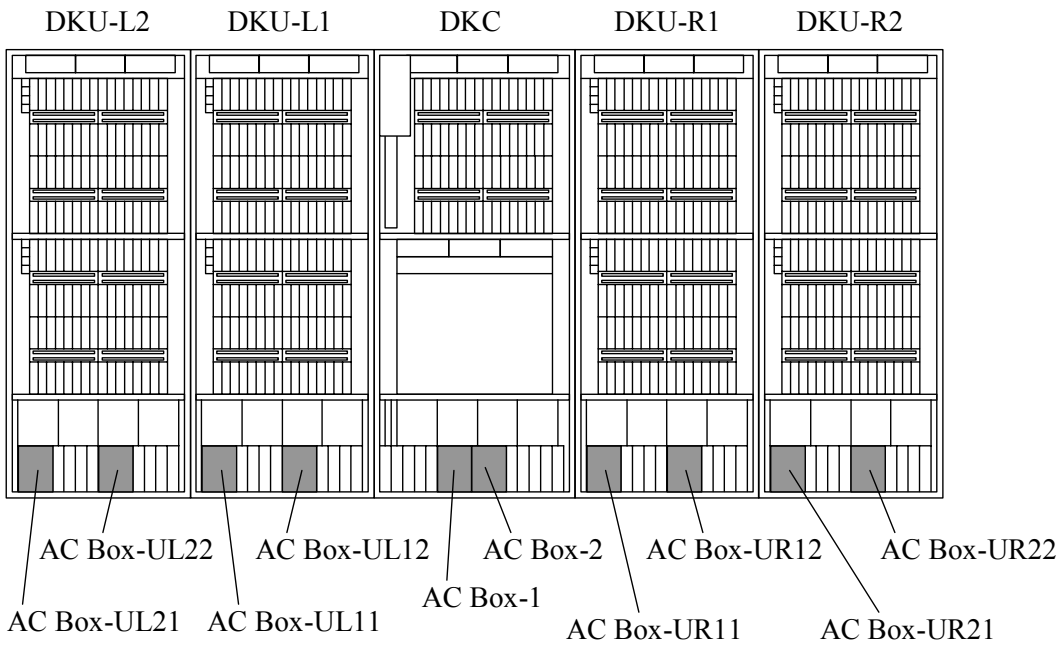
Fig. T17-1 Replacement of ALPA

2. Go to SVP post procedure t4 [REP04-890].

[HARDWARE T18]

Location	Function Name of Component		Part Name
Lower of DKC or DKU	1	AC Box (3 Phase/30A) (RoHS not applied)	
	2	AC Box (3 Phase/30A) (RoHS applied)	
(Reference) The related part for replacement of AC Box. 1. Circuit breaker on the power distribution panel that is connected to the AC Box.			

Front 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.

1	Replacement of AC Box for DKC frame

1. Power Off the Component to be replaced.

⚠ 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.)

⚠ CAUTION

The device may be powered off when turning off the breakers not shown below.

a. Turn off the circuit breaker for the AC Box to be replaced (CB101).

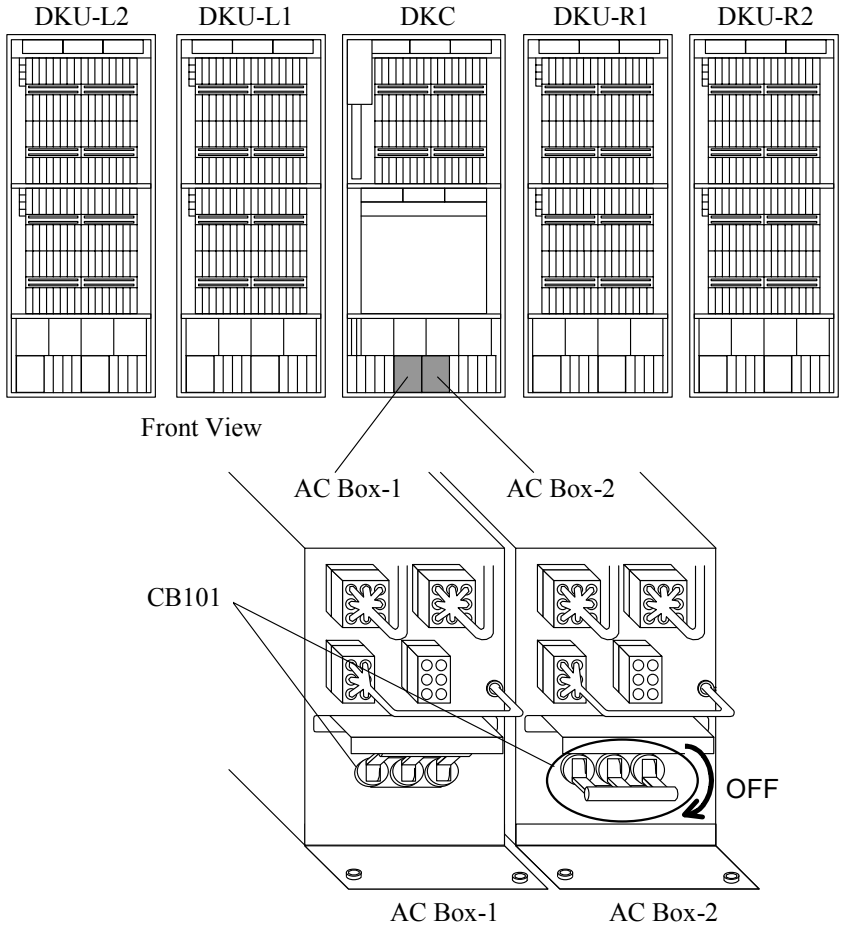


Fig. T18-1 AC Box Location and Turn off the Circuit Breaker

b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC Box to be replaced.

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

⚠ WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Loosen the screws and disconnect the AC power cable.

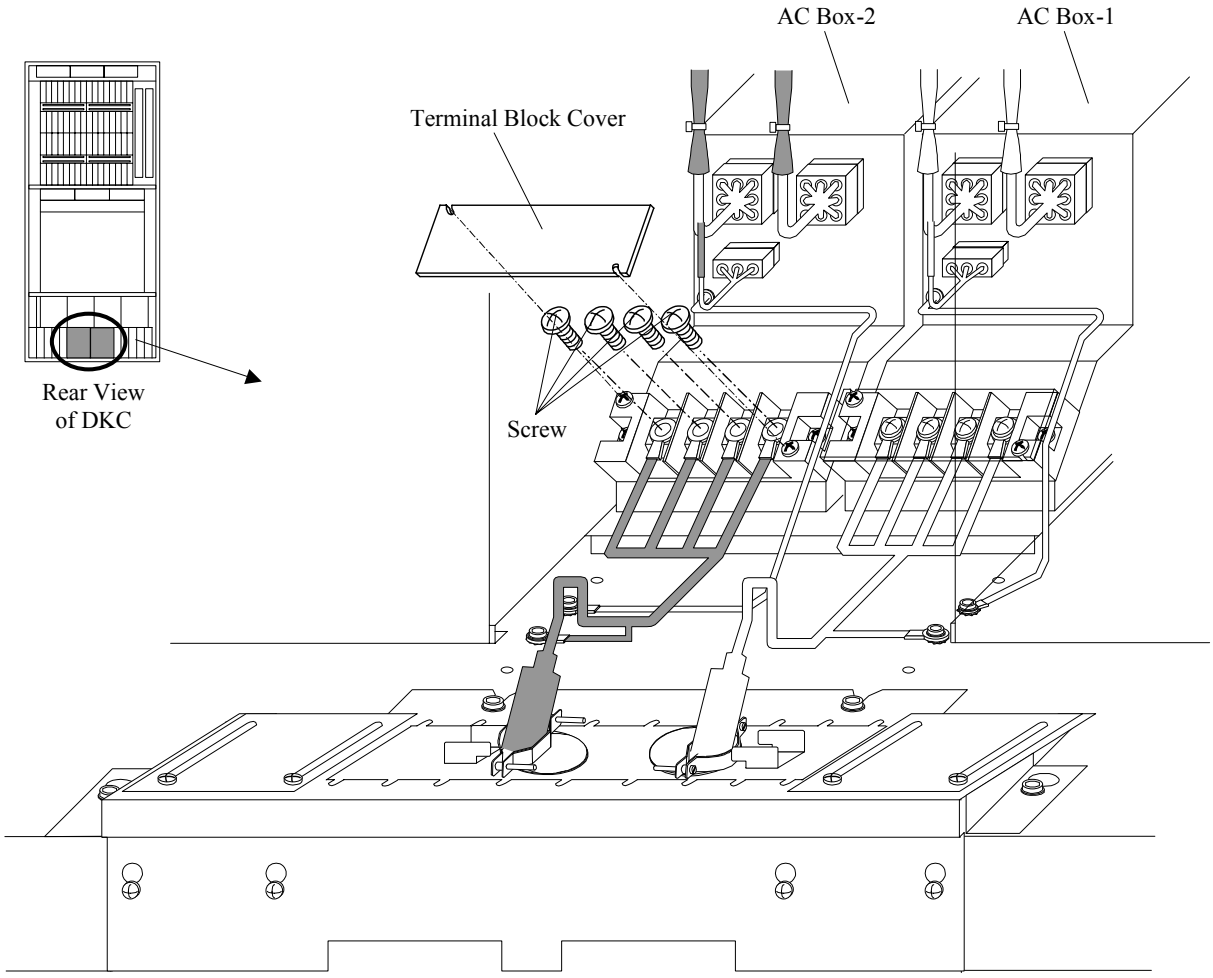


Fig. T18-2 Disconnection of AC cable

3. Disconnect the Cables.
   a. Unplug cable connectors P103-#, P104-# and P105-# from AC Box to be replaced.
   b. Loosen the screw and remove the Frame Ground Cable.

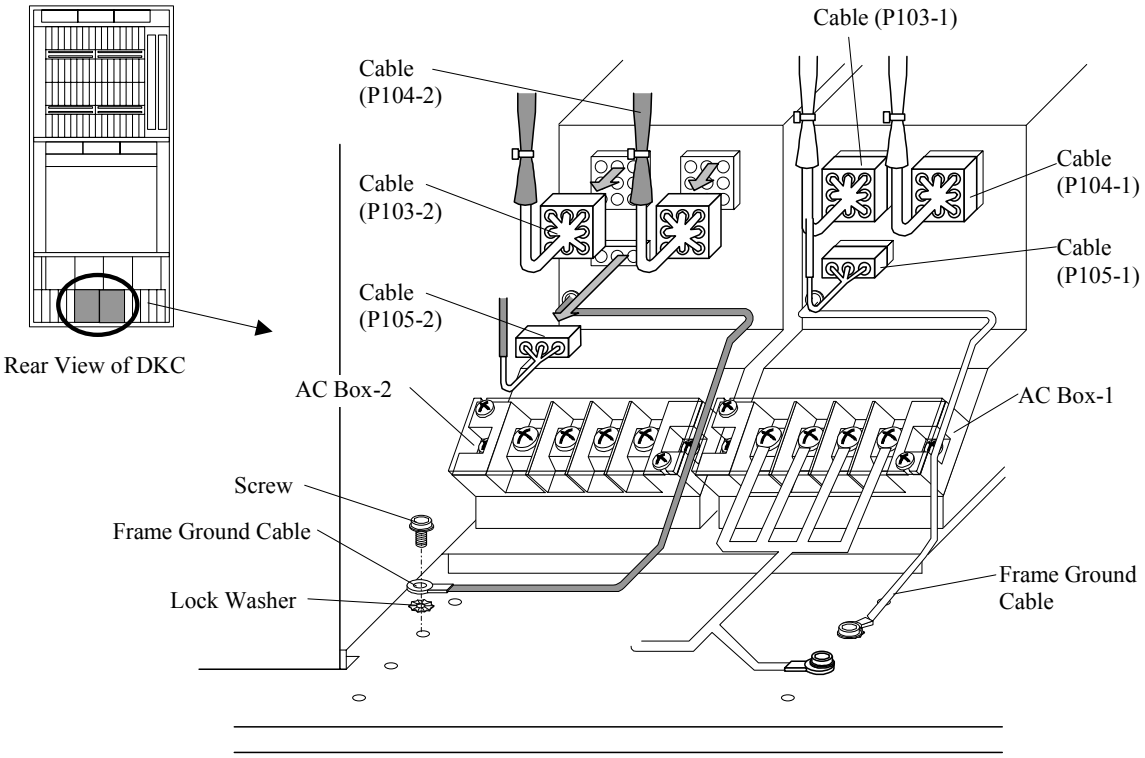


Fig. T18-3 Disconnection of Cables (Rear side)

c. Unplug the cable connectors P101-# and P102-# from the front of the AC Box.

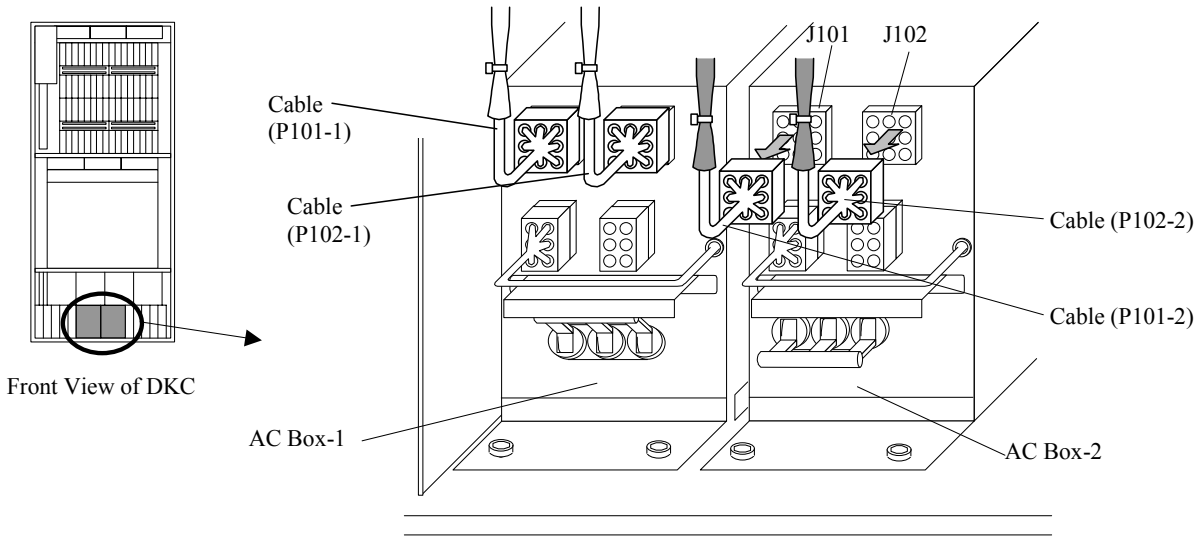


Fig. T18-4 Disconnection of Cables (Front side)

4. Replacement of AC Box.
   a. Remove the two screws and slide the AC Box from the rear to the front.

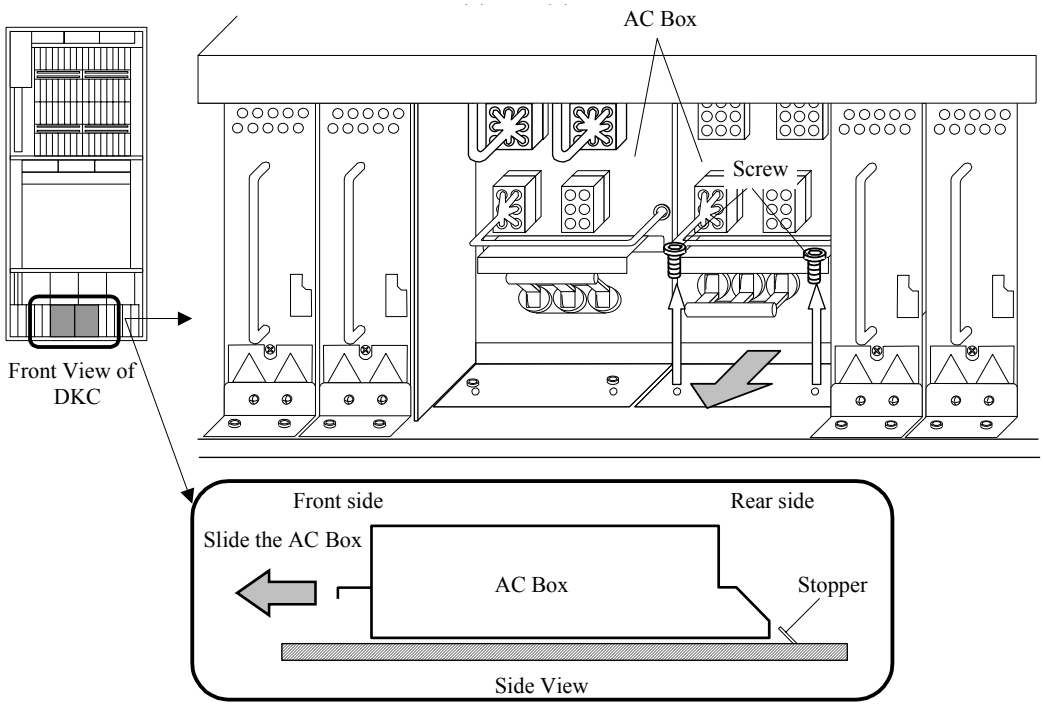


Fig. T18-5 Removal of AC Box

   b. Attach the spare AC Box.
   Slide the AC Box from the front to the rear and secure the AC Box with the screws.

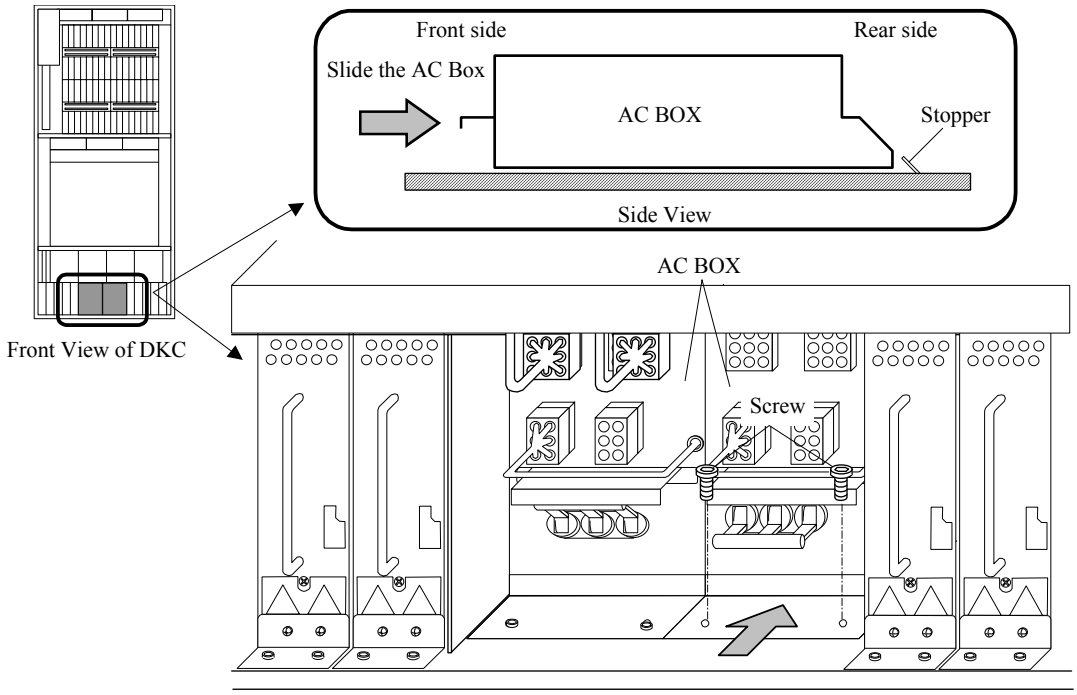


Fig. T18-6 Attachment of AC Box

5. Connect the AC power cable.
   a. Connect the AC power cable to the rear of the AC Box.
   b. Attach the terminal block cover with the screws.

Table T18-1 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	4 conductors (R/L1, S/L2, T/L3, FG)	
2	For Europe	380-415Vac	5 conductors (R/L1, S/L2, T/L3, N, FG)	

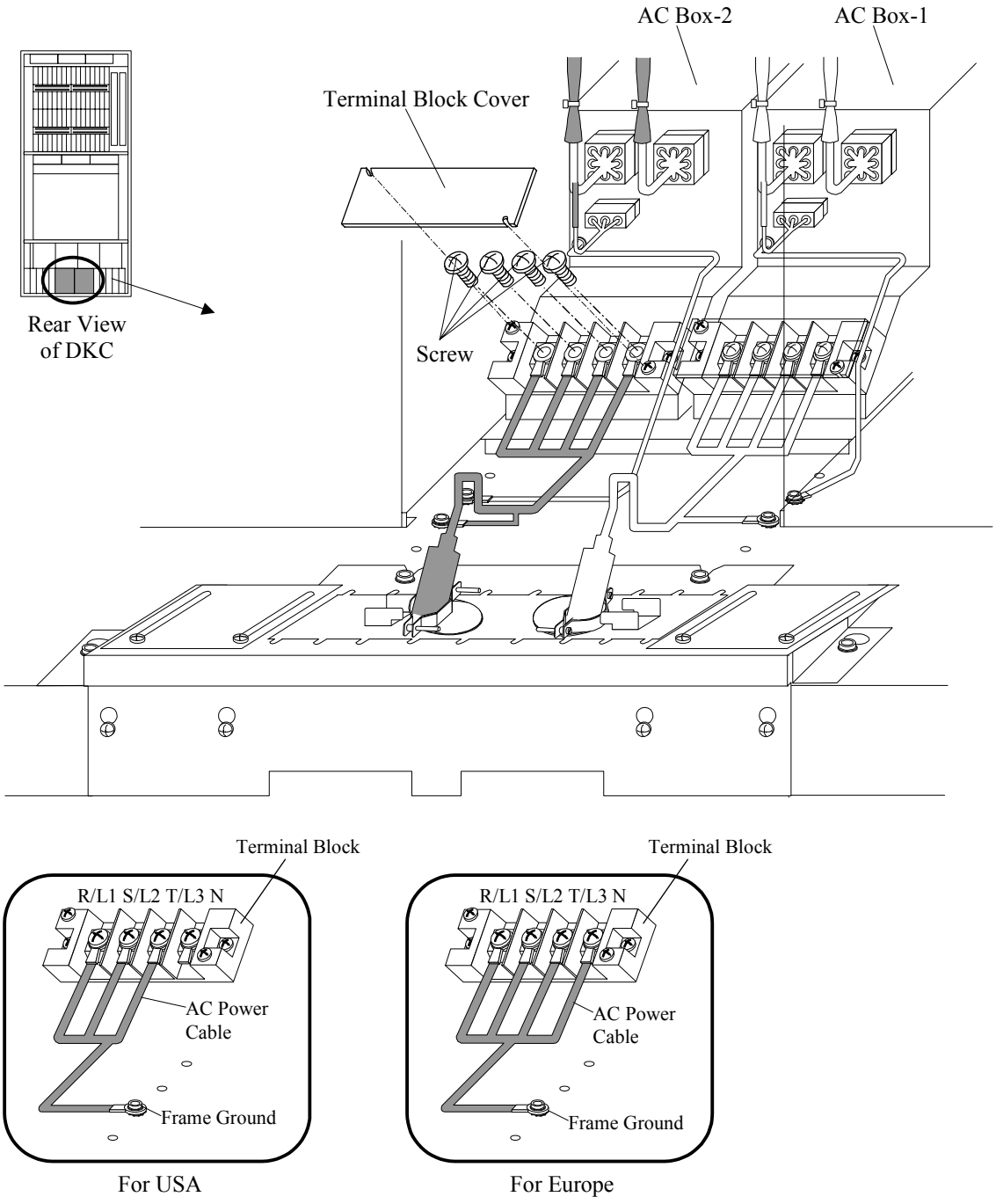


Fig. T18-7 Connection of AC Power Cable

6. Connect the Cables.

Note: In order that the cable for AC Box may prevent a connection mistake, the white tube is put on the cable for AC Box-1, and the black tube is put on AC Box-2.

a. Secure the frame ground cable with the screw and lock washer.
b. Connect the cables to the rear of the AC Box.

Table T18-2 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-1	AC Box-2		
1	P103-1	P103-2	J103	
2	P104-1	P104-2	J104	
3	P105-1	P105-2	J105	

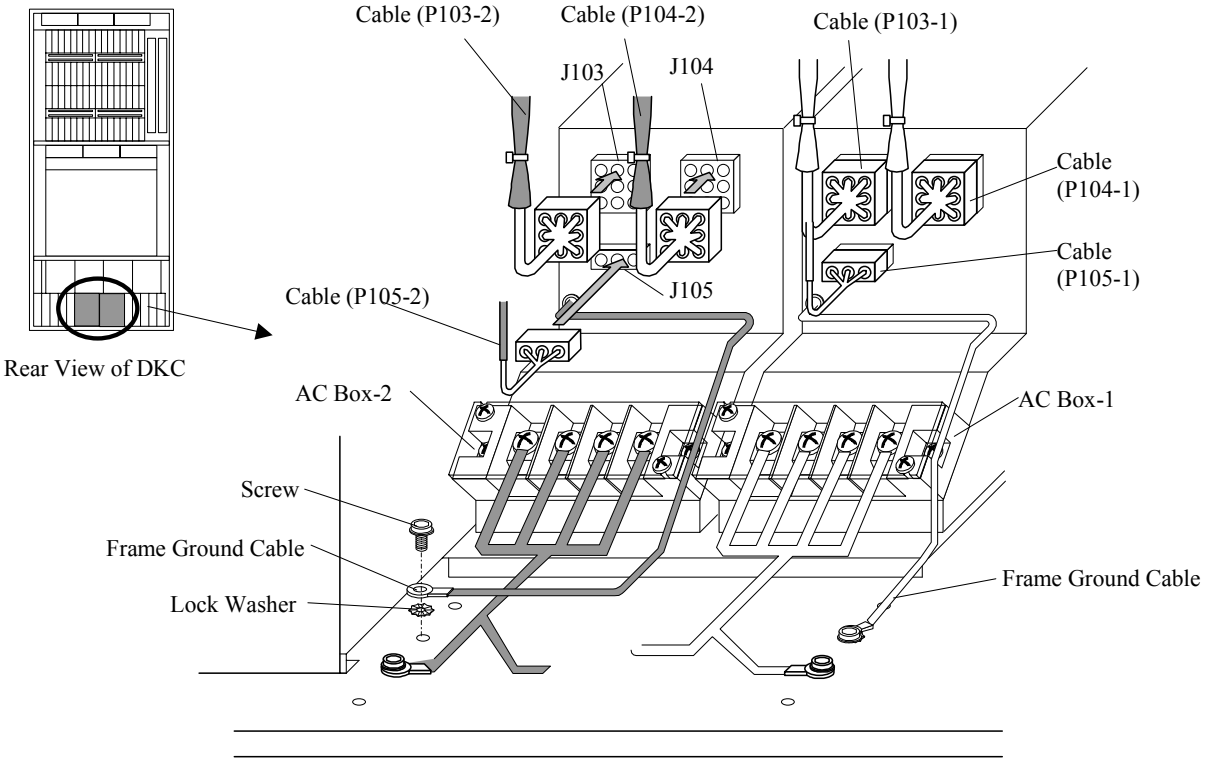


Fig. T18-8 Connection of Cables (Rear side)

c. Connect the cables and dummy connector to the front of the AC Box.

⚠ CAUTION

The mate connector of the P106 shown as No.3 in Table T18-3 vary depending on the voltage of the AC power inputted.
Never make a wrong connection because the subsystem will be damaged if the connection is wrongly made.

Table T18-3 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-1	AC Box-2		
1	P101-1	P101-2	J101	
2	P102-1	P102-2	J102	
3	P106		J106-1	For USA
			J106-2	For Europe
4	Dummy Connector		J106-2	For USA
			J106-1	For Europe

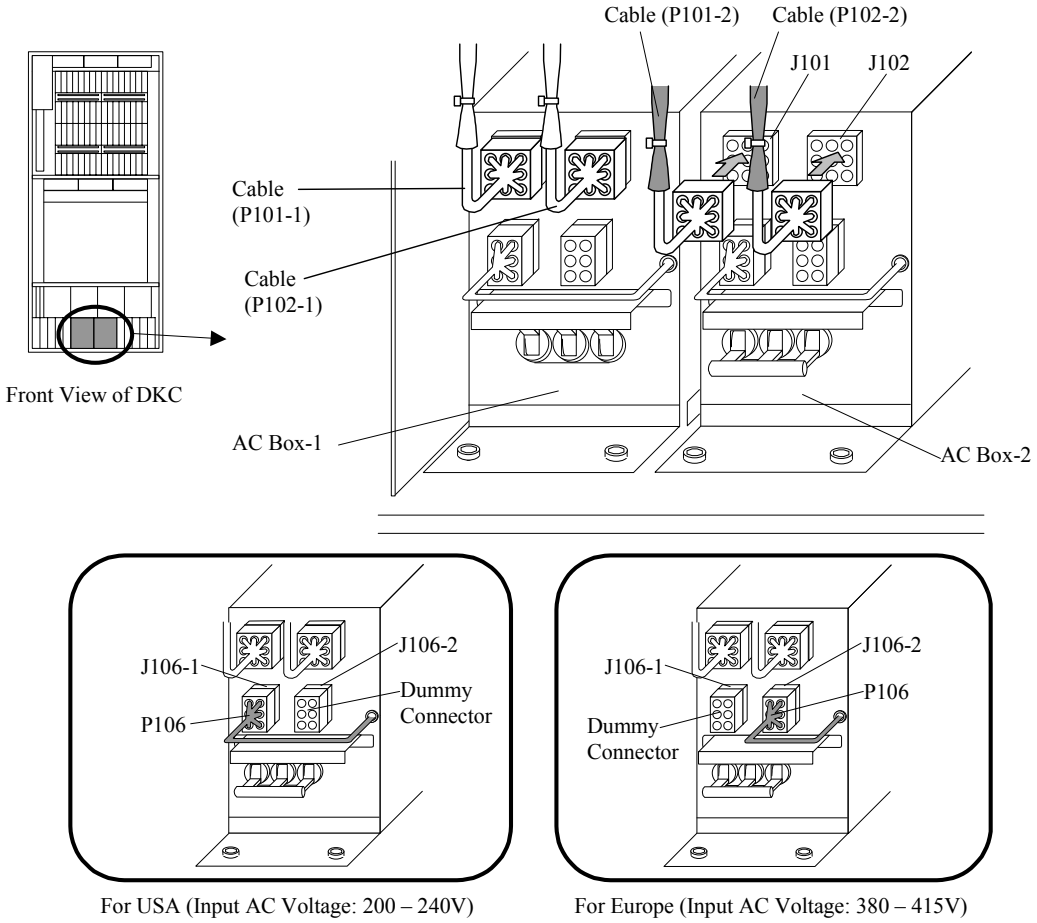


Fig. T18-9 Connection of Cables (Front side)

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC Box.
   b. Turn on the circuit breaker on the AC Box (CB101).

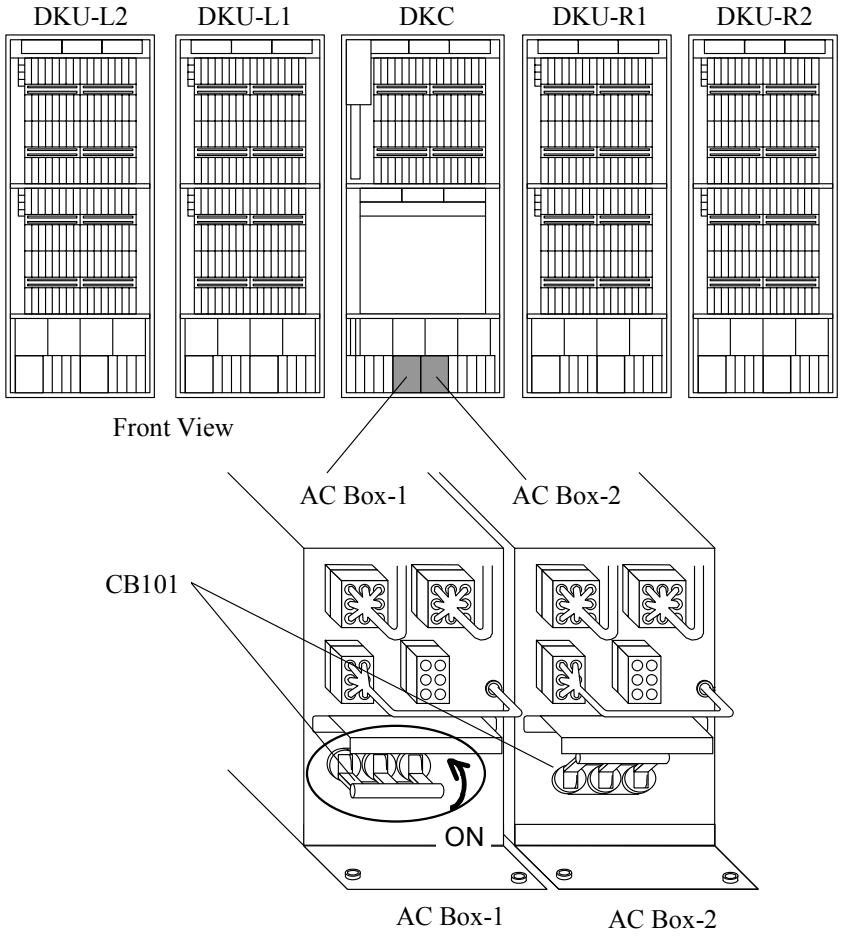


Fig. T18-10 Turn on the Circuit Breaker

8. Go to SVP post procedure t1 [REP04-330].

2	Replacement of AC Box for DKU frame

1. Power Off the Component to be replaced.

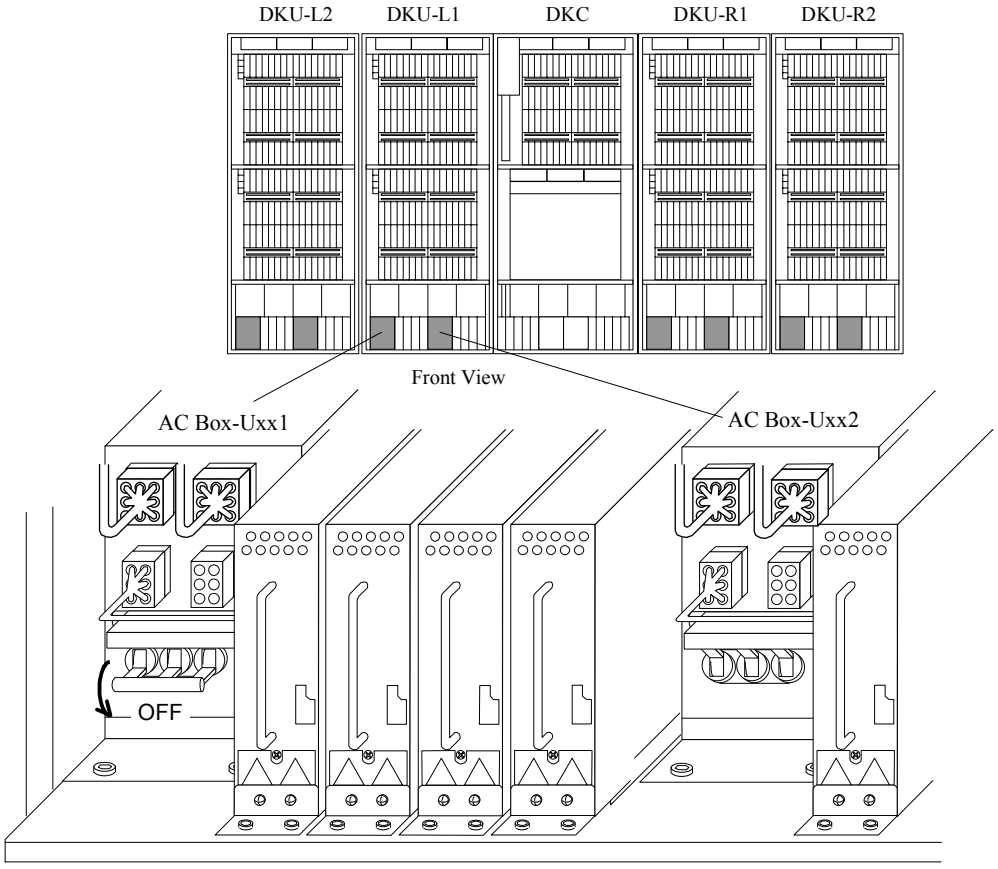
WARNING

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

CAUTION

The device may be powered off when turning off the breakers not shown below.

a. Turn off the circuit breaker for the AC Box to be replaced (CB101).



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T18-11 AC Box Location and Turn off the Circuit Breaker

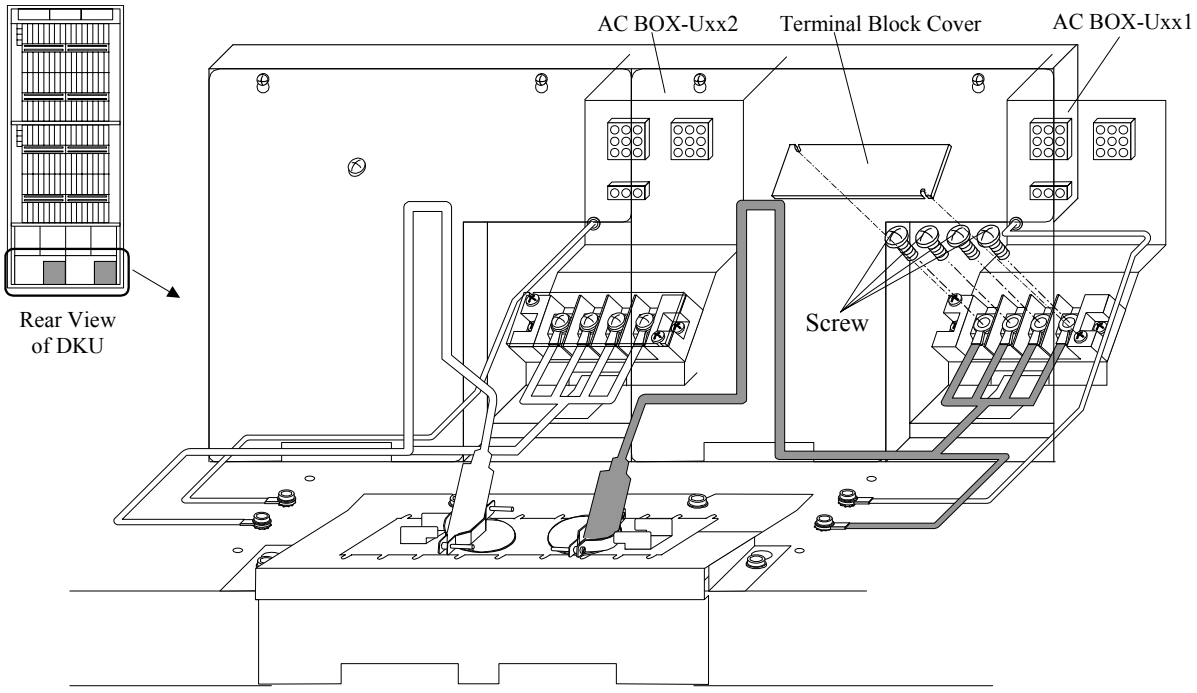
b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC Box to be replaced.

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

⚠ WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

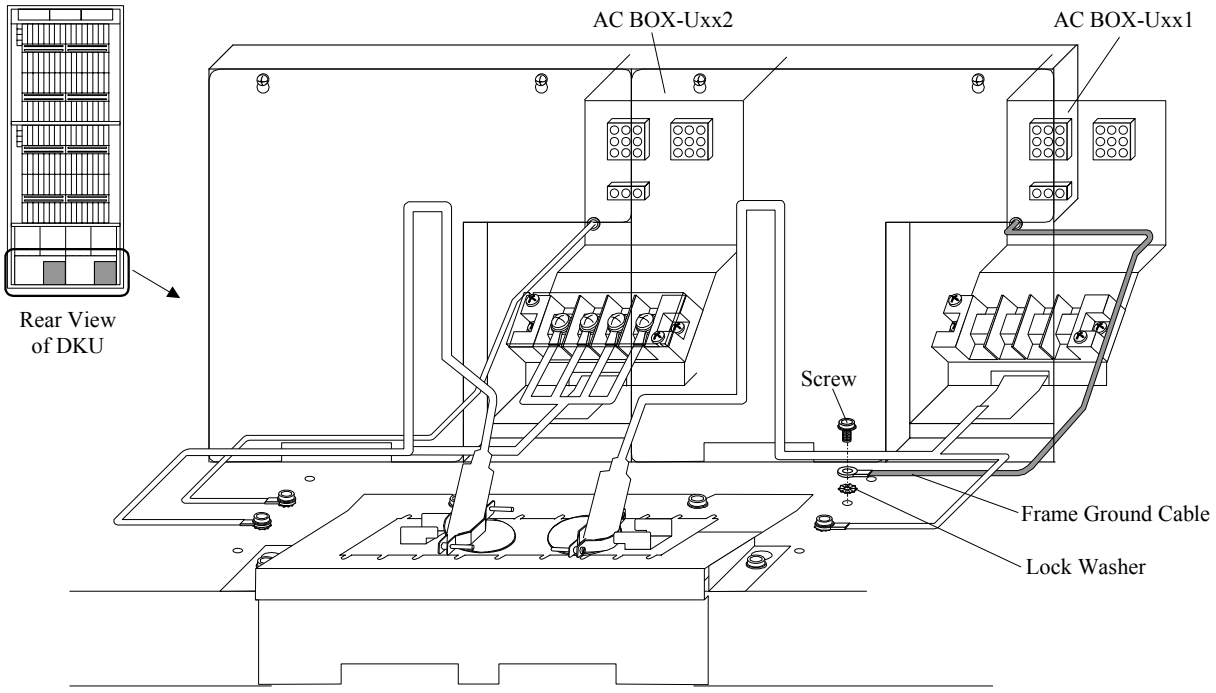
2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Loosen the screws and disconnect the AC power cable.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T18-12 Disconnection of AC cable

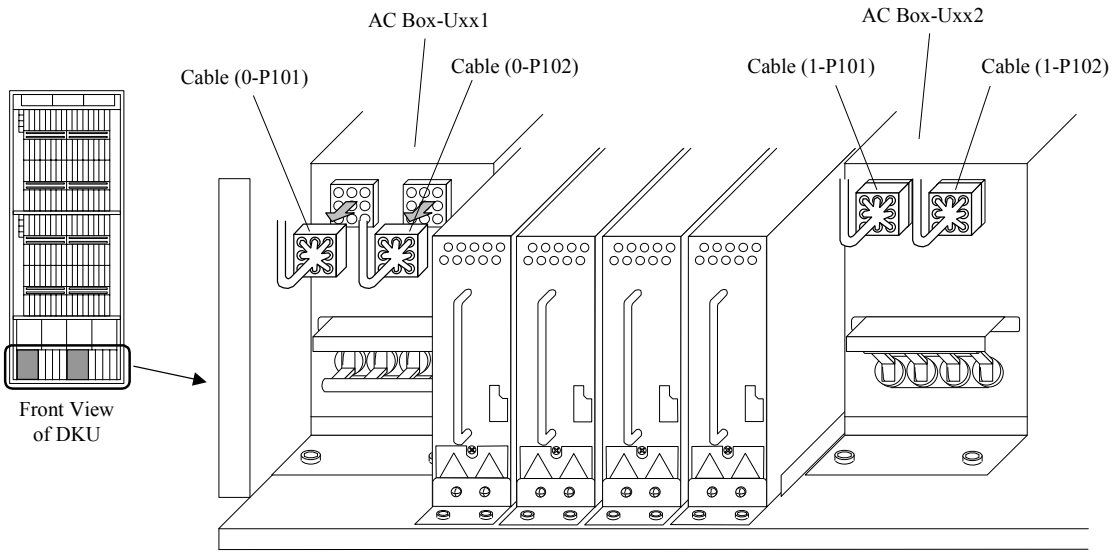
3. Disconnect the Cables.
   a. Loosen the screw and remove the Frame Ground Cable.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T18-13 Disconnection of Cable (Rear side)

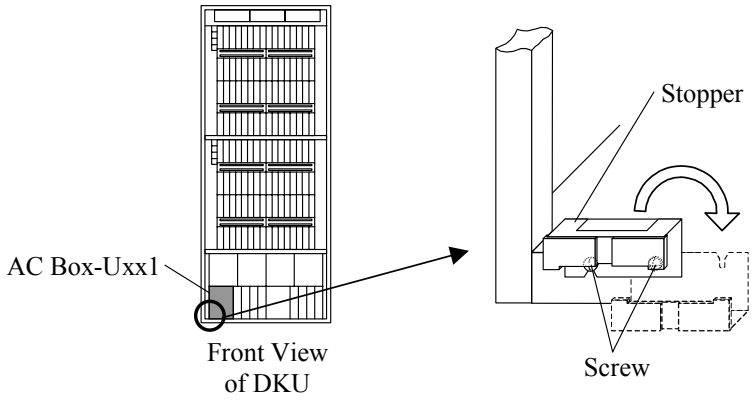
   b. Unplug the cable connectors #-P101 and #-P102 from the front of AC Box.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T18-14 Disconnection of Cable (Front side)

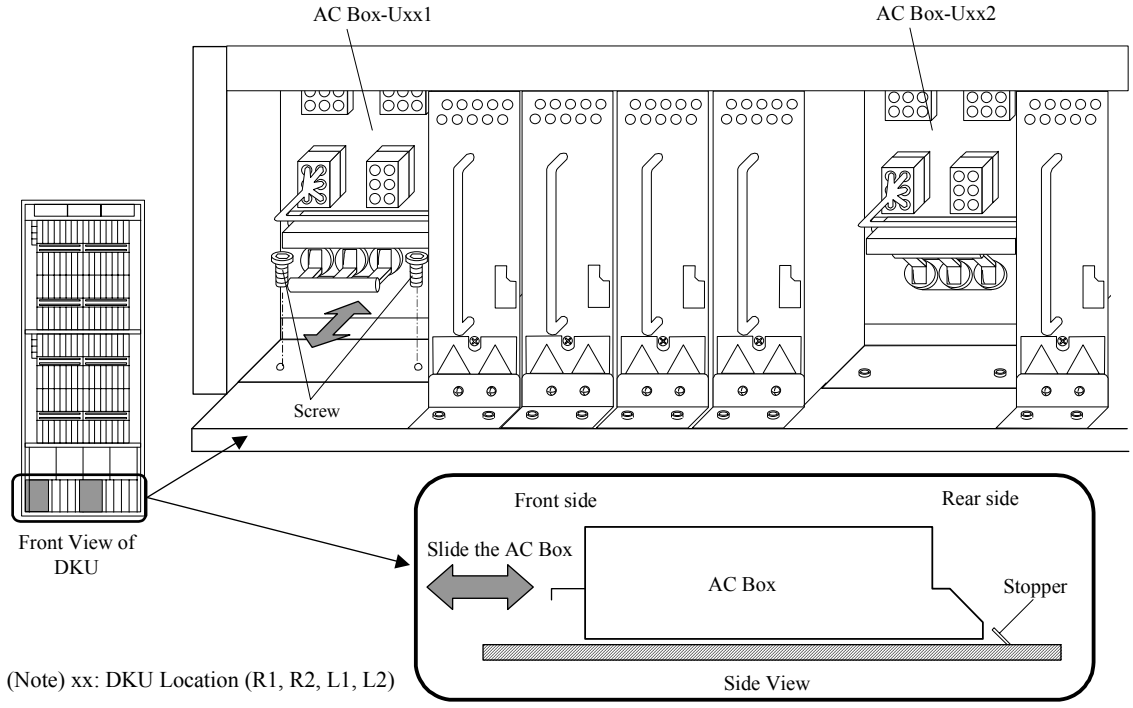
4. Replacement of AC Box.
   a. If the AC Box-Uxx1 is replaced, loosen the two screws and rotate the stopper. If not, go to step b.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T18-15 Rotation of Stopper

   b. Remove the two screws and slide the AC Box from the rear to the front.
   c. Attach the spare AC Box.
      Slide the AC Box from the front to the rear and secure the AC Box with the screws.



(Note) xx: DKU Location (R1, R2, L1, L2)

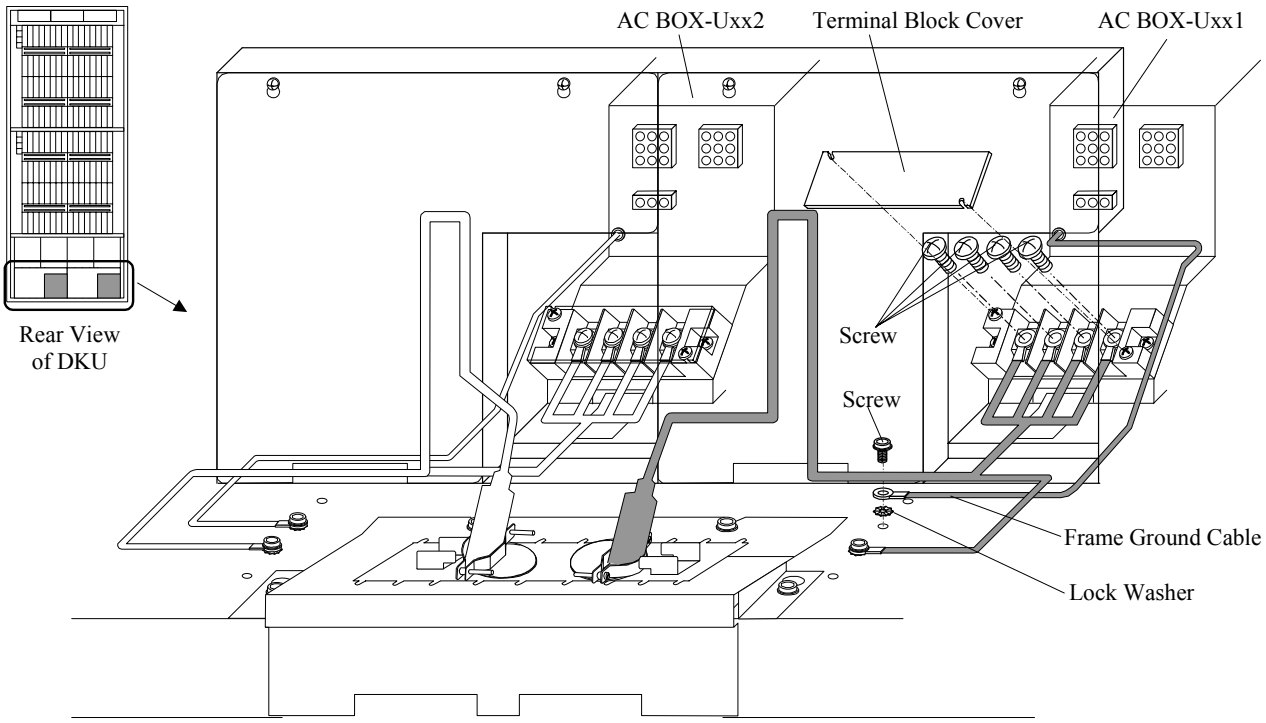
Fig. T18-16 Replacement of AC Box

   d. If the AC Box-Uxx1 is replaced, return the stopper to original position in the reverse order of step a. If not, go to step 5.

5. Connect the AC power cable and frame ground cable.
   a. Connect the AC power cable to the rear of the AC Box.
   b. Attach the terminal block cover with the screws.
   c. Secure the frame ground cable with the screws and lock washer.

Table T18-4 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	4 conductors (R/L1, S/L2, T/L3, FG)	
2	For Europe	380-415Vac	5 conductors (R/L1, S/L2, T/L3, N, FG)	



(Note) xx: DKU Location (R1, R2, L1, L2)

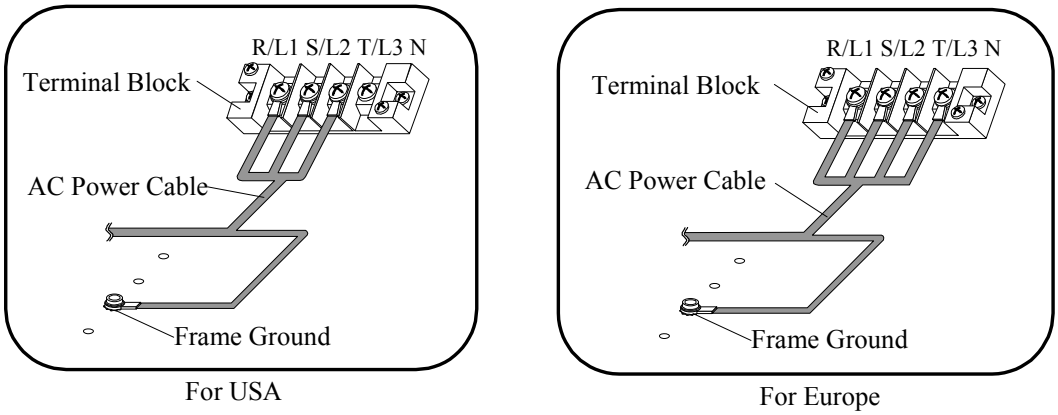
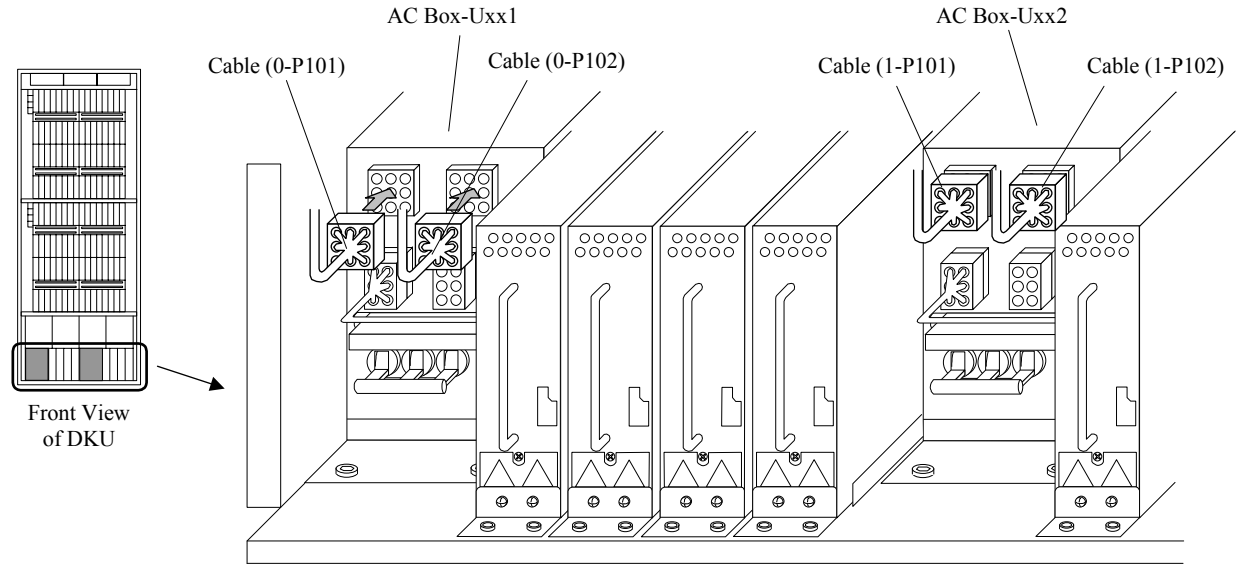


Fig. T18-17 Connection of AC Power Cable and Frame Ground Cable

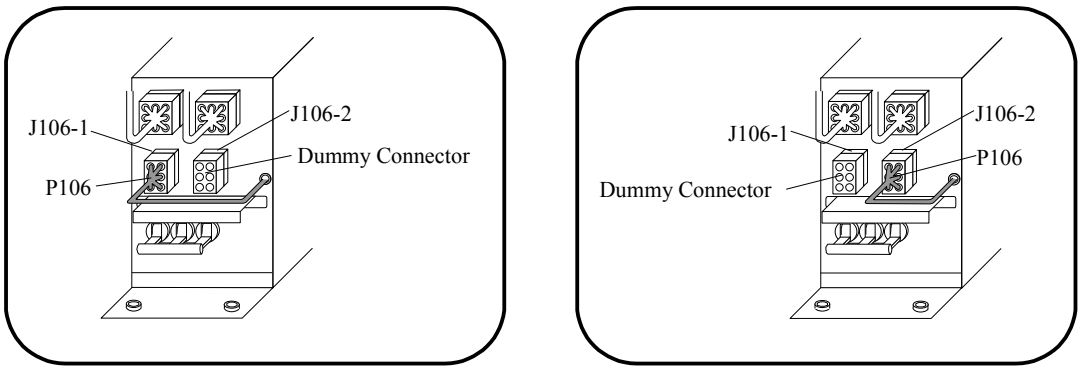
6. Connect the Cables.
   a. Connect the cables and dummy connectors to the front of the AC Box.

Table T18-5 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-Uxx1	AC Box-Uxx2		
1	0-P101	1-P101	J101	
2	0-P102	1-P102	J102	
3	P106		J106-1	For USA
			J106-2	For Europe
4	Dummy Connector		J106-2	For USA
			J106-1	For Europe



(Note) xx: DKU Location (R1, R2, L1, L2)



For USA (Input AC Voltage: 200 – 240V) For Europe (Input AC Voltage: 380 – 415V)

Fig. T18-18 Connection of Cables (Front side)

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC Box.
   b. Turn on the circuit breaker on the AC Box (CB101).

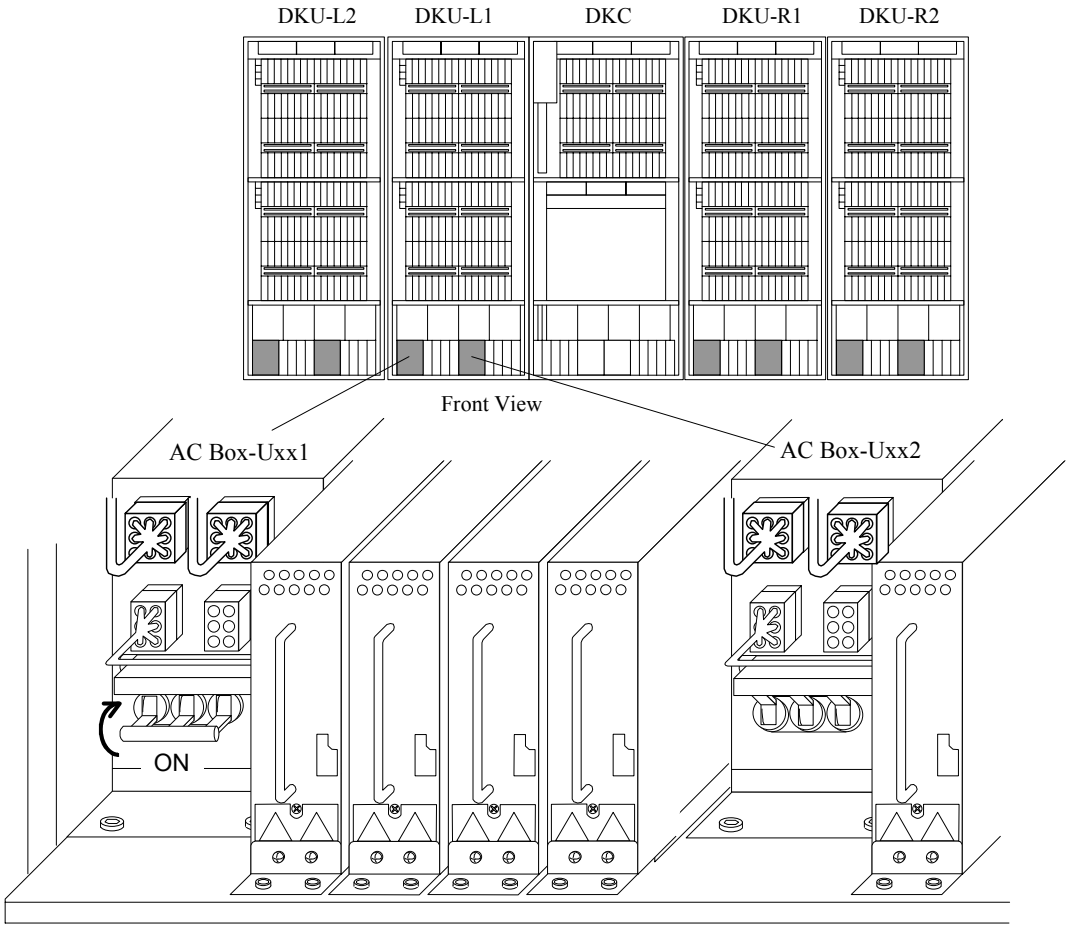
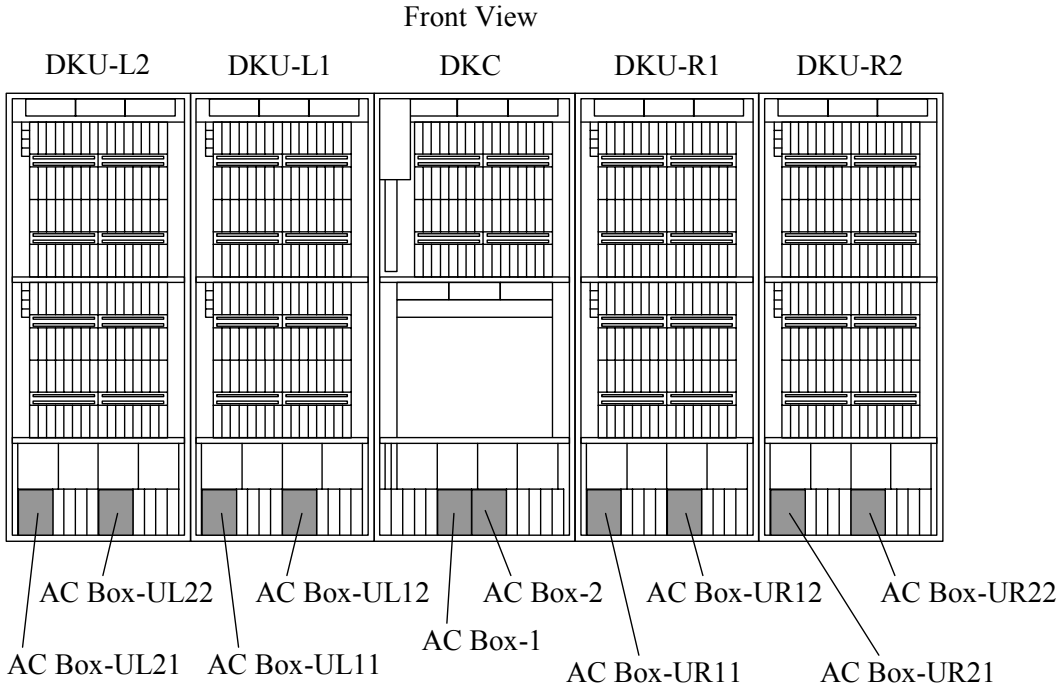


Fig. T18-19 Turn on the Circuit Breaker

8. Go to SVP post procedure t4 [REP04-890].

[HARDWARE T19]

Location	Function Name of Component		Part Name
Lower of DKC or DKU	1	AC Box (1Phase/30A) (RoHS not applied)	
	2	AC Box (1Phase/30A) (RoHS applied)	
(Reference) The related part for replacement of AC Box. 1. Circuit breaker on the power distribution panel that is connected to the AC Box.			



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

1	Replacement of AC Box for DKC frame

1. Power Off the Component to be replaced.

⚠ 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.)

⚠ CAUTION

The device may be powered off when turning off the breakers not shown below.

a. Turn off the circuit breaker for the AC Box to be replaced (CB101).

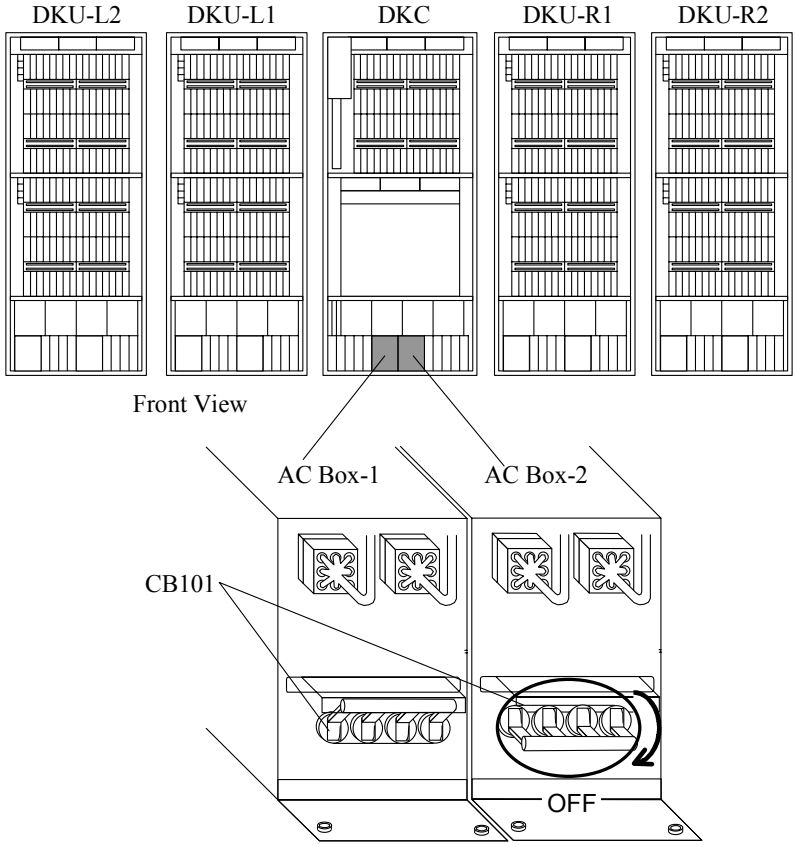


Fig. T19-1 AC Box Location and Turn off the Circuit Breaker

b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC Box to be replaced.

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

⚠ WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Loosen the screws and disconnect the AC power cable.

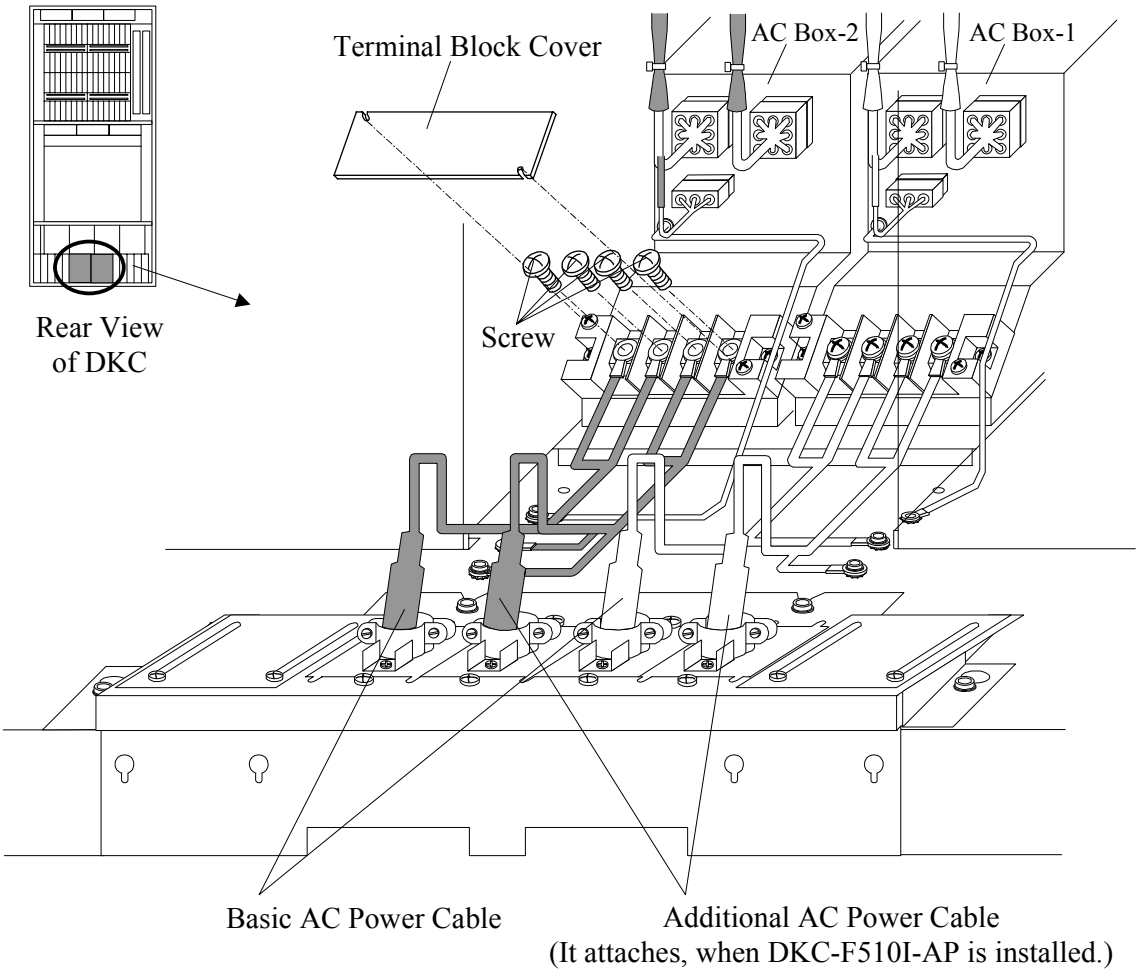


Fig. T19-2 Disconnection of AC cable

3. Disconnect the Cables.
   a. Unplug cable connectors P103-#, P104-# and P105-# from AC Box to be replaced.
   b. Loosen the screw and remove the Frame Ground Cable.

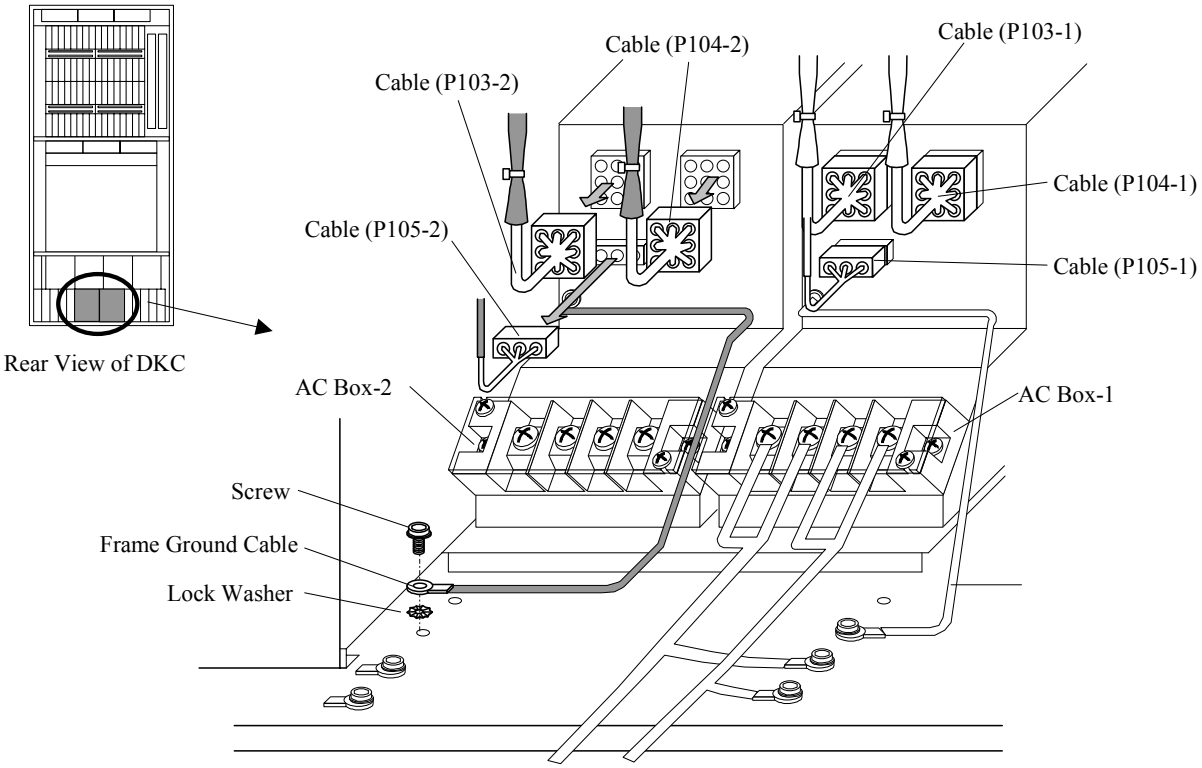


Fig. T19-3 Disconnection of Cables (Rear side)

c. Unplug the cable connectors P101-# and P102-# from the front of the AC Box.

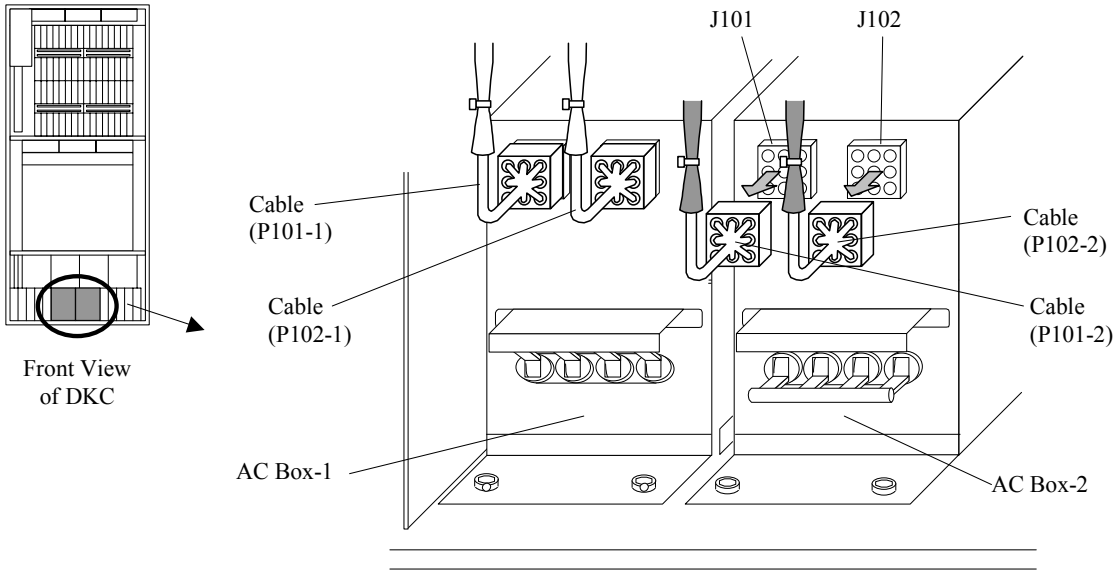


Fig. T19-4 Disconnection of Cables (Front side)

4. Replacement of AC Box.
   a. Remove the two screws and slide the AC Box from the rear to the front.

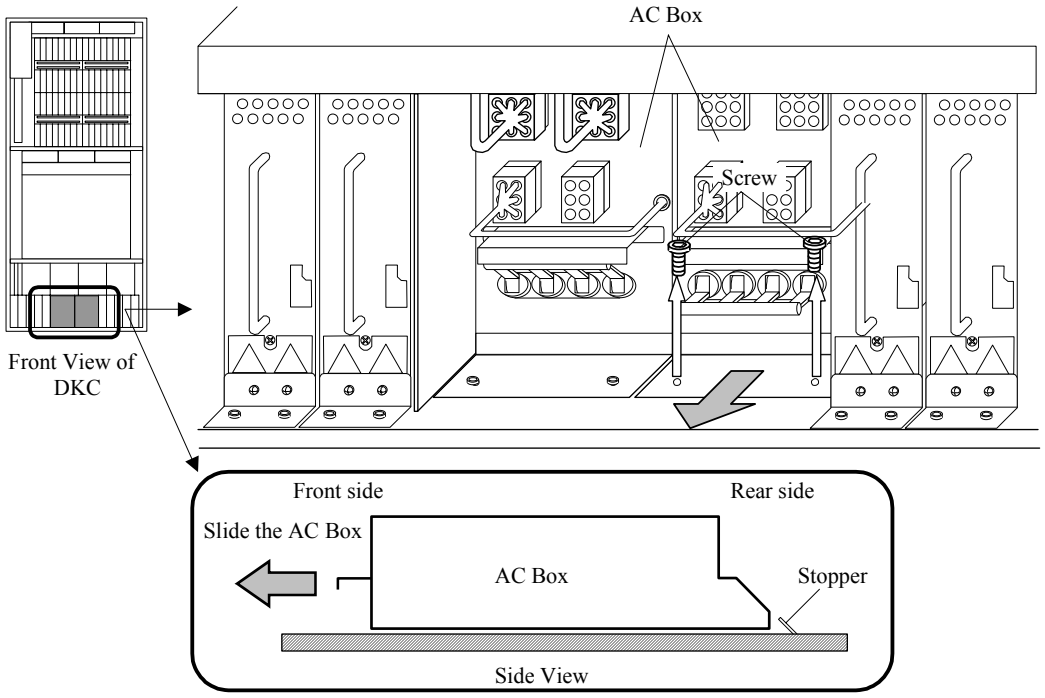


Fig. T19-5 Removal of AC Box

   b. Attach the spare AC Box.
   Slide the AC Box from the front to the rear and secure the AC Box with the screws.

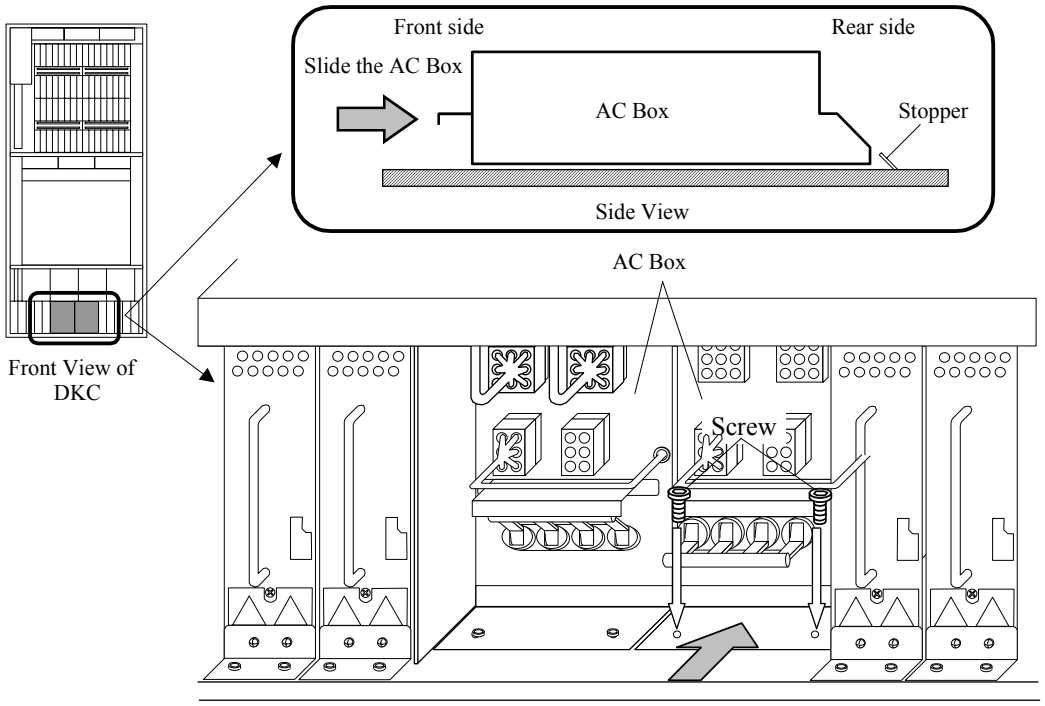
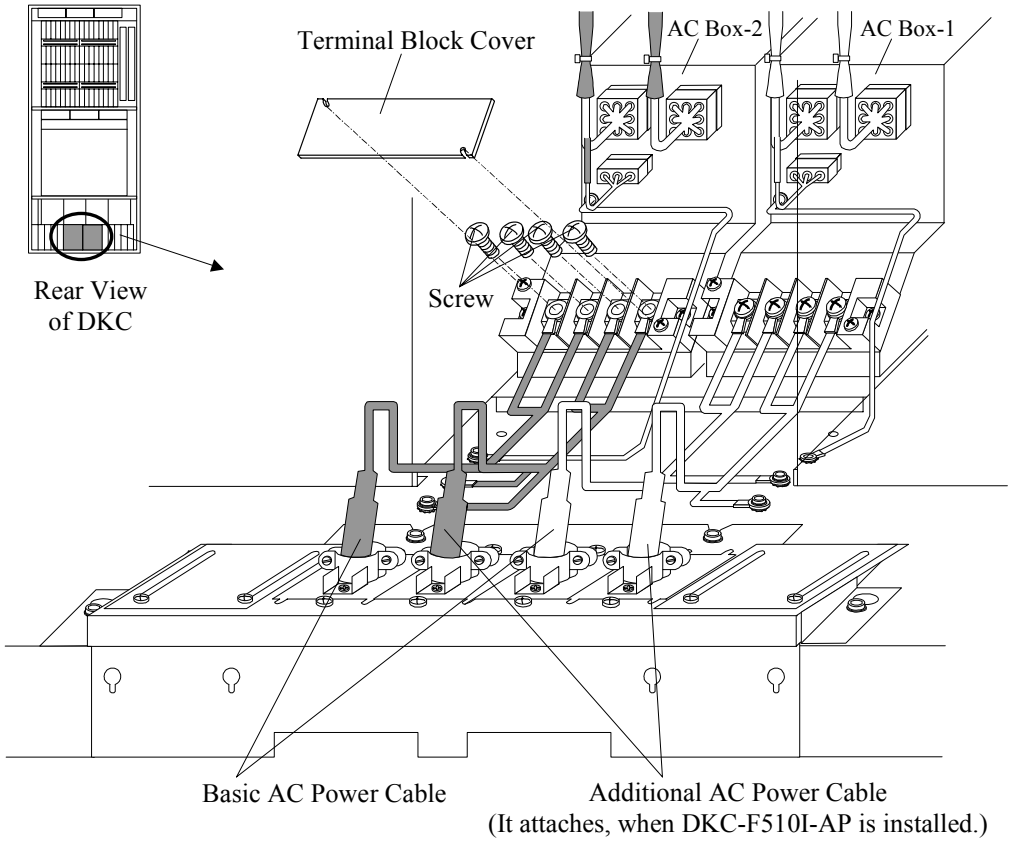


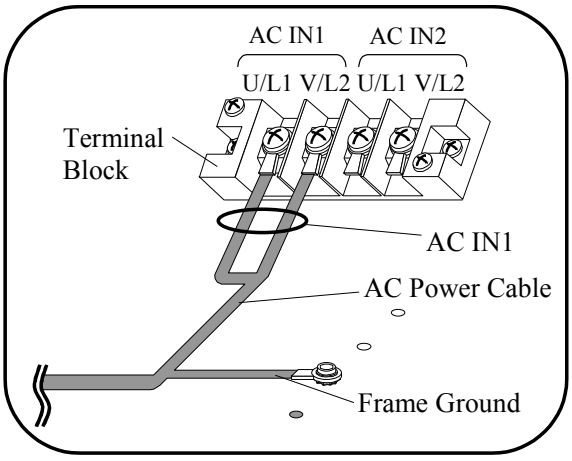
Fig. T19-6 Attachment of AC Box

5. Connect the AC power cable.
   a. Connect the AC power cable to the rear of the AC Box.
   b. Attach the terminal block cover with the screws.

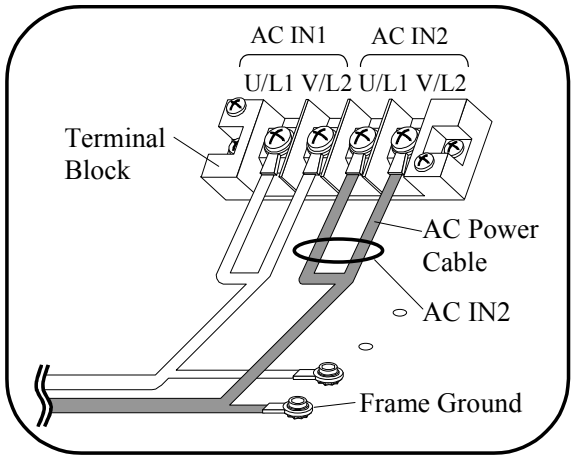
Table T19-1 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	





Basic AC Power Cable Connection



Additional AC Power Cable Connection

Fig. T19-7 Connection of AC Power Cable

6. Connect the Cables.

Note: In order that the cable for AC Box may prevent a connection mistake, the white tube is put on the cable for AC Box-1, and the black tube is put on AC Box-2.

a. Secure the frame ground cable with the screw and lock washer.
b. Connect the cables to the rear of the AC Box.

Table T19-2 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-1	AC Box-2		
1	P103-1	P103-2	J103	
2	P104-1	P104-2	J104	
3	P105-1	P105-2	J105	

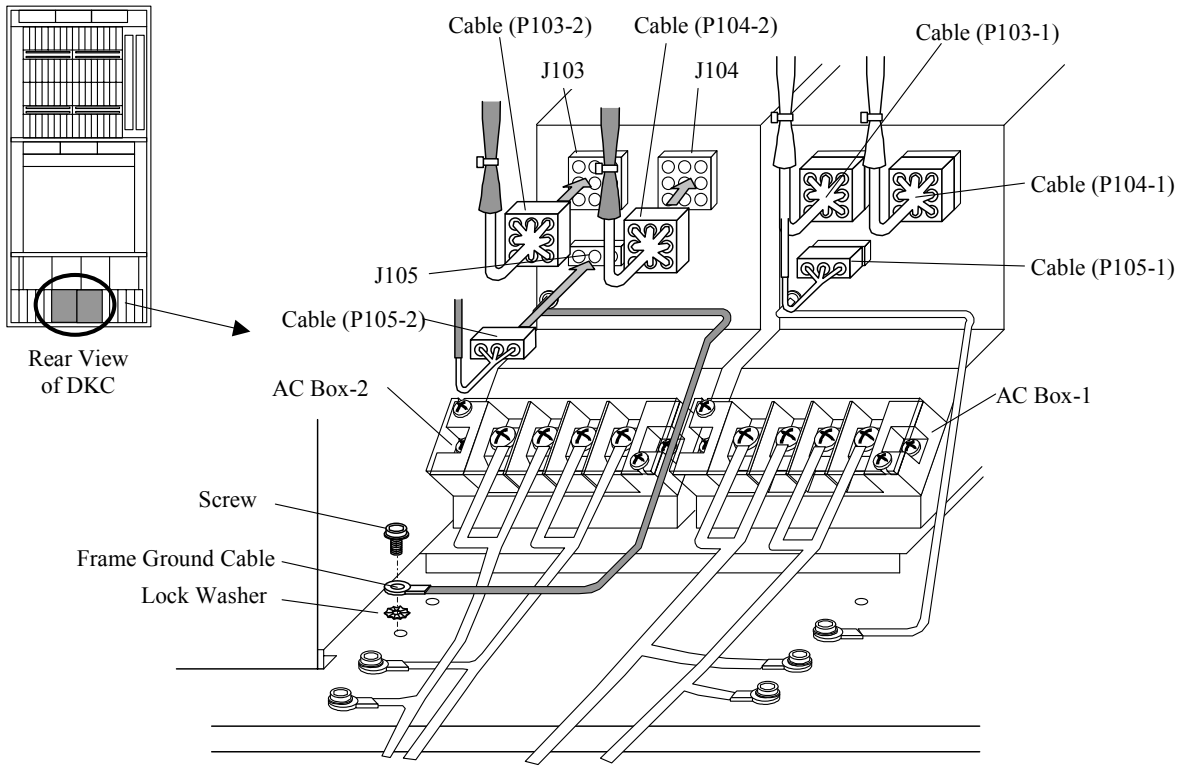


Fig. T19-8 Connection of Cables (Rear side)

c. Connect the cables to the front of the AC Box.

Table T19-3 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-1	AC Box-2		
1	P101-1	P101-2	J101	
2	P102-1	P102-2	J102	

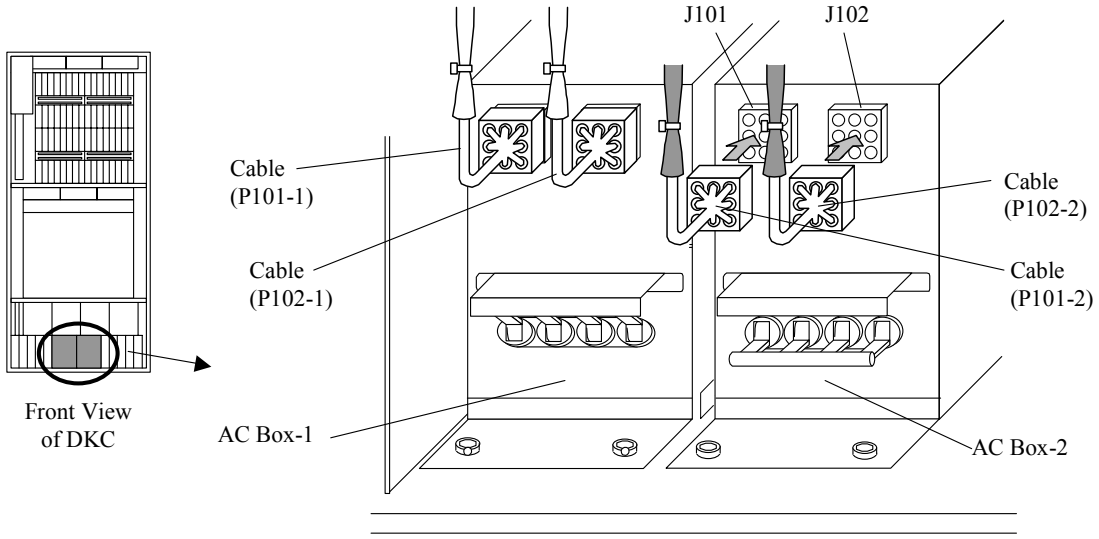


Fig. T19-9 Connection of Cables (Front side)

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC Box.
   b. Turn on the circuit breaker on the AC Box (CB101).

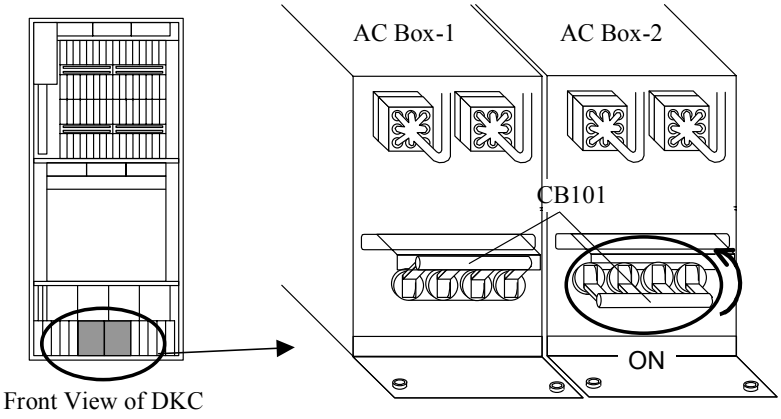


Fig. T19-10 Turn on the Circuit Breaker

8. Go to SVP post procedure t1 [REP04-330].

2	Replacement of AC Box for DKU frame

1. Power Off the Component to be replaced

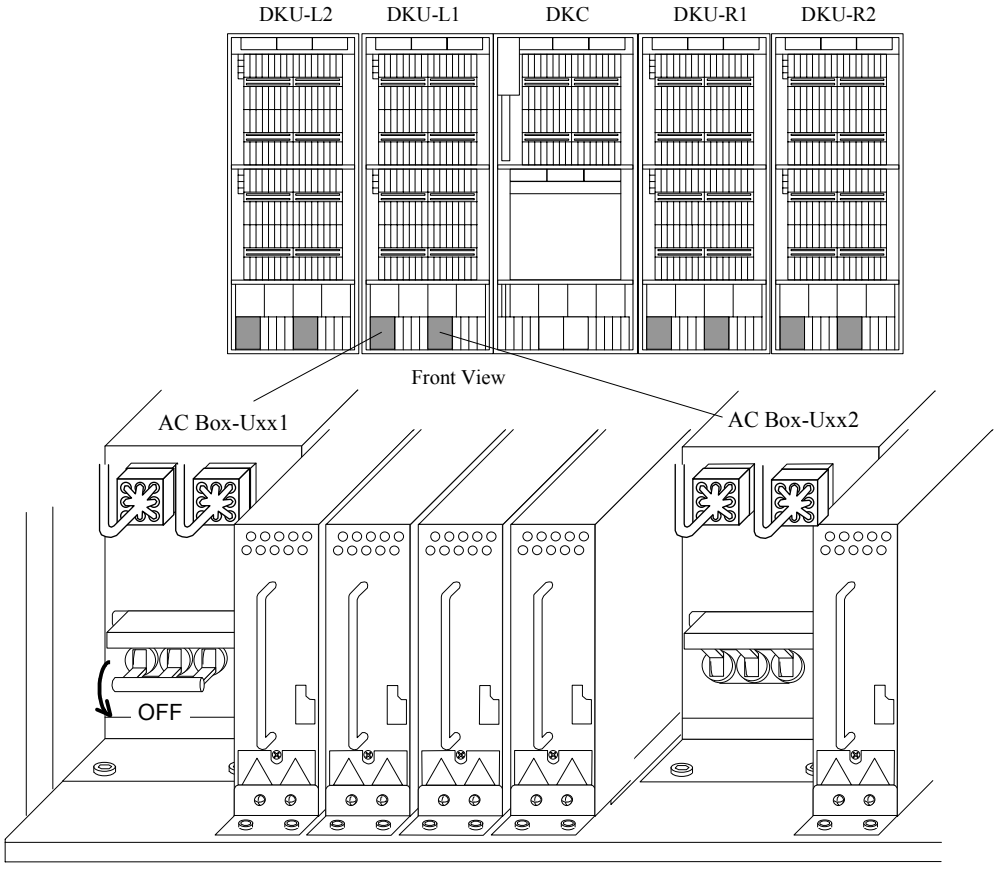
⚠ WARNING

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

⚠ CAUTION

The device may be powered off when turning off the breakers not shown below.

a. Turn off the circuit breaker for the AC Box to be replaced (CB101).



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T19-11 AC Box Location and Turn off the Circuit Breaker

b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC Box to be replaced.

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

WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Loosen the screws and disconnect the AC power cable.

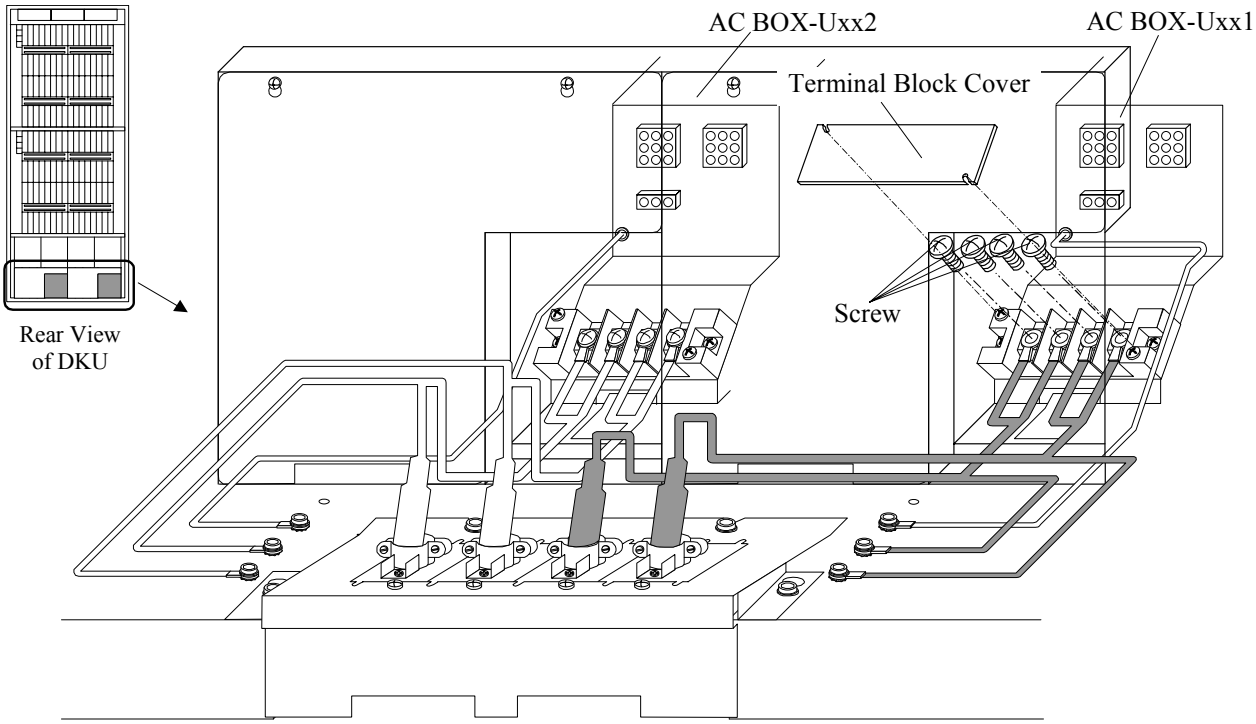


Fig. T19-12 Disconnection of AC cable

3. Disconnect the Cables.
   a. Loosen the screw and remove the Frame Ground Cable.

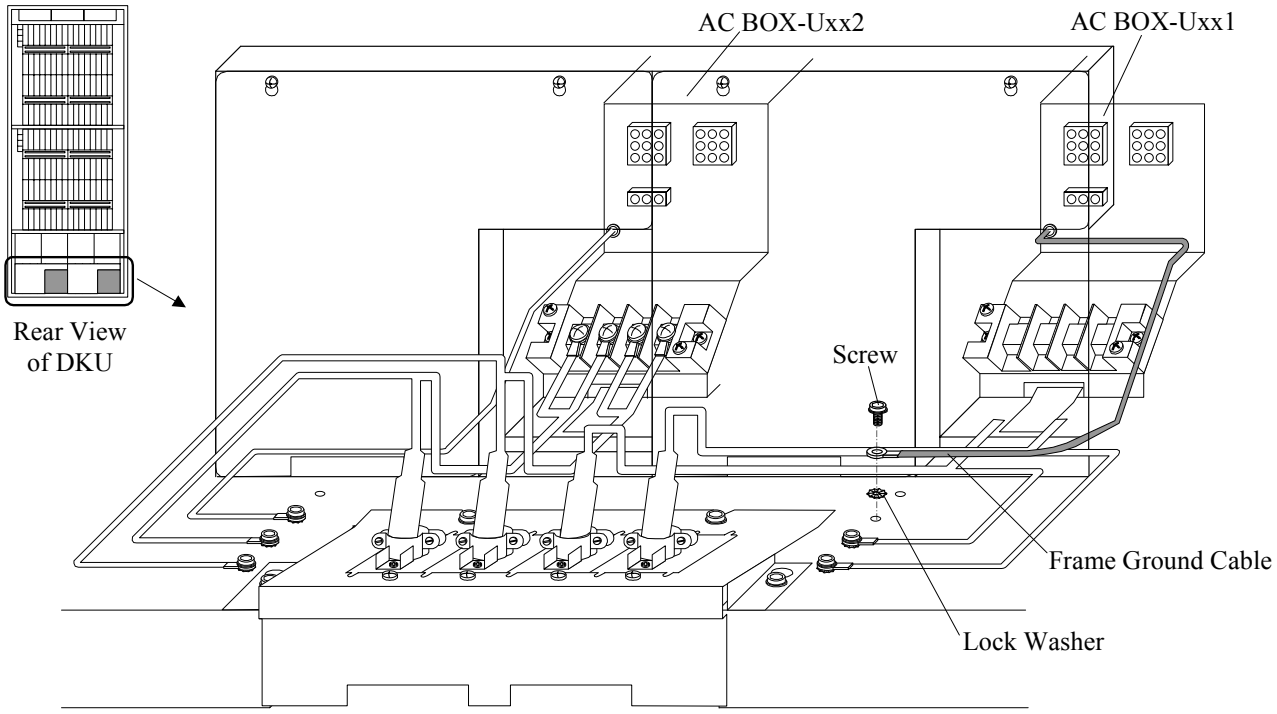
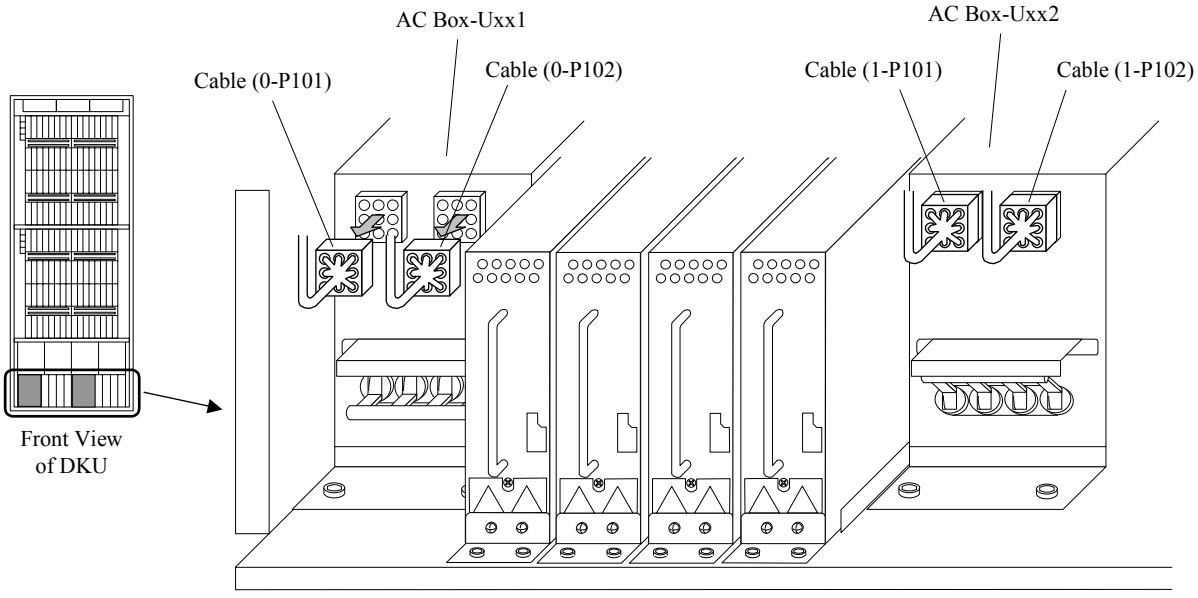


Fig. T19-13 Disconnection of Cable (Rear side)

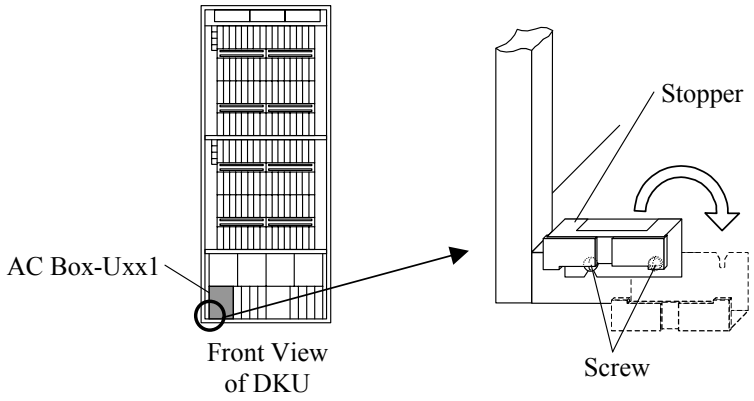
   b. Unplug the cable connectors #-P101 and #-P102 from the front of AC Box.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T19-14 Disconnection of Cable (Front side)

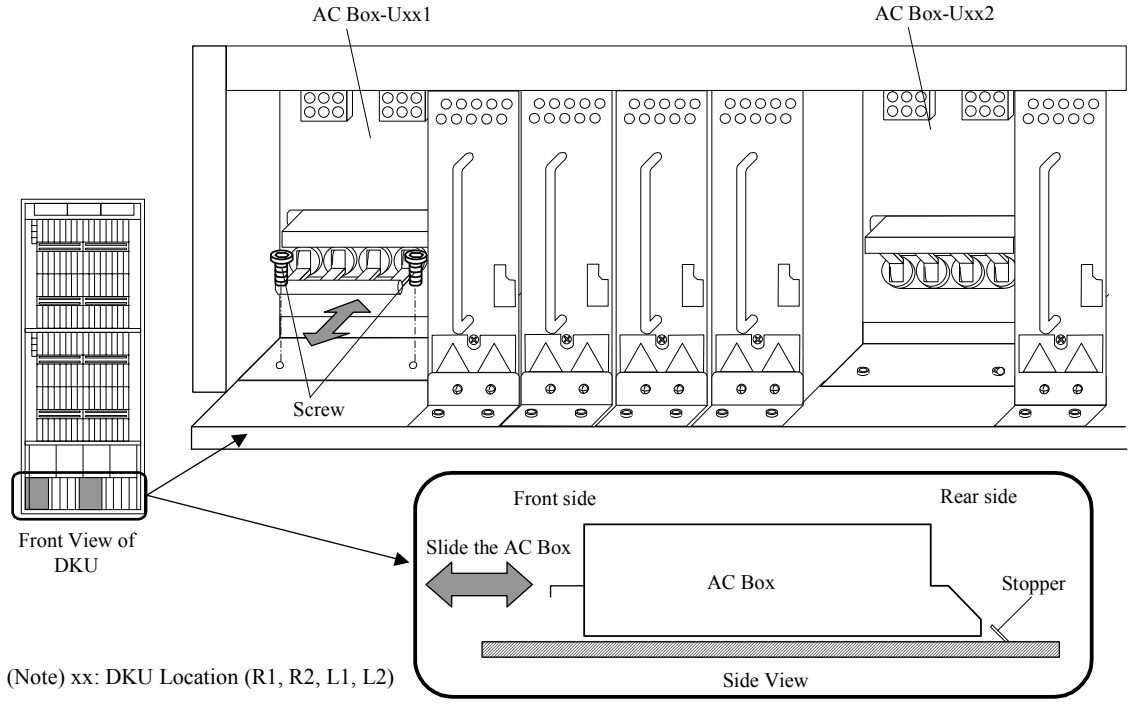
4. Replacement of AC Box.
   a. If the AC Box-Uxx1 is replaced, loosen the two screws and rotate the stopper. If not, go to step b.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T19-15 Rotation of Stopper

   b. Remove the two screws and slide the AC Box from the rear to the front.
   c. Attach the spare AC Box.
      Slide the AC Box from the front to the rear and secure the AC Box with the screws.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T19-16 Replacement of AC Box

   d. If the AC Box-Uxx1 is replaced, return the stopper to original position in the reverse order of step a. If not, go to step 5.

5. Connect the AC power cable and frame ground cable.
   a. Connect the AC power cable to the rear of the AC Box.
   b. Attach the terminal block cover with the screws.
   c. Secure the frame ground cable with the screws and lock washer.

Table T19-4 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	

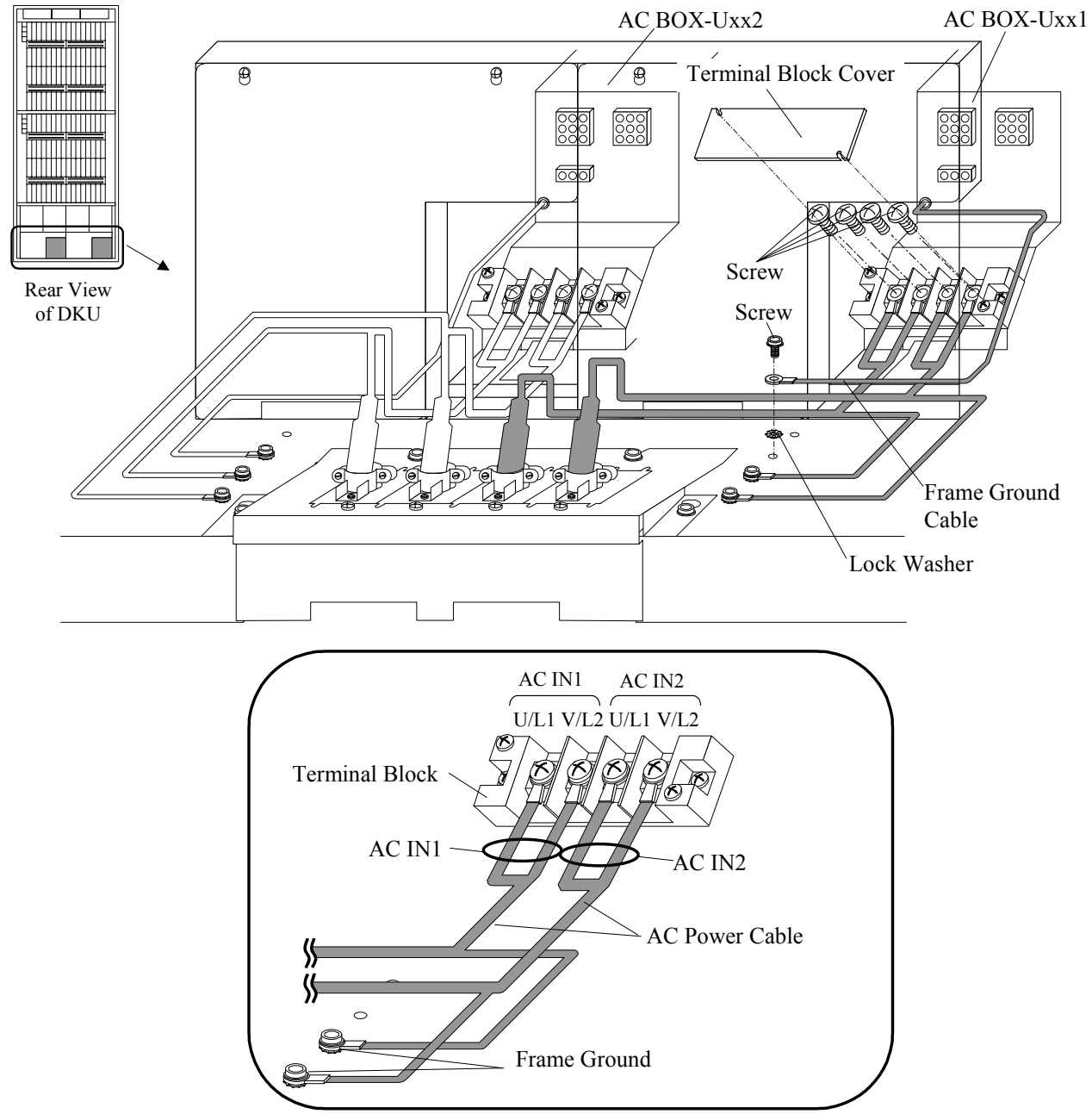
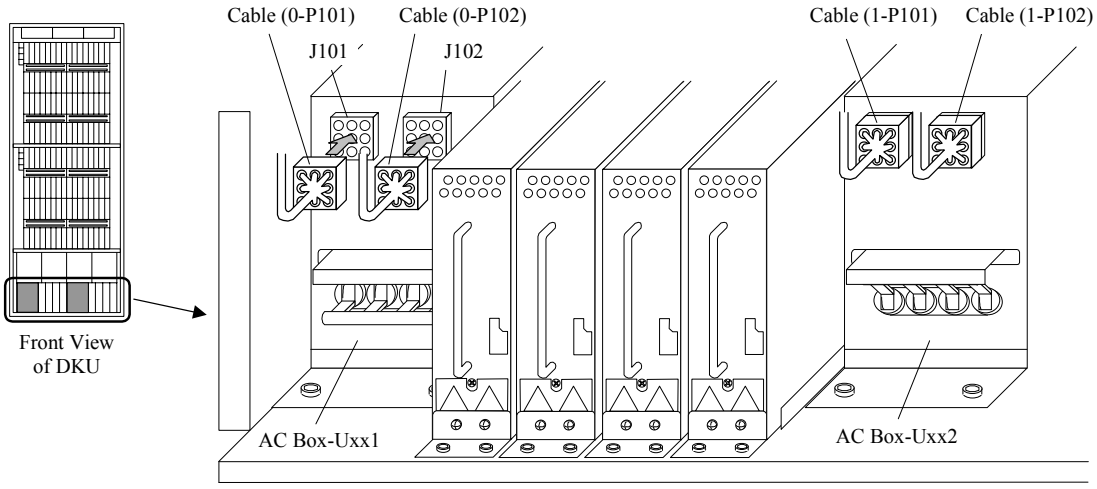


Fig. T19-17 Connection of AC Power Cable and Frame Ground Cable

6. Connect the Cables.
   a. Connect the cables to the front of the AC Box.

Table T19-5 Cable Connection of AC Box

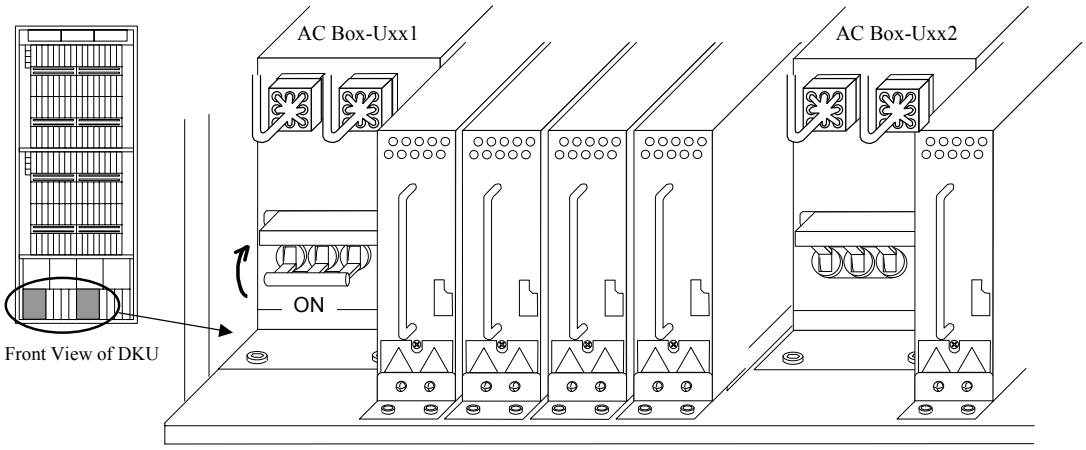
No.	Cable No.		Connector No.	Remarks
	AC Box-Uxx1	AC Box-Uxx2		
1	0-P101	1-P101	J101	
2	0-P102	1-P102	J102	



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T19-18 Connection of Cables (Front side)

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC Box.
   b. Turn on the circuit breaker on the AC Box (CB101).



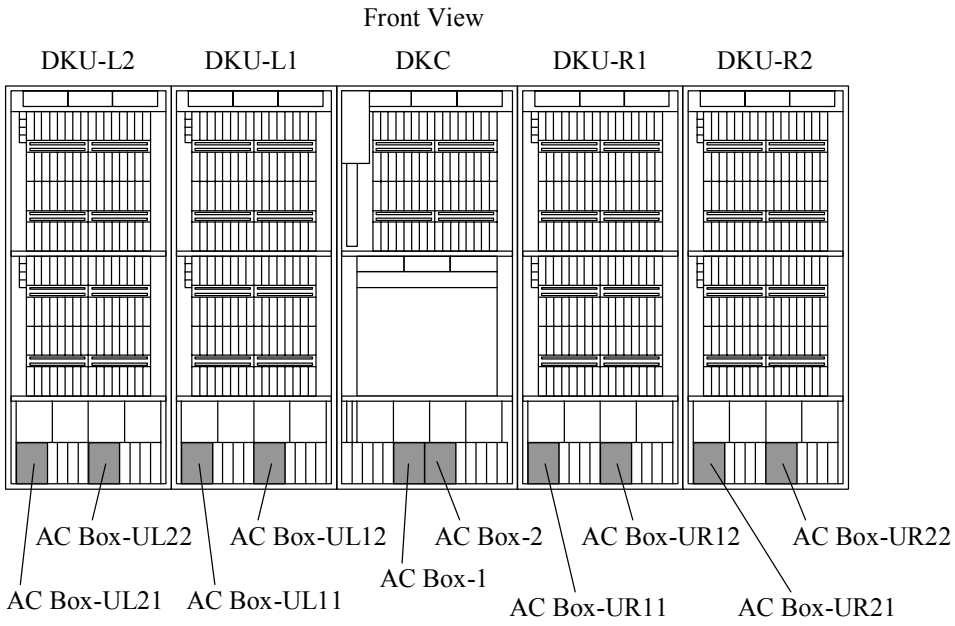
(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T19-19 Turn on the Circuit Breaker

8. Go to SVP post procedure t4 [REP04-890].

[HARDWARE T20]

Location	Function Name of Component		Part Name
Lower of DKC or DKU	1	AC Box (1Phase/50A) (RoHS not applied)	
	2	AC Box (1Phase/50A) (RoHS applied)	
(Reference) The related part for replacement of AC Box. 1. Circuit breaker on the power distribution panel that is connected to the AC Box.			



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

1	Replacement of AC Box for DKC frame

1. Power Off the Component to be replaced.

⚠ 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.)

⚠ CAUTION

The device may be powered off when turning off the breakers not shown below.

a. Turn off the circuit breaker for the AC Box to be replaced (CB101).

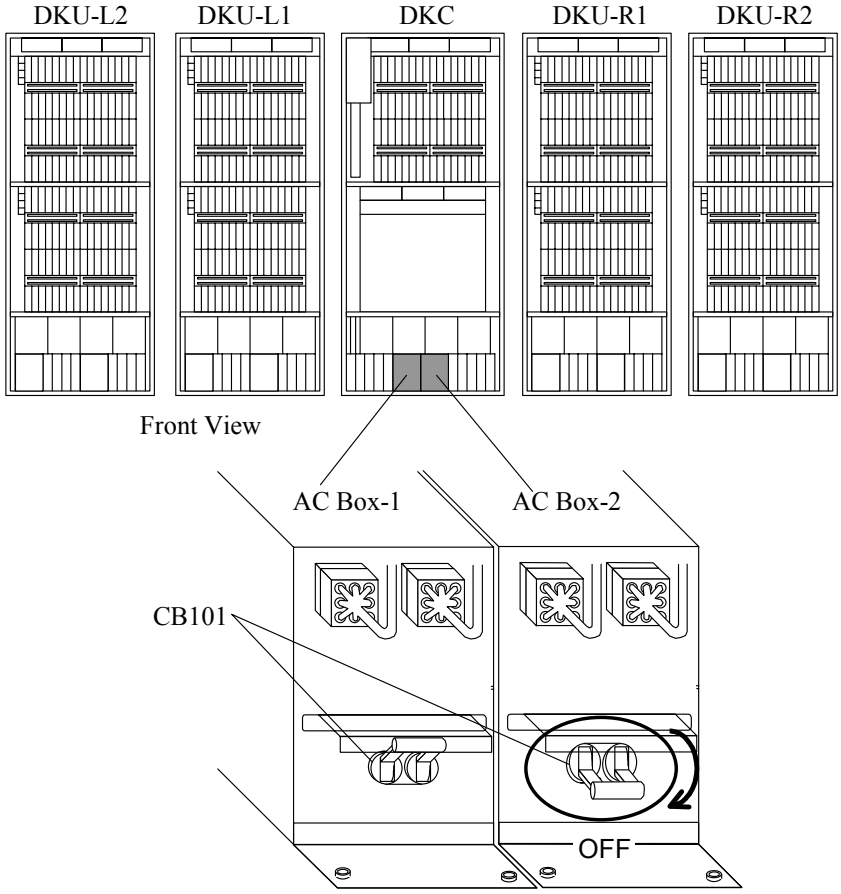


Fig. T20-1 AC Box Location and Turn off the Circuit Breaker

b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC Box to be replaced.

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

⚠ WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Loosen the screws and disconnect the AC power cable.

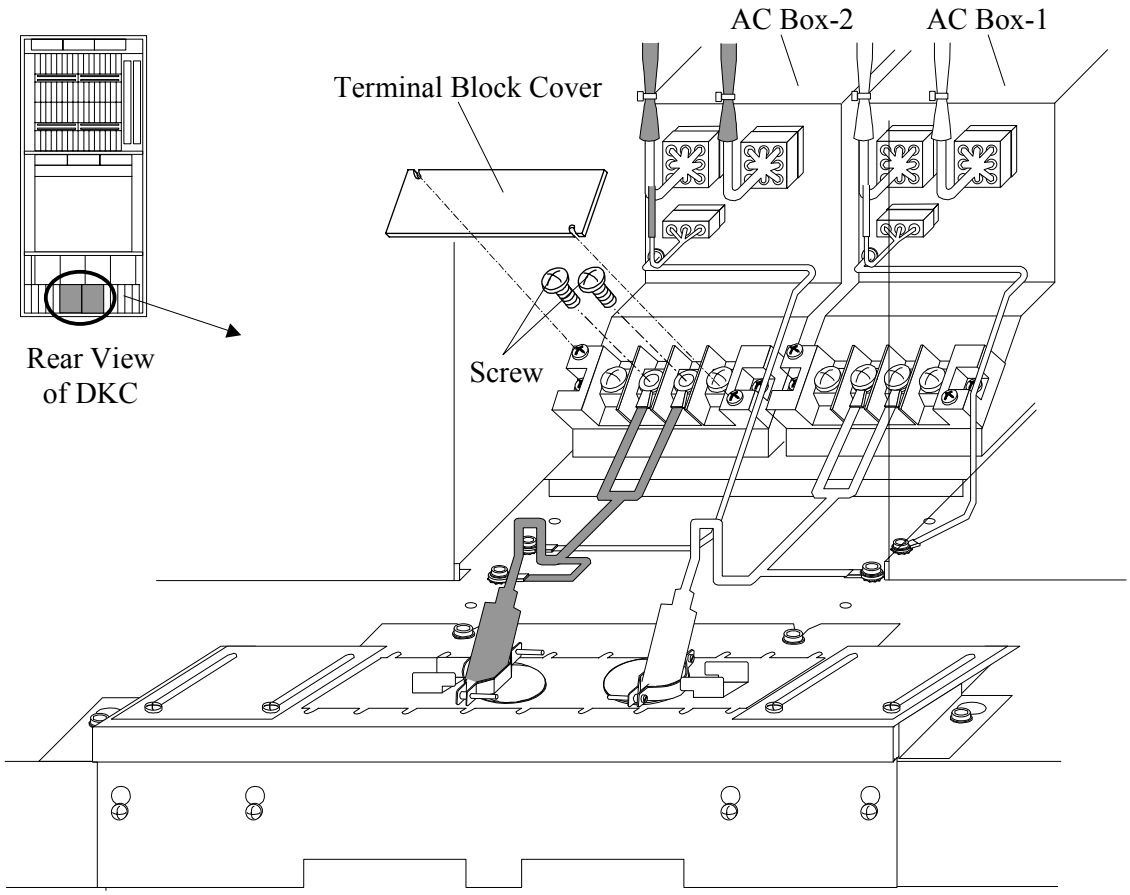


Fig. T20-2 Disconnection of AC cable

3. Disconnect the Cables.
   a. Unplug cable connectors P103-#, P104-# and P105-# from AC Box to be replaced.
   b. Loosen the screw and remove the Frame Ground Cable.

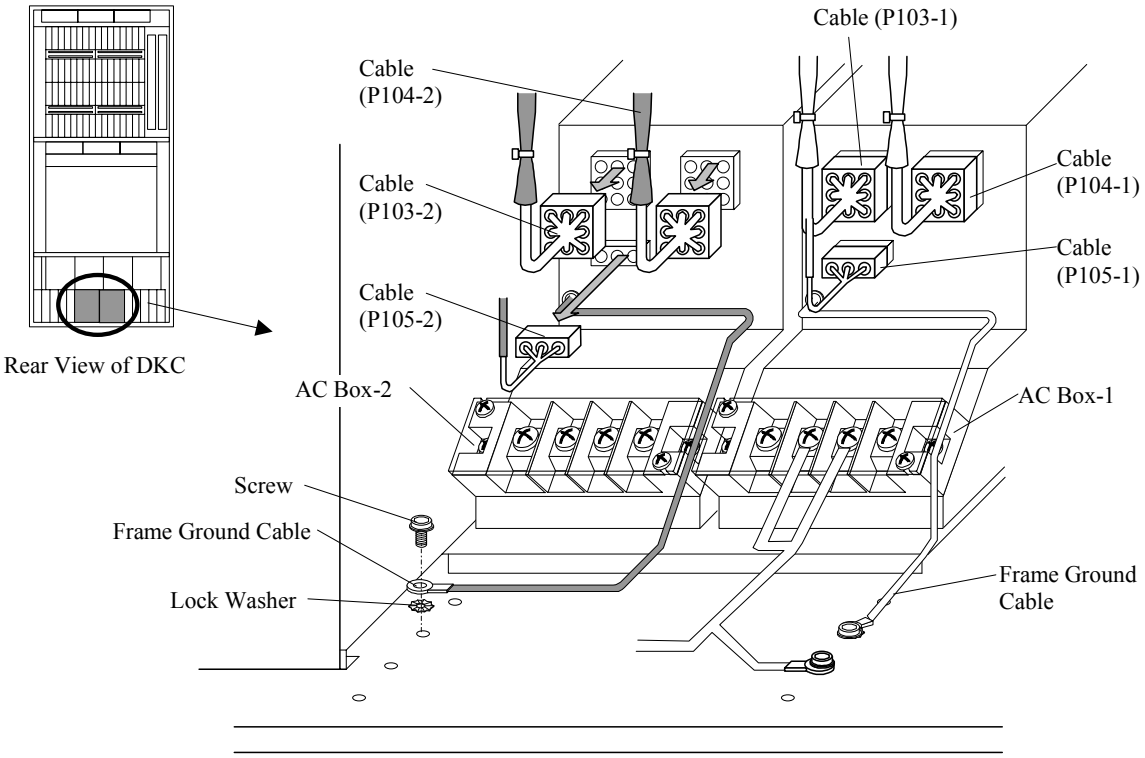


Fig. T20-3 Disconnection of Cables (Rear side)

c. Unplug the cable connectors P101-# and P102-# from the front of the AC Box.

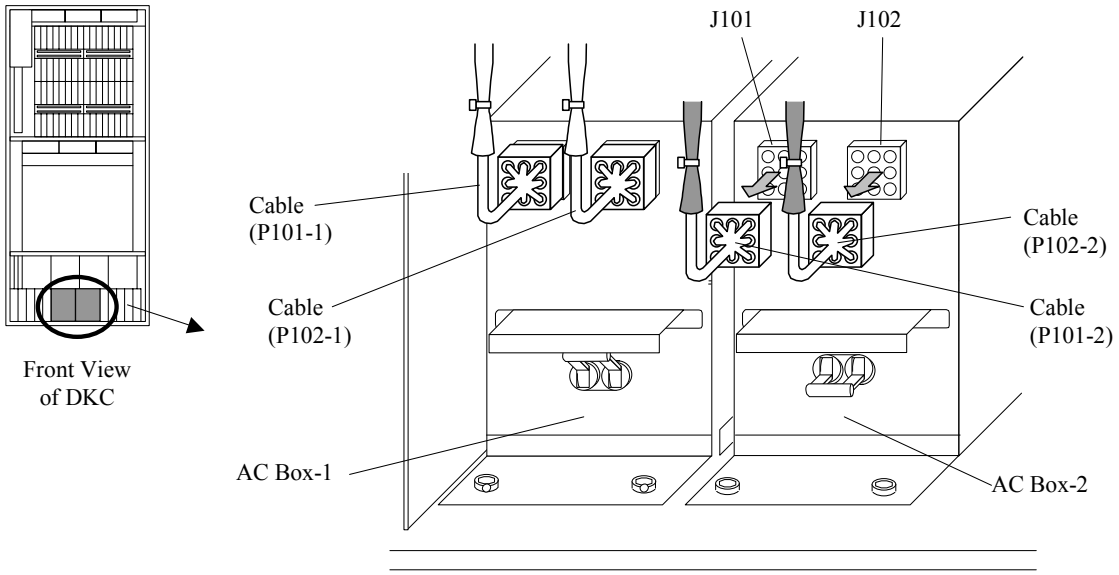


Fig. T20-4 Disconnection of Cables (Front side)

4. Replacement of AC Box.
   a. Remove the two screws and slide the AC Box from the rear to the front.

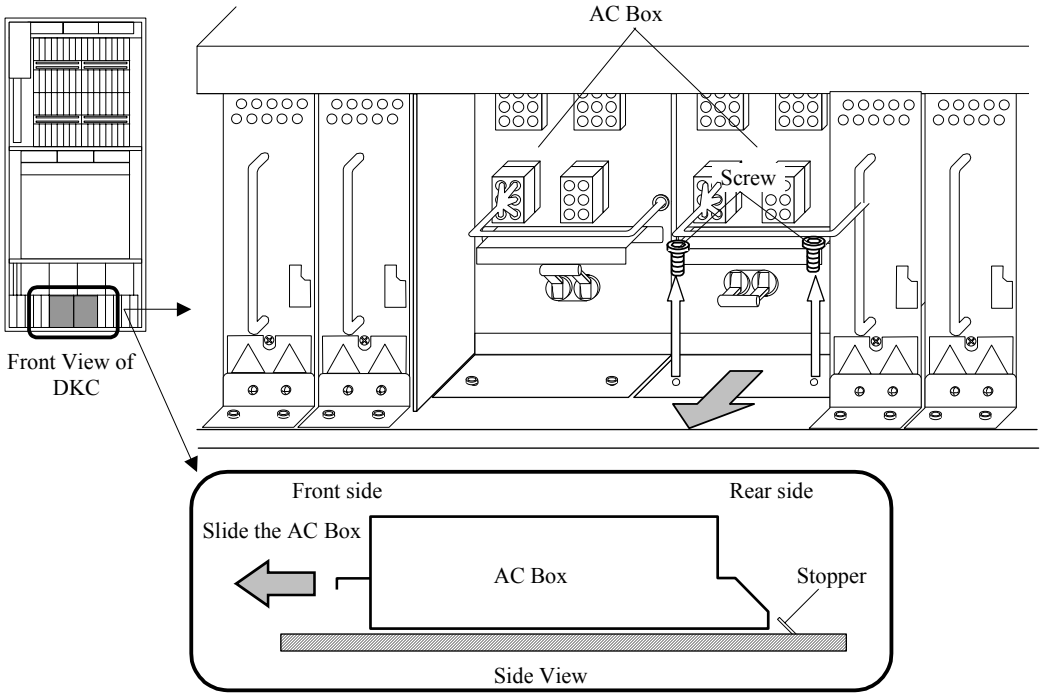


Fig. T20-5 Removal of AC Box

   b. Attach the spare AC Box.
   Slide the AC Box from the front to the rear and secure the AC Box with the screws.

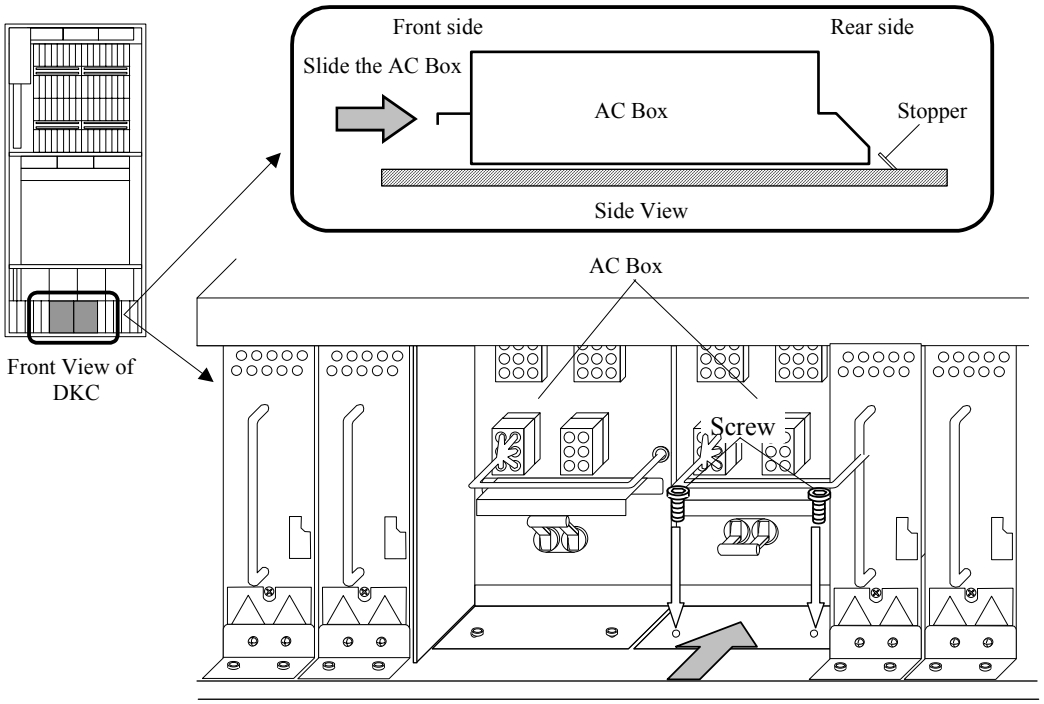
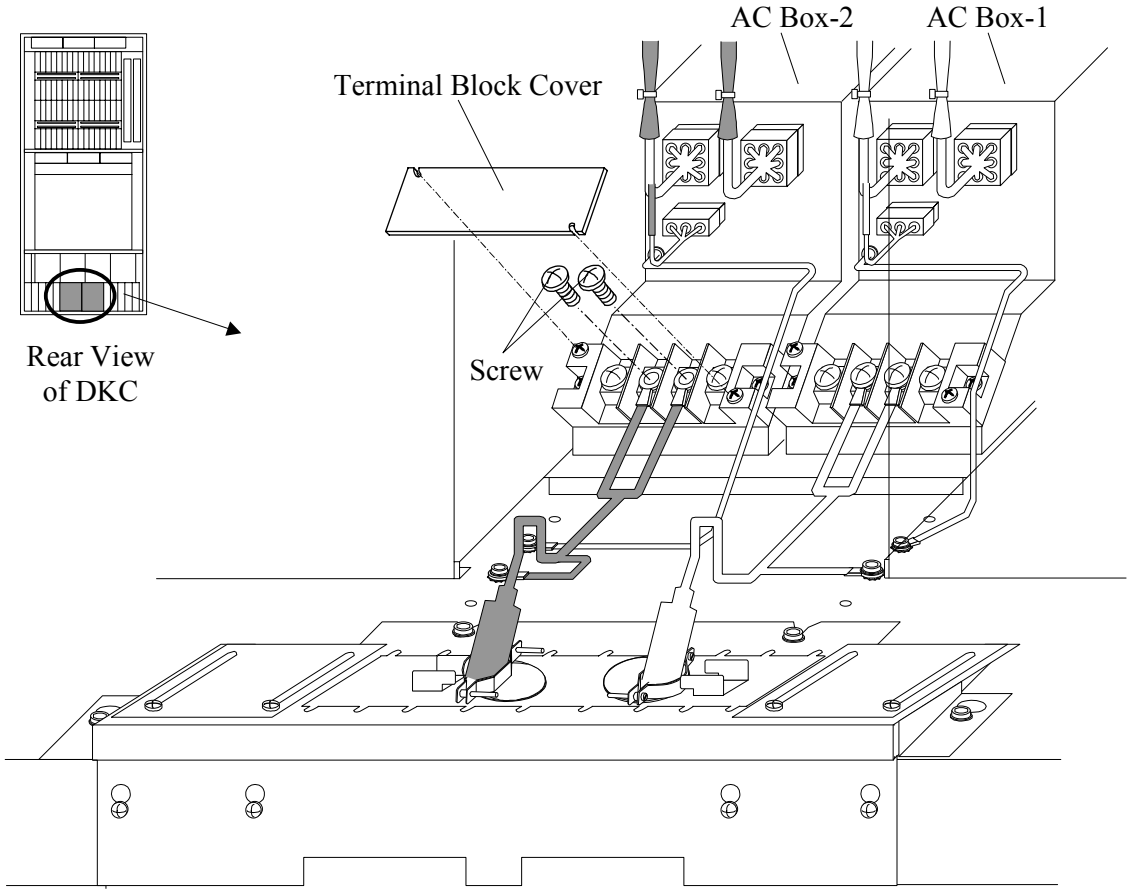


Fig. T20-6 Attachment of AC Box

5. Connect the AC power cable.
   a. Connect the AC power cable to the rear of the AC Box.
   b. Attach the terminal block cover with the screws.

Table T20-1 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	



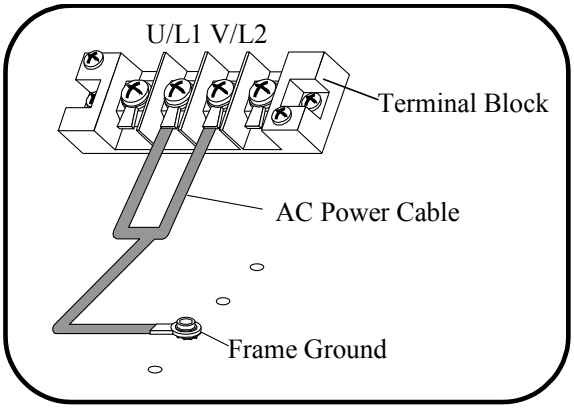


Fig. T20-7 Connection of AC Power Cable

6. Connect the Cables.

Note: In order that the cable for AC Box may prevent a connection mistake, the white tube is put on the cable for AC Box-1, and the black tube is put on AC Box-2.

a. Secure the frame ground cable with the screw and lock washer.
b. Connect the cables to the rear of the AC Box.

Table T20-2 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-1	AC Box-2		
1	P103-1	P103-2	J103	
2	P104-1	P104-2	J104	
3	P105-1	P105-2	J105	

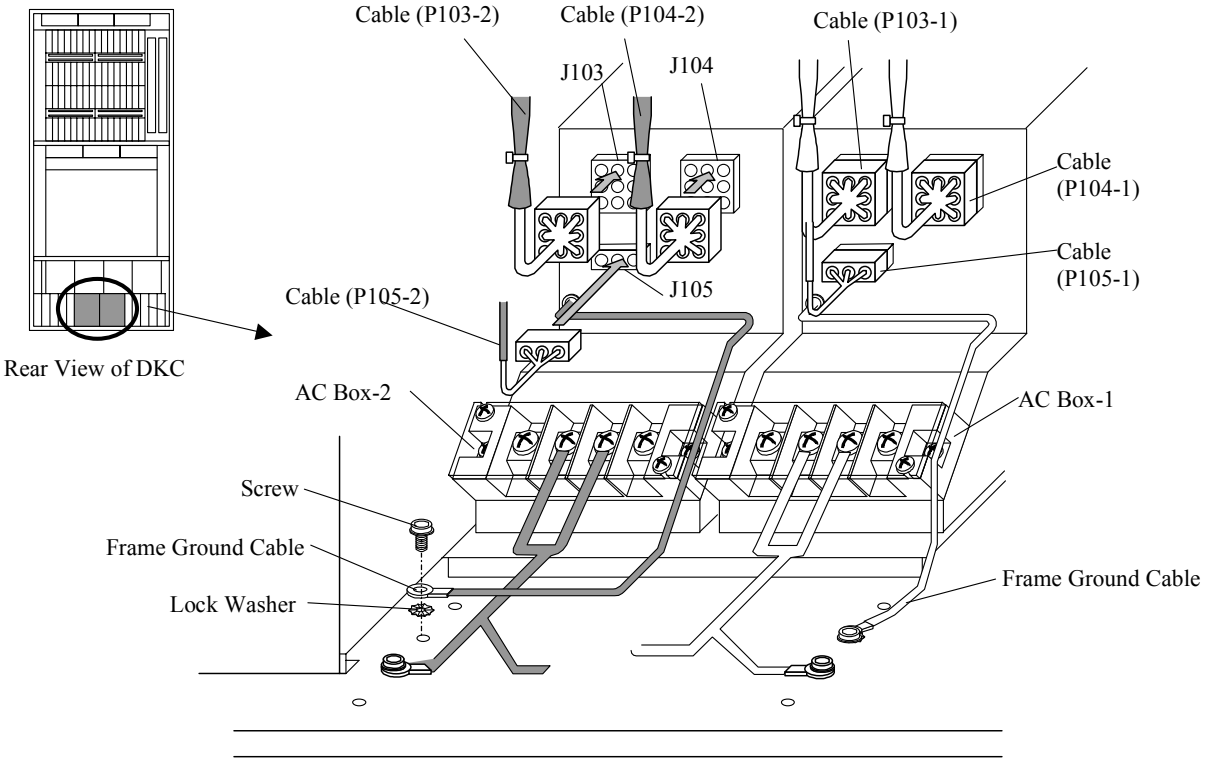


Fig. T20-8 Connection of Cables (Rear side)

c. Connect the cables to the front of the AC Box.

Table T20-3 Cable Connection of AC Box

No.	Cable No.		Connector No.	Remarks
	AC Box-1	AC Box-2		
1	P101-1	P101-2	J101	
2	P102-1	P102-2	J102	

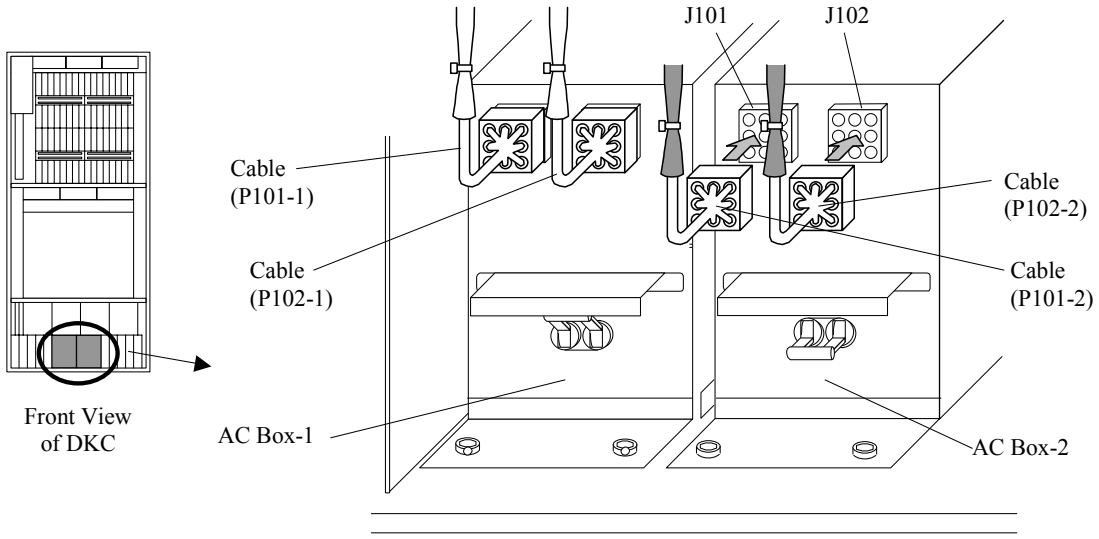


Fig. T20-9 Connection of Cables (Front side)

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC Box.
   b. Turn on the circuit breaker on the AC Box (CB101).

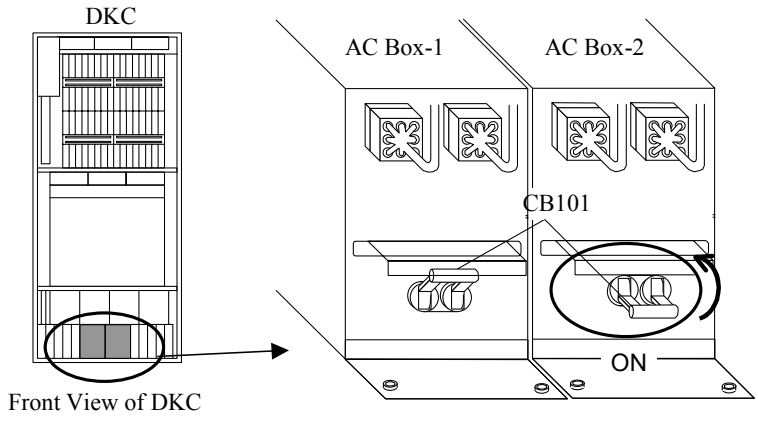


Fig. T20-10 Turn on the Circuit Breaker

8. Go to SVP post procedure t1 [REP04-330].

2	Replacement of AC Box for DKU frame

1. Power Off the Component to be replaced

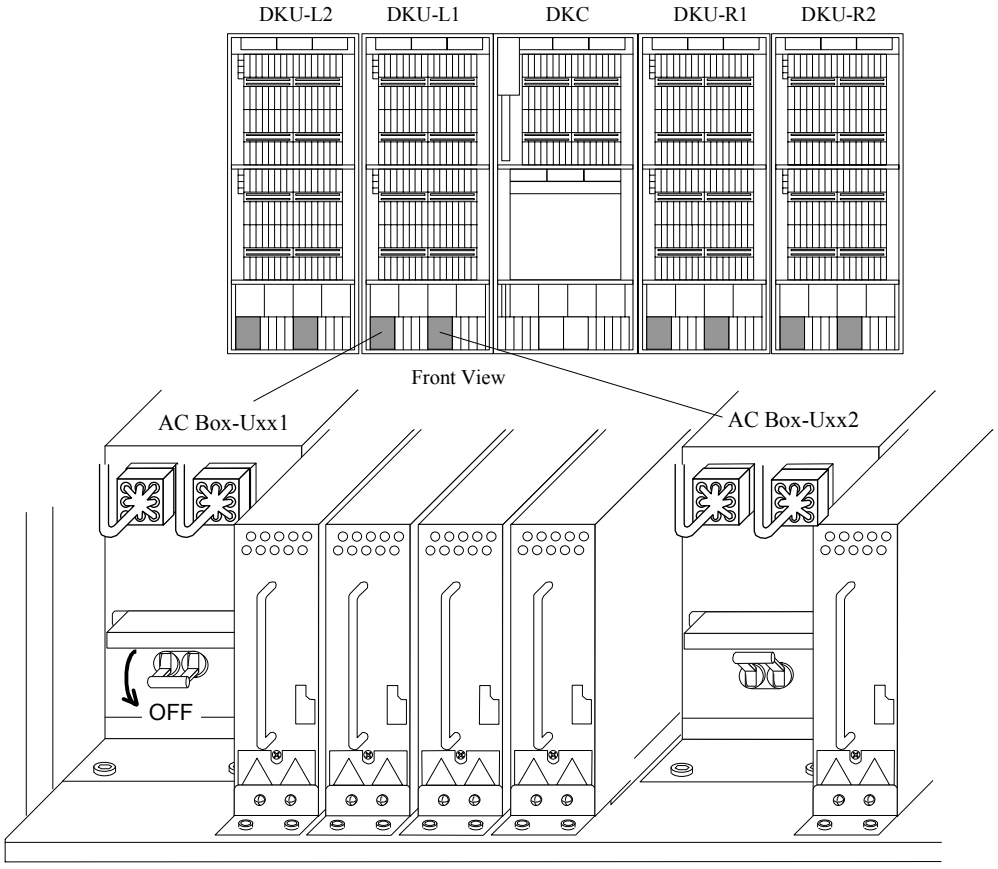
⚠ WARNING

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

⚠ CAUTION

The device may be powered off when turning off the breakers not shown below.

a. Turn off the circuit breaker for the AC Box to be replaced (CB101).



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-11 AC Box Location and Turn off the Circuit Breaker

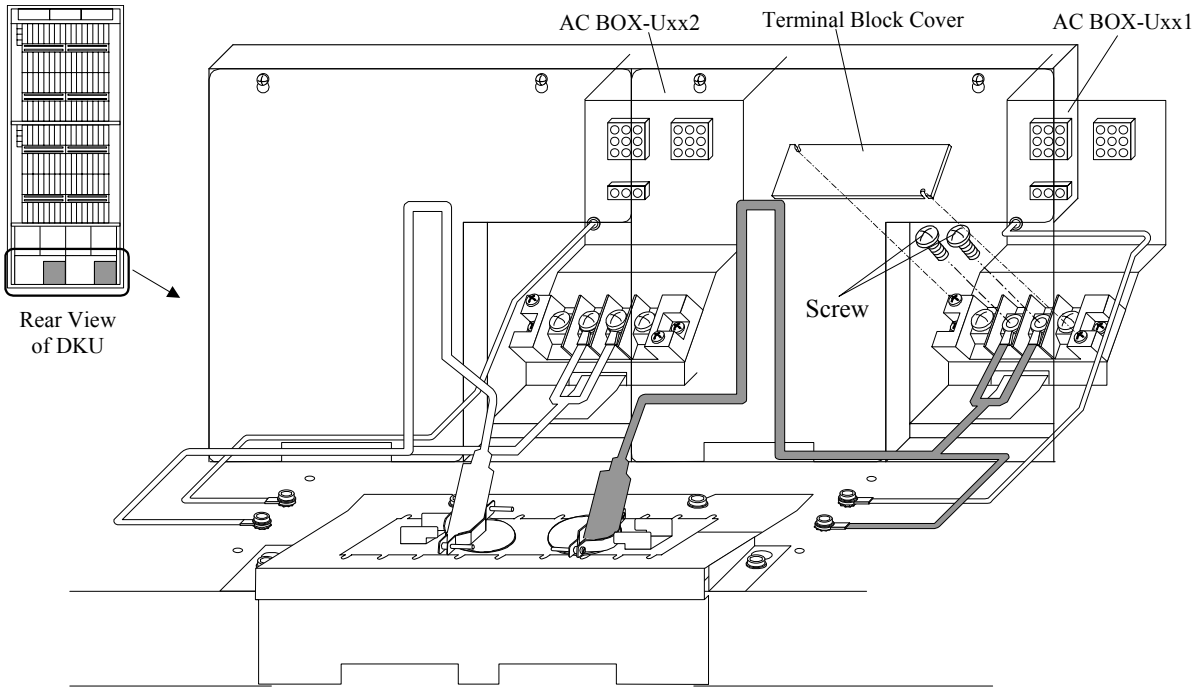
b. Turn off the circuit breaker on the power distribution panel in the plant that is connected to the AC Box to be replaced.

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

⚠ WARNING

Hazardous voltage:
Contact could cause electric shock or burn. Turning off the breaker on the distribution board connected to the AC BOX before start your work.

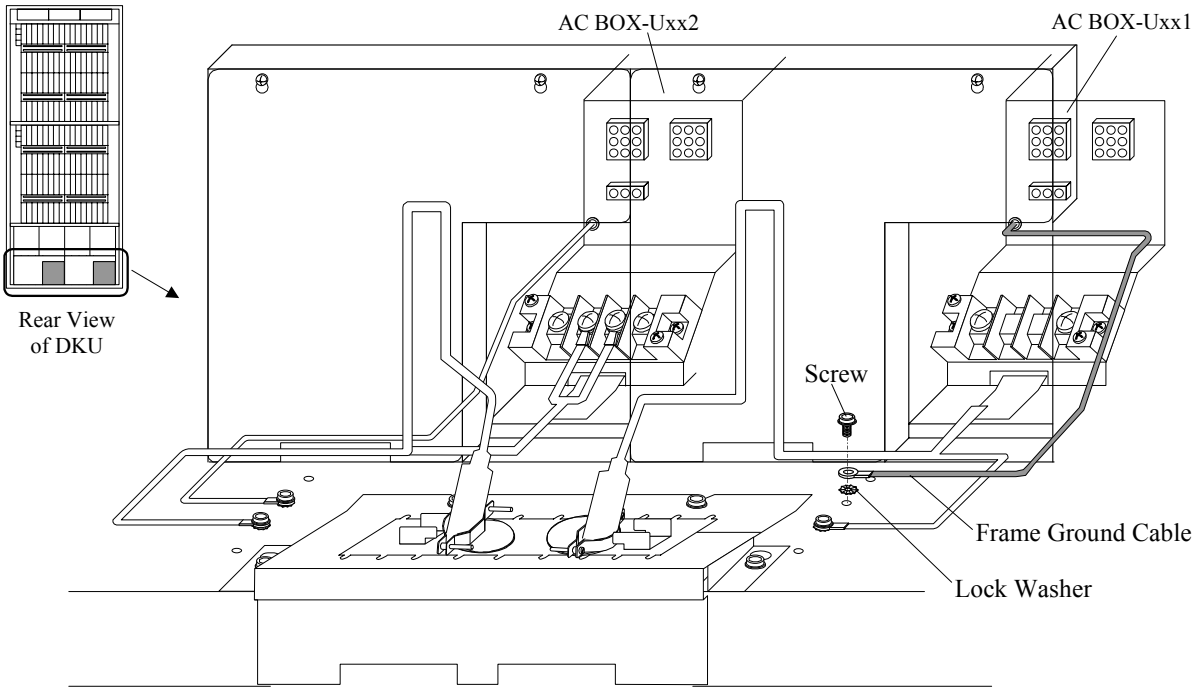
2. Disconnect the AC Power Cable.
   a. Loosen the screws and remove the terminal block cover.
   b. Loosen the screws and disconnect the AC power cable.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-12 Disconnection of AC cable

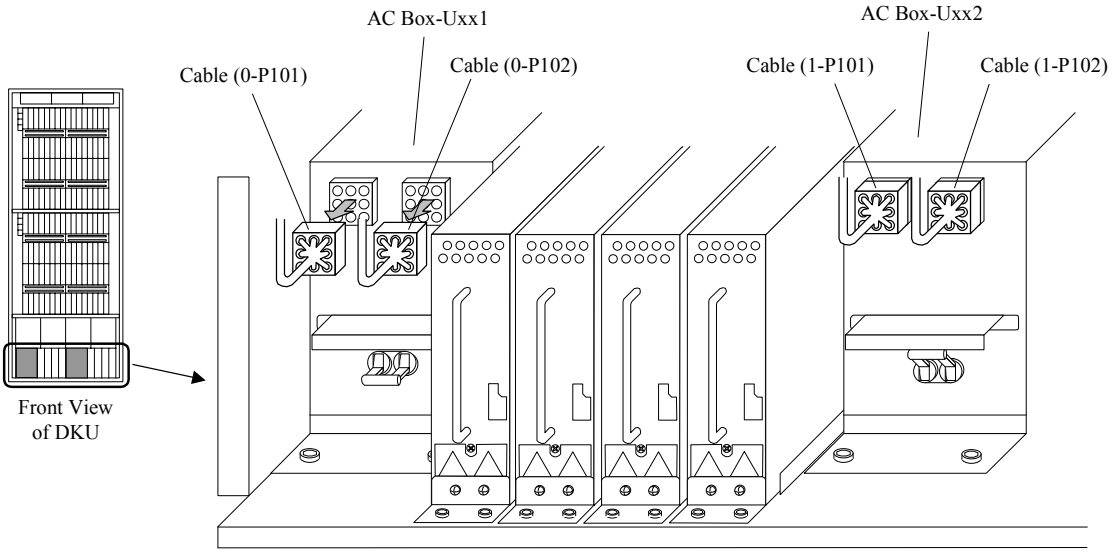
3. Disconnect the Cables.
   a. Loosen the screw and remove the Frame Ground Cable.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-13 Disconnection of Cable (Rear side)

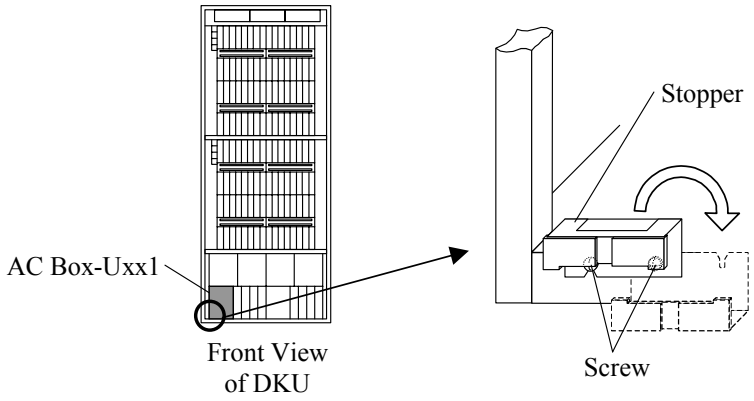
   b. Unplug the cable connectors #-P101 and #-P102 from the front of AC Box.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-14 Disconnection of Cable (Front side)

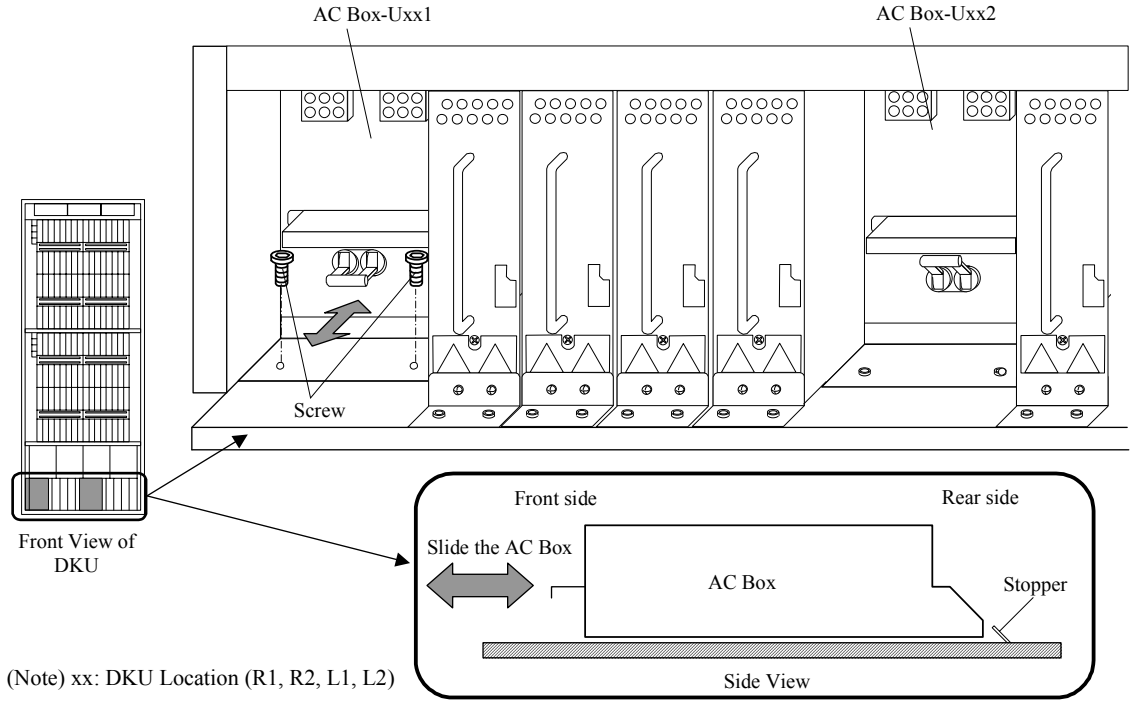
4. Replacement of AC Box.
   a. If the AC Box-Uxx1 is replaced, loosen the two screws and rotate the stopper. If not, go to step b.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-15 Rotation of Stopper

   b. Remove the two screws and slide the AC Box from the rear to the front.
   c. Attach the spare AC Box.
      Slide the AC Box from the front to the rear and secure the AC Box with the screws.



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-16 Replacement of AC Box

   d. If the AC Box-Uxx1 is replaced, return the stopper to original position in the reverse order of step a. If not, go to step 5.

5. Connect the AC power cable and frame ground cable.
   a. Connect the AC power cable to the rear of the AC Box.
   b. Attach the terminal block cover with the screws.
   c. Secure the frame ground cable with the screws and lock washer.

Table T20-4 AC Power Cable Conductors number

No.	Region	Input Voltage	AC Power Cable Conductors	Remarks
1	For USA	200-230Vac	3 conductors (U/L1, V/L2, FG)	
2	For Europe	200-240Vac	3 conductors (U/L1, V/L2, FG)	

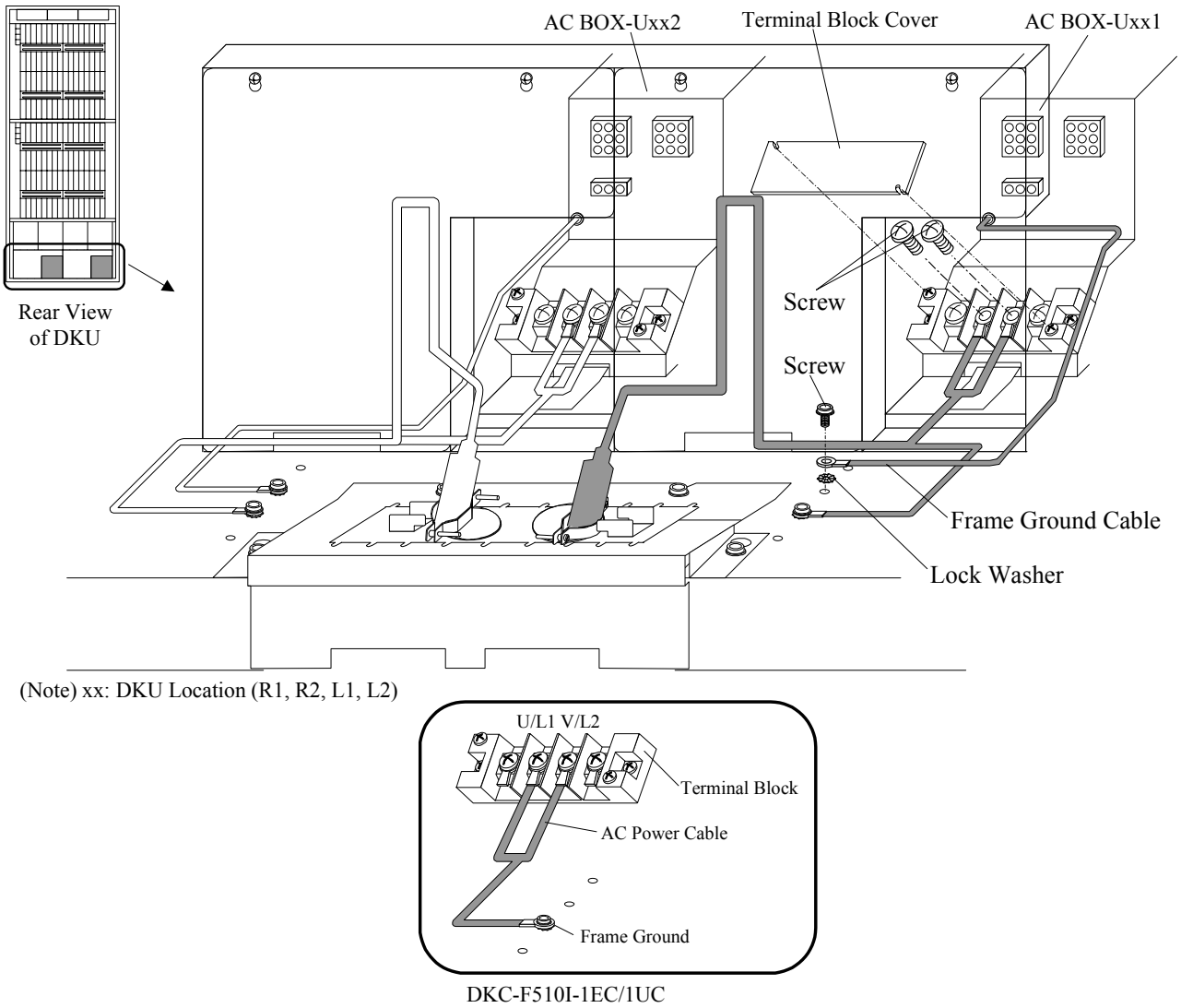
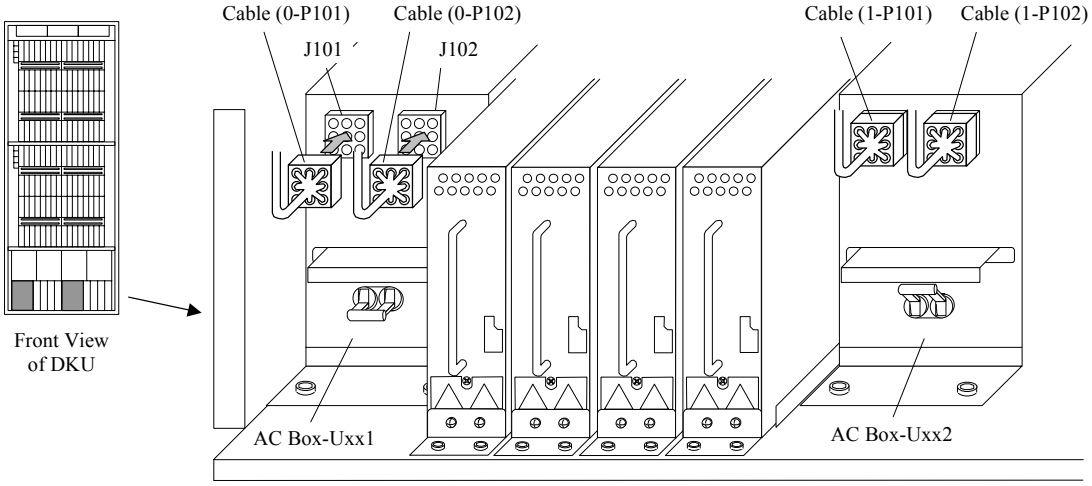


Fig. T20-17 Connection of AC Power Cable and Frame Ground Cable

6. Connect the Cables.
   a. Connect the cables to the front of the AC Box.

Table T20-5 Cable Connection of AC Box

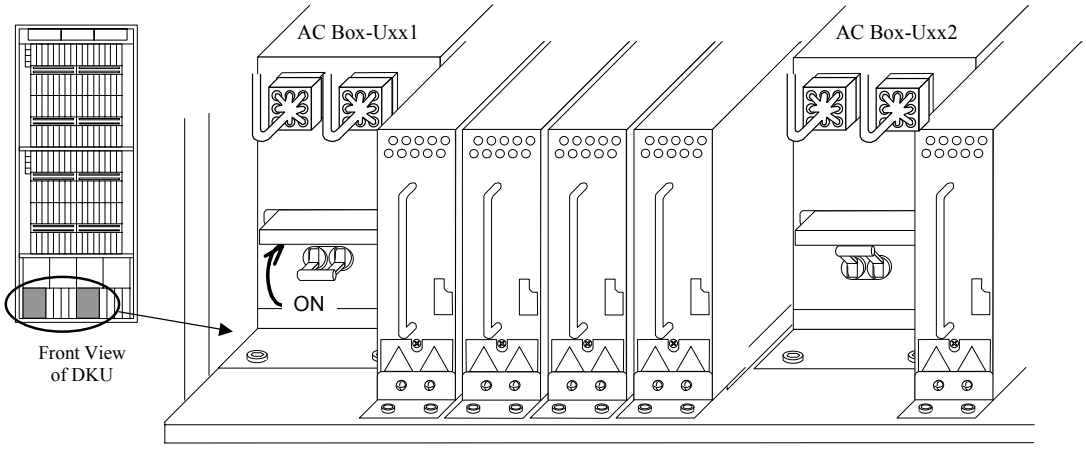
No.	Cable No.		Connector No.	Remarks
	AC Box-Uxx1	AC Box-Uxx2		
1	0-P101	1-P101	J101	
2	0-P102	1-P102	J102	



(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-18 Connection of Cables (Front side)

7. Power On the replacement component.
   a. Turn on the circuit breaker on the power distribution panel that is connected to AC Box.
   b. Turn on the circuit breaker on the AC Box (CB101).



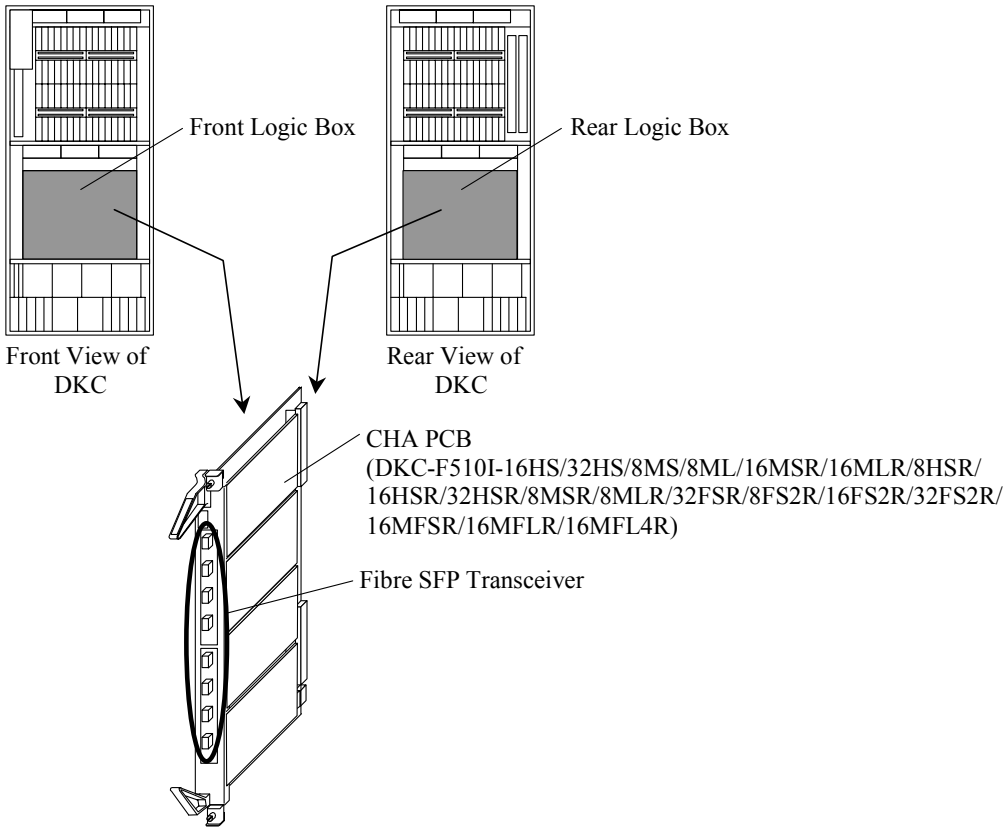
(Note) xx: DKU Location (R1, R2, L1, L2)

Fig. T20-19 Turn on the Circuit Breaker

8. Go to SVP post procedure t4 [REP04-890].

[HARDWARE T21]

Location		Function Name of Component	Part Name
Front Logic Box or Rear Logic Box	1	Fibre SFP Transceiver (DKC-F510I-16HS/32HS/8MS/8ML) (RoHS not applied)	• SFP (SHORT) • SFP (LONG)
	2	Fibre SFP Transceiver (DKC-F510I-16HS/32HS/8MS/8ML/ 16MSR/16MLR/8HSR/16HSR/32HSR/ 8MSR/8MLR) (RoHS applied)	• SFP (SHORT) • SFP (LONG)
	3	Fibre SFP Transceiver (1-4Gbps) (DKC-F510I-32FSR/8FS2R/16FS2R/ 32FS2R/16MFSR/16MFLR) (RoHS applied)	• SFP (SHORT) • SFP (LONG)
	4	Fibre SFP Transceiver (Long 1-4Gbps/4km) (DKC-F510I-32FSR/8FS2R/16FS2R/ 32FS2R/16MFL4R) (RoHS applied)	• SFP (LONG)



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

1	Fibre SFP Transceiver

1. Replacement of SFP
   a. Make sure of the CHA and Port Locations of the SFP to be replaced. (Refer to pages LOC04-10, LOC04-21, and LOC04-22.)

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.

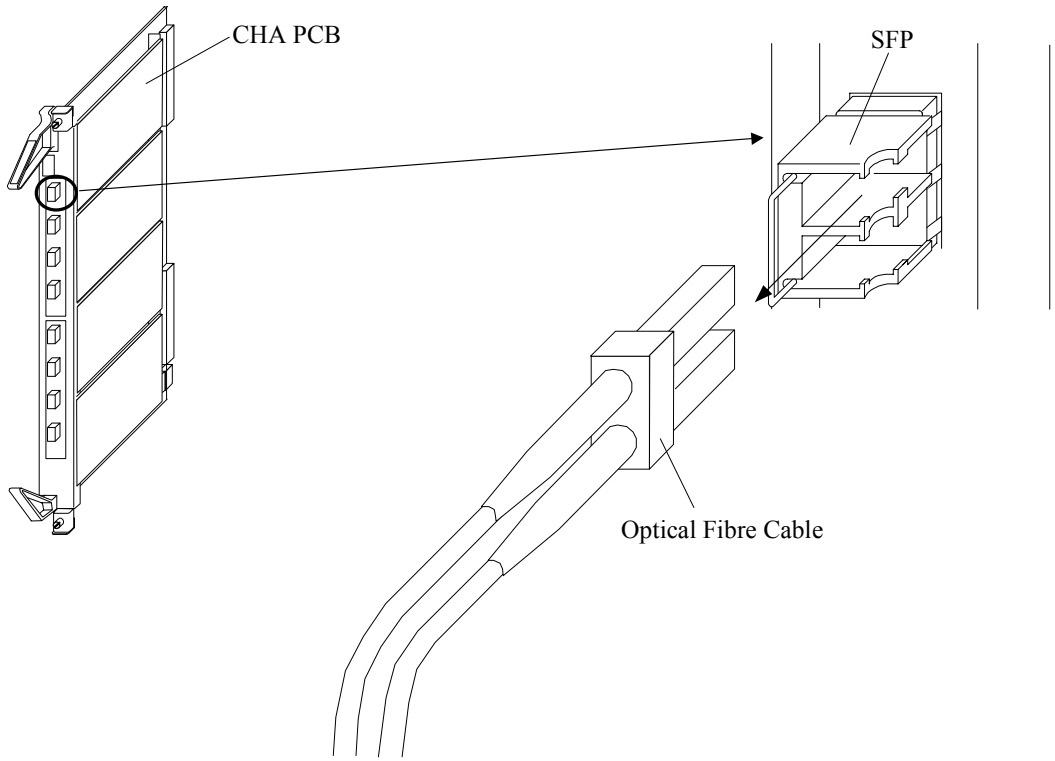


Fig. T21-1 Disconnection of Cable

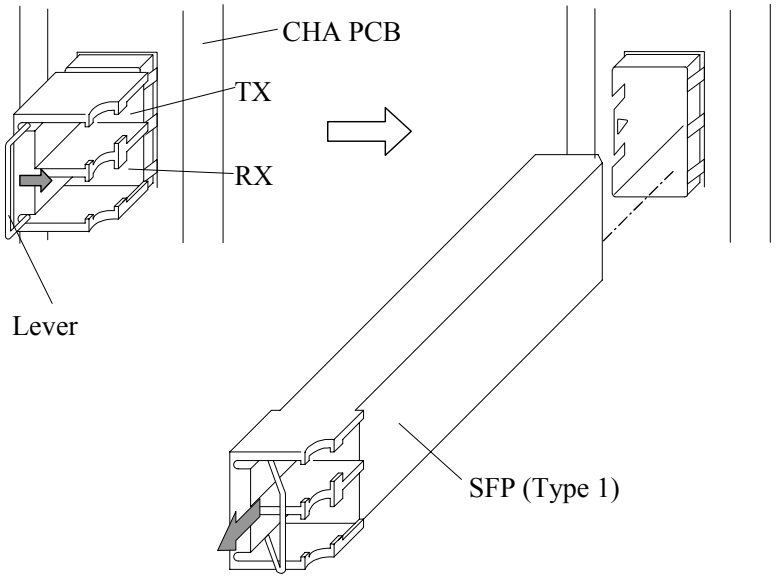
SFP (Type 1)

c. Remove the SFP pushing the lever on the right side.

SFP (Type 2)

c. Raise the lever forward and remove the SFP.

SFP (Type 1)



SFP (Type 2)

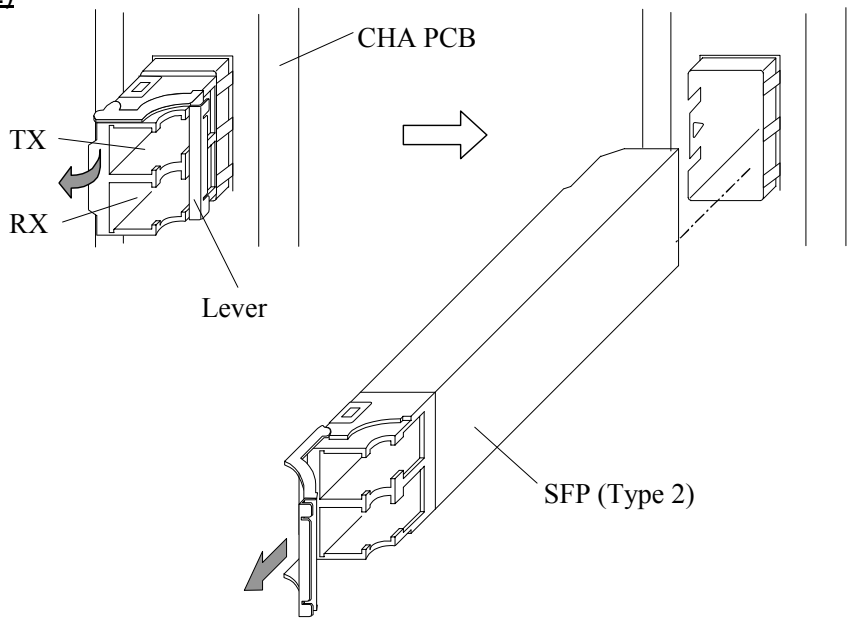


Fig. T21-2 Removal of SFP

d. Insert the spare SFP to the CHA PCB.
e. Connect the optical fibre cable to the SFP.

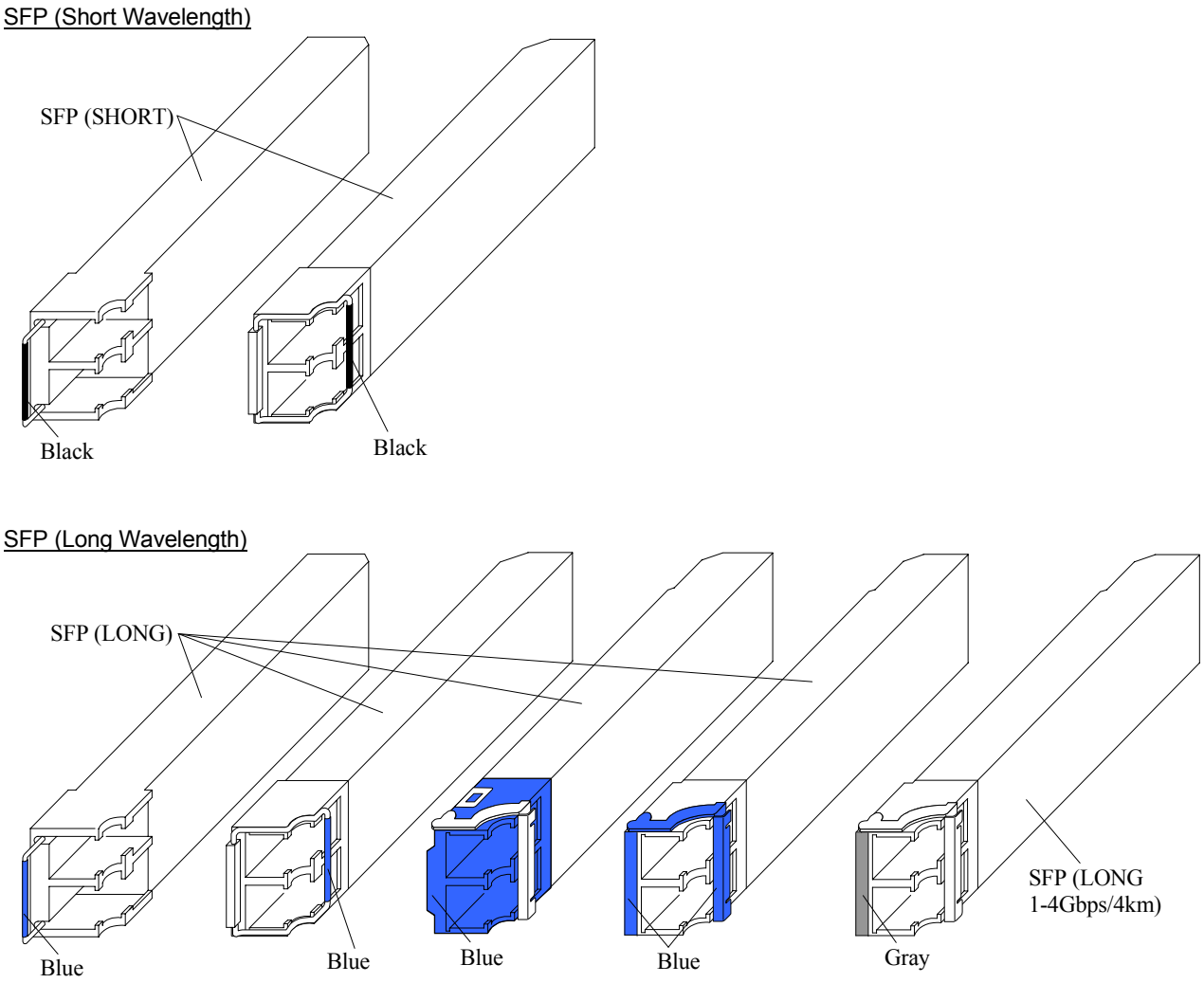


Fig. T21-3 How to distinguish SFP

2. Go to SVP post procedure t5 [REP04-971].

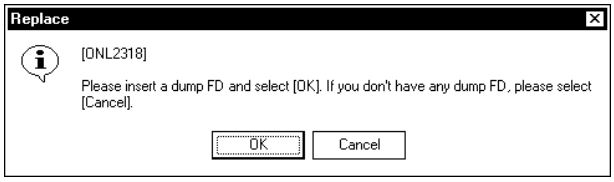
[POST-PROCEDURE a]

— OUTLINE —

① Execute CUDG on P-DEV
② Specify recovery
③ Copy back
④ SIM Complete

Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a floppy disk for dump, collect failure information, and return the floppy disk with the failed HDD.
A dump floppy disk is attached with a Spare HDD.

1. <Check the beginning of recovery>
   Please insert the floppy disk and select (CL) [OK].
   Failure information of the physical device is written to the floppy disk.



   [After the completion of writing failure information:]
   "Please remove the FD." is displayed.
   Please remove the floppy disk and select (CL) [OK].

2. <Spin up the Physical Drive>
   "Spinning up..." is displayed.

3. <DKU INLINE>
   "DKU INLINE is now running..." is displayed.

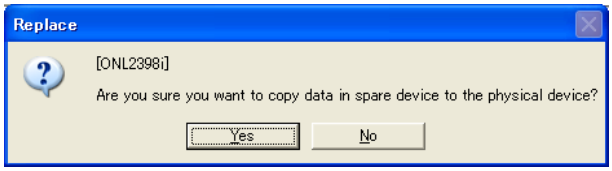
4. <Replacement of the DKU micro-program>
When the revision of the DKU micro-program in the SVP hard disk is newer than that in the PDEV, the following message appears on the screen.
The message “Exchanging DKU micro-program...” appears.

5. <Restore Physical Drive>
“Restoring...” is displayed.

6. <Check the Physical Drive>
“Checking...” is displayed.

7. <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.

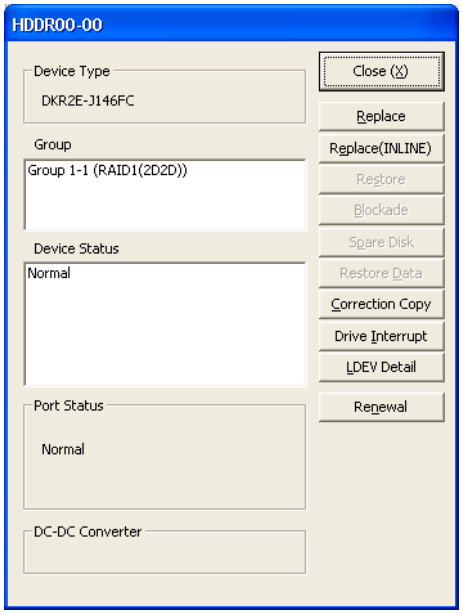
[Confirmation of starting a copy-back]
Select (CL) [Yes] in response to “Are you sure you want to copy data in spare device to the physical device?”.
Go to Step 8.



[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.”.
Go to Step 9.

8. <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.".

9.
When interrupting a copy, select (CL) the [Drive Interrupt] button.



10. <SIM Complete>
Refer to SVP02-520.

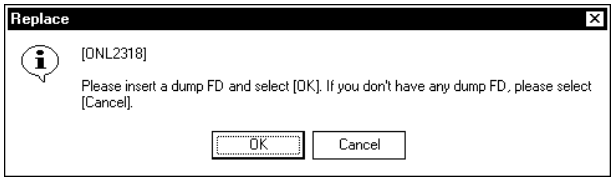
[POST-PROCEDURE b]

— OUTLINE —

① Execute CUDG on P-DEV.
② Specify recovery.
③ Correction copy
④ Reset ORM Error Count on the P-DEV.
⑤ Reset Threshold Counter
⑥ SIM Complete

Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a floppy disk for dump, collect failure information, and return the floppy disk with the failed HDD.
A dump floppy disk is attached with a Spare HDD.

1. <Check the beginning of recovery>
   Please insert the floppy disk and select (CL) [OK].
   Failure information of the physical device is written to the floppy disk.



   [After the completion of writing failure information:]
   "Please remove the FD." is displayed.
   Please remove the floppy disk and select (CL) [OK].

2. <Spin up the Physical Drive>
   "Spinning up..." is displayed.

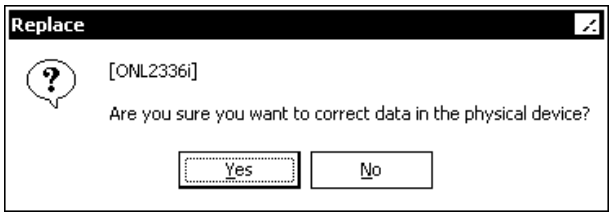
3. <DKU INLINE>
   "DKU INLINE is now running..." is displayed.

4. <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.

5. <Restore Physical Drive>
   "Restoring..." is displayed.

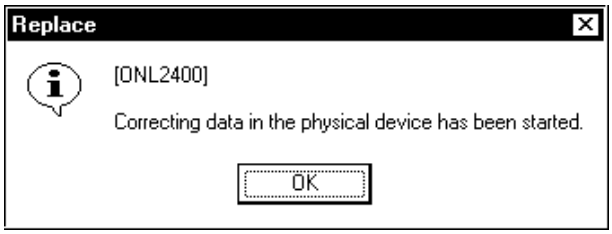
6. <Check the Drive Status>
   "Checking..." is displayed.
   Device is still blocked.

7. <Check the beginning of correction copy>
   Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".



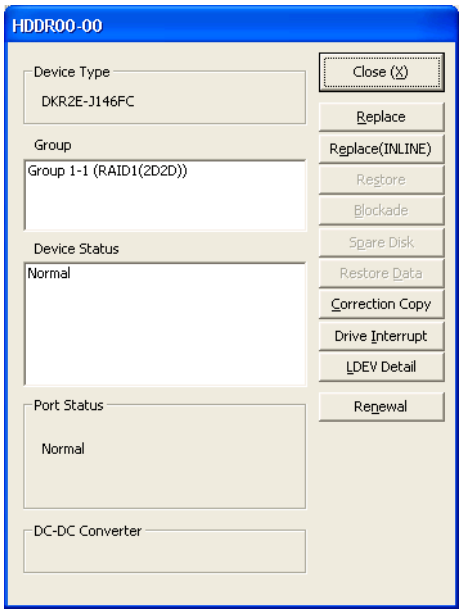
8. <Correct data>
   "Correcting..." is displayed.

9. <Check the starting of Correction copy>
Select (CL) [OK] in response to “Correcting data in the physical device has been started.”.



10. <Check the end of P-DEV recovery>
Select (CL) [OK] in response to “Replace finished.”.

11.
When interrupting the correction copy, select the PDEV to which the copy is being made and select (CL) the [Drive Interrupt] button.



12. <SIM Complete>
Refer to SVP02-520.

[POST-PROCEDURE c]

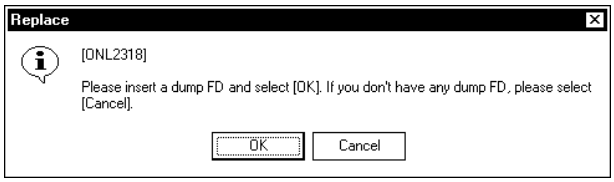
— OUTLINE —

① Perform L-DEV formatting on P-DEV
② Reset ORM Error Count on P-DEVs
③ Recover with backup data
④ Reset Threshold Counter
⑤ SIM Complete

⚠ CAUTION

Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a floppy disk for dump, collect failure information, and return the floppy disk with the failed HDD.
A dump floppy disk is attached with a Spare HDD.

1. <Check the beginning of recovery>
   Insert the floppy disk and select (CL) [OK].
   Failure information of the physical device is written to the floppy disk.



[After the completion of writing failure information:]
"Please remove the FD." is displayed.
Remove the floppy disk and select (CL) [OK].

---

2. <Spin up the Physical Drive>
   "Spinning up..." is displayed.

---

3. <DKU INLINE>
   "DKU INLINE is now running..." is displayed.

---

4. <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.

5. <Restore Physical Drive>
   "Restoring..." is displayed.

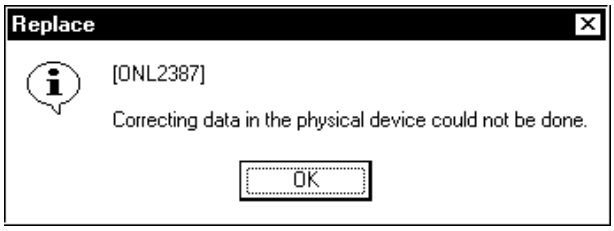
6. <Check the Drive Status>
   "Checking..." is displayed.

7. <Correction Copy disable message>

CAUTION

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.

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

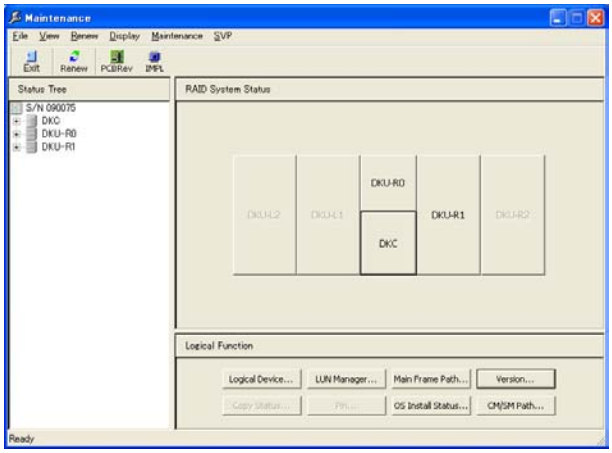


8. <Select [Logical Device]>

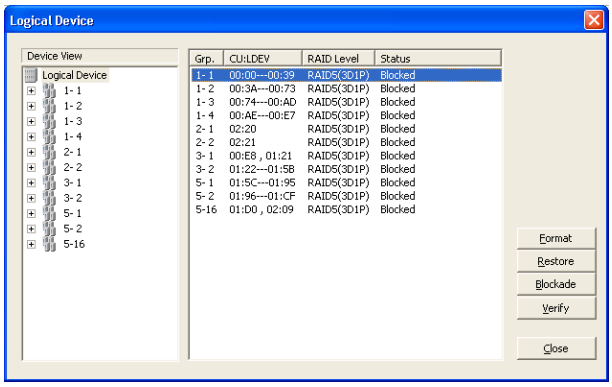
CAUTION

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

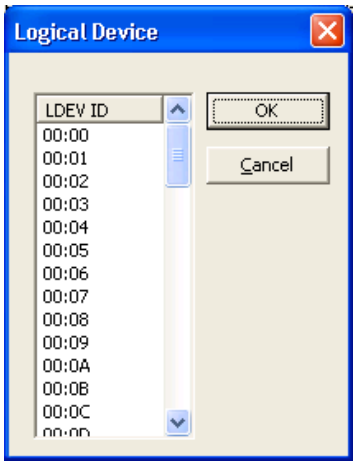
Select (CL) [Logical Device] from [Maintenance].



9. <Logical Device Status>
Select (CL) [Format].



10. <Format Logical Device>
Select (CL) corresponding LDEV from the LDEV ID list in the 'Logical Device' dialog box and select (CL) [OK].
If the target LDEV is not blocked, return to 'Logical Device Status' dialog box.

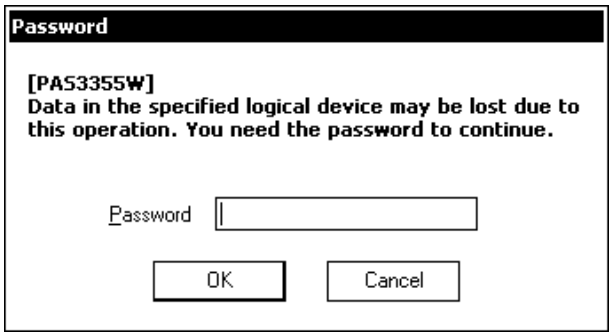


11. <Caution message for DATA lost>

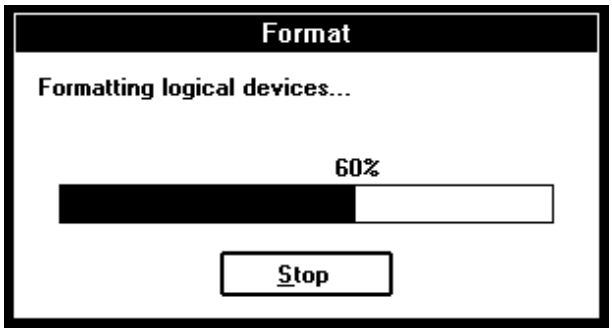
CAUTION

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.

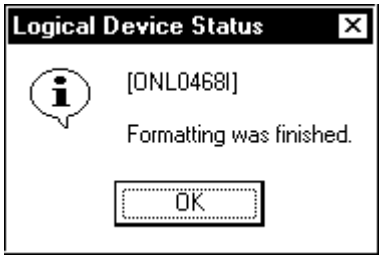
"Data in the specified logical device may be lost due to this operation. You need the password to continue." is displayed.
Enter the password and select (CL) [OK].



12. <Check Formatting the logical Device>
"Formatting the logical device..." is displayed.



13. <Check the end of Format Logical Device>
Select (CL) [OK] in response to "Formatting was finished.".



14. <SIM Complete>
Refer to SVP02-520.

15. <Recover data>
Ask the customer for recovering data with backup data.

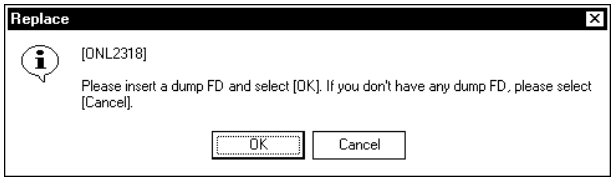
[POST-PROCEDURE d]

— OUTLINE —

① Execute CUDG on P-DEV
② Specify recovery
③ Reset ORM Error Count on the P-DEV
④ Reset Threshold Counter
⑤ SIM Complete

Before starting the <Check the beginning of recovery> operation in POST-PROCEDURES a, b, c and d, be sure to insert a floppy disk for dump, collect failure information, and return the floppy disk with the failed HDD.
A dump floppy disk is attached with a Spare HDD.

1. <Check the beginning of recovery>
   Please insert the floppy disk and select (CL) [OK].
   Failure information of the physical device is written to the floppy disk.



   [After the completion of writing failure information:]
   "Please remove the FD." is displayed.
   Please remove the floppy disk and select (CL) [OK].

2. <Check the spin up process>
   "Spinning up..." is displayed.

3. <Check the INLINE process>
   "DKU INLINE is now running..." is displayed.

4. <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.

5. <Restore Physical Drive>
   “Restoring...” is displayed.

6. <Check the end of P-DEV recovery>
   Select (CL) [OK] in response to “Replace finished.”.

7. <SIM Complete>
   Refer to SVP02-520.

[POST-PROCEDURE f]

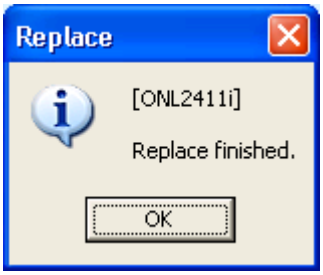
— OUTLINE —

① Execute CUDG on cache
② Specify recovery
③ SIM Complete

1. <INLINE CUDG>
   "INLINE CUDG is now running..." is displayed.

2. <Restore the Cache Memory>
   "Restoring the Cache Memory PCB..." is displayed.

3. <Check the end of Cache recovery>
   Select (CL) [OK] in response to "Replace finished.".



4. <SIM Complete>
   Refer to SVP02-520.

[POST-PROCEDURE g]

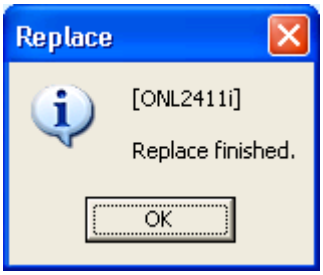
— OUTLINE —

① Execute CUDG on SM
② Specify recovery
③ SIM Complete

1. <INLINE CUDG>
   "INLINE CUDG is now running..." is displayed.

2. <Restore the Shared Memory>
   "Restoring the Shared Memory PCB..." is displayed.

3. <Check the end of Shared Memory recovery>
   Select (CL) [OK] in response to "Replace finished.".



4. <SIM Complete>
   Refer to SVP02-520.

[POST-PROCEDURE h]

— OUTLINE —

① Specify recovery for CHA/DKA
② Path online (for CHA)
③ SIM Complete

<For CHA/DKA>

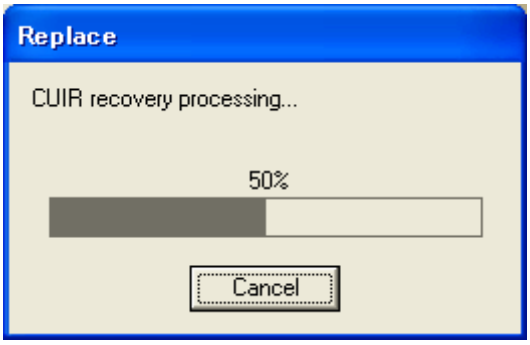
1. <Waiting for Power Event>
   "Waiting for Power Event...
   Usually several minutes (maximum 15 minutes)." is displayed.

---

2. <CUIR recovering when Mainframe Fibre CHA is replaced>
   When the CUIR function is effective, and the following messages are displayed.

   Select (CL) [Yes] in response to:
   "CUIR recovery processing is executed.
   Connect the cable as it was before the blockade processing. Please select [OK] after you finish connecting the cable."

   "CUIR recovery processing..." is displayed.



3.

   * For DKA
   "DKU PATH INLINE is now running..." is displayed.

---

4. <Check the recovery processing>
   The following message is displayed:

   * For DKA
   "Restoring the DKA..."

CAUTION

Confirm the version of the exchanged CHA/DKA microprogram on the “STATUS” screen.

5. <Check the end of CHA/DKA recovery>
   Select (CL) [OK] in response to “Replace finished.”.

6. <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.

   *: 2. When <CUIR recovering when Mainframe Fibre CHA is replaced> is executed, processing concerned is unnecessary.

[Notes for the case where DKN-200-NGW1 (NAS Unit) has been connected to this device]

If the NAS Unit is connected to this device, ask the NAS Unit administrator to confirm the following points.

[Points to be checked after completing this operation]

1. If the NAS service is terminated:
   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
2. If the NAS service is not terminated:
   When the replacement operation of CHA used by the NAS Unit is completed, the Fibre Channel path (FC path) of the NAS Unit might go into the Failure status. Before starting the operation of the next CHA replacement, contact the NAS Unit administrator, refer to “Recovering from FC path errors” of “Hitachi NAS Manager User’s Guide”, confirm the FC path status and, if the status is Failure, ask for the recovery of the FC path.

In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to “NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)” in “DKN-200-NGW1 NAS Unit Maintenance Manual”, and ask to check the status of the FC path and to recover the FC path if it is in a failure status after completing the replacement operation of CHA used by the NAS Unit.

7. <SIM Complete>
   Refer to SVP02-520.

Blank Sheet

Blank Sheet

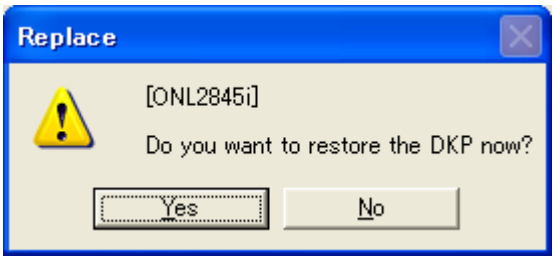
Blank Sheet

[POST-PROCEDURE j]

— OUTLINE —

① Specify recovery of DKP was connected FSW
② SIM Complete

1. <Check the beginning of DKP recovery>
   Select (CL) [Yes] in response to "Do you want to restore the DKP now?".



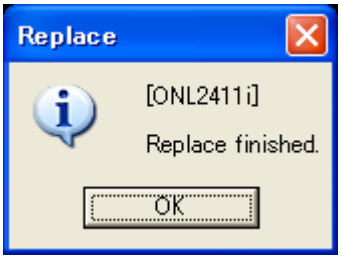
2. <DKU PATH INLINE>
   "DKU PATH INLINE is now running..." is displayed.

⚠ CAUTION

When a failure is found during DKU PATH INLINE, the DKP connected to the loop are blocked.
Confirm the Diagnosis Log and solve the problem.

3. <Check DKP recovery processing>
   "Restoring the DKP..." is displayed.

4. <Check the end of FSW replace>
   Select (CL) [OK] in response to "Replace finished.".



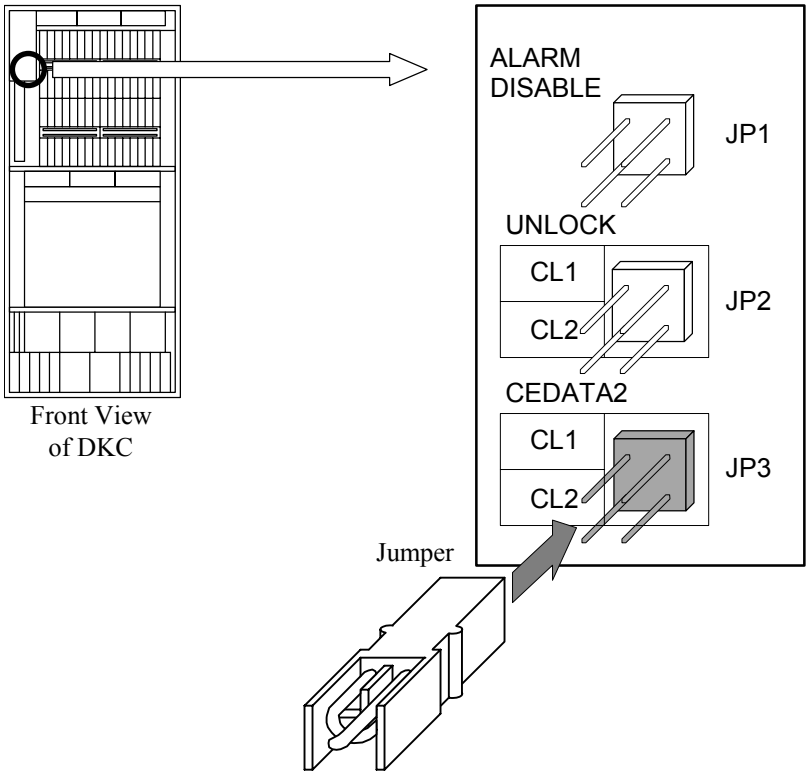
5. <SIM Complete>
   Refer to SVP02-520.

[POST-PROCEDURE k]

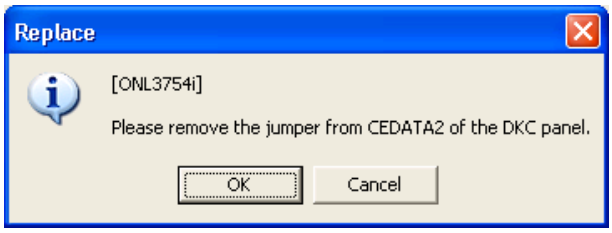
— OUTLINE —

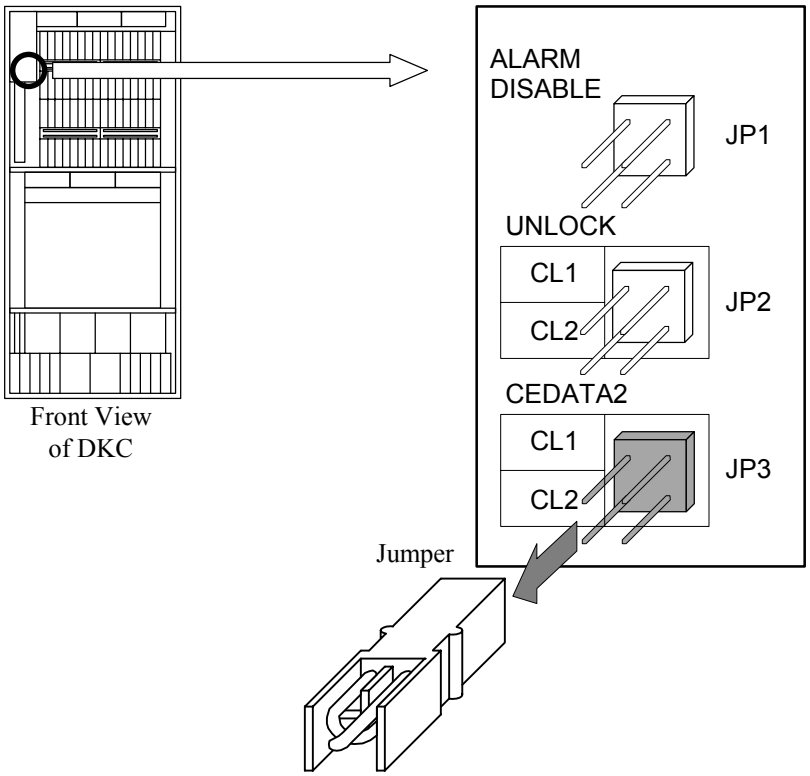
① Specify recovery of CSW
② SIM Complete

1. <Insert the jumper>
   "Please insert the jumper to CEDATA2 of the DKC panel." is displayed.
   Select (CL) [OK] after inserting the jumper to CEDATA2 of DKC Panel.



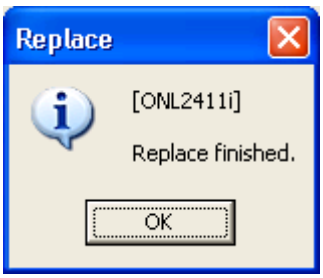
2. <Remove the jumper>
"Please remove the jumper from CEDATA2 of the DKC panel." is displayed.
Select (CL) [OK] after removing the jumper from CEDATA2 of DKC Panel.





3. <Check the CSW recovery procedure>
"Restoring the CSW..." is displayed.

4. <Check the CSW replace finished>
Select (CL) [OK] in response to "Replace finished.".



5. <SIM Complete>
Refer to SVP02-520.

[POST-PROCEDURE t1]

— OUTLINE —

① Specify end of special part replacement
② Reinstall related parts
③ Start environment monitor
④ SIM Complete

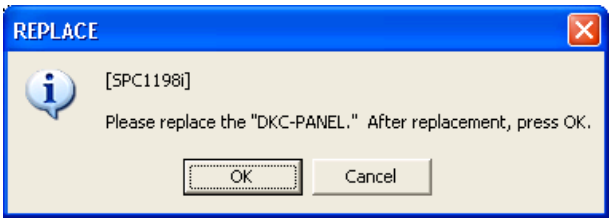
[1] Start of POST-PROCEDURE

Valid "XXXXX" values are listed below.

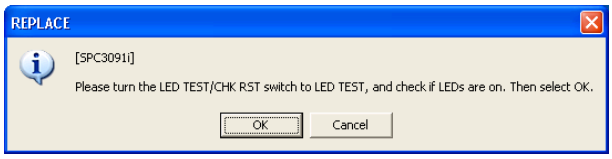
- DKC-PANEL ---------- [2] (REP04-350)
- DKCMN1/2 ---------- [3] (REP04-380)
- PCI CON ---------- [4] (REP04-390)
- EPO SW ---------- [5] (REP04-410)
- SVP ---------- [6] (REP04-420)
- SSVP ---------- [7] (REP04-780)
- DKCFAN ---------- [8] (REP04-800)
- Thermostat ---------- [9] (REP04-820)
- DKCPS ---------- [10] (REP04-840)
- DKC Battery Box ---------- [11] (REP04-860)
- DKC AC BOX ---------- [12] (REP04-880)

[2] DKC-PANEL

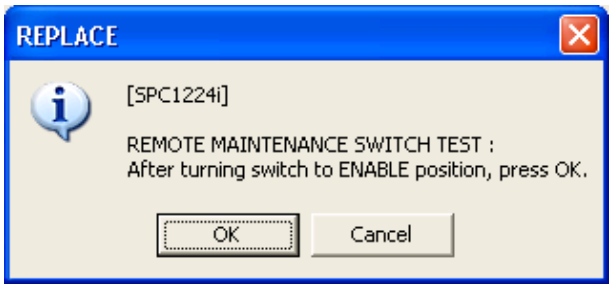
1. <Check replacement of special part>
   Select (CL) [OK] in response to “Please replace the “DKC-PANEL.” After replacement, press OK.”.



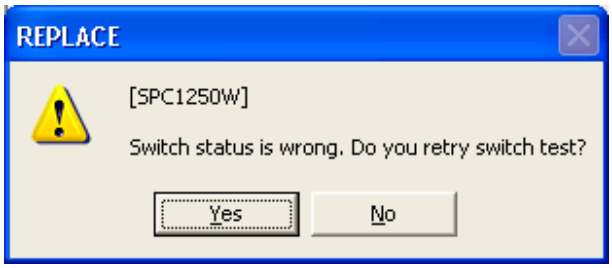
2. <LED TEST>
   Select (CL) [OK] in response to “Please turn the LED TEST/CHK RST switch to LED TEST, and check if LEDs are on. Then select OK.”.



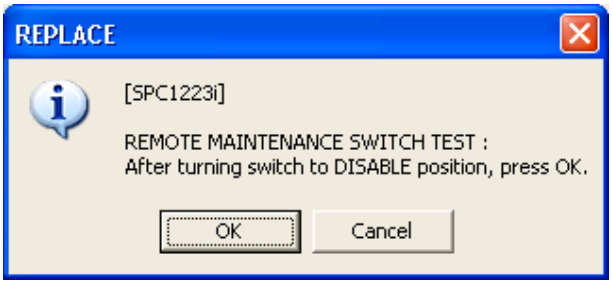
3.
   Select (CL) [OK] in response to “REMOTE MAINTENANCE SWITCH TEST: After turning switch to ENABLE position, press OK.”.



4.
   If an error has occurred in the switch test, an error message is displayed.
   If you select (CL) [Yes], go back to step 3.
   If you select (CL) [No], go to step 9.

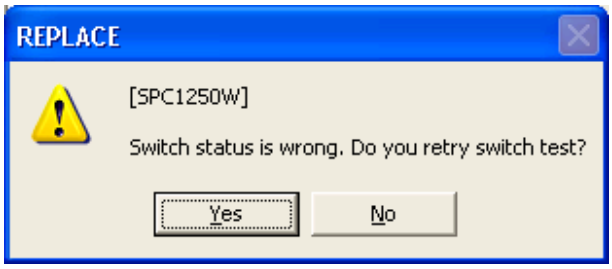


5.
   Select (CL) [OK] in response to “REMOTE MAINTENANCE SWITCH TEST: After turning switch to DISABLE position, Press OK.”.



6.

If an error has occurred in the switch test, an error message is displayed.
If you select (CL) [Yes], go back to step 5.
If you select (CL) [No], go to step 9.

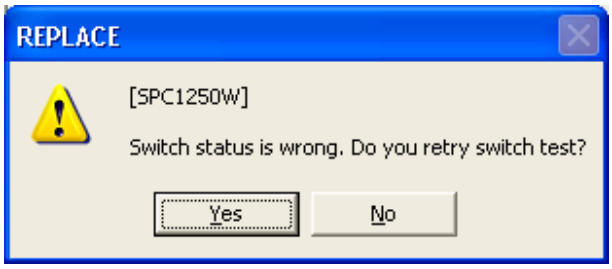


7.

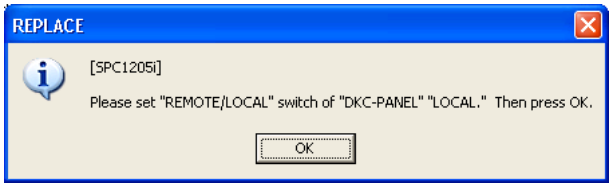
Select (CL) [OK] in response to "RESTART SWITCH TEST: After turning switch, press OK.".

8.

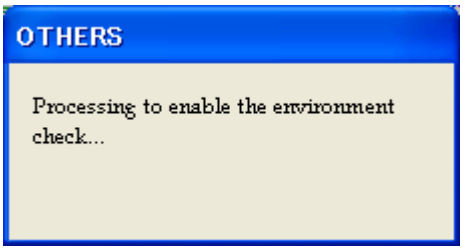
If an error has occurred in the switch test, an error message is displayed.
If you select (CL) [Yes], go back step 7.
If you select (CL) [No], go to step 9.



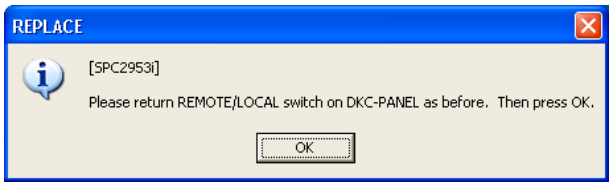
9. <Set REMOTE/LOCAL>
Set REMOTE/LOCAL switch, in response to the message "Please set "REMOTE/LOCAL" switch of "DKC-PANEL" "LOCAL". Then press OK.".
After confirming that switch set, select (CL) [OK].
The SVP automatically checks the REMOTE/LOCAL switch status.



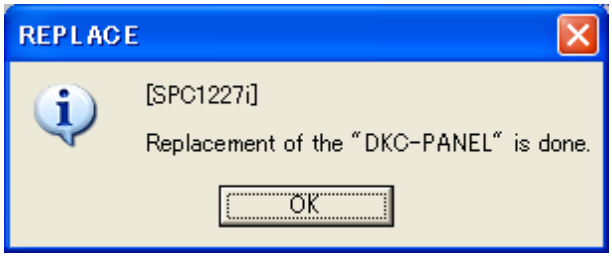
10. <Check environment monitor start processing>
"Processing to enable the environment check..." is displayed.



11. <Reset REMOTE/LOCAL switch>
Reset REMOTE/LOCAL switch to original value in response to "Please return REMOTE/LOCAL switch on DKC-PANEL as before. Then press OK." (REP03-420). After checking SW setting, select (CL) [OK].



12. <Check end of replacement>
Select (CL) [OK] in response to "Replacement of the "DKC-PANEL" is done.".



13. <SIM Complete>

See SVP02-520.

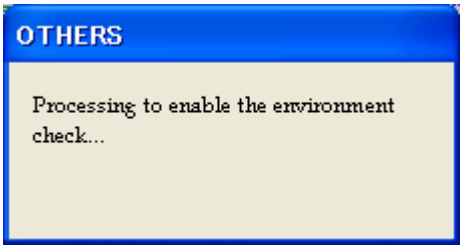
Close 'Maintenance' window.

Go to POST-PROCEDURE z (REP04-1020).

[3] DKCMN 1/2

1. <Check replacement of special part>
   Select (CL) [OK] in response to “Please replace the “DKCMNn.” After replacement, press OK.”.

2. <Check environment monitor start processing>
   “Processing to enable the environment check...” is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “DKCMNn” is done.”.

(Eg. DKCMN1)

4. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 5.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

5. <SIM Complete>

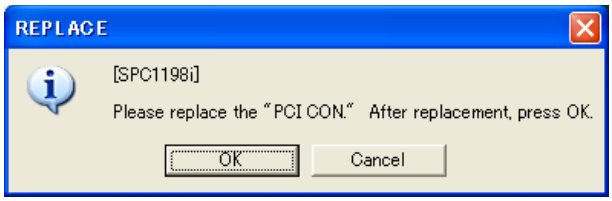
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

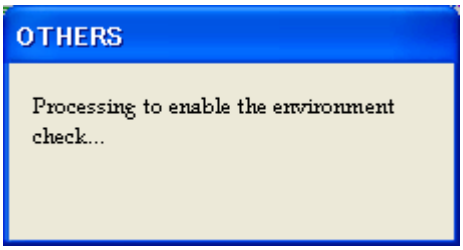
[4] PCI CON / PCI BOX

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Please replace the "PCI CON." After replacement, press OK.".

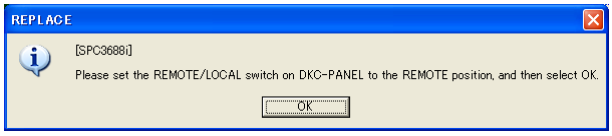


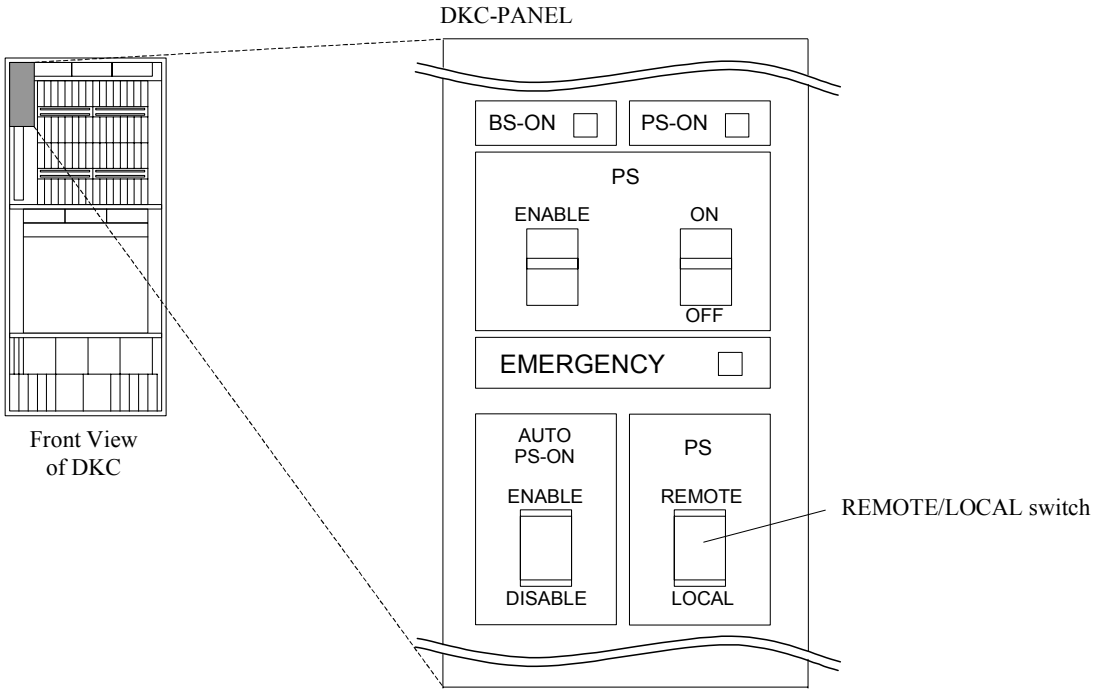
(Eg. PCI CON)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.



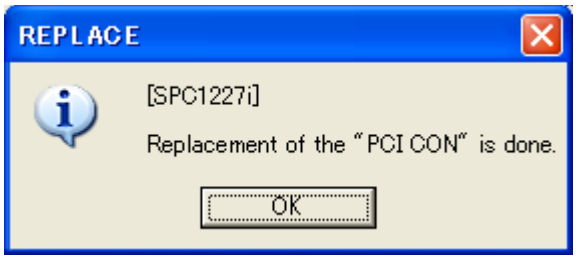
3. <Reset DKC-PANEL switch>
   Reset REMOTE/LOCAL switch to original value in response to "Please set the REMOTE/LOCAL switch on DKC-PANEL to the REMOTE position, and then select OK.".





After checking SW setting, select (CL) [OK].

4. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “PCI CON” is done.”.



(Eg. PCI CON)

5. <SIM Complete>

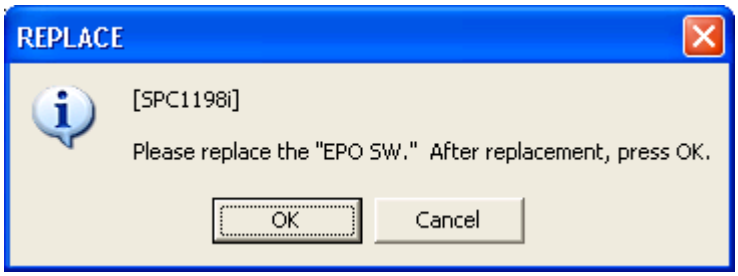
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

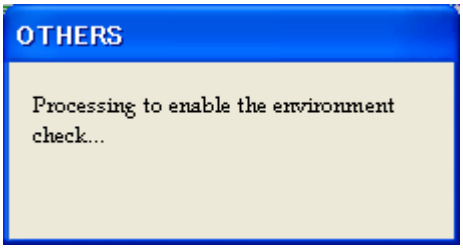
[5] EPO SW

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Please replace the "EPO SW." After replacement, press OK.".

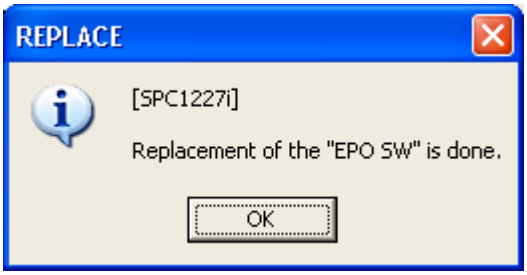


2. The SVP automatically checks the EPO SW status.

3. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.



4. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "DKC-PANEL" is done.".



5. <SIM Complete>

   See SVP02-520.

   Close 'Maintenance' window.

   Go to POST-PROCEDURE z (REP04-1020).

[6] SVP

1. Powering up the SVP

CAUTION

If the MESSAGE LED on DKC-PANEL has lit on when power on SVP, please complete SIM before operation.

CAUTION

When an SSVP alarm is issued during replacement of the PC, reset the SSVP.

CAUTION

If the message “Do you want to restart your computer now?” is displayed during the SVP reboot after replacement, select (CL) [Yes].

1-1 Connecting the Console PC

Connect the console PC to the SVP has been replaced using the utility for connection.

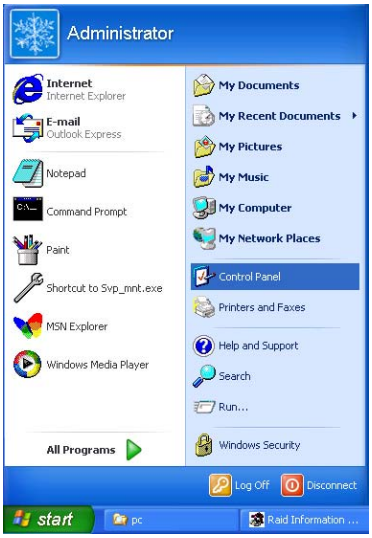
[Connection destination] 126.255.255.15

Note: Keep the IP address of Console PC, and set it to 126.255.255.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 Console PC communicate by the auto negotiation, 100Mbps, and full-duplex.

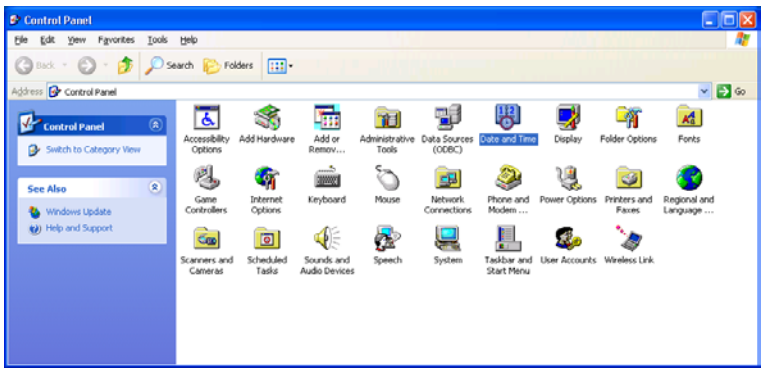
1-2 Setting the Data and Time

<Making sure of the setting of a time zone>

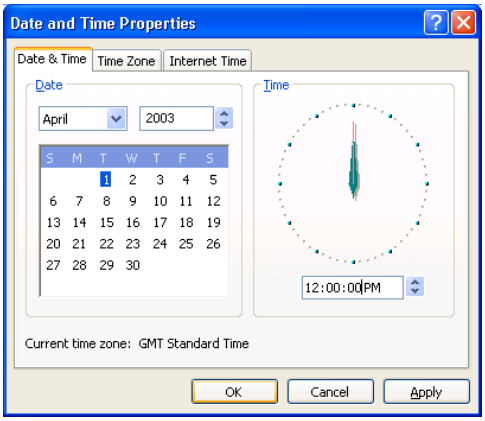
(1) Open the 'Control Panel' window.
Select (DR) [Control Panel] from the [Start] menu.



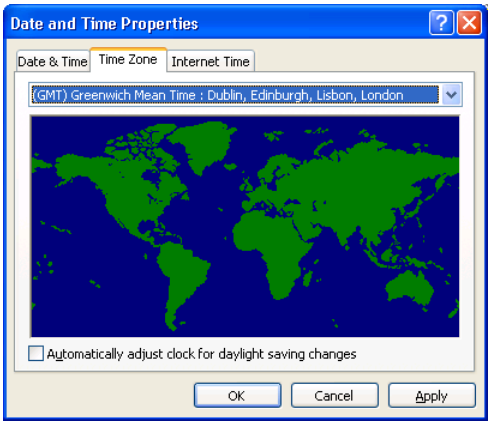
(2) Open the 'Date and Time' window.
Select (DC) [Date and Time] in the [Control Panel] window.



(3) Select [Time Zone].
Select (CL) [Time Zone].



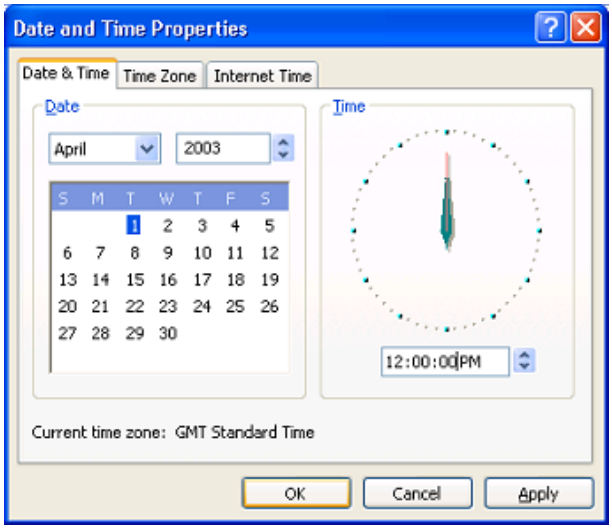
(4) Make sure of the setting of the [Time Zone].
Make sure that the [Time Zone] is set as "[GMT] Greenwich Mean Time; Dublin, Edinburgh, Lisbon, London" irrespective of a place where the subsystem is installed.
Besides, make sure that the check box to the left of the statement, "Automatically adjust clock for daylight saving changes" is blank (not checked).
Then press (CL) the [OK] button.



Notice: When a setup of [Time Zone] and "Automatically adjust clock for daylight saving changes" are changed after installation of a SVP micro program, please be sure to reboot SVP after a setup.

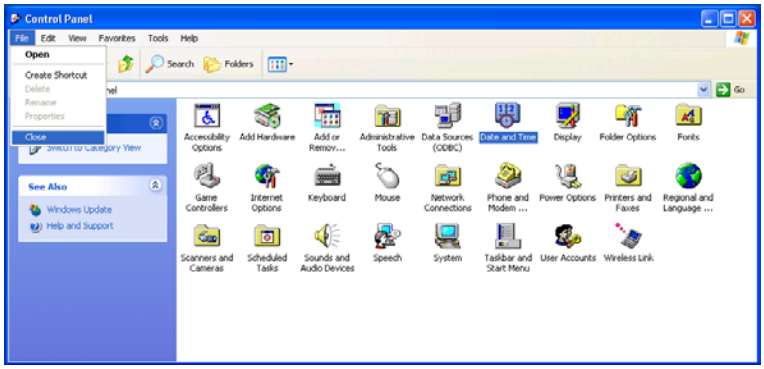
---

(5) <Set the [Date/Time]>
Check if the [Date/Time] 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.



2. <Installing the Microprogram>

2.1 Preparation

When the Microprogram has already been installed in the SVP, perform the following operations.

2.1.1 Uninstalling Apache

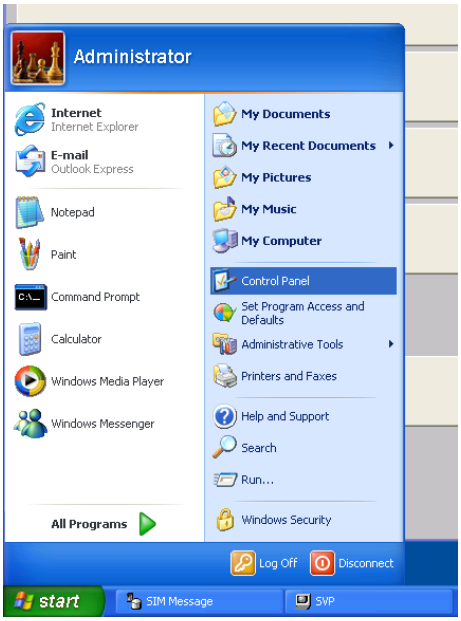
It is necessary to uninstall Apache installed in the SVP. Uninstall Apache following the procedure explained below.

2.1.1.1 Checking Apache version

Use the following procedure and check the version of Apache currently installed in the SVP.

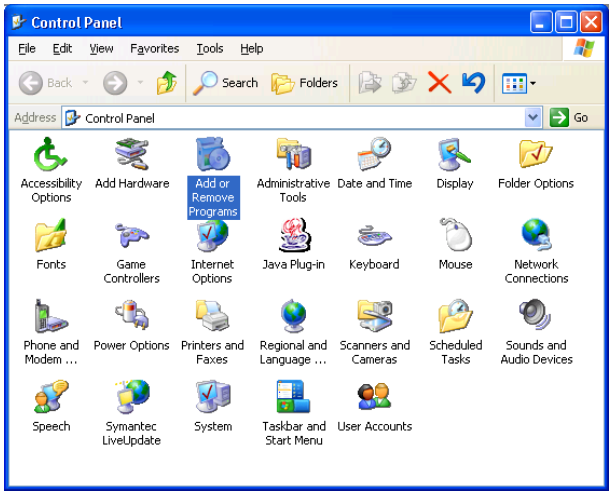
(1)

Select (DR) [Start]-[Control Panel].



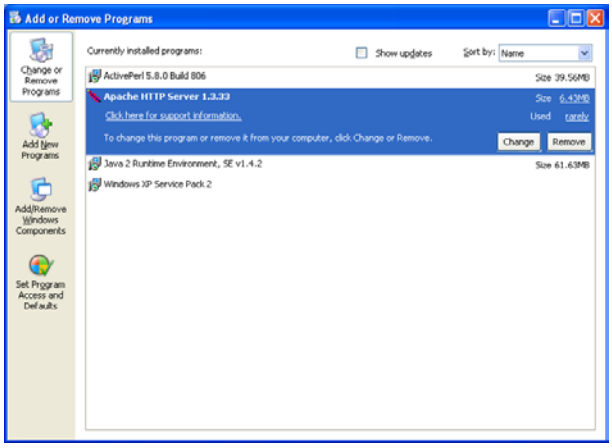
(2)

Select (DC) [Add or Remove Programs].



(3)

Check the content of [Currently installed programs] in the [Add or Remove Programs] panel.
If [Apache HTTP Server 1.3.27] exists, Apache 1.3.27 is installed.
If [Apache HTTP Server 1.3.33] exists, Apache 1.3.33 is installed.
If [OpenSA web server 1] exists, OpenSA is installed.
If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 is installed.



In order to uninstall Apache 1.3.27, go to 2.1.1.2.
In order to uninstall Apache 1.3.33, go to 2.1.1.3.
In order to uninstall OpenSA, go to 2.1.1.4.
In order to uninstall Apache 2.0.54, go to 2.1.1.5.

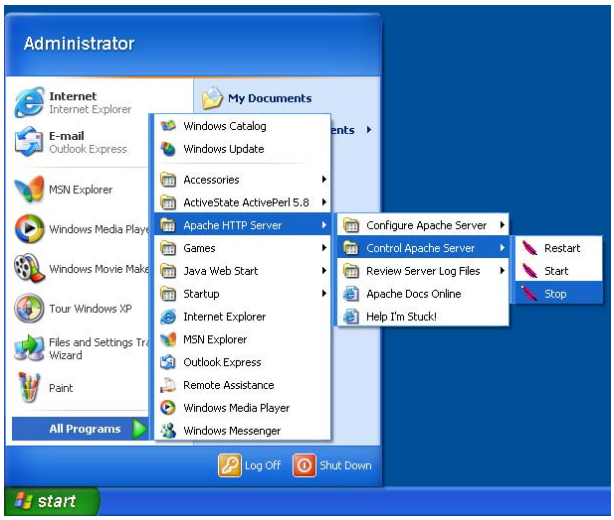
When the Apache version check is completed, select (CL) the [×] button.

2.1.1.2 Uninstalling Apache 1.3.27

It is necessary to uninstall Apache installed in the SVP. Uninstall Apache following the procedure explained below.

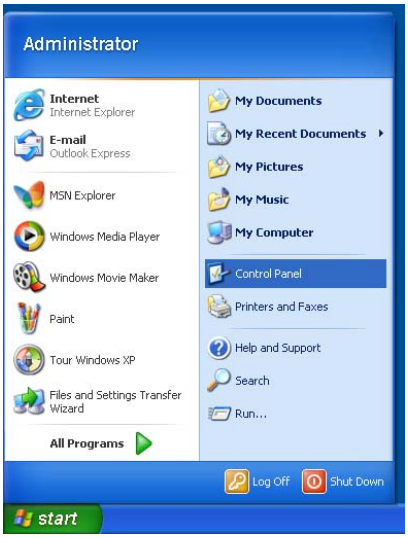
(1)

Select (DR) [Start], [All Programs], [Apache HTTP Server], [Control Apache Server], and [Stop] in this order. Apache discontinues its service.



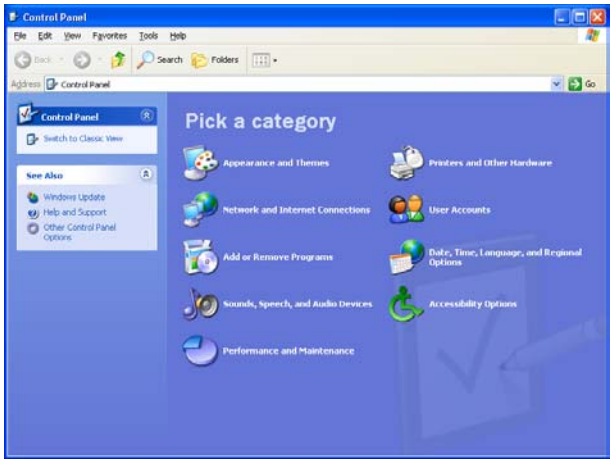
(2)

Select (DR) [Start] and [Control Panel] in this order.



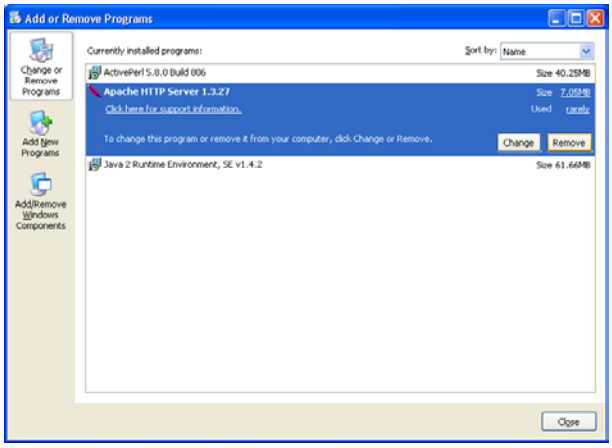
(3)

Select (CL) [Add or Remove Programs].



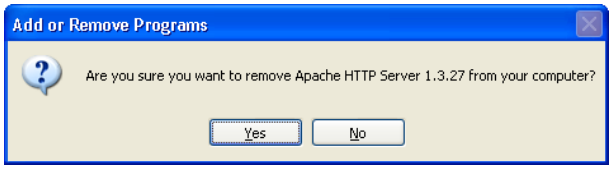
(4)

Select [Apache HTTP Server 1.3.27], and then select (CL) the [Remove] button.



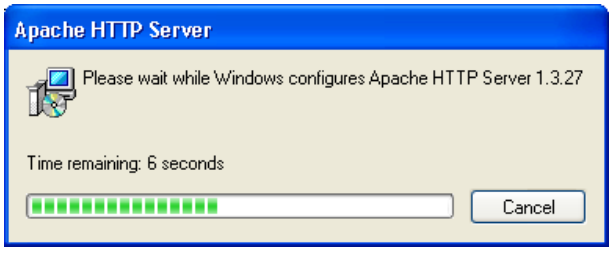
(5)

A message, “Are you sure you want to remove Apache HTTP Server 1.3.27 from your computer?” is displayed. Select (CL) the [Yes] button.



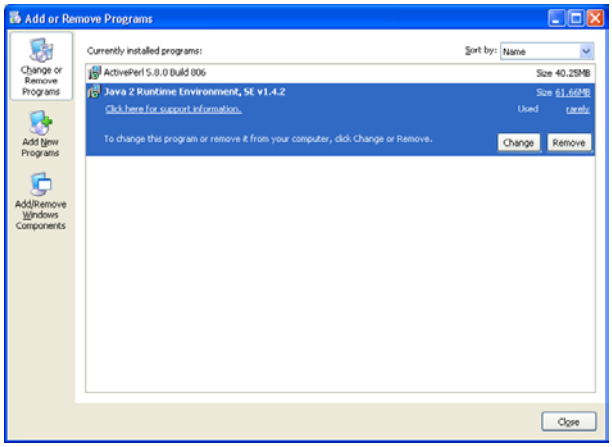
(6)

Uninstallation of Apache 1.3.27 is started.



(7)

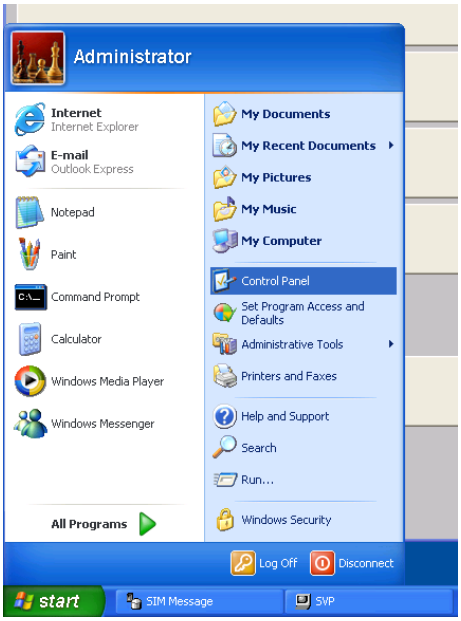
The [Apache HTTP Serve 1.3.27] is deleted from the 'Add or Remove Programs' window. Close the window by selecting (CL) the [×] button.
Go to 2.1.2.



2.1.1.3 Uninstalling Apache 1.3.33

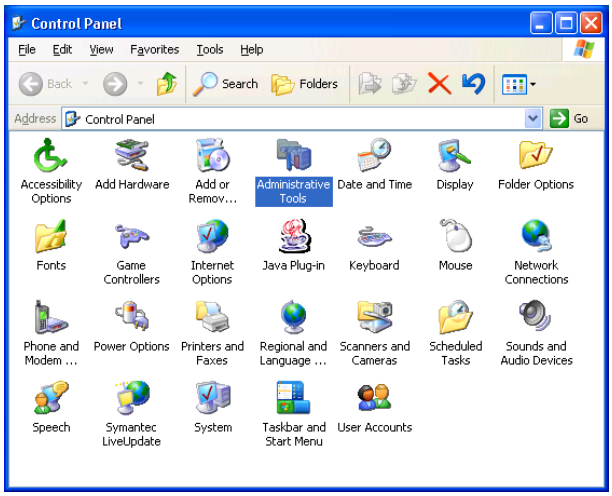
(1)

Select (DR) [Start] and [Control Panel] in this order.



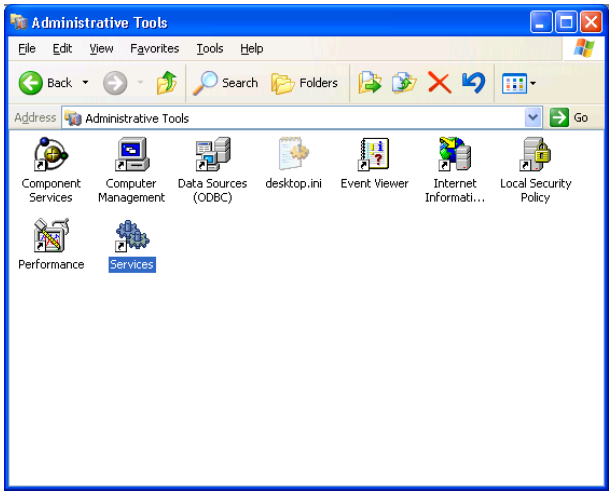
(2)

Select (DC) [Administrative Tools].



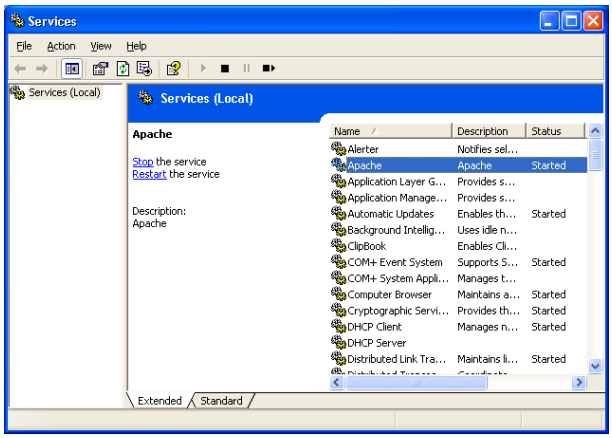
(3)

Select (DC) [Services].



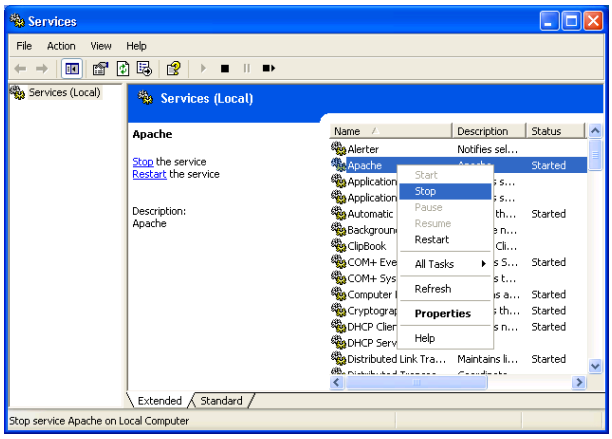
(4)

Select (CL) [Apache].



(5)

Select (DR) [Stop] from the right button menu.

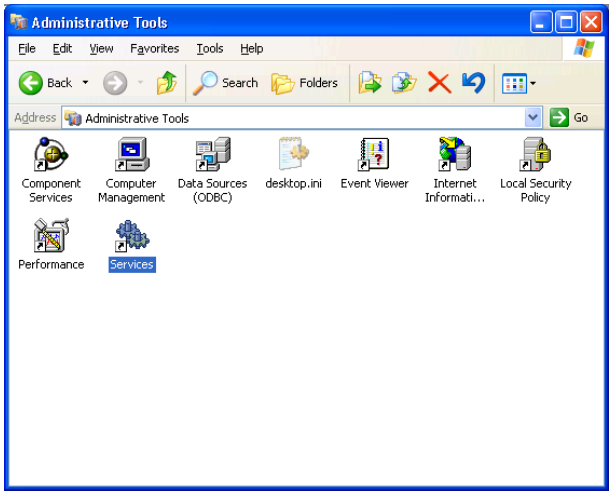


(6)

Close the 'Services' window by selecting (CL) the [×] button.

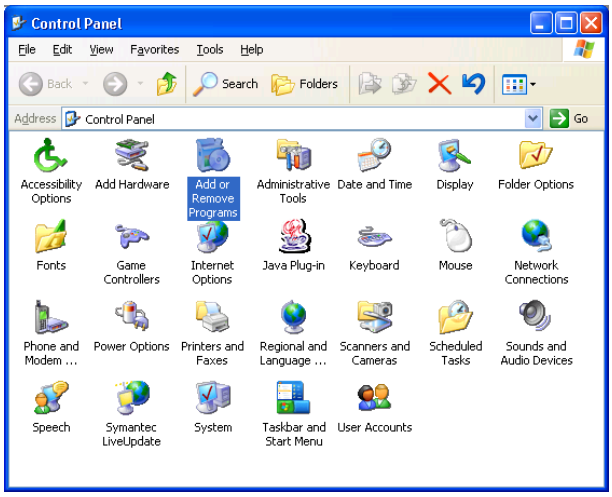
(7)

Select (CL) the [Back] button.



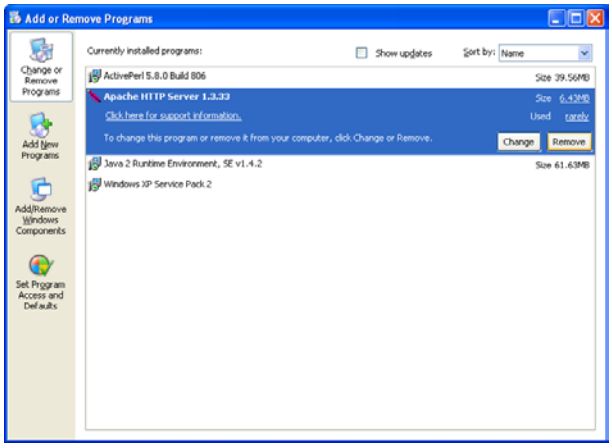
(8)

Select (DC) [Add or Remove Programs].



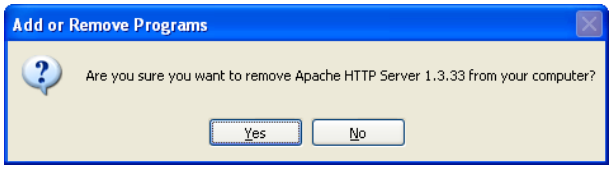
(9)

Select [Apache HTTP Server 1.3.33] and select (CL) the [Remove] button.



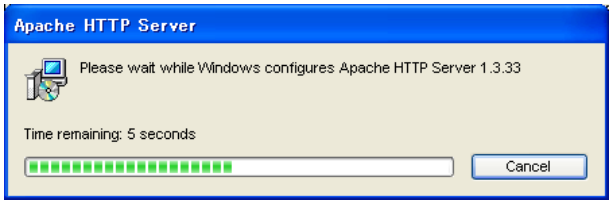
(10)

A message, “Are you sure you want to remove Apache HTTP Server 1.3.33 from your computer?” is displayed. Select (CL) the [Yes] button.



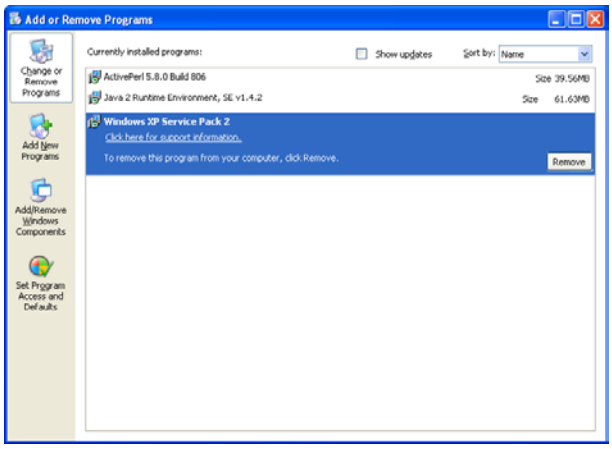
(11)

The uninstallation of Apache 1.3.33 is started.



(12)

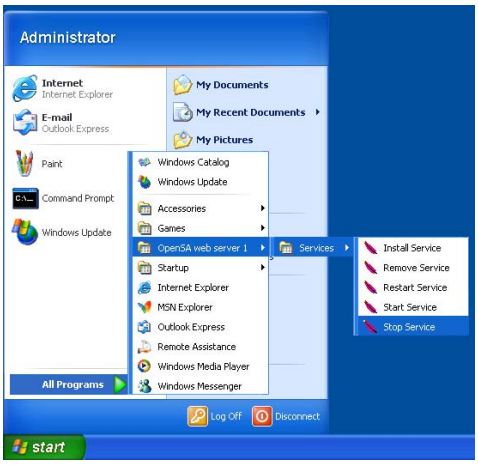
The [Apache HTTP Server 1.3.33] is removed from the ‘Add or Remove Programs’ panel. Close the panel by selecting (CL) the [×] button.
Go to 2.1.2.



2.1.1.4 Uninstallation of OpenSA

(1)

Select (DR) [Start]-[All Programs]-[OpenSA web server 1]-[Services]-[Stop Service].

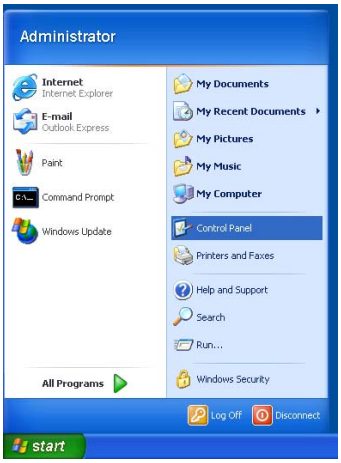


(2)

Select (DR) [Start]-[All Programs]-[OpenSA web server 1]-[Services]-[Remove Service].

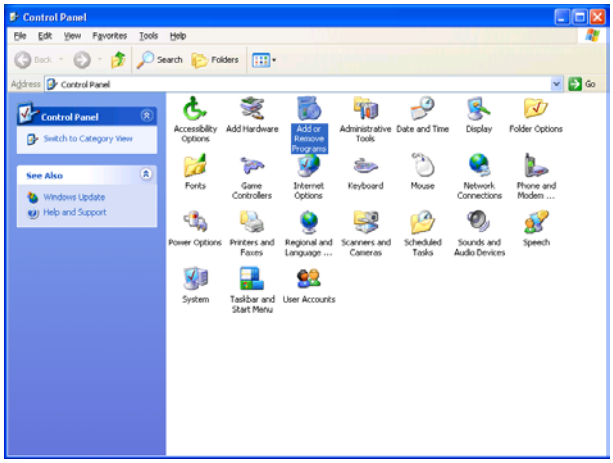
(3)

Select (DR) [Start]-[Control Panel].



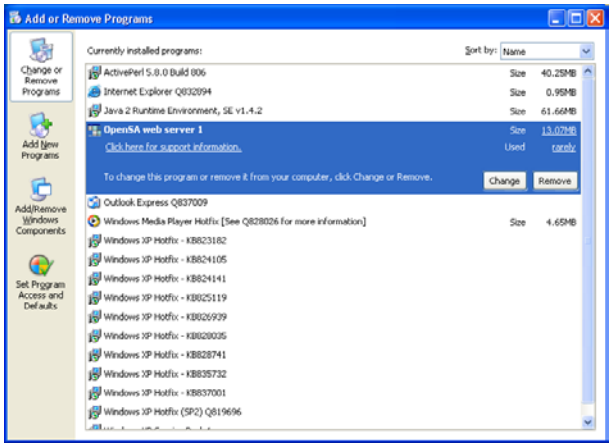
(4)

Select (DC) [Add or Remove Programs].



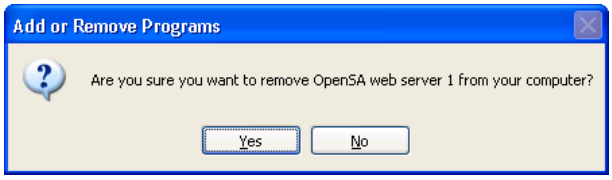
(5)

Select [OpenSA web server 1], and then select (CL) the [Remove] button.



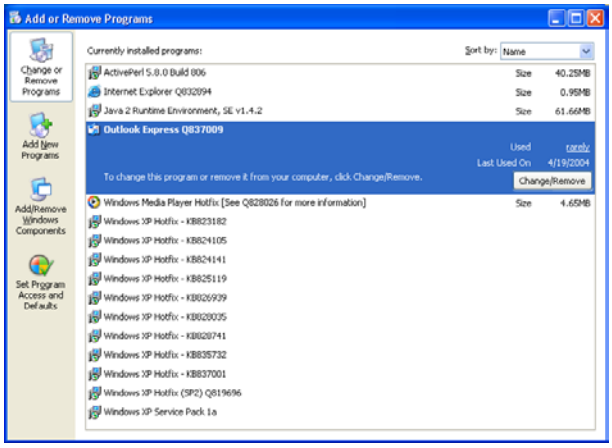
(6)

The message, “Are you sure you want to remove OpenSA web server 1 from your computer?” is displayed. Select (CL) the [Yes] button.



(7)

[OpenSA web server 1] is removed from the [Add or Remove Programs] panel.
Select (CL) [×] button, and close this window.



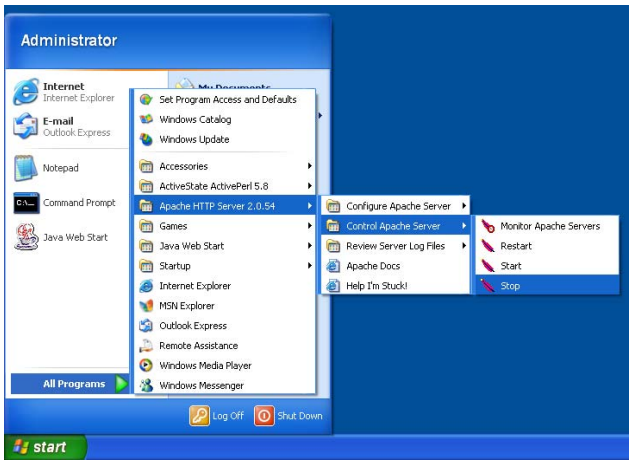
(8)

Select (DR) [Start]-[Run…].
Enter “delApacheConf.bat” and press the [OK] button.
Go to 2.1.2.

2.1.1.5 Uninstallation of Apache 2.0.54

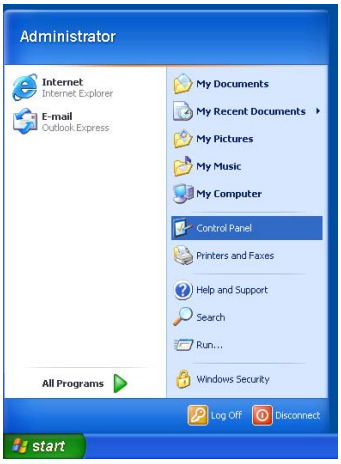
(1)

Select (DR) [Start]-[All Programs]-[Apache HTTP Server 2.0.54]-[Control Apache Server]-[Stop]. Service of Apache will stop.



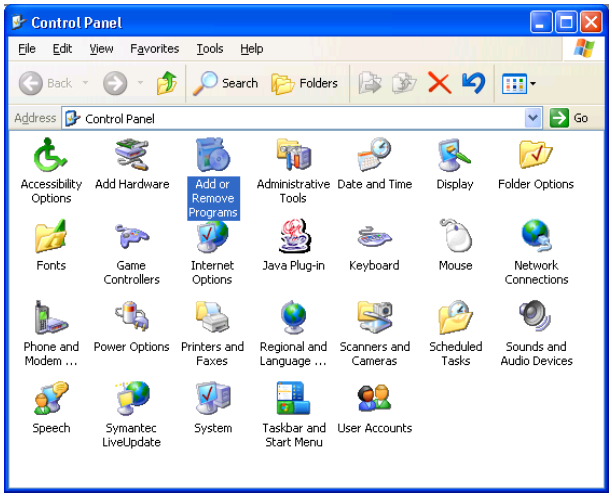
(2)

Select (DR) [Start]-[Control Panel].



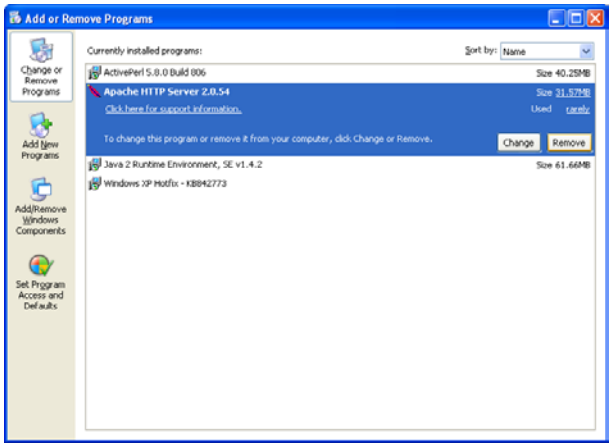
(3)

Select (DC) [Add or Remove Programs].



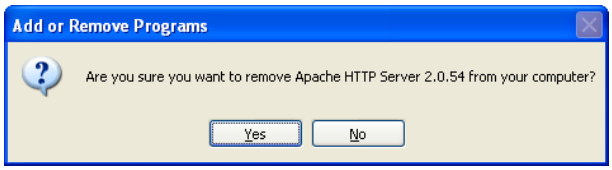
(4)

Select [Apache HTTP Server 2.0.54], and then select (CL) the [Remove] button.



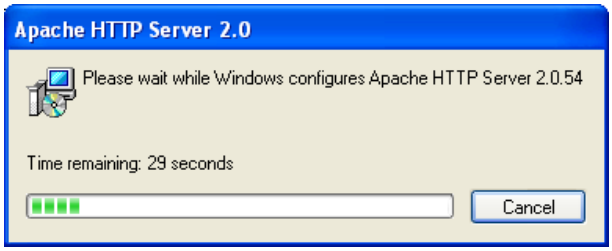
(5)

The message, “Are you sure you want to remove Apache HTTP Server 2.0.54 from your computer?” is displayed. Select (CL) the [Yes] button.



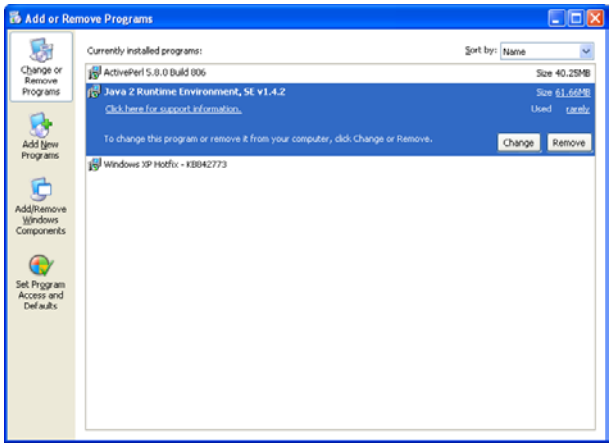
(6)

Unistallation of Apache 2.0.54 starts.



(7)

[Apache HTTP Server 2.0.54] is removed from the [Add or Remove Programs] panel.
Select (CL) [×] button, and close this window.



(8)

Select (DR) [Start]-[Run…].
Enter “delApacheConf.bat” and press the [OK] button.
Go to 2.1.2.

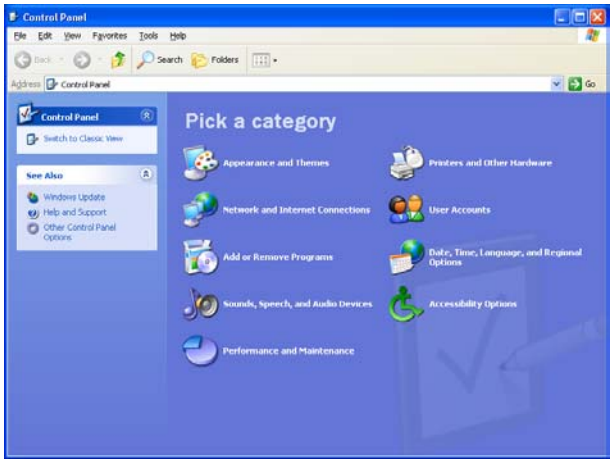
2.1.2 Uninstalling Java program

(1)

Select (DR) [Start] and [Control Panel] in this order.

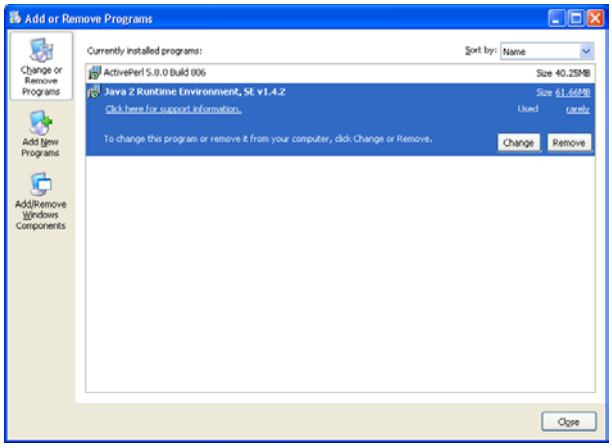
(2)

Select (CL) [Add or Remove Programs].



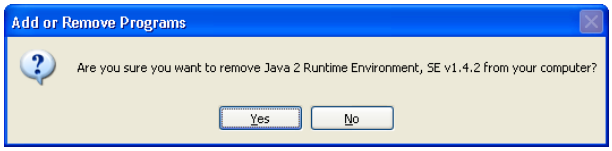
(3)

Select [Java 2 Runtime Environment, SE v1.4.2], and then select (CL) the [Remove] button.



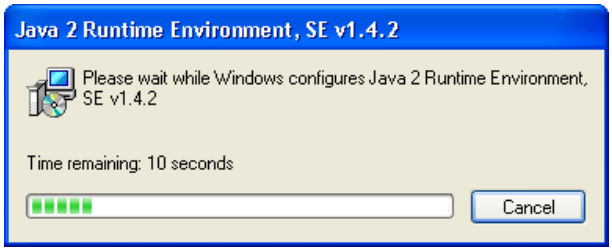
(4)

A message, “Are you sure you want to remove Java 2 Runtime Environment, SE v1.4.2 from your computer?” is displayed. Select (CL) the [Yes] button.



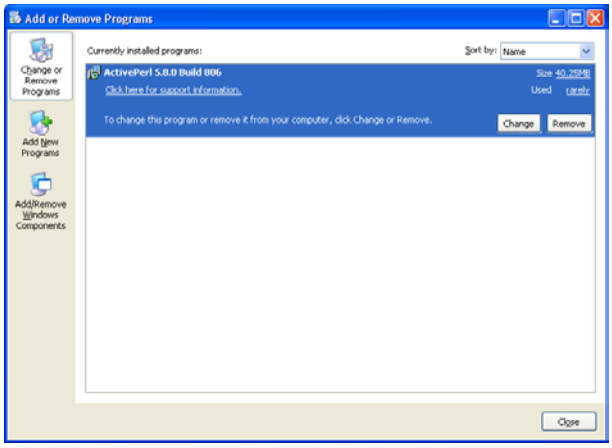
(5)

Uninstallation of Java is started.



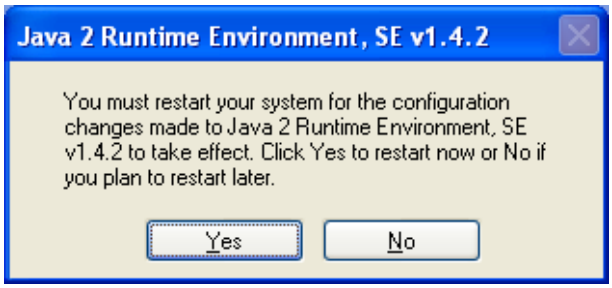
(6)

The [Java 2 Runtime Environment, SE v1.4.2] is deleted from the 'Add or Remove Programs' window.
Close the window by selecting (CL) the [×] button.



(7)

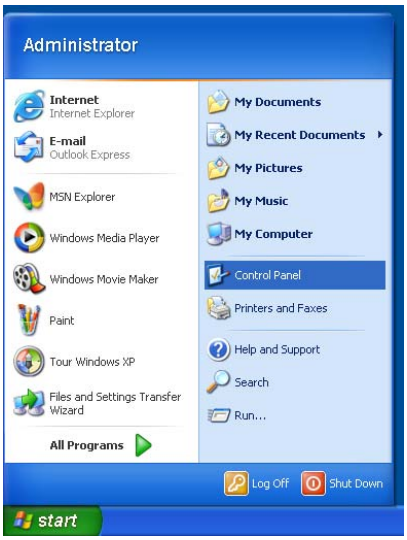
When this window is not displayed, go to Section 2.1.3.
When this window is displayed, select (CL) the [No] button.



2.1.3 Uninstalling Perl program

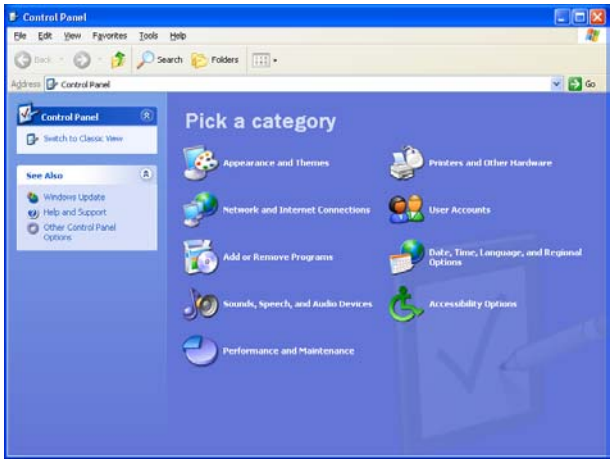
(1)

Select (DR) [Start] and [Control Panel] in this order.



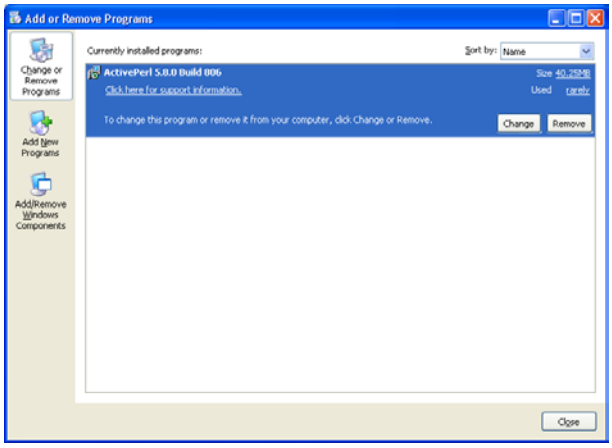
(2)

Select (CL) [Add or Remove Programs].



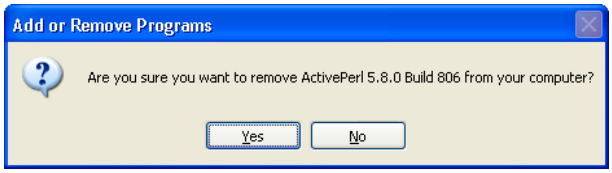
(3)

Select [ActivePerl 5.8.0 Build 806], and then select (CL) the [Remove] button.



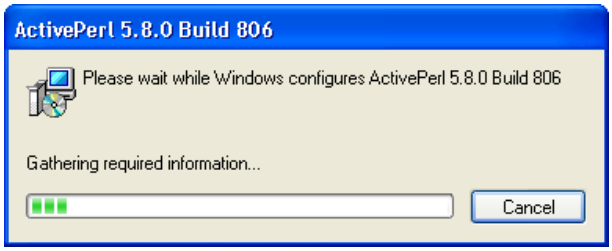
(4)

A message, “Are you sure you want to remove ActivePerl 5.8.0 Build 806 from your computer?” is displayed. Select (CL) the [Yes] button.



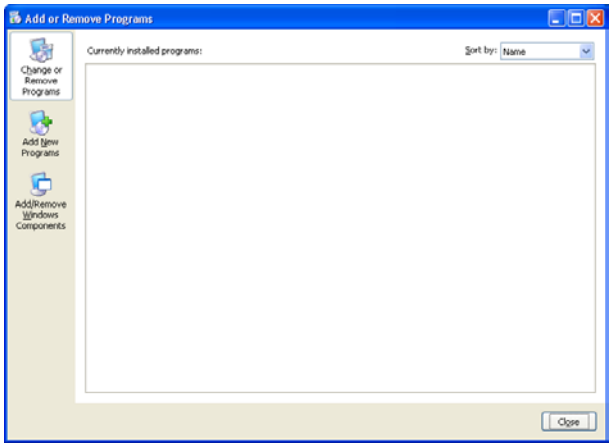
(5)

Uninstallation of Perl is started.



(6)

The [ActivePerl 5.8.0 Build 806] is deleted from the 'Add or Remove Programs' window. Close the window by selecting (CL) the [×] button.

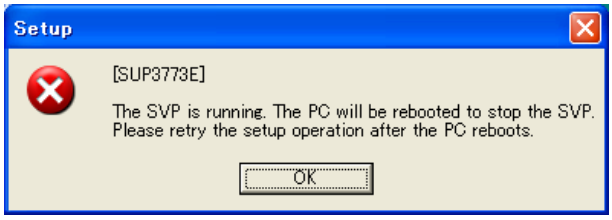


2.2 Starting Installation

① Insert a CD-ROM in the CD-ROM drive and wait for one minutes or so.

② Select (CL) [RUN...] from the "Start" menu. Enter "e:\setup.exe" and select (CL) the [OK] button.

Notice: When the SVP is running, the message "The SVP is running. The PC will be rebooted to stop the SVP. Please retry the setup operation after the PC reboots." is displayed, and the PC reboots if pressing [OK]. Install the microprogram again after rebooting the PC.



---

3. <Installing the Configuration Information>

(1) <Inserting the medium containing the configuration information>

① A message, "Please select the SVP or a client PC and insert a media." is displayed.

② Insert the medium containing backup data of the configuration information in the specified location and select (CL) the [OK] button. When the [Client PC] is selected, go to (2).

③ When the [SVP] is selected at ②, a message, "Please specify the inserted media" is displayed.

④ Select the inserted medium, and then select (CL) the [OK] button.

---

(2)

In response to a message, "Please remove the configuration information media." take out the medium and select (CL) the [OK] button.

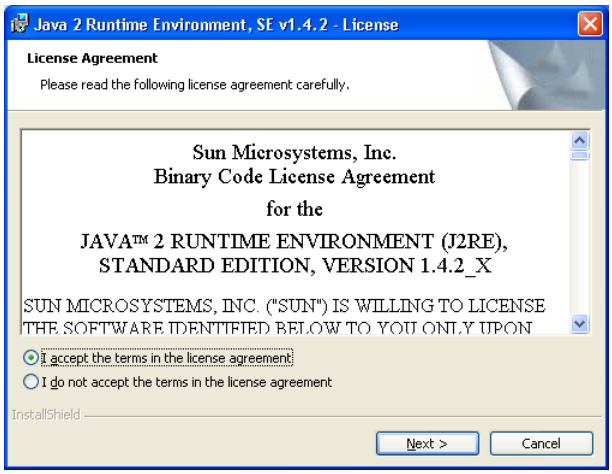
4. <Setting Up JAVA>

4-1 Setting Up of JAVA

Perform setting up operation of Java. When Java has already been installed, go to Section 4-2.

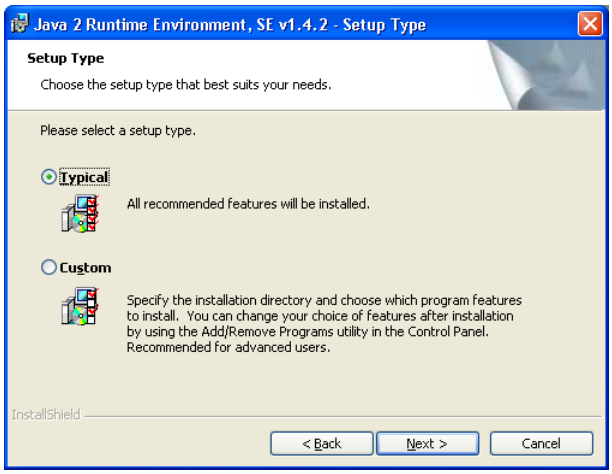
(1)

After selecting “I accept the terms in the license agreement”, press the [Next>] button.



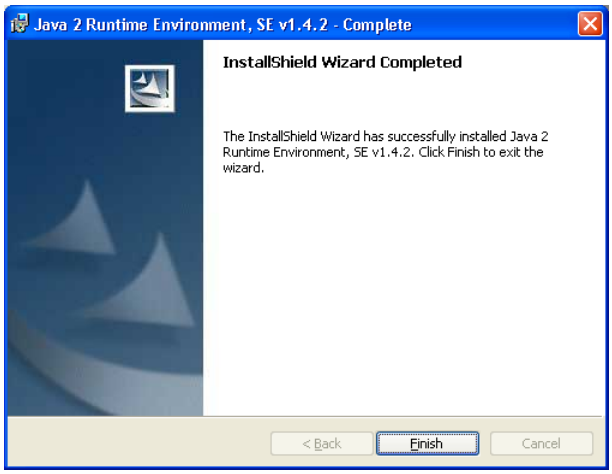
(2)

Select “Typical” and press the [Next>] button. Copying of the file is started.



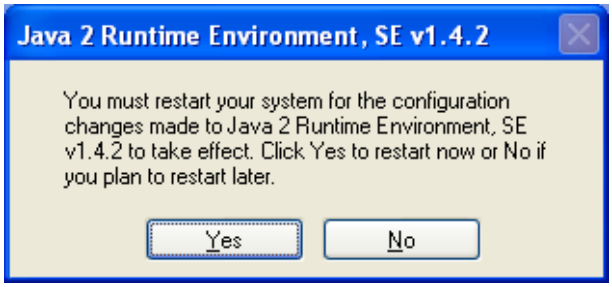
(3)

Since this window is displayed when the copying of the file is completed, press the [Finish] button.



(4)

When this window is not displayed, go to Section 4-2.
When this window is displayed, select (CL) the [No] button.



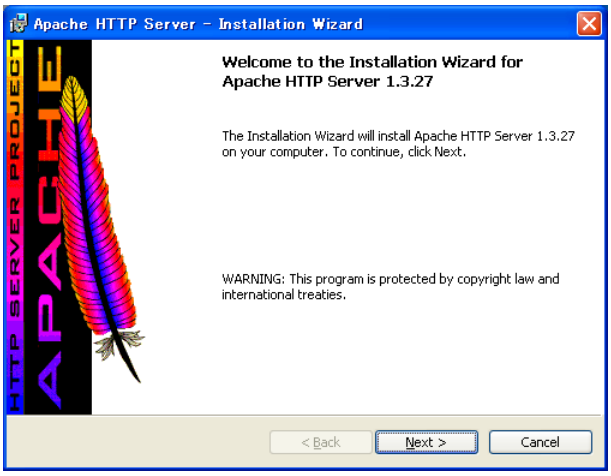
4-2 Setting Up of Apache

Perform setting up operation of Apache.
When the SVP version is earlier than 50-03-80/00, Apache 1.3.27 will be installed. Go to 4-2-1. When the SVP version is 50-03-80/00 or later, Apache 1.3.33 will be installed. Go to 4-2-2.

4-2-1 Setting Up of Apache 1.3.27

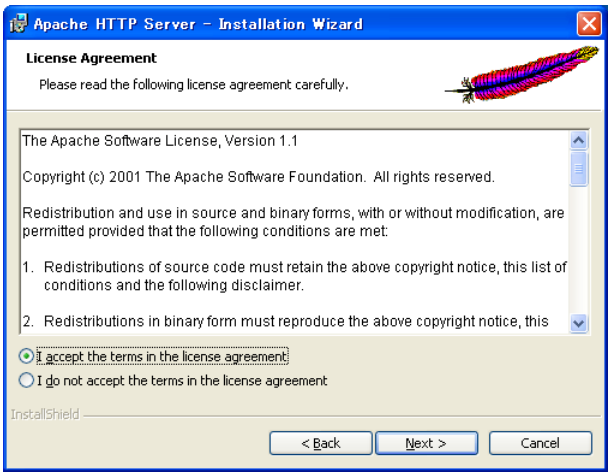
(1)

Press the [Next>] button.
When the window shown on the right is not displayed, go to 4-3 because Apache has already been installed.



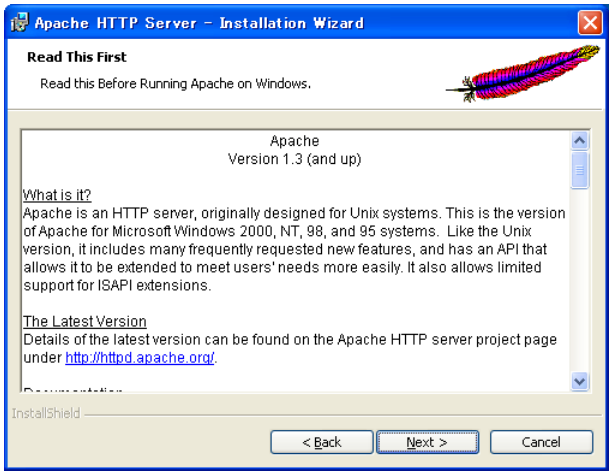
(2)

After selecting “I accept the terms in the license agreement” press the [Next>] button.



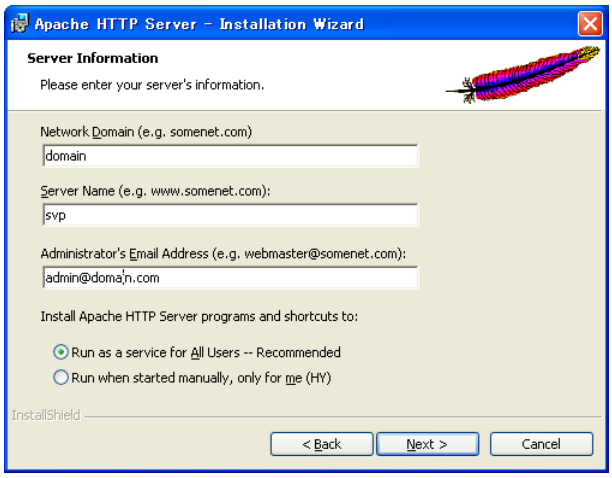
(3)

Press the [Next>] button.



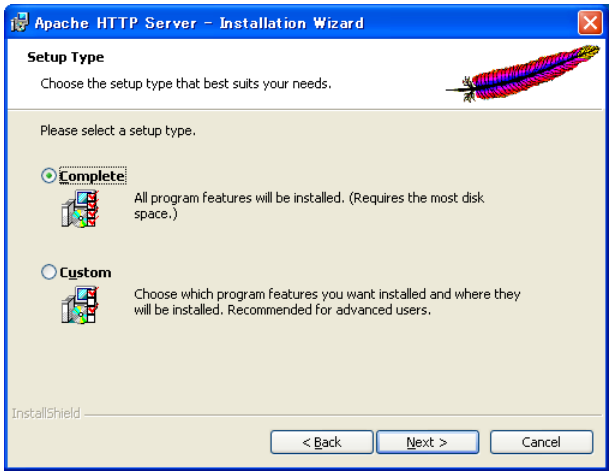
(4)

Enter “domain”, “svp”, and “admin@domain.com” in the Network Domain, Server Name, and Email Address boxes respectively. After that, select “Run as a service for All Users -- Recommended” and press the [Next>] button.



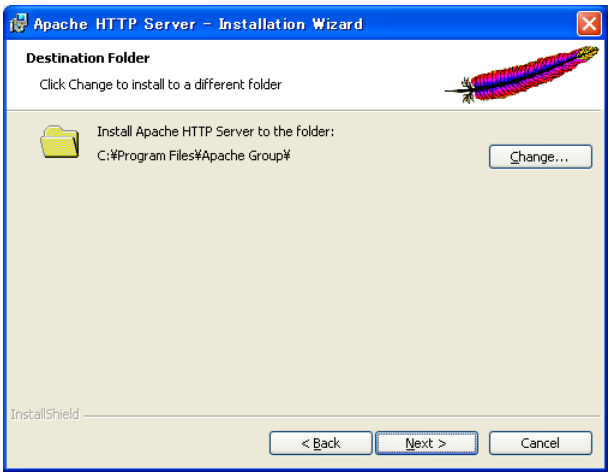
(5)

Select “Complete” and press the [Next>] button.



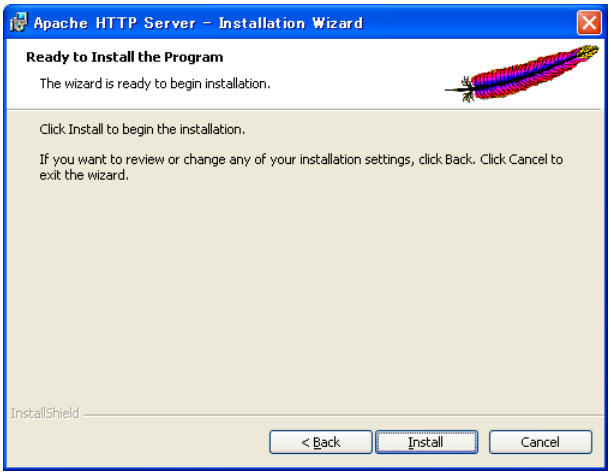
(6)

Press the [Next>] button.



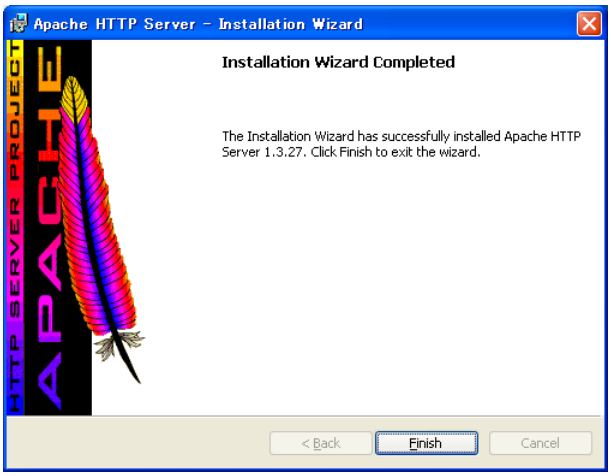
(7)

Press the [Install] button. Copying of the file is started.



(8)

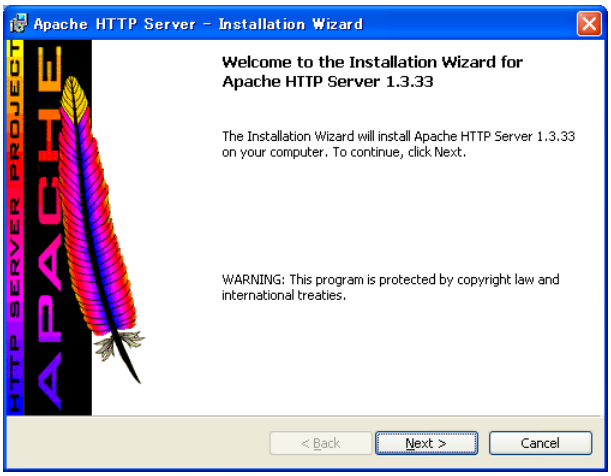
Since this window is displayed when the copying of the file is completed, press the [Finish] button.
Go to 4-3.



4-2-2 Setting Up of Apache 1.3.33

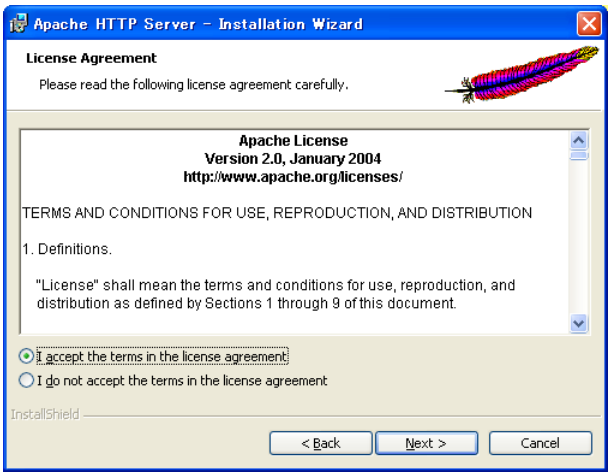
(1)

Press the [Next >] button.
When the window shown on the right is not displayed, go to 4-3 because Apache has already been installed.



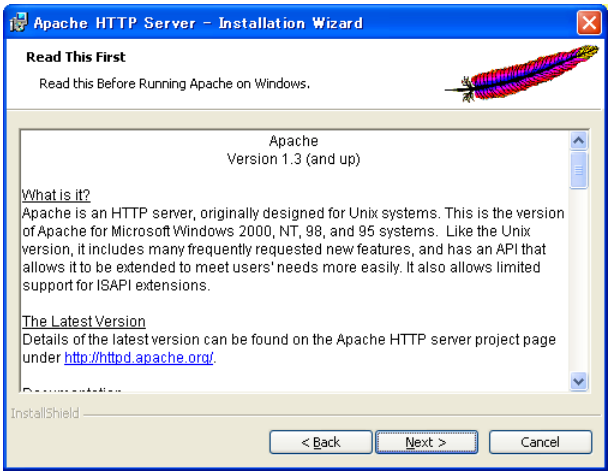
(2)

Press the [Next >] button after selecting "I accept the terms in the license agreement."



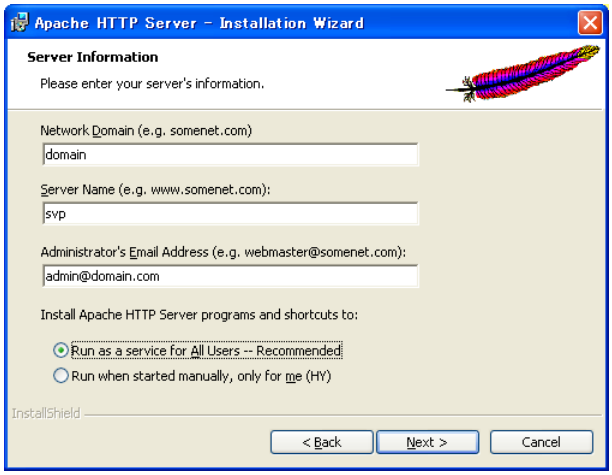
(3)

Press the [Next >] button.



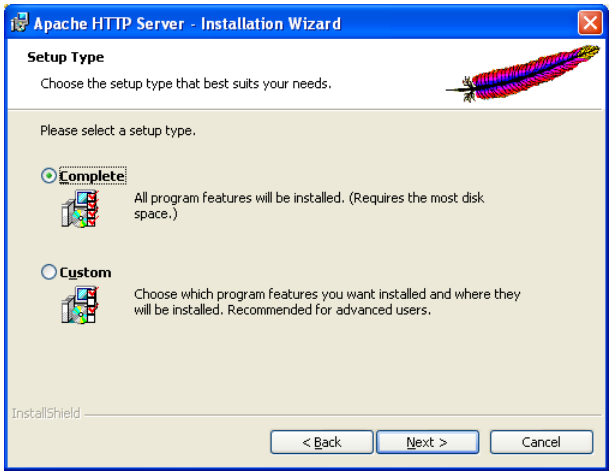
(4)

Enter “domain,” “SVP,” and “admin@domain.com” in the Network Domain, Server Name, and Administrator’s Email Address fields respectively, and then select “Run as a service for All Users -- Recommended” and press the [Next >] button.



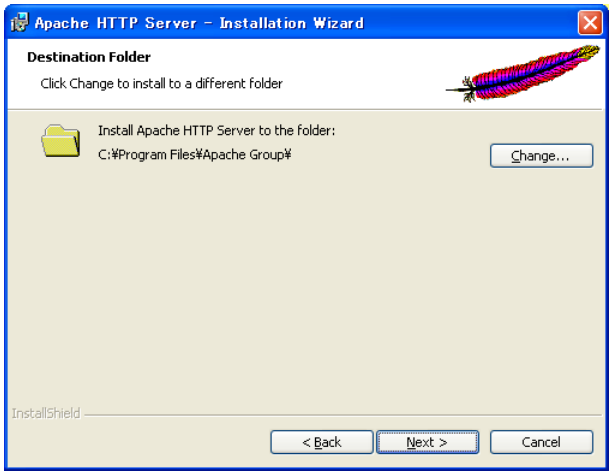
(5)

Select “Complete” and press the [Next >] button.



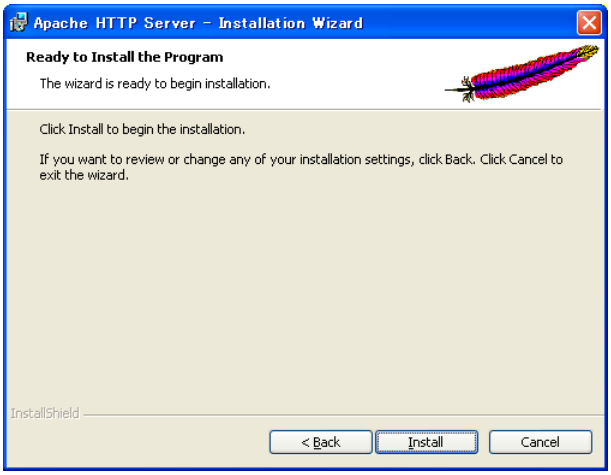
(6)

Press the [Next >] button.



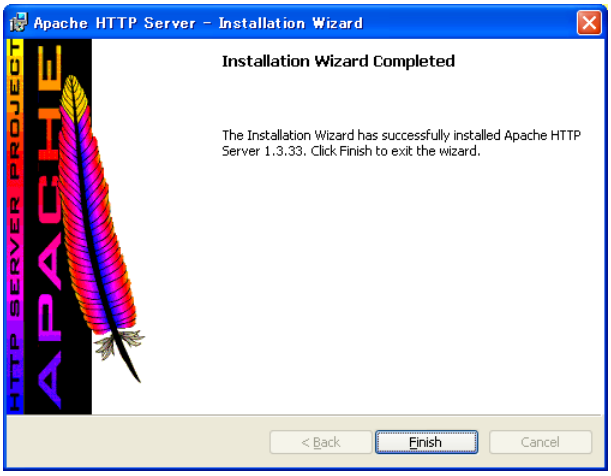
(7)

Press the [Install] button. A copying of the file is started.



(8)

Since this panel is displayed when the copying of the file is completed, press the [Finish] button.
Go to 4-3.



4-3 Setting Up of Perl

Perform setting up operation of Perl. When Perl has already been installed, go to Section 5.

(1)

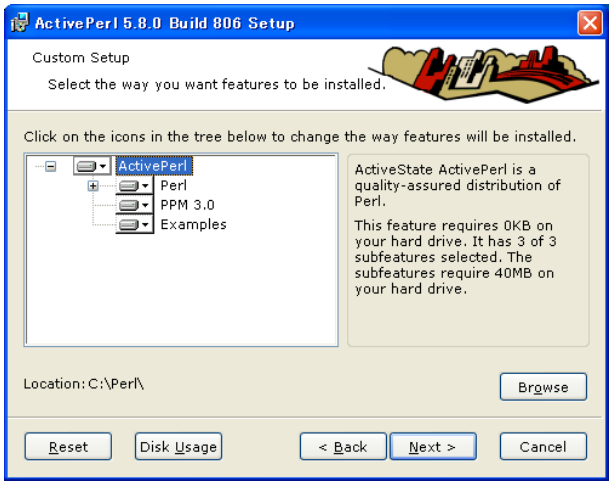
Press the [Next>] button.

(2)

After selecting “I accept the terms in the License Agreement”, press the [Next>] button.

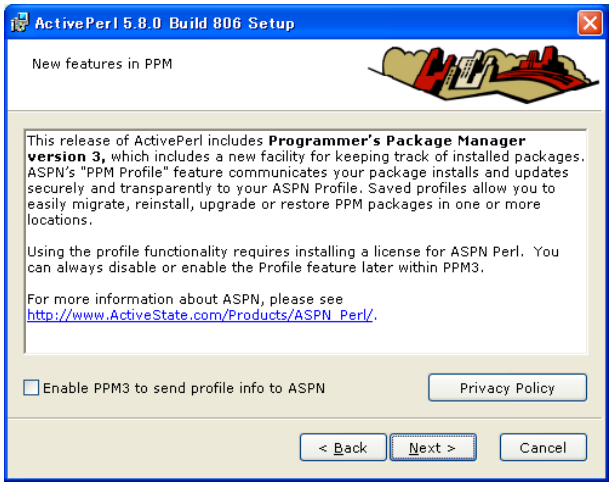
(3)

Press the [Next>] button.



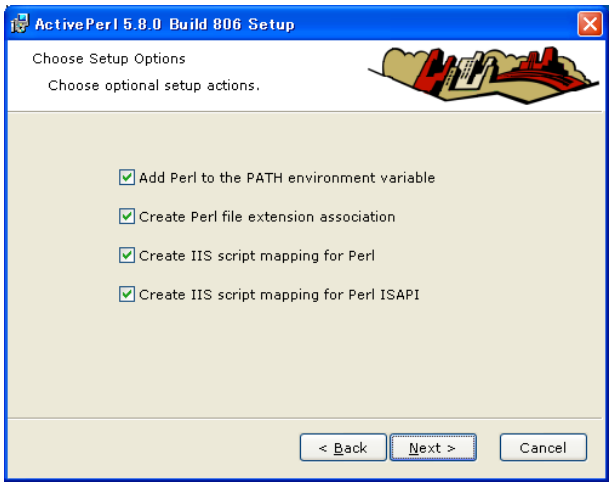
(4)

Press the [Next>] button.



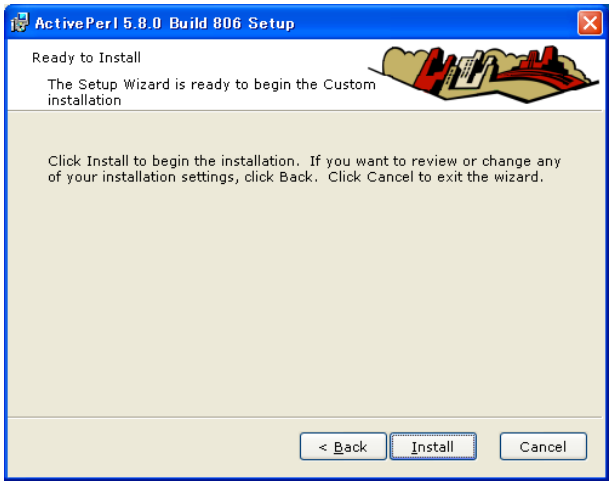
(5)

Press the [Next>] button.



(6)

Press the [Install] button. Copying of the file is started.



(7)

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 press the [Finish] button.

5. <Restarting the SVP>
When the setting up is completed, the following window is displayed. Take out the CD-ROM and select (CL) the [Finish] button. The SVP is restarted (disconnected from the console PC).
After waiting for about two minutes, reconnect the console PC to the SVP that has been replaced.

[Connection destination] 126.255.255.15

6. <Installing Web Server of option>
When OpenSA has been installed in the SVP to be replaced, it is required to install it also in the SVP that has been replaced. (See page WEB05-10.)
When Apache 2.0 has been installed in the SVP to be replaced, it is required to install it also in the SVP that has been replaced. (See page WEB07-10.)
When OpenSA or Apache 2.0 is not installed in the SVP to be replaced, go to the next step.

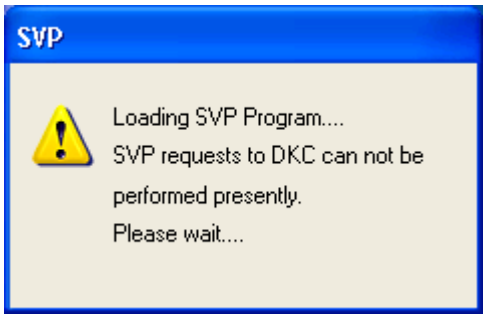
7. <Removing the JP1 Jumper>
When SVP High Reliability Support Kit is not set, remove the maintenance jumper that has been attached to the JP1 of the SVP. And connect a cable (P81-x) to replaced SVP.
When SVP High Reliability Support Kit is set go to the next step.

⚠ CAUTION

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.

8. <Setting the IP Address of the SVP>

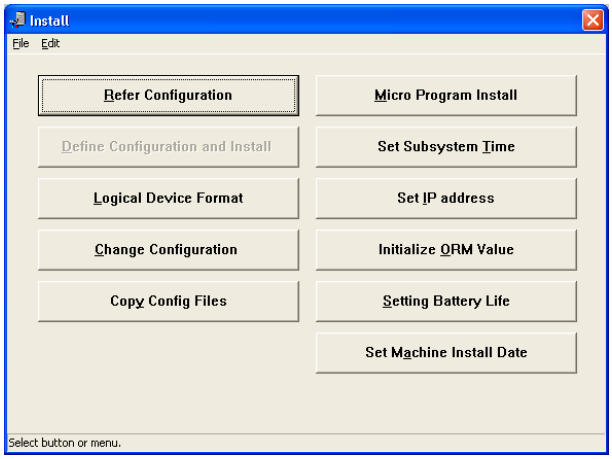
(1) <Mode change>
Change the mode to Modify Mode.



Note: Please wait for changing the mode into [Modify Mode] till the following message is closed.
"Loading SVP Program.... SVP requests to DKC can not be performed presently. Please wait...."
(If you do not find whether the message is closed, please confirm "Function Name: DKC" in 'Web Server Status' window.
If you can find the lamp yellow, you can change the mode into [Modify Mode].)

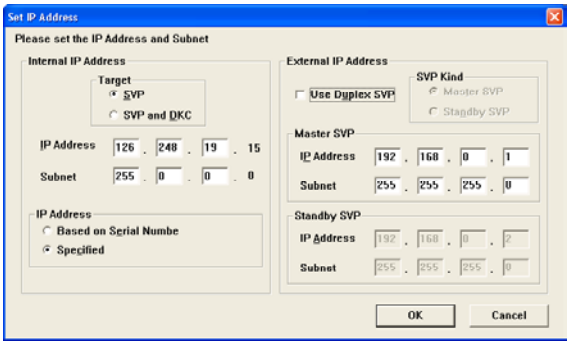
(2) <Opening the 'Install' window>
Select (CL) [Install] in the [SVP] menu.

(3) <Selecting [Set SVP IP address]>
Select (CL) [Set IP address] in the 'Install' window.

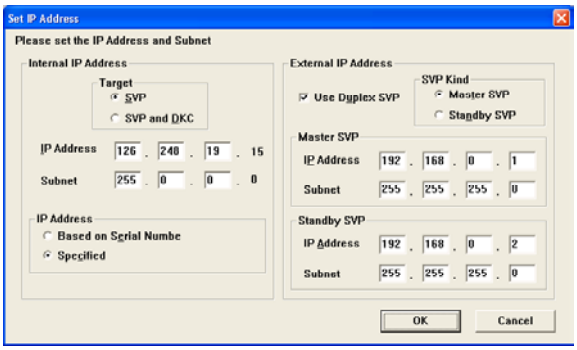


Note: Although it may be an error display if the Web Server Status window is displayed before the IP address setting work of SVP is completed, there is no problem because it is the one by the process of the SVP replacement.

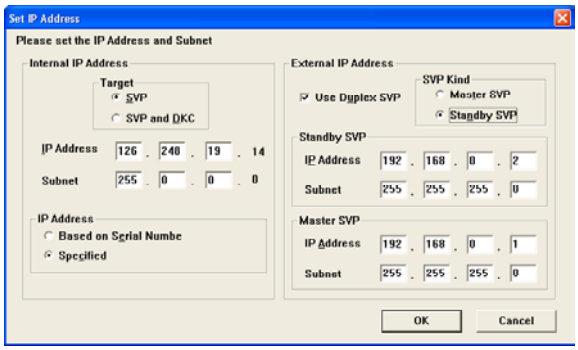
(4) <Setting the IP address>
Select (CL) [SVP], make sure of the IP Address and Subnet Mask of the Internal IP Address and the External IP Address, and select (CL) the [OK] button.
When the "IP Address" and/or "Subnet Mask" are/is wrong, enter the correct one(s).



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)

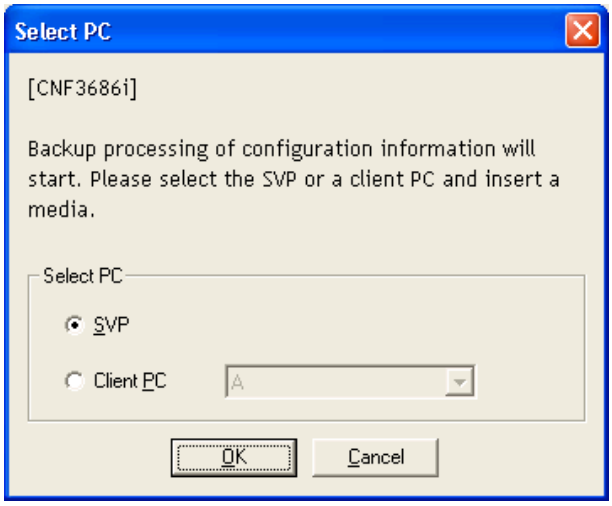
Note: When setting the High Reliability kit, select (CL) "Use Duplex SVP".
You can use the LED of SVP to verify the SVP, which is in operation and is not to be replaced, whether it is the master one or the standby one and whether it is in operation or not (for more information, see section SVP (SVP01-120)).
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.

(5) <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.

(6) <Inserting the medium containing the configuration information>

Insert the medium containing the configuration information in the specified location and select (CL) the [OK] button.

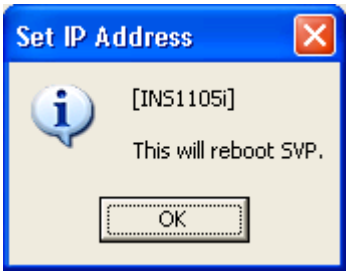


(7) <Taking out the medium containing the configuration information>

When the copying of the configuration information is completed, a message, “Please remove the configuration information media.” is displayed. Take out the medium containing the configuration information and select (CL) the [OK] button.

(8) <Making sure of the restart of the SVP>

Select (CL) the [OK] button.



The SVP is disconnected from the console PC.
After waiting for about two minutes, reconnect the SVP that has been replaced to the console PC.

[Connection destination]

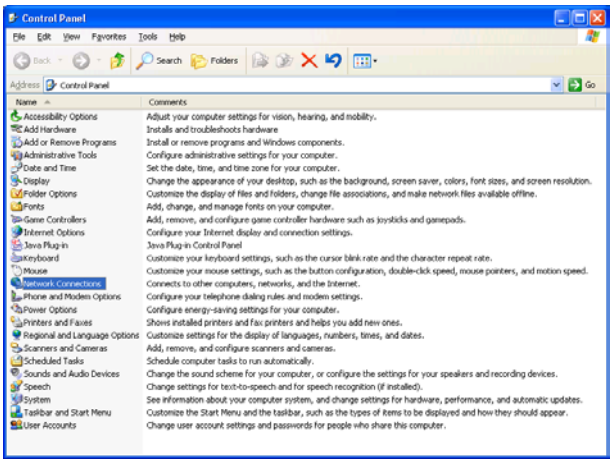
- When SVP High Reliability Support Kit is not set: xxx.xxx.xxx.15
- When SVP High Reliability Support Kit is set:
  When the Master SVP was replaced: xxx.xxx.xxx.15
  When the Standby SVP was replaced: xxx.xxx.xxx.14

Note: If the IP address of the Console PC has been changed to 126.255.255.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).

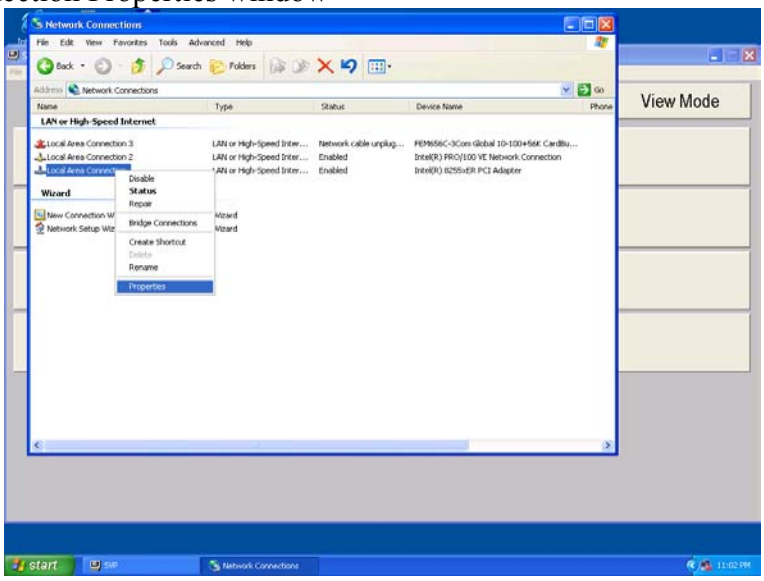
(9) <Opening the Control Panel window>
When the setting of the external IP address is not required, go to Step 9.
Select (DR) [Control Panel] from the [Start] menu.

(10) <Opening the Network Connections window>
Select (CL) [Network Connections] in the 'Control Panel' window.



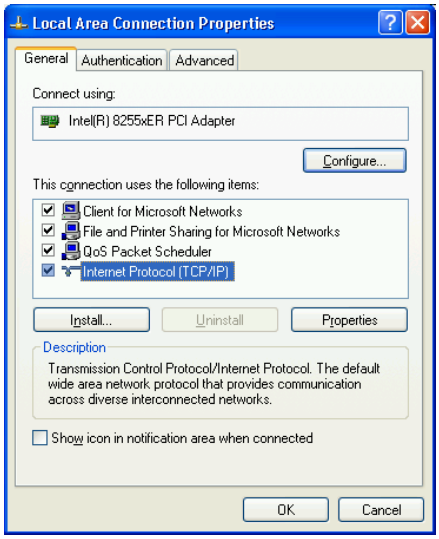
(11) <Opening the Local Area Connection Properties window>

Select (CL) [Local Area Connection Properties] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.



(12)

Select (CL) [Internet Protocol (TCP/IP)] in the 'Local Area Connection Properties' window and select (CL) the [Properties] button.

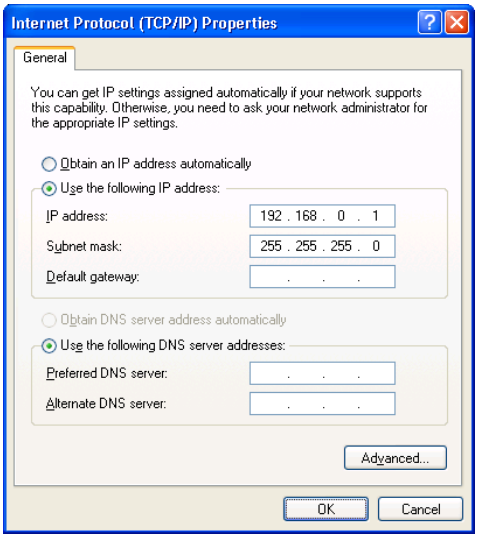


(13) <Setting the external IP address>

Set the “IP address” and “Subnet mask” and select (CL) the [OK] button.

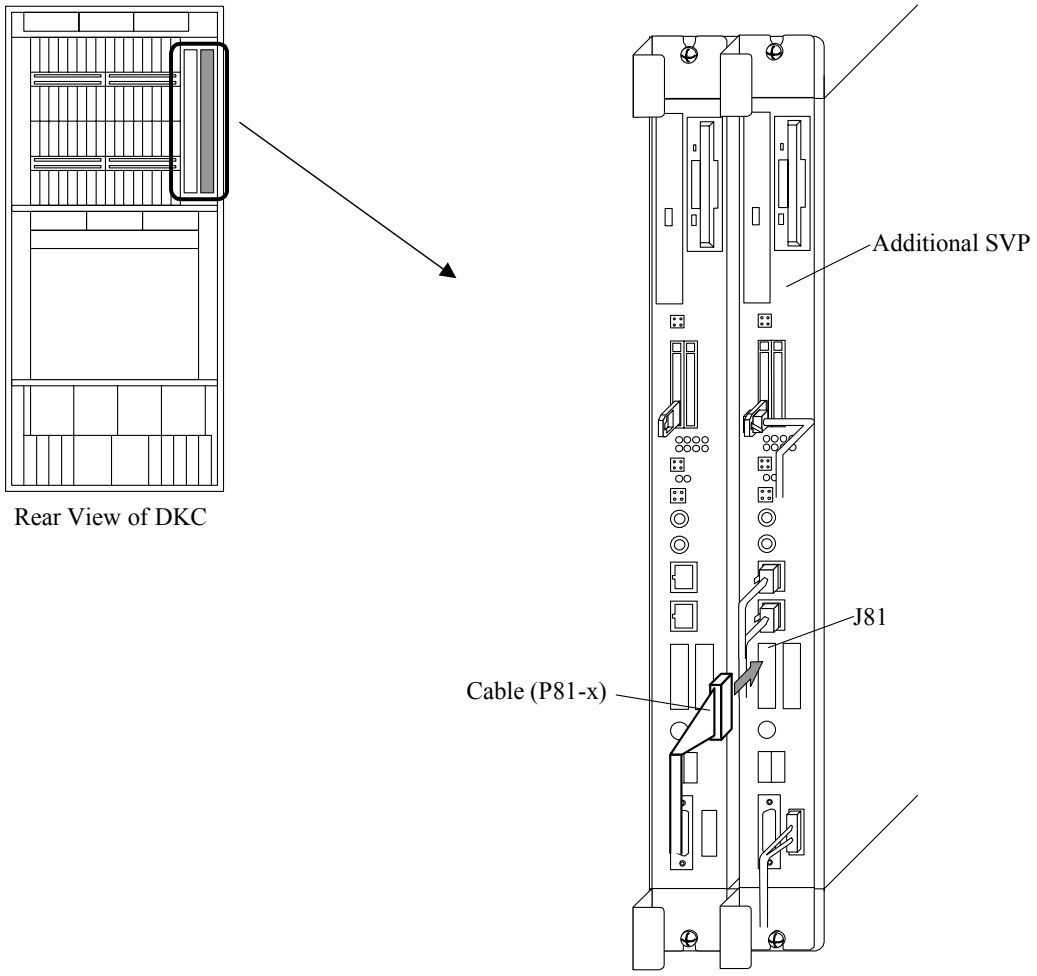
After the setting is completed, select (CL) the [OK] button in the “Local Area Connection Properties” window.

Close the ‘Network Connections’ window.



9. <Removing the JP1 Jumper and connection of cable (2)>
When SVP High Reliability Support Kit is set, remove the maintenance jumper that has been attached to the JP1 of the SVP.
When SVP High Reliability Support Kit is not set, go to the next step.

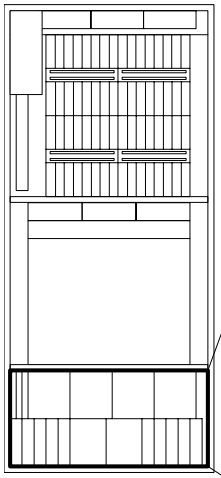
And connect a cable (P81-x) to replaced SVP.



10. <Resetting the SSVP>

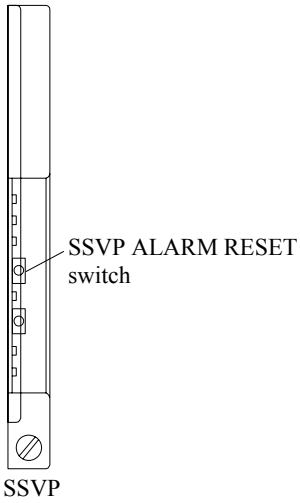
When SVP High Reliability Support Kit is set, press the SSVP ALARM RESET switch of the SSVP.

When SVP High Reliability Support Kit is not set, go to the next step.



Front View of DKC

CL1/CL2	CL1										
SSVP	DKCMN-1		PS11		PS12		PS13		PS14	
SH351-A	SH353-A		DKCPS		DKCPS		DKCPS		DKCPS	
BATTERY-11	BATTERY-12	BATTERY-13	BATTERY-14	BATTERY-15	AC BOX-1	AC BOX-2	BATTERY-21	BATTERY-22	BATTERY-23	BATTERY-24	BATTERY-25
LG	LG	LG	HDD	HDD			LG	LG	LG	HDD	HDD
CL1					CL1/CL2		CL2				



SSVP

11. <Transferring the Configuration Information>

When SVP High Reliability Support Kit is set, transfer the configuration information. (When the Master SVP has been replaced, do the same in order to make sure of the setting of the Master SVP.)
When SVP High Reliability Support Kit is not set, go to the next step.

Notice: This operation needs that Standby SVP is a View mode.

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).

---

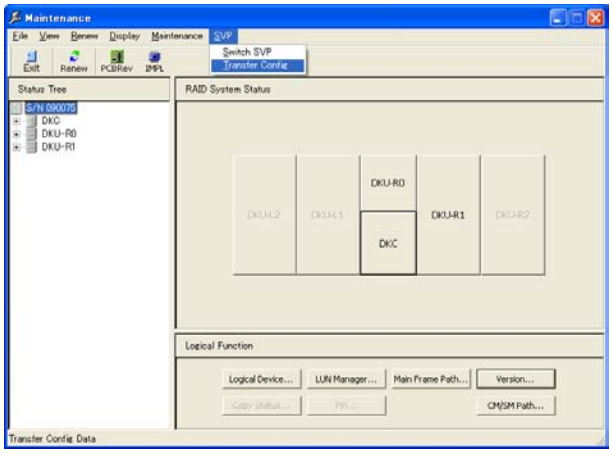
(1)

Change the mode to [Modify Mode] in the initial window. Select (CL) the [Maintenance] button.

---

(2)

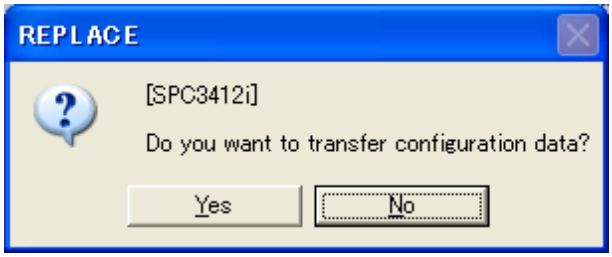
The 'Maintenance' window is displayed. Select (CL) [SVP] in the 'Maintenance' window and select (CL) [Transfer Config].



---

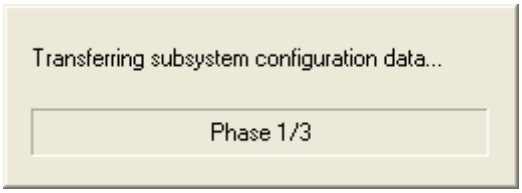
(3)

In response to the message, "Do you want to transfer configuration data?" select (CL) the [Yes] button.



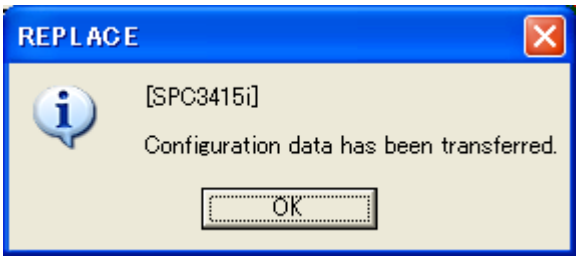
(4)

A message, “Transferring Subsystem Configuration data...” is displayed.



(5)

When the transfer of the configuration information is completed, a message, “Configuration data has been transferred.” is displayed.
Select (CL) the [OK] button.
When an error occurs during the transfer, check the connection/setting of the SVP (Standby SVP) that has been replaced because it may have caused the error.



(6)

Close the ‘Maintenance’ window.

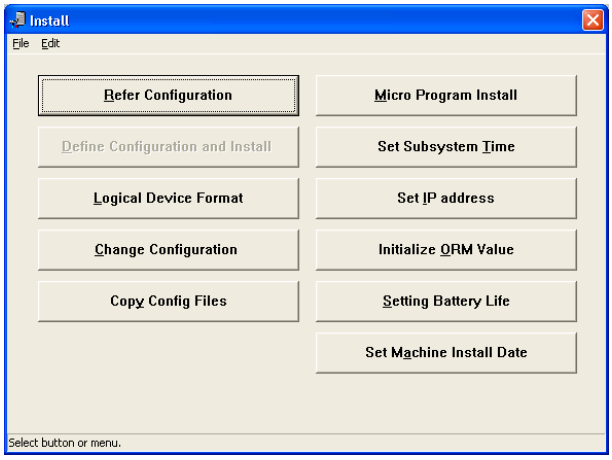
12. <Setting the TOD>

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 can not be performed presently. Please wait ...” disappears.
When SVP High Reliability Support Kit is set, go to the next step.

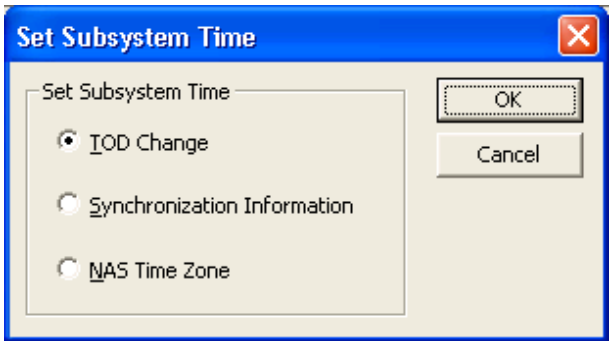
(1) <Changing the mode>
Change the mode to Modify Mode.

(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.

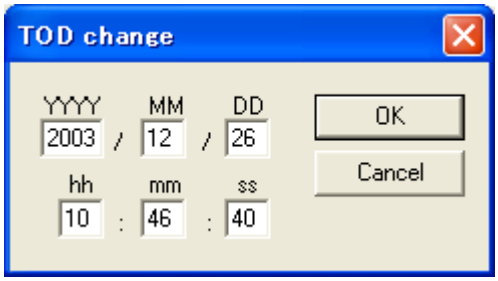


(4)
Select (CL) [TOD Change] in the ‘Set Subsystem Time’ window, and then select (CL) [OK].



(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.

13. <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 TRBL05-100.

---

(3) <Selecting [Exit]>
Select (CL) [File] from the 'Maintenance' window.
Select (CL) the [Exit] button.

---

14. <Setting the Web Console>

(1) Setting Web Console
Perform the setting of Web Console from the Web Console section.
Refer to WEB01-10 for the setting method.

---

(2) 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.
Refer to the RAID500 Web Console User's Guide (Base Volume) for the restoration method and the setting method.

---

(3) Setting AuditLog
When the customer is using the Syslog function of AuditLog, ask him/her to reset the Syslog server. Refer to WEB08-10 for the setting method.

15. <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.

In the case where SVP High Reliability Support Kit is set and the Standby SVP has been replaced, go to the next step.

---

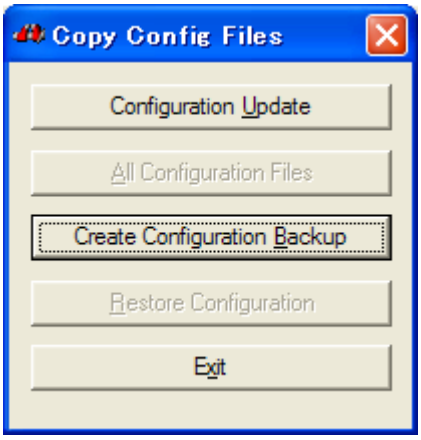
(1)

Select (CL) [Install] in the 'SVP' window. Select (CL) [Copy Config Files] in the 'Install' window.

---

(2)

Select (CL) [Create Configuration Backup] in the "Copy Config Files" window.

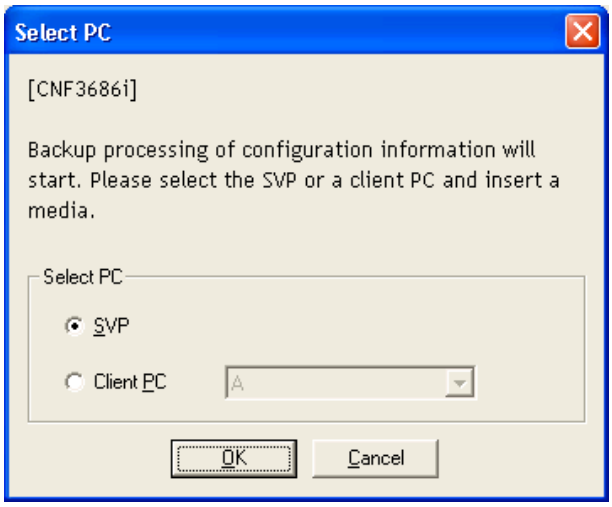


---

(3)

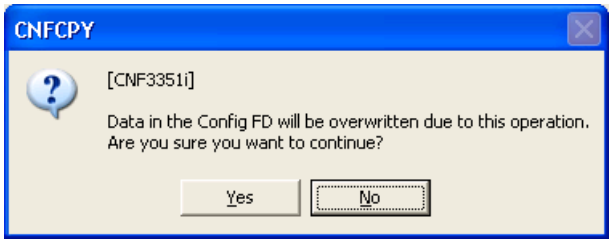
Perform the operation for backing up the configuration information. Prepare a floppy disk for backing up containing the configuration information or a formatted floppy disk and select (CL) the PC in which the medium is to be inserted. After inserting the medium, select (CL) the [OK] button. When the Client PC is selected, also select the drive in which the medium has been inserted.

(When a formatted floppy disk is used, go to Step (5).)



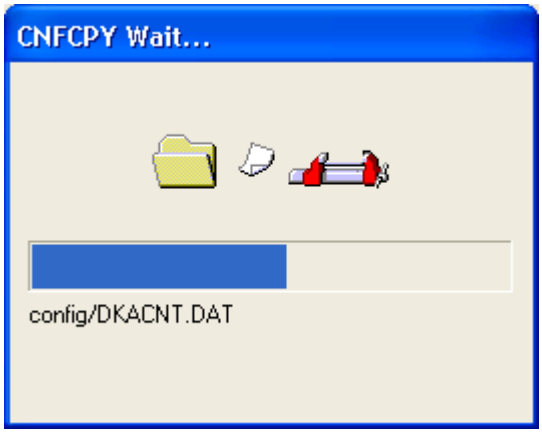
(4)

When you want to continue the operation, select (CL) the [Yes] button.
(When the backing up to the medium containing the configuration information is not necessary, select (CL) the [No] button.



(5)

Perform the operation for backing up the configuration information to the medium for backing up the configuration information.
During the operation, 'CNFCPY Wait...' window is displayed.



(6)

After pulling out the medium containing the configuration information, select (CL) the [OK] button.

(7)

Exit the 'Copy Config Files' window by selecting [Exit] in the 'Copy Config Files' window.

16. <Installing Setup on SVP>
When the E-NAS is introduced, install Setup on SVP from the NAS selection in only the SVP that has been replaced (NAS03-110).
When the E-NAS is not introduced, go to the next step.

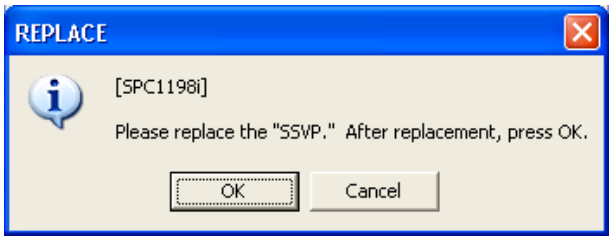
---

17. <Completing the SIM Log>
Refer to page SVP02-520.

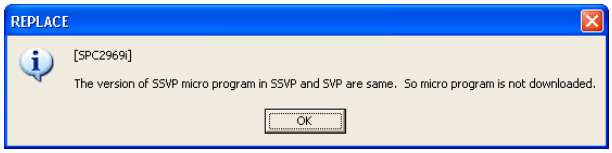
Go to POST-PROCEDURE z (REP04-1020).

[7] SSVP

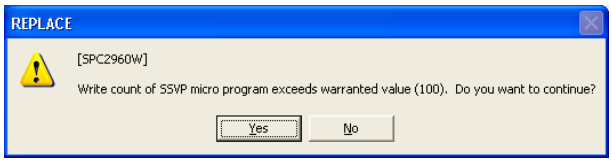
1. <Check replacement of special part>
   Select (CL) [OK] in response to “Please replace the “SSVP.” After replacement, press OK.”.



2. <Warning message>
   When the versions of two microprograms, one is to be downloaded to the SSVP and the other is stored in an ROM of the SSVP, are the same, a message, “The version of SSVP micro program in SSVP and SVP are same. So micro program is not downloaded,” is displayed.
   Select (CL) [OK] and go to Step 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 proceed to the following steps.
   When you do not download the microprogram, select (CL) [No] and go to Step 4.

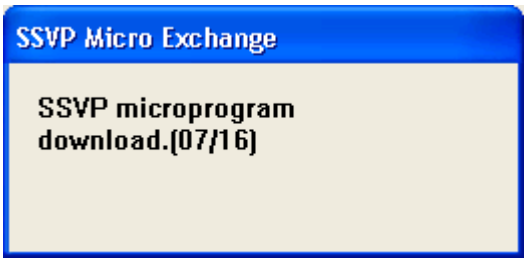


CAUTION

When you download the microprogram, an entry of a password is requested. Contact the Technical Support Division to ask for an instruction.

3.

The message “SSVP microprogram download. (n/16)” is displayed.



4. <Check end of replacement>

Select (CL) [OK] in response to “Replacement of the “SSVP” is done.”.

5. <SIM Complete>

See SVP02-520.

Close ‘Maintenance’ window.

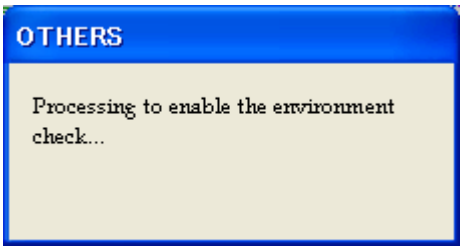
Go to POST-PROCEDURE z (REP04-1020).

[8] DKCFAN

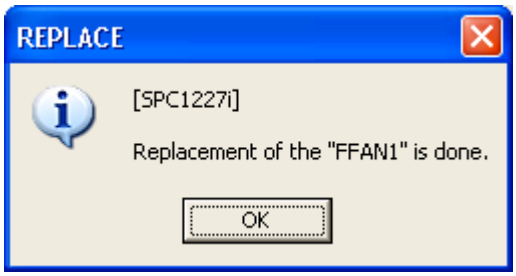
1. <Check replacement of special part>
   Select (CL) [OK] in response to “Please replace the “nFANn.” After replacement, press OK.”.

(Eg. FFAN1)

2. <Check environment monitor start processing>
   The message “Processing to enable the environment check...” is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “nFANn” is done.”.



(Eg. FFAN1)

4. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 5.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

5. <Confirm Cluster>
   If Cluster is blocked, recover it.
   See SVP02-1040.

---

6. <SIM Complete>

   See SVP02-520.

   Close ‘Maintenance’ window.

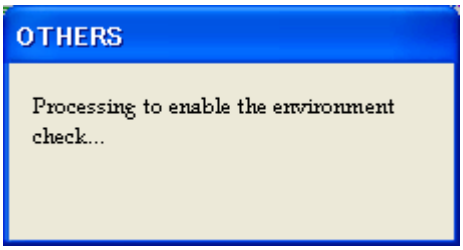
   Go to POST-PROCEDURE z (REP04-1020).

[9] Thermostat

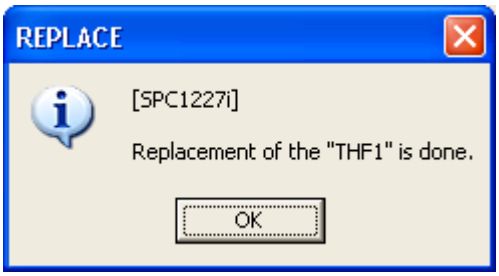
1. <Check replacement of special part>
   Select (CL) [OK] in response to “Please replace the “THnn.” After replacement, press OK.”.

(Eg. THF1)

2. <Check environment monitor start processing>
   The message “Processing to enable the environment check...” is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “THnn” is done.”.



(Eg. THF1)

4. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 5.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

5. <SIM Complete>

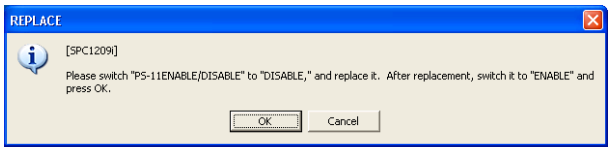
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

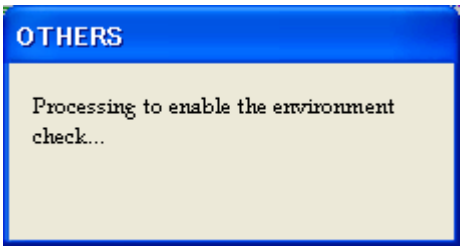
[10] DKCPS

1. <Check replacement of special part>
   Select (CL) [OK] in response to “Please switch “PS-nnENABLE/DISABLE” to “DISABLE”, and replace it. After replacement, switch it to “ENABLE” and press OK.”.

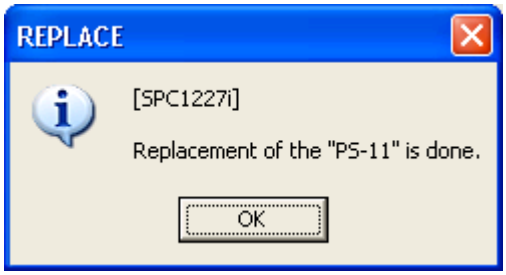


(Eg. PS-11)

2. <Check environment monitor start processing>
   The message “Processing to enable the environment check...” is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “PS-nn” is done.”.



(Eg. PS-11)

4. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 5.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

5. <Confirm Cluster>
   If Cluster is blocked, recover it.
   See SVP section “2.15 Recovering of Cluster” (SVP02-1040).

---

6. <SIM Complete>

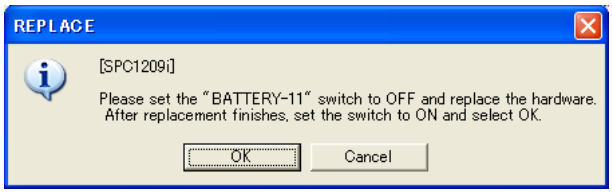
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

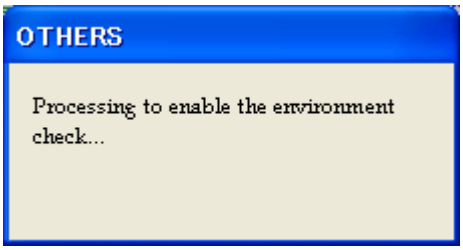
[11] DKC Battery Box

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Please set the "BATTERY-nn" switch to OFF and replace the hardware. After replacement finishes, set the switch to ON and select OK.".



(Eg. BATTERY-11)

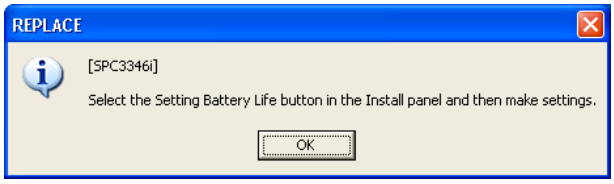
2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "BATTERY-nn" is done.".

(Eg. BATTERY-11)

4. <Setting the battery alarm SIM>
   The message, "Select the Setting Battery Life button in the Install panel and then make settings." is displayed. After the post-procedure of the part replacement is completed, specify a number of remaining days until the battery alarm SIM is issued for the "Setting Battery Life." (See page SVP02-1100.)



5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

6. <SIM Complete>

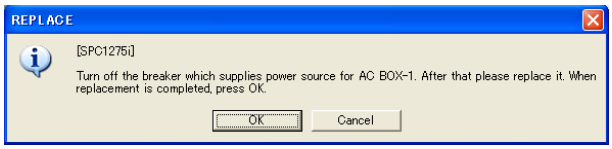
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

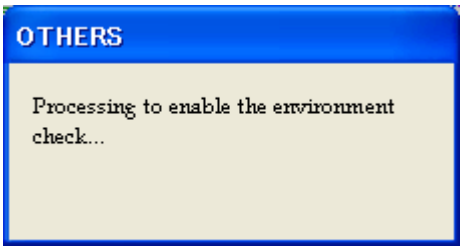
[12] DKC AC BOX

1. <Check replacement of special part>
   Select (CL) [OK] in response to "Turn off the breaker which supplies power source for AC BOX-n. After that please replace it. When replacement is completed, press OK.".

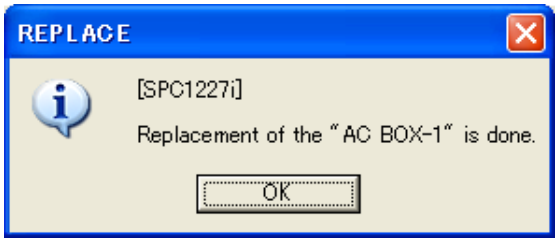


(Eg. AC BOX-1)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "AC BOX-n" is done.".



(Eg. AC BOX-1)

4. <Confirm Cluster>
   If Cluster is blocked, recover it.
   See SVP section "2.15 Recovering of Cluster" (SVP02-1040).

5. <SIM Complete>

   See SVP02-520.

   Close 'Maintenance' window.

   Go to POST-PROCEDURE z (REP04-1020).

[POST-PROCEDURE t4]

— OUTLINE —

① Specify end of special part replacement
② Reinstall related parts
③ DKU Path Inline Test
④ Start environment monitor
⑤ SIM Complete

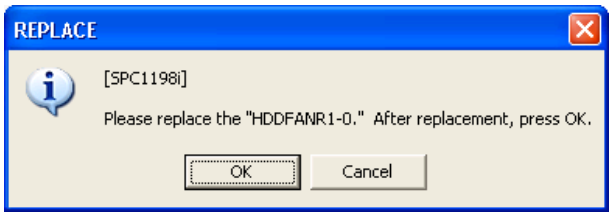
[1] Start of POST-PROCEDURE

Valid “XXXXX” values are listed below.

- HDDFAN ---------- [2] (REP04-910)
- ALPA ---------- [3] (REP04-920)
- DKUPS ---------- [4] (REP04-930)
- DKU Battery Box ---------- [5] (REP04-940)
- DKU AC BOX ---------- [6] (REP04-960)

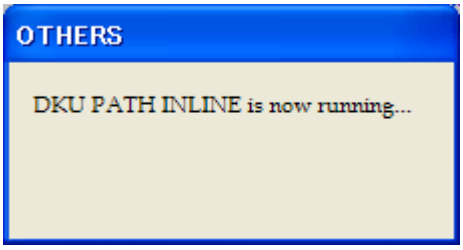
[2] HDDFAN

1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to "Please replace the "HDDFANnn-n." After replacement, press OK.".

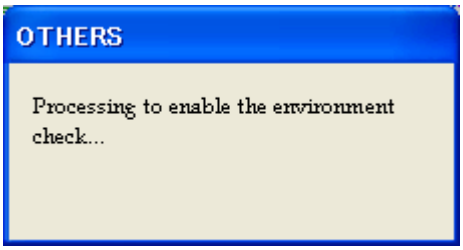


(Eg. HDDFANR1-0)

2. <DKU Path Inline Test>
   When the replaced part was a HDDFANnn-0 or HDDFANnn-1, the message "DKU PATH INLINE is now running..." is displayed.



3. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.



4. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "HDDFANnn-n" is done.".

(Eg. HDDFANR1-0)

5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

---

6. <SIM Complete>

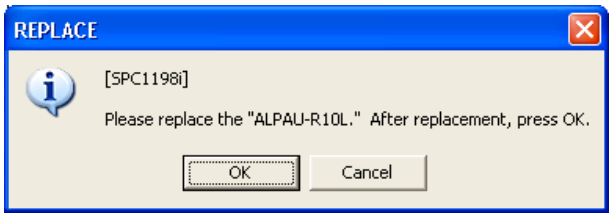
   See SVP02-520.

   Close 'Maintenance' window.

   Go to POST-PROCEDURE z (REP04-1020).

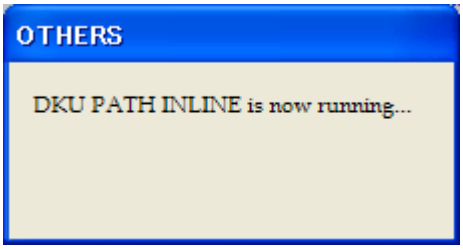
[3] ALPA

1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to “Please replace the “ALPAU-nnnn.” After replacement, press OK.”.

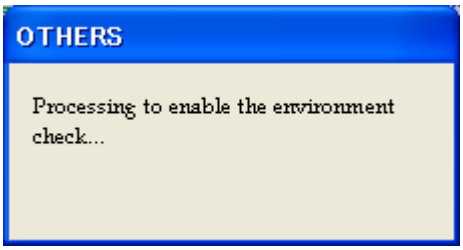


(Eg. ALPAU-R10L)

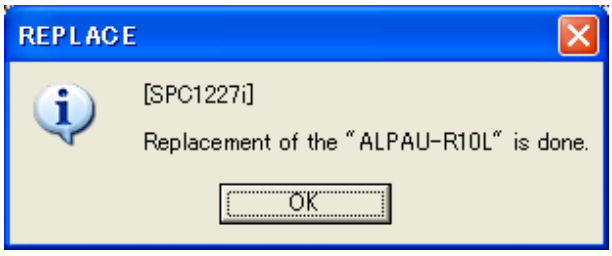
2. <DKU Path Inline Test>
   The message “DKU PATH INLINE is now running...” is displayed.



3. <Check environment monitor start processing>
   The message “Processing to enable the environment check...” is displayed.



4. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “ALPAU-nnnn” is done.”.



(Eg. ALPAU-R10L)

5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

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6. <SIM Complete>

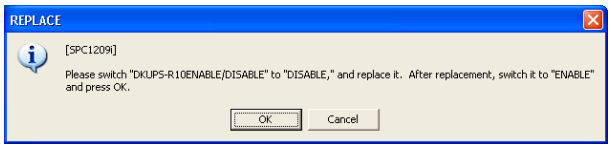
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

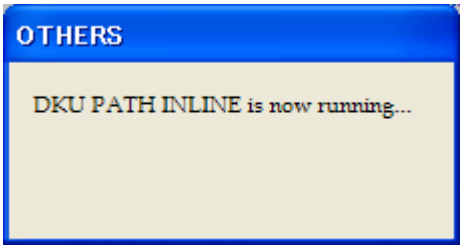
[4] DKUPS

1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to “Please switch “DKUPS-nnnENABLE/DISABLE” to “DISABLE,” and replace it. After replacement, switch it to “ENABLE” and press OK.”.

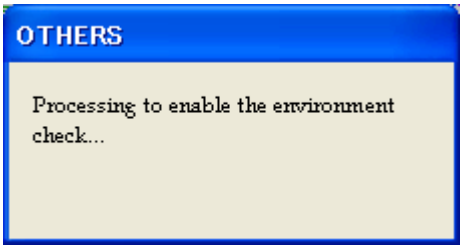


(Eg. DKUPS-R10)

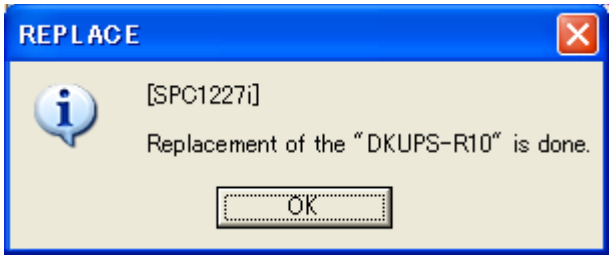
2. <DKU Path Inline Test>
   The message “DKU PATH INLINE is now running...” is displayed.



3. <Check environment monitor start processing>
   The message “Processing to enable the environment check...” is displayed.



4. <Check end of replacement>
   Select (CL) [OK] in response to “Replacement of the “DKUPS-nnn” is done.”.



(Eg. DKUPS-R10)

5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

---

6. <SIM Complete>

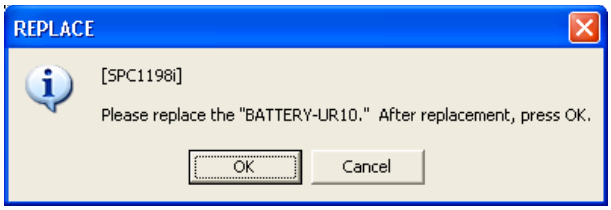
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

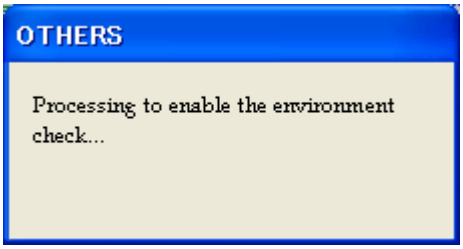
[5] DKU Battery Box

1. <Check beginning of special part Replacement>
Select (CL) [Yes] in response to “Please replace the “BATTERY-Unnn.” After replacement, press OK.”.

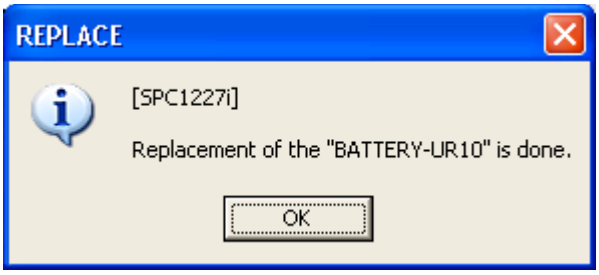


(Eg. BATTERY-UR10)

2. <Check environment monitor start processing>
The message “Processing to enable the environment check...” is displayed.

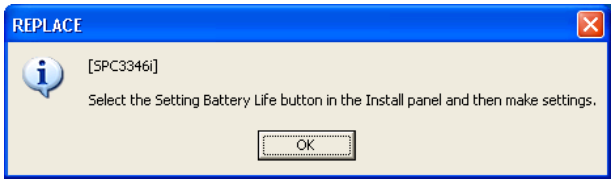


3. <Check end of replacement>
Select (CL) [OK] in response to “Replacement of the “BATTERY-Unnn” is done.”.



(Eg. BATTERY-UR10)

4. <Setting the battery alarm SIM>
The message, “Select the Setting Battery Life button in the Install panel and then make settings.” is displayed. After the post-procedure of the part replacement is completed, specify a number of remaining days until the battery alarm SIM is issued for the “Setting Battery Life.” (See page SVP02-1100.)



5. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 6.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

---

6. <SIM Complete>

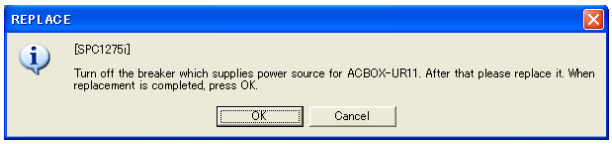
   See SVP02-520.

   Close ‘Maintenance’ window.

   Go to POST-PROCEDURE z (REP04-1020).

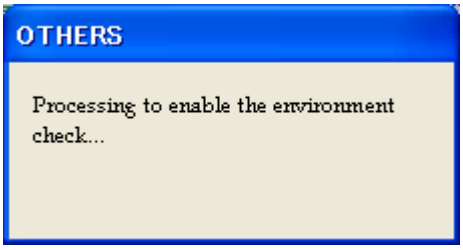
[6] DKU AC BOX

1. <Check beginning of special part Replacement>
   Select (CL) [Yes] in response to "Turn off the breaker which supplies power source for ACBOX-Unnn. After that please replace it. When replacement is completed, press OK.".

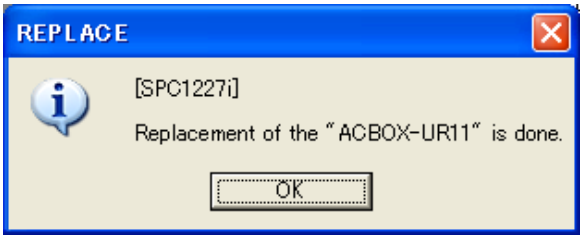


(Eg. ACBOX-UR11)

2. <Check environment monitor start processing>
   The message "Processing to enable the environment check..." is displayed.



3. <Check end of replacement>
   Select (CL) [OK] in response to "Replacement of the "ACBOX-Unnn" is done.".



(Eg. ACBOX-UR11)

4. <Confirm status>
   Confirm the status display.
   If button is normal (The string is normally display), go to step 5.
   If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

5. <Confirm Cluster>
   If Cluster is blocked, recover it.
   See SVP02-1040.

---

6. <SIM Complete>

   See SVP02-520.

   Close ‘Maintenance’ window.

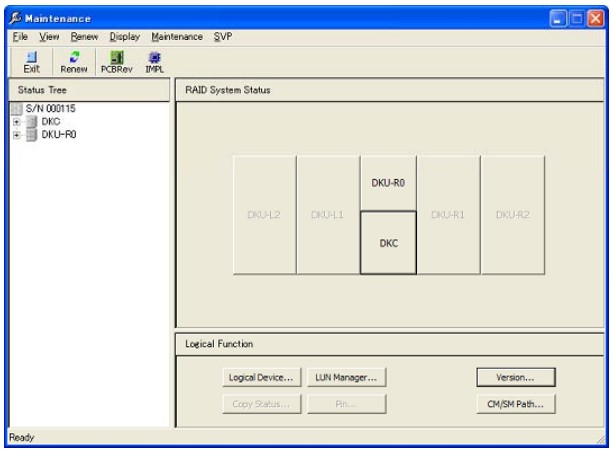
   Go to POST-PROCEDURE z (REP04-1020).

[POST-PROCEDURE t5]

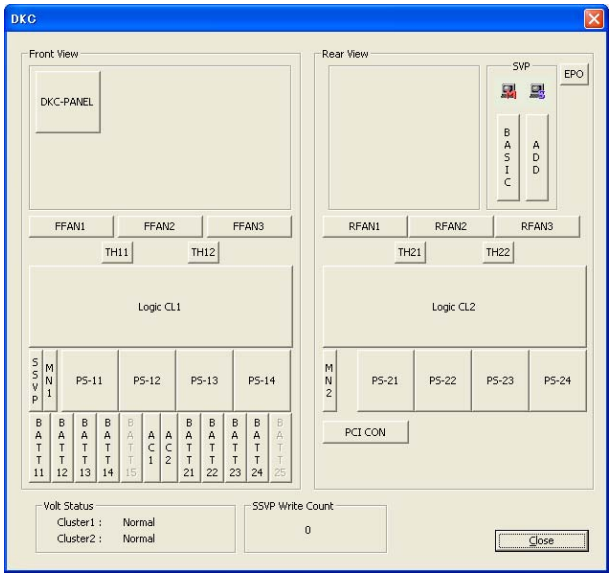
— OUTLINE —

① Check the port Wave information.

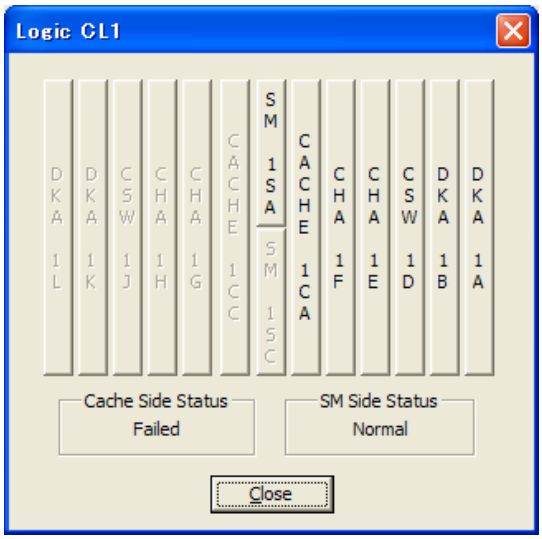
1. <Maintenance window>
   Select (CL) [DKC] in the 'Maintenance' window.



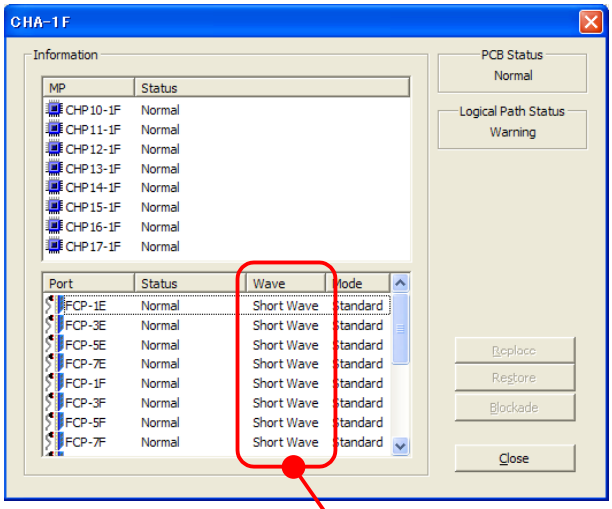
2. <DKC window>
   Select (CL) [Logic CLn] in the 'DKC' window.



3. <Select CHA>
   Select (CL) CHA.



4. <Check port Wave information>
   Check that the port Wave information on the port information list in the 'CHA' window is displayed.



5. <Set path online>

⚠ CAUTION

The path to be placed online is that connected with the SFP concerned.

[Notes for the case where DKN-200-NGW1 (NAS Unit) has been connected to this device]

If the NAS Unit is connected to this device, ask the NAS Unit administrator to confirm the following points.

[Points to be checked after completing this operation]

1. If the NAS service is terminated:
   After completing this operation, ask the NAS Unit administrator to reboot the NAS Unit.
2. If the NAS service is not terminated:
   When the replacement operation of SFP used by the NAS Unit is completed, the Fibre Channel path (FC path) of the NAS Unit might go into the Failure status. Before starting the operation of the next SFP replacement, contact the NAS Unit administrator, refer to “Recovering from FC path errors” of “Hitachi NAS Manager User’s Guide”, confirm the FC path status and, if the status is Failure, ask for the recovery of the FC path.

In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to “NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)” in “DKN-200-NGW1 NAS Unit Maintenance Manual”, and ask to check the status of the FC path and to recover the FC path if it is in a failure status after completing the replacement operation of SFP used by the NAS Unit.

[POST-PROCEDURE u]

— OUTLINE —

① Execute CUDG on P-DEV.
② Specify recovery.
③ Correction copy
④ Reset ORM Error Count on the P-DEV.
⑤ Reset Threshold Counter
⑥ SIM Complete

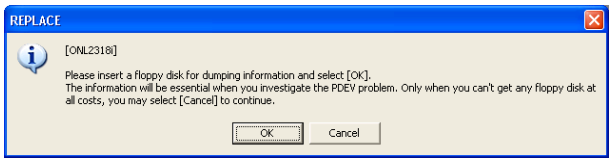
⚠ CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

⚠ CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

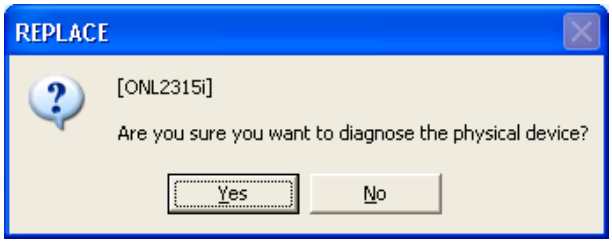
1. <Check the beginning of recovery>
   Please insert the floppy disk and select (CL) [OK].
   Failure information of the physical device is written to the floppy disk.



   [After the completion of writing failure information:]
   "Please remove the FD." is displayed.
   Please remove the floppy disk and select (CL) [OK].

2. <Spin up the Physical Drive>
   "Spinning up..." is displayed.

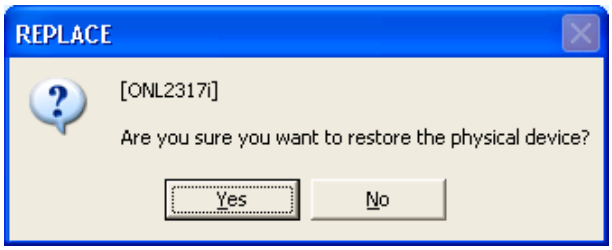
3. <DKU INLINE>
   Select (CL) [No] in response to "Are you sure you want to diagnose the physical device?".



CAUTION

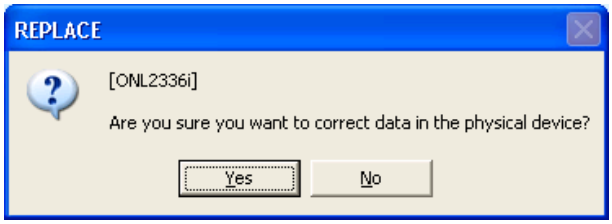
This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

4. <Restore Physical Drive>
   Select (CL) [Yes] in response to "Are you sure you want to restore the physical device?".



5. <Check the Drive Status>
   "Checking..." is displayed.
   Device is still blocked.

6. <Check the beginning of correction copy>
   Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".



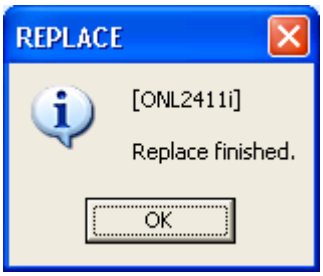
7. <Correct data>
   "Correcting..." is displayed.

CAUTION

This processing is a special operation for detecting a cause of a Fibre loop error.
Ask the technical support division about the appropriateness of the operation.

8. <Check the starting of Correction copy>
Select (CL) [OK] in response to "Correcting data in the physical device has been started.".

9. <Check the end of P-DEV recovery>
Select (CL) [OK] in response to "Replace finished.".



10. <SIM Log Complete>
Refer to SVP02-520.

[POST-PROCEDURE z]

— OUTLINE —

① SVP Window
② Change the SVP operation mode

1. <SVP window>

2. <Changing the SVP operation mode>
   Change the mode to [View Mode].