**REP00-00** Rev.0 / May.2007

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DKC615I

# REPLACE SECTION

## A 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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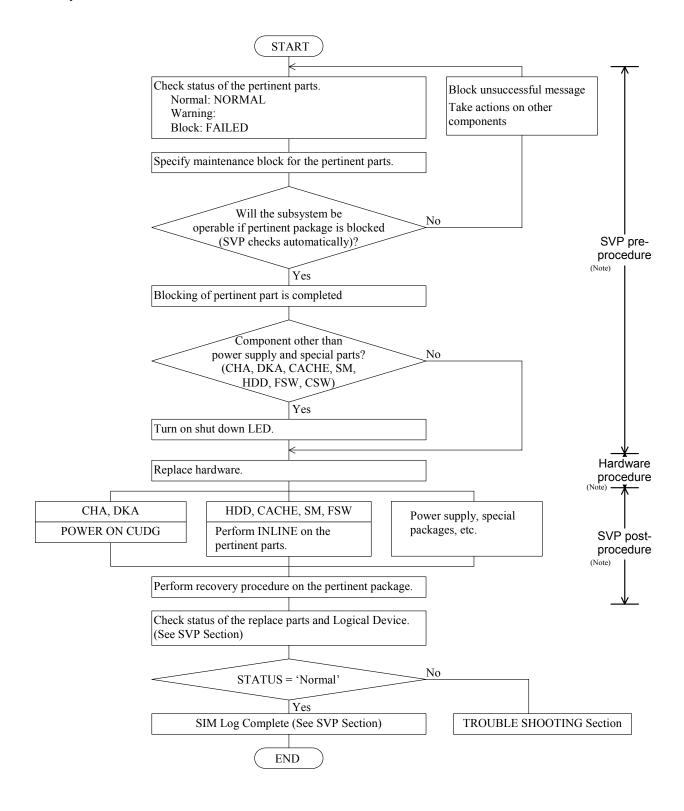
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### 1. Hot Replace

### 1.1 Hot Replace Flowchart



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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.

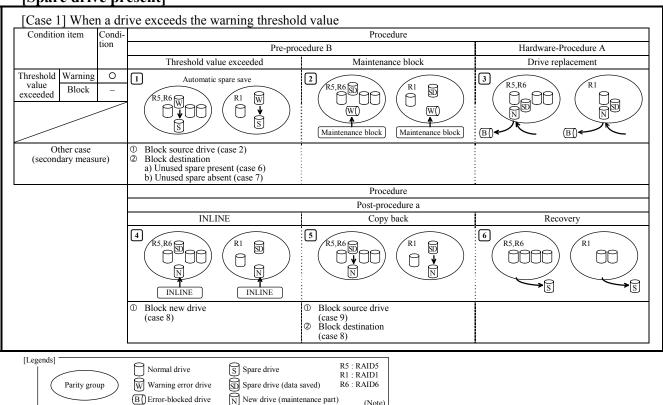
SVP post-procedure: An SVP (PC) process of making functional checks (CUDG and

INLINE) on the replacement package and building it into the

subsystem.

### 1.2 Concept of Drive Maintenance

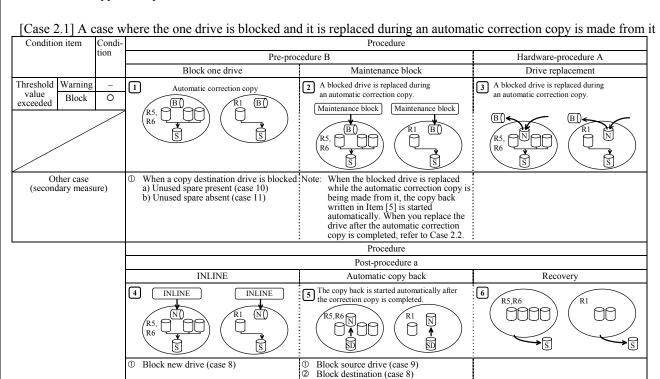
[Spare drive present]



#### [Spare drive present]

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

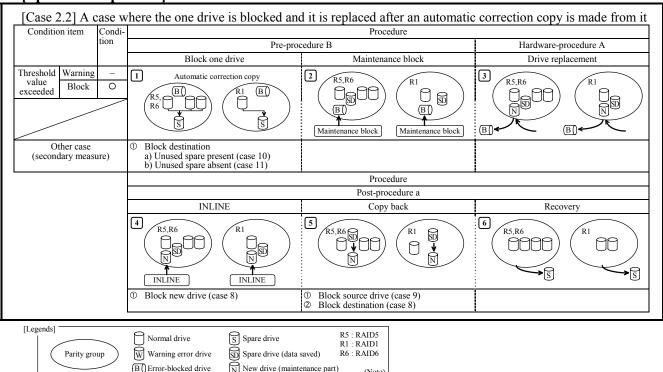
When a spare drive exists, a correction copy from the blocked drive is started automatically. In this case, go to Case 2.1 when the blocked drive is to be replaced during the correction copy from it and a copy back that follows is to be made automatically, or go to Case 2.2 when the blocked drive is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



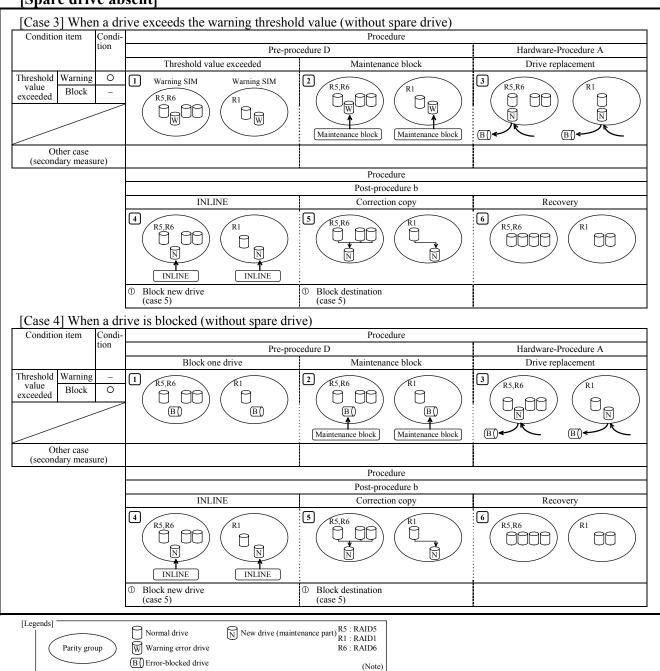
[Legends]

Normal drive	S	Spare drive	R5 : RAID5	R1 : RAID1	
Parity group	W	Warning error drive	S	Spare drive (data saved)	R6 : RAID6
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
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R6 : RAID6	R6 : RAID6				
R6 : RAID6	R6 : RAID6				
R6 : RAID					

[Spare drive present]



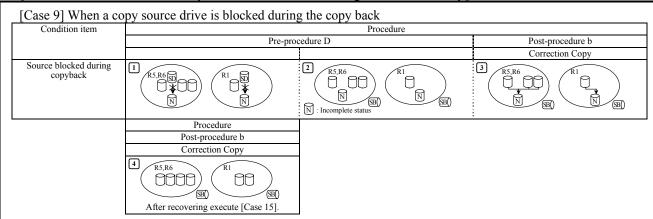
[Spare drive absent]



[Case in which a secondary error occurred during error] [Case 5] When a copy destination is blocked during the correction copy Condition item Procedure Pre-procedure D Hardware-Procedure A Maintenance block Drive replacement Blocked during INLINE 1 2 [3] R5,R6 R5,R6 R5,R6 Destination blocked during (B() (B() correction copy (B() Maintenance block Maintenance block (B() Procedure Post-procedure b INLINE Correction copy Recovery 4 [5] **6** 00  $\widetilde{N}$ INLINE INLINE [Case 6] When a copy destination is blocked during the automatic saving to the spare drive Condition item Procedure Pre-procedure B Re-automatic spare save Maintenance block Destination blocked during 2 [3] 1 R5 R6 automatic spare save (unused spare present) (SB() Maintenance block Procedure Hardware-Procedure A Post-procedure a INLINE Drive replacement Copy back [5] 4  $\overline{SD}$ (SB() (SB() INLINE Procedure Post-procedure a Recovery 7 Perform [case15] after recovery R5 R6 (SB() S • [Legends] R5: RAID5 Normal drive Spare drive R1: RAID1 Parity group W Warning error drive SD Spare drive (data saved) R6: RAID6 (B) Error-blocked drive New drive (maintenance part) (SB() Error-block drive (spare drive)

[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) Condition item Procedure Pre-procedure D Hardware-Procedure A Maintenance block on spare Spare drive replacement Destination blocked during 1 2 3 automatic spare save (unused spare absent) **→**(SB() Maintenance block Procedure Post-procedure d Pre-procedure C INLINE Maintenance block Spare save 4 5 **6** R5,R6 W INLINE INLINE Maintenance block Procedure Hardware-Procedure A Drive replacement Copy back Recovery 7 8 9 **→**S **>**S [Case 8] When the new drive is blocked during the copy back Condition item Procedure Pre-procedure D Hardware-Procedure A New drive block Maintenance block Drive replacement New drive blocked 1 2 [3] (spare saved) New drive blocked (correction copy performed) Destination blocked during copy back (B) (B() Maintenance block Maintenance block Procedure Post-procedure a INLINE Copy back Recovery 4 [5] 6 R5 R6 SD • (SB() [Legends] R5: RAID5 Normal drive R1: RAID1 W Warning error drive  $\overline{\text{SD}}$ Parity group Spare drive (data saved) R6: RAID6 New drive (maintenance part) B Error-blocked drive (SB) Error-block drive (spare drive)

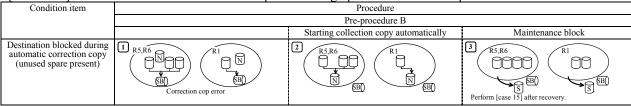
[Case in which a secondary error occurred during error recovery]



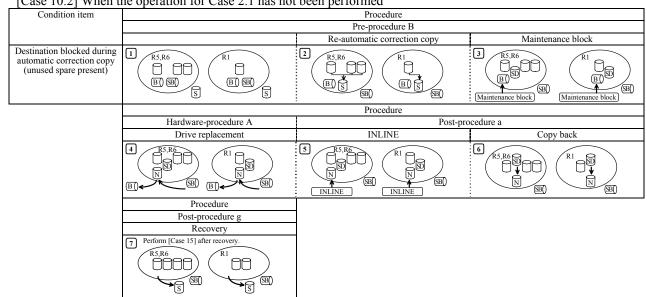
[Case 10] A case where the copy destination drive is blocked during the automatic correction copy (and a unused spare drive exists)

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

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



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



Legends]			1
Legendsj	Α.,	Θ.,	R5 : RAID5
	Normal drive	S Spare drive	R1 · RAID1
( Parity group )	B Error-blocked drive	New drive (maintenance part)	R6: RAID6
	SB Error-block drive (spare	drive)	(Note)
	SD Spare drive (data saved)		, í

Parity group

B Error-blocked drive

SB() Error-block drive (spare drive)

SD Spare drive (data saved)

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#### [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 Hardware-procedure A Maintenance block Drive replacement Destination blocked during 1 2 3 R5.R6 automatic correction copy 0 00 0 (unused spare absent) (B() B () (SB() (B() (SB() (SB() Maintenance block When the blocked drive is replaced in the case 2, same as a case 10.1, collection copy starting automatically Procedure Post-procedure b INLINE Correction copy Recovery 4 5 Perform [Case15] after recovery 6 R5,R6 R5 R6 99 (SB() (SB() [Legends] R5: RAID5 Normal drive S 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.

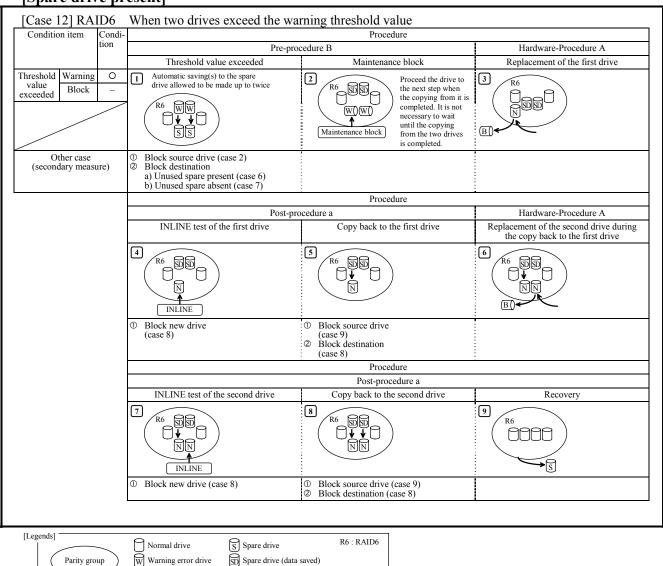
New drive (maintenance part)

R1: RAID1

R6: RAID6

(Note)

[Spare drive present]



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

New drive (maintenance part)

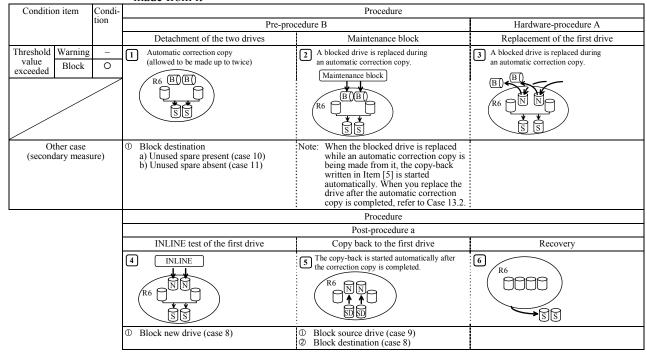
(B) Error-blocked drive

[Spare drive present]

[Case 13] RAID6 When two drives are blocked

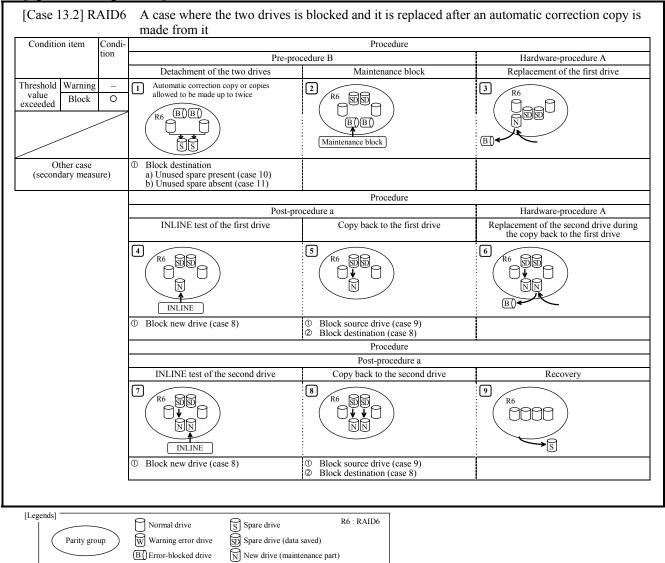
- When you replace the two blocked drives while making an automatic correction copy from them, go to Case 13.1.
- When you replace the two blocked drives after making an automatic correction copy from them, go to Case 13.2.
- When you replace one of the two blocked drives from each of which an automatic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

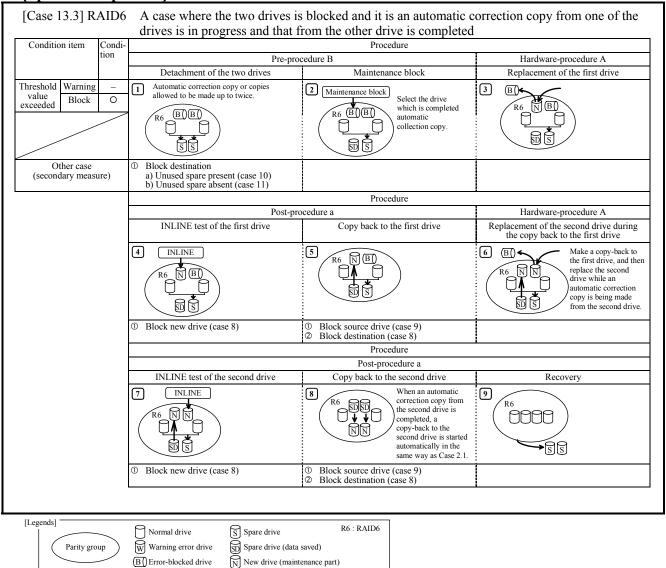


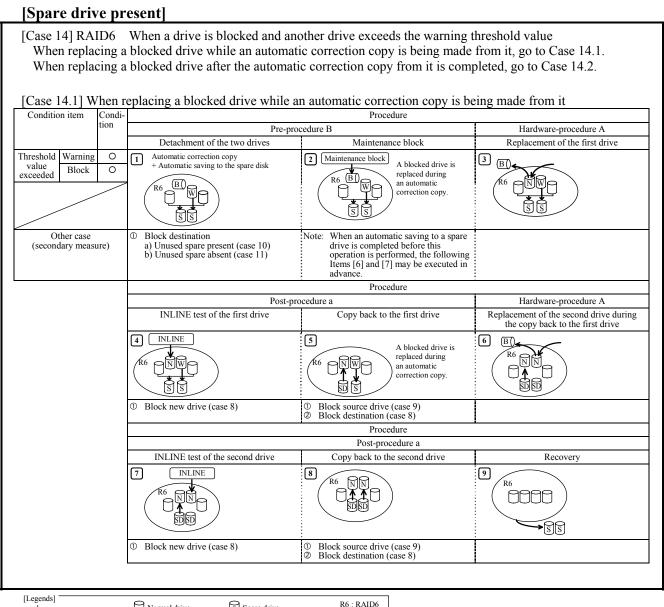
[Leg	ends]	Normal drive	S Spare drive	R6: RAID6
	Parity group	W Warning error drive	SD Spare drive (data saved)	
		B Error-blocked drive	New drive (maintenance	e part)

[Spare drive present]



#### [Spare drive present]

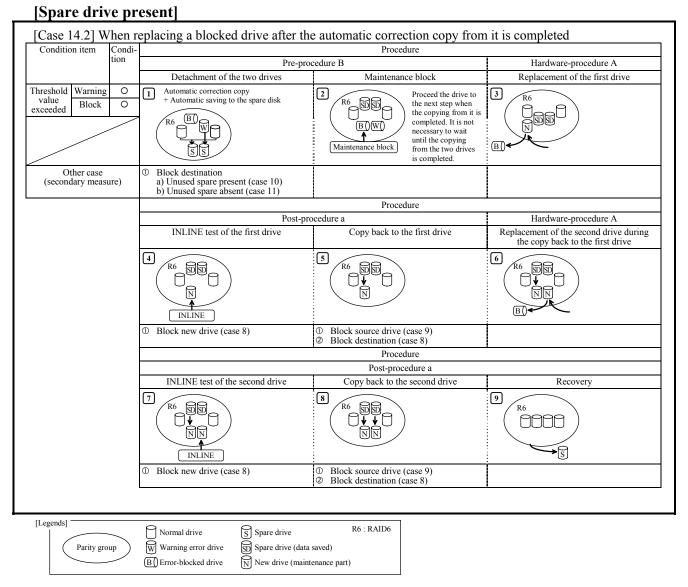




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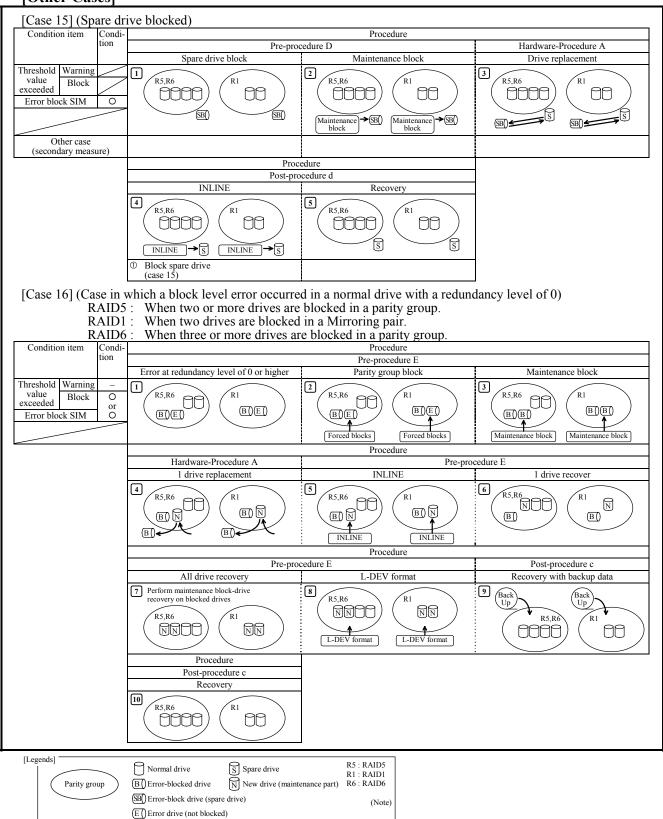
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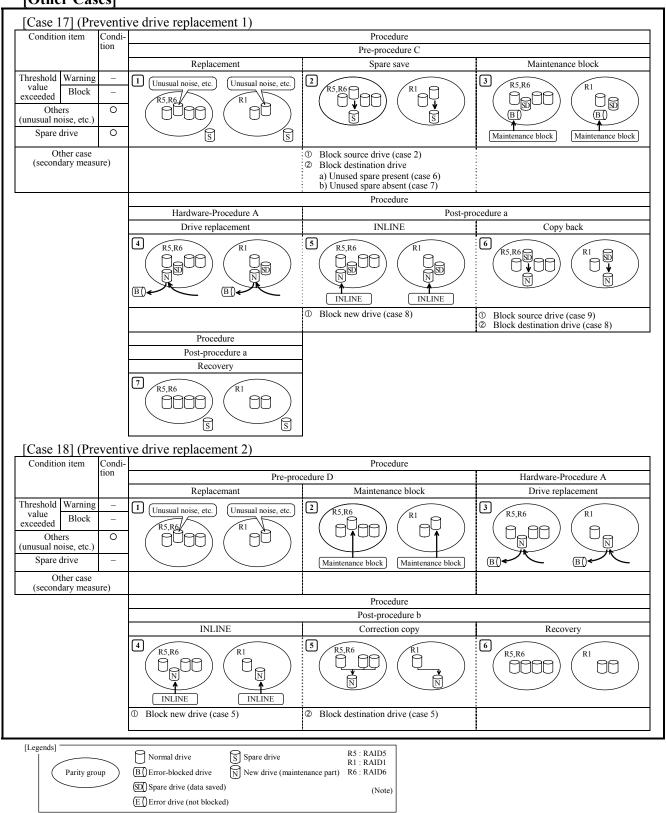


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#### [Other Cases]

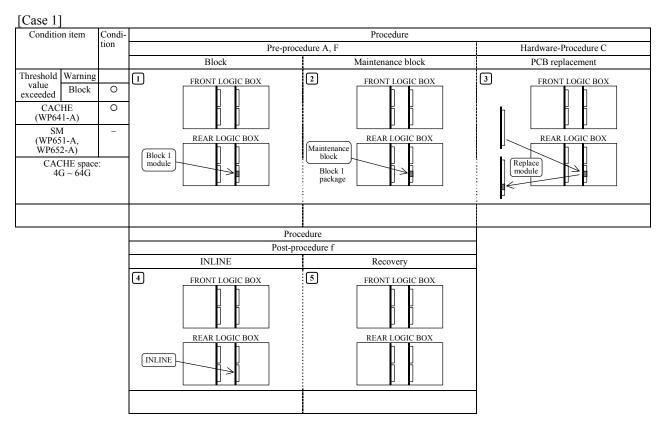


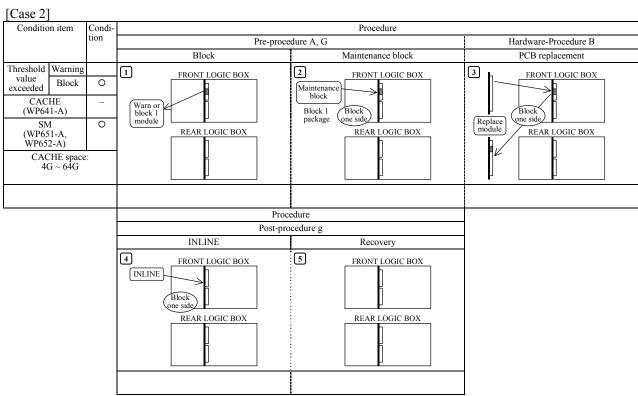
#### [Other Cases]



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### 1.3 Concept of Cache Maintenance





#### 1.4 How to Interpret the Hot Replace Procedure

[In case of replacement when SIM was reported]

- ① Search a work ID which coincides with the work ID corresponding to SIM ACC (FPC) (refer to FPC list on page ACC04-10) from Parts Replacement Process Table on page REP01-250. Search a work ID corresponding to the pertinent condition if "Condition Item" is described in Parts Replacement Process Table.
- ② If the work ID is found,
  - Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

If no work ID is found,

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

Note: See page REP01-230 for the procedure for searching a work ID to replace a drive. When replacing a drive, be sure to see page REP01-210 and REP01-220.

[In case of replacement when SIM was not reported]

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

Note: See page REP01-230 for the procedure for searching the work ID to replace a drive. When replacing a drive, be sure to see page REP01-210 and REP01-220.

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

### Condition to replace

SIM was reported

Work ID corresponding to SIM ACC 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	Part Name		Replacing		
ID		SVP	Hardware	SVP	Time
		Pre-procedure	procedure	post-procedure	
RCA1	Shared Memory	Pre Z (REP02-920),	Hardware B	Post g (REP04-240),	50 min
	(Shared Memory Module)	Pre A (REP02-10),	(REP03-70)	Post z (REP04-980)	
		Pre G (REP02-260)			
RCA2					

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#### PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY

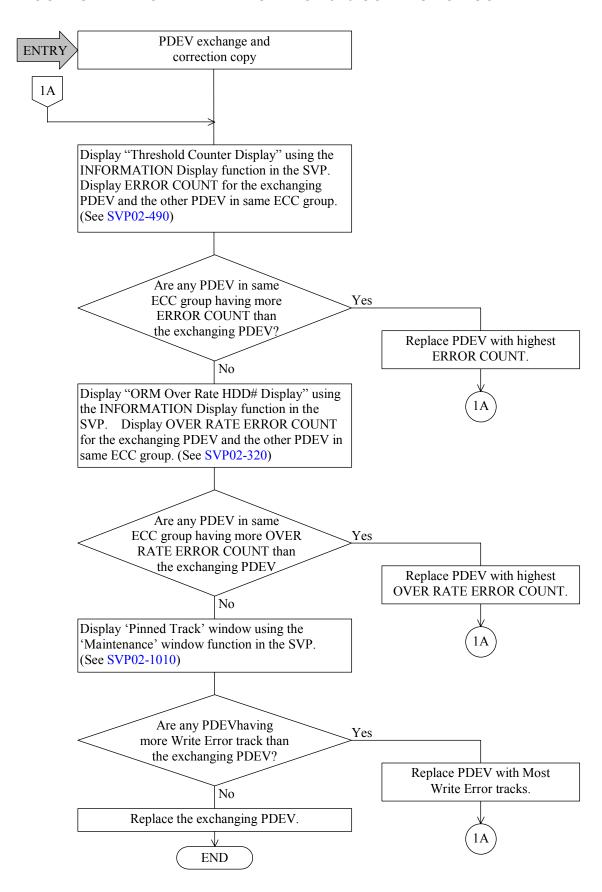
Instructions before blocking and exchanging PDEV with a drive failure error is listed below: When exchanging unblocked PDEV, redundancy in the ECC group is lost. Therefore, during PDEV exchange, the other PDEV in the same ECC group is fenced by a drive failure error, all the LDEV in the ECC group is 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.

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

#	Items checked	Procedure
1	Error Count	"Threshold Counter Display" (See SVP02-490)
2	ORM Over Rate	"ORM Over Rate HDD# Display" (See SVP02-320)
3	Write Error	"Pinned Track Display" (See SVP02-1010)

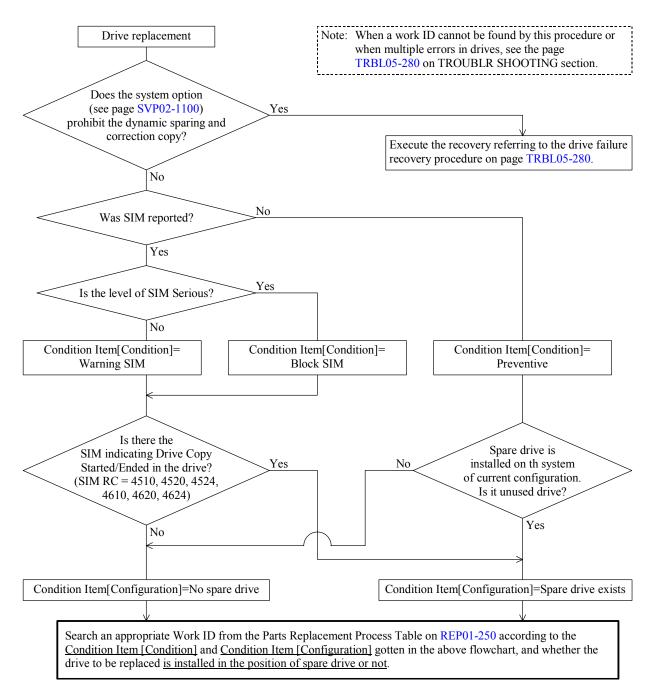
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#### PROCEDURE BEFORE PDEV EXCHANGE and CORRECTION COPY



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#### How to search a work ID to replace a drive



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#### -----<<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	Parts	(	Condition Condition		Item	em Procedure				R	eference informatio	n
ID	Name	Co			Config- uration	SVP pre- procedure	Hardware procedure	SVP post- procedure	R	Replacing time	Outline	Case
		Fai Warning SIM	Block SIM	Preventive	Unused Spare drive							
RDK1	Data Drive	×			Yes	Pre A (REP02-10), Pre B (REP02-40)		Post a (REP04-10), Post z (REP04-980)	2	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				Item	Procedure			R	Reference information		
ID	ID Name Conditi		Condition Configuration		uration	SVP pre- procedure	Hardware procedure	SVP post- procedure	Replacing time	Outline	Case *1
		Fai Warning SIM	Block SIM	Preventive	Unused Spare drive				*2 *8 *9		
RDK1	Data Drive *3	×			Yes	Pre A (REP02-10), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-980)	20 min	Drive replace ~ Copy back	Case1
RDK2	Data Drive *3	_	×		Yes	Pre A (REP02-10), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-980)	20 min	Drive replace ~ Copy back	Case 2
RDK3	Data Drive *3	_	_	×	Yes	Pre A (REP02-10), Pre C (REP02-80), Pre B (REP02-40)	Hardware A (REP03-10)	Post a (REP04-10), Post z (REP04-980)	_	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 (REP04-60), Post z (REP04-980)	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 (REP04-60), Post z (REP04-980)	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 (REP04-60), Post z (REP04-980)	20 min	Drive replace ~ Correction copy	Case 18
RDK7 *4, *5	Data Drive *3	*4				Pre A (REP02-10), Pre E (REP02-160)	Hardware A (REP03-10)	Post c (REP04-110), Post z (REP04-980)	_	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 (REP04-180), Post z (REP04-980)	20 min	Spare drive replace	Case 15

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- \*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 TRBL05-470.
- \*5: Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See page SVP03-190 for the procedure for referring to SVP STATUS
- \*6: See "PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY" (REP01-210).
- \*7: In case of RAID6, when two HDDs were blocked in the parity group, you can start the replacement from either of two HDDs.

Note: If a Work ID cannot be found or if multiple drive error is occurring, see page TRBL05-280 on TROUBLE SHOOTING section.

\*8: HDD copy time

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

`		LETT V COPY IV			
HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)
K600	Drive copy	2h30m	←	←	←
(15Krpm)	Correction copy	<b>↑</b>	10h55m	16h00m	16h00m
K450	Drive copy	2h15m	←	←	←
(15Krpm)	Correction copy	<b>↑</b>	9h40m	14h10m	14h10m
J400	Drive copy	2h45m	←	←	<b>←</b>
(10Krpm)	Correction copy	<b>↑</b>	7h00m	9h10m	9h10m
J300	Drive copy	2h30m	←	←	←
(10Krpm)	Correction copy	<b>↑</b>	6h00m	8h40m	8h40m
K300	Drive copy	2h00m	←	←	←
(15Krpm)	Correction copy	1	5h00m	7h00m	7h00m
K146	Drive copy	1h05m	←	←	←
(15Krpm)	Correction copy	<b>↑</b>	2h50m	4h20m	4h20m
K072	Drive copy	35m	←	←	←
(15Krpm)	Correction copy	<b>↑</b>	1h15m	2h05m	2h05m
H0R7AT	Drive copy	9h20m	←	←	←
(SATA)	Correction copy	<b>↑</b>	13h50m	16h30m	16h30m
H1R0AT	Drive copy	12h30m	←	←	←
(SATA)	Correction copy	<b>↑</b>	18h30m	22h00m	22h00m
H2R0AT	Drive copy	25h00m	←	←	←
(SATA)	Correction copy	1	37h00m	44h00m	44h00m
S072	Drive copy	25m	<b>←</b>	<b>←</b>	<b>←</b>
(SSD)	Correction copy	1	25m	40m	40m
S146	Drive copy	50m	<b>←</b>	<b>←</b>	←
(SSD)	Correction copy	1	50m	1h20m	1h20m
S200	Drive copy	1h15m	<b>←</b>	<b>←</b>	←
(SSD)	Correction copy	<b>↑</b>	1h15m	2h00m	2h00m
S400	Drive copy	2h30m	<b>←</b>	<b>←</b>	←
(SSD)	Correction copy	1	2h30m	4h00m	4h00m

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

(2) No 10, Of EN-V Copy Wode – Interfeave Wedfulli							
HDD type	Copy type	RAID1 (2D+2D)	RAID5 (3D+1P)	RAID5 (7D+1P)	RAID6 (6D+2P)		
K600	Drive copy	2h10m	←	←	<b>←</b>		
(15Krpm)	Correction copy	<b>↑</b>	5h00m	7h00m	7h00m		
K450	Drive copy	1h40m	←	←	←		
(15Krpm)	Correction copy	1	4h00m	5h50m	5h50m		
J400	Drive copy	2h30m	←	←	←		
(10Krpm)	Correction copy	1	3h45m	5h00m	5h00m		
J300	Drive copy	2h10m	←	←	←		
(10Krpm)	Correction copy	<b>↑</b>	3h05m	4h20m	4h20m		
K300	Drive copy	1h45m	←	←	←		
(15Krpm)	Correction copy	1	2h30m	3h30m	3h30m		
K146	Drive copy	55m	←	←	←		
(15Krpm)	Correction copy	1	1h35m	2h20m	2h20m		
K072	Drive copy	30m	<b>←</b>	<b>←</b>	←		
(15Krpm)	Correction copy	<b>↑</b>	45m	1h15m	1h15m		
H0R7AT	Drive copy	8h55m	←	←	←		
(SATA)	Correction copy	<b>↑</b>	8h40m	11h10m	11h10m		
H1R0AT	Drive copy	12h00m	←	←	←		
(SATA)	Correction copy	<b>↑</b>	11h40m	14h50m	14h50m		
H2R0AT	Drive copy	24h15m	←	←	←		
(SATA)	Correction copy	1	24h30m	31h10m	31h10m		
S072	Drive copy	20m	←	←	←		
(SSD)	Correction copy	<b>↑</b>	15m	25m	25m		
S146	Drive copy	40m	<b>←</b>	←	<b>←</b>		
(SSD)	Correction copy	<u></u>	30m	50m	50m		
S200	Drive copy	1h00m	<b>←</b>	←	←		
(SSD)	Correction copy	<u></u>	45m	1h15m	1h15m		
S400	Drive copy	2h00m	<b>←</b>	<b>←</b>	<b>←</b>		
(SSD)	Correction copy	1	1h30m	2h30m	2h30m		

- 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.
  - (Eg: If the amount of LDEV assigned is 50%, the copy time is half the above-mentioned values.)

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\*9: 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.
- \*10: When SATA-Enhance method (Refer to THEORY03-3480) is applied, the correction copy time takes 1.3 times more than that shown in the above table, except for RAID1 (2D+2D).
- Time changes by the Device constitution (the HDD number of DKA subordinates, etc), and the Internal re-try processing (Head positioning, Handling of re-covered process). Please make a range to 1.5 times of above time an aim.

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### <Shared Memory, Cache Memory>

Work	Part Name	Procedure			Replacing
ID		SVP	Hardware	SVP	Time
		Pre-procedure	procedure	post-procedure	(*1)(*2)
RCA1	Shared Memory	Pre Z (REP02-920) (*3),	Hardware B	Post g (REP04-240),	50 min
	Shared Memory Module (*3)		(REP03-70)	Post z (REP04-980)	
		Pre G (REP02-260)			
RCA2	Cache Memory	Pre Z (REP02-920) (*3),	Hardware C	Post f (REP04-220),	20 min
	Cache Memory Module (*3)	Pre A (REP02-10),	(REP03-120)	Post z (REP04-980)	
		Pre F (REP02-210)			

- \*1: The destaging operation takes 30 minutes to 2 hours (SVP time out).
- \*2: The time for the dump is not included.
- \*3: In the case of Memory Module, the dump to removable media is unnecessary. Thus you can skip the SVP pre-procedure Z, so start from SVP 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	Part Name	Procedure			Replacing
ID		SVP Pre-procedure	Hardware procedure	SVP post-procedure	Time (*2)
RCH1	Serial CHA	Pre Z (REP02-920), Pre A (REP02-10), Pre H (REP02-310)	Hardware D (REP03-170)	Post h (REP04-260), Post z (REP04-980)	20 min
RCH2	Fibre-T CHA	Pre Z (REP02-920), Pre A (REP02-10), Pre H (REP02-310)	Hardware E (REP03-210)	Post h (REP04-260), Post z (REP04-980)	20 min
RCH3	Mainframe Fibre CHA	Pre Z (REP02-920), Pre A (REP02-10), Pre H (REP02-310)	Hardware F (REP03-250)	Post h (REP04-260), Post z (REP04-980)	20 min
RDA1	DKA (DKF, EDKF)	Pre Z (REP02-920), Pre A (REP02-10), Pre H (REP02-310)	Hardware J (REP03-330)	Post h (REP04-260), Post z (REP04-980)	20 min
RFS1	FSW	Pre Z (REP02-920), Pre A (REP02-10), Pre L (REP02-430)	Hardware T16 (REP03-1040)	3 \ //	10 min
RCS1	CSW	Pre Z (REP02-920), Pre A (REP02-10), Pre M (REP02-480)	Hardware K (REP03-370)	Post k (REP04-320), Post z (REP04-980)	13 min

<sup>\*2:</sup> 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" (TRBL05-130).

If a failure occurs in replacing a CSW PCB, see "Recovery procedure for failed CSW PCB replacement" (TRBL05-620).

### <Other Parts of DKCBOX and SBBOX>

Work	Part Name	Procedure			Replacing
ID		SVP Pre-procedure	Hardware procedure	SVP post-procedure	Time
RTC1	DKCPANEL	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T1 (REP03-410)	Post t1 (REP04-340), Post z (REP04-980)	16 min
RTC2	EPOSW	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T2 (REP03-440)	Post t1 (REP04-340), Post z (REP04-980)	12 min
RTC3	SSVP/MN	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T3 (REP03-470)	Post t1 (REP04-340), Post z (REP04-980)	22 min
RTC5	FAN Assembly (LG)	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T5 (REP03-550)	Post t1 (REP04-340), Post z (REP04-980)	8 min
RTC7	SVP	Pre A (REP02-10), Pre T1 (REP02-530) *1	Hardware T6 (REP03-570)	Post t1 (REP04-340), Post z (REP04-980)	40 min
RTC9	Battery Box (12V)	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T7 (REP03-710)	Post t1 (REP04-340), Post z (REP04-980)	11 min
RTCB	DKCPS	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T8 (REP03-770)	Post t1 (REP04-340), Post z (REP04-980)	11 min
RTCC	EXTADP	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T9 (REP03-790)	Post t1 (REP04-340), Post z (REP04-980)	28 min
RTCD	SBADP	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T10 (REP03-810)	Post t1 (REP04-340), Post z (REP04-980)	28 min
RTCF	Fibre SFP Transceiver	Pre A (REP02-10), Pre T5 (REP02-830)	Hardware T14 (REP03-970)	Post t5 (REP04-900), Post z (REP04-980)	5 min
RTCG	SBFAN	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T11 (REP03-840)	Post t1 (REP04-340), Post z (REP04-980)	8 min
RTCH	SB Battery	Pre A (REP02-10), Pre T1 (REP02-530)	Hardware T7 (REP03-710)	Post t1 (REP04-340), Post z (REP04-980)	11 min
_	FDD	_	Hardware T12 (REP03-870)	_	10 min

<sup>\*1:</sup> When SVP is not able to operate, start from Hardware procedure. (When SVP High Reliability Kit is not installed.)

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### <Other Parts of DKUBOX>

Work	Part Name	Procedure				
ID		SVP	Hardware	SVP	Time	
		Pre-procedure	procedure	post-procedure		
RTU1	LEDPNL	Pre A (REP02-10), Pre T4 (REP02-750)		Post t4 (REP04-850), Post z (REP04-980)	10 min	
RTU2	DKUPS	Pre A (REP02-10), Pre T4 (REP02-750) *1		Post t4 (REP04-850), Post z (REP04-980)	10 min	

<sup>\*1:</sup> When SVP is not able to operate, start from Hardware procedure.

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

Component	Maintenance Type	Condition	HRC establ		During in	itial copy		mpleting copy	Susj	pend
			MCU	RCU	MCU	RCU	MCU	RCU	MCU	RCU
Logical	Blockade	_	×	×	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
Device	Recovery	_	×	×	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	Format	_	×	×	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)	SVP2031W (*3)	SVP2034W (*3)
	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	Condition	Suspe	ending	Dele	eting
	Type		MCU	RCU	MCU	RCU
Logical	Blockade	_	SVP2031W	SVP2034W	SVP2031W	SVP2034W
			(*3)	(*3)	(*3)	(*3)
Device	Recovery	_	SVP2031W	SVP2034W	SVP2031W	SVP2034W
			(*3)	(*3)	(*3)	(*3)
	Format	_	SVP2031W	SVP2034W	SVP2031W	SVP2034W
			(*3)	(*3)	(*3)	(*3)
	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.

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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" (MICRO11-10).

- \*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.

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

\*3: If you need to delete a pair used by TrueCopy for Mainframe when performing a maintenance operation, delete the TrueCopy for Mainframe pair by using Web Console.

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

# 1.7 Availability of the online maintenance when 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	
Logical	Blockade	_	SVP2484W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	>	<
Device	Restore	_	×	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	>	<
	Format	_	×	SVP2483W	SVP2485W	SVP2483W	SVP2485W	SVP2483W	SVP2485W	>	<
	Verify	_	×	;	×	>	<	>	×	>	<
HDD	Replace	_	×	)	×	>	<	>	×	>	<
canister	Dynamic Sparing	_	×	;	×	×		×		>	<
	Correction Copy	_	×	;	×	>	<	>	×	>	<
Cache PCB	Replace	_	×	)	×	>	<	>	×	>	<
СНА	Replace	_	×	;	×	>	<	>	×	>	<
DKA	Replace	_	×	;	×	>	<	>	×	>	<

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#### 1.8 Availability of the online maintenance when HXRC is used

Component	Maintenance	During in	itial copy	Estab	lished	Sus	pend
	Type	Primary	Secondary	Primary	Secondary	Primary	Secondary
Logical	Blockade	**	**	**	**	**	**
Device	Recovery	**	**	**	**	**	**
	Format	**	**	**	**	**	**
	Verify	×	×	×	×	×	×
HDD canister	Replace	×	×	×	×	×	×
Cache PCB	Replace	*	×	*	×	*	×
СНА	Replace	×	×	×	×	×	×
		×	×	×	×	×	×
DKA	Replace	×	×	×	×	×	×
CSW PCB	Replace	×	×	×	×	×	×

<sup>×:</sup> 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.

# 1.9 Availability of the online maintenance when UR is used

#### JNL-GROUP

Component	Maintenance	Condition	HRC path	established	Ini	tial	Ac	tive
	Type		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	Condition	H	alt	Hal	ting
	Type		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	Condition	St	op	Stop	ping
	Type		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	×	×	×	×

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#### DATA-VOL

Component	Maintenance Type	Condition	HRC path established		During in	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	×	SVP3848W	×	
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W	
DKA	Replace	_	×	×	×	×	×	×	
CSW	Replace	_	×	×	×	×	×	×	
DKC	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×	
		Without Alternate path	×	×	SVP3848W	SVP2073W	SVP3848W	SVP2074W	

Component	Maintenance	Condition	Susp	pend	Suspe	ending	Deleting	
	Type		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	×
		Without Alternate path	×	×	SVP3848W	SVP2075W	SVP3848W	SVP2075W
DKA	Replace	_	×	×	×	×	×	×
CSW	Replace	_	×	×	×	×	×	×
DKC	Replace	With Alternate path	×	×	SVP3848W	×	SVP3848W	×
		Without Alternate path	×	×	SVP3848W	SVP2075W	SVP3848W	SVP2075W

### ×: Maintenance is available

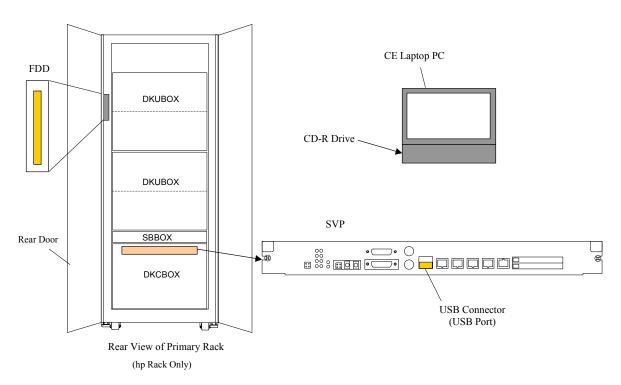
SVPXXXXW: Maintenance is not available based on the specification. Refer to SVP MESSAGE SECTION.

# 1.10 About the storage media used for installation/maintenance process

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

No.	Media	Description	Installation device	Remarks
1	CD-ROM	CD-R for micro program storage. Used for installation or micro program download in time of micro FC.	CD-R Drive of CE Laptop PC	Attached to the device
2	USB Memory	The USB memory for configuration information backup. Used for configuration information storage in time of device configuration change.	USB Connector of SVP	Attached to the device
3	USB Memory	USB memory for collecting device dump information. Used for collecting dump information in time of failure analysis or operation investigation.	USB Connector of SVP	Attached to the device
4	CD-R	CD-R Used for collecting PCB dump information in time of PCB (CHA/DKA/CMA/SMA/CSW/FSW) replacement.	CD-R Drive of CE Laptop PC	Attached to PCB as a spare part
5	Floppy Disk	FD for collecting HDD dumps information in time of HDD replacement.	FDD	Attached to HDD as a spare part

#### Information collection device for each media



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# [PRE-PROCEDURE A]

#### - OUTLINE -

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

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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 step 3.

To replace the SVP, you may need to replace the Apache.

When the option WEB server is installed in the SVP before replacement, you need to install the option WEB server to the SVP after replacement. In such case, it is required to install Apache whose version is the same as the one before the replacement.

When the SVP High Reliability Support Kit has been installed, or when you can check the version in the SVP before the replacement, use the following procedure to check the Apache version installed in the SVP before replacement.

When the SVP High Reliability Support Kit has not been installed, and if you cannot operate the SVP before the replacement, apply the shipped Apache version. If you replace the SVP, Apache program before product shipment which is corresponding to the microprogram version after replacement is installed. Refer to the WEB CONSOLE section for the relation between the version of SVP and Apache.

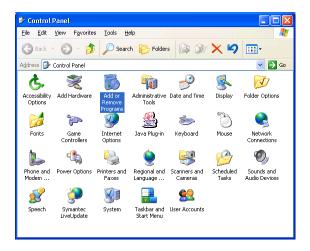
(1) Select (DR) [Start]-[Control Panel].



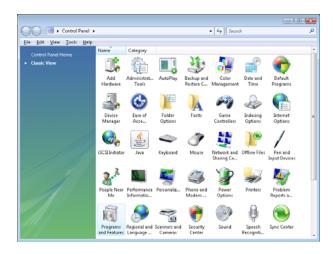
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(2)

[In case of Windows XP]
Select (DC) [Add or Remove Programs].



[In case of Windows Vista]
Select (DC) [Programs and Features].



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(3)

#### [In case of Windows XP]

Check the content of [Currently installed programs] in the 'Add or Remove Programs' window.

If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 is installed.

If [Apache HTTP Server 2.2.4] exists, Apache 2.2.4 is installed.

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

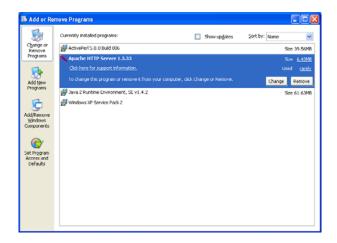
#### [In case of Windows Vista]

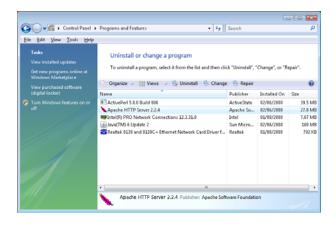
Check the content of program list in the 'Programs and Features' window.

If [Apache HTTP Server 2.0.54] exists,
Apache 2.0.54 is installed.

If [Apache HTTP Server 2.2.4] exists,
Apache 2.2.4 is installed.

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





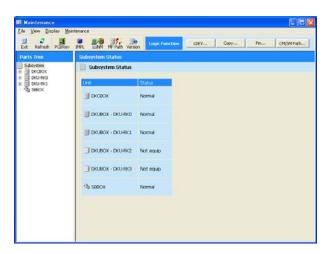
**REP02-30** Rev.2 / Oct.2007, Feb.2008

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

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



# [PRE-PROCEDURE B]

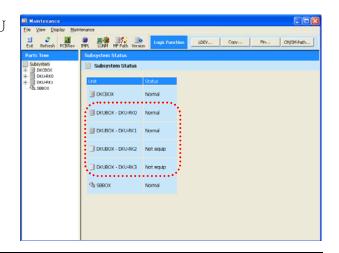
#### — OUTLINE —

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

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1. <Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

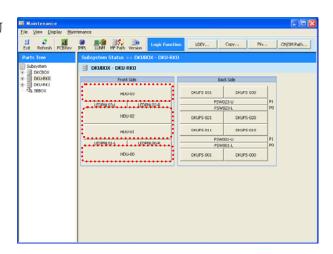
Select (CL) [DKUBOX - DKU-RKX].



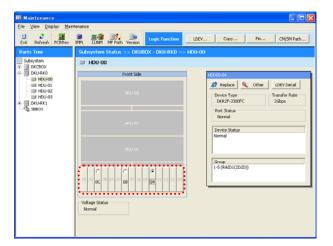
#### 2. <Select HDU>

Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

Select (CL) [HDU-XX].



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

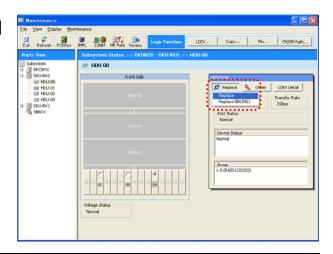


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4. <Specify replacement of HDD> Make sure that the "Device Status" is [Failed] or [Warning] or [Reserved].

Select (CL) [Replace]-[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.

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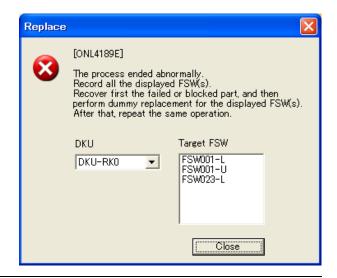
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8. <Spin down the Physical device> "Spinning down..." is displayed.

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>



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.

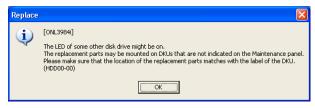
If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

Confirm the label on DKU.

To confirm the label, the right messages are displayed.

Please confirm the display position referring to the Location section so that the installing position is different on the Maintenance screen.

The name in parentheses shows the position where HDD show in LOC02-10.





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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. (HDDnn-nn)" after the unit is replaced.



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

# [PRE-PROCEDURE C]

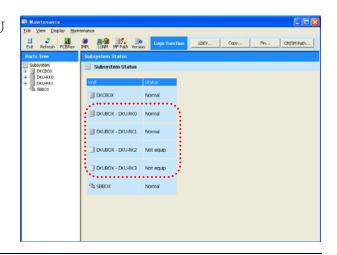
#### - OUTLINE -

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

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1. <Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

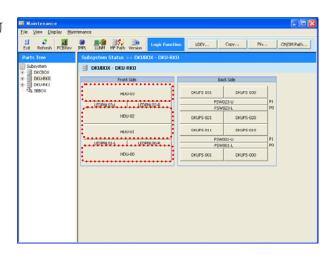
Select (CL) [DKUBOX - DKU-RKX].



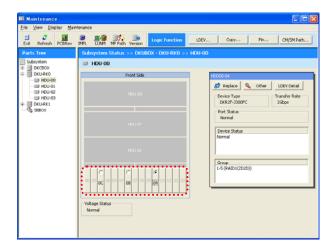
#### 2. <Select HDU>

Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

Select (CL) [HDU-XX].

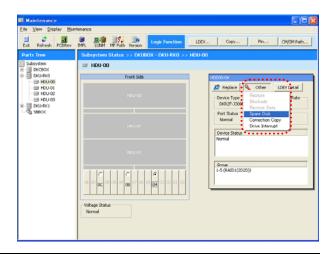


3. <Select HDD> Check and select (CL) [nn] to be replaced.



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4. <Specify replacement of HDD> Select (CL) [Other]-[Spare Disk].



<Checking the P-DEV status>



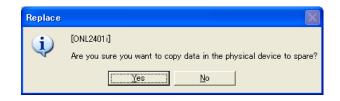
### **A** CAUTION

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?".

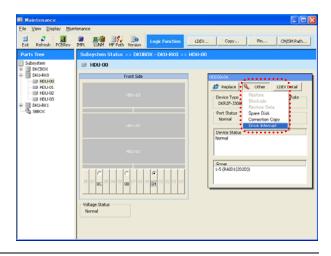


<Saving in process> "Copying..." is displayed. 8. <End of spare saving>
Select (CL) [Yes] in response to "Copying data in the physical device to spare has been started.".



9. When interpreting a

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



10.

Please execute Pre procedure B after finishing copy. (REP02-40)

# [PRE-PROCEDURE D]

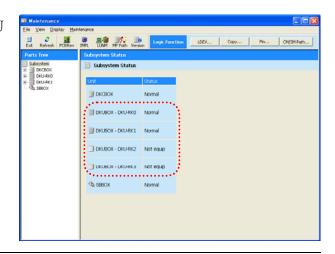
#### - OUTLINE -

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

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1. <Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

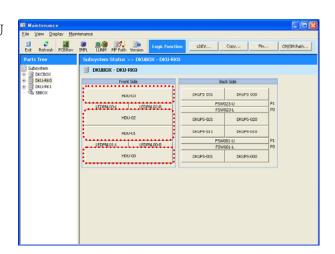
Select (CL) [DKUBOX - DKU-RKX].



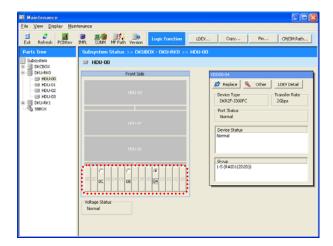
#### 2. <Select HDU>

Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

Select (CL) [HDU-XX].



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

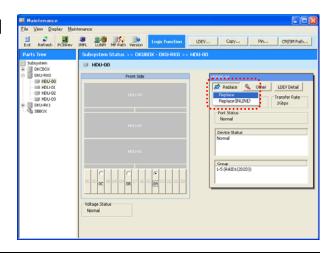


**REP02-140** Rev.0 / May.2007

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4. <Specify replacement of HDD> Make sure that the "Device Status" is [Failed] or [Warning].

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



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



#### A 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.

**REP02-150** Rev.2 / Oct.2008, May.2009

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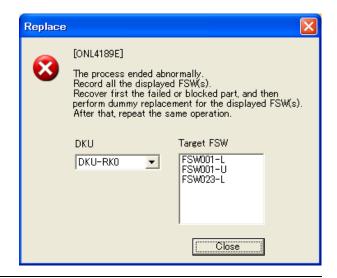
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8. <Spin down the Physical device> "Spinning down..." is displayed

> 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>



#### A 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.

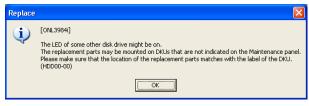
If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

Confirm the label on DKU.

To confirm the label, the right messages are displayed.

Please confirm the display position referring to the Location section so that the installing position is different on the Maintenance screen.

The name in parentheses shows the position where HDD show in LOC02-10.





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10. <Confirmation of replace>
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. (HDDnn-nn)" after the unit is replaced (Step 11).



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

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# [PRE-PROCEDURE E]

#### — OUTLINE —

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

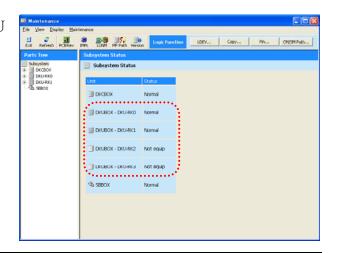
# **A** CAUTION

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.

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1. <Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

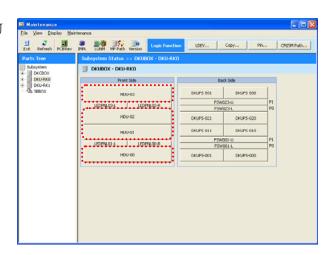
Select (CL) [DKUBOX - DKU-RKX].



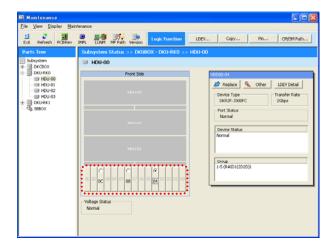
#### 2. <Select HDU>

Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

Select (CL) [HDU-XX].



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

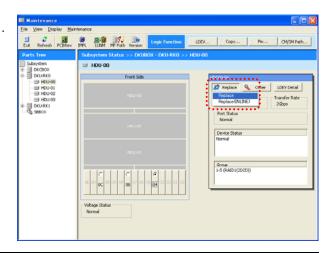


**REP02-180** Rev.0 / May.2007

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4. <Specify replacement of HDD> Make sure that the "Device Status" is [Failed].

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



#### <Confirm lost data>



#### A 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?".



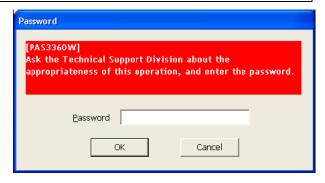
# <Enter password>



#### A 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.



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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,

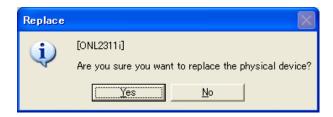


PDEV is automatically recovered by recovering LDEV.

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 (SVP02-950).

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

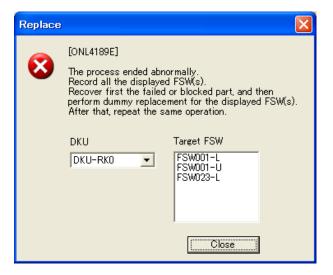


- 9. <Blocking the Physical device> "Blocking..." is displayed.
- 10. <Spin down the Physical device>
  "Spinning down..." is displayed.
  The Shut down LED is lit.

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.



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# 11. <Replace HDU>

Confirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

Confirm the label on DKU.

To confirm the label, the right messages are displayed.

Please confirm the display position referring to the Location section so that the installing position is different on the Maintenance screen.

The name in parentheses shows the position where HDD show in LOC02-10.

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. (HDDnn-nn)" after the unit is replaced.

(See HARDWARE A (REP03-10))







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

# [PRE-PROCEDURE F]

#### - OUTLINE -

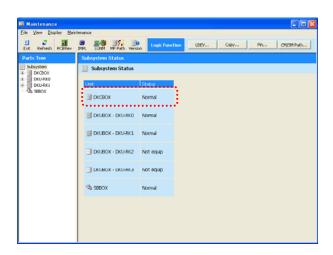
- ① Select cache (status check)
- 2 Specify Replacement
- 3 Place PCB into unpluggable state

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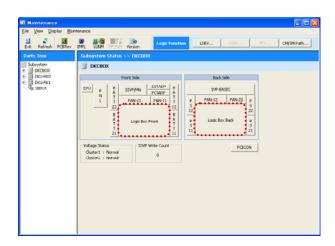
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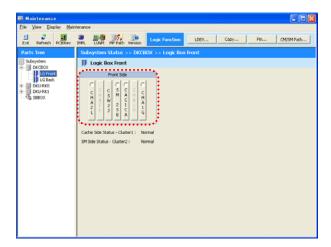
<Maintenance window>
 Select (CL) [DKCBOX] in the 'Maintenance' window.



2. <Select DKCBOX> Select (CL) [Logic Box XXXXX].



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



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<Specify replacement of cache>

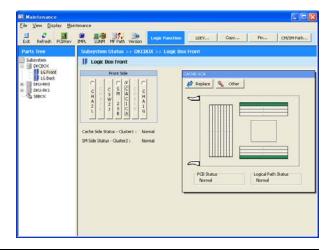


### A CAUTION

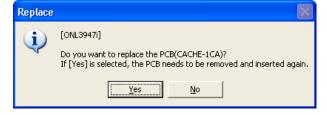
When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

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

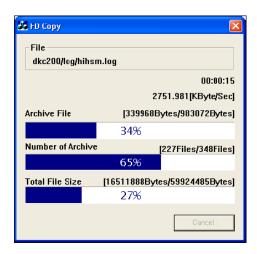
Check status display. Select (CL) [Replace].



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(CACHEnnn)? If [Yes] is selected, the PCB needs to be removed and inserted again.".



6. <Compression of the error information> The error information is compressed. The dialog of FDCopy is displayed.

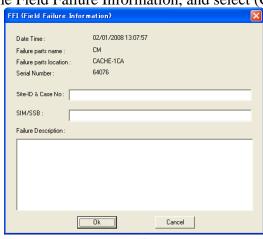


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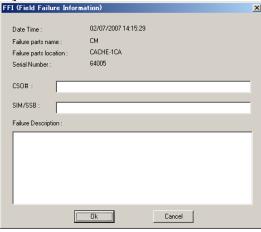
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7. <Get the error information>

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







[HP]

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

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

A Primary copy is always placed on the SVP HD in the "c:\dkc200\others\pcbinfo\" directory with the following file name format "YYMMDDhhmmss.tzg".

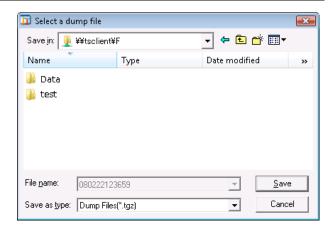


(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).

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If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the



'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

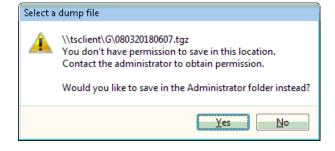
Note: Operation steps when the icon of the new folder creation is grayed out.

Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected. <For Windows XP>



<For Windows Vista>
Select (CL) [Yes] displays the
"C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected
with the Client PC.



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

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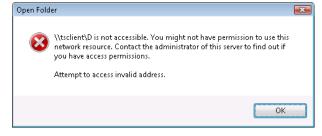
• When the memory in the destination drive specified with the Client PC is corrupted. <For Windows XP>

The dialog remains displayed after select (CL) [OK].

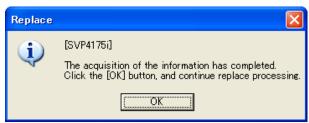


< For Windows Vista>

The dialog remains displayed after select (CL) [OK].



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



8. <Cache blocking>

"The Cache Memory PCB (CACHE-nnn) is being blocked." is displayed.

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9. <Check shut down LED>

Select (CL)

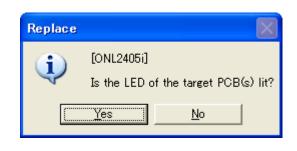
- \* [Yes] if LED is on
- \* [No] if LED is off

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>

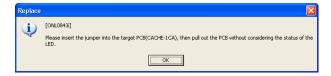


# **A** CAUTION

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 REP03-130)



Select (CL) [OK] after the jumper is inserted. Go to step 10.

10. <Cache Replacement>

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



11. <Replace cache PCB> Replace cache.

For CACHE see HARDWARE C (REP03-120)

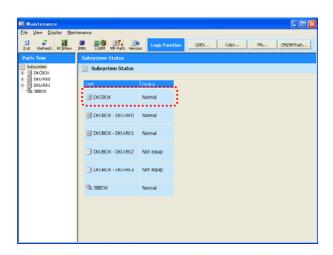
# [PRE-PROCEDURE G]

#### - OUTLINE -

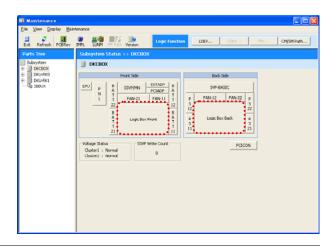
- ① Select SM (status check)
- 2 Specify Replacement
- 3 Place PCB into unpluggable state

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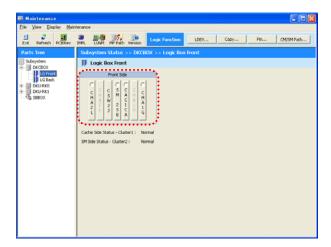
1. <Maintenance window> Select (CL) [DKCBOX] in the 'Maintenance' window.



2. <Select DKCBOX> Select (CL) [Logic Box XXXXX].



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



<Specify replacement of SM>

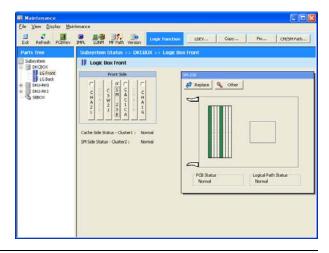


#### A CAUTION

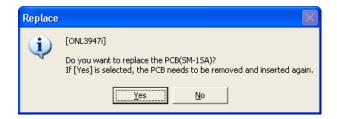
When the screen appears prompting the operator to input a password to prevent multiple maintenance or for executing a pin check, contact the technical support division to ask for instructions.

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

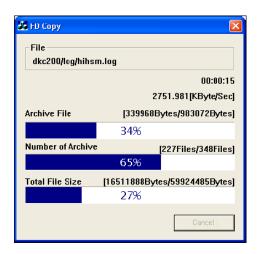
Check status display. Select (CL) [Replace].



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(SMnnn)? If [Yes] is selected, the PCB needs to be removed and inserted again.".



6. <Compression of the error information> The error information is compressed. The dialog of FDCopy is displayed.

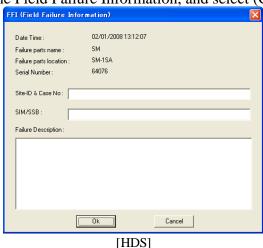


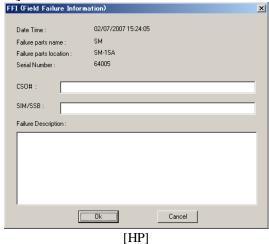
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7. <Get the error information>

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





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

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

A Primary copy is always placed on the SVP HD in the "c:\dkc200\others\pcbinfo\" directory with the following file name format "YYMMDDhhmmss.tzg".

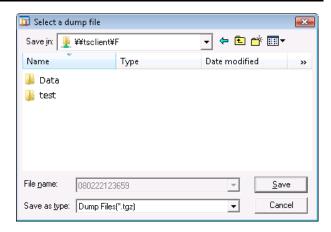


(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).

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If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the

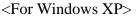


'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: Operation steps when the icon of the new folder creation is grayed out.

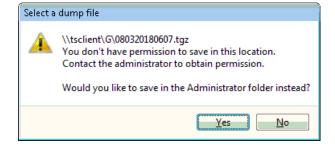
Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected.





<For Windows Vista>
Select (CL) [Yes] displays the
"C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected
with the Client PC.



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

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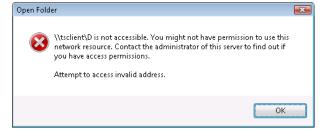
• When the memory in the destination drive specified with the Client PC is corrupted. <For Windows XP>

The dialog remains displayed after select (CL) [OK].



< For Windows Vista>

The dialog remains displayed after select (CL) [OK].



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



8. <SM blocking>

"The Shared Memory PCB (SM-nnn) is being blocked." is displayed.

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**REP02-300** Rev.1 / May.2007, Oct.2008

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9. <Check shut down LED>

Select (CL)

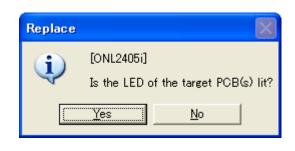
- \* [Yes] if LED is on
- \* [No] if LED is off

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>



# **A** 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 REP03-80)



Select (CL) [OK] after the jumper is inserted. Go to step 10.

### 10. <SM Replacement>

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



# 11. <Replace SM PCB> Replace SM.

For SM see HARDWARE B (REP03-70)

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# [PRE-PROCEDURE H]

#### - OUTLINE -

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

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1. <Set path offline or switch of channel path>

### **A** CAUTION

For Mainframe, the path to be placed offline is that connected with the CHA concerned. For Open host, the switch to the alternate channel path or host shutdown is that connected with the CHA concerned.

As for other channel path, it switch to the alternate channel path or host shutdown is unnecessary.

However, the host must shutdown when the Pinned track in CHA connected port.

[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.

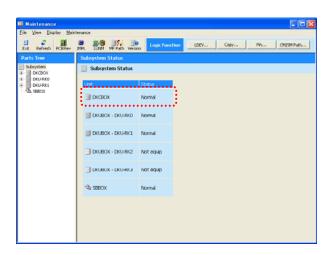
In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to "NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)" in "DKN-200-NGW1 NAS Unit Maintenance Manual", and ask to check the status of the FC path and to recover the FC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

**REP02-321** Rev.0 / May.2009

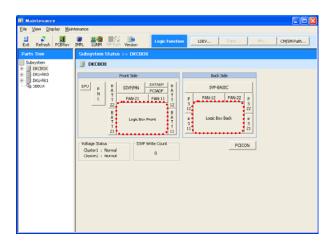
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2. <Maintenance window> Select (CL) [DKCBOX] in the 'Maintenance' window.



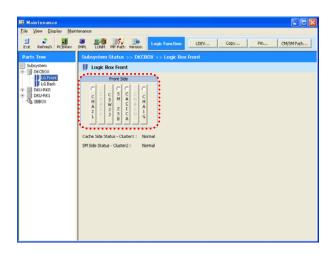
3. <Select DKCBOX> Select (CL) [Logic Box XXXXX].



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



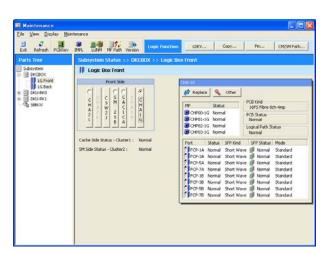
#### 5. <Specify Replacement of CHA/DKA>

# **A** CAUTION

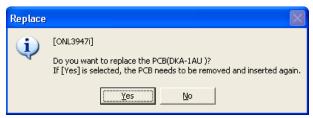
- When the path to the PCB to be replaced is online, ask the customer to place it offline.
   (For CHA replacement)
- For Mainframe, vary off the concerned channel paths.
   For Open host, switch to the alternate channel path or shutdown the host.
   However, the host must shutdown when the Pinned track in CHA connected port.
- 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].

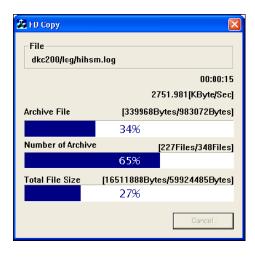


6. <CHA/DKA replace>
Select (CL) [Yes] in response to:
"Do you want to replace the PCB(DKA-nnn)?
If [Yes] is selected, the PCB needs to be removed and inserted again."



(Eg. DKA)

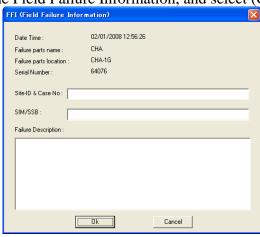
7. <Compression of the error information>
The error information is compressed.
The dialog of FDCopy is displayed.



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8. <Get the error information>

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



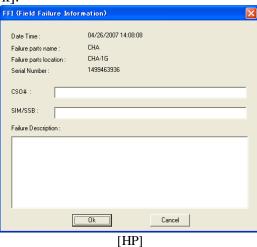
[HDS]

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

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

"YYMMDDhhmmss.tzg".

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

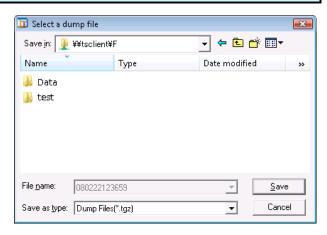




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If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the



'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: Operation steps when the icon of the new folder creation is grayed out.

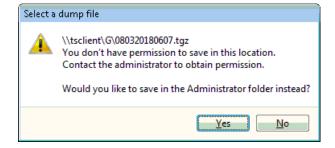
Right click the button, select "New" then "Folder", and then a new folder is created.

- \* For CHA ----- Go to step 9.
- \* For DKA ----- Go to step 10.
- When the destination media is write-protected.

<For Windows XP>



<For Windows Vista>
Select (CL) [Yes] displays the
"C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected
with the Client PC.



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

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• When the memory in the destination drive specified with the Client PC is corrupted. <For Windows XP>

The dialog remains displayed after select (CL) [OK].



#### < For Windows Vista>

The dialog remains displayed after select (CL) [OK].

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





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#### 9. <Confirm Channel Path offline>

This operation is only CHA. If DKA Replacement, go to step 10.

Select (CL) [Yes] or [OK] in response to following message.

For Serial CHA or Mainframe Fiber CHA:

"Please confirm you have already varied off the concerned Channel paths for all HOST connected to this PCB. If OK, please press [OK]."



#### For Fiber CHA:

"Confirm that you have already shut down the corresponding connected host(s) or switched to the alternate channel path(s) for all HOST



connected to this PCB. Do you want to continue processing?"

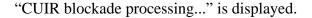
#### \*For Mainframe Fibre CHA

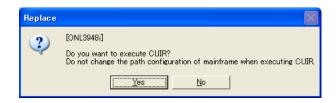
The channel path offline confirmation message is not displayed when the CUIR function is effective, and the following messages are displayed.

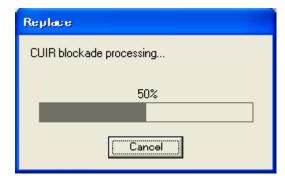
Note: In the case of the FNP port, the CUIR function is not performed.

Select (CL) [Yes] in response to:

"Do you want to execute CUIR? Do not change the path configuration of mainframe when executing CUIR".







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#### 10. <Caution message for system down>



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)"



### 11. <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..."

12. <Check to see if the shut down LED is lit> Select (CL)

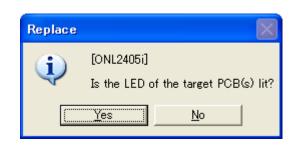
- \* [Yes] if LED is on
- \* [No] if LED is off

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>





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 REP03-120)



(Eg. DKA)

Select (CL) [OK] after the jumper is inserted. Go to step 13.

For Serial CHA (Refer REP03-170)
For Fibre CHA (Refer REP03-210)
For MF Fibre CHA (Refer REP03-250)
For DKA (Refer REP03-330)

13. <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)

For Serial CHA See HARDWARE D (REP03-170)
For Fibre CHA See HARDWARE E (REP03-210)
For MF Fibre CHA See HARDWARE F (REP03-250)
For DKA See HARDWARE J (REP03-330)

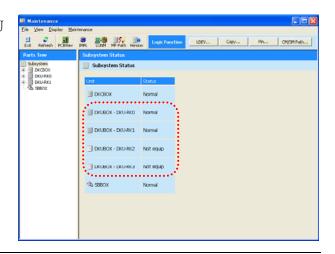
# [PRE-PROCEDURE K]

#### - OUTLINE -

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

1. <Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

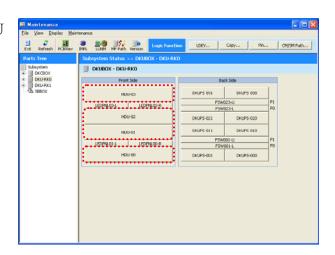
Select (CL) [DKUBOX - DKU-RKX].



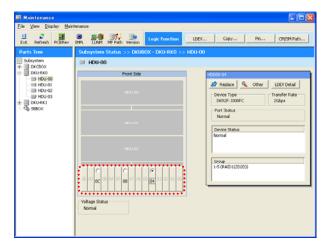
#### 2. <Select HDU>

Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

Select (CL) [HDU-XX].



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

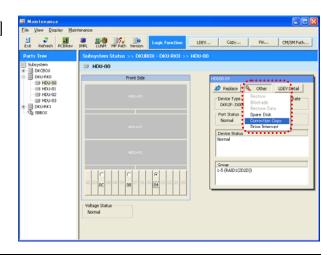


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4. <Specify replacement of HDD>

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

Select (CL) [Other]-[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).

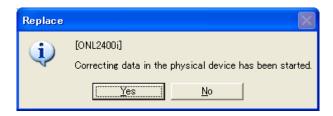
"Checking..." is displayed.

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



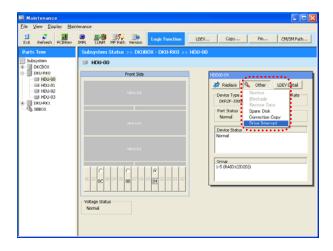
7. <Correction copy in progress> "Correcting..." is displayed.

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



9. When interpreting

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]

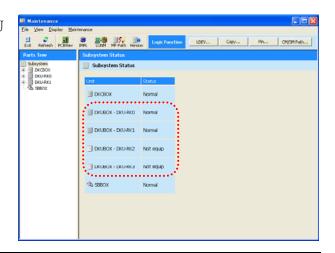
#### - OUTLINE -

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

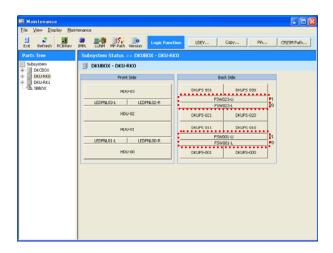
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1. <Maintenance window>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

Select (CL) [DKUBOX - DKU-RKX].



2. <Select FSW>
Check and select (CL) [FSWXXX-X] to be replaced.



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<Specify replacement>



### **A** 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.

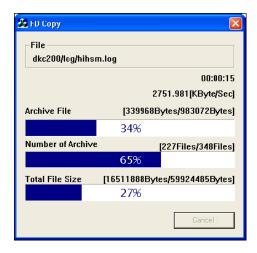
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

Select (CL) [Execute].

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



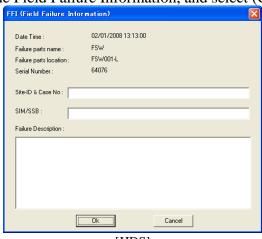
4. <Compression of the error information> The error information is compressed. The dialog of FDCopy is displayed.



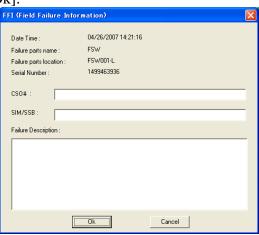
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5. <Get the error information>

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



[HDS]



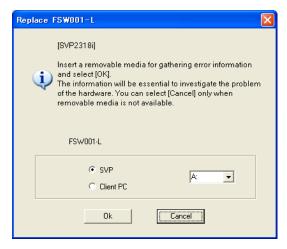
[HP]

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

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

"YYMMDD hhmmss.tzg".

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

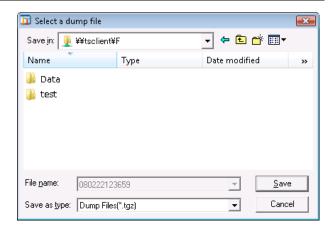


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If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the



'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

Note: The message is displayed two or more times, and operate it in every case.

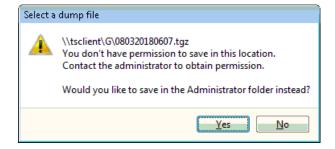
Note: Operation steps when the icon of the new folder creation is grayed out.

Right click the button, select "New" then "Folder", and then a new folder is created.

When the destination media is write-protected.
 <For Windows XP>



<For Windows Vista>
Select (CL) [Yes] displays the
"C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected
with the Client PC.



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

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• When the memory in the destination drive specified with the Client PC is corrupted. <For Windows XP>

The dialog remains displayed after select (CL) [OK].



#### < For Windows Vista>

The dialog remains displayed after select (CL) [OK].

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





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6. <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.".



<Check system down>



### **A** 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)"



8. <Check DKP blocking> "The DKP is being blocked..." is displayed. Hitachi Proprietary SC03096Z

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#### 9. <Replace FSW>

Make sure of the FSW PCB location is displayed, replace all target FSW PCB. If the FSW LED is not turned on, please replace FSW PCB.

Confirm the label on DKU.

To confirm the label, the right messages are displayed.

Please confirm the display position referring to the Location section so that the installing position is different on the Maintenance screen.

The name in parentheses shows the position where FSW show in LOC02-10.

"Please replace the FSW connected by the same fibre interface cable, and then select OK. (FSWnnn-x) 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 (REP03-1040)

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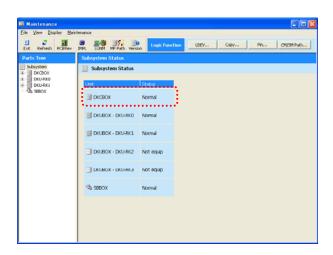
# [PRE-PROCEDURE M]

#### - OUTLINE -

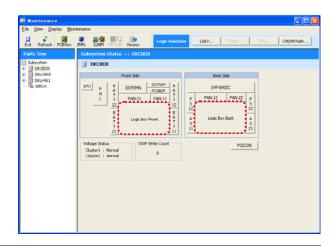
- ① Select CSW (status check)
- 2 Specify Replacement
- 3 Place PCB into blocked state

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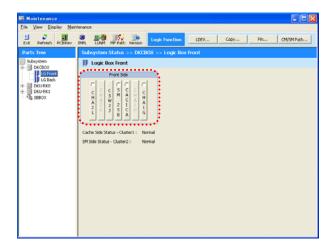
<Maintenance window>
 Select (CL) [DKCBOX] in the 'Maintenance' window.



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



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



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<Specify replacement>



#### A CAUTION

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

Select (CL) [Execute].

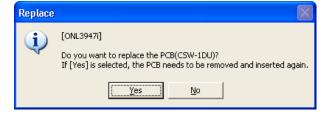
Selecting (CL) [Cancel] returns you to step 3.



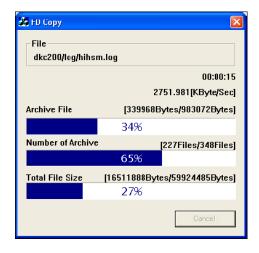
5. <CSW replace>

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

Select (CL) [Yes] in response to: "Do you want to replace the PCB(CSW-nnn)? If [Yes] is selected, the PCB needs to be removed and inserted again."



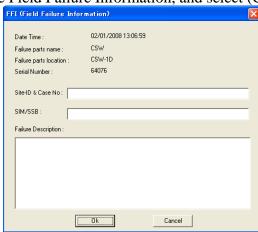
6. < Compression of the error information> The error information is compressed. The dialog of FDCopy is displayed.



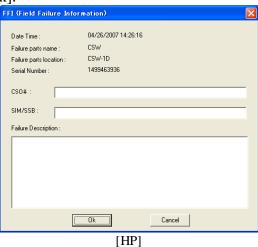
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7. <Get the error information>

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





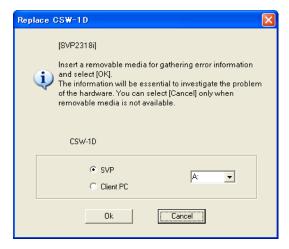


"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

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

"YYMMDDhhmmss.tzg".

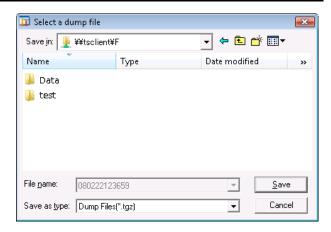
(YY denotes Year, MM denotes Month, DD denotes Day, hh denotes Hour, mm denotes Minute, and ss denotes Second).



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If Client PC is selected, a second copy is placed into the root directory of the drive selected on the Client PC. Please burn this to CDROM from the Client PC and return it with the defective part.

It is suggested to move it from the root directory to another directory of the CE's choosing if desired. Unfortunately it is not possible to select this directory initially. Therefore it must be a manual process as follows. After Client PC is selected, the



'Select a dump file' window is displayed to select a directory. In this window, specify a desired directory, and select (CL) [Save].

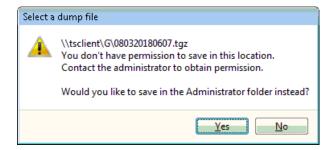
Note: Operation steps when the icon of the new folder creation is grayed out.

Right click the button, select "New" then "Folder", and then a new folder is created.

• When the destination media is write-protected. <For Windows XP>



<For Windows Vista>
Select (CL) [Yes] displays the
"C:\users\Administrator" folder of SVP.
Select (CL) [No] displays the folder selected
with the Client PC.



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and then select (CL) [Save].

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• When the memory in the destination drive specified with the Client PC is corrupted. <For Windows XP>

The dialog remains displayed after select (CL) [OK].



#### < For Windows Vista>

The dialog remains displayed after select (CL) [OK].

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





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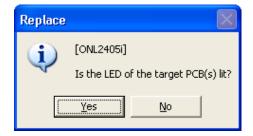
8. <Check CSW blocking>

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

"Blocking the CSW..." is displayed.

- 9. <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 PCB(s) lit?".



<Forcing shut down LED on>



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-nnn), then pull out the PCB without considering the status of the LED.". (Refer REP03-380)



Select (CL) [OK] after the jumper is inserted. Go to step 10.

10. <Beginning of CSW replacement>

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

Go to HARDWARE K (REP03-370)



## [PRE-PROCEDURE T1]

#### - OUTLINE -

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

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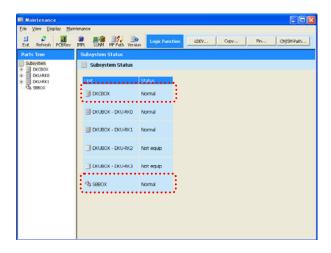
[1] Select special part



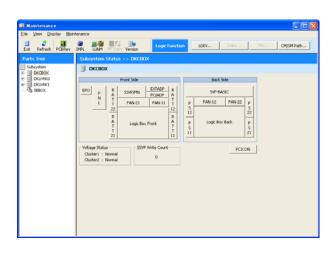
## **A** CAUTION

<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.

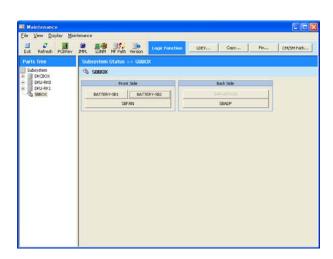
1. <Maintenance window> In the 'Maintenance' window, check and select (CL) [DKCBOX] or [SBBOX] to be replaced.



2. <Specify special part> Select (CL) the button to indicate the parts to be replaced.



[10] (REP02-730)



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#### [2] DKCPANEL

1. <Execute>



### A 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).

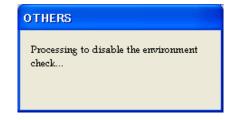
A window shown on the right is displayed. Select (CL) [Execute].



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



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 "DKCPANEL." After replacement, press OK." is displayed. (Reply with [OK] after replacing the special part.)



See HARDWARE T1 (REP03-410)

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[4] EPOSW

1. <Execute>

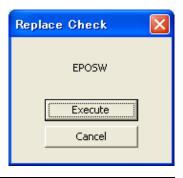


## A CAUTION

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).

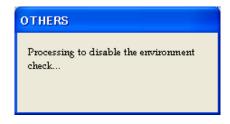
A window shown on the right is displayed. Select (CL) [Execute].



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



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 "EPOSW." After replacement, press OK." is displayed. (Reply with [OK] after replacing the special part.)



See HARDWARE T2 (REP03-440)

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[5] 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 SVP02-1280) 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 (SVP01-190 "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.



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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) [Yes].

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.

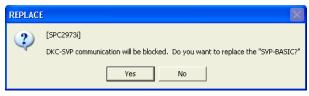


(Eg. SVP-BASIC)

When you perform the replacement, select (CL) [Yes].

The message, "DKC-SVP communication will be blocked. Do you want to replace the SVP-BASIC?" is displayed.

When you perform the replacement, select (CL) [Yes].

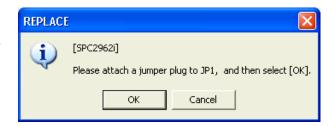


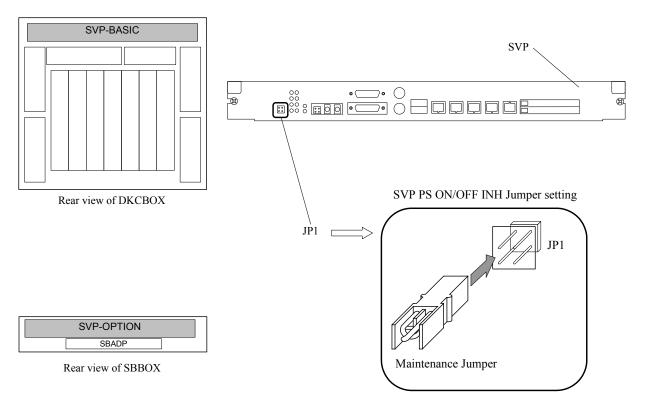
(Eg. SVP-BASIC)

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.

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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].



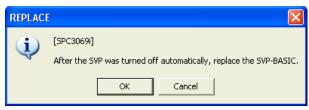
Go to Step 5.

When the jumper plug is not attached, re-execute Step 4.

5. < Powering off the SVP>

The message, "After the SVP was turned off automatically, replace the SVP-BASIC." is displayed.

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 T6 (REP03-570)

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#### [6] SSVP/MN

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).

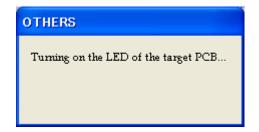
A window shown on the right is displayed. Select (CL) [Execute].



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/MN?"" is displayed. Select (CL) [OK].

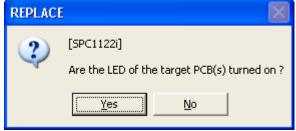


3. < Check environment monitor stopped state> The message "Turning on the LED of the target PCB..." is displayed.



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

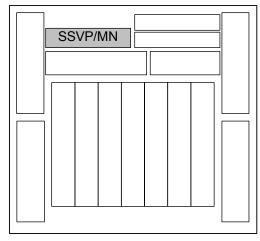
on, select (CL) [Yes] and go to Step 6. When the LED on the PCB to be pulled out is kept off, select (CL) [No] and go to Step 5.



DKC615I

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

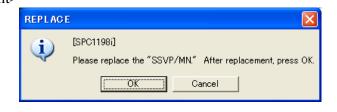




Front View of DKCBOX (Cover is opened.)

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

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



See HARDWARE T3 (REP03-470)

DKC615I

#### [7] DKCFAN / SBFAN

1. <Execute>



## **A** 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].

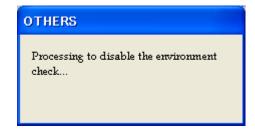


2. < Check beginning of special part Replacement> Select (CL) [Yes] in response to "Do you want to replace the "FAN-nn?"".



(Eg. FAN-11)

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



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**REP02-680** Rev.0 / May.2007

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DKC615I

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

See HARDWARE T5 (REP03-550)



(Eg. FAN-11)

DKC615I

## [8] DKCPS

1. <Execute>

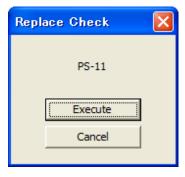


## **A** CAUTION

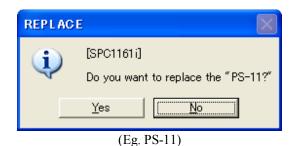
When the screen prompting an operator to input a password in order to prevent a multiple maintenance, contact the technical support division to ask for an instruction.

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

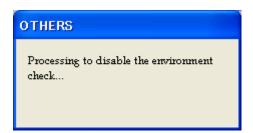
A window shown on the right is displayed. Select (CL) [Execute].



- 2. <Checking power supply> The SVP automatically checks the DKC PS to see if it is replaceable.
- $3. \quad \text{<Check beginning of special part Replacement>}$ Select (CL) [Yes] in response to "Do you want to replace the "PS-nn?"".

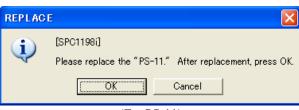


4. <Check environment monitor stopped state> The message "Processing to disable the environment check..." is displayed.



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

See HARDWARE T8 (REP03-770)



(Eg. PS-11)

DKC615I

[9] DKC Battery Box / SB Battery

1. <Execute>



## **A** 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].

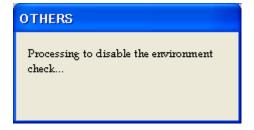


- 2. < Checking power supply> The SVP automatically checks the DKC Battery/SB Battery to see if it is replaceable.
- $3. \quad \text{<Check beginning of special part Replacement>} \\$ Select (CL) [Yes] in response to "Do you want to replace the "BATTERY-nn?"".



(Eg. BATTERY-11)

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



part.)

DKC615I

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



(Eg. BATTERY-11)

See HARDWARE T7 (REP03-710)

DKC615I

[10] EXTADP / SBADP

1. <Execute>



## **A** 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].



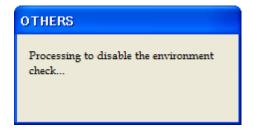
(Eg. EXTADP)

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



(Eg. EXTADP)

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



DKC615

<Check the SVP-OPTION>

[When the SVP High Reliability Support Kit has not been added] Go to Step 5.

When the SVP High Reliability Support Kit has been added]

When the SVP (Master SVP) being used now is SVP-OPTION, a message on the right is displayed.

Select (CL) OK. After the SVP Switching

(Eg. EXTADP) (See SVP section SVP Switching (SVP02-1280)) is done, retry the replacement of specified parts.

Others

[SPC4081E]



ÖΚ

If you replace the EXTADP, SVP-OPTION will be blocked. Switch the SVP-BASIC to Master SVP before executing this operation

(Eg. EXTADP)

is SVP-BASIC, a message on the right is displayed. After the power supply of SVP-OPTION

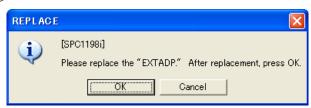
When the SVP (Master SVP) being used now

(Standby SVP) is turned off (See SVP section power Off (SVP01-190)), OK is selected (CL).

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

See HARDWARE T9 **EXTADP** (REP03-790)

See HARDWARE T10 (REP03-810) SBADP



(Eg. EXTADP)

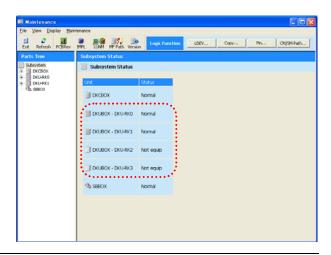
## [PRE-PROCEDURE T4]

#### - OUTLINE -

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

## [1] Select special part

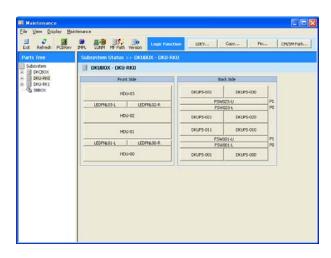
1. <Maintenance window>
Select (CL) [DKUBOX – DKU-RKX] in the 'Maintenance' window.



2. <Specify special part> Select (CL) the button to indicate the parts to be replaced.

• DKUPS-----[DKUPS-XXn]
[2] (REP02-770)

• LED Panel ----- [LEDPNLXX-X]
[3] (REP02-800)



DKC615I

## [2] DKUPS

1. <Execute>



## **A** 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].

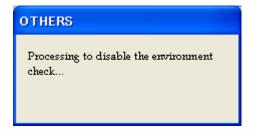


- 2. < Checking DKU PS> The SVP automatically checks the DKU PS to see if it is replaceable.
- $3. \quad \text{<Check beginning of special part Replacement>}$ Select (CL) [Yes] in response to "Do you want to replace the "DKUPS-nnn?"".



(Eg. DKUPS-000)

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



DKC615I

5. <Check lighting of Shutdown LED>
A message shown on the right is displayed.
When the Shutdown LED on the DKUPS to be replaced is on, select (CL) [Yes] and go to step 7.

When the Shutdown LED on the DKUPS to be replaced is off, select (CL) [No] and go to step 6.



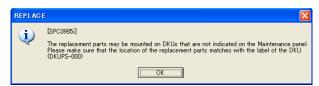
(Eg. DKUPS-000)

6. <Check location of DKUPS>
A message shown on the right is displayed,
make sure the location of DKUPS to be
replaced in the Location section of
maintenance manual.



(Eg. DKUPS-000)

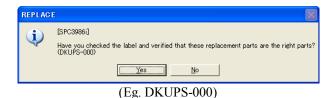
7. < Check location of special part>
A message shown on the right is displayed.
(Reply with [OK] after location check the special part.)



(Eg. DKUPS-000)

DKC615I

<Check location of special part again> A message shown on the right is displayed. (Reply with [OK] after location check again the special part.)



<Check beginning of special part Replacement> The message "Please set the "DKUPS-nnn" 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.)

See HARDWARE T17 (REP03-1090)



(Eg. DKUPS-000)

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[3] LEDPNL

1. <Execute>

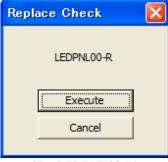


## **A** CAUTION

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.

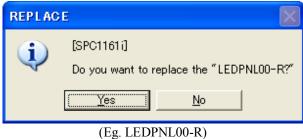
If any other message that is not explained below is displayed, see the SVP Message Section (SVPMSG00-00).

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

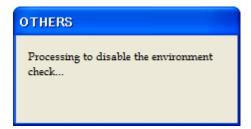


(Eg. LEDPNL00-R)

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



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



DKC615I

4. <Check lighting of Shutdown LED>

A message shown on the right is displayed. When the Shutdown LED on the LEDPNL to be replaced is on, select (CL) [Yes] and go to step 6.

When the Shutdown LED on the LEDPNL to be replaced is off, select (CL) [No] and go to step 5.



(Eg. LEDPNL00-R)

5. <Check location of LEDPNL>
A message shown on the right is displayed,
make sure the location of LEDPNL to be
replaced in the Location section of
maintenance manual.



(Eg. LEDPNL00-R)

6. <Check location of special part>
A message shown on the right is displayed.
(Reply with [OK] after location check the special part.)



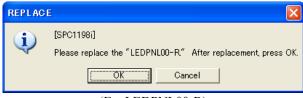
(Eg. LEDPNL00-R)

7. <Check location of special part again>
A message shown on the right is displayed.
(Reply with [OK] after location check again the special part.)



(Eg. LEDPNL00-R)

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



(Eg. LEDPNL00-R)

See HARDWARE T15 (REP03-1010)

# [PRE-PROCEDURE T5]

#### - OUTLINE -

- ① Select Port (SFP information check)
- 2 Specify Replacement

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DKC615

1. <Set path offline>

## **A** 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.

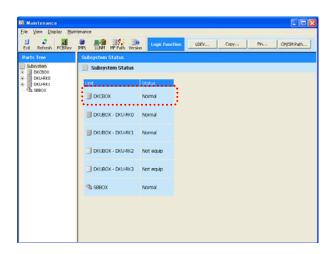
In addition, if there are any personnel for the NAS Unit maintenance, ask the NAS Unit maintenance personnel to refer to "NAS IMS 2.9.8 Displaying LU Path Setting Screen (NAS IMS 02-0490)" in "DKN-200-NGW1 NAS Unit Maintenance Manual", and ask to check the status of the FC path and to recover the FC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

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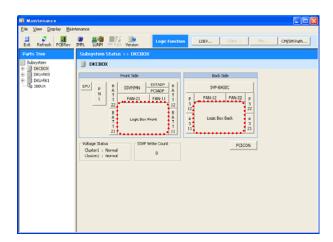
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DKC615I

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



3. <Selecting DKCBOX> Select (CL) [Logic Box XXXXX].

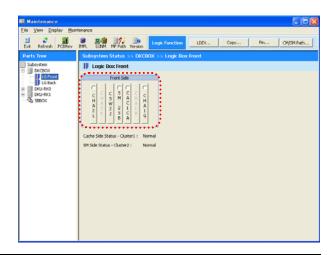


**REP02-850** Rev.0 / May.2007

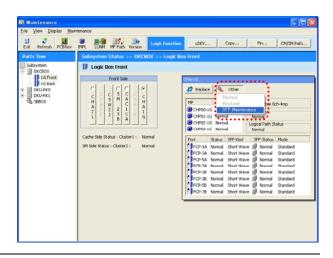
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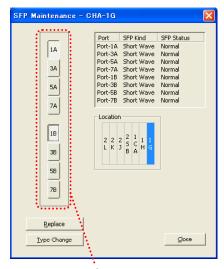
4. <Selecting CHA> Select (CL) the target CHA.



5. <SFP Maintenance window is displayed> Select (CL) [Other]-[SFP Maintenance].



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



port button

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 DKC615I

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7. < Replacing the SFP>

A message, "Please replace the "SFP(Portnn, ...)." After replacement, press OK." is displayed.



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

Refer to the hardware part replacement procedure T14 (on page REP03-970).

[PRE-PROCEDURE V]

## - OUTLINE -

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



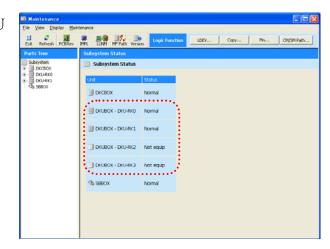
This processing is a special operation for detecting a cause of a Fibre loop error. Ask the technical support division about the appropriateness of the operation.



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>
Select (CL) the DKU information of the DKU which installs the HDD to be replaced in the 'Maintenance' window.

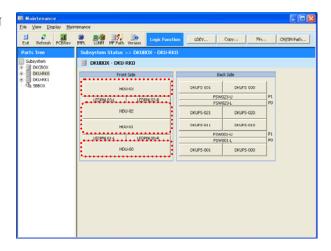
Select (CL) [DKUBOX - DKU-RKX].



2. <Select HDU>

Select (CL) the HDU information of the HDU which installs the HDD to be replaced.

Select (CL) [HDU-XX].

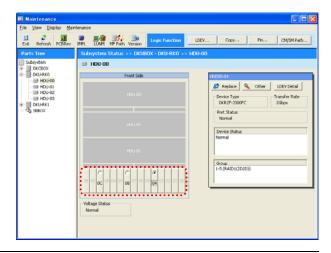


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This processing is a special operation for detecting a cause of a Fibre loop error. Ask the technical support division about the appropriateness of the operation.

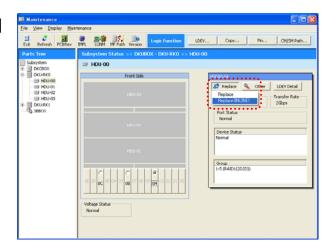
3. <Select HDD>
Check and select (CL) [nn] to be replaced.



4. <Specify replacement of HDD>

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

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



**REP02-900** Rev.2 / Oct.2008, May.2009

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# A 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?".

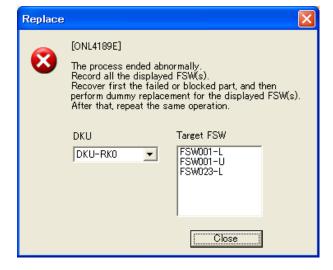


- 7. <Blocking the Physical device> "Blocking..." is displayed.
- 8. <Spin down the Physical device> "Spinning down..." is displayed

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.

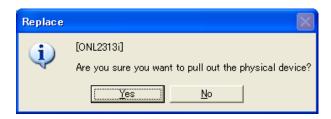


DKC615

# **A** 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.

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



# 10. <Check shut down LED>



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.

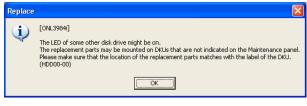
If LED is off, reconfirm the location of the HDD to be replaced with LOCATION SECTION before replacing the hardware.

Confirm the label on DKU.

To confirm the label, the right messages are displayed.

Please confirm the display position referring to the Location section so that the installing position is different on the Maintenance screen.

The name in parentheses shows the position where HDD show in LOC02-10.





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11. <Confirmation of replace>
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. (HDDnn-nn)" after the unit is replaced (Step 12).



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

# [PRE-PROCEDURE Z]

- OUTLINE -

① Installation of USB memory

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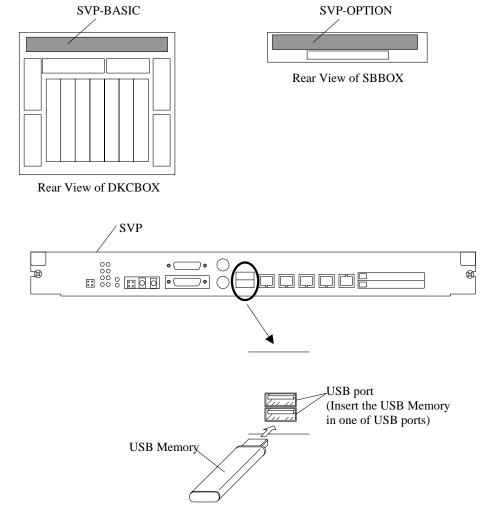
DKC615I

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. Return the USB memory that contains the failure information together with the failed PCB after the failed PCB replacement.

# 1. Installation of USB memory

- (1) Collecting information to the external USB memory.

  Connect the USB memory to one of the USB ports on the SVP in the array as shown below. If the SVP-OPTION 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.



Go to PRE-PROCEDURE A (REP02-10).

# [HARDWARE A]

Location	Function Name of Component	Part Name	HDA Label
DKUBOX	1 HDD Canister	HDU600-72KSFC	DKS2E-K72FC
			DKS2F-K72FD
			DKS2G-K72FD
			DKR2F-K72FC
			DKR2F-K72FH
			DKR2G-K72FC
			DKR2J-K72FD
			DKx2x-K72Fx (*1)
		HDU600-146KSFC	DKS2E-K146FC
			DKS2F-K146FC
			DKS2G-K146FD
			DKR2F-K146FC
			DKR2F-K146FH
			DKR2G-K146FC
			DKR2J-K146FD
			DKx2x-K146Fx (*1)
		HDU600-300JSFC	DKS2D-J300FC
			DKR2F-J300FC
			DKR2G-J300FC
			DKR2J-J300FC
			DKx2x-J300Fx (*1)
		HDU600-300KMFC	DKS2E-K300FC
			DKS2F-K300FC
			DKS2G-K300FC
			DKR2G-K300FC
			DKR2H-K300FC
			DKR2J-K300FC
			DKx2x-K300Fx (*1)
		HDU600-300KSFC	DKS2E-K300FC
			DKS2F-K300FC
			DKS2G-K300FC
			DKx2x-K300Fx (*1)

(To be continued)

<sup>\*1:</sup> This drive model name shows the compatible drive.

(Continued from the preceding page)

Location Location		Function Name of Component	Part Name	HDA Label
DKUBOX	1	HDD Canister	HDU600-400JSFC	DKS2E-J400FC
				DKS2G-J400FD
				DKx2x-J400Fx (*1)
			HDU600-450KSFC	DKS2F-K450FC
				DKS2G-K450FC
				DKR2H-K450FC
				DKR2J-K450FC
				DKx2x-K450Fx (*1)
			HDU600-600KSFC	DKS2G-K600FC
				DKR2J-K600FC
				DKx2x-K600Fx (*1)
			HDU600-0R7HSFC	DKS2A-H0R7AT
				DKR2B-H0R7AT
				DKR2C-H0R7AD
				DKR2D-H0R7AD
				DKx2x-H0R7Ax (*1)
			HDU600-1R0HSFC	DKR2B-H1R0AT
				DKR2C-H1R0AD
				DKR2D-H1R0AD
				DKx2x-H1R0Ax (*1)
			HDU600-2R0HSFC	DKR2C-H2R0AT
				DKR2D-H2R0AT
				DKx2x-H2R0AT (*1)
	2	SSD Canister	SSD600-72S1FC	SDT2A-S072FC
				SDT2x-S072FC (*1)
			SSD600-146S1FC	SDT2A-S146FC
				SDT2x-S146FC (*1)
			SSD600-200S1FC	SDT2A-S200FC
				SDT2C-S200FC
				SDT2x-S200FC (*1)
			SSD600-400S1FC	SDT2A-S400FC
				SDT2C-S400FC
				SDT2x-S400FC (*1)

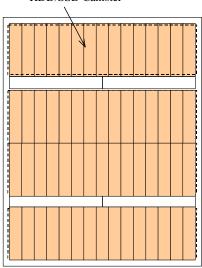
<sup>\*1:</sup> This drive model name shows the compatible drive.

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DKC615I

HDD/SSD Canister



Front View of DKUBOX

## 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.

DKC615I

- 1. Check the Shut Down LED.
  - a. Check that the Shut Down LED on the LEDPNL corresponding to HDD/SSD canister is turned on.

Note: In case of replacing HDDs for Micro-Version "60-02-27-00/00" or more, there is no problem that the Shut Down LED (RED) lights up and the HDD ENABLE LED (GREEN) may keep the light on.

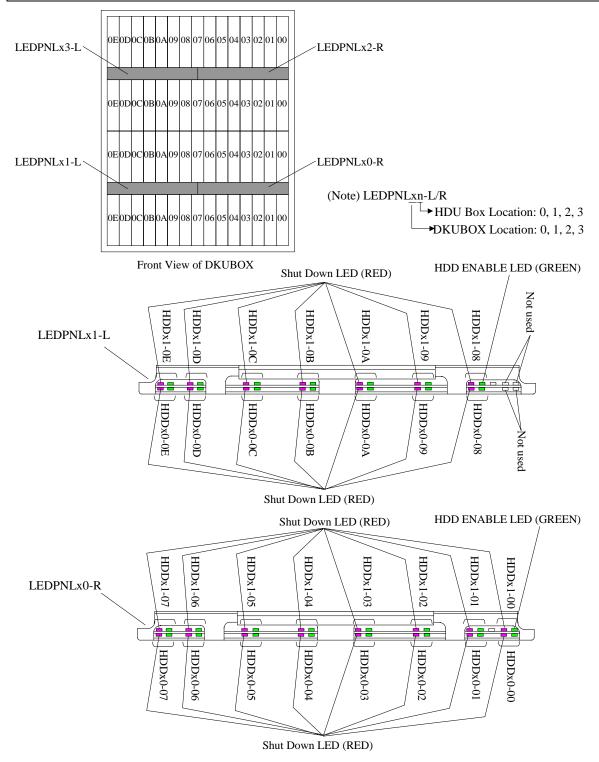


Fig. A-1 Checking of Shut Down LED

DKC615I

- 2. Remove the HDD/SSD canister.
  - a. Push up the stopper of HDD/SSD canister, and bring the handle down. Don't pull the handle during this process.
  - b. Push down the handle.
  - c. Pull out the HDD/SSD canister.
  - d. Fig. A-3 illustrates the case of wrong procedure.

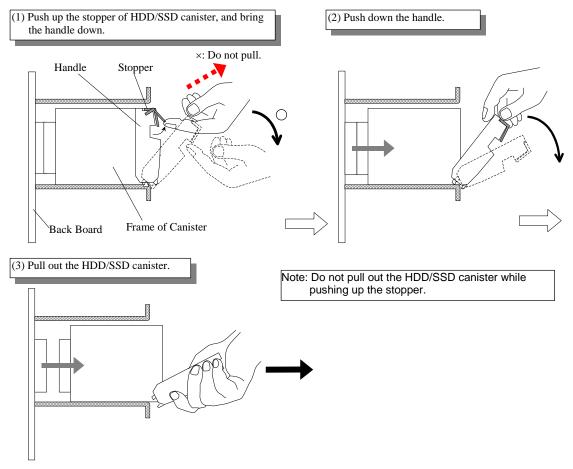


Fig. A-2 Removal of HDD/SSD Canister

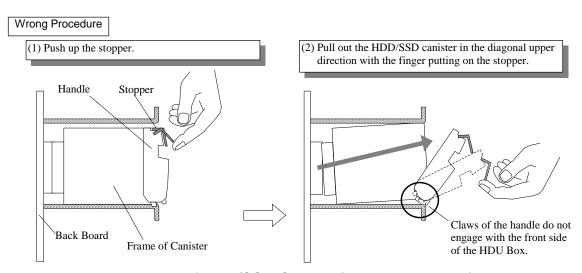
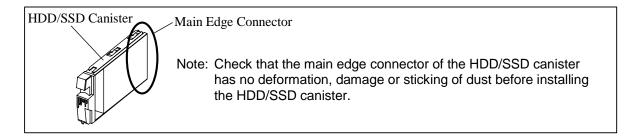


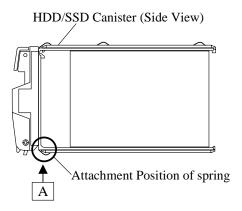
Fig. A-3 Removal of HDD/SSD Canister(Wrong Procedure)

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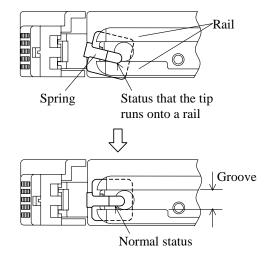
3. Check the condition of the HDD/SSD canister before installing it.



- a. Check if the spring exists in the lower part of the HDD/SSD.
- b.
- <When the spring does not exist in the lower part of the HDD/SSD> Go to the procedure 4 of the next page.
- <When the spring exist in the lower part of the HDD/SSD>
  Check that a spring does not run onto a rail.
  If it runs onto a rail, correct the position so that it may fit in a groove.

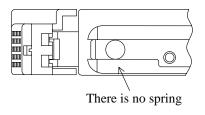


When the spring exists



Viewed from A

When the spring does not exist



Viewed from A

Fig. A-4 Confirmation of Spring Condition

# 4. HDD/SSD canister install procedure

Hitachi Proprietary

Caution – Back Board, or HDD/SSD connector or canister handle may be damaged when the canister is forcibly inserted.

If the canister cannot be easily inserted until the claws on the handle reach the DKU Box, or if the handle binds or stops before it can be locked, then remove the canister and perform inspection:

- a) Check the HDD/SSD slot in HDU Box to be free and clear of obstructions.
- b) Check connector on back board for visible defects.
- c) Inspect connector on HDD/SSD for visible defects.
- d) Inspect HDD/SSD canister top and bottom guide for defects. Note special alignment tab on bottom guide on some canisters. A damaged tab can bind on the lower slot guides in HDU Box.
- e) During installation make sure the HDD/SSD is inserted in alignment with slot guides.
- f) Check upper rear spring on SSD canister has been removed. (This applies only on SSD canister)

Reinsert HDD/SSD after inspections have passed.

# Note on the installation: Do not insert the HDD/SSD canister by pushing its frame

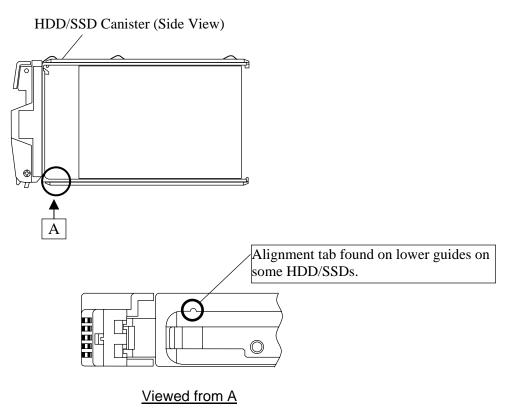


Fig. A-5 Alignment Tab of HDD/SSD Canister

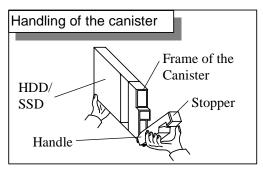
(1) Insert the HDD/SSD canister into the HDU Box holding its handle.

(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) Close and latch the handle in one easy stroke by pushing its top with your thumb.

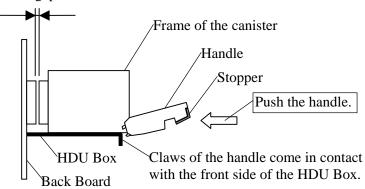
(Do not force the handle. If it binds or stops

before it can be locked, remove the canister and perform inspections provided in the Caution instructions)



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

Small gap exists.



(2) Close and latch the handle in one easy stroke by pushing its top with your thumb.
(Do not force the handle. If it binds or stops before it can be locked, remove the canister and perform inspections provided in the Caution instructions)

The connectors have been coupled.

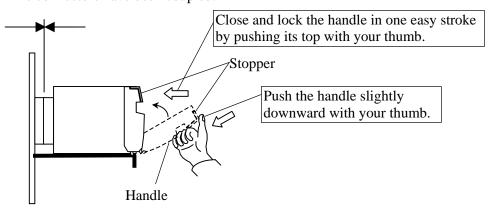


Fig. A-6 Method of Installing HDD/SSD Canister

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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>

		Condition Item  Condition Configuration			Procedure	
Work ID	Parts Name				Configuration	SVP post-procedure
		Failure		Preventive	Unused Spare	
		Warning SIM	Block SIM		drive	
RDK1	Data Drive *1	×	_	_	Yes	Post a (REP04-10), Post z (REP04-980)
RDK2	Data Drive *1	_	×	_	Yes	Post a (REP04-10), Post z (REP04-980)
RDK3	Data Drive *1	_	_	×	Yes	Post a (REP04-10), Post z (REP04-980)
RDK4	Data Drive *1, *4	×	_	_	No	Post b (REP04-60), Post z (REP04-980)
RDK5	Data Drive *1, *4	_	×	_	No	Post b (REP04-60), Post z (REP04-980)
RDK6	Data Drive *1, *4	_	_	×	No	Post b (REP04-60), Post z (REP04-980)
RDK7 *2, *3	Data Drive *1	*2				Post c (REP04-110), Post z (REP04-980)
RDK8	Spare Drive *1	_				Post d (REP04-180), Post z (REP04-980)

\*1: Parts Name indicates attribute of a drive.

Data Drive: The drive is installed in the position for a drive except spare drive (Data Drive).

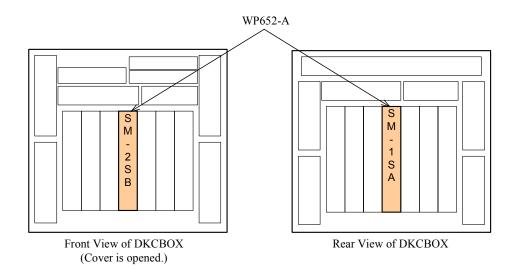
Spare Drive: The drive is installed in the position for a spare drive.

- \*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 TRBL05-470.
- \*3: Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See page SVP03-190 for the procedure for referring to SVP STATUS
- \*4: See "PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY" (REP01-210).

Note: If a Work ID cannot be found or if multiple drive error is occurring, see page TRBL05-280 on TROUBLE SHOOTING section.

# [HARDWARE B]

Location	Function Name of Component		Part Name
Front DKCBOX or Rear DKCBOX	1	SM (Shared Memory) PCB	• WP652-A
	2	SM Module	• SH453-C (S2GQ) • SH453-E (S4GQ)



# 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.

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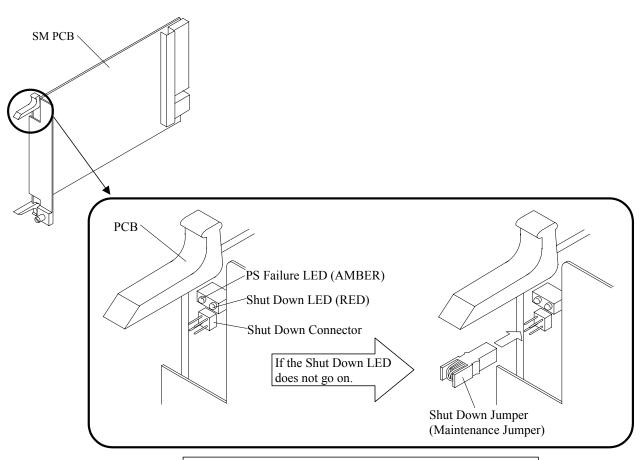
DKC615I

Remove the SM PCB.

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

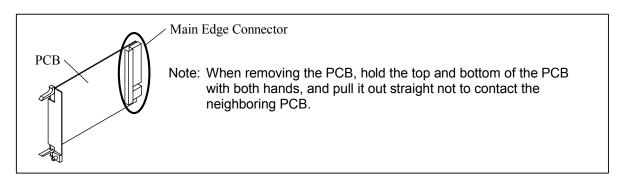
# A CAUTION

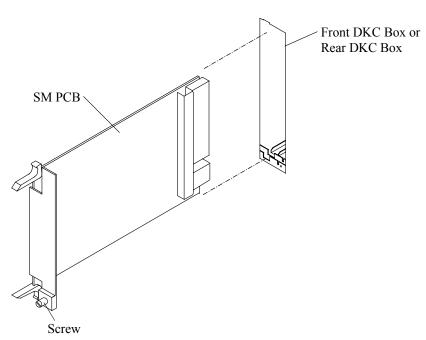
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



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. Remove the screw and remove the SM PCB.





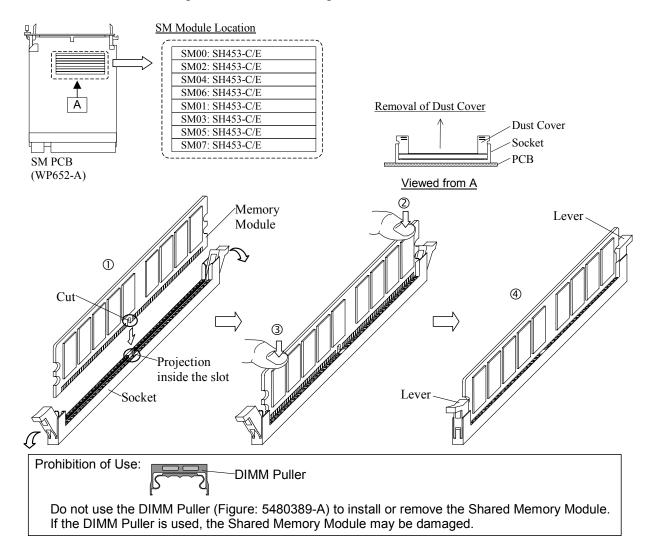
c. Remove the Maintenance Jumper if it is mounted.

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2. Replace the failed part with 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 SM Module, replace the SM Module.



### 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 Insert the other side of the Shared Memory Module into the socket by holding the both sides with your fingers.

### Removal

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

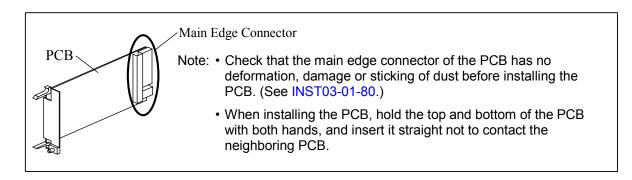
**REP03-110** Rev.0 / May.2007

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DKC615I

3. Insert the SM PCB.

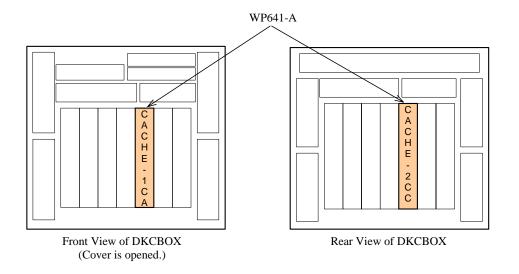
a. Insert the SM PCB and fasten the screw.



4. Go to SVP post-procedure g [REP04-240].

# [HARDWARE C]

Location		Function Name of Component	Part Name
Front DKCBOX or	1	CM (Cache Memory) PCB	• WP641-A
Rear DKCBOX			
	2	CM Module	• SH454-C (C4G)
			• SH454-E (C8G)
			• SH454-G (C16G)



### 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.

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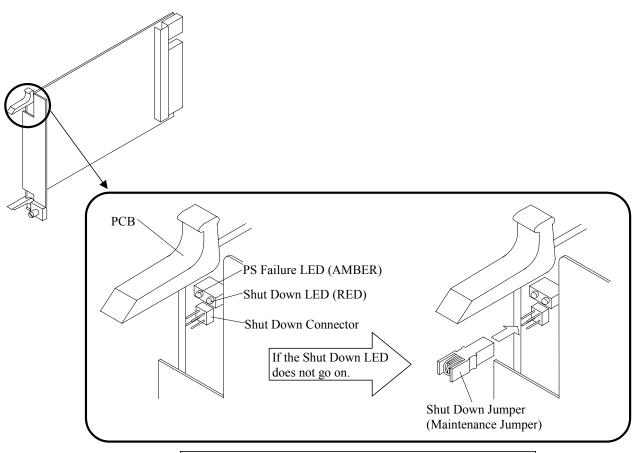
DKC615I

Remove the CM PCB.

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

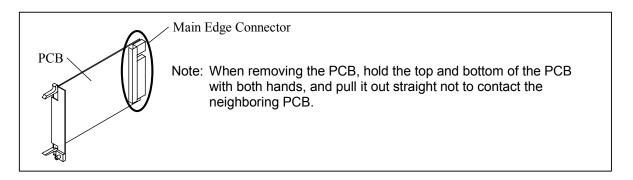
# A CAUTION

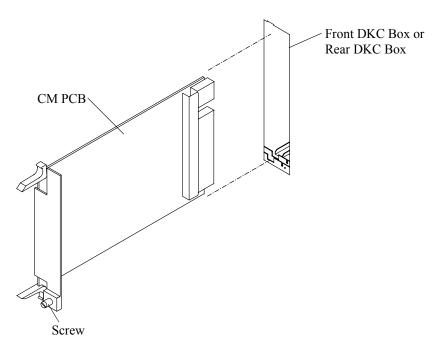
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



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. Remove the screw and remove the CM PCB.



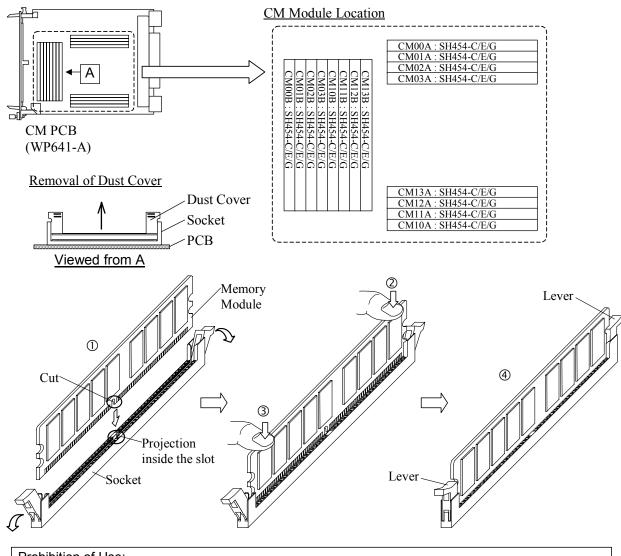


c. Remove the Maintenance Jumper if it is mounted.

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Rev.2 / Feb.2008, Jul.2008

- 2. Replace the failed part with 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 CM Module, replace the CM Module.





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 Insert the other side of the Cache Memory Module into the socket by holding the both sides with your fingers.

### Removal

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

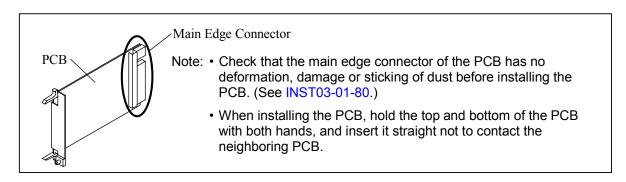
**REP03-160** Rev.0 / May.2007

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DKC615I

3. Insert the CM PCB.

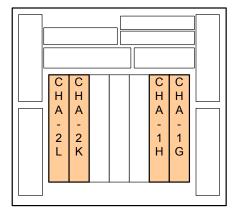
a. Insert the CM PCB and fasten the screw.



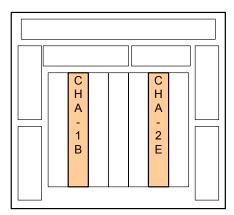
4. Go to SVP post-procedure f [REP04-220].

# [HARDWARE D]

Location	Function Name of Component		Part Name
Front DKCBOX or Rear DKCBOX	1	CHA (Channel Adapter) PCB for Serial (Serial 4-port Adapter PCB)	• WP612-A ×1 & SH343-C ×2 (8S)



Front View of DKCBOX (Cover is opened.)



Rear View of DKCBOX

# NOTICE:

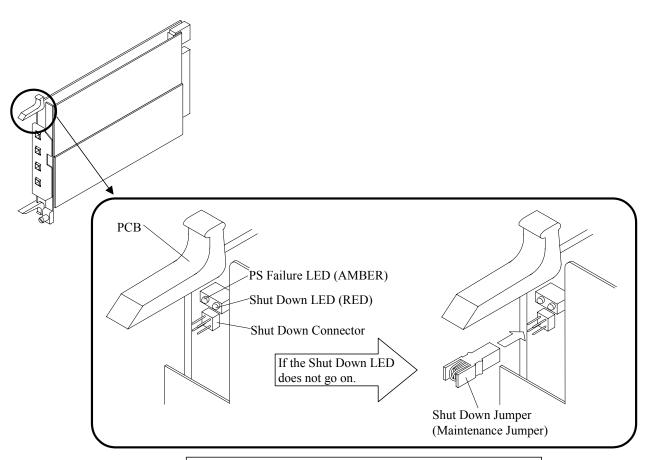
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

Remove the Channel Adapter PCB.

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

# A 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.

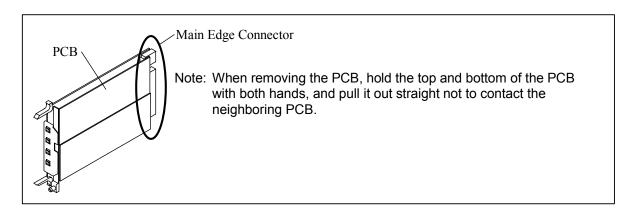


Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

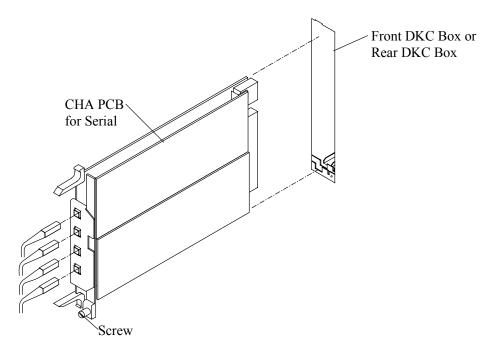
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b. Disconnect the optical fibre cables from the failed Channel Adapter PCB.

c. Remove the screw and remove the failed PCB.



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

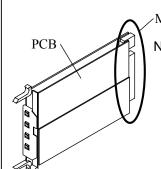


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DKC615I

2. Insert the spare PCB.

a. Insert the spare PCB to the correct location and fasten the screw.



Main Edge Connector

Note: • Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-80.)

 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.

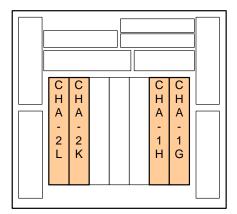
3. Cleaning the fibre cable connectors.

For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.

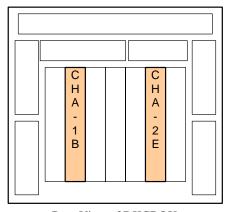
- a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
- b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
- c. Blow compressed air again and check the result of the cleaning. (None of dust, sticking of foreign matter, and dirt must be observed.)
- 4. Connect the optical fibre cables to the spare PCB.
- 5. Go to SVP post procedure h [REP04-260].

# [HARDWARE E]

Location		Function Name of Component	Part Name
Front DKCBOX or Rear DKCBOX	1	CHA (Channel Adapter) PCB for Fibre (Fibre 4-port Adapter PCB)	• WP610-B ×1 & SH444-A ×2 (8FS)
Real BREBOX	2	CHA PCB for Fibre	• WP610-A ×1 &
	2	(Fibre 8-port Adapter PCB)	SH444-A ×2 (16FS)
	3	CHA PCB for Fibre	• WP614-B ×1 &
		(Fibre 4-port Adapter PCB)	SH444-B ×2 (8US)



Front View of DKCBOX (Cover is opened.)



Rear View of DKCBOX

# 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.

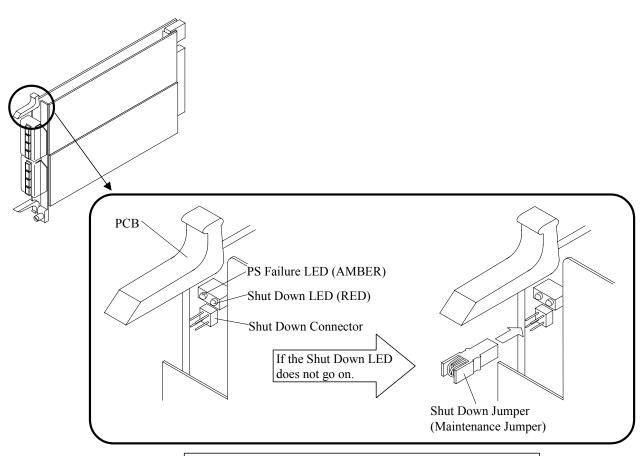
DKC615I

Remove the Channel Adapter PCB.

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

# A CAUTION

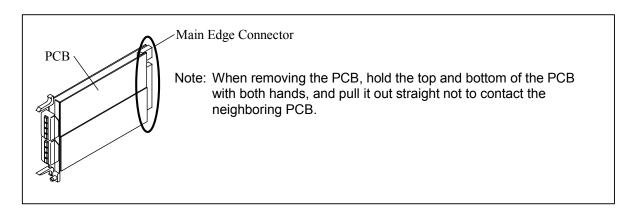
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



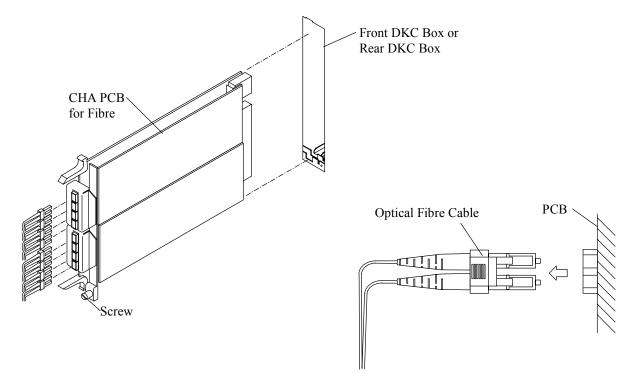
Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

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

c. Remove the screw and remove the failed PCB.



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

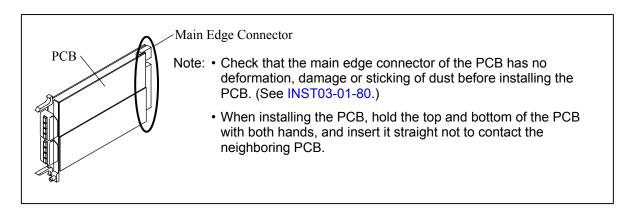


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DKC615

2. Insert the spare PCB.

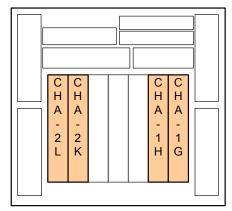
a. Insert the spare PCB to the correct location and fasten the screw.



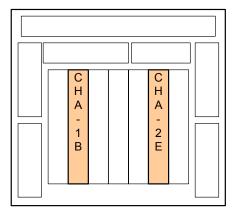
- 3. Cleaning the fibre cable connectors. For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
  - a. Blow compressed gas against the connector using an air sprayer (for about five seconds).
  - b. Wipe the connector lightly with a piece of cut gauze wet with ethyl alcohol.
  - 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 [REP04-260].

## [HARDWARE F]

Location	Function Name of Component		Part Name
Front DKCBOX or Rear DKCBOX	1	CHA (Channel Adapter) PCB for Mainframe Fibre (MF Fibre 8-port Adapter PCB)	• WP611-A ×1 & SH444-A ×2 (8MFS)
	2	CHA PCB for Mainframe Fibre (MF Fibre 8-port Adapter PCB)	• WP611-B ×1 & SH444-A ×2 (8MFL)



Front View of DKCBOX (Cover is opened.)



Rear View of DKCBOX

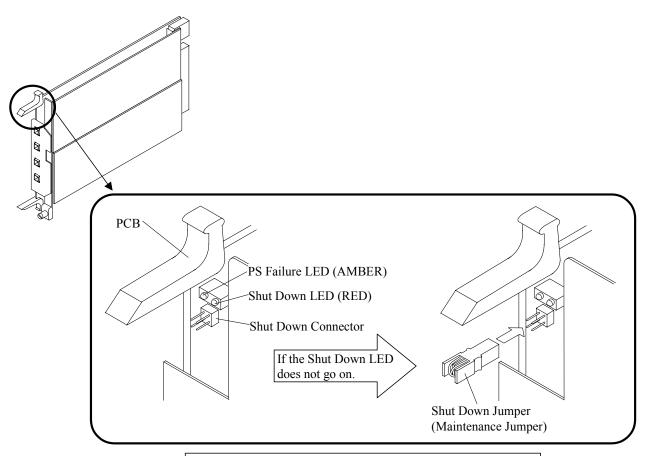
### NOTICE:

Remove the Channel Adapter PCB.

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

### A CAUTION

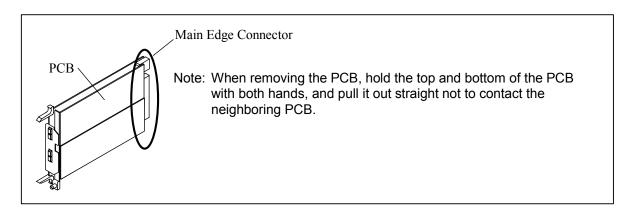
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



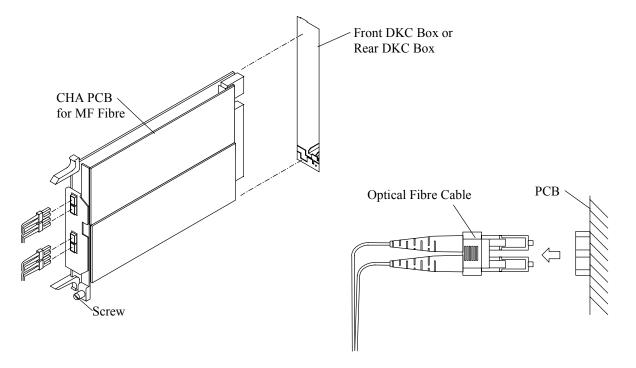
Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

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

c. Remove the screw and remove the failed PCB.



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

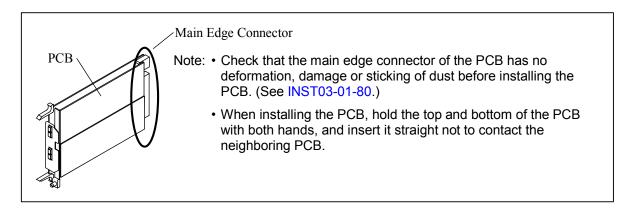


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2. Insert the spare PCB.

a. Insert the spare PCB to the correct location and fasten the screw.



- 3. Cleaning the fibre cable connectors. For the tools needed for the cleaning, refer to the tool list on page PARTS06-10.
  - 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 [REP04-260].

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 REP03-290
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 REP03-300
 DKC615I

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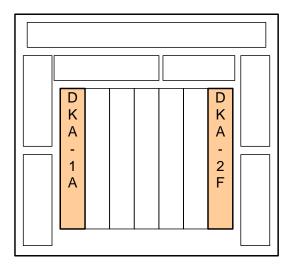
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 REP03-320
 DKC615I

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# [HARDWARE J]

Location		Function Name of Component	Part Name
Rear DKCBOX	1	DKA (Disk Adapter) PCB	• WP620-A ×1 & SH444-A ×2
	2	Encrypt DKA PCB	• WP620-B ×1 & SH444-A ×2



Rear View of DKCBOX

### NOTICE:

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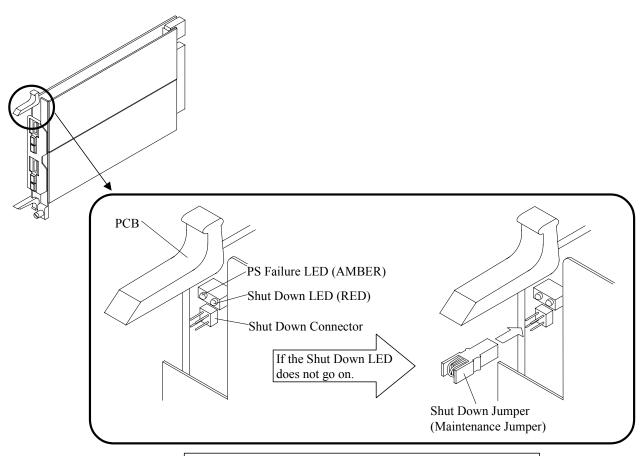
DKC615I

Remove the DKA PCB.

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

### A CAUTION

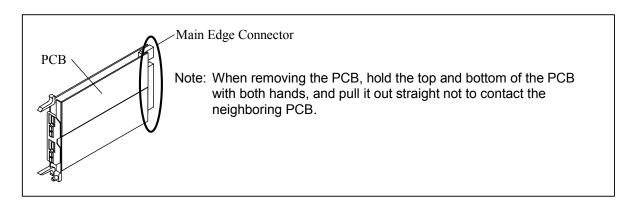
A system down may be caused if the Maintenance Jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



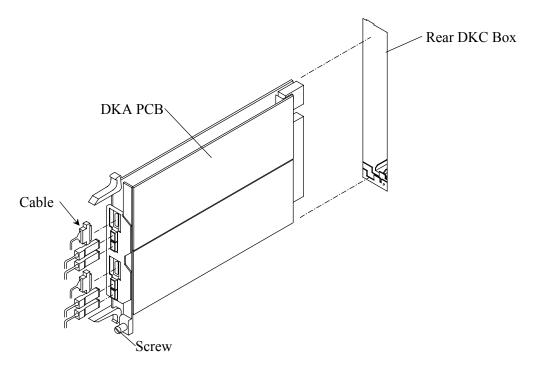
Note: When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

b. Disconnect the cables from the failed DKA PCB.

c. Remove the screw and remove the failed PCB.

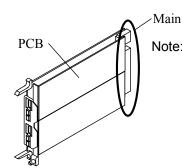


d. If the Maintenance Jumper is used, remove it.



2. Insert the spare PCB.

a. Insert the spare PCB to the correct location and fasten the screw.



Main Edge Connector

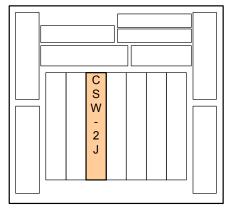
Note: • Check that the main edge connector of the PCB has no deformation, damage or sticking of dust before installing the PCB. (See INST03-01-80.)

 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.

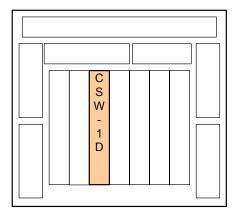
- b. Connect the cables to the spare PCB after seeing "Notes when connecting the DEV interface cable" (INST03-01-100).
- 3. Go to SVP post procedure h [REP04-260].

# [HARDWARE K]

Location	Function Name of Component		Part Name
Front DKCBOX or	1	CSW PCB	• WP630-A
Rear DKCBOX			



Front View of DKCBOX (Cover is opened.)



Rear View of DKCBOX

### NOTICE:

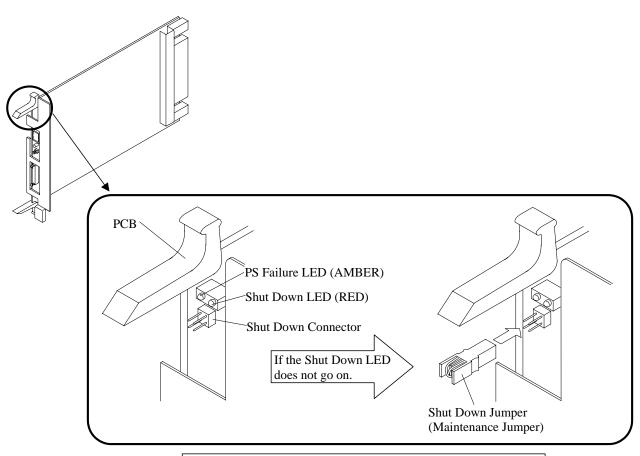
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Remove the CSW PCB.

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.

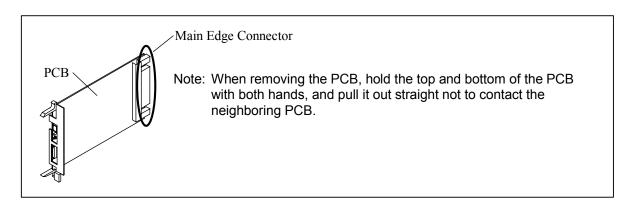


Note: • When the Maintenance Jumper is inserted in the PCB, the Shut Down LED (RED) and the PS Failure LED (AMBER) light on, but it is not a problem if they do not light on.

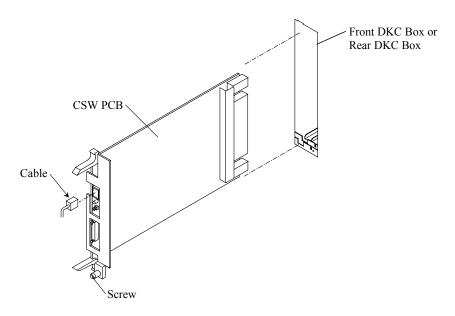
· When the CSW is forcibly replaced without the SVP operation by the Shut Down Jumper, a dummy replacement by the SVP operation is required to restore the paths.

b. Disconnect the cable from the failed CSW PCB.

c. Remove the screw and remove the failed PCB.

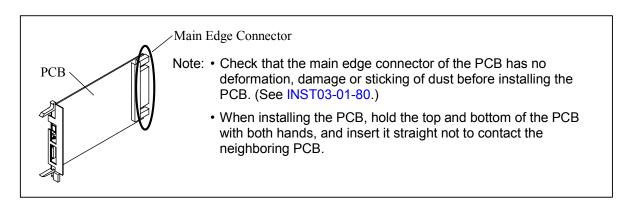


d. If the Maintenance Jumper is used, remove it.



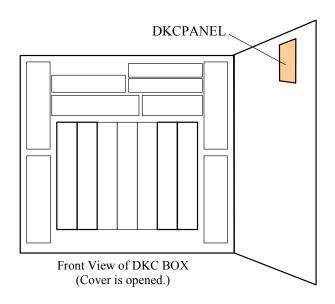
2. Insert the spare PCB.

a. Insert the spare PCB to the correct location and fasten the screw.



- 3. Connect the cable to the spare PCB.
- 4. Go to SVP post procedure k [REP04-320].

Location		Function Name of Component	Part Name
Front Door of DKCBOX	1	DKCPANEL	• SH457-A



### NOTICE:

### 1 DKCPANEL

1. Set the switches and jumpers 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.

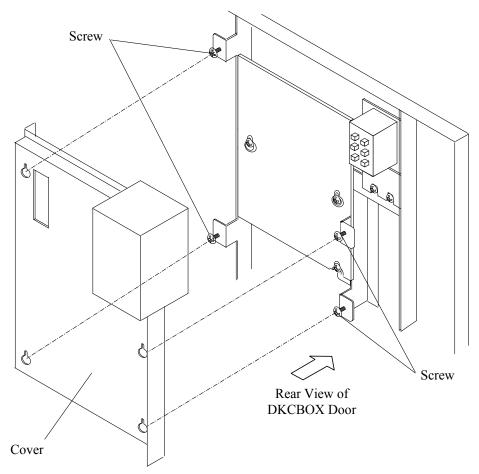


Fig. T1-1 Removal of Cover

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- b. Disconnect the cables (P11 and P12) from the DKCPANEL PCB.
- c. Loosen the three screws and remove the DKCPANEL PCB.
- d. Attach the spare PCB and fasten the three screws.
- e. Connect the cables (P11 and P12) to the spare PCB.

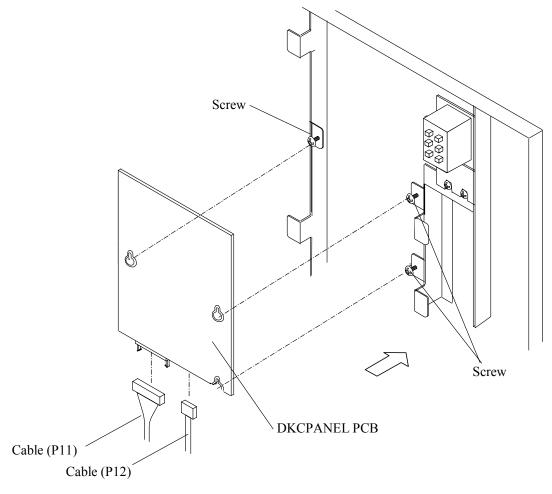
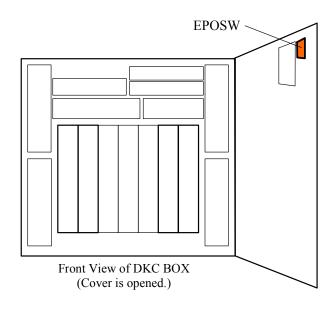


Fig. T1-2 Replace of PCB

- 3. Attach the Cover.
  - a. Attach the cover and fasten the four screws. Refer to Fig. T1-1.
- 4. Go to SVP post procedure t1 [REP04-340].

## [HARDWARE T2]

Location	Function Name of Component		Part Name
Front Door of DKCBOX	1	EPOSW	



### NOTICE:

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 DKC615I

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### 1 EPOSW

- 1. Remove the EPOSW.
  - a. Loosen the four screws and remove the cover.
  - b. Disconnect the cable (P12) from the DKCPANEL PCB.

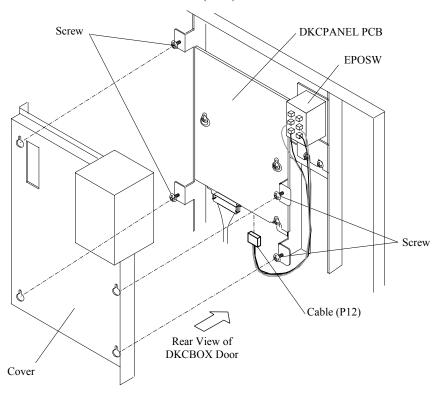


Fig. T2-1 Removal of Cable

c. Loosen the screw and remove the bracket.

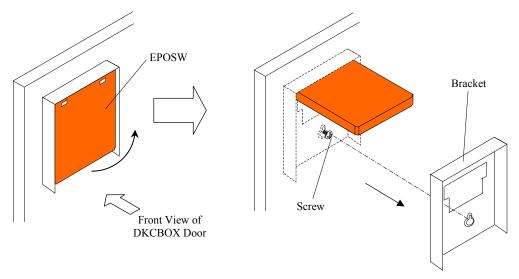
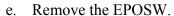


Fig. T2-2 Removal of Bracket

d. Loosen the two screws, and remove the EPOSW cover from the failed EPOSW.



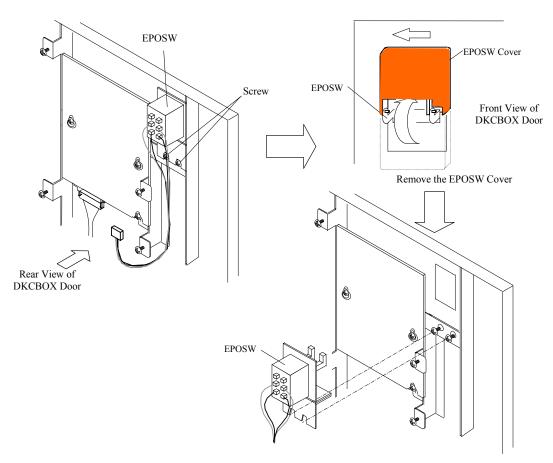


Fig. T2-3 Removal of EPOSW

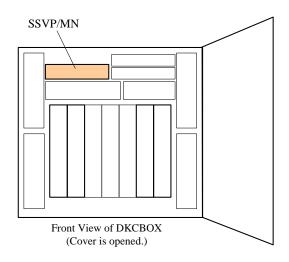
### 2. Attach the EPOSW

- a. Attach the spare EPOSW to the DKCBOX door, and attach the EPOSW cover to the EPOSW, and fasten the two screws. Refer to Fig. T2-3.
- b. Attach the bracket and fasten the screw. Refer to Fig. T2-2.
- c. Connect the cable (P12) to the DKCPANEL PCB. Refer to Fig. T2-1.
- d. Attach the Cover and fasten the four screws.
- 3. Go to SVP post procedure t1 [REP04-340].

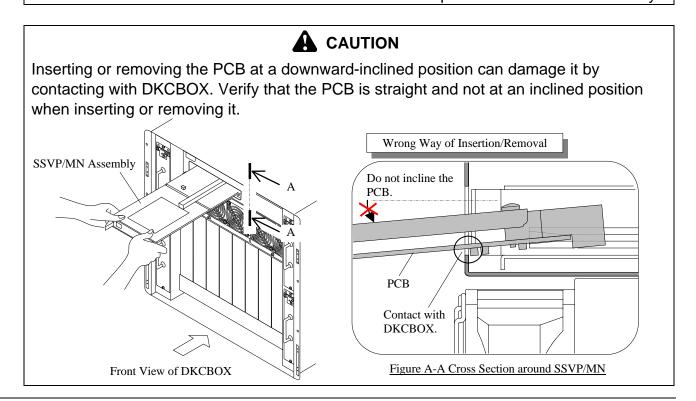
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### [HARDWARE T3]

Location		Function Name of Component	Part Name
Front of DKCBOX	1	SSVP/MN	• SH455-A



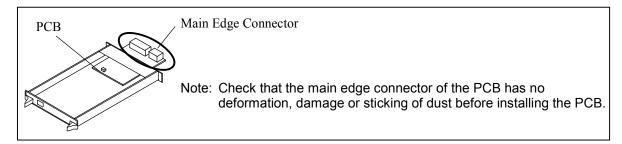
### NOTICE:



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### 1 SSVP/MN

- 1. Replace the SSVP/MN Assembly.
  - a. Check that the Shut Down LED is on.
  - b. Loosen the screw and remove the SSVP/MN Assembly.
  - c. Insert the spare SSVP/MN Assembly and fasten the screw.



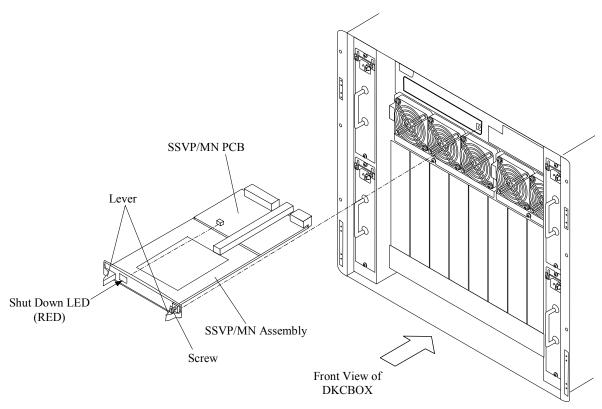


Fig. T3-1 Replacement of SSVP/MN Assembly

2. Go to SVP post procedure t1 [REP04-340].

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REP03-490 DKC615I

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PEP03-520

DKC615I

 REP03-520
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**REP03-530** Rev.0 / May.2007 DKC615I Copyright © 2007, Hitachi, Ltd.

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PEP03-540

DKC615I

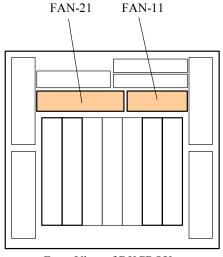
 REP03-540
 DKC615I

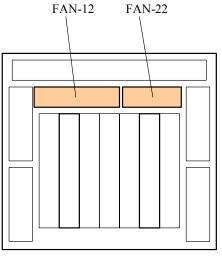
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## [HARDWARE T5]

Location		Function Name of Component	Part Name
Front DKCBOX	1	FAN Assembly (LG-F1)	FAN-11
	2	FAN Assembly (LG-F2)	FAN-21
Rear DKCBOX	3	FAN Assembly (LG-R1)	FAN-12
	4	FAN Assembly (LG-R2)	FAN-22





Front View of DKCBOX (Cover is opened.)

Rear View of DKCBOX

### NOTICE:

DKC615I

1 FAN Assembly (DKCBOX)



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 and remove the failed FAN Assembly (DKCBOX).
  - b. Attach the spare FAN Assembly (DKCBOX) and fasten the screw.

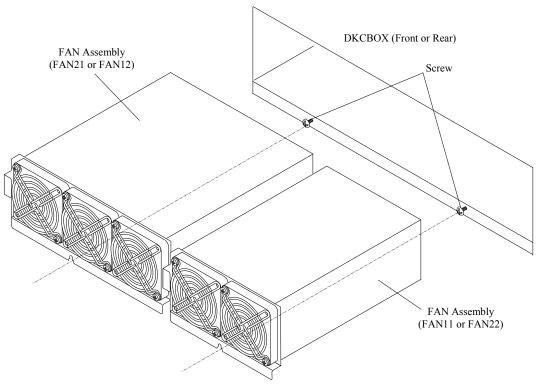
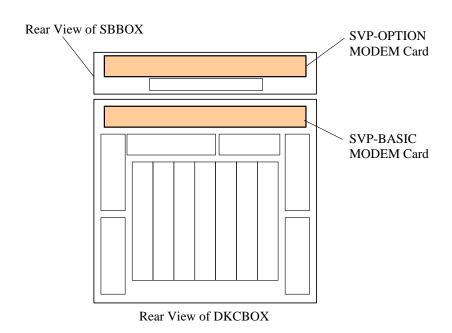


Fig. T5-1 Replacement of FAN Assembly (DKCBOX)

2. Go to SVP post procedure t1 [REP04-340].

# [HARDWARE T6]

Location	Function Name of Component		Part Name
Rear DKCBOX or	1	SVP (XP)	• HJ-4220-60EEA
Rear SBBOX	2	SVP (VISTA)	• HJ-4220-7EWEA
	3	MODEM Card	• ME5614CG3 (OMRON)



### NOTICE:

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1-2 SVP

Note: Refer to the INSTALLATION SECTION pages (INST03-13-20 through INST03-13-22) for the types and the supported combinations of SVP.

- 1. Notes when replacing the SVP When replacing SVP, pay attention to the following. Installation of LAN card varies with SPEC NO in Fig. T6.1-1 or Fig. T6.1-2.
  - (1) Fig. T6.1-1 in case of SPEC NO SVP2

    The LAN card is installed in the LAN card slot. When replacing SVP, it is unnecessary to remove the LAN card.
  - (2) Fig. T6.1-2 in case of SPEC NO SVP3 or SVP4 The LAN card is not installed in the LAN card slot. (The function of the LAN card is taken into the mother board.) When replacing SVP, do not install the LAN card in the LAN card slot.

### When SVP is SPEC NO SVP2

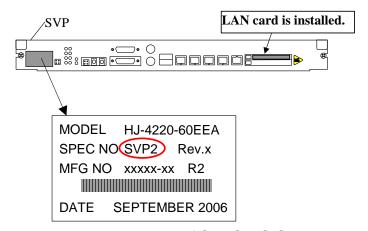


Fig. T6.1-1 In case of SPEC NO SVP2

### When SVP is SPEC NO SVP3 or SVP4

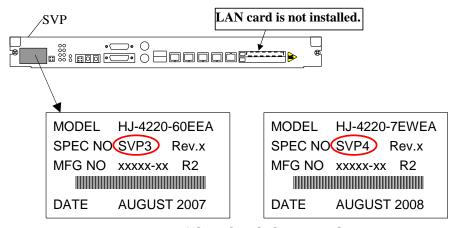
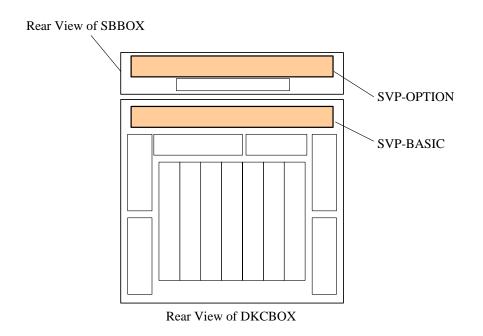


Fig. T6.1-2 In case of SPEC NO SVP3 or SVP4

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#### 2. SVP PS OFF.

a. Press the SVP PS OFF switch on the SVP.



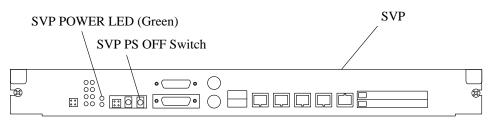


Fig. T6.1-3 SVP PS OFF

- 3. Remove the SVP.
  - a. Disconnect the cables (P83-x and P84-x) from the failed SVP.
  - b. When the MODEM card is installed, disconnect the cable from the MODEM card.
  - c. Loosen the two screws and remove the failed SVP.

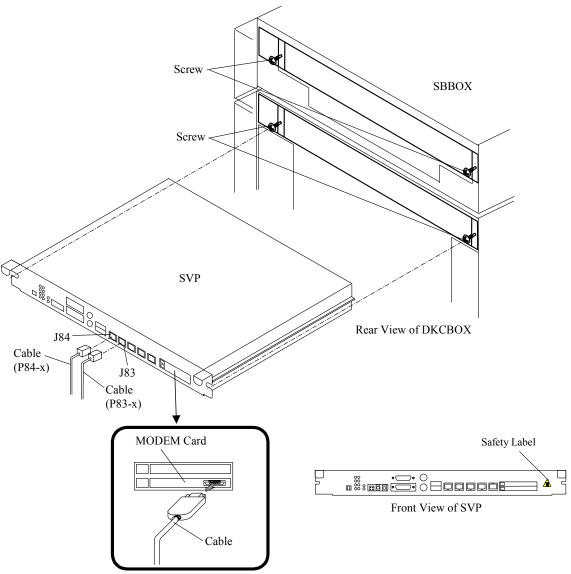


Fig. T6.1-4 Removal of SVP

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- 4. Set the Jumper.
  - a. When the maintenance jumper is inserted into the JP1 on the failed SVP, remove the maintenance jumper.
  - b. Insert the maintenance jumper into the JP1 on the spare SVP.

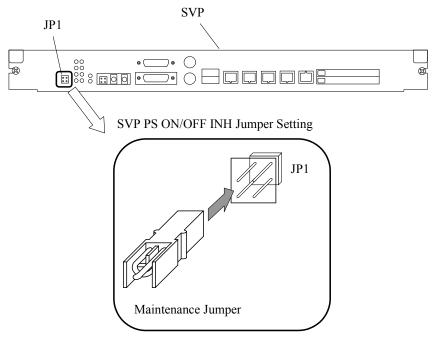


Fig. T6.1-5 Insertion of Maintenance Jumper

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5. When the MODEM card is installed, move the MODEM card.

When the MODEM card is not installed, go to step 6.

- a. Push the Lower button on the failed SVP.
- b. Push the Lower button to remove MODEM Card from the failed SVP.
- c. Insert the MODEM Card to the spare SVP.

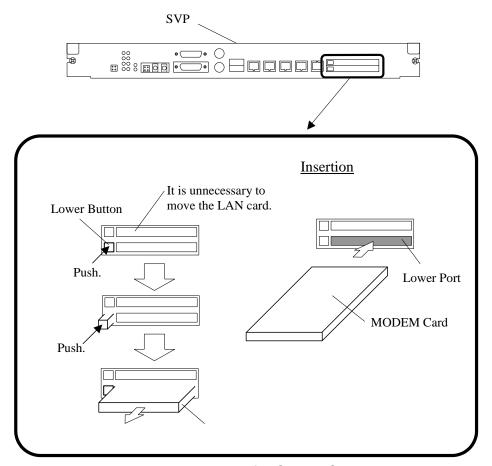


Fig. T6.1-6 Replacement of MODEM Card

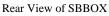
- 6. Install the spare SVP.
  - a. Install the spare SVP and fasten the two screws. (Refer to Fig. T6.1-4.)
     Note: Confirm the vertical direction of the SVP. If the direction was wrong, the SVP will not be ON.
  - b. When the MODEM card is installed, connect the cable to the MODEM card.
  - c. Connect the cables (P83-x and P84-x) to the spare SVP.
- 7. SVP PS ON.
  - a. Check that the SVP POWER LED of the SVP is on. (Refer to Fig. T6.1-3.)
- 8. Go to SVP post procedure t1 [REP04-340].

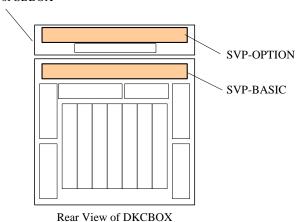
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#### 3 Replacement of MODEM Card

#### 1. SVP Power OFF

When replacing the MODEM Card of Master SVP, go to step 1-1 (REP03-630). When replacing the MODEM Card of Standby SVP, go to step 1-2 (REP03-650).





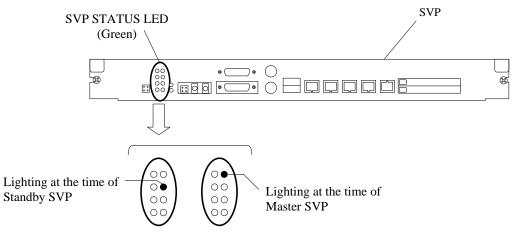


Fig. T6.2-1 Confirmation of SVP STATUS LED

DKC615I

1-1 When replacing the MODEM Card of Master SVP

a. Insert the maintenance jumper into JP1 on the SVP-BASIC.
 When the SVP-OPTION is installed, insert the maintenance jumper into JP1 on the SVP-OPTION.

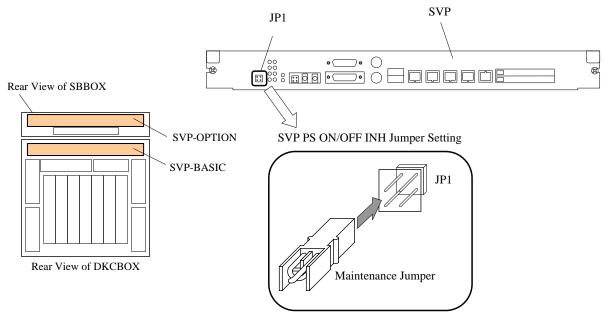
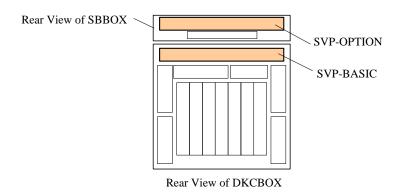


Fig. T6.2-2 Insertion of Maintenance Jumper

- b. Press the SVP PS OFF switch on the Master SVP.
- c. It waits until SVP POWER LED puts out the light.



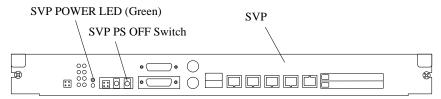


Fig. T6.2-3 Location of SVP POWER LED

d. Go to step 2.

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- 1-2 When replacing the MODEM Card of Standby SVP
  - Insert the maintenance jumper into JP1 on the SVP-BASIC.
     Insert the maintenance jumper into JP1 on the SVP-OPTION.

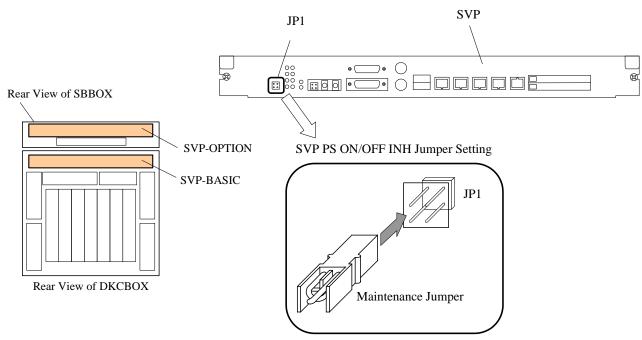
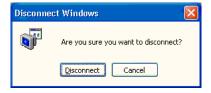


Fig. T6.2-4 Insertion of Maintenance Jumper

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.



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

Remote Desktop Disconnected

The remote session to the remote computer was ended by means of an administration tool.

Your administrator might have ended your connection.

OK

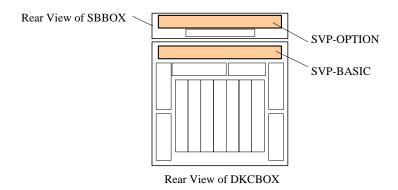
Help

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 SVP01-110)

[Connection destination]

xxx.xxx.xxx.14

- c. Press the SVP PS OFF switch on the Standby SVP.
- It waits until SVP POWER LED puts out the light.



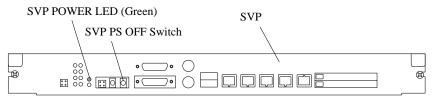


Fig. T6.2-5 Location of SVP POWER LED

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- 2. Remove the failed MODEM Card.
  - a. Disconnect the cable from the modem cable coupler.
  - b. Push the Lower button on the SVP.
  - c. Push the Lower button to remove MODEM Card from the SVP.

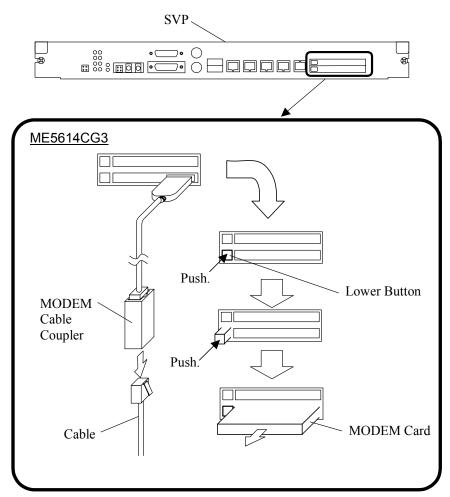


Fig. T6.2-6 Removal of MODEM Card

DKC615I

- 3. Insert the spare MODEM Card.
  - a. Insert the MODEM Card in the Lower port on the SVP.
  - b. Connect the cable to the modem cable coupler.

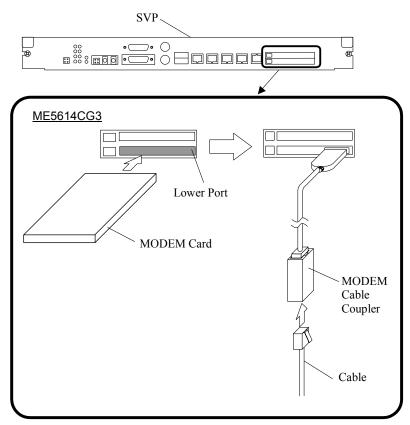


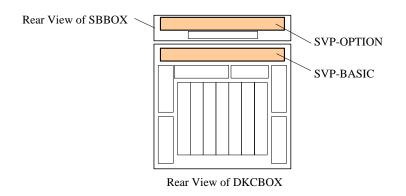
Fig. T6.2-7 Insertion of MODEM Card

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#### 4. SVP Power ON.

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



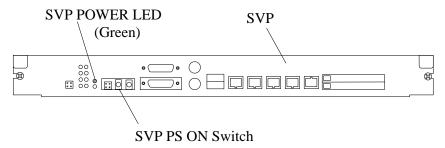


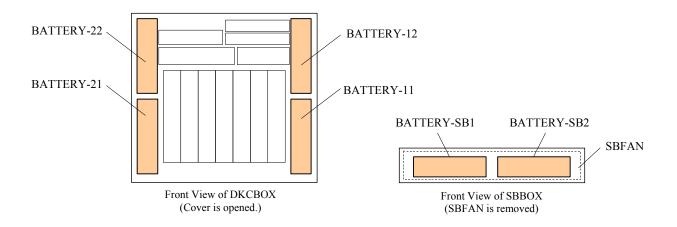
Fig. T6.2-8 SVP PS ON Switch

- 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 SVP01-110.)
   [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 SVP-BASIC. When the SVP-OPTION is installed, remove the maintenance jumper of the JP1 on the SVP-OPTION. Refer to Fig. T6.2-2.
- 5. Replacement work is end. (Post procedure is unnecessary.)

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## [HARDWARE T7]

Location	Function Name of Component		Part Name
Front of DKCBOX	1	BATTERY BOX (12V)	
Front of SBBOX	2	BATTERY BOX (12V)	



#### 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.

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#### 1 BATTERY BOX (12V) in the DKCBOX



Paying attention to falls:

The weight of the battery box is 6 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.

### **A** 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. Confirmation of the switch
  - a. Open the DKCBOX Front Cover. (Refer to INST03-01-40)
  - b. Confirm the switch on the battery box is turned off.

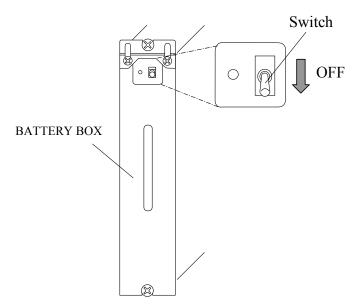


Fig. T7.1-1 Switch on Battery Box

- 2. Replacing the battery box.
  - a. Turn off the switch on the replaced Battery Box. (Refer to Fig. T7.1-1.)
  - b. Loosen the two screws and remove the battery box.
  - c. Insert the spare battery box.
  - d. Fix the battery box with the screws and stopper.
  - e. Turn on the switch on the Battery Box.

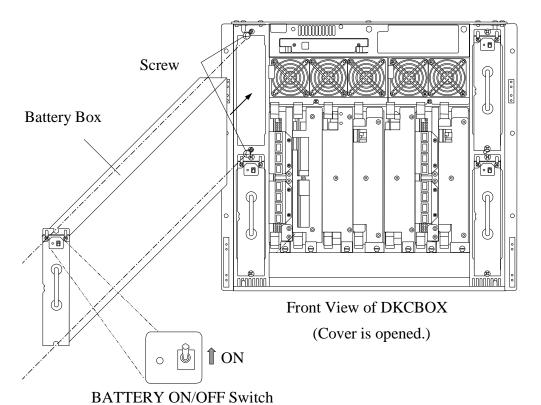


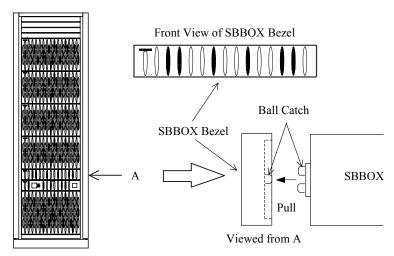
Fig. T7.1-2 Replacement of Battery Box

- e. Close the DKCBOX Front Cover. (Refer to INST03-01-40).
- 3. Go to SVP post procedure t1 [REP04-340].

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#### 2 BATTERY BOX (12V) in the SBBOX

- 1. Remove the SBBOX bezel and SBFAN assembly.
  - a. Remove the SBBOX bezel.



Front View of Basic Rack

Fig. T7.2-1 Removal of SBBOX Bezel

b. Loosen the four screws and remove the SBFAN assembly.

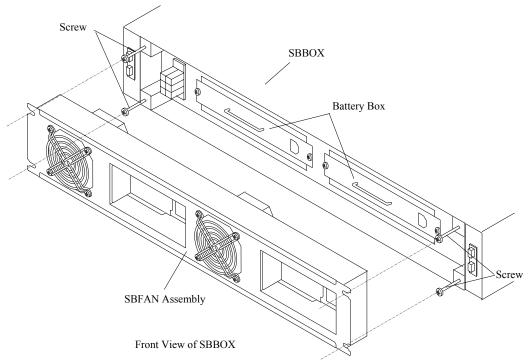


Fig. T7.2-2 Removal of SBFAN Assembly



Paying attention to falls:

The weight of the battery box is 6 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.

### A CAUTION

Watching for short-circuits:

A Short-circuit may cause a fire.

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

- 2. Confirmation of the switch
  - a. Confirm the switch on the battery box is turned off.

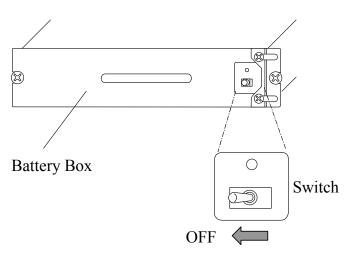


Fig. T7.2-3 Switch on Battery Box

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- 3. Replacing the battery box.
  - a. Turn off the switch on the replaced Battery Box. (Refer to Fig. T7.2-3.)
  - b. Loosen the two screws and remove the battery box.
  - c. Insert the spare battery box.
  - d. Fix the battery box with the screws.
  - e. Turn on the switch on the Battery Box.

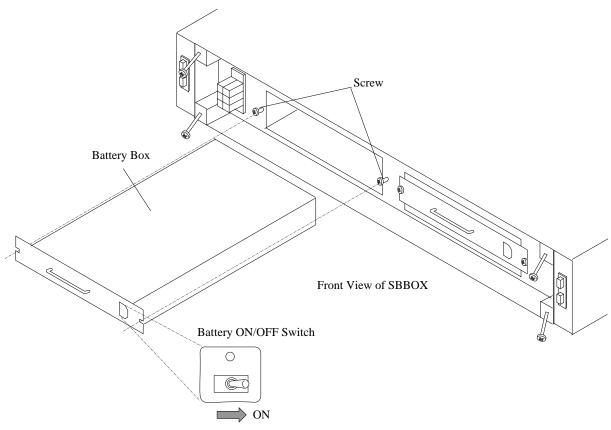
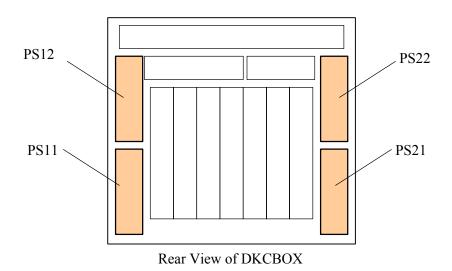


Fig. T7.2-4 Replacement of Battery Box

- f. Attach the SBFAN assembly and fasten the four screws. (Refer to Fig.T7.2-2)
- g. Attach the SBBOX Bezel. (Refer to Fig.T7.2-1)
- 4. Go to SVP post procedure t1 [REP04-340].

# [HARDWARE T8]

Location	Function Name of Component		Part Name
Rear of DKCBOX	1	DKCPS	



#### 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.

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#### Replacement of DKCPS

Replace the DKCPS.



#### CAUTION

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

a. Remove the stopper on the failed DKCPS and disconnect the cable.



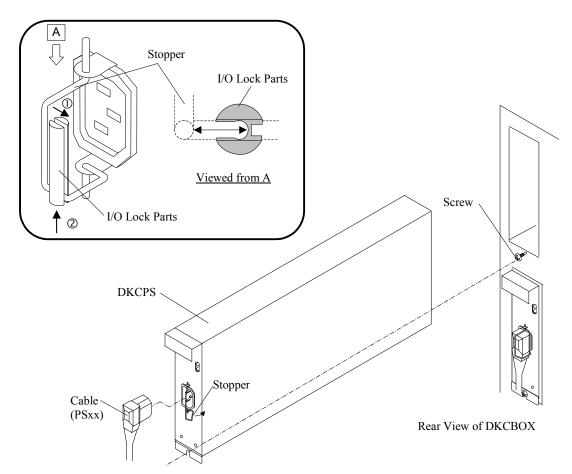
#### CAUTION

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.

- b. Loosen the screw and remove the DKCPS.
- c. Remove the I/O lock parts from the stopper of the DKCPS and attach it to the stopper of the spare DKCPS.
- d. Attach the spare DKCPS and fasten the screw.
- e. Connect the cable and secure it with the stopper.

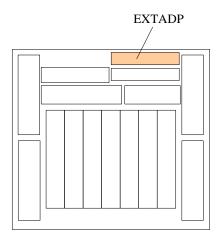


Replacement of DKCPS Fig. T8-1

Go to SVP post procedure t1 [REP04-340]. 2.

## [HARDWARE T9]

Location	Function Name of Component		Part Name
Front of DKCBOX	1	EXTADP	• SH499-A



Front View of DKCBOX (Cover is opened.)

#### 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.

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#### 1 EXTADP

- 1. Replace the EXTADP.
  - a. Open the DKCBOX Front Cover. (Refer to INST03-01-40)
  - b. Disconnect the cables.
  - c. Loosen the screw and remove the EXTADP.
  - d. Attach the spare EXTADP and fasten the screw.
  - e. Connect the cables.

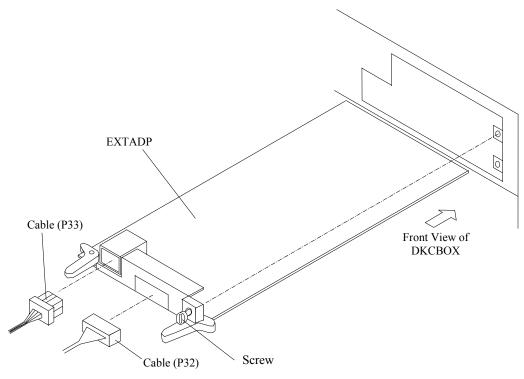
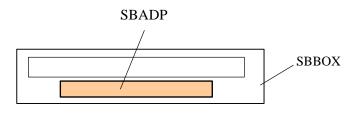


Fig. T9-1 Replacement of EXTADP

2. Go to SVP post procedure t1 [REP04-340].

# [HARDWARE T10]

Location		Function Name of Component	Part Name
Rear of SBBOX	1	SBADP	• SH500-A



Rear View of SBBOX

#### 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.

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#### 1 SBADP

- 1. Remove the Rear SBBOX Cover.
  - a. Loosen the two screws and remove the Rear SBBOX Cover.

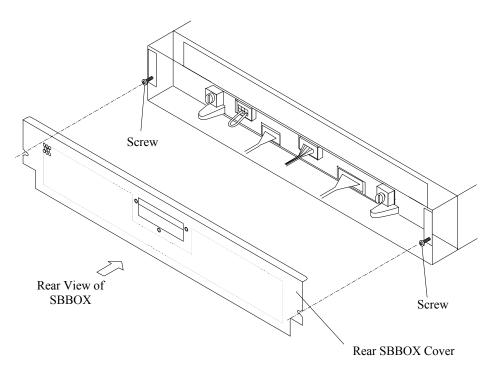


Fig. T10-1 Removal of Rear SBBOX Cover.

- 2. Replace the SBADP
  - a. Disconnect the cables, and remove the Cable Check Connector.
  - b. Loosen the two screws and remove the SBADP.
  - c. Attach the spare SBADP, and fasten the two screws.
  - d. Connect the cables and attach the Cable Check Connector to the SBADP.

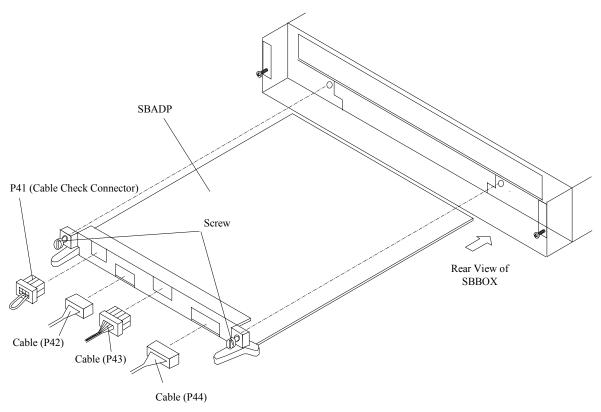
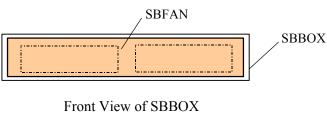


Fig. T10-2 Replacement of SBADP

- e. Attach the Rear SBBOX Cover. (Refer to Fig. T10-1.)
- 3. Go to SVP post procedure t1 [REP04-340].

## [HARDWARE T11]

Location	Function Name of Component		Part Name
Front of SBBOX	1	SBFAN Assembly	



(SBBOX Bezel is removed)

#### 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.

DKC615I

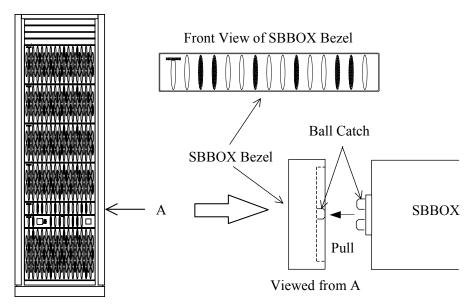
1 SBFAN Assembly



Hazardous rotating mechanism:

Can cause injury if touched. Stay clear of it when machine is running.

#### 1. Remove the SBBOX bezel.



Front View of Basic Rack

Fig. T11-1 Removal of SBBOX Bezel

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2. Replace the SBFAN assembly.

- a. Loosen the four screws and remove the SBFAN assembly.
- b. Attach the spare SBFAN assembly, and fasten the four screws.
- c. Attach the SBBOX Bezel. (Refer to Fig. T11-1.)

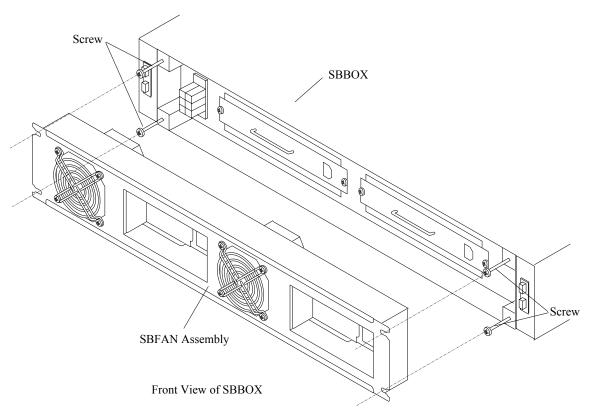
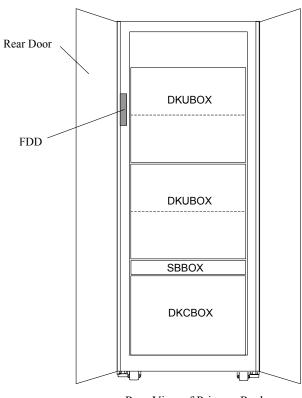


Fig. T11-2 Replacement of SBFAN Assembly

3. Go to SVP post procedure t1 [REP04-340].

# [HARDWARE T12]

Location		Function Name of Component	Part Name
Rear of Primary Rack	1	FDD	FDD (USB)



Rear View of Primary Rack

(hp Rack Only)

#### NOTICE:

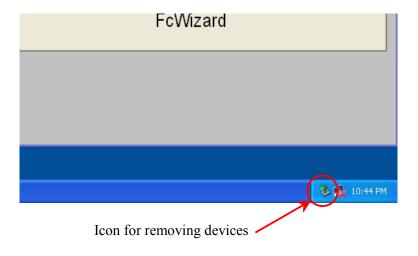
Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity.

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 DKC615I

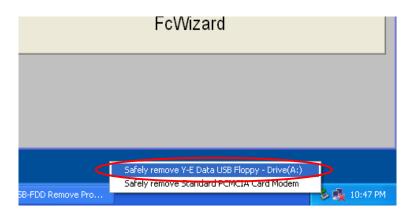
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1 FDD

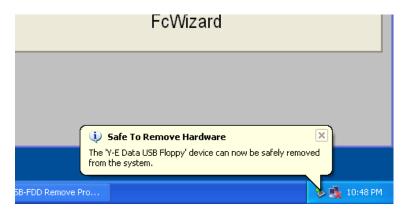
- 1. Pre-procedure of FDD removal
  - a. Move a mouse cursor onto the icon that is for detaching devices. That locates on lower right of the screen. (Inside of red circle of the figure below) And, click a left button on the icon.



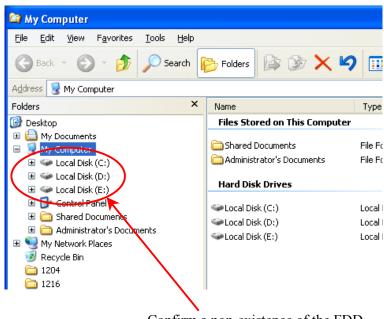
b. Then, the menu would be displayed on the icon that means removable devices. Next, move a mouse cursor onto the menu "Safely remove Y-E Data USB Floppy - Drive (A)". And, click a left button on the menu.



c. Confirm that the message of "The 'Y-E Data USB Floppy' device can now be safely removed from the system." is displayed.



d. Open the Windows Explorer ([Start]-[All Programs]–[Accessories]–[Windows Explorer]), and confirm non-existence of the USB-FDD "3 1/2 Floppy (A:)" in there.



Confirm a non-existence of the FDD

- 2. Replace the FDD.
  - a. Disconnect the USB cable of the FDD from the USB extension cable.
  - b. Loosen the screw and slide the FDD stopper to the upside.
  - c. FDD is pushed up from a square notch portion, and pull out the FDD.

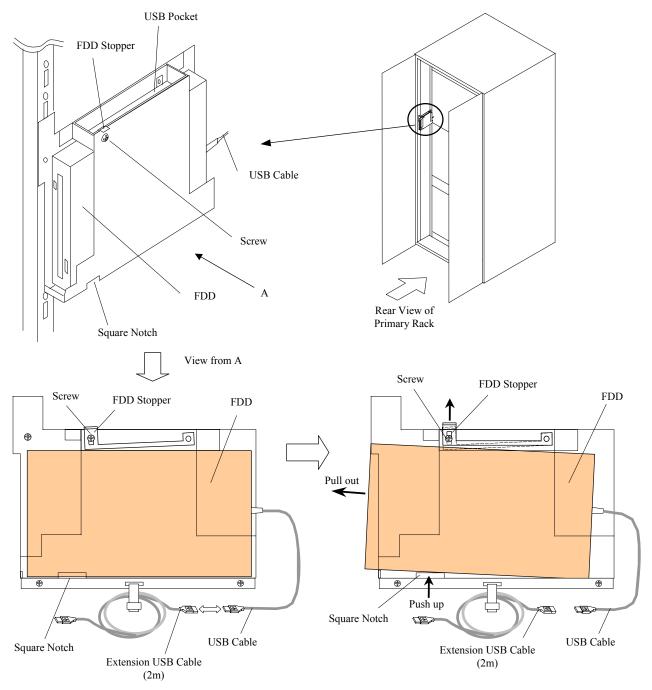


Fig. T12-1 How to Remove the FDD

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d. Replace the FDD.

- e. Fix the FDD stopper and fasten the screw. (Refer to Fig. T12-1)
- f. Connect the USB cable of the FDD to USB extension cable. (Refer to Fig. T12-1)

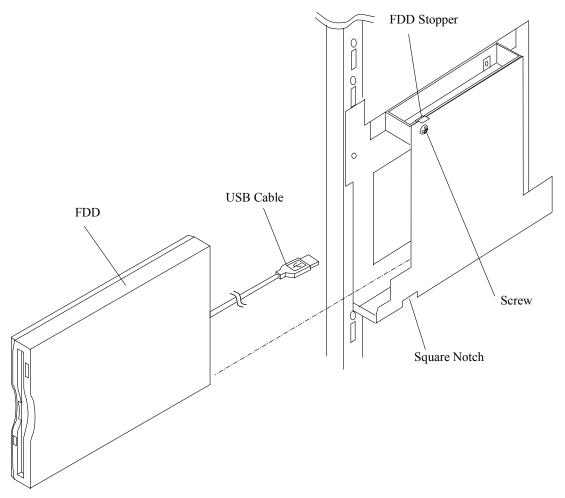
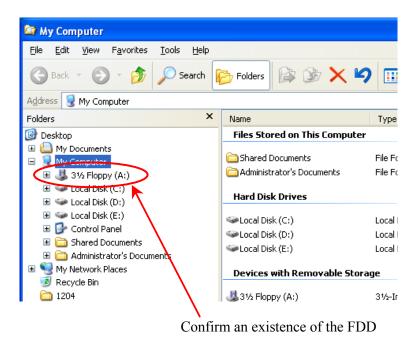


Fig. T12-2 Replacement of FDD

- 3. Confirmation of FDD attachment
  - a. Open the Windows Explorer ([Start]–[All Programs]–[Accessories]–[Windows Explorer]), and confirm an existence of the USB-FDD "3 1/2 Floppy (A:)" in there.



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

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 REP03-960
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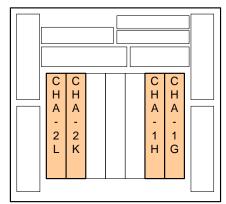
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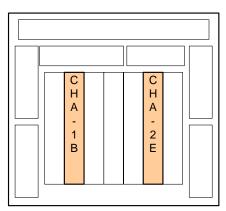
Hitachi Proprietary

# [HARDWARE T14]

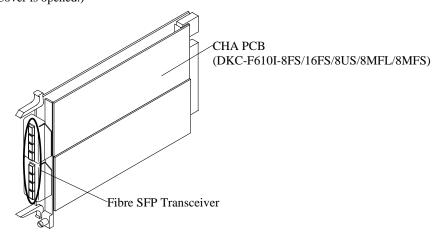
Location	Function Name of Component		Part Name
Front DKCBOX or	1		• SFP (SHORT 4G) • SFP (LONG 4G)
Rear DKCBOX	2	•	• SFP (SHORT 8G) • SFP (LONG 8G)



Front View of DKCBOX (Cover is opened.)



Rear View of DKCBOX



### 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, LOC04-20.)

### A 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.

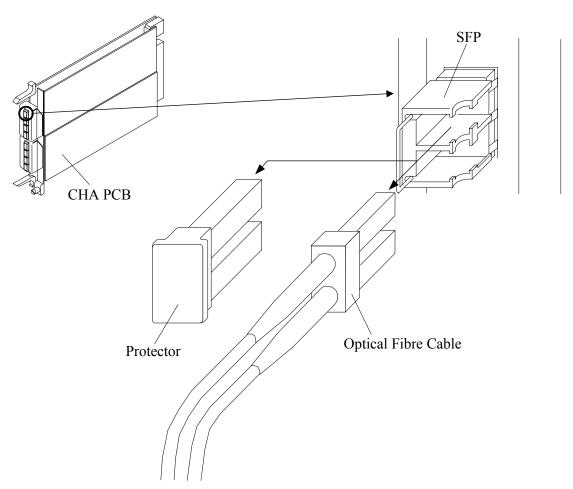


Fig. T14-1 Disconnection of Cable

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 DKC615I

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c. Raise the lever forward and remove the SFP.

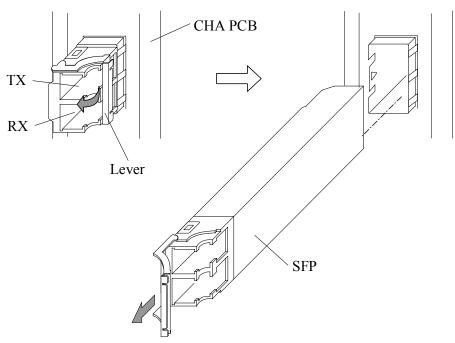


Fig. T14-2 Removal of SFP

Hitachi Proprietary SC03096Z

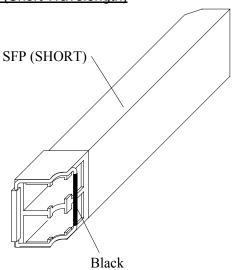
**REP03-1000** Rev.0 / May.2007

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DKC615I

- d. Insert the spare SFP to the CHA PCB.
- e. Connect the optical fibre cable to the SFP.

### SFP (Short Wavelength)



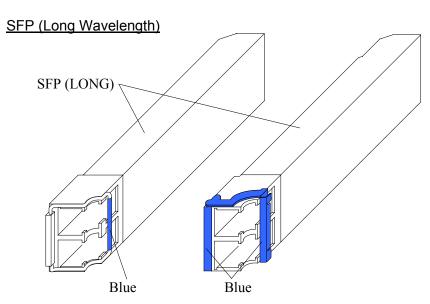
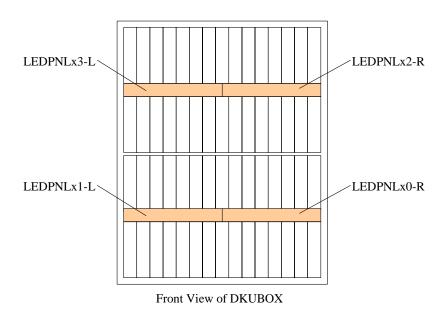


Fig. T14-3 How to distinguish SFP

2. Go to SVP post procedure t5 [REP04-900].

# [HARDWARE T15]

Location	Function Name of Component	Part Name
Front DKUBOX	1 LEDPNL	• NJD-8614



### 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.

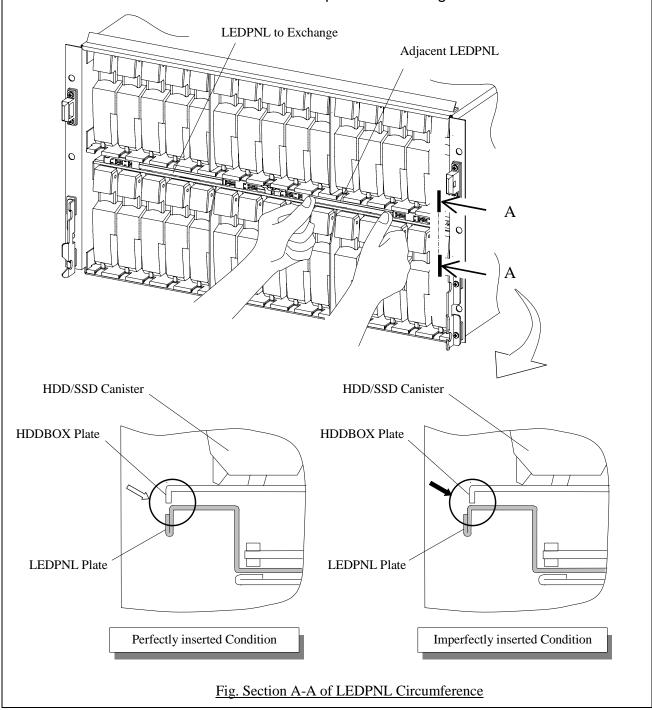
1 LEDPNL

### A CAUTION

When the LEDPNL is exchanged with the adjacent LEDPNL imperfectly inserted, it may lead to the system down.

Confirm the insertion by pushing the adjacent LEDPNL all the way in with both hands before the replacement.

Make sure that the PCBs are inserted to the position of the figure of the lower left.



DKC615I

- 1. Replacement of LEDPNL
  - a. Remove the HDDBOX Bezel. (Refer to page INST03-01-30.)
  - b. Loosen the screw and slide the stopper.

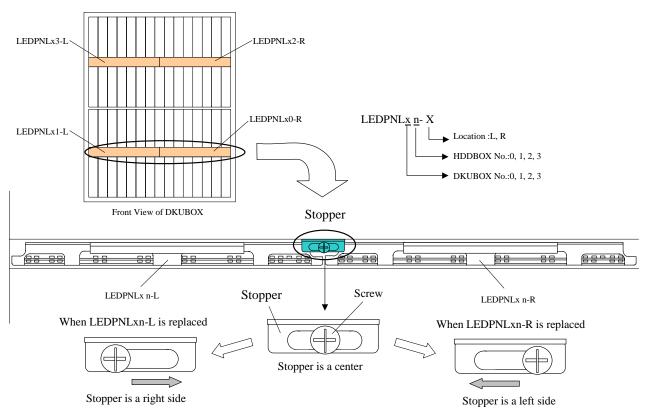


Fig. T15-1 How to slide the Stopper

c. Remove the LEDPNL.

- d. Remove the panel sheet from the LEDPNL and attach it to the spare LEDPNL.
  - Note: The panel sheets installed on the left and right are different from each other. Take care not to make a mistake in installation. (Confirm the "LEFT" and "RIGHT" characters marked on the sheets.)
- e. Attach the spare LEDPNL and the stopper is slide in a central position.

  Note: The installation of LEDPNL must be done by pushing it all the way in with both hands. (See next sheet.)
- f. Fasten the screw.
- g. Attach the HDDBOX Bezel. (Refer to page INST03-01-30.)

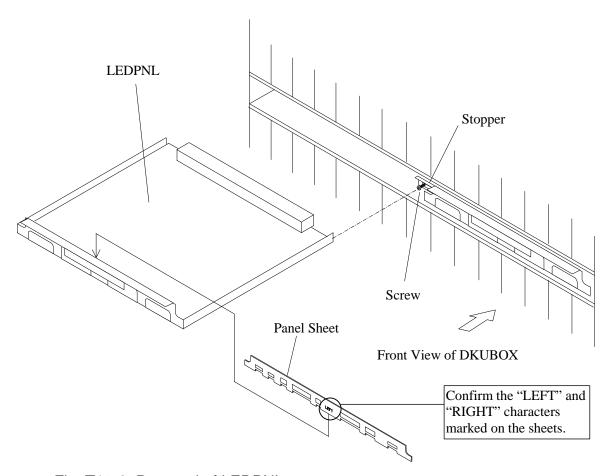


Fig. T15-2 Removal of LEDPNL

### **A** CAUTION

The installation of LEDPNL must be done by pushing it all the way in with both hands. Make sure that the PCBs are inserted to the position of the figure of the lower left.

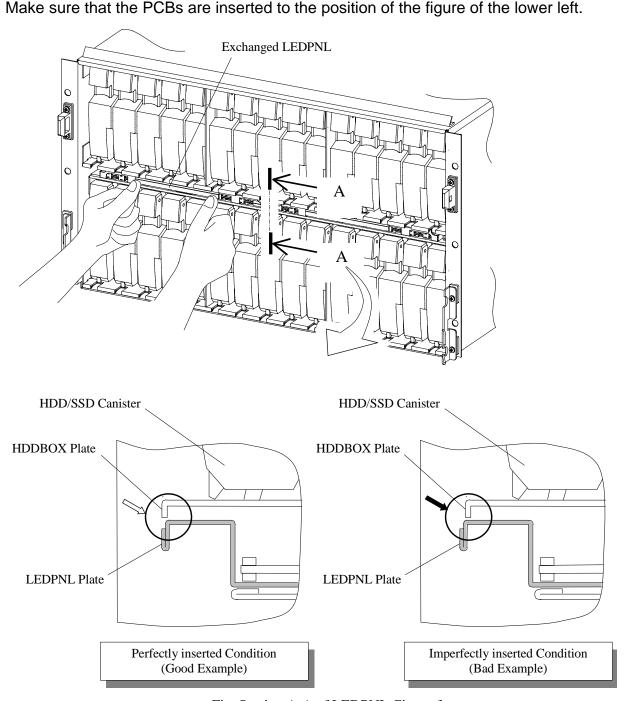
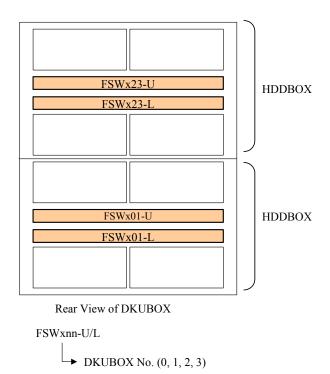


Fig. Section A-A of LEDPNL Circumference

2. Go to SVP post procedure t4 [REP04-850].

# [HARDWARE T16]

Location	Function Name of Component		Part Name
DKUBOX	1	FSW	• SH463-A



### 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 "Replacement of FSW (REP03-1050)".
  - When coupling the DKU-RK1, RK2 and RK3, remove all the FSWs (whose Shut Down LEDs are on) once and then installing them. The Shut Down LED light off when you operate post procedure on SVP.

1 Replacement of FSW

### 1. Remove the covers.

When the DKC-F615I-EXC0 is not installed in the DKUBOX or When the DKC-F615I-EXC0 is installed to right side of DKUBOX

Note: Since the screws that fix the FSW Cover and the cable cover are not fall prevention screws, be careful not to drop the screws when attaching or removing the covers.

- a. Loosen the six screws and remove the HDDBOX cover.
- b. Loosen the three screws and remove the R cover
- c. Loosen the two screws, move the FSW cover to the left and then remove it.
- d. Loosen the two screws, move up the Cable cover (R) and then remove it.

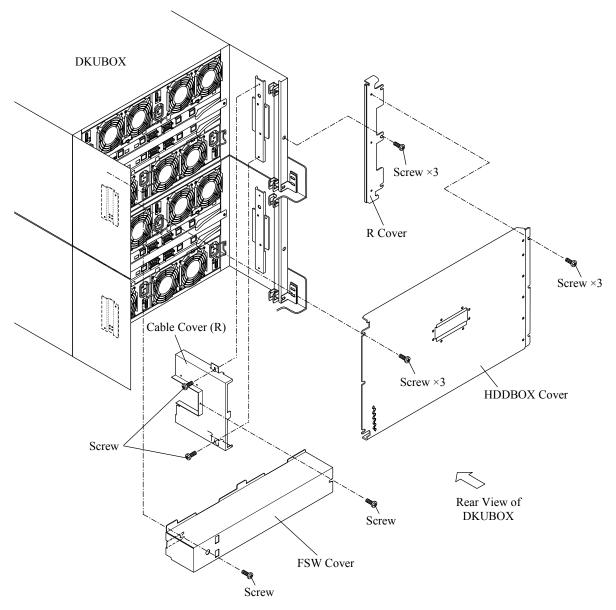


Fig. T16-1 Removal of Covers

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### When the DKC-F615I-EXC0 is installed to left side of DKUBOX

Note: Since the screws that fix the FSW Cover and the cable cover are not fall prevention screws, be careful not to drop the screws when attaching or removing the covers.

- a. Loosen the six screws and remove the HDDBOX cover.
- b. Loosen the three screws and remove the R cover
- c. Remove the two screws and remove the FSW cover.
- d. Loosen the two screws, move up the Cable cover (R) and then remove it.
- e. Loosen the two screws, move up the Cable cover (L) and then remove it.

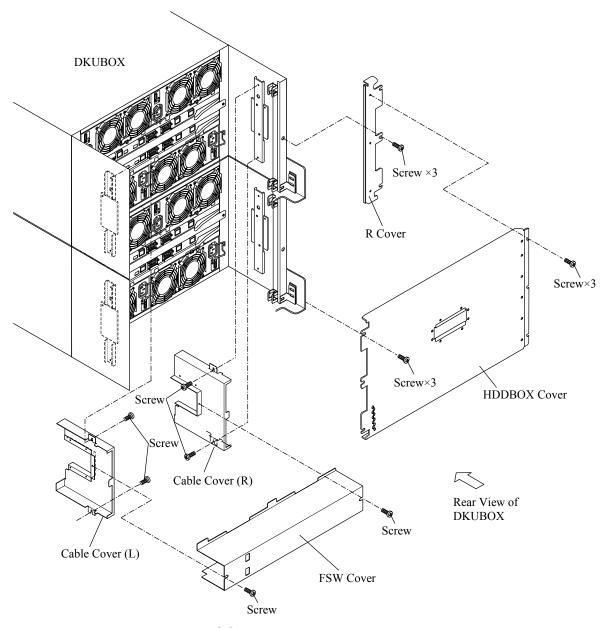


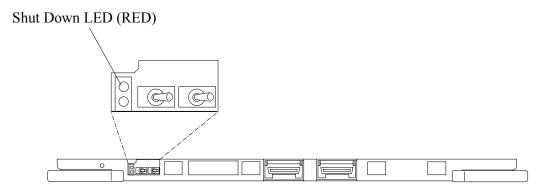
Fig. T16-2 Removal of Covers

 REP03-1060
 DKC615I

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- 2. Replace the FSW PCB.
  - a. 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.



Front View of FSW PCB

Fig. T16-3 Confirmation of Shut Down LED

b. Disconnect the DEV interface cables from the FSW PCB.

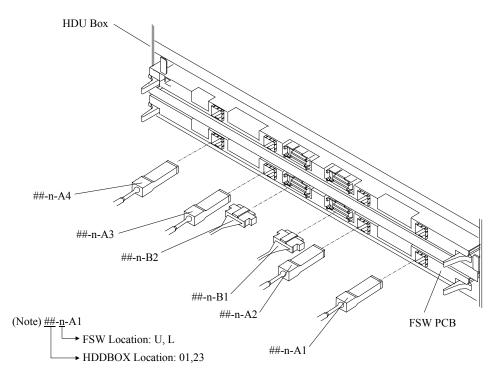


Fig. T16-4 Disconnect the DEV Interface Cables

- c. Open the lever of the FSW PCB outside, and pull out the PCB from the platter. (The worker must face to the front of the device.)
- d. Hold the center part of the FSW PCB, and pull it out slowly.

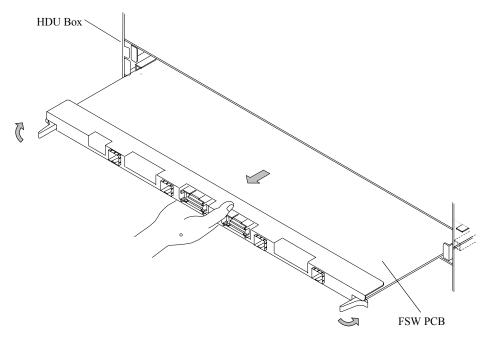


Fig. T16-5 Removal of FSW PCB

e. Set the switches of the spare FSW PCB. For switch settings, refer to LOC06-90 through 100.



- f. Take time for 10 seconds or more from removing the PCB to the installation.
- g. Put the tip of the FSW PCB on the rails and insert it about 30mm. (The worker must face to the front of the device.)
- h. Hold the center part of the FSW PCB, and insert it slowly.
- i. Close the lever inside, and insert the FSW PCB into the platter.

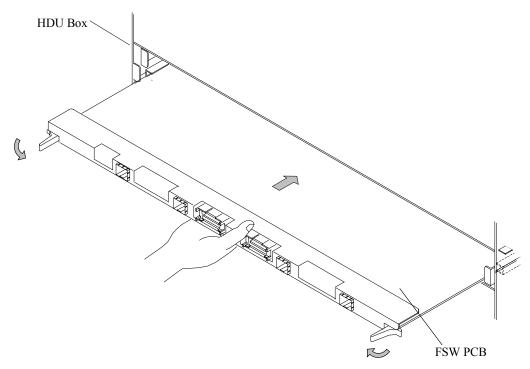
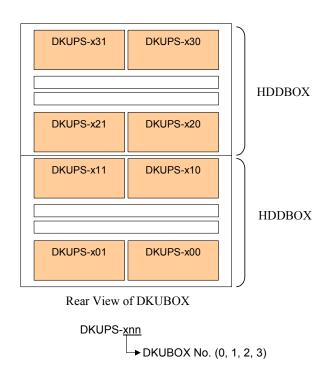


Fig. T16-6 Insertion of FSW PCB

- j. Connect the DEV interface cables to the FSW PCB after seeing "Notes when connecting the DEV interface cable" (INST03-01-100). (Refer to Fig. T16-3.)
- k. Attach the covers and fasten the screws. (Refer to Fig. T16-1 or Fig. T16-2.)
- 3. Go to SVP post procedure j [REP04-290].

# [HARDWARE T17]

Location	Function Name of Component		Part Name
Rear of DKUBOX	1	DKUPS	



### 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.

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### 1 Replacement of DKUPS

### 1. Remove the covers.

Note: Since the screws that fix the FSW Cover are not fall prevention screws, be careful not to drop the screws when attaching or removing the covers.

- a. Loosen the screws and remove the HDDBOX cover. Refer to Fig. T17-1 or Fig. T17-2.
- b. When the right side DKUPS is replaced, loosen the screws and remove the R cover and FSW cover.
- c. When the left side DKUPS is replaced, remove the FSW cover.

When the DKC-F615I-EXC0 is not installed in the DKUBOX or When the DKC-F615I-EXC0 is installed to right side of DKUBOX

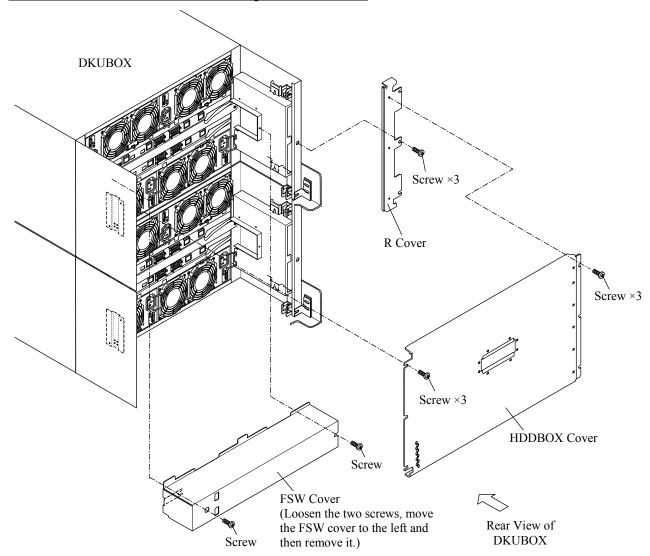


Fig. T17-1 Removal of the Covers

### When the DKC-F615I-EXC0 is installed to left side of DKUBOX

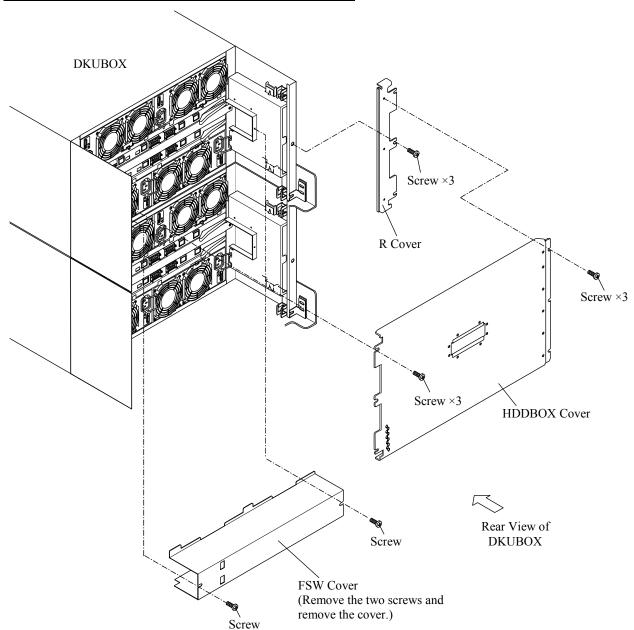


Fig. T17-2 Removal of the Covers

DKC615I

2. Replace the DKUPS.

a. Turn the PS Enable/Disable switch to disable at the DKUPS.

### **A** CAUTION

A system down may be caused by setting the PS Enable/Disable switch of the DKUPS other than that to be replaced to "Disable". Make sure that it is a DKUPS to be replaced.

DKUPS are installed in upper side and lower side of a HDDBOX in an opposite direction.

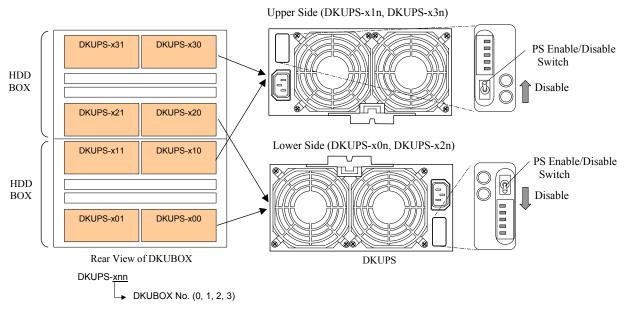


Fig. T17-3 Switch Position on DKUPS

b. Open the connector stopper and disconnect the cable from the DKUPS.



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. Remove the screw, and pull out the DKUPS.
- d. Set the switches of the spare DKUPS. For switch settings, refer to LOC06-60 through 80.
- e. Attach the spare DKUPS, and fasten the screw.
- f. Connect the cables to the DKUPS and fix the connector stopper.
- g. Attach the covers. (Refer to Fig. T17-1 or Fig. T17-2.)

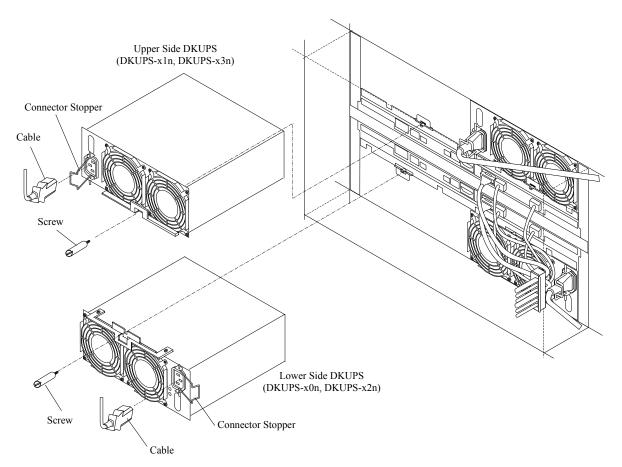


Fig. T17-4 Replacement of DKUPS

3. Go to SVP post procedure t4 [REP04-850].

## [POST-PROCEDURE a]

### - OUTLINE -

- ① Execute CUDG on P-DEV
- ② Specify recovery
- 3 Copy back
- **4** SIM Complete

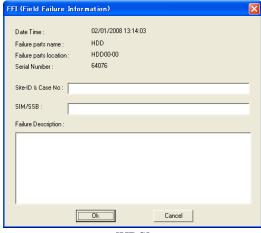
DKC615

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

A dump removable media is attached with a Spare HDD.

1. <Get the error information>

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



[HDS]



[HP]

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



When Client PC is selected, the directory selection dialog is displayed.

Please select an arbitrary directory if necessary. Select (CL) [Save] when saving a file in a specified directory.

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



DKC615I

• When the destination media is write-protected. <For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].

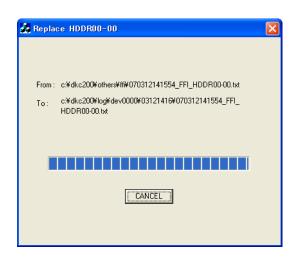
<For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



DKC615I

2. <Copy of the error information>
The error information is copied onto media.



"Remove the media." is displayed. Remove the removable media and select (CL) [OK].



- 3. <Spin up the Physical Drive> "Spinning up..." is displayed.
- 4. <DKU INLINE>
  "DKU INLINE is now running..." is displayed.

Hitachi Proprietary SC03096Z

**REP04-40** Rev.0 / May.2007

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5. < 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.

- 6. <Restore Physical Drive> "Restoring..." is displayed.
- 7. < Check the Physical Drive > "Checking..." is displayed.
- 8. <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 9.



[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 10.

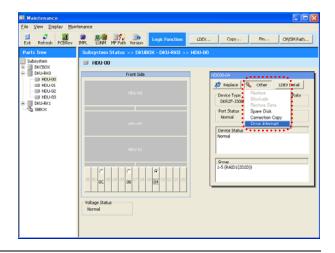


9. <Check starting of copyback>
"Copying..." is displayed.
Select (CL) [OK] in response to "Copying data in spare device to the physical device has been started.".



10.

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



11. <SIM Complete>
Refer to SVP02-560.

## [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.
- S Reset Threshold Counter
- **© SIM Complete**

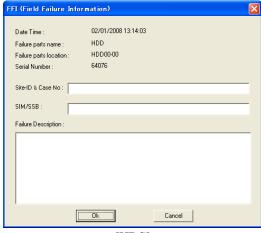
DKC615I

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

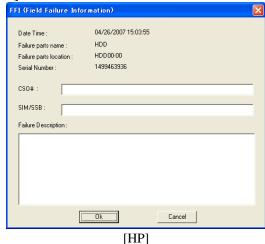
A dump removable media is attached with a Spare HDD.

1. <Get the error information>

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



[HDS]



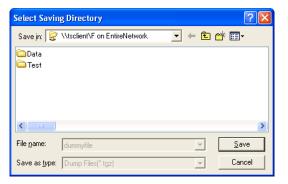


"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.

When Client PC is selected, the directory selection dialog is displayed.

Please select an arbitrary directory if necessary. Select (CL) [Save] when saving a file in a specified directory.

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



**REP04-71** Rev.0 / Aug.2010

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DKC615I

• When the destination media is write-protected. <For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].

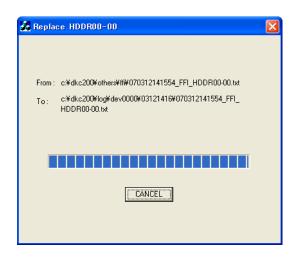
<For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



DKC615I

2. <Copy of the error information>
The error information is copied onto media.



"Remove the media." is displayed. Remove the removable media and select (CL) [OK].



- 3. <Spin up the Physical Drive> "Spinning up..." is displayed.
- 4. <DKU INLINE> "DKU INLINE is now running..." is displayed.

Hitachi Proprietary SC03096Z

**REP04-90** Rev.0 / May.2007

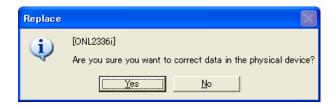
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5. < Replacement of the DKU micro-program>

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.

- 6. <Restore Physical Drive> "Restoring..." is displayed.
- 7. <Check the Drive Status> "Checking..." is displayed. Device is still blocked.
- 8. <Check the beginning of correction copy> Select (CL) [Yes] in response to "Are you sure you want to correct data in the physical device?".



9. <Correct data> "Correcting..." is displayed.

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

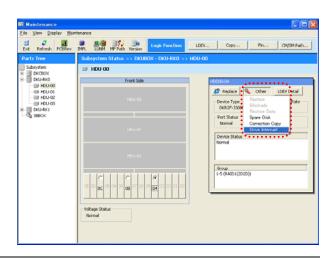


11. <Check the end of P-DEV recovery> Select (CL) [OK] in response to "Replace finished.".



12.

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



13. <SIM Complete>
Refer to SVP02-560.

## [POST-PROCEDURE c]

### - OUTLINE -

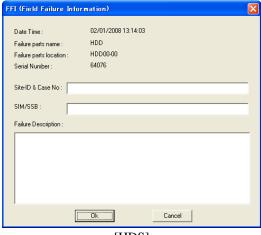
- ① Execute CUDG on P-DEV
- ② Perform L-DEV formatting on P-DEV
- 3 Reset ORM Error Count on P-DEVs
- Recover with backup data
- S Reset Threshold Counter
- **© SIM Complete**

DKC615

# **A** CAUTION

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

1. <Get the error information>
Input the Field Failure Information, and select (CL) [Ok].



[HDS]

Failure parts location: HDD00-00
Serial Number: 1499463936

CSO#:
SIM/SSB:
Failure Description:

Ok Cancel

04/26/2007 15:03:55

HDD

FFI (Field Failure Information)

Date Time :

Failure parts name

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



When Client PC is selected, the directory selection dialog is displayed.

Please select an arbitrary directory if necessary. Select (CL) [Save] when saving a file in a specified directory.

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



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• When the destination media is write-protected. <For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].

<For Windows XP>

The dialog remains displayed after selecting (CL) [OK].

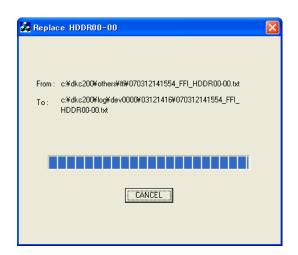


**REP04-130** Rev.1 / May.2007, Aug.2010

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DKC615I

2. <Copy of the error information>
The error information is copied onto media.



"Remove the media." is displayed. Remove the removable media and select (CL) [OK].



- 3. <Spin up the Physical Drive> "Spinning up..." is displayed.
- 4. <DKU INLINE> "DKU INLINE is now running..." is displayed.

**REP04-140** Rev.1 / May.2007, May.2009

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DKC615

<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.

- 6. <Restore Physical Drive> "Restoring..." is displayed.
- 7. <Check the Drive Status> "Checking..." is displayed.
- <Correction Copy disable message>



# **A** 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. If the copying process is operating at the other



HDD in the same parity group, retry again after completing that operation.".

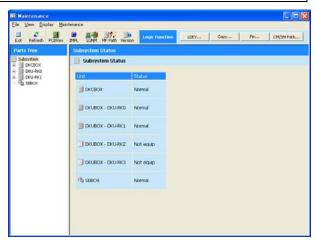
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9. <Select [Logical Device]>

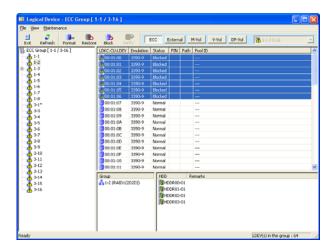


Before you perform following steps, be sure to call T.S.D. Data housed in Logical Device will be lost due to formatting Logical Device.

Select (CL) [Logical Device] from [Maintenance].



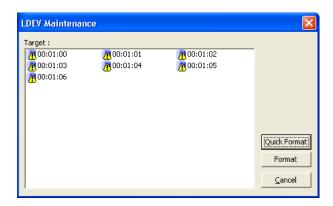
10. <Logical Device Status> Select (CL) [Format].



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11. <Format Logical Device>
Select (CL) [Format] or [Quick Format].
If the target LDEV is not blocked, return to 'Logical Device' dialog box.

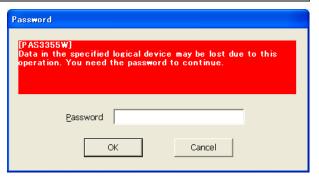


# 12. <Caution message for DATA lost>



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].

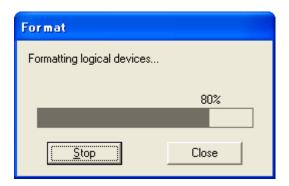


**REP04-170** Rev.1 / May.2007, Feb.2008

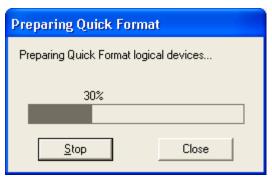
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13. <Confirmation of processing progress>

• In case of LDEV formatting "Formatting logical devices..." is displayed.



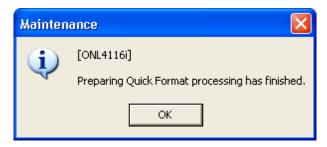
In case of Quick Format
 "Preparing Quick Format logical devices..." is
 displayed.



- 14. <Confirmation of processing end>
  - In case of LDEV formatting Select (CL) [OK] in response to "Formatting was finished.".



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



- 15. <SIM Complete>
  Refer to SVP02-560.
- 16. <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
- Reset Threshold Counter
- **SIM Complete**

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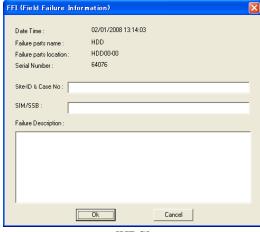
DKC615I

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

A dump removable media is attached with a Spare HDD.

1. <Get the error information>

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



[HDS]



[HP]

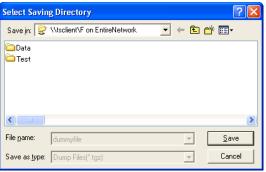
"Insert a removable media for gathering error information and select [OK]. The information will be essential to investigate the problem of the hardware. You can select [Cancel] only when removable media is not available." is displayed.



When Client PC is selected, the directory selection dialog is displayed.

Please select an arbitrary directory if necessary. Select (CL) [Save] when saving a file in a specified directory.

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



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• When the destination media is write-protected. <For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].

<For Windows XP>

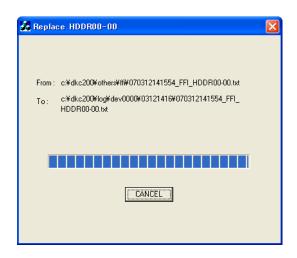
The dialog remains displayed after selecting (CL) [OK].



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2. <Copy of the error information>
The error information is copied onto media.



"Remove the media." is displayed. Remove the removable media and select (CL) [OK].



- 3. <Check the spin up process> "Spinning up..." is displayed.
- 4. <Check the INLINE process>
  "DKU INLINE is now running..." is displayed.

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5. <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.

- 6. <Restore Physical Drive> "Restoring..." is displayed.
- 7. <Check the end of P-DEV recovery> Select (CL) [OK] in response to "Replace finished.".



8. <SIM Complete>
Refer to SVP02-560.

# [POST-PROCEDURE f]

## - OUTLINE -

- ① Execute CUDG on cache
- ② Specify recovery
- 3 SIM Complete

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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 SVP02-560.

Go to POST-PROCEDURE z (REP04-980).

# [POST-PROCEDURE g]

## - OUTLINE -

- ① Execute CUDG on SM
- ② Specify recovery
- 3 SIM Complete

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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 SVP02-560.

# **A** CAUTION

When both SM PCBs in the same cluster are blocked, the button on the 'Maintenance' window blinks until replacing another SM PCB in the same cluster with the replaced SM PCB.

Go to POST-PROCEDURE z (REP04-980).

# [POST-PROCEDURE h]

## - OUTLINE -

- ① Specify recovery for CHA/DKA
- ② Path online (for CHA)
- 3 SIM Complete

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### <For CHA/DKA>

<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..."

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# A CAUTION

Confirm the version of the exchanged CHA/DKA microprogram on the "STATUS" screen. (Refer SVP03-350)

Check whether the version of all processors accords.

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]

- 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 SVP02-560.

Go to POST-PROCEDURE z (REP04-980).

# [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.

# A 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.".



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5. <SIM Complete>
Refer to SVP02-560.

Go to POST-PROCEDURE z (REP04-980).

# [POST-PROCEDURE k]

- OUTLINE -

- ① Specify recovery of CSW
- ② SIM Complete

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1. <Check the CSW recovery procedure> "Restoring the CSW..." is displayed.

2. <Check the CSW replace finished> Select (CL) [OK] in response to "Replace finished.".



3. <SIM Complete>
Refer to SVP02-560.

Go to POST-PROCEDURE z (REP04-980).

# [POST-PROCEDURE t1]

## - OUTLINE -

- ① Specify end of special part replacement
- ② Reinstall related parts
- 3 Start environment monitor
- **4** SIM Complete

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# [1] Start of POST-PROCEDURE

# Valid "XXXXX" values are listed below.

• DKCPANEL	[2] (REP04-360)
• EPOSW	[4] (REP04-410)
• SVP	[5] (REP04-420)
• SSVP/MN	[6] (REP04-760)
• DKCFAN	[7] (REP04-780)
• DKCPS	[8] (REP04-800)
• DKC Battery Box	
• EXTADP	[10] (REP04-840)
• SBADP	[10] (REP04-840)
• SBFAN	[7] (REP04-780)
• SB Battery	[9] (REP04-820)

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## [2] DKCPANEL

1. <Check replacement of special part> Select (CL) [OK] in response to "Please replace the "DKCPANEL." After replacement, press OK.".



2.

Select (CL) [OK] in response to "REMOTE MAINTENANCE SWITCH TEST: After turning switch to ENABLE position, press OK.".



3.

If an error has occurred in the switch test, an error message is displayed.

If you select (CL) [Yes], go back to step 2. If you select (CL) [No], go to step 8.



4

Select (CL) [OK] in response to "REMOTE MAINTENANCE SWITCH TEST: After turning switch to DISABLE position, Press OK.".



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5.

If an error has occurred in the switch test, an error message is displayed.

If you select (CL) [Yes], go back to step 4. If you select (CL) [No], go to step 8.



6.

Select (CL) [OK] in response to "RESTART SWITCH TEST: After turning switch, press OK.".



7.

If an error has occurred in the switch test, an error message is displayed.

If you select (CL) [Yes], go back step 6. If you select (CL) [No], go to step 8.



## 8. <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].

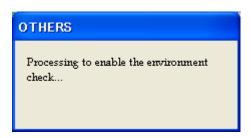


The SVP automatically checks the REMOTE/LOCAL switch status.

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9. <Check environment monitor start processing> "Processing to enable the environment check..." is displayed.



10. <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.".

After checking SW setting, select (CL) [OK].



11. <Check end of replacement>
Select (CL) [OK] in response to "Replacement of the "DKCPANEL" is done.".



- 12. <Reset REMOTE MAINTENANCE switch>
  Reset REMOTE MAINTENANCE switch to original value.
- 13. <SIM Complete>

See SVP02-560.

Go to POST-PROCEDURE z (REP04-980).

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Blank sheet

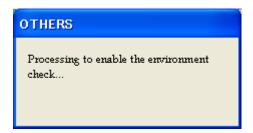
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## [4] EPOSW

1. <Check replacement of special part> Select (CL) [OK] in response to "Please replace the "EPOSW." After replacement, press OK.".



- 2. The SVP automatically checks the EPOSW 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 "EPOSW" is done.".



5. <SIM Complete>

See SVP02-560.

Go to POST-PROCEDURE z (REP04-980).

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[5] SVP

1. Powering up the SVP



## CAUTION

If the MESSAGE LED on DKCPANEL has lit on when power on SVP, please complete SIM before operation.

(When the SVP high-reliability kit is installed, SIM RC=BF85A3 (Basic SVP JP1 setting error), BF86A3 (Optional SVP JP1 setting error), BFE3A2 (SVP duplication setting defect) and 7FF201 (standby SVP failure detection) may occur but there is no problem because they occur in process of the SVP replacement.)



## 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 fullduplex.

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1-2 Setting the Data and Time

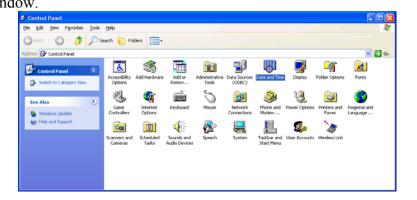
<Making sure of the setting of a time zone>

(1) Open the 'Control Panel' window. Select (DR) [Control Panel] from the [Start] menu.

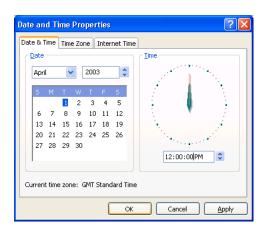


(2) Open the 'Date and Time' window.

Select (DC) [Date and Time]
in the [Control Panel]
window.



(3) Select [Time Zone]. Select (CL) [Time Zone].



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(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).

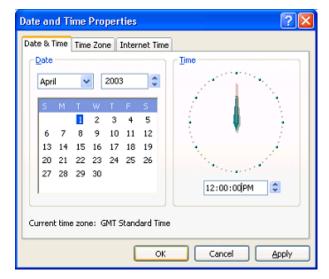
Then select (CL) [Data & Time].



Notice: When a setup of [Time Zone] and

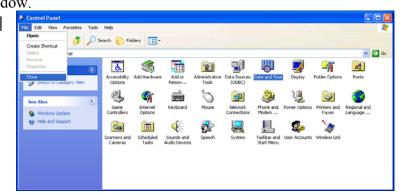
"Automatically adjust clock for daylight saving changes" are changed after installation of a SVP micro program, please be sure to reboot SVP after a setup.

(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.



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# 2. <Installing the Microprogram>

# 2.1 Preparation

When the Microprogram has already been installed in the SVP (spare part) to be replaced, perform the following operations.

- When Apache is installed, perform uninstalling Apache.There are two type Apache, check the type of Apache and go to following procedure.
  - Check the version of Apache. (Go to 2.1.1.1 Checking Apache version)
  - When Apache 2.0.54 is installed, perform uninstalling Apache 2.0.54. (Go to 2.1.1.2 Uninstallation of Apache 2.0.54)
  - When OpenSA (Apache corresponding to SSL) is installed, perform uninstalling OpenSA. (Go to 2.1.1.3 Uninstallation of OpenSA)
  - When Apache 2.2.4 is installed, perform uninstalling Apache 2.2.4. (Go to 2.1.1.4 Uninstallation of Apache 2.2.4)
- ② When Java program is installed, perform uninstalling Java program. (Go to 2.1.2 Uninstalling Java program)
- When Perl program is installed, perform uninstalling Java program. (Go to 2.1.3 Uninstalling Perl program)

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### 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

Check the version of Apache installed to the replaced SVP with the following procedure. When the Apache version installed in the SVP before the replacement and the shipped Apache version corresponding to the microprogram version are different, you need to install the Apache before the replacement by performing the operations described in step 6. If you cannot check the Apache version before the replacement, you do not have to install the Apache by performing the operations described in step 6, but the Apache version would be the shipped one.

For the shipped Apache version, see the WEB CONSOLE section.

Notice: If the Apache version of SVP is 2.2.4 and is downgraded 2.0.54, the microprogram version of SVP should be less than 60-02-00/00.

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

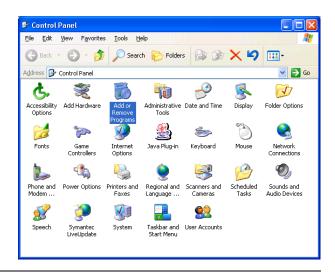


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(2) Select (DC) [Add or Remove Programs].



(3)

Check the content of [Currently installed programs] in the [Add or Remove Programs] panel.

If [Apache HTTP Server 2.0.54] exists, Apache 2.0.54 is installed.

If [OpenSA web server 1] exists, OpenSA is installed.

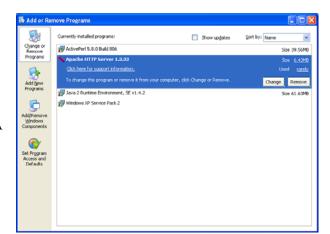
If [Apache HTTP Server 2.2.4] exists, Apache 2.2.4 is installed.

If Apache 2.0.54 is uninstalled, go to 2.1.1.2.

If OpenSA is uninstalled, go to 2.1.1.3.

If Apache 2.2.4 is uninstalled, go to 2.1.1.4.

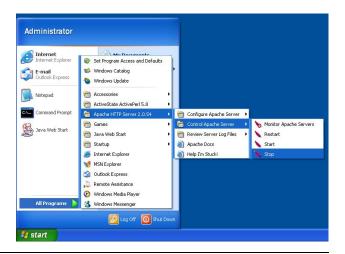
When the Apache version check is completed, select (CL) the  $[\times]$  button.



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### 2.1.1.2 Uninstallation of Apache 2.0.54

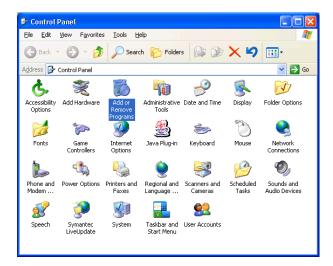
(1)
Select (DR) [Start]-[All Programs][Apache HTTP Server 2.0.54]-[Control
Apache Server]-[Stop]. Service of
Apache will stop.



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



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

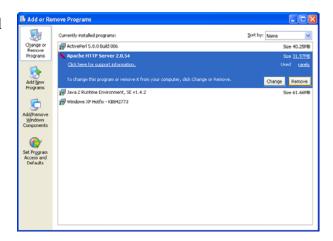


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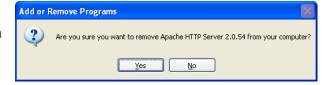
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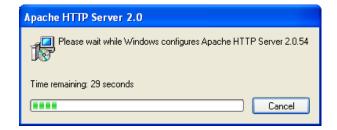
(4) Select [Apache HTTP Server 2.0.54], and then select (CL) the [Remove] button.



(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.

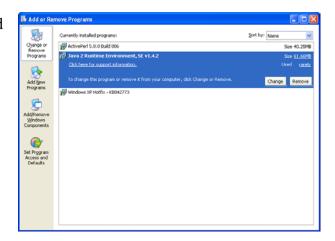


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(7)

[Apache HTTP Server 2.0.54] is removed from the [Add or Remove Programs] panel.

Select (CL)  $[\times]$  button, and close this window.



(8)
Select (DR) [Start]-[Run...].
Enter "delApacheConf.bat" and press the [OK] button.
Go to 2.1.2.

## 2.1.1.3 Uninstallation of OpenSA

- (1)
  Select (DR) [Start]-[Run...].
  Enter "rmvopensa.bat" and press the [OK] button.
- (2) Select (DR) [Start]-[Control Panel].



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

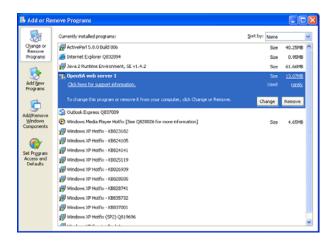


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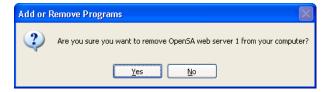
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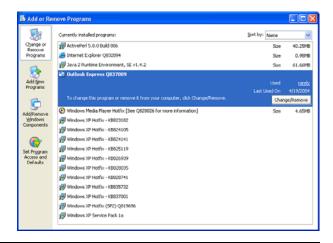
(4) Select [OpenSA web server 1], and then select (CL) the [Remove] button.



The message, "Are you sure you want to remove OpenSA web server 1 from your computer?" is displayed. Select (CL) the [Yes] button.



(6)
[OpenSA web server 1] is removed from the [Add or Remove Programs] panel.
Select (CL) [×] button, and close this window.



(7)
Select (DR) [Start]-[Run...].
Enter "delApacheConf.bat" and press the [OK] button.
Go to 2.1.2.

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## 2.1.1.4 Uninstallation of Apache 2.2.4

(1)
Select (DR) [Start]-[All Programs][Apache HTTP Server 2.2.4]-[Control
Apache Server]-[Stop]. Service of Apache
will stop.



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



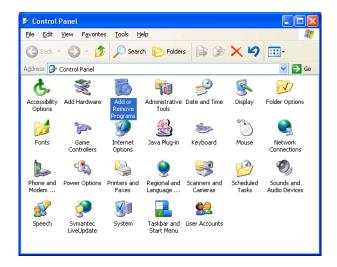
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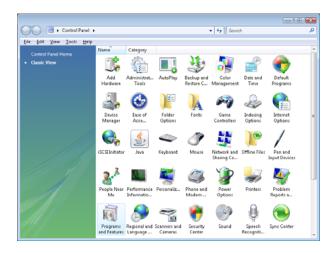
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(3)

[In case of Windows XP]
Select (DC) [Add or Remove Programs].



[In case of Windows Vista]
Select (DC) [Programs and Features].



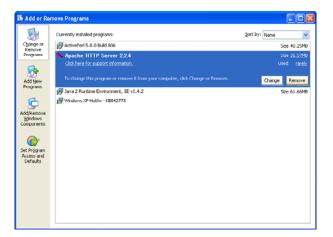
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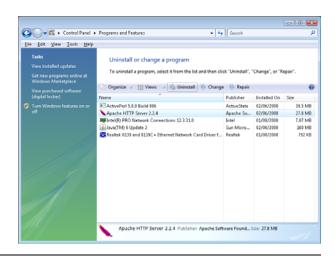
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(4)

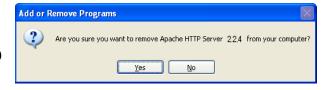
[In case of Windows XP]
Select [Apache HTTP Server 2.2.4], and then select (CL) the [Remove] button.



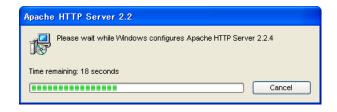
[In case of Windows Vista]
Select [Apache HTTP Server 2.2.4], and then select (CL) the [Uninstall] button.



(5)
The message, "Are you sure you want to remove Apache HTTP Server 2.2.4 from your computer?" is displayed. Select (CL) the [Yes] button.



(6) Uninstallation of Apache 2.2.4 starts.



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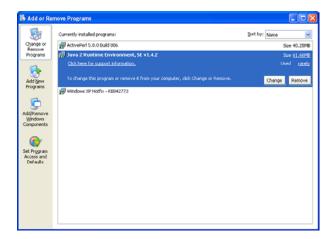
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(7)

[In case of Windows XP]

[Apache HTTP Server 2.2.4] is removed from the 'Add or Remove Programs' window.

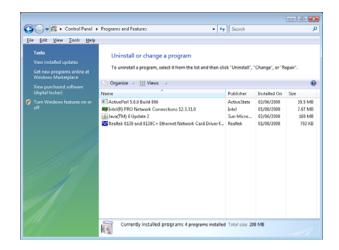
Select (CL)  $[\times]$  button, and close this window.



[In case of Windows Vista]

[Apache HTTP Server 2.2.4] is removed from the 'Programs and Features' window.

Select (CL)  $[\times]$  button, and close this window.



(8)

Select (DR) [Start]-[Run...].

Enter "delApacheConf.bat" and press the [OK] button.

Go to 2.1.2.

DKC615I

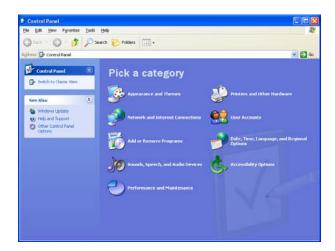
## 2.1.2 Uninstalling Java program

(1) Select (DR) [Start] and [Control Panel] in this order.

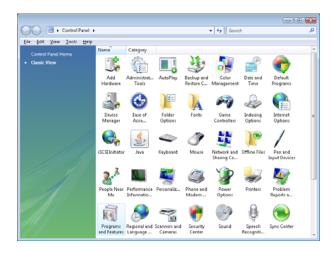


(2)

[In case of Windows XP]
Select (CL) [Add or Remove Programs].



[In case of Windows Vista]
Select (DC) [Programs and Features].



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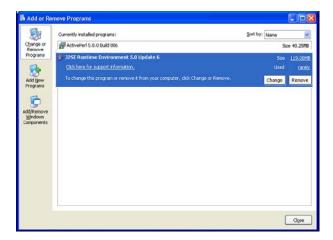
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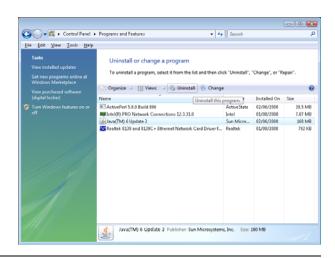
(3)

[In case of Windows XP]
Select [J2SE Runtime Environment 5.0

Update 6], and then select (CL) the [Remove] button.



[In case of Windows Vista]
Select [Java(TM) 6 Update 2], and then select (CL) the [Uninstall] button.



(4)

[In case of Windows XP]

A message, "Are you sure you want to remove J2SE Runtime Environment 5.0 Update 6 from your computer?" is displayed.

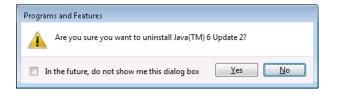
Select (CL) the [Yes] button.



[In case of Windows Vista]

A message, "Are you sure you want to uninstall Java(TM) 6 Update 2?" is displayed.

Select (CL) the [Yes] button.



**REP04-522** Rev.0 / Feb.2008

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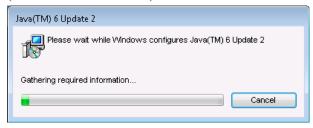
(5)

Uninstallation of Java is started.

(In case of Windows XP)



(In case of Windows Vista)

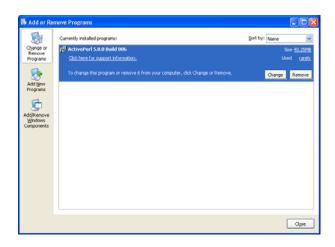


(6)

[In case of Windows XP]

The [J2SE Runtime Environment 5.0 Update 6] is deleted from the 'Add or Remove Programs' window. Close the window by selecting (CL) the

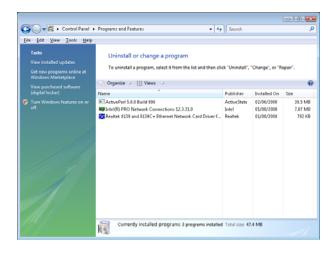
 $[\times]$  button.



[In case of Windows Vista]

The [Java(TM) 6 Update 2] is deleted from the 'Programs and Features' window.

Close the window by selecting (CL) the  $[\times]$  button.



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(7)

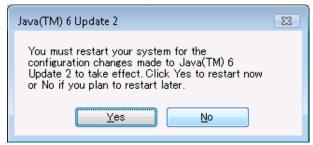
When this window is not displayed, go to Section 2.1.3.

When this window is displayed, select (CL) the [No] button.

(In case of Windows XP)



(In case of Windows Vista)



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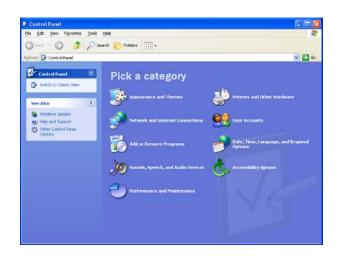
DKC615I

## 2.1.3 Uninstalling Perl program

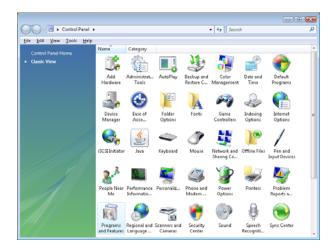
(1) Select (DR) [Start] and [Control Panel] in this order.



(2)
[In case of Windows XP]
Select (CL) [Add or Remove Programs].



[In case of Windows Vista]
Select (DC) [Programs and Features].



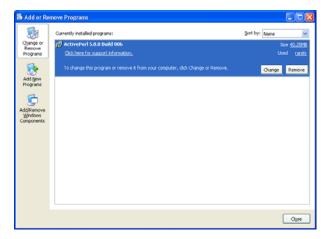
**REP04-541** Rev.0 / Feb.2008

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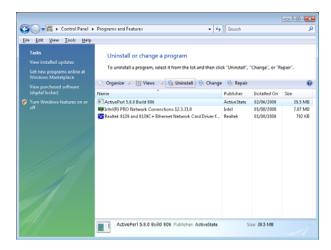
DKC615I

(3)

[In case of Windows XP]
Select [ActivePerl 5.8.0 Build 806], and then select (CL) the [Remove] button.



[In case of Windows Vista]
Select [ActivePerl 5.8.0 Build 806], and then select (CL) the [Uninstall] button.

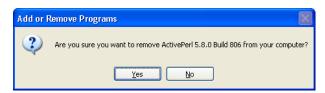


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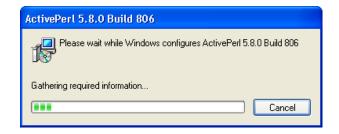
(4)

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.

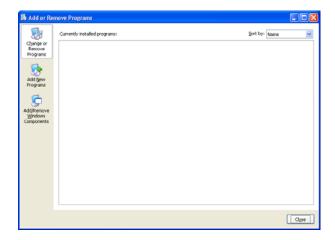


(6)

[In case of Windows XP]

The [ActivePerl 5.8.0 Build 806] is deleted from the 'Add or Remove Programs' window.

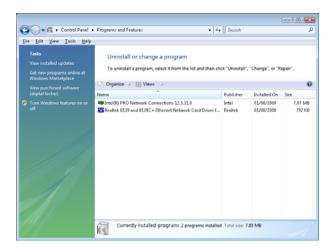
Close the window by selecting (CL) the  $\lceil \times \rceil$  button.



[In case of Windows Vista]

The [ActivePerl 5.8.0 Build 806] is deleted from the 'Programs and Features' window.

Close the window by selecting (CL) the  $[\times]$  button.



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### 2.2 < Starting Installation >

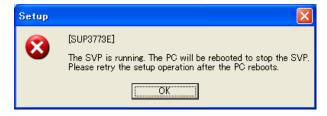
- ① Insert a micro program media in the CD-ROM drive of Client PC and wait for one minutes or so.
- ② Select (CL) [RUN...] from the "Start" menu. Enter "\\tsclient\E\\setup.exe" and select (CL) the [OK] button.

Notice1: Select the drive which inserted a CD-R in ②.

"\\text{\text{E\setup.exe}"} Input the drive name of the CD-ROM drive of Client PC.

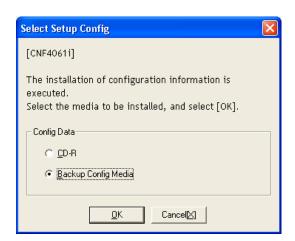
Indicate Client PC. (This spelling is inputted.)

Notice2: 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].



After waiting for about five minutes, install the microprogram again after rebooting the PC.

- 3. <Using another media>
- 3-1 < Installing the Configuration Information>
  - (1) Prepare the Config media which did backup.
  - (2)
    Select (CL) Backup Config Media in the
    'Select Setup Config' window and select (CL)
    the [OK] button.
    - "CD-R": Use Only With Technical Support Authorization.



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\*\*\*\*\*\* For Technical Support Use Only \*\*\*\*\*\*\*\*\*\*\*

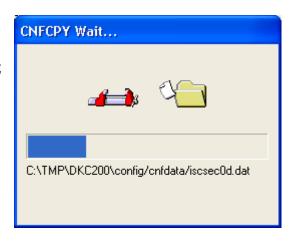
(2-1)

Select "CD-R" to install configuration information from CD-R, when the message CNF4061i.

Enter the key code of the configuration information when the message CNF4055i, and then click [OK]. (Refer to INSTALLATION SECTION "2.10 New Installation procedures without the pre-installation at a customer site" \*14. (INST02-410))

(2-2)

Perform copy processing of the configuration information from the CD-R to the SVP. The 'CNFCPY Wait...' window is displayed during this time.



Go to 3-1-1.

\*

**REP04-570** Rev.0 / May.2007

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(3)

Select the drive which insert the Backup Config Media (prepared with step (1)), and select (CL) the [OK] button.

Select (CL) [Refresh] button, Disk is updated to the latest information.



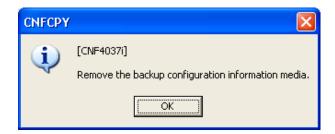
**(4)** 

Perform copy processing of the configuration information from the Backup Config Media to the SVP.

The 'CNFCPY Wait...' window is displayed during this time.



(5) Select (CL) the [OK] button after removing the configuration information media.



## 3-1-1 <Installing the OSS media>

(1)

When the message of "Insert the second CD-R." is displayed, replace it to the second media. Select (CL) [OK] after the replacement.



**REP04-580** Rev.0 / May.2007

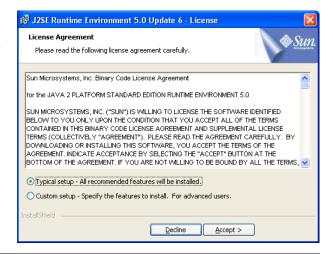
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4. <Setting Up JAVA>

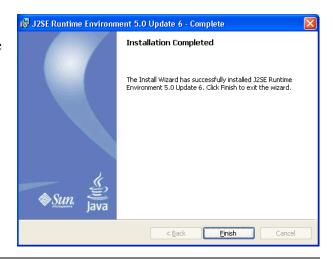
## 4-1 <Setting Up of JAVA>

Perform setting up operation of Java. When Java has already been installed, go to Section 4-2.

(1)
After selecting "Typical setup – All recommended features will be installed.", press the [Accept>] button. Copying of the file is started.



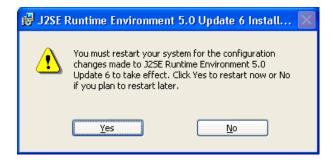
Since this window is displayed when the copying of the file is completed, press the [Finish] button.



(3)

When this window is not displayed, go to Section 4-2.

When this window is displayed, select (CL) the [No] button.



**REP04-590** Rev.3 / Jul.2008, Aug.2010

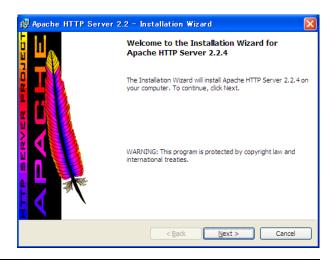
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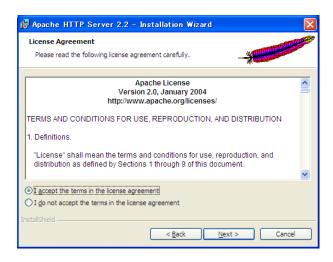
4-2 Setting Up of Apache Execute Apache setup.

## 4-2-1 Setting Up of Apache 2.2.4

(1)
Press the [Next >] button.
When this window is not displayed, go to step 4-3 because Apache is already installed.



Press the [Next >] button after selecting "I accept the terms in the license agreement".

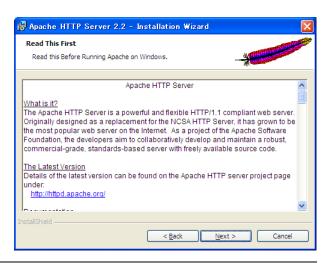


**REP04-600** Rev.1 / May.2007, Oct.2007

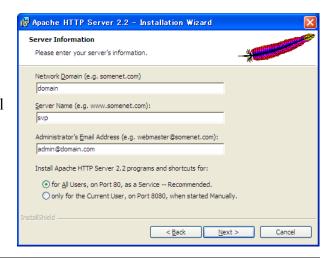
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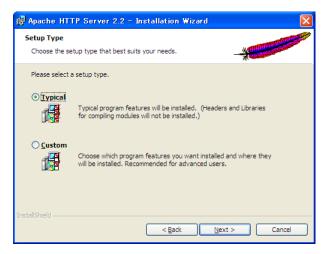
(3) Press the [Next >] button.



Enter "domain," "svp," and
"admin@domain.com" in the Network
Domain, Server Name, and
Administrator's Email Address fields
respectively, and then select (CL) "for All
Users, on Port 80, as a Service -Recommended." and press the [Next >]
button.



(5)
Select (CL) "Typical" and press the [Next >] button.



**REP04-610** Rev.2 / Oct.2007, Aug.2010

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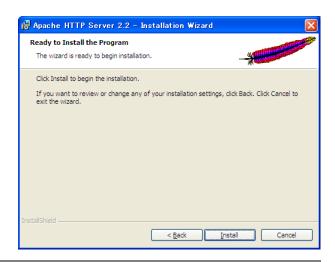
DKC615I

(6)

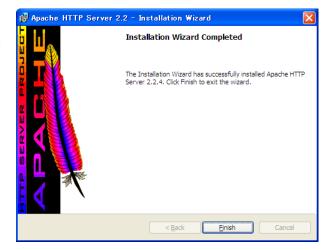
Press the [Next >] button.



(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 step 4-3.



**REP04-620** Rev.0 / May.2007

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4-3 Setting Up of Perl

Perform setting up operation of Perl. When Perl has already been installed, go to Section 5.

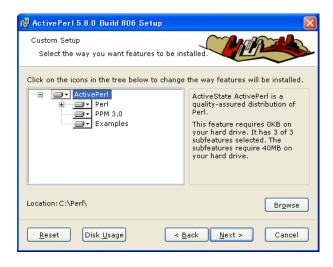
(1) Press the [Next>] button.



After selecting "I accept the terms in the License Agreement", press the [Next>] button.



(3) Press the [Next>] button.

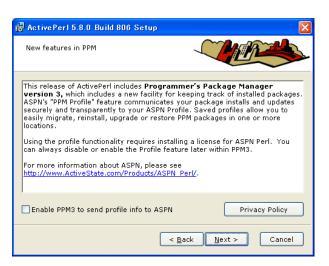


**REP04-630** Rev.0 / May.2007

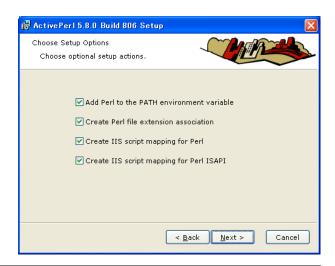
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(4) Press the [Next>] button.



(5) Press the [Next>] button.



(6) Press the [Install] button. Copying of the file is started.



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(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 five minutes, reconnect the console PC to the SVP that has been replaced.

[Connection destination] 126.255.255.15



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#### 6. < Changing Web Server>

With the confirmation on the process of "2. <Checking Apache version>" (on page REP02-20) or at the Technical Support Center, if the Apache being installed in the SVP before replacement is Apache 2.0.54 or OpenSA, you need to replace the Apache in the SVP after replacement to Apache 2.0.54 or OpenSA as well.

In order to replace the Apache in the SVP after replacement, uninstall the Apache 2.2.4 (See WEB06-60) which is installed in the SVP after replacement, and then install the Apache 2.0.54 or OpenSA.

If the Apache in the SVP before replacement is Apache 2.2.4, 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.

When SVP High Reliability Support Kit is set go to the next step.



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.

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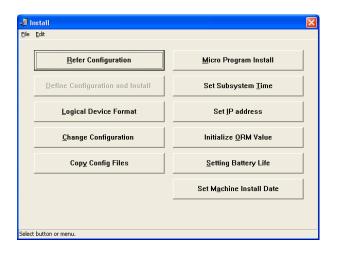
8. <Setting the IP Address of the SVP>

(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.

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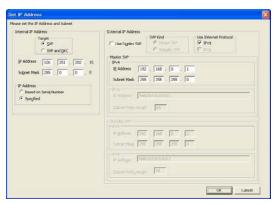
(4) <Setting the IP address>

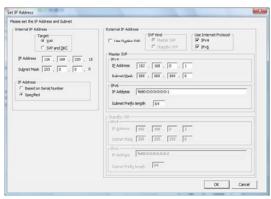
Select (CL) [SVP], make sure of the IP Address and Subnet Mask of the Internal IP Address and the External IP Address, and select (CL) the [OK] button.

When the "IP Address" and/or "Subnet Mask" are/is wrong, enter the correct one(s).

[In case of Windows Vista]

When setting IPv6, select (CL) "IPv6". Enter the "IP Address" and/or "Subnet Prefix length".



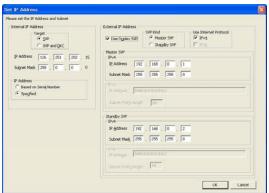


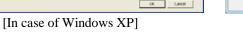
[In case of Windows XP]

[In case of Windows Vista]

When SVP High Reliability Support Kit is not set

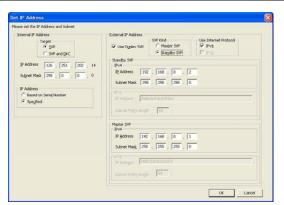
When SVP High Reliability Support Kit is set (in the Master SVP)

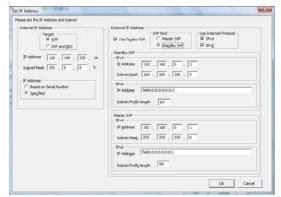






[In case of Windows Vista]





[In case of Windows XP]

[In case of Windows Vista]

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 (SVP01-210)). 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.

DKC615I

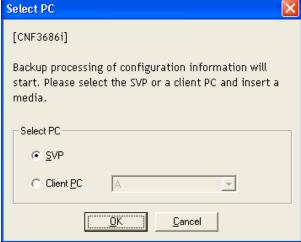
(5) < Making sure of the setting of the external IP address> When a message, "When there are directions to set the external IP address,

please set the external IP address from the "Control Panel" of Windows after

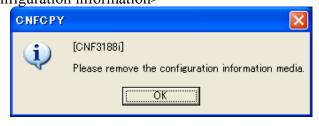


performing this operation," is displayed, select (CL) the [OK] button.

(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.



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(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 five 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

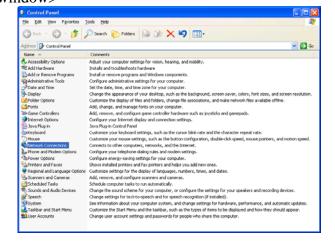
• When SVP High Reliability Support Kit is set:

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.

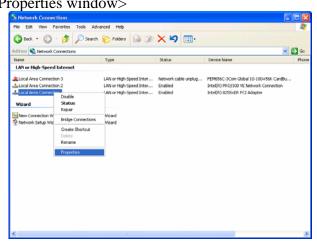
When the SVP, which is an object of the operation, cannot be detected, retry the connection after a while (about one minute).

- (9) <When OS of SVP is Windows XP>
  - (a) <Opening the Control Panel window> Select (DR) [Control Panel] from the [Start] menu.
  - (b) < Opening the Network Connections window> Select (CL) [Network Connections] in the 'Control Panel' window.

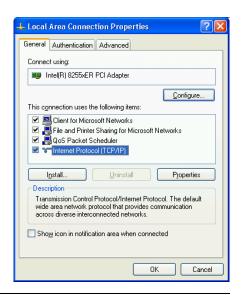


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(c) <Opening the Local Area Connection Properties window> Select (CL) [Local Area Connection Properties] in the 'Network Connections' window and select (CL) [Properties] by clicking the right mouse button.



(d)
Select (CL) [Internet Protocol (TCP/IP)] in the
'Local Area Connection Properties' window and
select (CL) the [Properties] button.

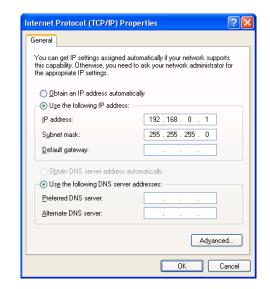


Set the "IP address" and "Subnet mask" and select (CL) the [OK] button.

After the setting is completed, select (CL) the [OK] button in the "Local Area Connection Properties" window.

Close the 'Network Connections' window.

(e) <Setting the external IP address>



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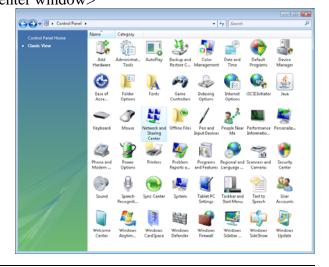
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(10) < When OS of SVP is Windows Vista>

(a) <Opening the Control Panel window> Select (DR) [Control Panel] from the [Start] menu.

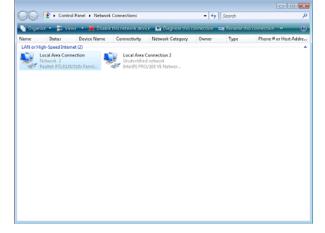
(b) < Opening the Network and Sharing Center window> Select (CL) [Network and Sharing Center] in the 'Control Panel' window.



(c) < Opening the Manage network connections window> Select (CL) [Manage network connections] in the 'Network and Sharing Center' window.



(d) < 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.

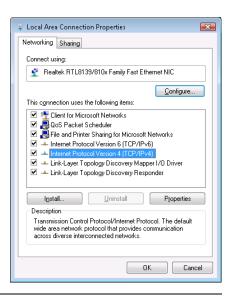


**REP04-702** Rev.0 / Feb.2008

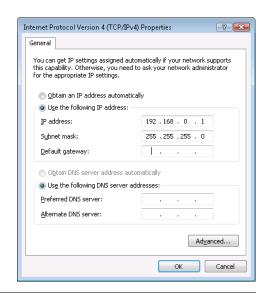
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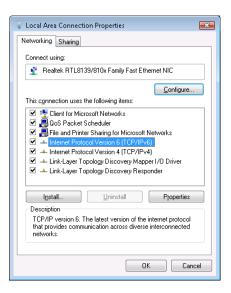
(e)
Select (CL) [Internet Protocol Version 4
(TCP/IPv4)] in the 'Local Area Connection
Properties' window and select (CL) the [Properties]
button.



(f) <Setting the external IP address>Set the "IP address" and "Subnet mask" and select (CL) the [OK] button.When you do not set IPv6, go to step (i).



(g)
Select (CL) [Internet Protocol Version 6
(TCP/IPv6)] in the 'Local Area Connection
Properties' window and select (CL) the [Properties]
button.

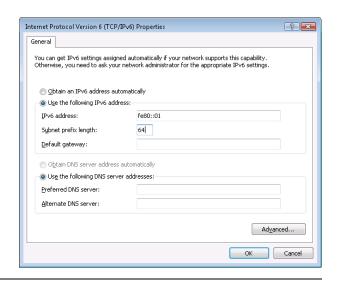


**REP04-710** Rev.1 / May.2007, Feb.2008

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(h) <Setting the external IP address> Set the "IPv6 address" and "Subnet prefix length" and select (CL) the [OK] button.



(i)

After the setting is completed, select (CL) the [OK] button in the "Local Area Connection Properties" window.

Close the 'Manage 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.

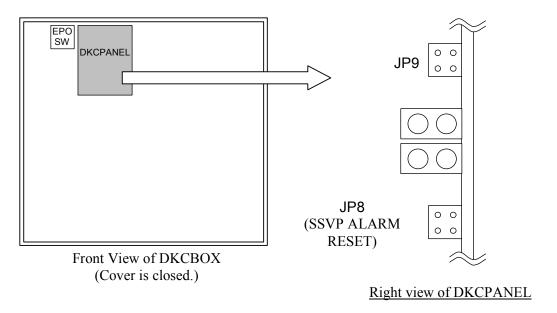
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## 10. < Resetting the SSVP>

When the SVP high-reliability kit is set, remove it after inserting the maintenance jumper in JP8 (SSVP ALARM RESET) of DKCPANEL.

When SVP High Reliability Support Kit is not set, go to the next step.



### 11. <Transferring the Configuration Information>

When SVP High Reliability Support Kit is set, transfer the configuration information. (See SVP02-1300 "2.20 Configuration Information Transfer".)

(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.

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).

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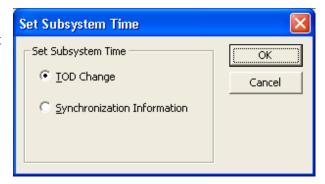
## 12. <Setting the TOD>

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.

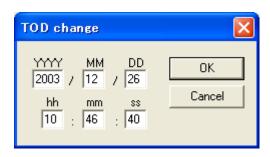
- (1) <Changing the mode>
  Change the mode to Modify Mode.
- (2) <Opening the 'Install' window> Select (CL) [Install] in the [SVP] menu.
- (3) <Selecting [Set Subsystem Time] > Select (CL) [Set Subsystem Time] in the 'Install' window.



(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 TRBL05-90.
- (3) <Selecting [Exit]>
  Select (CL) [File] from the 'Maintenance' window.
  Select (CL) the [Exit] button.

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#### 14. <Setting the Web Console>

If the customer don't use Web Console (Storage Navigator), (3) and (4) are not required. If the customer uses neither Web Console nor SNMP Agent, (1), (2), (3) and (4) are not required.

(1) Setting Web Console

Perform the setting of Web Console from the WEB CONSOLE section. Please refer to WEB CONSOLE section "1. Before using Web Console" (WEB01-10) for the setting method.

#### (2) Setting SNMP

- ① Please perform the following procedure, when you use SNMP Agent.
  - 1. Push Web Console button.
  - 2. Open the SNMP Information Tab.
  - 3. Add the check mark of Extension SNMP and push Apply button.
- ② Please perform the following procedure, when you don't use SNMP Agent.
  - 1. Push Web Console button.
  - 2. Specify Name, Contact and Location on Information Tab again.

Please refer to the Hitachi Storage Navigator User's Guide "Information Window (3-12)" for the setting method.

(3) Setting the user account information and the environment setting information (The setting is not required if the SVP High Reliability Support Kit is set.)

Ask the customer to restore the user account information and the environment setting information of Web Console using the backup which he/she is keeping.

If the backup is not kept, ask him/her to reset it.

Please refer to the Hitachi Storage Navigator User's Guide "Registering New Users (4-12)", "Setting Environment Parameters (4-18)", "Restoring Backups of Configuration Files (4-20)" for the restoration method and the setting method.

#### (4) Setting Audit Log

When the customer is using the Syslog function of Audit Log or the FTP transfer function, request the customer to restore it by using the backup that he/she is keeping.

If the backup is not kept, ask him/her to reset it.

Please refer to the Storage Navigator User's Guide "Syslog Window (3-24)", "Audit Log Window (3-26)", "Restoring Backups of the Configuration Files (4-22)" for the restoration method and the setting method.

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# 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. (See MICRO08-40 "8.2 Config Backup".)

In the case where SVP High Reliability Support Kit is set and the Standby SVP has been replaced, go to the next step.

## 16. < Completing the SIM Log>

Refer to page SVP02-560.

#### [6] SSVP/MN

1. <Check replacement of special part> Select (CL) [OK] in response to "Please replace the "SSVP/MN." After replacement, press OK.".



## 2. <Warning message>

When the versions of two microprograms, one is to be downloaded to the SSVP/MN and the other is stored in an ROM of the SSVP/MN, are the same, a message, "The version of



SSVP microprogram in SSVP/MN and SVP are same. So microprogram 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.



When you download the microprogram, an entry of a password is requested. Contact the Technical Support Division to ask for an instruction.

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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/MN" is done.".



5. <SIM Complete>

See SVP02-560.

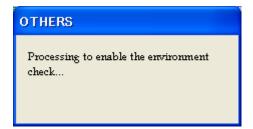
#### [7] DKCFAN / SBFAN

1. <Check replacement of special part> Select (CL) [OK] in response to "Please replace the "FAN-nn." After replacement, press OK.".



(Eg. FAN-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 "FAN-nn" is done.".



(Eg. FAN-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.

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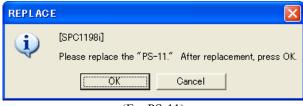
5. <Confirm Cluster>
If Cluster is blocked, recover it.
See SVP02-1170.

# 6. <SIM Complete>

See SVP02-560.

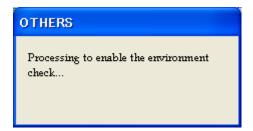
#### [8] DKCPS

<Check replacement of special part>
 Select (CL) [OK] in response to "Please
 replace the "PS-nn". After replacement, press
 OK.".

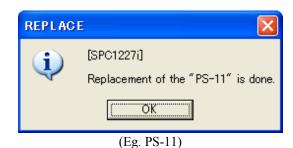


(Eg. PS-11)

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.".



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.

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<Confirm Cluster>
 If Cluster is blocked, recover it.
 See SVP section "2.15 Recovering of Cluster" (SVP02-1170).

# 6. <SIM Complete>

See SVP02-560.

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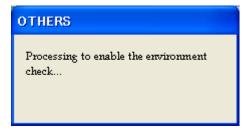
#### [9] DKC Battery Box / SB Battery

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. If the periodical exchange maintenance of a Battery, 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 SVP02-1230.)

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## 5. <Confirm status>

Confirm the status display.

If button is normal (The string is normally display), go to step 6.

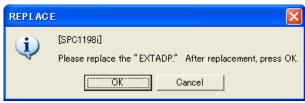
If button is abnormal (The string is blinking), replace the target part again, or see TROUBLE SHOOTING SECTION.

# $6. \quad <\!\! \text{SIM Complete}\!\! >$

See SVP02-560.

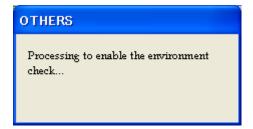
### [10] EXTADP / SBADP

1. <Check replacement of special part>
Select (CL) [OK] in response to "Please replace the "EXTADP." After replacement, press OK.".



(Eg. EXTADP)

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 "EXPADP" is done.".



4. <SIM Complete>

See SVP02-560.

# [POST-PROCEDURE t4]

#### - OUTLINE -

- ① Specify end of special part replacement
- ② Reinstall related parts
- 3 DKU Path Inline Test
- Start environment monitor
- **SIM Complete**

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## [1] Start of POST-PROCEDURE

Valid "XXXXX" values are listed below.

- DKUPS ----- [2] (REP04-870)
- LEDPNL ----- [3] (REP04-890)

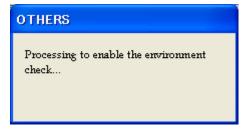
#### [2] DKUPS

1. <Check beginning of special part Replacement> Select (CL) [Yes] in response to "Please set the "DKUPS-nnn" switch to OFF and replace the hardware. After replacement finishes, set the switch to ON and select OK.".

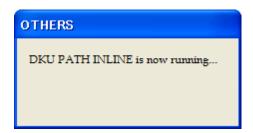


(Eg. DKUPS-000)

2. <Check environment monitor start processing>
The message "Processing to enable the environment check..." is displayed.



3. <DKU PATH INLINE TEST>
The message "DKU PATH INLINE is now running..." is displayed.



4. <Check end of replacement>
Select (CL) [OK] in response to "Replacement of the "DKUPS-nnn" is done.".



(Eg. DKUPS-000)

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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 SVP02-560.

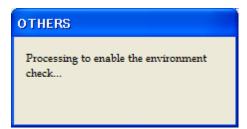
#### [3] LEDPNL

1. <Check beginning of special part Replacement> Select (CL) [OK] in response to "Please replace the "LEDPNLnn-x." After replacement, press OK.".



(Eg. LEDPNL00-R)

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 "LEDPNLnn-x" is done.".



(Eg. LEDPNL00-R)

4. <SIM Complete>

See SVP02-560.

# [POST-PROCEDURE t5]

- OUTLINE -

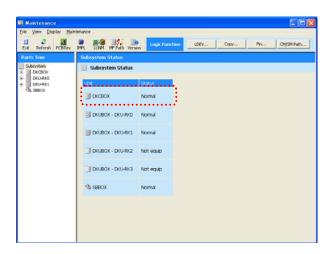
① Check the port Wave information.

**REP04-910** Rev.1 / May.2007, Dec.2007

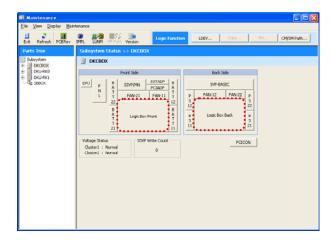
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1. <Maintenance window> Select (CL) [DKCBOX] in the 'Maintenance' window.



2. <Selecting DKCBOX> Select (CL) [Logic Box XXXXX].

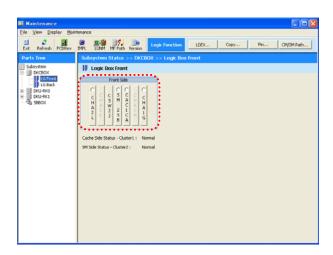


**REP04-920** Rev.2 / Oct.2008, May.2009

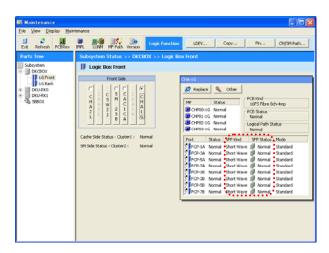
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3. <Selecting CHA> Select (CL) the target CHA.



4. <Confirming SFP type information>
Confirm that the SFP type information on the port information list is displayed.



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5. <Set path online>



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]

- 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.

6. <SIM Complete>

See SVP02-560.

# [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.
- S Reset Threshold Counter
- **© SIM Complete**

# A 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.

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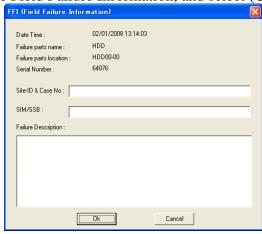
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# **A** CAUTION

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. <Get the error information>

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



[HDS]

FFI (Field Failure Information)

Date Time: 04/26/2007 15:03:55
Failure parts name: HDD
Failure parts location: HDD00-00
Serial Number: 1499463936

CSO#:
SIM/SSB:
Failure Description:

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



When Client PC is selected, the directory selection dialog is displayed.

Please select an arbitrary directory if necessary. Select (CL) [Save] when saving a file in a specified directory.

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



• When the destination media is write-protected. <For Windows XP>

The dialog remains displayed after selecting (CL) [OK].



• When dialog of the destination drive specified with the Client PC is open, the media is removed, and select (CL) [Save].

<For Windows XP>

The dialog remains displayed after selecting (CL) [OK].

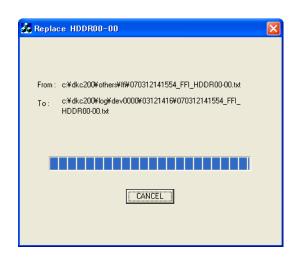


**REP04-950** Rev.1 / May.2007, Aug.2010

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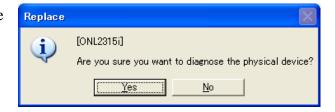
2. <Copy of the error information>
The error information is copied onto media.



"Remove the media." is displayed. Remove the removable media and select (CL) [OK].



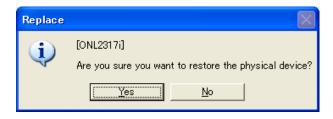
- 3. <Spin up the Physical Drive> "Spinning up..." is displayed.
- 4. <DKU INLINE>
  Select (CL) [No] in response to "Are you sure you want to diagnose the physical device?".



# **A** 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. <Restore Physical Drive>
Select (CL) [Yes] in response to "Are you sure you want to restore the physical device?".



- 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.



# **A** 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.

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. <SIM Log Complete> Refer to SVP02-560.

# [POST-PROCEDURE z]

#### - OUTLINE -

- ① Maintenance Window
- ② Change the SVP operation mode

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DKC615I

1. <Maintenance window>

In the 'Maintenance' window, check the status of subsystem.

Recover the parts if the other parts is blocked.

Close the 'Maintenance' window if there is no problem.

2. <Changing the SVP operation mode>
In the 'SVP' window, change the mode to [View Mode].