

7. REPLACE SECTION



SAFETY SUMMARY

Notes on the operation on the password inputting screen.

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

- When the password inputting screen is displayed, be sure to observe the cautions given in the procedure concerned in the maintenance manual.
- When a confirmation by the technical support center 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.

REPLACE

7.1 Hot Replace

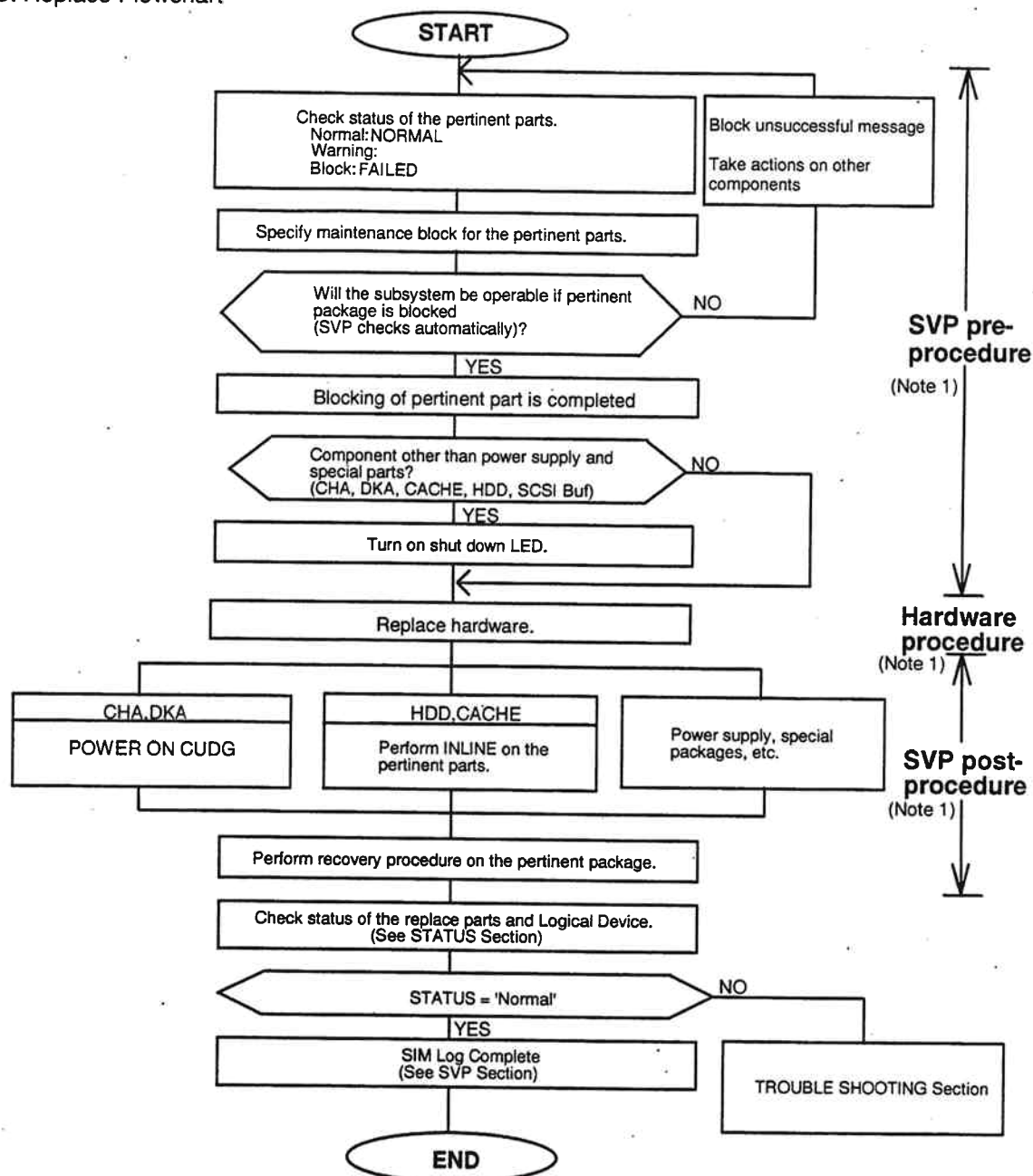
7.1.1 Hot Replace Flowchart-----	REP01-10
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[Pre A] ----REP02-10	[Hardware A] -----REP03-10	[Post a] ---- REP04-10
[Pre B] ----REP02-40	[Hardware B] -----REP03-50	[Post b] ---- REP04-40
[Pre C] ----REP02-80	[Hardware C] -----REP03-120	[Post c] ---- REP04-80
[Pre D] ----REP02-120	[Hardware D] -----REP03-170	[Post d] ---- REP04-100
[Pre E] ----REP02-160	[Hardware E] -----REP03-220	[Post e] ---- REP04-120
[Pre F] ----REP02-210	[Hardware F] -----REP03-270	[Post f] ---- REP04-150
[Pre G] ----REP02-260	[Hardware G] -----REP03-320	[Post g] ---- REP04-170
[Pre H] ----REP02-300	[Hardware H] -----REP03-350	[Post h] ---- REP04-190
[Pre I] ----REP02-350	[Hardware I] -----REP03-370	[Post i] ---- REP04-203
[Pre J] ----REP02-381	[Hardware J] -----REP03-390	[Post t1] --- REP04-210
[Pre K] ----REP02-387	[Hardware K] -----REP03-410	[Post t3] --- REP04-360
[Pre T1] ---REP02-390	[Hardware L] -----REP03-455	[Post t4] --- REP04-410
[Pre T3] ---REP02-550	[Hardware M] -----REP03-1390	[Post u] ---- REP04-490
[Pre T4] ---REP02-650	[Hardware N] -----REP03-1740	
[Pre V] ----REP02-730	[Hardware P] -----REP03-1830	
	[Hardware T1] -----REP03-460	
	[Hardware T2] -----REP03-480	
	[Hardware T3] -----REP03-510	
	[Hardware T4] -----REP03-530	
	[Hardware T5] -----REP03-560	
	[Hardware T6] -----REP03-580	
	[Hardware T7] -----REP03-610	
	[Hardware T8] -----REP03-630	
	[Hardware T9] -----REP03-660	
	[Hardware T10] -----REP03-680	
	[Hardware T11] -----REP03-700	
	[Hardware T12] -----REP03-720	
	[Hardware T13] -----REP03-810	
	[Hardware T14] -----REP03-890	
	[Hardware T15] -----REP03-910	
	[Hardware T16] -----REP03-930	
	[Hardware T17] -----REP03-990	
	[Hardware T18] -----REP03-1010	
	[Hardware T19] -----REP03-1090	
	[Hardware T20] -----REP03-1110	
	[Hardware T21] -----REP03-1130	
	[Hardware T22] -----REP03-1220	
	[Hardware T23] -----REP03-1360	
	[Hardware T25] -----REP03-1383	

7 Replace

7.1 Hot Replace

7.1.1 Hot Replace Flowchart


Note 1:

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.

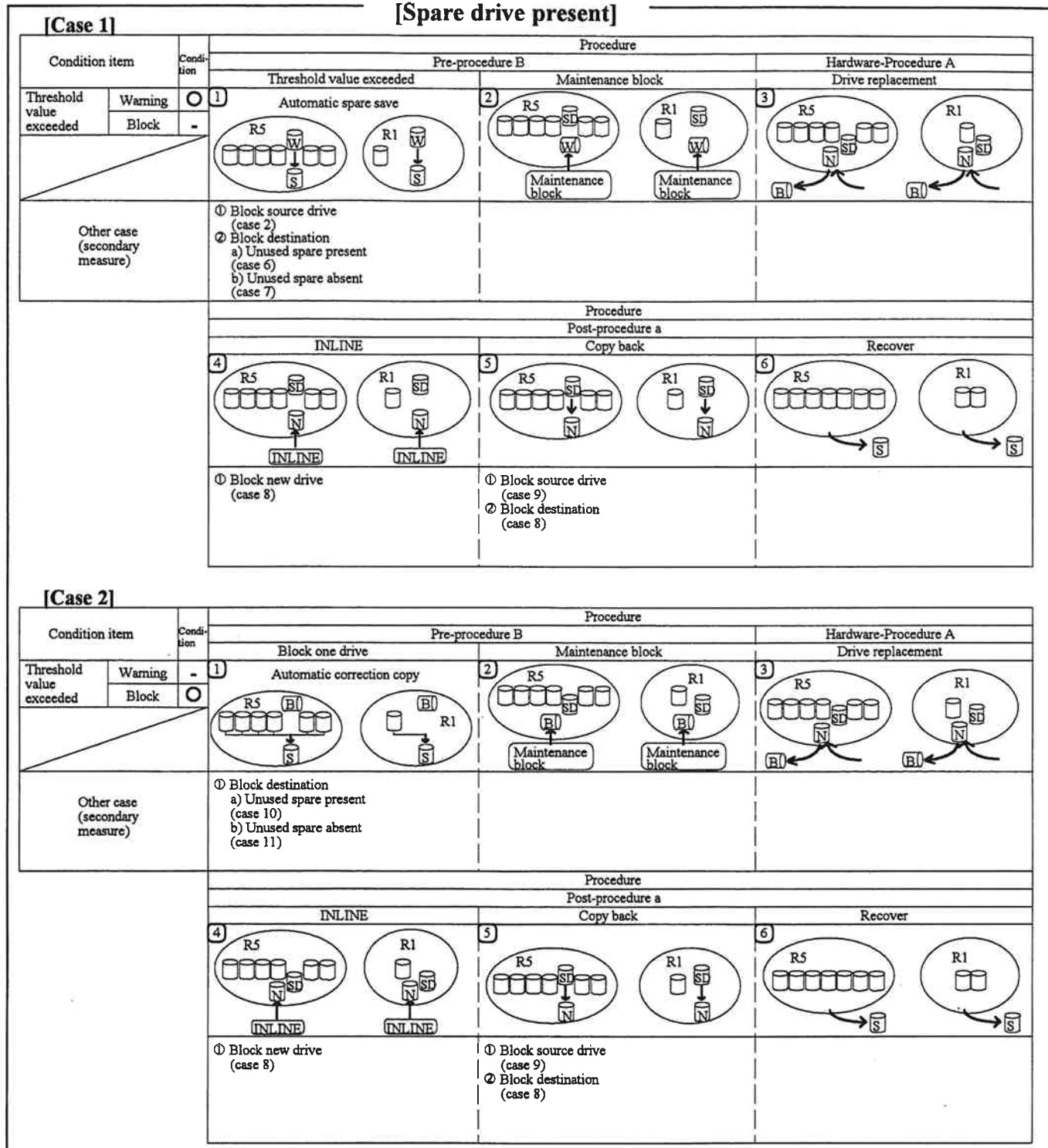
SVP post-procedure: An SVP (PC) process of making functional checks (CUDG and INLINE) on the replacement package and building it into the subsystem.

Note 2:

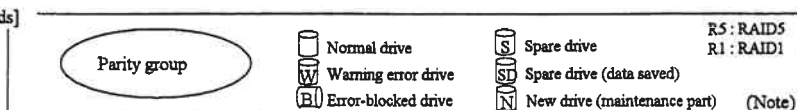
When a message other than a record is displayed, refer to SVPMSG section.

7.1.2 Concept of Drive Maintenance

[Spare drive present]



[Legends]



(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.

[Spare drive absent]

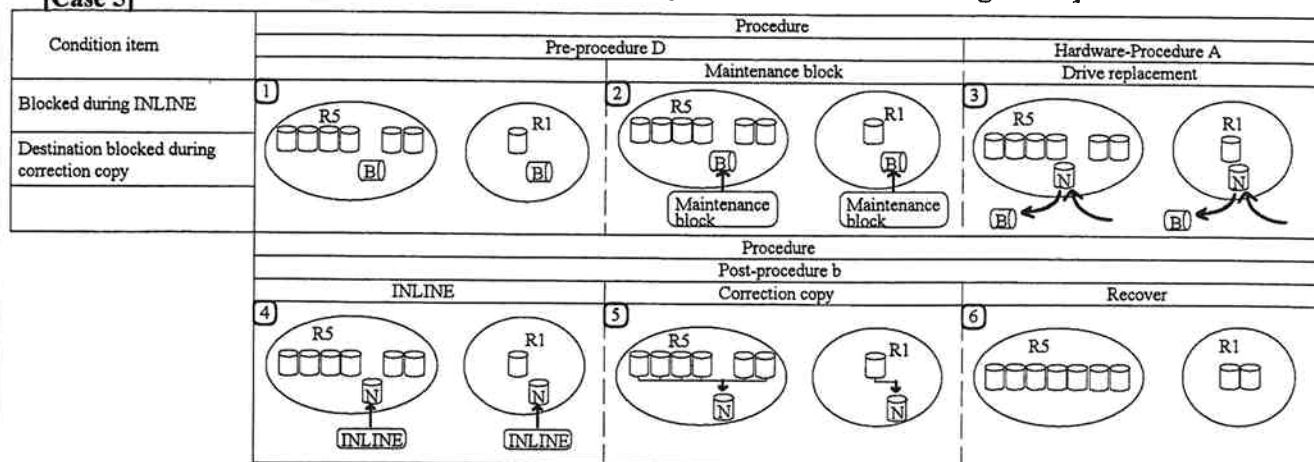
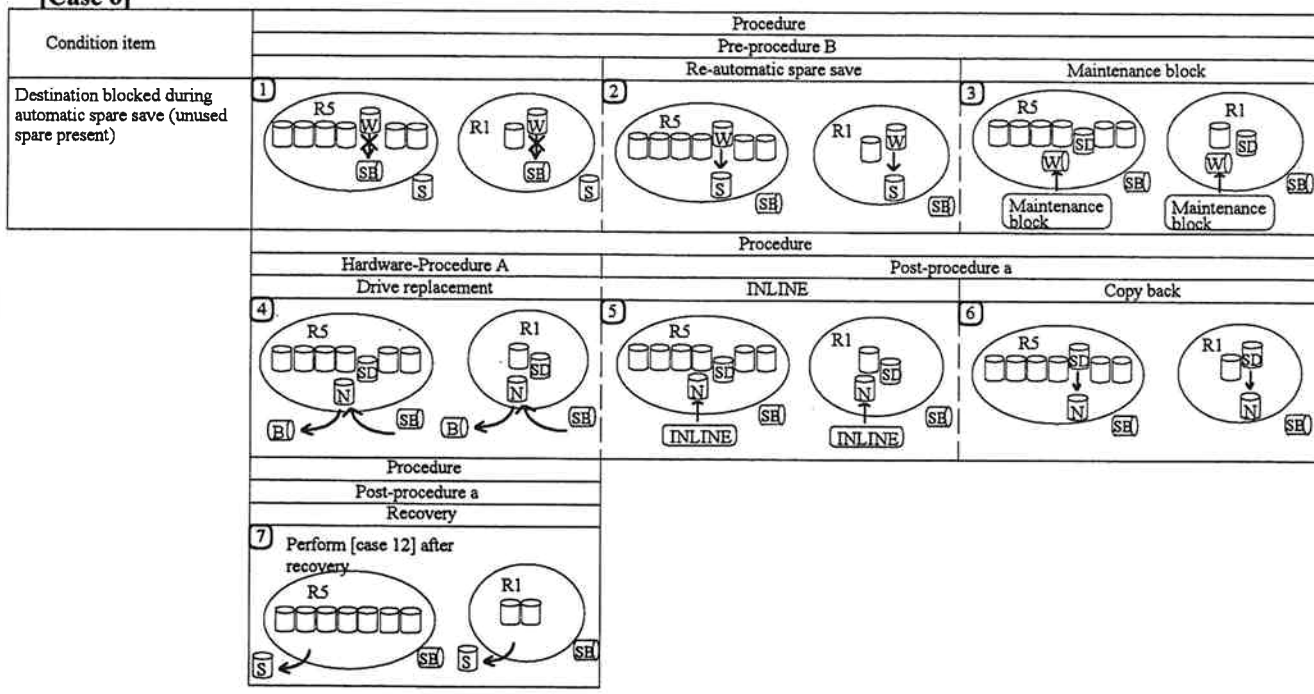
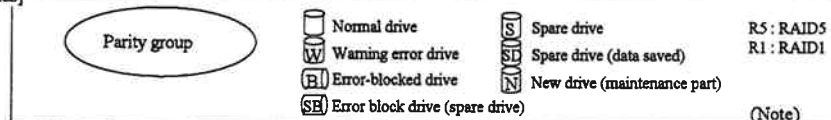
[Case 3]			[Spare drive absent]		
Condition item		Condition	Procedure		
			Pre-procedure D		Hardware-Procedure A
Threshold value exceeded	Warning	○	Threshold value exceeded		Drive replacement
	Block				
			① Warning SIM	Warning SIM	②
Other case (secondary measure)					
			Procedure		
			Post-procedure b		
			Correction copy		Recover
			④	⑤	⑥
			① Block new drive (case 5)	① Block destination (case 5)	

[Case 4]			[Spare drive present]		
Condition item		Condition	Procedure		
			Pre-procedure D		Hardware-Procedure A
Threshold value exceeded	Warning	○	Block one drive		Drive replacement
	Block				
			①	②	③
Other case (secondary measure)					
			Procedure		
			Post-procedure b		
			Correction copy		Recover
			④	⑤	⑥
			① Block new drive (case 5)	① Block destination (case 5)	

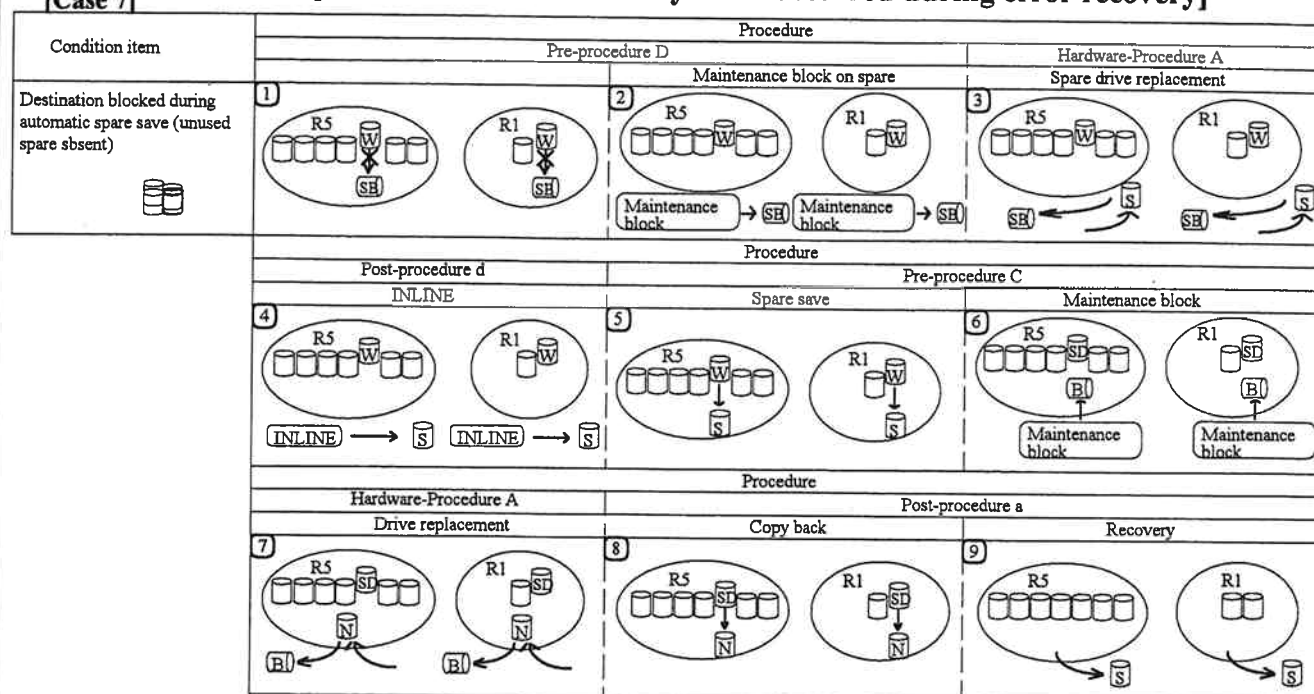
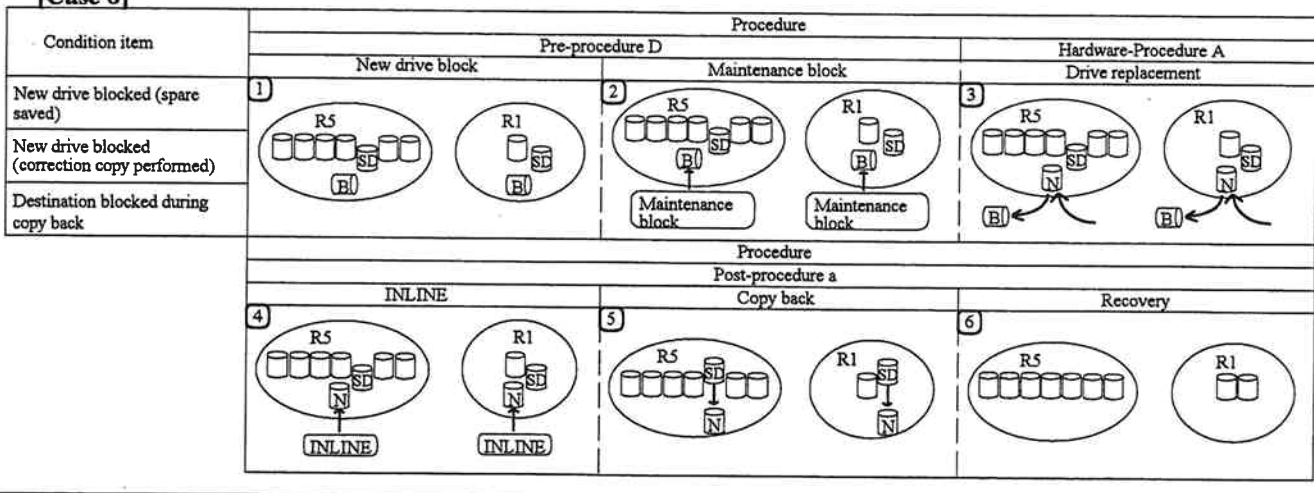
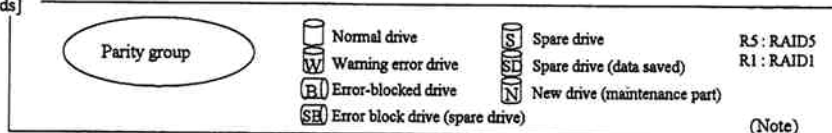
[Legends]

			R5 : RAID5
			R1 : RAID1
			(Note)

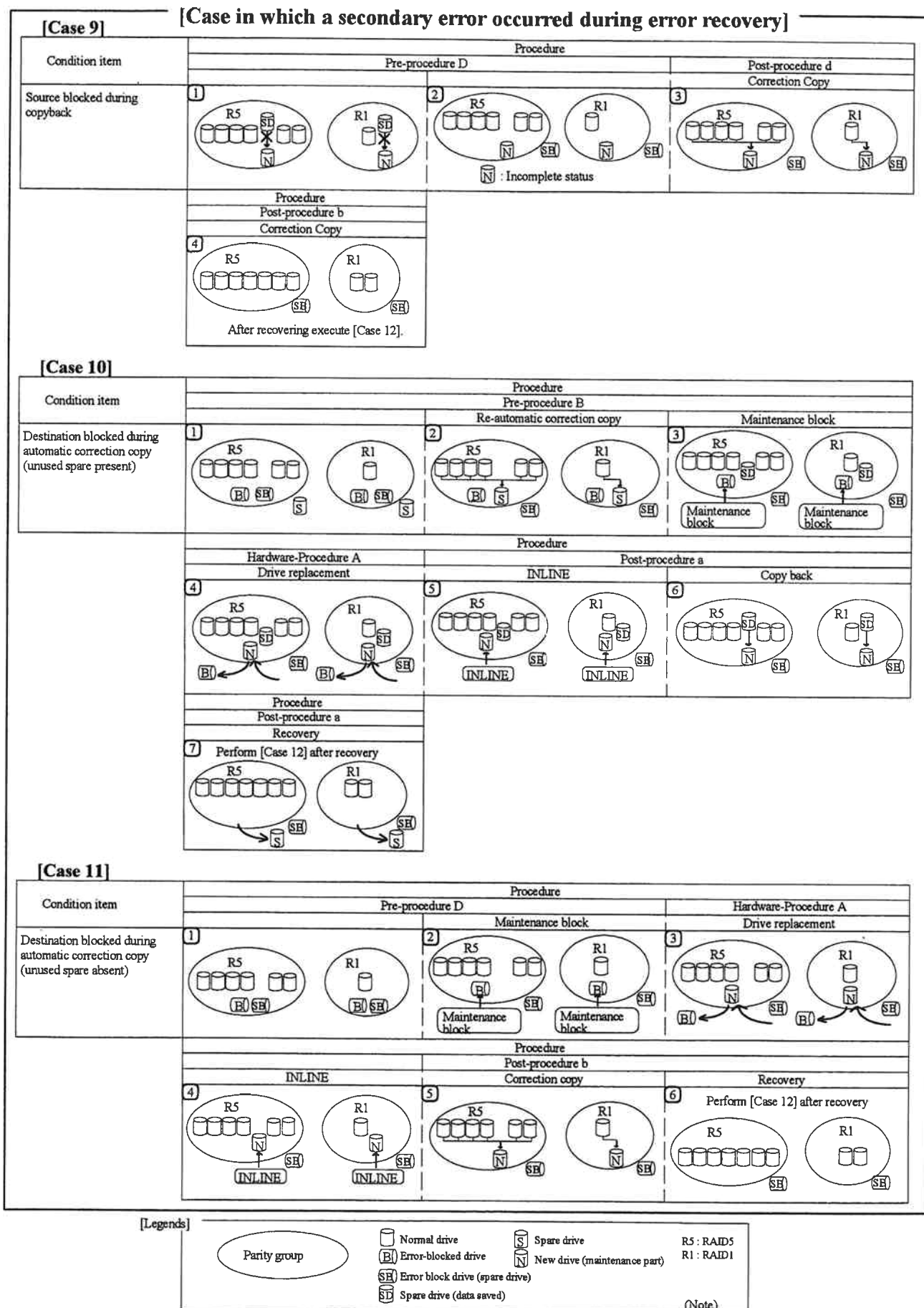
(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.

[Case 5]**[Case in which a secondary error occurred during error]****[Case 6]****[Legends]**

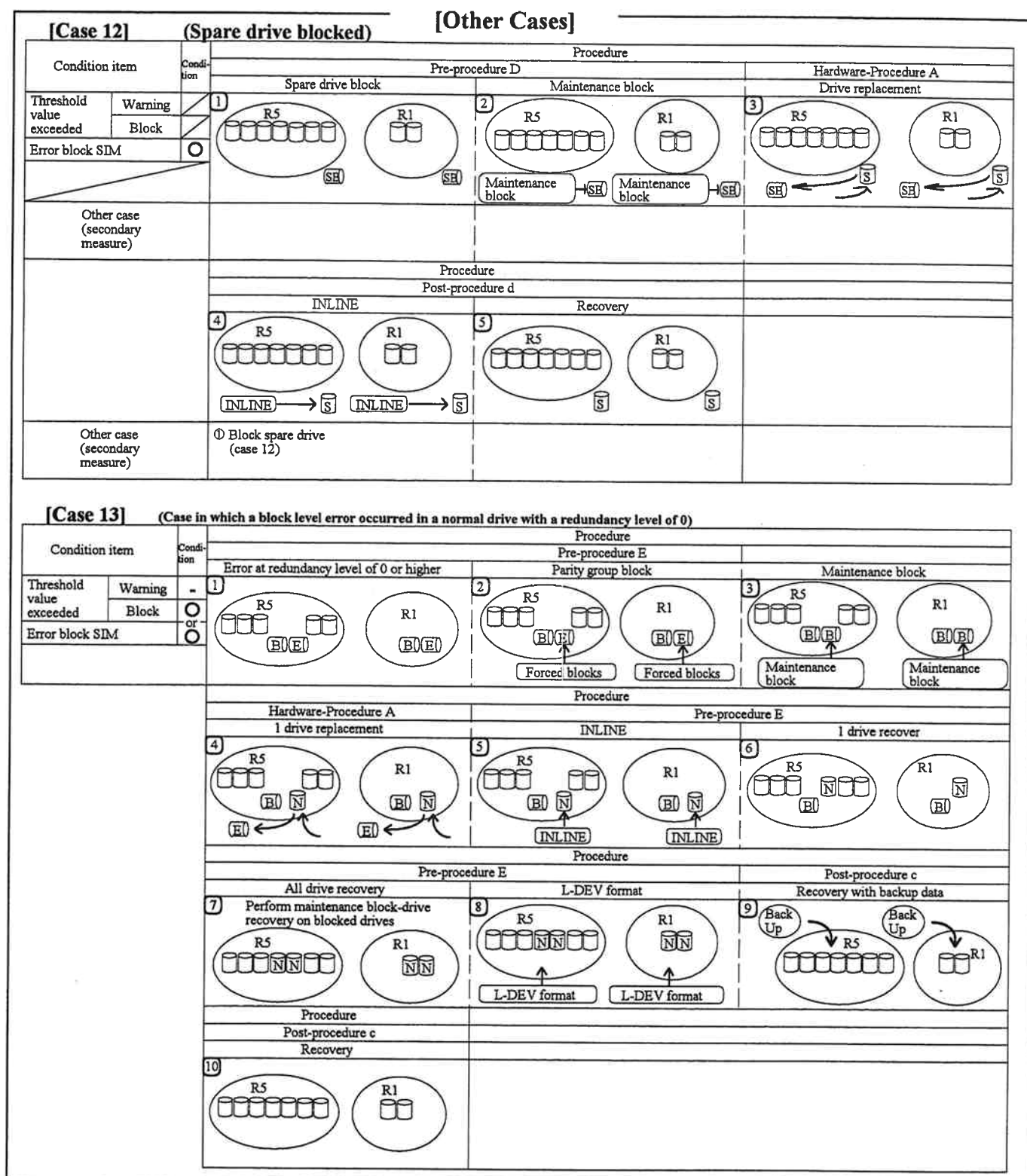
(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.

[Case 7]**[Case in which a secondary error occurred during error recovery]****[Case 8]****[Legends]**

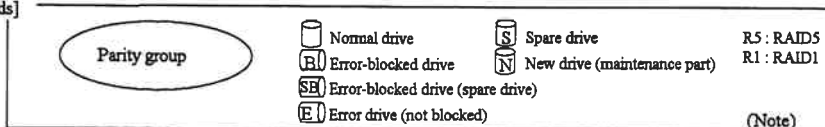
(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.



(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.



[Legends]



(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.

[Case 14] (Preventive drive replacement 1) [Other cases]

Condition item		Condition	Procedure		
Threshold value exceeded	Warning	-	Replacement		
	Block	-	Pre-procedure C		
Others (unusual noise, etc.)		○	Maintenance block		
Spare drive		○	Spare save		
Other case (secondary measure)			① Block source drive (case 2) ② Block destination drive a) Unused spare present (case 6) b) Unused spare absent (case 7)		
Condition item		Condition	Procedure		
Threshold value exceeded	Warning	-	Hardware-Procedure A		
	Block	-	Post-procedure a		
Others (unusual noise, etc.)		○	Recovery		
Spare drive		○	Copy back		
Other case (secondary measure)			① Block new drive (case 8) ② Block source drive (case 9) ③ Block destination drive (case 8)		
Condition item		Condition	Procedure		
Threshold value exceeded	Warning	-	Pre-procedure D		
	Block	-	Hardware Procedure A		
Others (unusual noise, etc.)		○	Recovery		
Spare drive		-	Correction copy		
Other case (secondary measure)			Recovery		

[Case 15] (Preventive drive replacement 2)

Condition item		Condition	Procedure		
Threshold value exceeded	Warning	-	Replacement		
	Block	-	Maintenance block		
Others (unusual noise, etc.)		○	Maintenance block		
Spare drive		-	Maintenance block		
Other case (secondary measure)			① Block new drive (case 5) ② Block destination drive (case 5)		
Condition item		Condition	Procedure		
Threshold value exceeded	Warning	-	Pre-procedure D		
	Block	-	Hardware Procedure A		
Others (unusual noise, etc.)		○	Recovery		
Spare drive		-	Correction copy		
Other case (secondary measure)			Recovery		

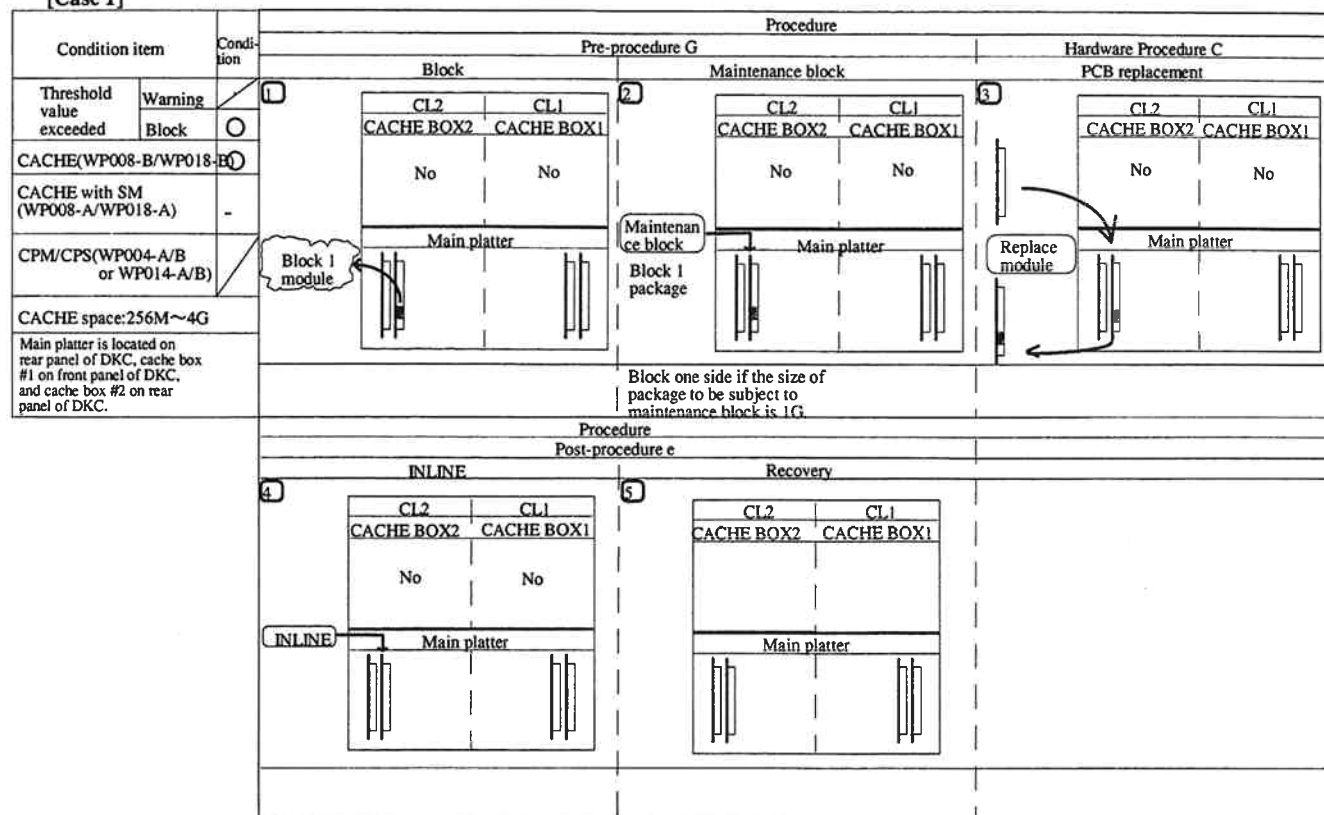
[Legends]

			R5 : RAID5
			R1 : RAID1
			(Note)

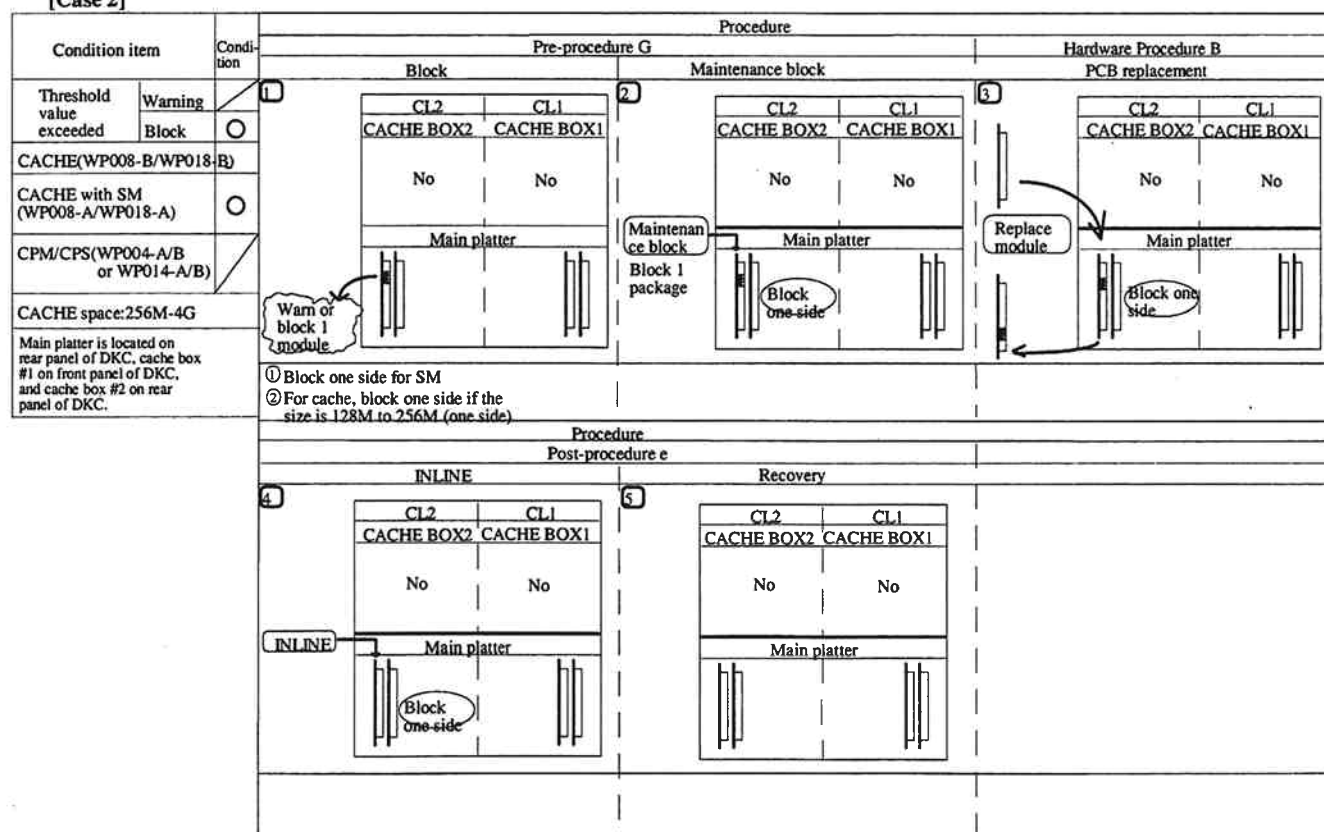
(Note) In RAID 0 method, Parity group consists of only one drive. Also, this system does not execute Correction Copy in RAID 0 method. In RAID 1 method, Parity group consists of two drives.

7.1.3 Concept of Cache Maintenance

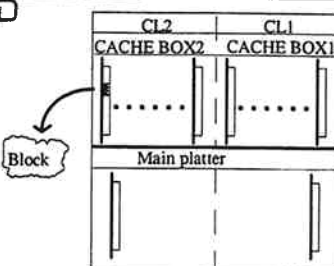
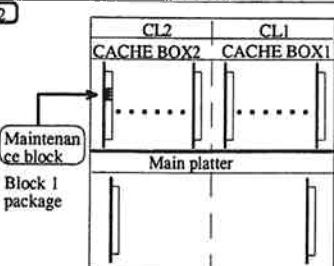
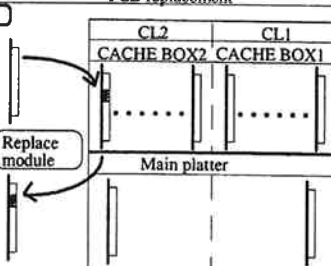
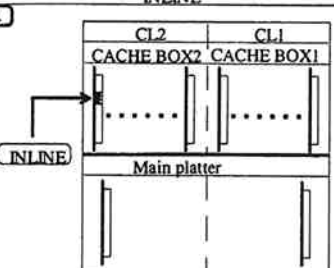
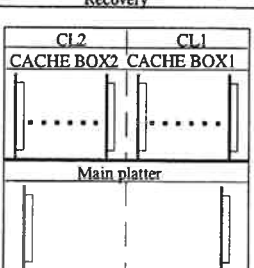
[Case 1]



[Case 2]



[Case 3]

Condition item		Condition	Procedure		
Threshold value exceeded	Warning		Pre-procedure G	Maintenance block	Hardware Procedure F PCB replacement
CACHE(WP008-A/B or WP018-A/B)	Block	○	<div>1</div> <div></div>	<div>2</div> <div></div>	<div>3</div> <div></div>
CACHE with SM (WP008-A/WP018-A)		○			
CPM/CPS(WP004-A/B or WP014-A/B)		-			
CACHE space: 4G~16G					
Main platter is located on rear panel of DKC, cache box #1 on front panel of DKC, and cache box #2 on rear panel of DKC.					
			Procedure		
			Post-procedure e	Recovery	
			<div>4</div> <div></div>	<div>5</div> <div></div>	

[Case 4]

Condition item		Condition	Procedure		
Threshold value exceeded	Warning		Pre-procedure G		Hardware Procedure D/G
CACHE(WP008-A/B or WP018-A/B)	Block	○	Warn or block		PCB replacement
CACHE with SM (WP008-A/WP018-A)		-			
CPM/CPS(WP004-A/B or WP014-A/B)		○			
CACHE space :4G or more					
Main platter is located on rear panel of DKC, cache box #1 on front panel of DKC, and cache box #2 on rear panel of DKC.					
			Procedure		
			Post-procedure e		Recovery
			4		5

7.1.4 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 REP01-120.
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 REP01-120.
 - Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

Note : See page REP01-113 for the procedure for searching a work ID to replace a drive.
When replacing a drive, be sure to see page REP01-111 and REP01-112.

[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 REP01-120.
- ② Take actions according to the SVP pre-procedure, hardware procedure, SVP post-procedure number that match the work ID.

Note : See page REP01-113 for the procedure for searching the work ID to replace a drive.
When replacing a drive, be sure to see page REP01-111 and REP01-112.

<Example>

Condition to replace

SIM was reported

Work ID corresponding to SIM ACC FPC is RCA1

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

<CACHE>

Work ID	Part name	Procedure			Replacing time
		SVP re-procedure	Hardware procedure	SVP post-procedure	
RCA1	CACHE with SM (WP108-A)	Pre A, pre F	Hardware B	Post c	15 minutes
RCA2					

PROCEDURE BEFORE PDEV EXCHANGE AND CORRECTION COPY

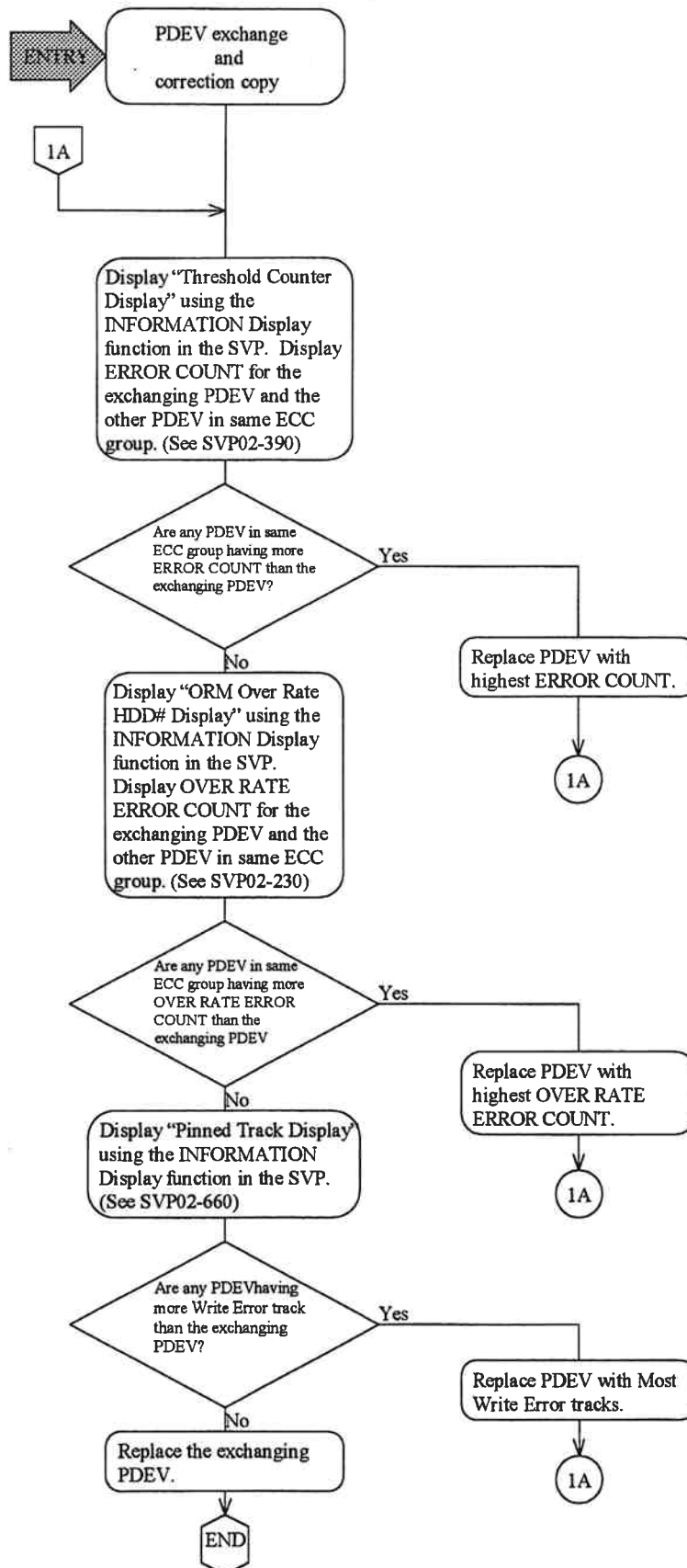
Instructions before blocking and exchanging PDEV with a drive failure error is listed below.

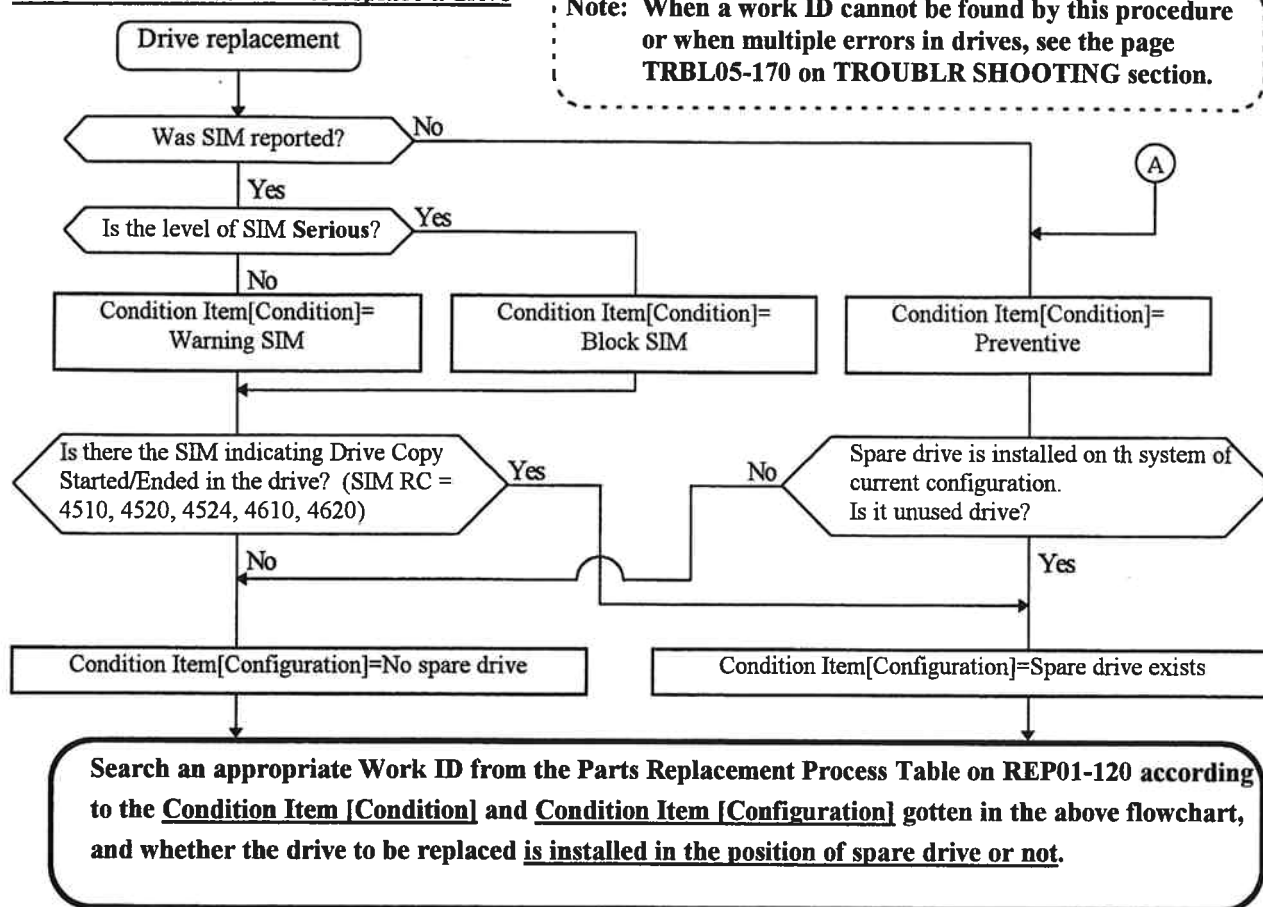
When exchanging unblocked PDEV, redundancy in the ECC group is lost. Therefore, during PDEV exchange, the other PDEV in the same ECC group is fenced by a drive failure error, all the LDEV(8LDEV) in the ECC group is fenced. Accordingly, to prevent the above problem from occurring, the status of PDEV. 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.

Before PDEV exchange, following items are checked.

#	Items checked	Procedure
1	Error Count	"Threshold Counter Display" see SVP02-390
2	ORM Over Rate	"ORM Over Rate HDD# Display" see SVP02-230
3	Write Error	"Pinned Track Display" see SVP02-660

PROCEDURE BEFORE PDEV EXCHANGE and CORRECTION COPY.



How to search a work ID to replace a drive

*1 When Dynamic Sparring and Correction Copy are inhibited by the System Option (See SVP02-740), go to (A).

<<Example>>

- SIM was reported.
- Level of the SIM is not "Serious". = Condition Item[Condition] is "Warning SIM".
- There is the SIM that RC is 4510 in the drive. = Condition Item[Configuration] is "Unused spare drive exists".
- The drive to be replaced is not a spare drive. = "Data Drive"
- * Under the above conditions, the shaded area is searched from Parts Replacement Process Table. Therefore, in this example Work ID should be RDK1.

<Data Drive, Spare Drive>

Work ID	Parts Name	Condition Item				Procedure			Reference information	
		Condition		Preventive	Configuration Unused spare drive	SVP pre-procedure	Hardware procedure	SVP post-procedure	Image of replacement	
		Failure							Outline	Case
		Warning SIM	Block SIM							
RDK1	Data Drive	x	-	-	Yes	Pre A, Pre B *1	Hard A *1	Post a *1	Drive replacement ~ Copy back	Case 1
RDK2	Data Drive	-	x	-	Yes					

7.1.5 Parts Replacement Process Table

<Data Drive, Spare Drive>

Work ID	Parts Name	Condition Item				Procedure *1			Reference information	
		Condition		Preven- tive	Configu- -ration	SVP pre- procedure	Hardware procedure	SVP post- procedure	Outline	Case *2
		Failure								
		Warning SIM	Block SIM							
RDK1	Data Drive Note 1	×	-	-	Yes	Pre A, pre B *1	Hardware A *1	Post a *1	Drive replace ~ Copy back	Case1
RDK2	Data Drive Note 1	-	×	-	Yes	Pre A, pre B *1	Hardware A *1	Post a *1	Drive replace ~ Copy back	Case 2
RDK3	Data Drive Note 1	-	-	×	Yes	Pre A, pre C, pre B *1	Hardware A *1	Post a *1	Copy to Spare drive ~ Drive replace ~ Copy back	Case 14
RDK4	Data Drive Note 1	×	-	-	No	Pre A, pre D *1	Hardware A *1	Post b *1	Drive replace ~ Correction copy	Case 3
RDK5	Data Drive Note 1	-	×	-	No	Pre A, pre D *1	Hardware A *1	Post b *1	Drive replace ~ Correction copy	Case 4
RDK6	Data Drive Note 1	-	-	×	No	Pre A, pre D *1	Hardware A *1	Post b *1	Drive replace ~ Correction copy	Case 15
RDK7 Note 2 Note 3	Data Drive Note 1	Note 2				Pre A, pre E *1	Hardware A *1	Post c *1	LDEV formrtting after replacing all the HDDs blocked in a parity group Note 3	Case 13
RDK8	Spare Drive Note 1	-				Pre A, pre D *1	Hardware A *1	Post d *1	Spare drive replace	Case 12

*1: Refer to REP01-180

*2: Refer to REP01-20

Note 1) Parts Name is indicates attribute of a drive.

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

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

Note 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 center about the appropriateness of the operation.

Note 3) Confirm the parity group and the LDEV No. corresponding to the HDD through the SVP STATUS. See page STATUS05-80 for the procedure for referring to SVP STATUS

Note : If a Work ID cannot be found or if multiple drive error is occurring, see page TRBL05-170 on TROUBLE SHOOTING section.

BLANK SHEET

<Cache>

Work ID	Part name	Conditin Item		Procedure *1			Replacing Time
		Mounting		SVP re-procedure	Hardware procedure	SVP post-procedure	
		Main platter	Cache platter				
RCA1	CACHE (with SM) (WP008-A/WP018-A)	×		Pre A, Pre F	Hard B	Post e	15 min
RCA2	CACHE (WP008-B/WP018-B)	×	-	Pre A, Pre F	Hard C	Post e	15 min
RCA3	CPM (WP004-A/WP014-A)	×		Pre A, Pre F	Hard D	Post e	—
RCA4	CACHE (WP008-A/WP018-A)	-	×	Pre A, Pre G	Hard E	Post e	—
RCA5	CACHE (WP008-B/WP018-B)	-	×	Pre A, Pre G	Hard F	Post e	—
RCA6	CPS (WP004-B/WP014-B)		×	Pre A, Pre F	Hard G	Post e	—
RCA7	CACHE Terminator (WP010-A)		×	Pre A, Pre F	Hard N	Post e	—
RCA8	CACHE BB (LP471-A)		×	Pre A, Pre F	Hard M	Post e	—

<Channel adapter, disk adapter, SCSI buffer, and terminator>

Work ID	Part name	Procedure *1			Replacing Time
		SVP re-procedure	Hardware procedure	SVP post-procedure	
RCH1	CHA(SERIAL)	Pre A, Pre H	Hard H	Post f	20 min
RCH2	CHA(PARALLEL)	Pre A, Pre H	Hard I	Post f	20 min
RCH3	CHA(SCSI)	Pre A, Pre H	Hard P	Post f	20 min
RDA1	DKA	Pre A, Pre H	Hard J	Post f	20 min
RSC1	SCSI BFR & SCSI CABLE	Pre A, Pre I	Hard K	Post h	10 min
RTM1 RTM2	Terminator (LTM)	Pre A, Pre T1	Hard L	Post t1	13 min

*1 Refer to REP01-180

If a failure occurs in replacing a channel adaptor or a disk adaptor, see "Error Recovery Procedure for the Replacement of CHA/DKA" (TRBL05-110).

<DKC, special P/K, fan, others>

Work ID	Part name	Procedure			Replacing Time
		SVP pre-procedure	Hardware procedure	Note 1) SVP post-procedure	
RT1	System Panel	Pre A, pre T1	Hardware T1	Post t1	16 min
RT2	OP Panel	Pre A, pre T1	Hardware T2	Post t1	23 min
RT3	CE Panel	Pre A, pre T1	Hardware T3	Post t1	23 min
RT4	EPO SW	Pre A, pre T1	Hardware T4	Post t1	12 min
RT5	PWRCTL	Pre A, pre T1	Hardware T5	Post t1	22 min
RT6	PCI CONN Note 2)	Pre A, pre T1	Hardware T6	Post t1	16 min
RT7	RCU CONN	Pre A, pre T1	Hardware T7	Post t1	13 min
RT8	FAN(LOGIC)	Pre A, pre T3	Hardware T8	Post t3	8 min
RT9	FAN(CACHE)	Pre A, pre T3	Hardware T8	Post t3	8 min
RT10	THERMOSTAT	Pre A, pre T3	Hardware T9	Post t3	8 min
RT11	SVP, LAN Card	Pre A, pre T1	Hardware T10	Post t1	40 min
RT12	SSVP	Pre A, pre T1	Hardware T11	Post t1	29 min
RT13	Breaker box 1	Pre A, pre T3	Hardware T12	Post t3	28 min
RT14	Breaker box 1	Pre A, pre T3	Hardware T12	Post t3	30 min
RT15	Breaker box 2	Pre A, pre T3	Hardware T13	Post t3	18 min
RT16	Breaker box 2	Pre A, pre T3	Hardware T13	Post t3	18 min
RT17	Battery	Pre A, pre T3	Hardware T14	Post t3	11 min
RT18	Battery Controller PCB	Pre A, pre T3	Hardware T15	Post t3	8 min
RT19	OUTLET BOX	Pre A, pre T1	Hardware T16	Post t1	25 min
RT44	SVP PSCTL	Pre A, pre T1	Hardware T25	-	25 min

Note 3

Note 3

Note 3

Note 3

Note 1) Refer to REP01-180

Note 2) All connected devices to DKC210I are powered off by EPO signal of PCI when the PCI CONN PCB is removed.

Prevent the trouble for connected devices from EPO signal.

Note 3) When SVP is not able to operate, start from Hardware procedure.

<DKC, power supply>

Work ID	Part name	Procedure *1			Replacing Time
		SVP pre-procedure	Hardware procedure	SVP post-procedure	
RT20	SW PS(LOGIC,5V)	Pre A, pre T3	Hardware T17	Post t3	8 min
RT21	SW PS(LOGIC,5V)	Pre A, pre T3	Hardware T17	Post t3	
RT22	SW PS(LOGIC,5V)	Pre A, pre T3	Hardware T17	Post t3	
RT23	SW PS(LOGIC,Multi)	Pre A, pre T3	Hardware T17	Post t3	
RT24	SW PS(LOGIC,Multi)	Pre A, pre T3	Hardware T17	Post t3	
RT25	SW PS(LOGIC,Multi)	Pre A, pre T3	Hardware T17	Post t3	
RT26	SW PS(LOGIC,3V)	Pre A, pre T3	Hardware T17	Post t3	
RT27	SW PS(LOGIC,3V)	Pre A, pre T3	Hardware T17	Post t3	
RT28	SW PS(LOGIC,3V)	Pre A, pre T3	Hardware T17	Post t3	
RT29	SW PS(CACHE,5V)	Pre A, pre T3	Hardware T17	Post t3	
RT30	SW PS(CACHE,5V)	Pre A, pre T3	Hardware T17	Post t3	
RT31	SW PS(CACHE,5V)	Pre A, pre T3	Hardware T17	Post t3	
RT32	SW PS(CACHE,3V)	Pre A, pre T3	Hardware T17	Post t3	
RT33	SW PS(CACHE,3V)	Pre A, pre T3	Hardware T17	Post t3	
RT34	SW PS(CACHE,3V)	Pre A, pre T3	Hardware T17	Post t3	

*1 Refer to REP01-180

<DKU, special P/K, power supply, fan>

Work ID	Part name	Procedure Note 1)			Replacing Time
		SVP pre-procedure	Hardware procedure	SVP post-procedure	
RT35	DKUMN	Pre A, pre T4	Hardware T18	Post t4	12 min
RT36	SW PS(DKU,Multi)	Pre A, pre T4	Hardware T19	Post t4	10 min
RT37	FAN(DKU)	Pre A, pre T4	Hardware T20	Post t4	5 min
RT38	AC Box-R10	Pre A, pre T4	Hardware T21	Post t4	Note 2
RT39	AC Box-R10	Pre A, pre T4	Hardware T21	Post t4	
RT40	AC Box(except R10)	Pre A, pre T4	Hardware T22	Post t4	
RT41	AC Box(except R10)	Pre A, pre T4	Hardware T22	Post t4	
RT43	RS CONN	Pre A, pre T1	Hardware T23	Post t1	8 min

Note 1) Refer to REP01-180.

Note 2) When SVP is not able to operate, start from Hardware procedure.

7.1.6 Procedure contents table

SVP Pre	GO TO
Pre A	REP02-10
Pre B	REP02-40
Pre C	REP02-80
Pre D	REP02-120
Pre E	REP02-160
Pre F	REP02-210
Pre G	REP02-260
Pre H	REP02-300
Pre I	REP02-350
Pre J	REP02-381
Pre K	REP02-387
Pre T1	REP02-390
Pre T3	REP02-550
Pre T4	REP02-650
Pre V	REP02-730

Hardware	GO TO
Hardware A	REP03-10
Hardware B	REP03-50
Hardware C	REP03-120
Hardware D	REP03-170
Hardware E	REP03-220
Hardware F	REP03-270
Hardware G	REP03-320
Hardware H	REP03-350
Hardware I	REP03-370
Hardware J	REP03-390
Hardware K	REP03-410
Hardware L	REP03-455
Hardware M	REP03-1390
Hardware N	REP03-1740
Hardware P	REP03-1830
Hardware T1	REP03-460
Hardware T2	REP03-480
Hardware T3	REP03-510
Hardware T4	REP03-530
Hardware T5	REP03-560
Hardware T6	REP03-580
Hardware T7	REP03-610
Hardware T8	REP03-630
Hardware T9	REP03-660
Hardware T10	REP03-680
Hardware T11	REP03-700
Hardware T12	REP03-720
Hardware T13	REP03-810
Hardware T14	REP03-890
Hardware T15	REP03-910
Hardware T16	REP03-930
Hardware T17	REP03-990
Hardware T18	REP03-1010
Hardware T19	REP03-1090
Hardware T20	REP03-1110
Hardware T21	REP03-1130
Hardware T22	REP03-1220
Hardware T23	REP03-1360
Hardware T25	REP03-1383

SVP Post	GO TO
Post a	REP04-10
Post b	REP04-40
Post c	REP04-80
Post d	REP04-100
Post e	REP04-120
Post f	REP04-150
Post h	REP04-190
Post i	REP04-203
Post t1	REP04-210
Post t3	REP04-360
Post t4	REP04-410
Post u	REP04-490

7.1.7 ONLINE MAINTENANCE outline

(1) Types of status display

- EMPTY ; The device configuration information is set to "uninstalled".
- NORMAL ; Normal part (normal part defined in the device configuration information)
- BLOCKED ; The part is in the maintenance blocked state (this state takes precedence over the error blocked state in display).
- WARNING ; There exists a lower-level part that is held in the error blocked states.
The functionality of the current part is maintained.
- FAILED ; The part is in the error blocked state (the functionality of the current part is lost).
- FREE ; Spare drive is in normal state (data is not saved).
- RESERV ; Spare drive is in normal state (data is saved).
- INCOMP ; Copy back to the spare drive was ended incompletely.

(2) How to interpret the status display

① The status information is displayed on the SVP screen is not on a realtime basis. It reflects the state that was established.

When 'ONLINE' is opened, to display the latest state (or the state immediately after 'REPLACE' processing terminates), drag the [Renew the status] from the [View Mode].

② The status information about each part represents the status of the components of the part.

The status of the part does not affect the status of its components.

Example 1; While CACHE-xx is set to [BLOCKED], the status of its lower-level Module Group remains [NORMAL].

Example 2; HDU-xxx because unavailable when the DKAs attached to both ports of the HDU-xxx are blocked but its status remains the same.

7.1.8 Availability of the online maintenance when HRC is used

Component	Maintenance Type	Condition	HRC path established		During initial copy		After finished copy		Suspend	
			MCU	RCU	MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blocade	—	×	×	ONL2031W	ONL2034W	ONL2031W	ONL2034W	ONL2031W	ONL2034W
	Recovery	—	×	×	ONL2031W	ONL2034W	ONL2031W	ONL2034W	ONL2031W	ONL2034W
	Format	—	×	×	ONL2031W	ONL2034W	ONL2031W	ONL2034W	ONL2031W	ONL2034W
	Verify	—	×	×	×	×	×	×	×	×
HDD canister	Replace	—	×	×	ONL2059W	ONL2079W	×	×	×	×
Cache PCB	Replace	—	×	×	ONL2059W	ONL2079W	×	×	×	×
CHA	Replace	Alternate path exist.	×	×	×	ONL2038W	×	ONL2038W	×	ONL2038W
		Alternate path not exist.	×	×	ONL2073W	ONL2038W	ONL2074W	ONL2038W	ONL2075W	×
DKA	Replace	—	×	×	×	×	×	×	×	×
LTM PCB	Replace	—	×	×	×	×	×	×	×	×

7.1.9 Availability of the online maintenance when HODM is used

(1/2)

Component	Maintenance Type	Condition	HODM path established		During initial copy		Waiting for erase		Suspend	
			MCU	RCU	MCU	RCU	MCU	RCU	MCU	RCU
Logical Device	Blocade	—	×		ONL2031W		ONL2031W		ONL2031W	
	Recovery	—	×		ONL2031W		ONL2031W		ONL2031W	
	Format	—	×		ONL2031W		ONL2031W		ONL2031W	
	Verify	—	×		×		×		×	
HDD canister	Replace	—	×		ONL2059W		×		×	
Cache PCB	Replace	—	×		ONL2059W		×		×	
CHA	Replace	Alternate path exist.	×		×		×		×	
		Alternate path not exist.	×		ONL2076W		ONL2078W		ONL2077W	
DKA	Replace	—	×		×		×		×	
LTM PCB	Replace	—	×		×		×		×	

× : Maintenance is available

ONLXXXXW/SPLXXXXW : Maintenance is not available based on the specification. Refer to SVP-MSG SECTION.

Note.1 About replacement of CHA in the RCU side

If the CHA 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.

(2/2)

Component	Maintenance Type	Condition	During for R-Vol Erasing		Erasing Error	
			MCU	RCU	MCU	RCU
Logical Device	Blocade	—	ONL2031W		ONL2031W	
	Recovery	—	ONL2031W		ONL2031W	
	Format	—	ONL2031W		ONL2031W	
	Verify	—	×		×	
HDD canister	Replace	—	×		×	
Cache PCB	Replace	—	×		×	
CHA	Replace	Alternate path exist.	×		×	
		Alternate path not exist.	ONL2078W		ONL2078W	
DKA	Replace	—	×		×	
LTM PCB	Replace	—	×		×	

× : Maintenance is available

ONLXXXXW/SPLXXXXW : Maintenance is not available based on the specification. Refer to SVP-MSG SECTION.

Note.1 About replacement of CHA in the RCU side

If the CHA 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.

7.1.10 Availability of the online maintenance when HXRC is used

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

x: Maintenance is available

*: When a maintenance operation is needed while HXRC is using, 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 using, you must confirm that the usage of Sidefile monitor 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 [Information] 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 using, HXRC should be stopped before the maintenance operation.

[PRE-PROCEDURE A]

— OUTLINE —

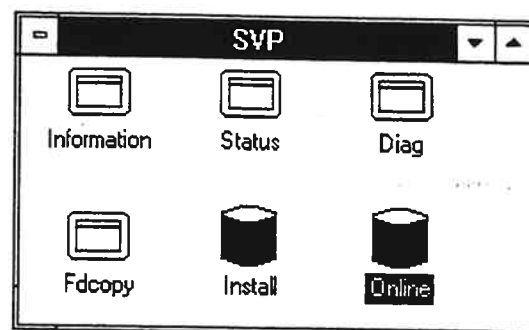
- ① Open [ONLINE] from [SVP].
- ② Change SVP operation mode.
- ③ Open [HardWare Maintenance].

1. <Open [Online]>

Select [Online] from 'SVP' (DC).

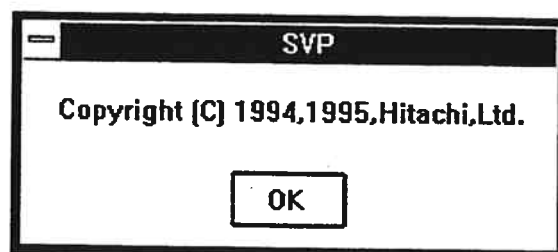
<Remark>

If you will replace LTM PCB, please confirm that "STATUS" or "INFORMATION" programs are not executed.



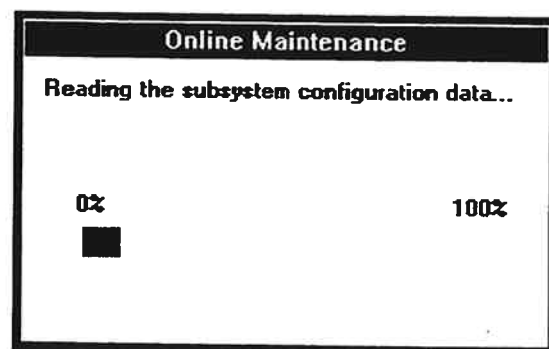
2. <Check copyrights>

Select [OK] (CL).



3. <"Reading the Subsystem Configuration">

"Reading the subsystem configuration data..." is displayed.

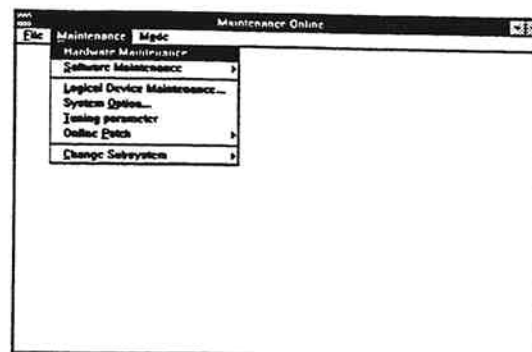


4. <Operation mode change>

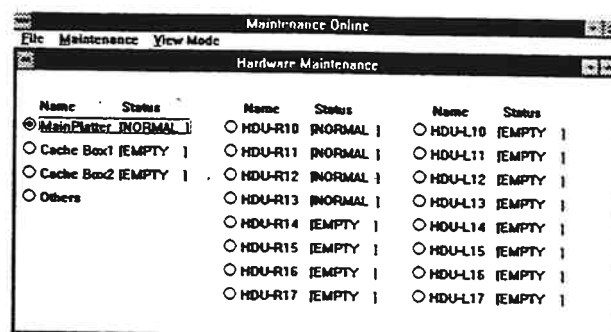
Select [Modify] from [Mode] on 'Maintenance Online' (DR).



5. <Select [Hardware Maintenance]>
Select [Hardware Maintenance] from
[Maintenance] (DR).



6. <Display of HardWare Maintenance>
'Hardware Maintenance' is displayed.



[PRE-PROCEDURE B]

— OUTLINE —

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

1. <Start SVP STATUS>

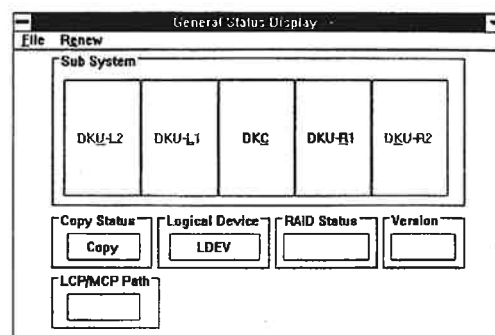
Start SVP STATUS (Refer to STATUS04-10 how to start).

2. <Check the drive copy status>

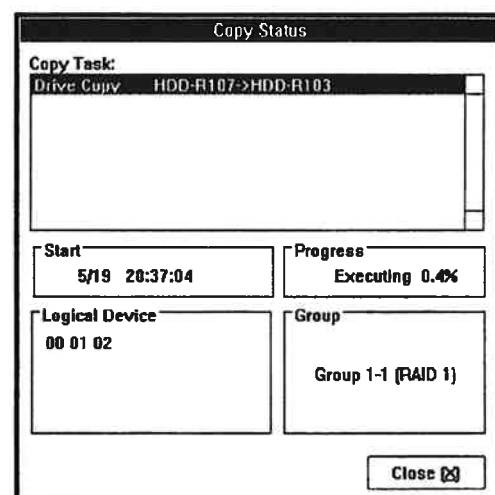
If Copy Status button in the SVP Status screen does not blink, it means that the drive copy does not work.

Please go to 3.

If the Copy Status button is blinking, please select the button.



SVP will display the list of Copy Task. You can select one of the tasks to check the progress.



If the copy is not finished, please go to 3.

If copying, please wait until the copy is finished and go to 3.

3. <Select DKU Box>

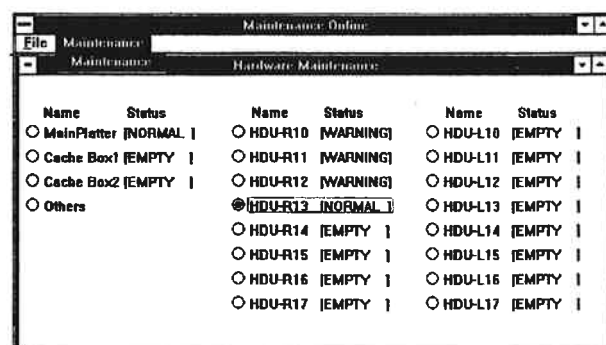
Make sure (other than preventive) that the status of [HDU-Rnn] or [HDU-Lnn] is to be Replaced from [Hardware Maintenance] is:

* Warning threshold value -> [NORMAL]

(Turns to [WARNING] at the end of copy processing)

* Block threshold value -> [WARNING]

After checking status, select [HDU-Rnn] or [HDU-Lnn] (CL) and select [Maintenance] from [Maintenance] (DR).

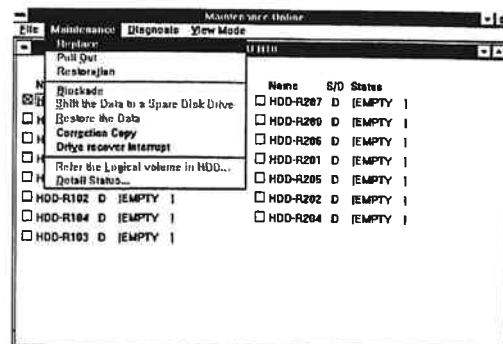


4. <Specify Replacement on HDU>

Select [HDD-Rnnn] or [HDD-Lnnn] to be Replaced from [HDU-Rnn] or [HDU-Lnn] (CL) and select [Replace] from [Maintenance] (DR).

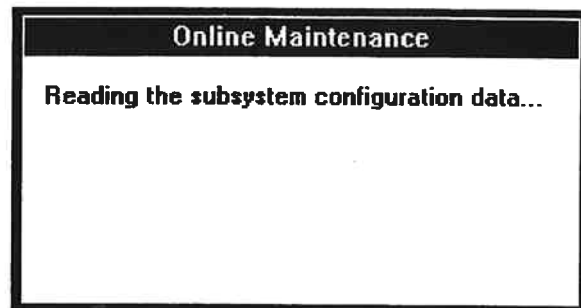
NOTICE

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

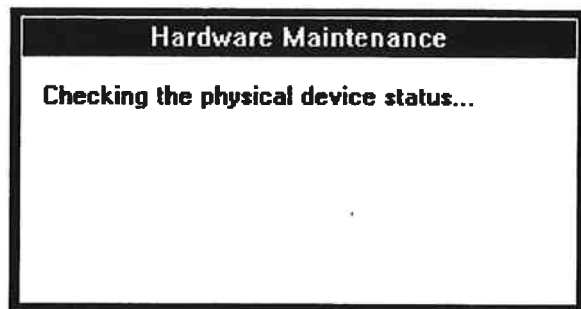


5. <Reading the subsystem configuration data and checking P-DEV status>

"Reading the subsystem configuration data..." is displayed.

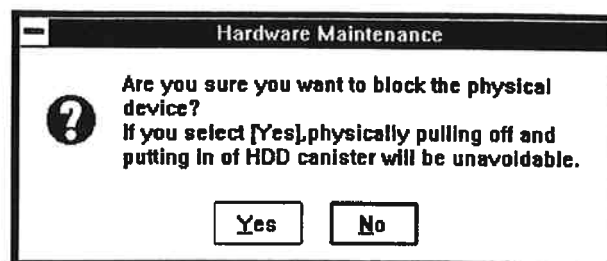


"Checking the physical device status..." is displayed.



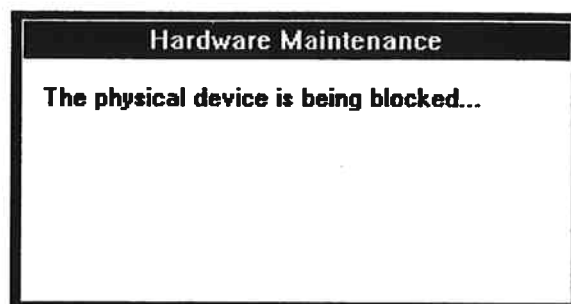
6. <P-DEV blocking>

Select [Yes] in response to "Are you sure you want to block the physical device? If you select [Yes], physically pulling off and putting in of HDD canister will be unavoidable." (CL).



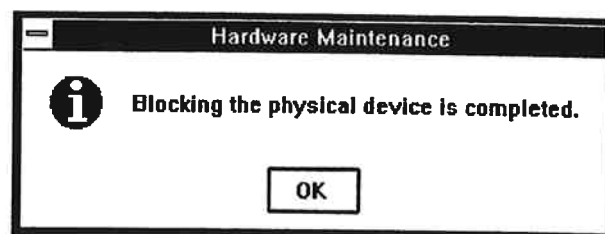
7. <P-DEV blocking>

"The physical device is being blocked..." is displayed.



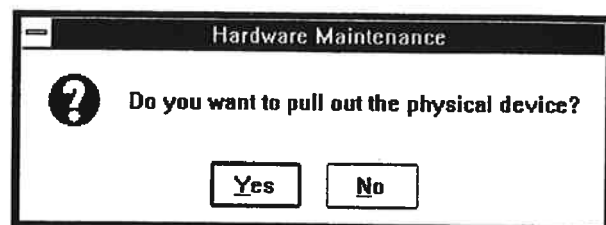
8. <End of P-DEV blocking>

Select [OK] in response to "Blocking the physical device is completed." (CL).



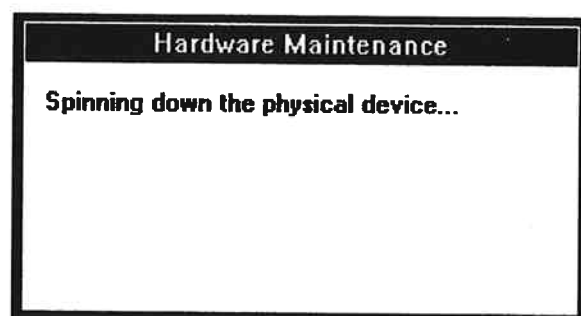
9. <Confirm P-DEV removal>

Select [Yes] in response to "Do you want to pull out the physical device ?" (CL).



10. <Spin down in progress>

"Spinning down the physical device..." is displayed.
(Shut down LED lit.)



11. <Check shut down LED>

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 hardware.

NOTICE

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

12. <Confirm Replacement.>

Select [OK] in response to "Please replace the physical device. After replacement, please press OK." after replace the unit.



13. <Replace HDU>

Replace HDU .

See HARDWARE A (REP03-10).

[PRE-PROCEDURE C]

— OUTLINE —

- ① Select drive (status check).
- ② Check progress of copy processing.
- ③ Specify Replacement.
- ④ Save Spare.

1. <Start SVP STATUS>

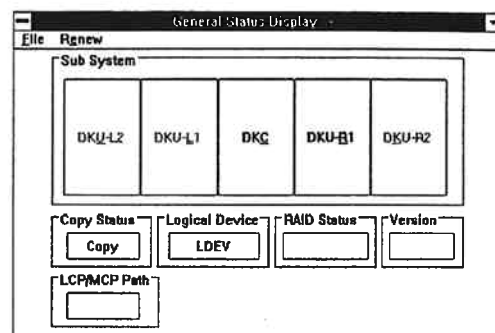
Start SVP STATUS (Refer to STATUS04-10 how to start).

2. <Check the drive copy status>

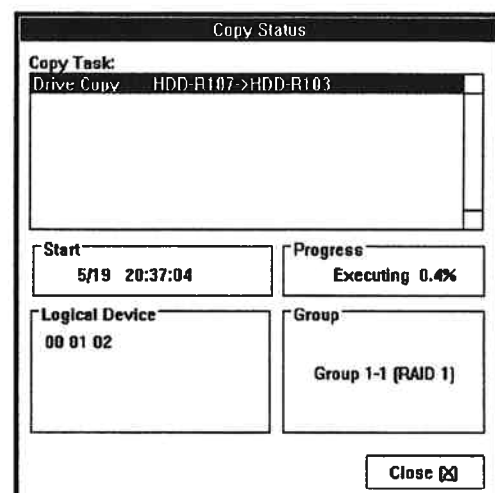
If Copy Status button in the SVP Status screen does not blink, it means that the drive copy does not work.

Please go to 3.

If the Copy Status button is blinking, please select the button.



SVP will display the list of Copy Task. You can select one of the tasks to check the progress.



If the copy is not finished, please go to 3.

If copying, please wait until the copy is finished and go to 3.

3. <Select DKU Box>

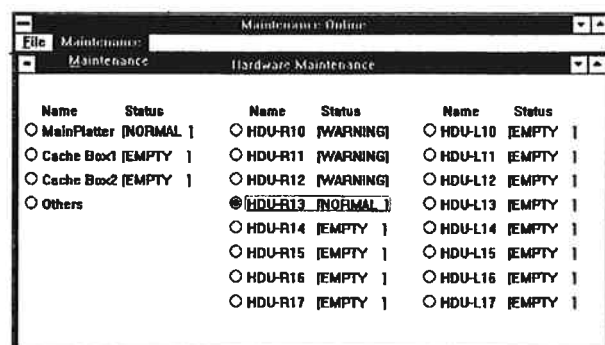
Make sure (other than preventive) that the status of [HDU-Rnn] or [HDU-Lnn] to be Replaced from 'Hardware Maintenance' is:

* Warning threshold value -> [NORMAL]

(The status will be [WARNING] at the end of copy processing)

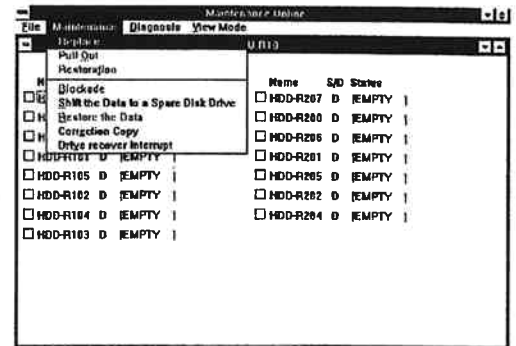
* Block threshold value -> [WARNING]

After checking status, select [HDU-Rnn] or [HDU-Lnn] (CL) and select [Maintenance] from [Maintenance] (DR).



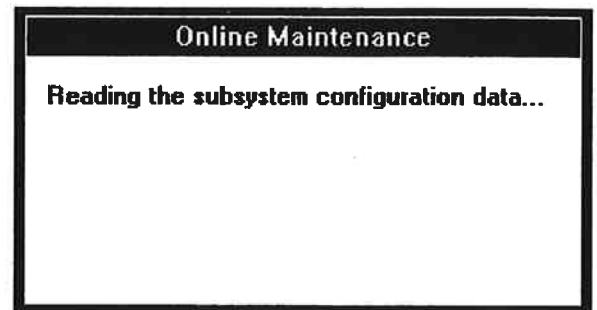
4. <Specify Replacement on HDU>

Select [HDD-Rnnn] or [HDD-Lnnn] to be replaced from [HDU-Rnn] or [HDU-Lnn] (CL) and select [Shift the Data to a Spare Disk Drive] from [Maintenance] (DR).

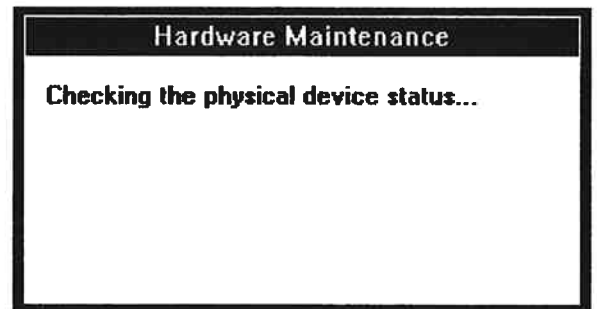


5. <Reading the subsystem configuration data and Checking the P-DEV status>

"Reading the subsystem configuration data..." is displayed.



"Checking the physical device status..." is displayed.

**NOTICE**

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

6. <Saving the spare>

Select [Yes] in response to "Do you want to copy the data to the spare disk now?" (CL).



7. <Saving in process>

"Copying the data to the spare disk..." is displayed.



8. <End of spare saving>

Select [OK] (CL) in response to "Copying the data to the spare disk has started."



9.

Please do Pre B after finishing copy.

[PRE-PROCEDURE D]

— OUTLINE —

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

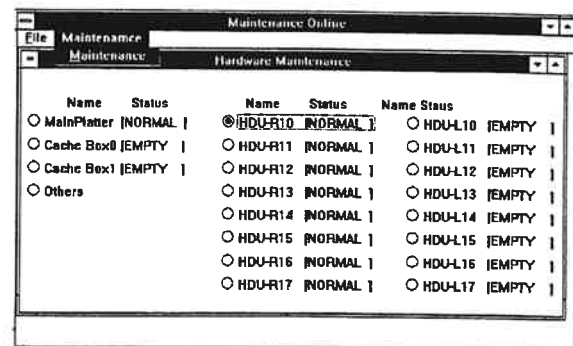
1. <Select HDU Box>

Make sure (other than preventive) that the status of [HDU-Rnn] or [HDU-Lnn] to be replaced from 'Hardware Maintenance' is:

* Warning threshold value -> [NORMAL]

* Block threshold value -> [WARNING]

After checking status, select [HDU-Rnn] or [HDU-Lnn] and select [Maintenance] from [Maintenance] (DR).



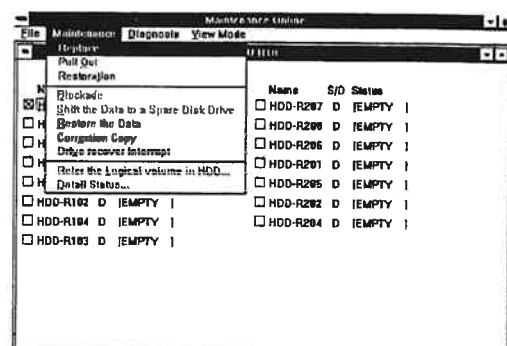
2. <Specify Replacement on HDU>

Make sure (other than preventive) that the status of HDD Canister[HDD-Rnnn] or [HDD-Lnnn] to be replaced from HDU Box[HDU-Rnn] or [HDU-Lnn] is:

* Warning threshold value -> [NORMAL]

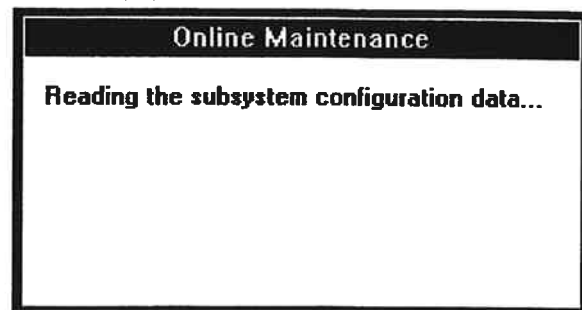
* Block threshold value -> [FAILED]

After checking status, select Replacement [HDD-Rnnn] or [HDD-Lnnn] (CL) and select [Replace] from [Maintenance] (DR).



3. <Reading the subsystem configuration data and checking the P-DEV status>

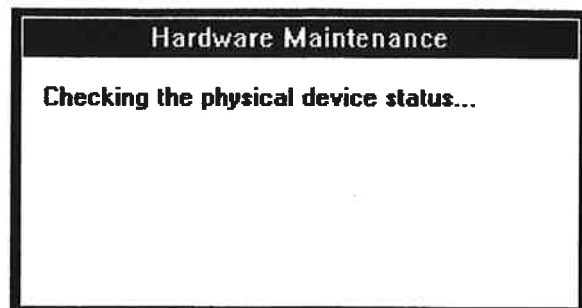
"Reading the subsystem configuration data..." is displayed.



"Checking the physical device status..." is displayed.

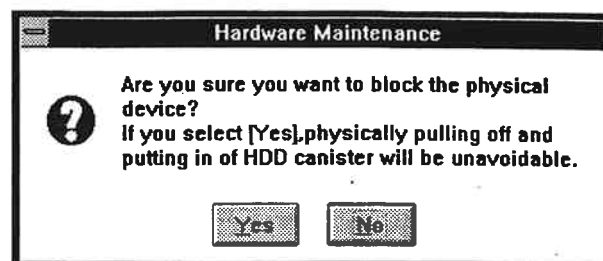
NOTICE

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



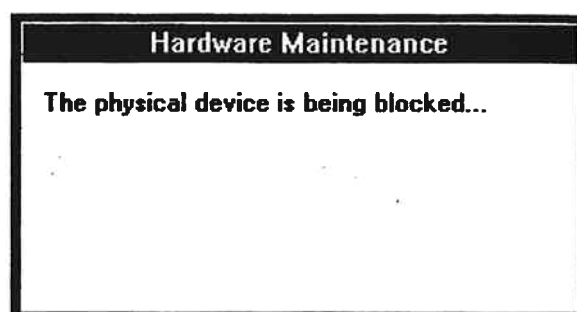
4. <P-DEV blocking>

Select [Yes] in response to "Are you sure you want to block the physical device? If you select [Yes], physically pulling off and putting in of HDD canister will be unavoidable." (CL).



5. <P-DEV blocking>

"The physical device is being blocked..." is displayed.



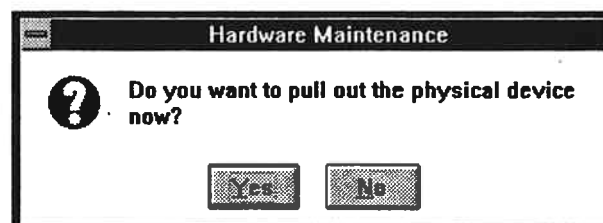
6. <End of P-DEV Blocking>

Select [OK] in response to "Blocking the physical device is completed" (CL).



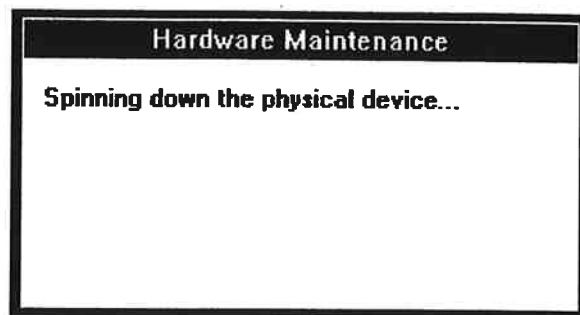
7. <Confirm P-DEV removal>

Select [YES] in response to "Do you want to pull out the physical device now?" (CL).



9. <Spin down progress>

"Spinning down the physical device..." is displayed
(shut down LED lit)



10. <Check shut down LED>

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 hardware work.

NOTICE

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

11. <Confirmation of replace>

Select [OK] (CL) in response to "Please replace the physical device. After replacement, please press OK." after replace the unit (Step 12).



12. <Replace HDD>

Replace HDD.

See HARDWARE A (REP03-10).

[PRE-PROCEDURE E]

— OUTLINE —

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

NOTICE

Be sure to contact the technical support center before executing this processing.

NOTICE

Be sure to contact the technical support center before executing this processing.

1. <Select HDU Box>

Make sure (other than preventive) that the status of [HDU-Rnn] or [HDU-Lnn] the drive to be replaced from [Hardware Maintenance] is in the WARNING state.
(some drives are in the FAILED state and others in the WARNING state.)

Name	Status	Name	Status	Name	Status
<input type="radio"/> MainPlatter	[NORMAL]	<input checked="" type="radio"/> HDU-R10	[NORMAL]	<input type="radio"/> HDU-L10	[EMPTY]
<input type="radio"/> Cache Box1	[EMPTY]	<input type="radio"/> HDU-R11	[NORMAL]	<input type="radio"/> HDU-L11	[EMPTY]
<input type="radio"/> Cache Box2	[EMPTY]	<input type="radio"/> HDU-R12	[NORMAL]	<input type="radio"/> HDU-L12	[EMPTY]
<input type="radio"/> Others		<input type="radio"/> HDU-R13	[NORMAL]	<input type="radio"/> HDU-L13	[EMPTY]
		<input type="radio"/> HDU-R14	[NORMAL]	<input type="radio"/> HDU-L14	[EMPTY]
		<input type="radio"/> HDU-R15	[NORMAL]	<input type="radio"/> HDU-L15	[EMPTY]
		<input type="radio"/> HDU-R16	[NORMAL]	<input type="radio"/> HDU-L16	[EMPTY]
		<input type="radio"/> HDU-R17	[NORMAL]	<input type="radio"/> HDU-L17	[EMPTY]

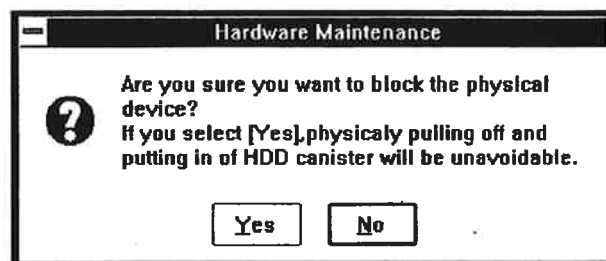
2. <Specify Replacement on HDU>

Select [HDU-Rnn] or [HDU-Lnn] to be blocked (status = WARNING (other than preventive)) from [HDU-Rnn] or [HDU-Lnn] (CL) and select [Replace] from [Maintenance] (DR).

Name	S/D	Status
<input type="checkbox"/> HDD-R207	D	[EMPTY]
<input type="checkbox"/> HDD-R209	D	[EMPTY]
<input type="checkbox"/> HDD-R206	D	[EMPTY]
<input type="checkbox"/> HDD-R201	D	[EMPTY]
<input type="checkbox"/> HDD-R205	D	[EMPTY]
<input type="checkbox"/> HDD-R202	D	[EMPTY]
<input type="checkbox"/> HDD-R204	D	[EMPTY]

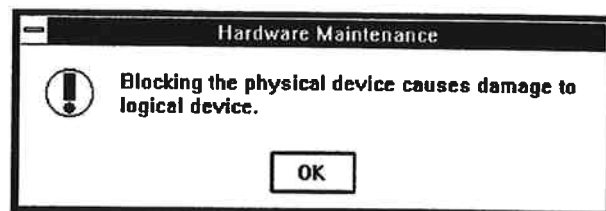
3. <P-DEV blocking>

Select [Yes] in response to "Are you sure you want to block the physical device? If you select [Yes], physically pulling off and putting in of HDD canister will be unavoidable." (CL).



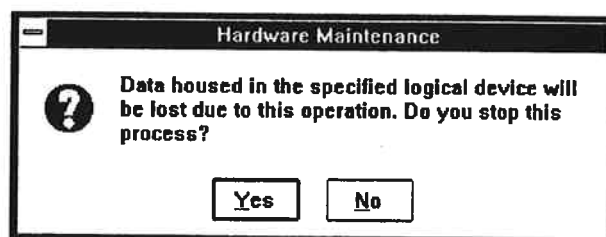
4. <Bringing system down>

Select [OK] in response to "Blocking the physical device causes damage to logical device." (CL).



5. <Confirm lost data>

Select [No] in response to "Data housed in the specified logical device will be lost due to this operation. Do you stop this process." (CL)

**NOTICE**

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.

6. <Enter password>

Enter the password in response to [PassWord?] and select [OK] (CL).

Password is needed for this operation.

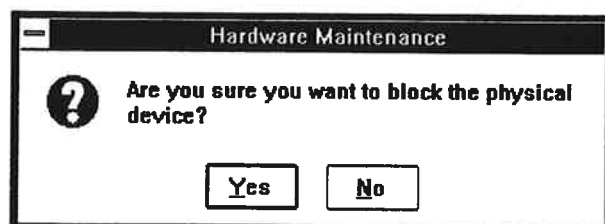
Please call Technical Support Center to obtain password and authorization.

**NOTICE**

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 center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.

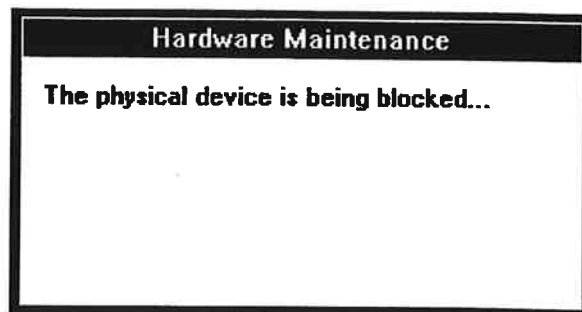
7. <P-DEV blocking>

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



8. <P-DEV blocking>

"The physical device is being blocked" is displayed.



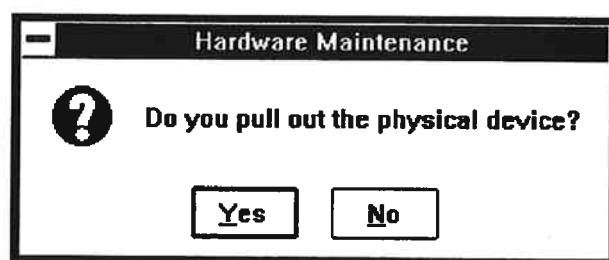
9. <End of P-DEV blocking>

Select [OK] in response to "Blocking the physical device is completed" (CL).



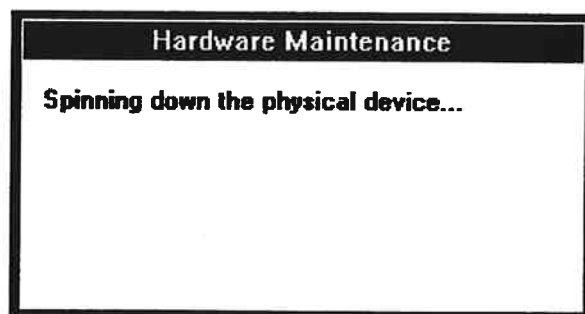
10. <Confirm P-DEV removal>

Select [Yes] in response to "Do you pull out the physical device?" (CL).



11. <Spin down>

"Spinning down the physical device." is displayed.
Shut down LED lit.



12. <Replace HDU>

Select [OK] in response to "Please replace the physical device. After replacement, please press OK."

(See HARDWARE A (REP03-10))



[PRE-PROCEDURE F]

— OUTLINE —

- ① Select (main platter) cache (status check).
- ② Specify Replacement.
- ③ Place package into unpluggable state.

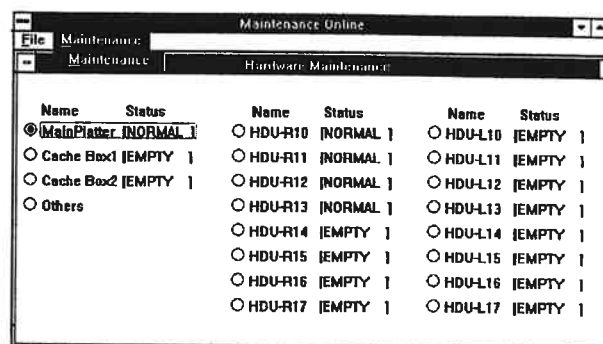
1. <Select main platter containing PCB>

Select [MainPlatter] from 'Hardware Maintenance' (CL) and select [Maintenance] from [Maintenance] (DR).

* For Cache Box, follow the pre-procedure of CACHE Terminator.

* For CACHE Terminator, CPM, CPS or Cache Box

----- [Go to REP02-250, step 12]

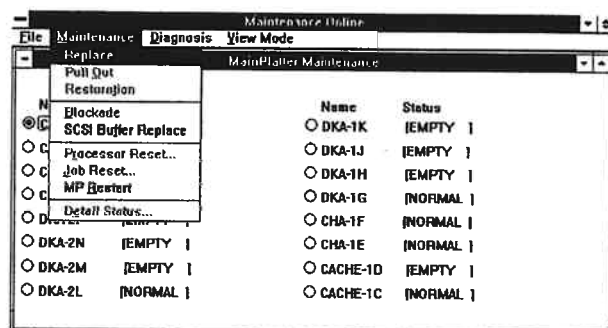


2. <Specify Replacement of cache PCB>

Select [CACHEXX] to be replaced from 'MainPlatter Maintenance' (CL) and select [Replace] from [Maintenance] (DR).

NOTICE

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



3. <Check beginning of cache blocking>

Select [Yes] (CL) after making sure that the package to be blocked is correct in response to:

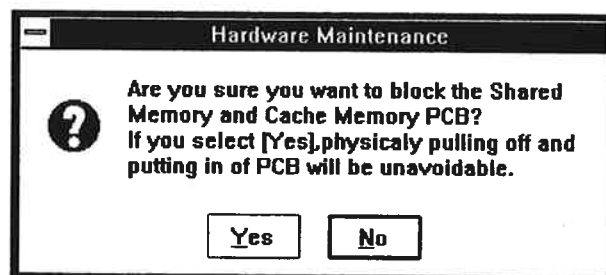
* For CACHE (with SM) -- [Go to REP02-230, step 4]

"Are you sure you want to block the Shared Memory and Cache Memory PCB? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."

* For CACHE ----- [Go to REP02-230, step 4]

"Are you sure you want to block the Cache Memory PCB?

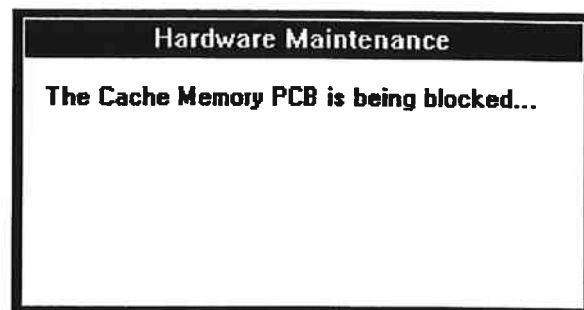
If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."



4. <Cache blocking>

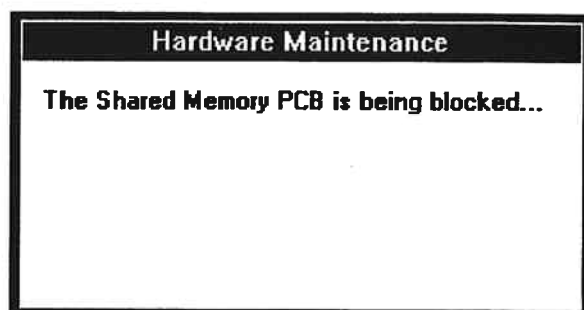
"The Cache Memory PCB is being blocked." is displayed.

* For CACHE ----- [Go to step 6]



5. <Shared memory blocking>

"The Shared Memory is being blocked..." is displayed.



6. <End of Cache/Shared memory blocking>

Select [OK] in response to

* For CACHE (with SM)

"Blocking the Shared Memory and Cache Memory PCB is completed" (CL).

* For CACHE

"Blocking the Cache Memory PCB is completed" (CL).



7. <Check removal of cache>

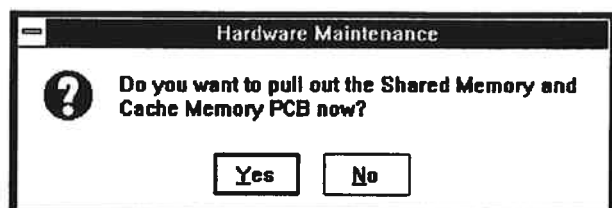
Select [Yes] (CL) in response to:

* For CACHE (with SM)

"Do you want to pull out the Shared Memory and Cache Memory PCB now?"

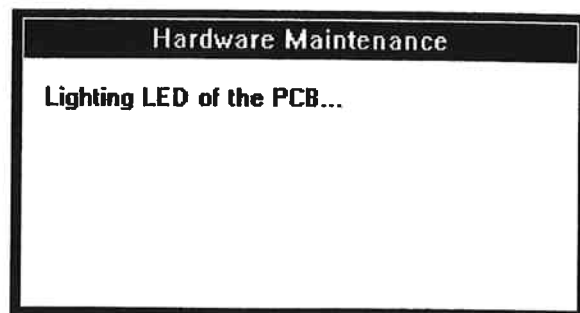
* For CACHE

"Do you want to pull out the Cache Memory PCB now?"



8. <Turn on LED>

"Lighting LED of the PCB..." is displayed.



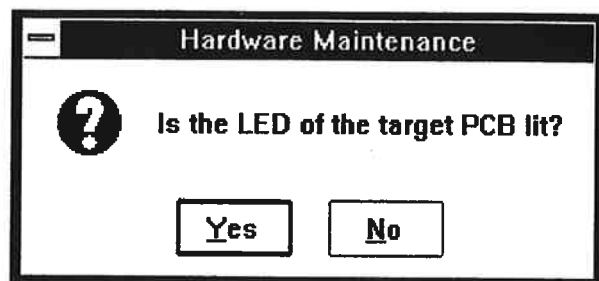
9. <Check shut down LED>

Select (CL)

* [Yes] if LED is on

* [No] if LED is off

in response to "Is the LED of the target PCB lit?"



<Forcing shut down LED on>

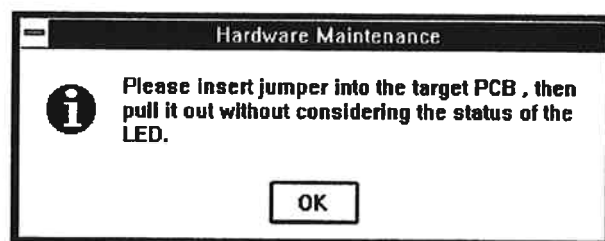
NOTICE

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 jumper into the target PCB, then pull it out without considering the status of the LED". (Refer REP03-60)

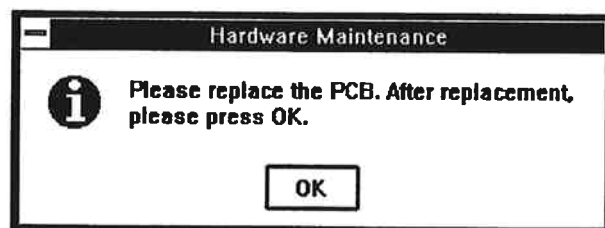
Go to step 10.



10. <Cache Replacement>

"Please replace the PCB. After replacement, please press OK." is displayed.

(Select [OK] after replacing the PCB.)



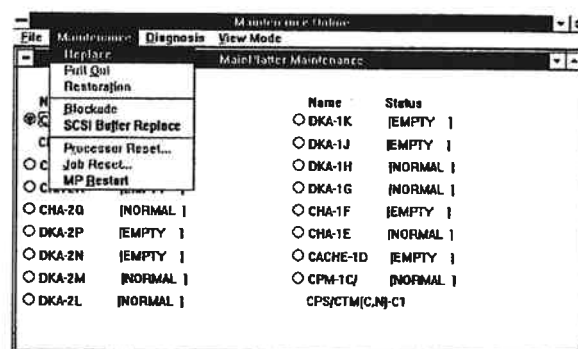
11. <Replace cache PCB>

Replace cache.

For CACHE (with SM) or CACHE	See HARDWARE B (REP03-50)	LOGIC BOX
	See HARDWARE C (REP03-120) or HARDWARE E (REP03-220) or HARDWARE F (REP03-270)	CACHE BOX
For CPM or CPS	See HARDWARE D (REP03-170)	LOGIC BOX
	See HARDWARE G (REP03-320)	CACHE BOX
For CACHE Box	See HARDWARE M (REP03-1400)	CACHE BOX
For CACHE Terminator	See HARDWARE N (REP03-1740)	CACHE BOX

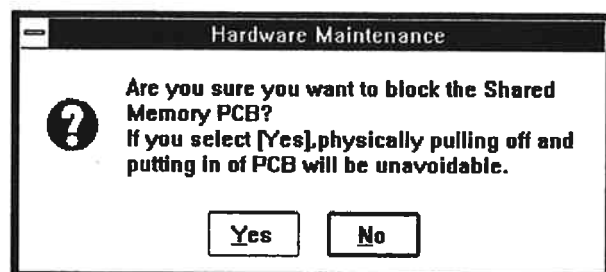
12. <Specify Replacement of CPM/CPS/CTM PCB>

Select [CPM/CPS/CTMXX] to be replaced from
'MainPlatter Maintenance' (CL) and select [Replace] from
[Maintenance] (DR).



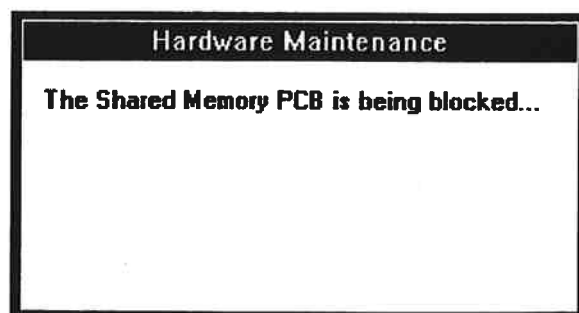
13. <Check beginning of cache blocking>

In response to the message "Are you sure you want to block the Shared Memory PCB? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable.", and select [Yes] (CL).



14. <Check beginning of cache blocking>

The message "The Shared Memory is being blocked..." is displayed.



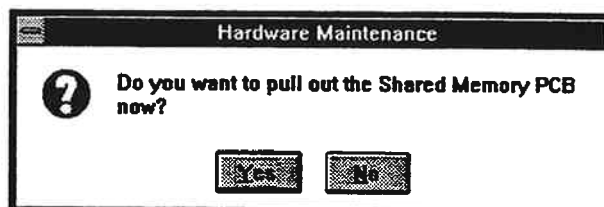
15. <Shared memory blocking>

In response to the message "Blocking the Shared Memory PCB is completed.", and select [OK] (CL).



16. <Check removal shared memory>

In response to the message "Do you want to pull out the Shared Memory PCB now?", and select [Yes] (CL).



17. <Check removal of CPM PCB>

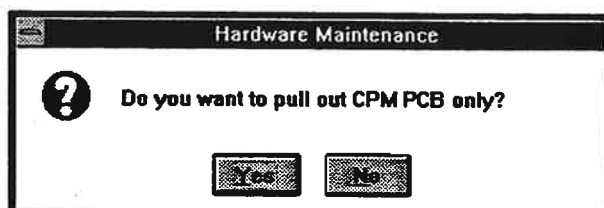
In response to the message "Do you want to pull out CPM PCB only?", and select (CL)

* [Yes] If Shared Memory Replace

—— Go to step 8

* [No] If CPM/CPS/CTM PCB Replace

—— Go to step 18



18. <CPM/CPS/CTM Replace method>

The message "When you push [OK], the LED of the CPM PCB is lit and then please insert the jumper into the CPS PCB." is displayed.

Go to REP02-240, step 8



[PRE-PROCEDURE G]

— OUTLINE —

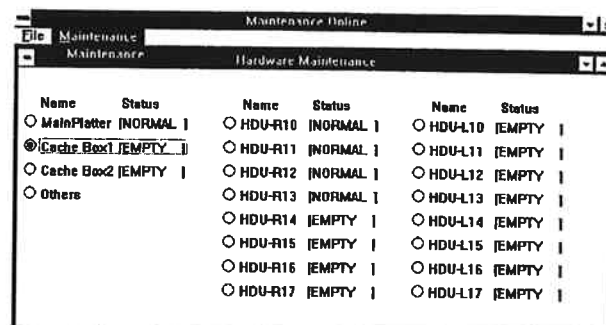
- ① Select (Cache Box) cache (status check).
- ② Specify Replacement.
- ③ Place package into blocked state.

1. <Select cache box>

Select [Cache Box 1] or [Cache Box 2] from 'Hardware Maintenance' (CL) and select [Maintenance] from [Maintenance] (DR). ([Cache Box 1] is selected in the figure.)

NOTICE

Sides A and B of cache memory on a cache platter is divided into [Cache Box 1] and [Cache Box 2], respectively. Consequently, it is necessary to select the correct platter when replacing.



2. <Specify Replacement of cache P/K>

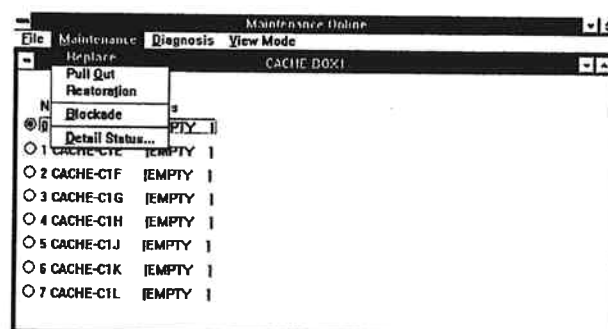
Select [X CACHE] to be replaced from [Cache Box 1] or

[Cache Box 2] (CL) and select [Replace] from [Maintenance] (DR).

(Select the name of the slot to be replaced.)

NOTICE

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



3. <Check beginning of cache blocking>

Select [Yes] (CL) after making sure that the package to be blocked is correct in response to:

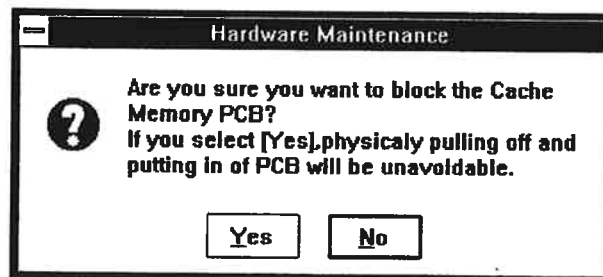
* For CACHE (with SM) -- [Go to REP02-230 step 4]

"Are you sure you want to block the Shared Memory and Cache Memory PCB? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."

* For CACHE ----- [Go to REP02-230 step 4]

"Are you sure you want to block the Cache Memory PCB?

If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."



Blank Sheet

Blank Sheet

[PRE-PROCEDURE H]

— OUTLINE —

Select CHA/DKA (status check).
Specify Replacement.
Place package into blocked state.

1. <Set path offline>

Set the path offline from HOST when replacing CHA by your customer.

NOTICE

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

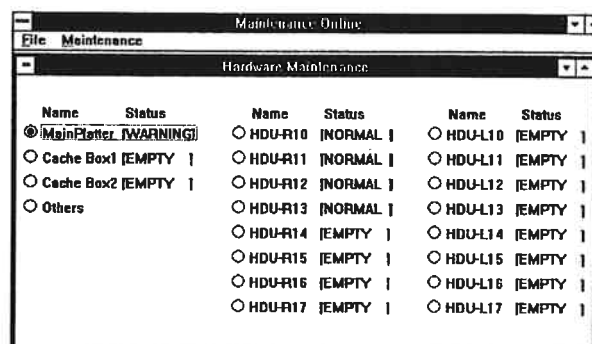
NOTICE

This is not needed when replacing the DKA.

2. <Select main platter containing PCB>

Select [MainPlatter] from 'Hardware Maintenance' (CL) and select [Maintenance] from [Maintenance] (DR).

Make sure that the 'Status' of [Mainplatter] is [WARNING].



3. <Specify Replacement of CHA/DKA P/K>

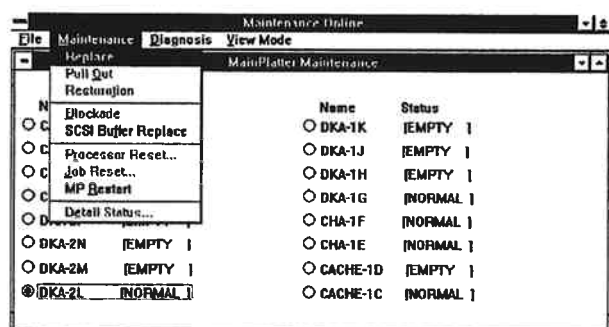
Select [CHAnn] or [DKAnn] to be replaced from 'MainPlatter Maintenance' (CL) and select [Replace] from [Maintenance] (DR).

NOTICE

When the subsystem is placed online, ask the customer to place it offline.

NOTICE

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



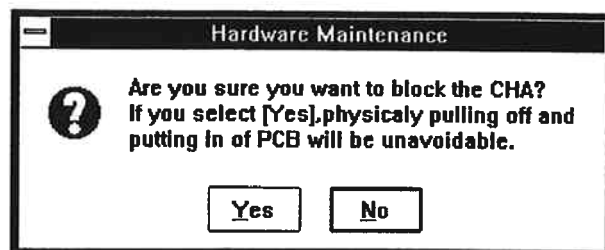
4. <CHA/DKA blocking>

Select [Yes] (CL) in response to:

* For CHA

"Are you sure you want to block the CHA? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."

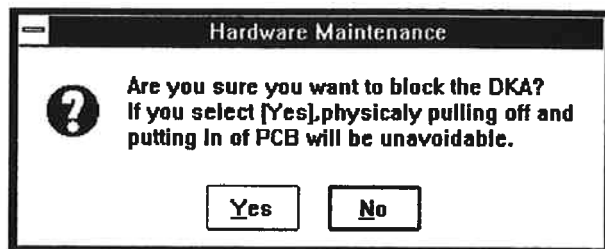
Go to step 5.



* For DKA

"Are you sure you want to block the DKA? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."

Go to step 6.



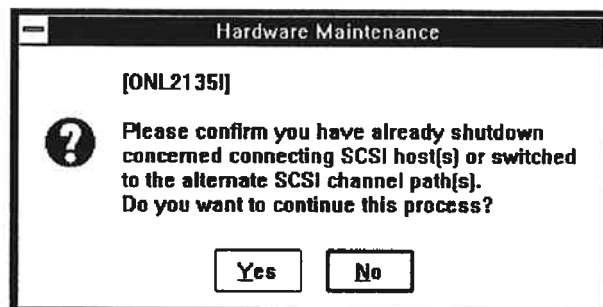
5. <Confirm Channel Path offline>

Select [OK] (CL) in response to:

"Please confirm you have already varied offline the concerned channel paths. If OK, press return."

If SCSI channel adapter is installed:

After you confirm that you have stopped concerned SCSI channel paths, select [OK] (CL).



6. <Caution message for system down>

NOTICE

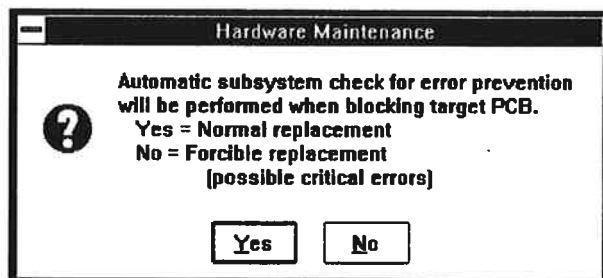
Select [Yes] (CL) in response to:

"Automatic subsystem check for error prevention will be performed when blocking target PCB.

Yes = Normal replacement

No = Forcible replacement

(Possible critical errors)"



7. <CHA/DKA blocking>

* For CHA

[The CHA is being blocked...]

* For DKA

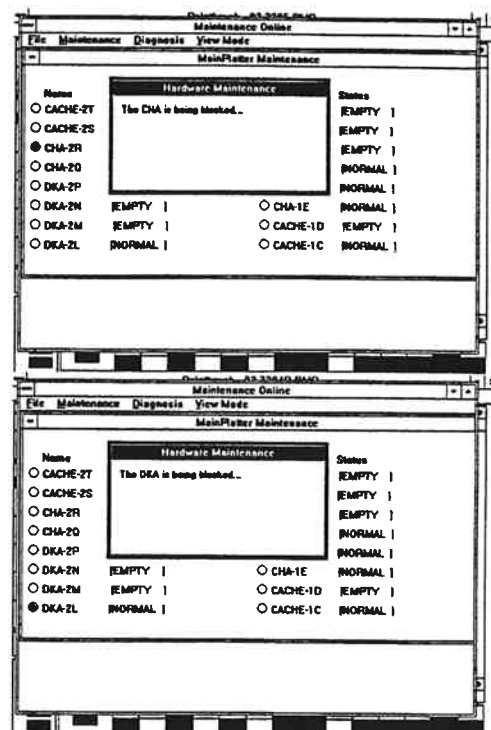
[The DKA is being blocked...]

<<Error>>

Analyze the error referring to the instructions in TRBL05-10 if the following message is displayed:

"Change of Arbiter master is rejected.

Error Code = xx, MP Code = xx"



8. <End of CHA/DKA blocking>

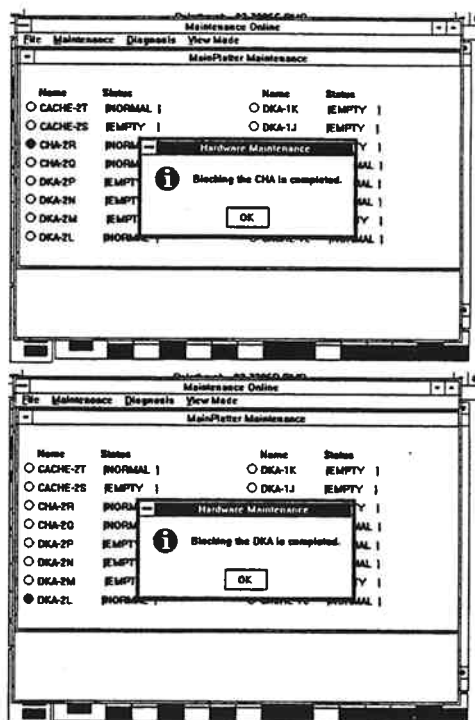
Select [OK] (CL) in response to:

* For CHA

[Blocking the CHA is completed]

* For DKA

[Blocking the DKA is completed]



9. <Removal of CHA/DKA>

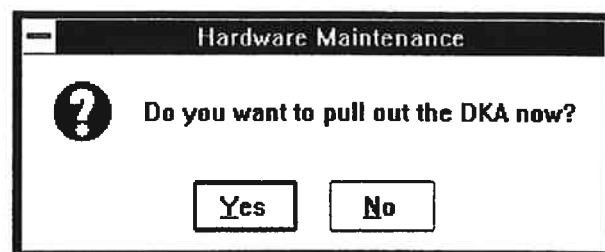
Select [Yes] (CL) in response to:

* For CHA

"Do you want to pull out the CHA now?"

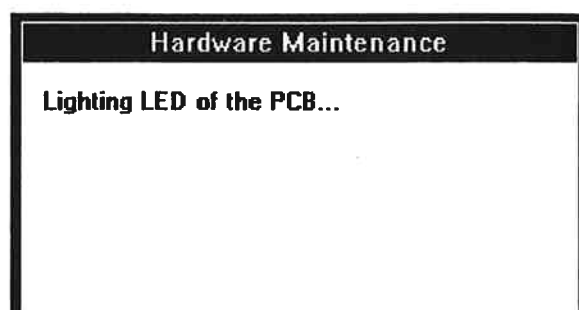
* For DKA

"Do you want to pull out the DKA now?"



10. <Turn on LED>

"Lighting LED of the PCB ..." is displayed.



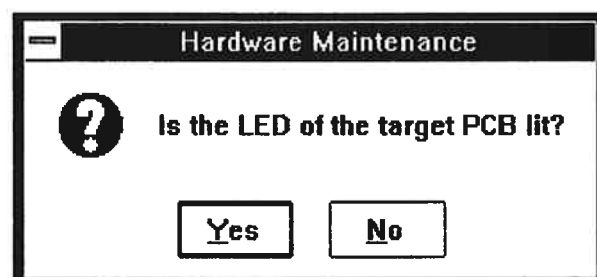
11. <Check to see if shut down LED is lit>

Select

* [Yes] if LED is on

* [No] if LED is off

in response to "Is the LED of the target PCB lit?".



<Forcing shut down LED on>

NOTICE

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 jumper into the target PCB, then pull it out without considering the status of the LED". (Refer REP03-360)

For CHA (SERIAL) HARDWARE H (REP03-350)

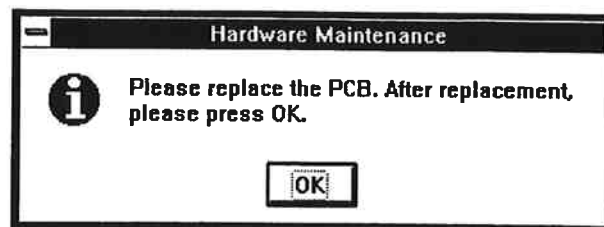
CHA (PARALLEL) HARDWARE I (REP03-370)

DKA HARDWARE J (REP03-390)



12. <Beginning of CHA/DKA Replacement>

"Please replace the PCB. After replacement, please press OK." is displayed. Select [OK] after replacing the PCBs (Step 13.)



13. <Replace CHA / DKA>

For CHA (Serial)	Go to HARDWARE H (REP03-350)
For CHA (Parallel)	Go to HARDWARE I (REP03-370)
For DKA	Go to HARDWARE J (REP03-390)

14.

Select [OK] (CL) in response to "Please replace the PCB..." (step 12)
 "Waiting for Power Event..." is displayed.

[PRE-PROCEDURE I]

— OUTLINE —

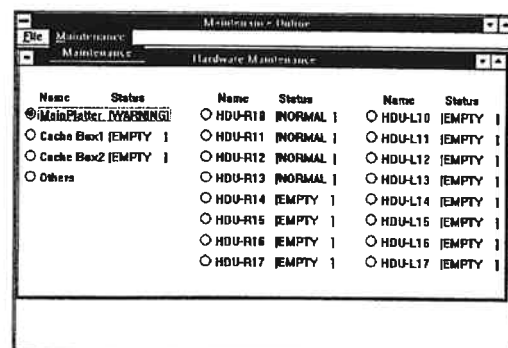
Select DKA (status check).

Specify removal of SCSI buffer.

Select SCSI buffer.

1. <Select main platter containing PCB>

Select [MainPlatter] from 'Hardware Maintenance' (CL) and select [Maintenance] from [Maintenance] (DR).

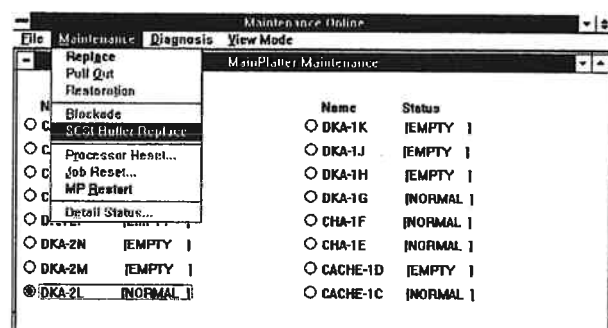


2. <Specify SCSI Buffer Replace>

Select [DKAnn] to be Replaced from 'MainPlatter Maintenance' (CL) and select [SCSI Buffer Replace] from [Maintenance] (DR).

NOTICE

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

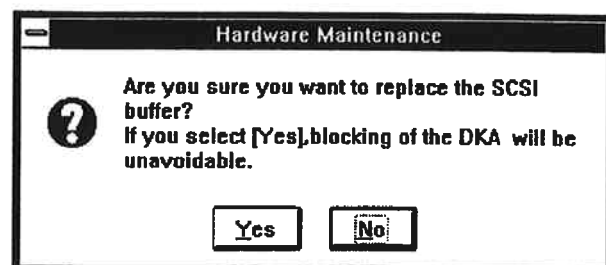


The correspondence of [SCSI n] in dialog box with location of the SCSI Buffer is shown as follows.
For the location of the SCSI Buffer, refer to LOCATION02-70.

DKA ID	SCSI ID			
	SCSI 0	SCSI 1	SCSI 2	SCSI 3
DKA-1G	SCBFR-R10U	SCBFR-R11U	SCBFR-R12U	SCBFR-R13U
	SCBFR-R20U	SCBFR-R21U	SCBFR-R22U	SCBFR-R23U
DKA-1H	SCBFR-R14U	SCBFR-R15U	SCBFR-R16U	SCBFR-R17U
	SCBFR-R24U	SCBFR-R25U	SCBFR-R26U	SCBFR-R27U
DKA-1J	SCBFR-L10U	SCBFR-L11U	SCBFR-L12U	SCBFR-L13U
	SCBFR-L20U	SCBFR-L21U	SCBFR-L22U	SCBFR-L23U
DKA-1K	SCBFR-L14U	SCBFR-L15U	SCBFR-L16U	SCBFR-L17U
	SCBFR-L24U	SCBFR-L25U	SCBFR-L26U	SCBFR-L27U
DKA-2L	SCBFR-R10L	SCBFR-R11L	SCBFR-R12L	SCBFR-R13L
	SCBFR-R20L	SCBFR-R21L	SCBFR-R22L	SCBFR-R23L
DKA-2M	SCBFR-R14L	SCBFR-R15L	SCBFR-R16L	SCBFR-R17L
	SCBFR-R24L	SCBFR-R25L	SCBFR-R26L	SCBFR-R27L
DKA-2N	SCBFR-L10L	SCBFR-L11L	SCBFR-L12L	SCBFR-L13L
	SCBFR-L20L	SCBFR-L21L	SCBFR-L22L	SCBFR-L23L
DKA-2P	SCBFR-L14L	SCBFR-L15L	SCBFR-L16L	SCBFR-L17L
	SCBFR-L24L	SCBFR-L25L	SCBFR-L26L	SCBFR-L27L

3. <Check beginning of DKA blocking>

Select [Yes] (CL) in response to "Are you sure you want to replace the SCSI buffer? If you select [Yes], blocking of the DKA will be unavoidable."



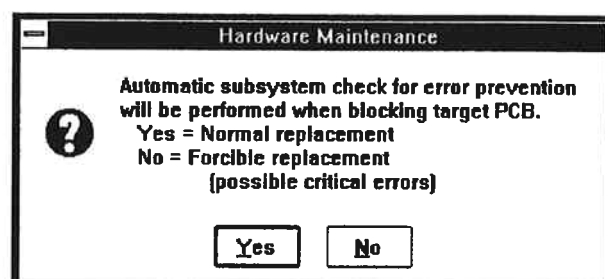
4. <Check system down>

Select [Yes] (CL) in response to "Automatic subsystem check for error prevention will be performed when blocking target PCB."

Yes = Normal replacement

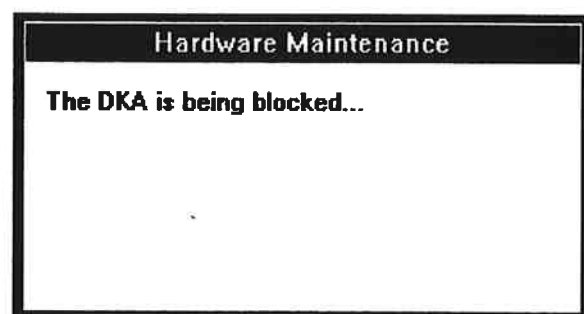
No = Forcible replacement

(Possible critical errors)"



5. <Check DKA blocking>

"The DKA is being blocked..." is displayed.



6. <End of DKA blocking>

Select [OK] in response to "Blocking the DKA is completed." (CL).



7. <Select SCSI Buf>

Select [SCSI n] to be Replaced from 'SCSI Buffer LED ON/OFF' and select [ON] (CL).

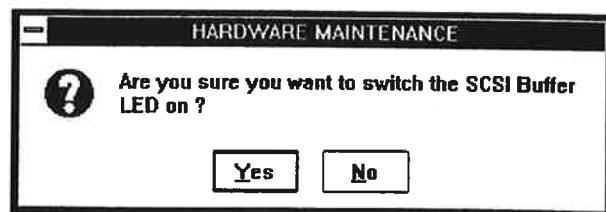
SCSI Buffer LED ON/OFF		
<input type="checkbox"/> SCSI 0	<input type="checkbox"/> SCSI 2	<input type="button" value="ON"/>
<input type="checkbox"/> SCSI 1	<input type="checkbox"/> SCSI 3	<input type="button" value="CANCEL"/>

8. <Remove SCSI Buf>

Select [Yes] in response to "Are you sure you want to switch the SCSI Buffer LED on?".

NOTICE

Be sure to select [YES].



9. <Replace SCSI Buf>

Perform SCSI Buf PCB Replacement procedure.

A pair of SCSI Buf PCBs which connected by same SCSI Interface cable should be replaced at the same time.

Go to HARDWARE K (REP03-410)

[PRE-PROCEDURE J]

— OUTLINE —

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

NOTICE

This processing is a special procedure for detecting a cause of a bus error.
Contact the technical support center before performing this processing.

NOTICE

This processing is a special procedure for detecting a cause of a bus error.
Contact the technical support center before performing this processing.

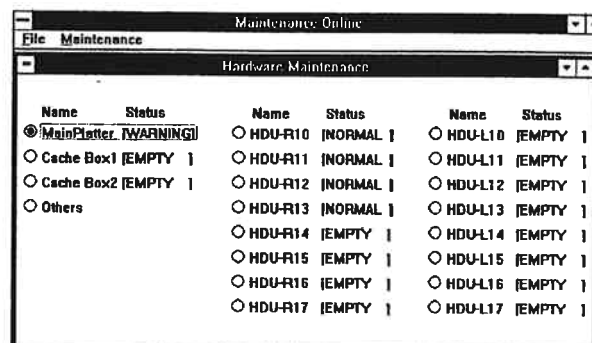
1. <Set path offline>

Set the path offline from HOST when replacing CHA by your customer.

2. <Select main platter containing PCB>

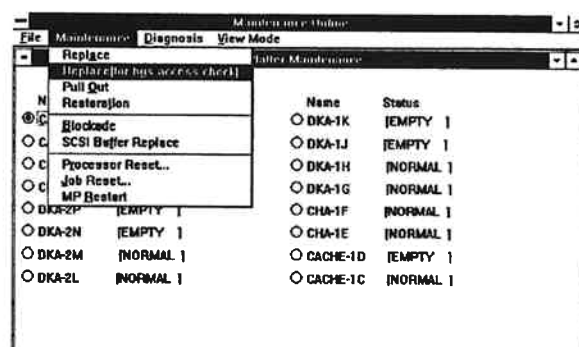
Select [MainPlatter] from 'Hardware Maintenance' (CL) and select [Maintenance] from [Maintenance] (DR).

Make sure that the 'Status' of [Mainplatter] is [WARNING].



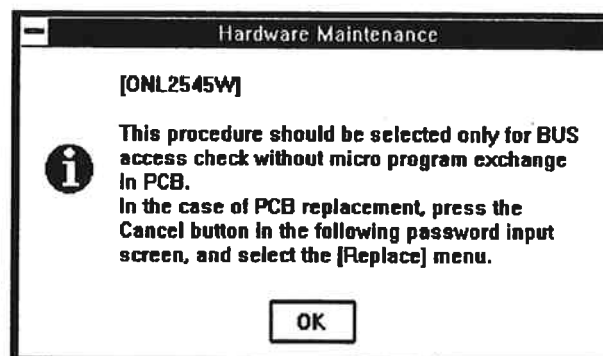
3. <Specify Replacement of CHA/DKA P/K>

Select [CHAnn] or [DKAnn] to be replaced from 'MainPlatter Maintenance' (CL) and select [Replace (for BUS access check)] from [Maintenance] (DR).



4. <Check beginning of Replacement>

Select [OK] (CL) in response to "This procedure should be selected only for BUS access check without micro program exchange in PCB. In the case of PCB replacement, press the Cancel button in the following password input screen, and select the [Replace] menu."

**NOTICE**

To perform a replacement using a PCB which is a maintenance part, be sure to click (CL) the [Cancel] button as a response and select "Replace" on the succeeding password input screen. In this error cause detection "Replace (for BUS access check)", a microprogram replacement is not executed. This processing can be performed only when performing the error cause detection using the PCB originally installed in the same subsystem.

NOTICE

This processing is a special procedure for detecting a cause of a bus error.
Contact the technical support center before performing this processing.

5. <Enter the password>

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

Password is needed for this operation.

Please call Technical Support Center to obtain password and authorization.

NOTICE

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 center about the appropriateness of the operation, and input the password after getting an approval of executing the operation.



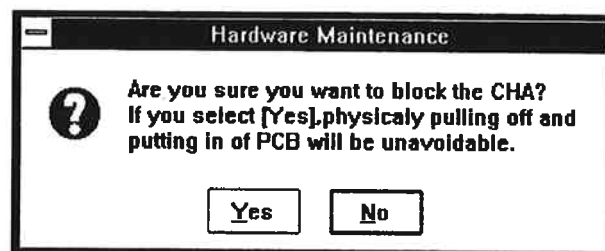
6. <CHA/DKA blocking>

Select [Yes] (CL) in response to:

* For CHA

"Are you sure you want to block the CHA? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."

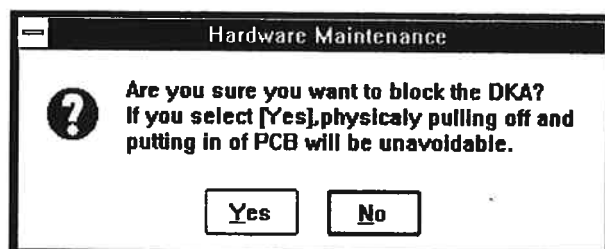
Go to step 7.



* For DKA

"Are you sure you want to block the DKA? If you select [Yes], physically pulling off and putting in of PCB will be unavoidable."

Go to step 8.



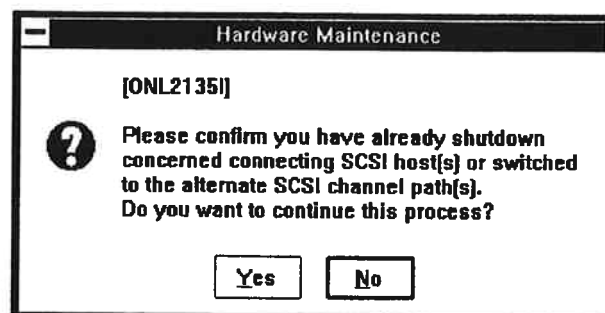
7. <Confirm Channel Path offline>

Select [OK] (CL) in response to:

"Please confirm you have already varied offline the concerned channel paths. If OK, press return."

If SCSI channel adapter is installed:

After you confirm that you have stopped concerned SCSI channel paths, select [OK] (CL).



NOTICE

This processing is a special procedure for detecting a cause of a bus error.
Contact the technical support center before performing this processing.

8. <Caution message for system down>

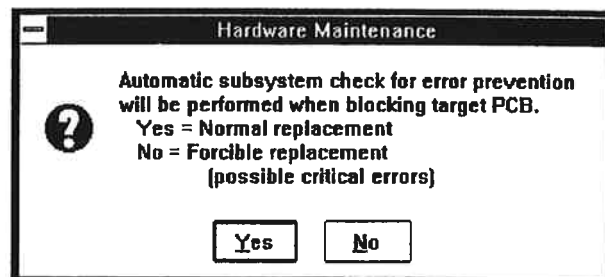
Select [Yes] (CL) in response to:

"Automatic subsystem check for error prevention
will be performed when blocking target PCB.

Yes = Normal replacement

No = Forcible replacement

(Possible critical errors)"

**9. <CHA/DKA blocking>**

* For CHA

"The CHA is being blocked..."



* For DKA

"The DKA is being blocked..."



<<Error>>

Analyze the error referring to the instructions in
TRBL05-10 if the following message is displayed:

"Change of Arbiter master is rejected.

Error Code = xx, MP Code = xx"

NOTICE

This processing is a special procedure for detecting a cause of a bus error.
Contact the technical support center before performing this processing.

10. <End of CHA/DKA blocking>

Select [OK] (CL) in response to:

* For CHA

"Blocking the CHA is completed."



* For DKA

"Blocking the DKA is completed."

**11. <Removal of CHA/DKA>**

Select [Yes] (CL) in response to:

* For CHA

"Do you want to pull out the CHA now?"

* For DKA

"Do you want to pull out the DKA now?"

**12. <Turn on LED>**

"Lighting LED of the PCB ..." is displayed.



NOTICE

This processing is a special procedure for detecting a cause of a bus error.
Contact the technical support center before performing this processing.

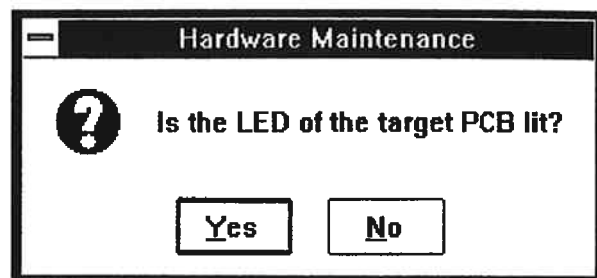
13. <Check to see if shut down LED is lit>

Select

* [Yes] if LED is on

* [No] if LED is off

in response to "Is the LED of the target PCB lit?".



<Forcing shut down LED on>

NOTICE

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 jumper into the target PCB, then pull it out without considering the status of the LED". (Refer REP03-360)

For CHA (SERIAL)	HARDWARE H (REP03-350)
CHA (PARALLEL)	HARDWARE I (REP03-370)
DKA	HARDWARE J (REP03-390)

14. <Replace CHA/DKA>

For CHA (SERIAL)	HARDWARE H (REP03-350)
CHA (PARALLEL)	HARDWARE I (REP03-370)
DKA	HARDWARE J (REP03-390)

[PRE-PROCEDURE K]

— OUTLINE —

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

1. <Select DKU Box>

Make sure that the status of [HDU-Rnn] or [HDU-Lnn] to be replaced from 'Hardware Maintenance' is :

- * Warning threshold value → [NORMAL]
(Turns to [WARNING] at the end of copy processing)
- * Block threshold value → [WARNING]

After checking status, select [HDU-Rnn] or [HDU-Lnn] (CL) and select [Maintenance] from [Maintenance] (DR).

Name	Status	Name	Status	Name	Status
<input type="radio"/> MainPrinter	NORMAL	<input checked="" type="radio"/> HDU-R10	WARNING	<input type="radio"/> HDU-L18	EMPTY
<input type="radio"/> Cache Box1	EMPTY	<input type="radio"/> HDU-R11	NORMAL	<input type="radio"/> HDU-L11	EMPTY
<input type="radio"/> Cache Box2	EMPTY	<input type="radio"/> HDU-R12	NORMAL	<input type="radio"/> HDU-L12	EMPTY
<input type="radio"/> Others		<input type="radio"/> HDU-R13	NORMAL	<input type="radio"/> HDU-L13	EMPTY
		<input type="radio"/> HDU-R14	NORMAL	<input type="radio"/> HDU-L14	EMPTY
		<input type="radio"/> HDU-R15	NORMAL	<input type="radio"/> HDU-L15	EMPTY
		<input type="radio"/> HDU-R16	NORMAL	<input type="radio"/> HDU-L16	EMPTY
		<input type="radio"/> HDU-R17	NORMAL	<input type="radio"/> HDU-L17	EMPTY

2. <Check progress of copy processing>

Check the status of [HDD-Rnnn] or [HDD-Lnnn] to be replaced from [HDU-Rnn] or [HDU-Lnn].

[Warning threshold value]

- * [RECOVERING]: Copy Processing is in progress.

[FAILED] (S/D set to S): End of copy processing.

[Block threshold value]

- * [FAILED] (S/D set to D): Copy processing is in progress.

[FAILED] (S/D set to S): End of copy processing.

3. <Check progress of copy processing>

See STATUS Section.

After copy processing is complete, perform Replacement procedure.

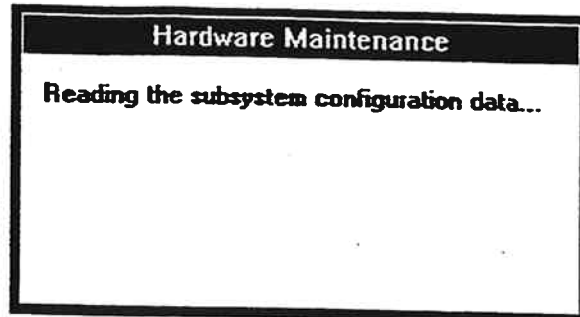
4. <Specify Replacement on HDU>

Select [HDD-Rnnn] or [HDD-Lnnn] to be replaced from [HDU-Rnn] or [HDU-Lnn] (CL) and select [Correction Copy] from [Maintenance] (DR).

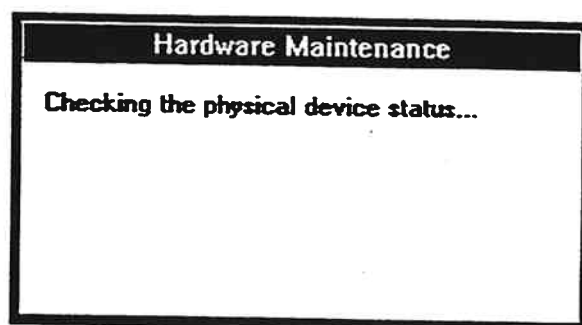
Name	S/D	Status
<input type="checkbox"/> HDD-R203	D	EMPTY
<input type="checkbox"/> HDD-R208	D	EMPTY
<input type="checkbox"/> HDD-R206	D	EMPTY
<input type="checkbox"/> HDD-R201	D	EMPTY
<input type="checkbox"/> HDD-R205	D	EMPTY
<input type="checkbox"/> HDD-R202	D	EMPTY
<input type="checkbox"/> HDD-R204	D	EMPTY
<input type="checkbox"/> HDD-R203	S	FREE

5. <Reading the subsystem configuration data and Checking the P-DEV status>

"Reading the subsystem configuration data..." is displayed.

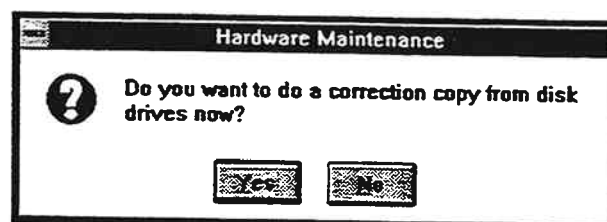


"Checking the physical device status..." is displayed.



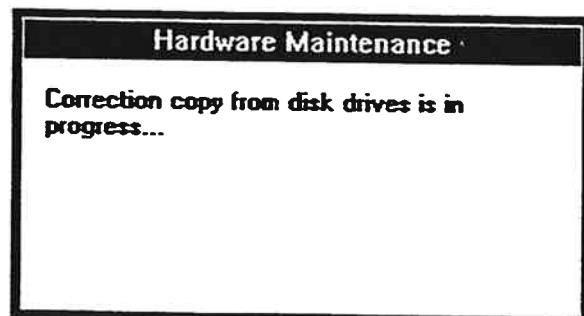
6. <Saving the spare>

Select [Yes] (CL) in response to "Do you want to do a correction copy from disk drives now?" (CL).



7. <Correction copy in progress>

"Correction copy from disk drives is in progress..." is displayed.



8. <End of starting correction copy>

Select [OK] (CL) in response to "Correction copy from disk drives has started."



[PRE-PROCEDURE T1]

— OUTLINE —

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

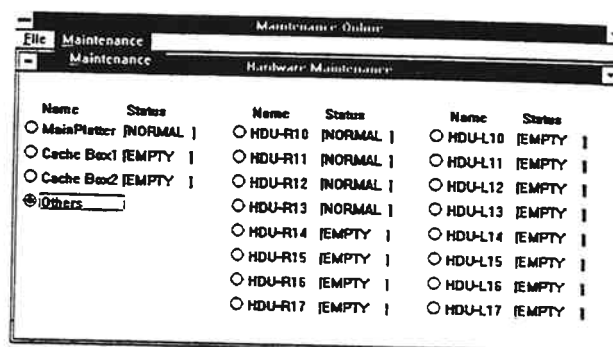
[1] Select special part

<Remark>

If you will replace LTM PCB, please confirm that "STATUS" or "INFORMATION" programs are not executed.

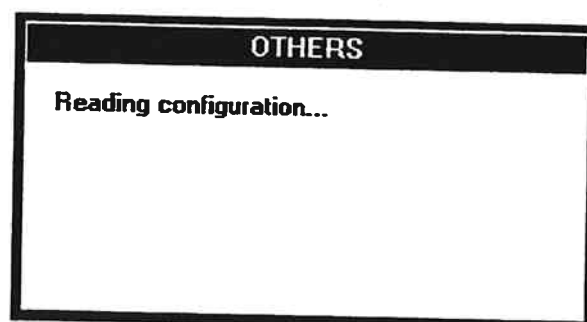
1. <Select special part>

Select [Others] from 'Hardware Maintenance' (CL)
and select [Maintenance] from [Maintenance] (DR).



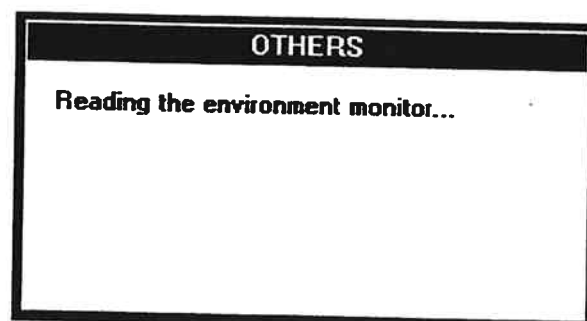
2. <Check DKC configuration data>

"Reading configuration..." is displayed.



3. <Reading environment monitor>

"Reading the environment monitor..." is displayed.



4. <Specify special part>

Select part [XXXXXX] to be replaced from 'OTHERS' (CL) and select [Replace] (CL).

Valid [XXXXXX] values are listed below.

- System panel — [System panel]
- OP panel — [OP panel-1/2]
- CE panel — [CE panel]
- PWRCTL — [PWRCTL-1/2]
- PCI CONN — [PCI CONN]
- RCU CONN — [RCU CONN] Go to 6
- EPO SW — [EPO SW]
- OUTLET BOX - [Outlet Box]
- LTM PCB — [LTM PCB-n] Go to 6
(Terminator)
- SVP — [SVP]
- SSVH/HUB — [SSVP]
- RS CONN — [RS CONN]

Name	Name	Name	Status
<input checked="" type="radio"/> CE panel	<input type="radio"/> PCI CONN	<input type="radio"/> PWRCTL-1	[NORMAL]
<input type="radio"/> EPO SW	<input type="radio"/> RCU CONN	<input type="radio"/> PWRCTL-2	[NORMAL]
<input type="radio"/> System panel	<input type="radio"/> LTM PCB-A/C		
<input type="radio"/> OP panel-1	<input type="radio"/> LTM PCB-B/D		
<input type="radio"/> OP panel-2	<input type="radio"/> SVP		
<input type="radio"/> Outlet Box	<input type="radio"/> SSVH		
	<input type="radio"/> RS CONN		

Buttons: Close, Check, Replace, Cluster...

Bottom status boxes:

- DKU-L2: DKU-L2(4), Parts status
- DKU-L1: DKU-L1(2), Parts status
- DKC: DKC..., Parts status, Cluster-1 [NORMAL], Cluster-2 [NORMAL]
- DKU-R1: DKU-R1(1), Parts status [NORMAL]
- DKU-R2: DKU-R2(3), Parts status

5. <Check beginning of special part Replacement>

Select [Yes] (CL) in response to "Do you want to replace the "XXXXXX?" "".

XXXXXX represents one of the part names listed in step 4.

- "System panel" -- Go to [10] (REP02-510)
- "OP panel-1/2" -- Go to [2] (REP02-420)
- "CE panel" — Go to [3] (REP02-440)
- "EPO SW" — Go to [4] (REP02-450)
- "PCI CONN" — Go to [5] (REP02-460)
- "PWRCTL 1/2" — Go to [7] (REP02-480)
- "Outlet Box" — Go to [8] (REP02-490)
- "RS CONN" — Go to [10] (REP02-510)
- "SVP" — Go to [12] (REP02-530)
- "SSVP" — Go to [13] (REP02-540)

REPLACE

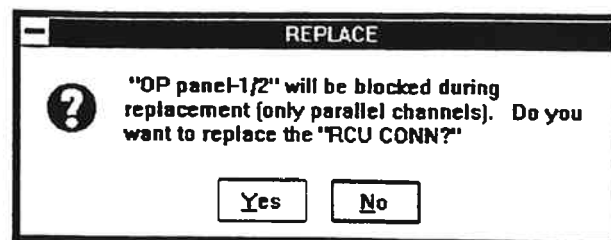
? Do you want to replace the "System panel?"

Yes No

6. <check beginning of special part Replacement>

Select [Yes] (CL) in response to "OP panel-m" will be blocked during replacement [only parallel channels].

Do you want to replace the "XXXXXX ?".



OP panel-m:

- For "RCU CONN" :m = 1/2 ("OP panel-1/2"), OP panel-1 and 2 will be blocked.
- For "LTM PCB-A/C" :m = 1 ("OP panel-1"), OP panel-1 will be blocked.
- For "LTM PCB-B/D" :m = 2 ("OP panel-2"), OP panel-2 will be blocked.

XXXXXX represents one of the part names listed in step 4.

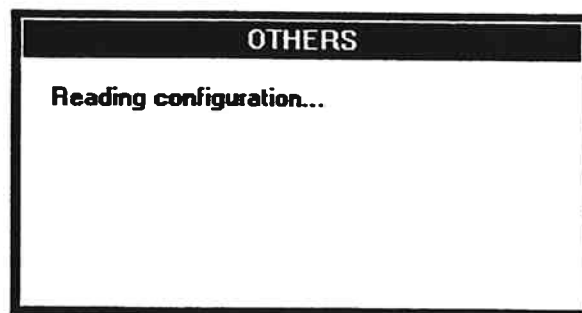
- "RCU CONN" — Go to [6] (REP02-470)
- "LTM PCB-n" — Go to [9] (REP02-500)

[2] OP PANEL

1. <Check type of CHA>

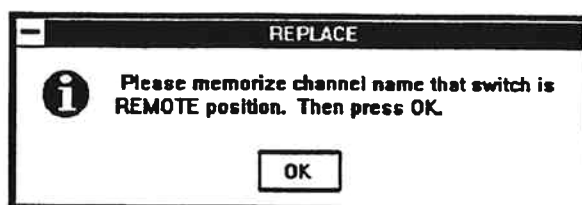
"Reading configuration..." is displayed.

If there are no parallel channels, Go to [10] (REP02-510).



2. <Memorize REMOTE channel name>

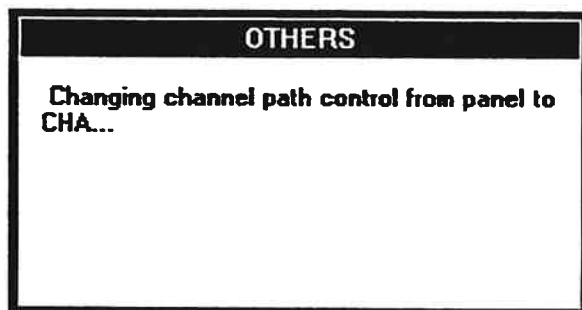
Memorize channel name that switch is REMOTE position, and select [OK] (CL).



3. <Change CHP mode>

"Changing channel path control from panel to CHA..." is displayed.

Go to [10] (REP02-510).



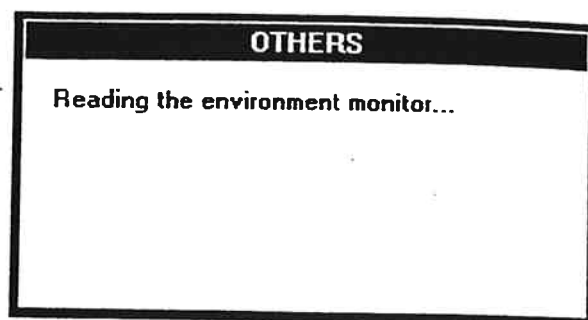
Blank Sheet

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[3] CE PANEL

1. <Read environment monitor>

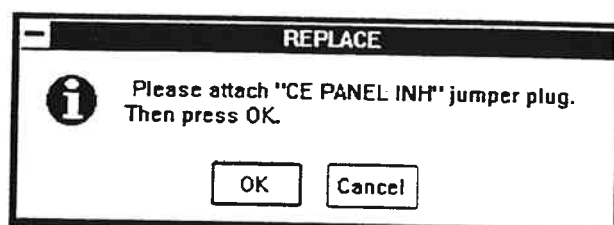
"Reading the environment monitor." is displayed.



2. <Check jumper installation>

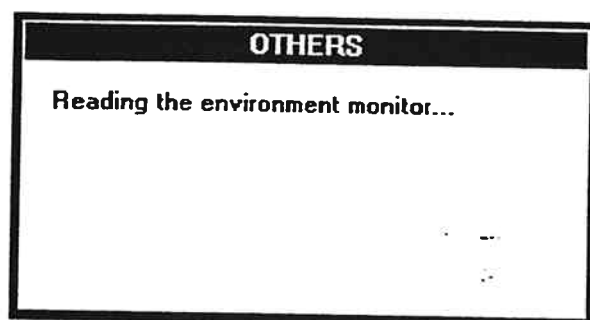
Attach jumpers on PWRCTL PCBs (1 and 2) in response to "Please attach "CE PANEL INH" jumper plug. Then press OK.". (see HARDWARE T3 (REP03-520 step 1)).

Select [OK] after confirming that jumpers are attached (CL).



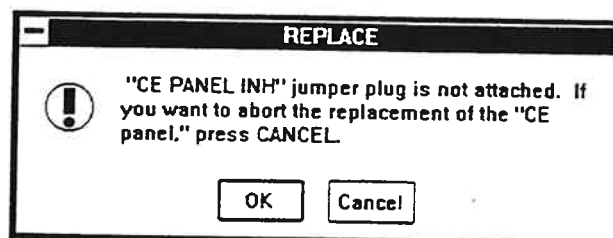
"Reading the environment monitor..." is displayed.
Go to [11] (REP02-520).

If jumper plug is not attached, go to step 3.



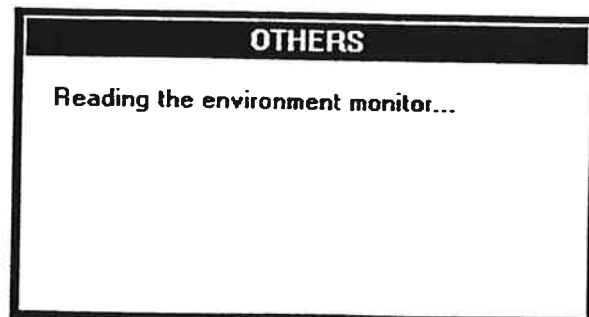
3. <Check jumper reinstallation>

"CE PANEL INH" jumper plug is not attached. If you want to abort the replacement of the "CE panel," press CANCEL." is displayed if no jumper is attached. Attach jumpers and select [OK] (CL).



"Reading the environment monitor..." is displayed.
Go to [11] (REP02-520).

If jumper plug is not attached, step 3 again.



[4] EPO SW

1. <Check jumper installation>

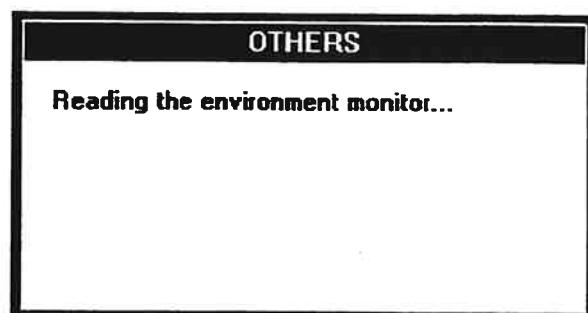
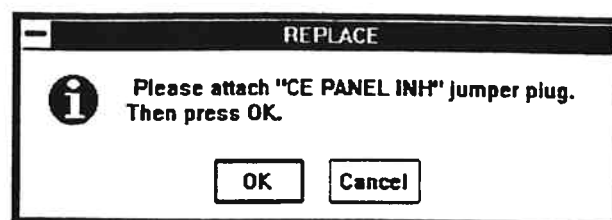
Attach jumpers on PWRCTL PCBs (1 and 2) in response to "Please attach "CE PANEL INH" jumper plug. Then press OK.". (see HARDWARE T4 (REP03-530 step 1)).

Select [OK] after confirming that jumpers are attached (CL).

"Reading the environment monitor..." is displayed.

Go to [10] (REP02-510).

If jumper plug is not attached, go to 2.



2. <Check jumper reinstallation>

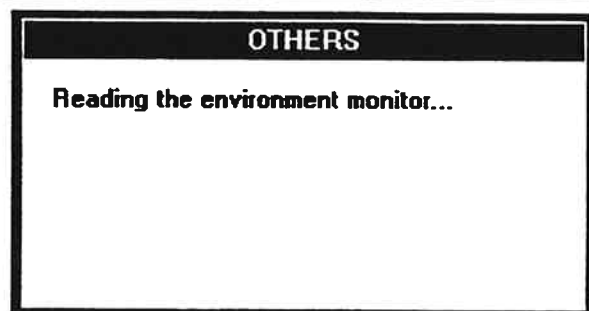
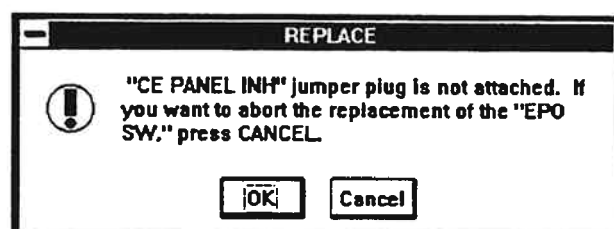
"CE PANEL INH" jumper plug is not attached. If you want to abort the replacement of the "EPO SW," press CANCEL." is displayed if no jumper is attached.

Attach jumpers and select [OK] (CL).

"Reading the environment monitor..." is displayed.

Go to [10] (REP02-510).

If jumper plug is not attached, step 2 again.

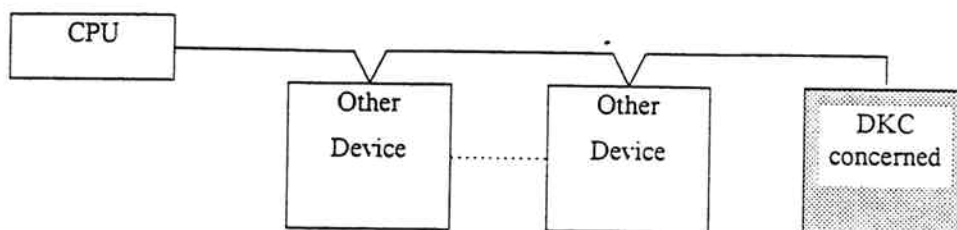


[5] PCI CONN

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

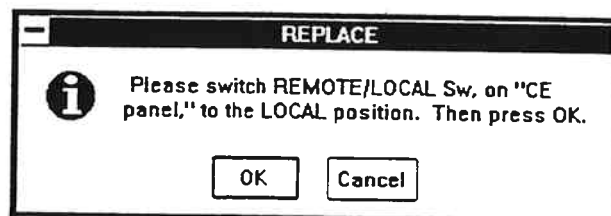
a) If PCI cable is not connected to the replacing DKC.

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



1. <Check CE panel switches>

Set REMOTE/LOCAL SW to LOCAL and select [OK] (CL) in response to "Please switch REMOTE/LOCAL Sw, on "CE panel," to the LOCAL position. Then press OK.". (see HARDWARE T6 (REP03-590))

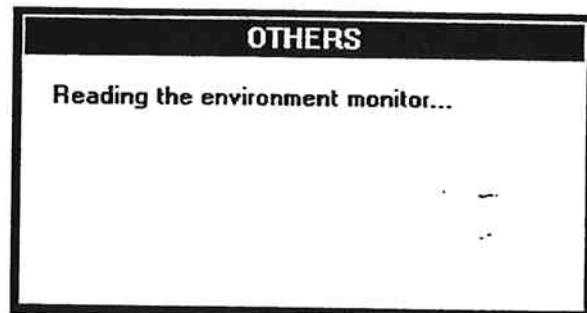


Select [OK] after confirming that REMOTE/LOCAL SW is LOCAL (CL).

"Reading the environment monitor..." is displayed.

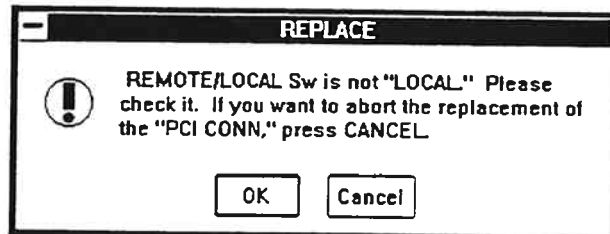
Go to [10] (REP02-510).

If REMOTE/LOCAL SW is not LOCAL, go to 2.



2. <Check that the REMOTE/LOCAL switch of CE panel is LOCAL>

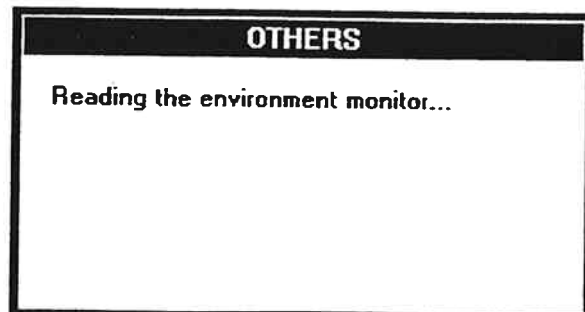
"REMOTE/LOCAL Sw is not "LOCAL." Please check it. If you want to abort the replacement of the "PCI CONN," press CANCEL." is displayed if REMOTE/LOCAL SW is not LOCAL. Turn to LOCAL and select [OK], or [Cancel] to terminate replacing (CL).



"Reading the environment monitor..." is displayed.

Go to [10] (REP02-510).

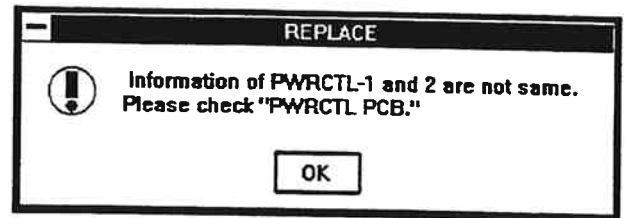
If REMOTE/LOCAL SW is not LOCAL, step 2 again.



3. <PWRCTL's are not same>

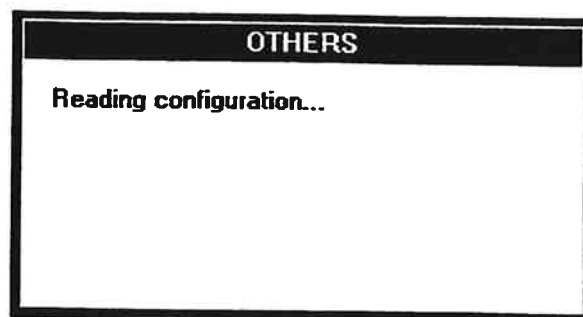
When checking REMOTE/LOCAL SW status,
information of PWRCTL-1 and 2 are not same, select
[OK].

[End of replacement]



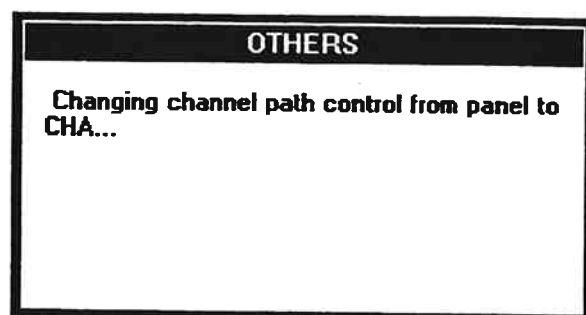
[6] RCU CONN**1. <Read configuration>**

"Reading configuration..." is displayed.

**2. <Change CHP mode>**

"Changing channel path control from panel to CHA..." is displayed.

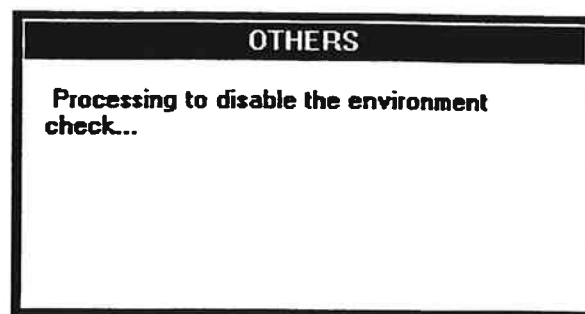
Go to [10] (REP02-510).



[7] PWRCTL

1. <environment monitor state>

"Processing to disable the environment check..." is displayed.

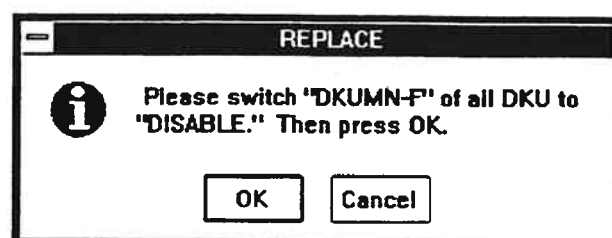


2. <Check PWRCTLn switch>

Select [OK] (CL) after disabling DKUMN in response to:

"Please switch "DKUMN-n" of all DKU to "DISABLE." Then press OK."

(About DKUMN position, see LOCATION SECTION (LOCATION02-70), and about connection, see LOCATION SECTION (LOCATION04-50))



DKUMN-n:

① For PWRCTL-1

n = F ("DKUMN-F"), Switch DKUMN on front side of DKU to DISABLE.

② For PWRCTL-2

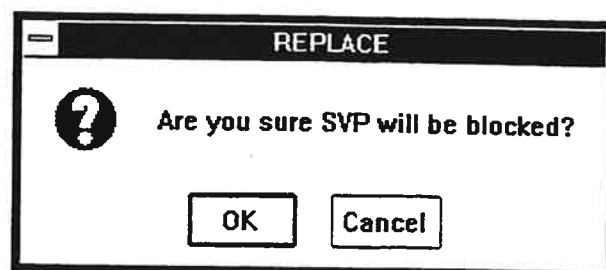
n = R ("DKUMN-R"), Switch DKUMN on rear side of DKU to DISABLE.

Go to [11] (REP02-520).

[8] OUTLET BOX

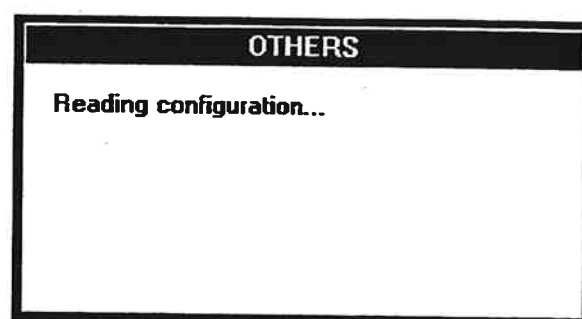
1. <Shutdown of SVP>

Select [OK] (CL) in response to "Are you sure SVP will be blocked?".

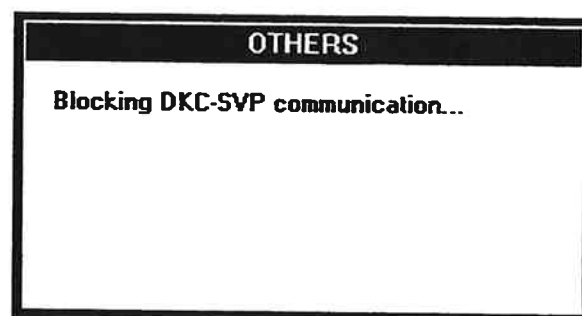


2. <SVP shutdown processing>

"Reading configuration..." is displayed.



"Blocking DKC-SVP communication..." is displayed.



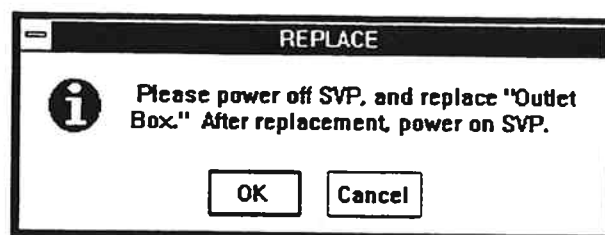
3. <Checking special part Replacement>

Select [OK] (CL) in response to "Please power off SVP, and replace 'Outlet Box.'" After replacement, power on SVP."

After selecting [OK] (CL), SVP console shows DOS prompt. (C:\>)

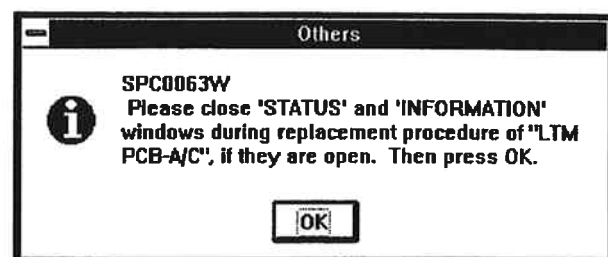
And the switch off SVP. ([Alt]+[Ctrl]+[Power Switch])
(see HARDWARE T16 (REP03-930))

[End of PRE-PROCEDURE]



[9] LTM PCB (Terminator PCB)

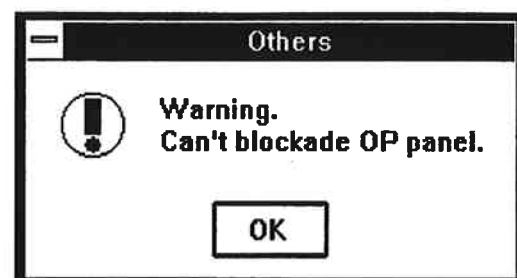
1. Please confirm that "STATUS" or "INFORMATION" programs are not executed.
Select [OK] (CL).



2. If blocking OP-Panel is failed, the message shown on the right is displayed.
Select [OK] (CL).

NOTICE

When failing to block the OP panel, channel must be placed offline. If the channel is not allowed to be placed offline, select [Cancel] to cancel the replacement.



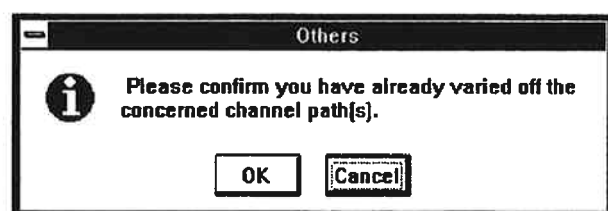
"Please confirm you have already varied off the concerned channel path(s)." is displayed.

If you replace "LTM-PCB-A/C", vary off the channel of Cluster-1.

If you replace "LTM-PCB-B/D", vary off the channel of Cluster-2.

If you select [OK] (CL), go to step 3.

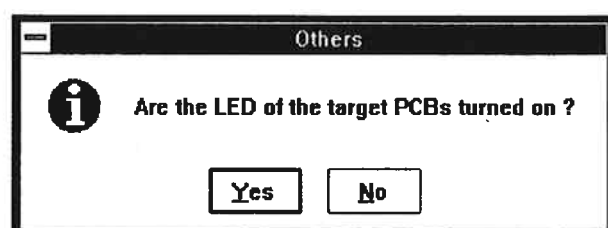
If you select [Cancel] (CL), go to step 6.



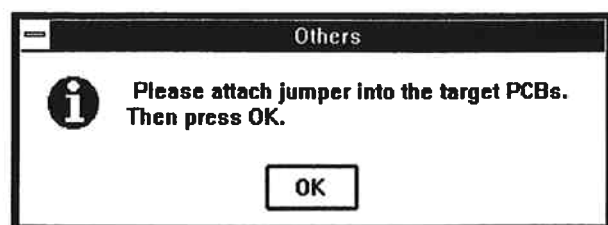
3. The message "Are the LED of the target PCBs turned on?" is displayed.

If you select [Yes] (CL), go to step 5.

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



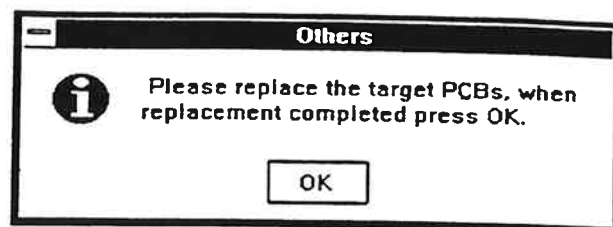
4. Please attach the jumper in response to the displayed message. And select [OK] (CL).



5. The message "Please replace the target PCBs, when replacement completed press OK." is displayed.
After replacing, select [OK] (CL).
(see HARDWARE L (REP03-455))

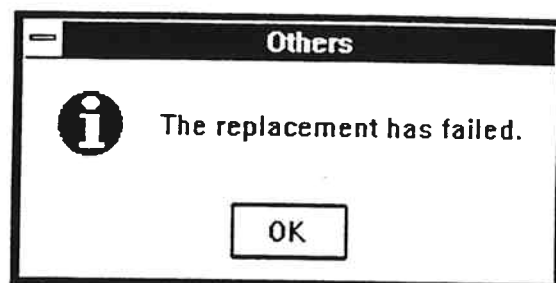
NOTE : When you plug in new PCBs, the LEDs are lit on again.

[End of PRE-PROCEDURE]



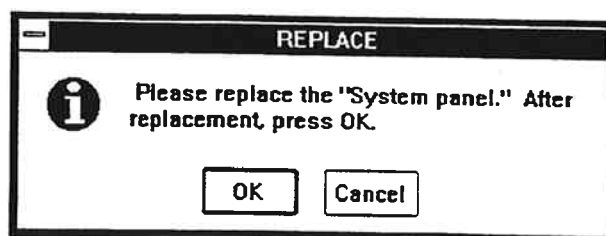
6. Replacement error
Select [OK] (CL) in response to "The replacement has failed."

[End of Replacement]



[10] Check beginning of replacement 1

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



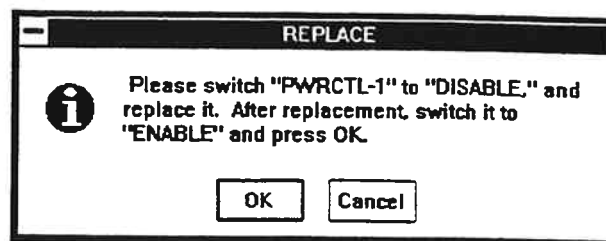
2. <Replace special part>
 Replace the special part.

System panel—— see HARDWARE T1 (REP03-460)
 OP panel-1/2—— see HARDWARE T2 (REP03-480)
 EPO SW—— see HARDWARE T4 (REP03-530)
 PCI CONN—— see HARDWARE T6 (REP03-580)
 RCU CONN —— see HARDWARE T7 (REP03-610)
 RS CONN—— see HARDWARE T23 (REP03-1360)

[End of PRE-PROCEDURE]

[11] Check beginning of replacement 2

1. <Check beginning of special part replacement>
"Please switch "XXXXXX" to "DISABLE," and replace it. After replacement, switch it to "ENABLE" and press OK." is displayed.
(Reply with [OK] after replacing the special part)



2. <Replace special part>
Replace the special part.

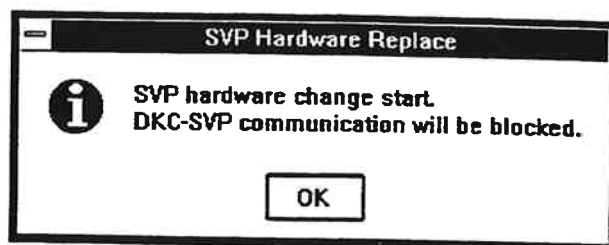
CE panel ——— see HARDWARE T3 step 2 (REP03-520)

PWRCTL-1/2 ——— see HARDWARE T5 (REP03-560)

[End of PRE-PROCEDURE]

[12] SVP

1. Select [OK] (CL) in response to the message shown on the right.



2. The message "Blocking SVP-SSVP communication. Wait..." is displayed.

Blocking SVP-SSVP
communication. Wait...

The message "Blocking DKC-SVP communication. Wait..." is displayed.

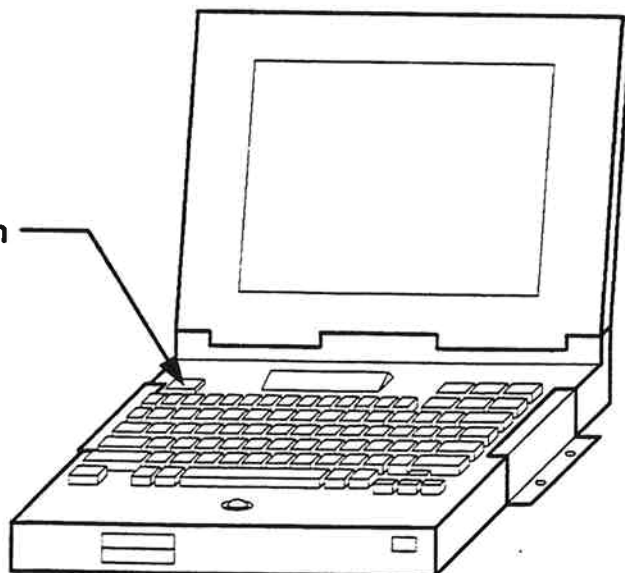
Blocking DKC-SVP
communication. Wait...

3. The message "This will end SVP operation. Replace SVP after turning off." is displayed. Select [OK] (CL) and turn off SVP.
[ALT]+[CTL]+[Power Switch]
Replace SVP.
(SVP: see HARDWARE T10 (REP03-680))
(LAN adapter: see HARDWARE T24 (REP03-1380))



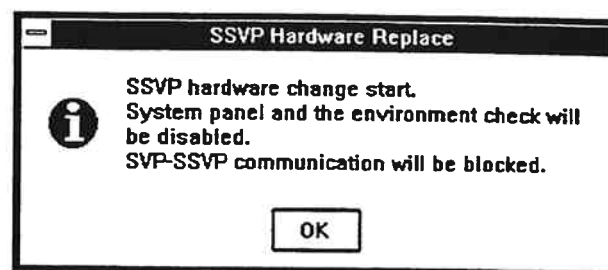
[End of PRE-PROCEDURE]

Power Switch

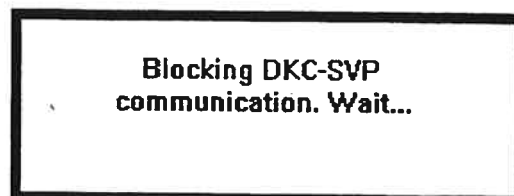


[13] SSVP/HUB

1. Select [OK] (CL) in response to the message shown on the right.



2. The message "Blocking DKC-SVP communication. Wait..." is displayed.



3. The message "Turn "SSVP ENABLE" switch to "DISABLE", then replace SSVP. After replacement, press OK." is displayed. Disable the Enable/Disable switch on SSVP PCB, and replace it. (see HARDWARE T11 (REP03-700))



[End of PRE-PROCEDURE]

[PRE-PROCEDURE T3]

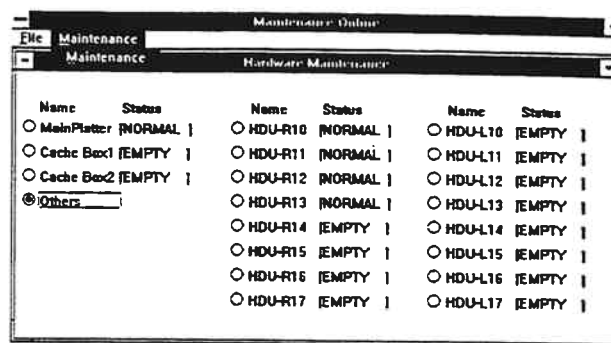
— OUTLINE —

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

[1] Select special part

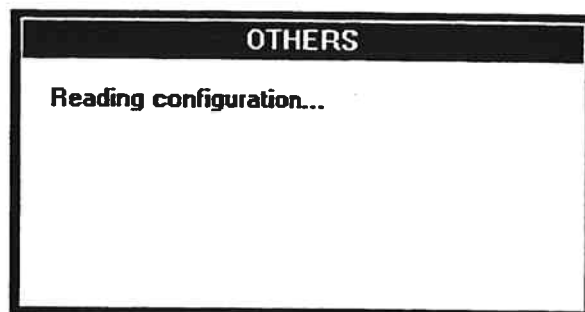
1. <Select special part>

Select [Others] from 'Hardware Maintenance' (CL)
and select [Maintenance] from [Maintenance] (DR).

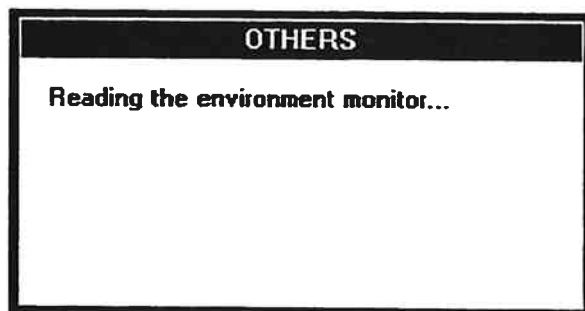


2. <Checking environment monitor>

"Reading configuration..." is displayed.

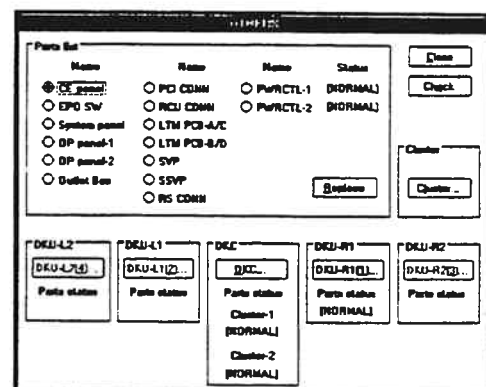


"Reading the environment monitor..." is displayed.



3. <Specify special part>

Select [DKC...] (CL) from 'DKC' group box in 'OTHERS'.



4. <Specify cluster>

Specify cluster, from [Cluster, Cache Box] group box.

5. <Specify special part Replacement>

Select part [XXXXX] to be replaced from [Parts list] group box (CL) and select [Replace] (CL).

Valid [XXXXX] values are listed below.

- FAN ——— [FAN]
- PS ——— [MPSn], [5VPSn], [3VPSn], [5VPSCn], [3VPSCn]
- Battery ——— [Battery, BATT CTR]
- Breaker Box - [Breaker Box-1] Go to [6] (REP02-630)
[Breaker Box-2] Go to [6] (REP02-630)
- Thermostat — [TH]

6. <Check beginning of special part Replacement>

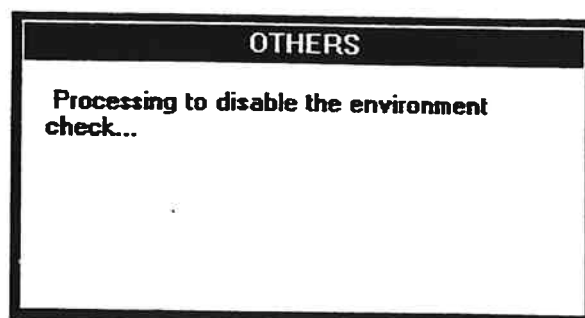
Select [Yes] (CL) in response to "Do you want to replace the "XXXXXX?". "".

XXXXXX represents one of the part names listed in step 5.

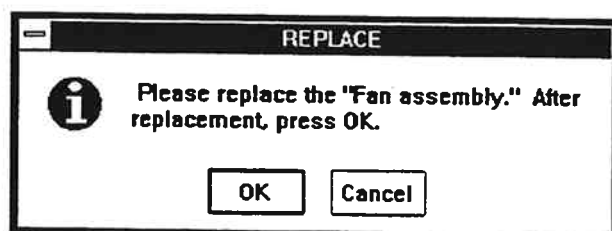
- "FAN" ——— Go to [2] (REP02-580)
- "MPSn" ——— Go to [3] (REP02-590)
- "5V PSn" ——— Go to [3] (REP02-590)
- "3V PSn" ——— Go to [3] (REP02-590)
- "5VPSCn" ——— Go to [3] (REP02-590)
- "3VPSCn" ——— Go to [3] (REP02-590)
- "Battery" ——— Go to [4] (REP02-610)
- "Thermostat" — Go to [5] (REP02-620)

[2] FAN

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

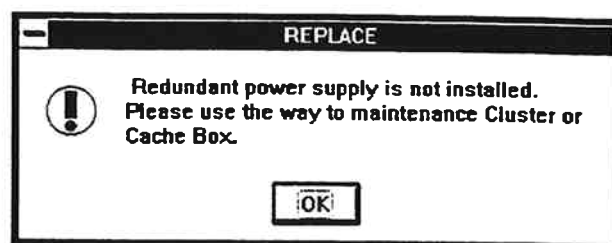


2. <Special part Replacement>
"Please replace the "XXXXXX." After replacement, press OK." is displayed.
Go to [7] (REP02-640).

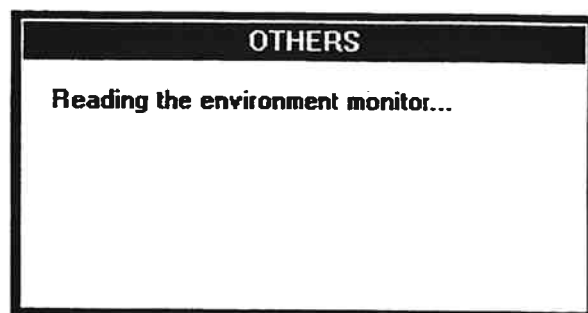


[3] 5V PS, 3V PS, MPS, 5VPSC, 3VPSC

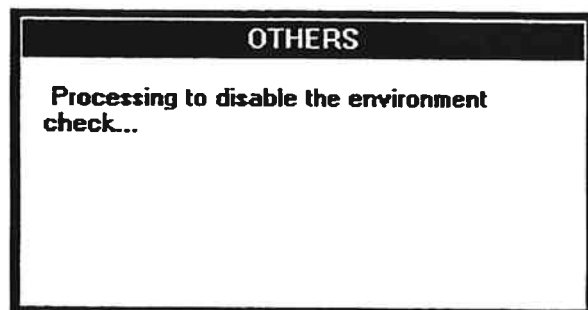
1. If Redundant power supply is not installed, the message shown on the right is displayed.
Select [OK] (CL).
Go to 5



2. <Check matching power supply>
The SVP automatically checks the power supply to see if it is Replaceable.

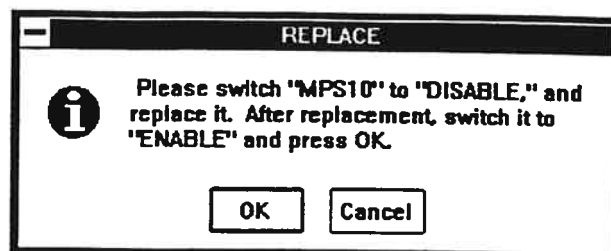


3. <Environment monitor state>
"Processing to disable the environment check..." is displayed.



4. <Special part replacement>

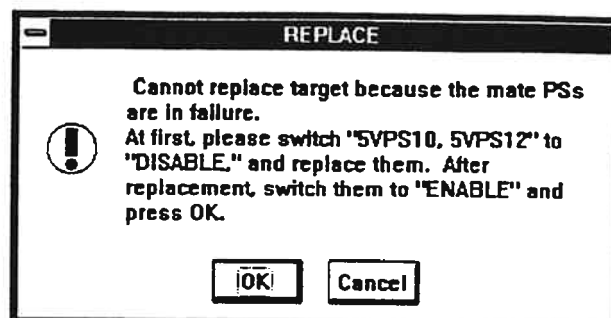
The message shown on the right is displayed.
Go to [7] (REP02-640).



When replace 5VPSx0 or 5VPSx1, if target PS is normal and other 5VPSs are in failure, the message shown on the right is displayed.

Select [OK] (CL).

Go to [7] (REP02-640)



5. <Block Cluster or Cache Box>

- 5VPS, 3VPS, MPS

Block cluster that include target PS.

see SVP02-810.

- 5VPSC, 3VPSC

Block Cache Box that include target PS.

see SVP02-940.

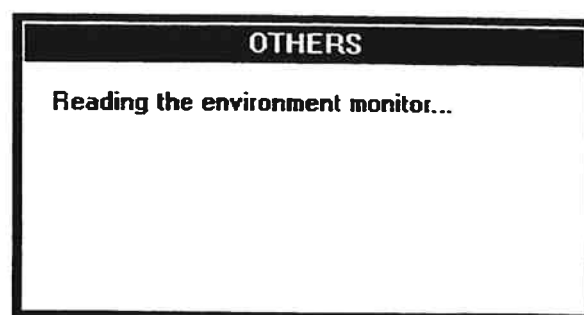
6. <Special part replacement>

Go to [7] (REP02-640).

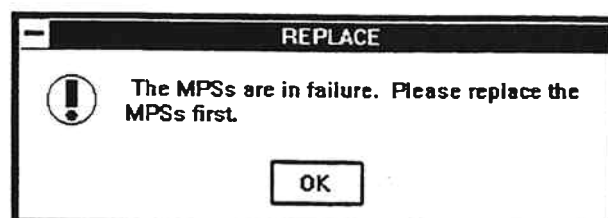
[4] Battery

1. <Check source power>

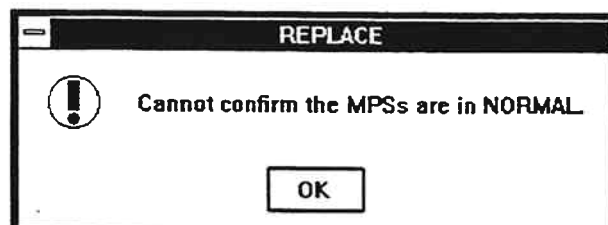
The SVP automatically checks the 5V/12V power supply to determine whether it is not shut down.



If NG, "The MPSs are in failure. Please replace the MPSs first." is displayed.

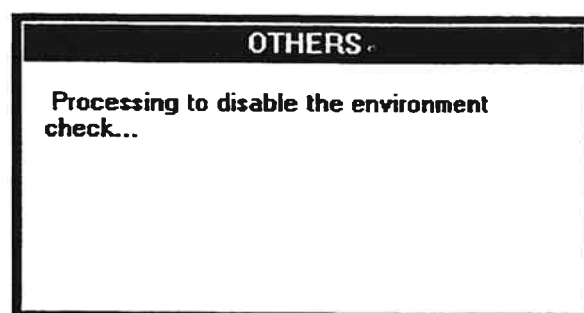


If an error has occurred while reading the environment monitor, the message shown on the right is displayed. Select [OK] (CL).
Return to DKC cluster X screen.



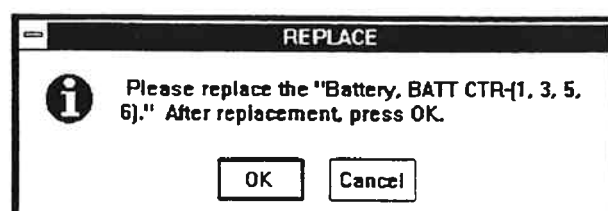
2. <Check environment monitor stopped state>

"Processing to disable the environment check..." is displayed.



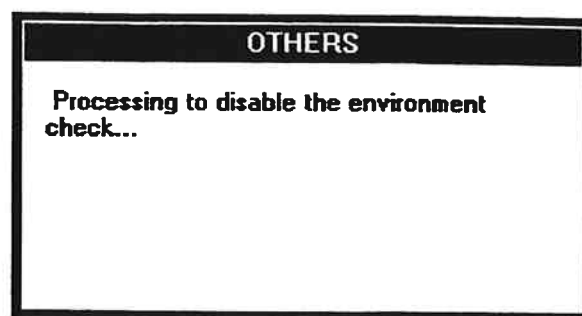
3. <Check beginning of special part Replacement>

"Please replace the "Battery, BATT CTR-(1,3,5,6)." After replacement, press OK." is displayed.
Go to [7] (REP02-640).

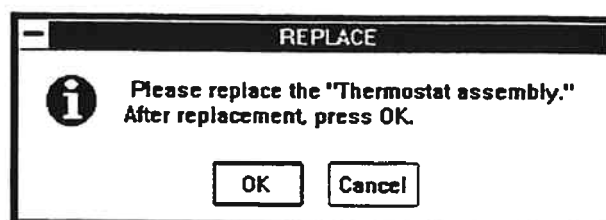


[5] Thermostat**1. <Environment monitor state>**

"Processing to disable the environment check..." is displayed.

**2. <Special part Replacement>**

"Please replace the "Thermostat assembly." After replacement, press OK." is displayed.
Go to [7] (REP02-640).



[6] Breaker Box

NOTICE

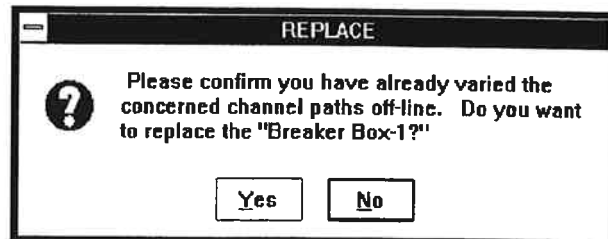
An effect of the replacement on the subsystem varies depending on its configuration. Confirm the effect on the subsystem by referring to the following table, then start the replacement.

Replace part	Machine configuration			Effect on the subsystem	Replace case
	Logic redundant power supply (DKC-F210I-71)	CACHE BOX power supply (DKC-F210I-41)	CACHE redundant power supply (DKC-F210I-72)		
Breaker Box1	not installed	not installed	not installed	Channel at the Cluster1 side must be varied off-line. Blocked at the half side of CACHE	case1
	installed	not installed	not installed	Nothing	case3
	installed	installed	not installed	Blocked at the half side of CACHE	case2
	not installed	installed	not installed	Channel at the Cluster1 side must be varied off-line. Blocked at the half side of CACHE	case1
	installed	installed	installed	Nothing	case3
Breaker Box2	not installed	not installed	not installed	Channel at the Cluster2 side must be varied off-line. Blocked at the half side of CACHE	case1
	installed	not installed	not installed	Nothing	case3
	installed	installed	not installed	Blocked at the half side of CACHE	case2
	not installed	installed	not installed	Channel at the Cluster2 side must be varied off-line. Blocked at the half side of CACHE	case1
	installed	installed	installed	Nothing	case3

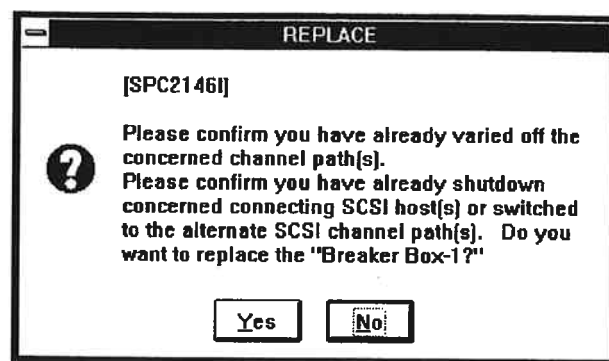
*1 If cluster is blocked or CACHE Box is blocked after replacing Breaker Box1, you should recover them at the POST procedure (Because SVP battery will be off).

If Breaker Box2 is replaced, SVP will recover it automatically.

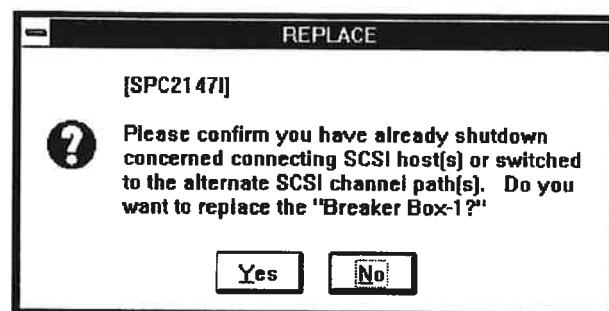
1. If case1, please select [Yes] (CL) in the
 "Please confirm you have already varied the concerned
 channel paths off-line. Do you want to replace the
 "Breaker Box-n?" message.



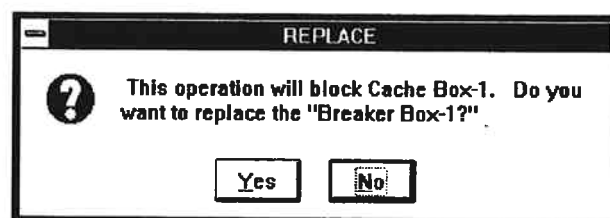
- When SCSI channels and other kinds are mixed.
 "Please confirm you have already varied off the
 concerned channel path(s). Please confirm you have
 already shutdown concerned connecting SCSI
 host(s) or switched to the alternate SCSI channel
 path(s). Do you want to replace the "Breaker Box-
 n?" is displayed. Select [Yes] (CL).



- When only SCSI channels are installed.
 "Please confirm you have already shutdown
 concerned connecting SCSI host(s) or switched to
 the alternate SCSI channel path(s). Do you want to
 replace the "Breaker Box-n?" is displayed. Select
 [Yes] (CL).



If case2, please select [Yes] (CL) in the
 "This operation will block Cache Box-n. Do you want
 to replace the "Breaker Box-n?" message.

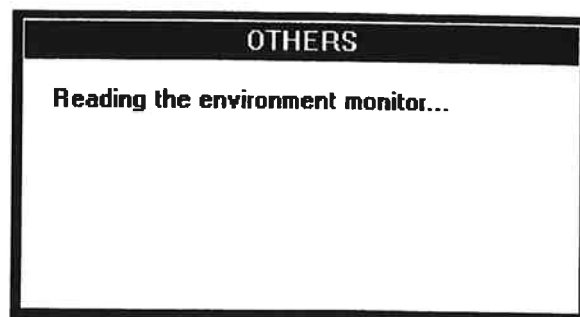


If case3, please go to 7 (REP02-633)

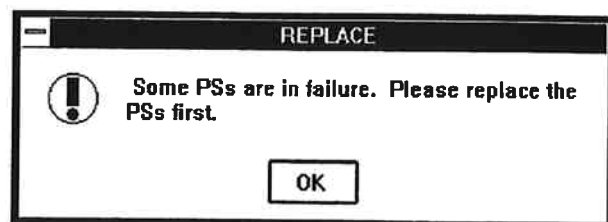
2. "Reading the environment monitor..." is displayed.

"Breaker Box-1" Go to 3.

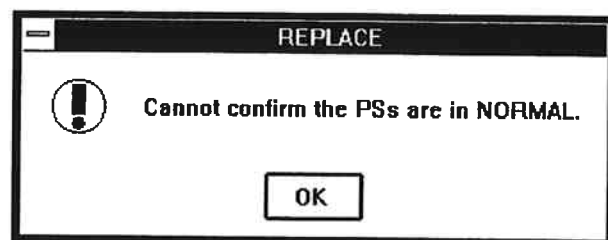
"Breaker Box-2" Go to 4.



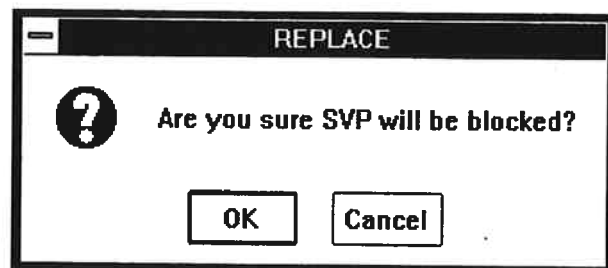
If it is not replaceable, "Some PSs are in failure. Please replace the PSs first." is displayed.



If an error has occurred in reading of environment monitor, the message shown on the right is displayed.
Select [OK] (CL).
Return to DKC cluster X screen.



3. Select [OK] (CL) in response to "Are you sure SVP will be blocked?"



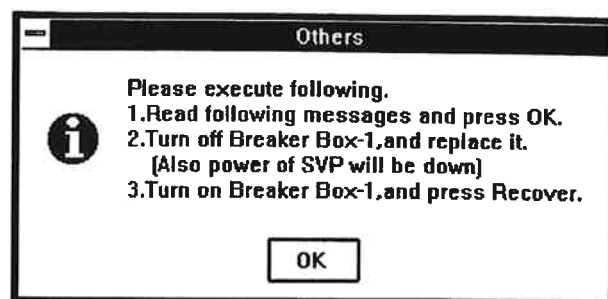
4. <Block cluster or Cache Box>

Blocking cluster or Cache Box has finished normally,

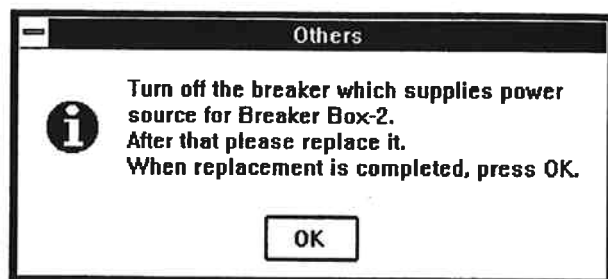
"Breaker Box-1" Go to 5

"Breaker Box-2" Go to 6

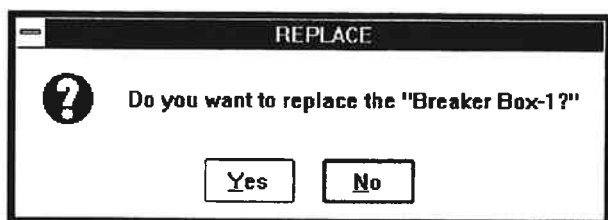
5. After reading the displayed message carefully, select [OK] (CL).
Go to [7] (REP02-640).



6. The message shown on the right is displayed.
(Reply with [OK] after performing the hardware procedure.)
Go to [7] (REP02-640).



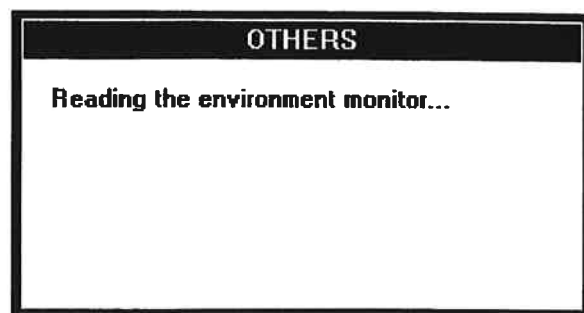
7. When redundant power supply is installed.
"Do you want to replace the "Breaker Box-n?" is displayed.



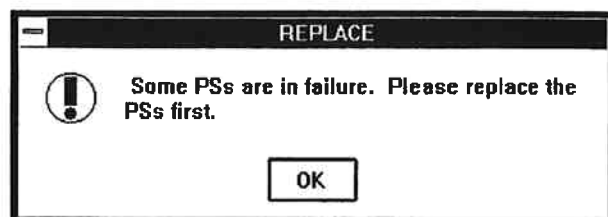
8. "Reading the environment monitor..." is displayed.

"Breaker Box-1" Go to 9

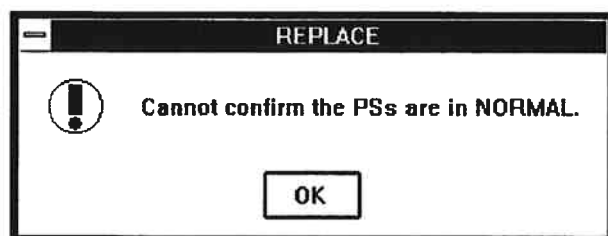
"Breaker Box-2" Go to 13



If it is not replaceable, "Some PSs are in failure. Please replace the PSs first." is displayed.

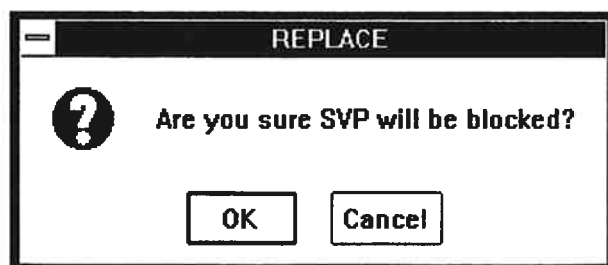


If an error has occurred in reading of environment monitor, the message shown on the right is displayed.
Select [OK] (CL).
Return to DKC cluster X screen.



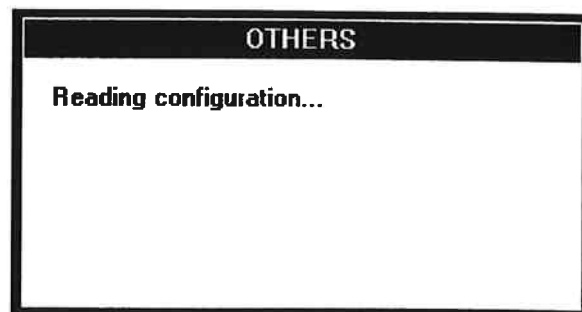
9. <Check shut down of SVP>

Select [OK] (CL) in response to "Are you sure SVP will be blocked?".

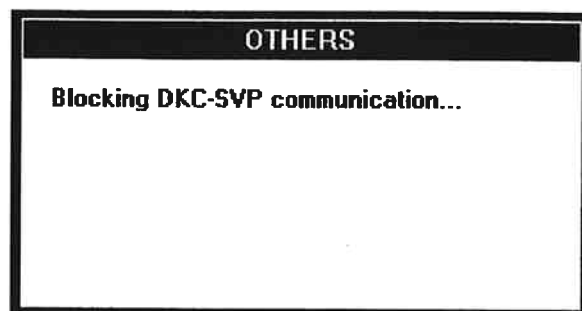


10. <SVP shutdown processing>

"Reading configuration..." is displayed.

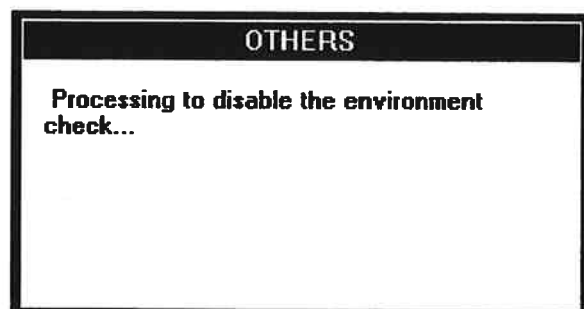


"Blocking DKC-SVP communication." is displayed.



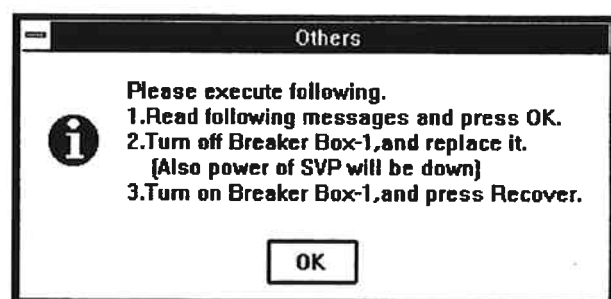
11. <Check environment monitor stopped state>

"Processing to disable the environment check..." is displayed.

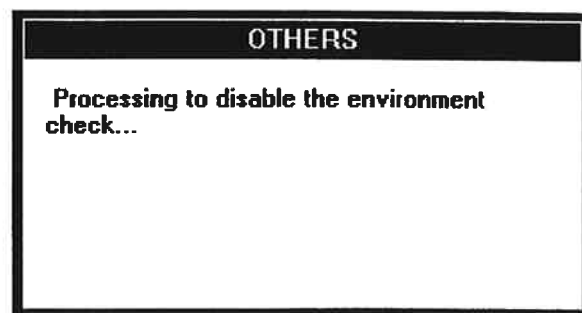


12. After reading the displayed message carefully, select [OK] (CL).

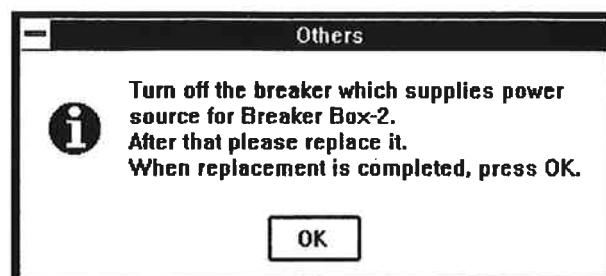
Go to [7] (REP02-640).



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



14. The message shown on the right is displayed.
(Reply with [OK] after performing the hardware procedure.)
Go to [7] (REP02-640).



[7] Replacement

1. <Replace special part>
Replace the special part.

FAN----- see HARDWARE T8 (REP03-630)

Thermostat ----- see HARDWARE T9 (REP03-660)

Breaker Box-1 ---- see HARDWARE T12 (REP03-720)

Breaker Box-2 ---- see HARDWARE T13 (REP03-810)

Battray ----- see HARDWARE T14 (REP03-890)

BATT CTR ----- see HARDWARE T15 (REP03-910)

PS(DKC) ----- see HARDWARE T17 (REP03-990)

[End of PRE-PROCEDURE]

[PRE-PROCEDURE T4]

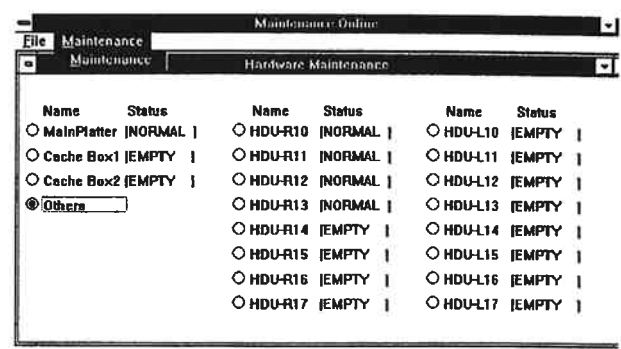
— OUTLINE —

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

[1] Select special part

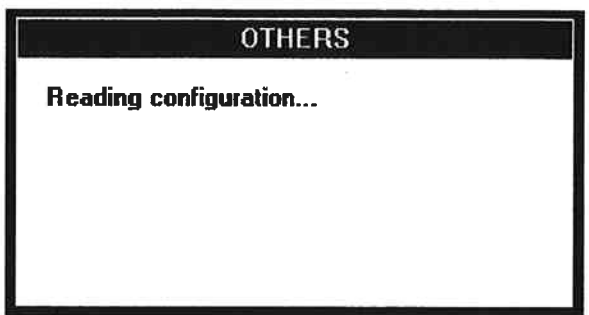
1. <Select special part>

Select [Others] from 'Hardware Maintenance' (CL) and select [Maintenance] from [Maintenance] (DR).



2. <Reading environment monitor>

"Reading configuration..." is displayed.



"Reading the environment monitor..." is displayed.

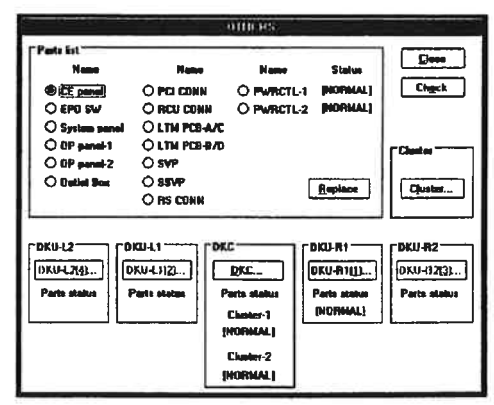


NOTICE

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

3. <Select DKU containing special part>

Select [DKU-XX] (CL) containing part to be replaced from 'OTHERS'.



4. <Select HDU Box containing special part>

Select [HDU Box (xxx-xxx)] containing part from [HDU Box] group box.

Note : If HDU Box location is not displayed on DKU-XX window, see the table listed below.

HDD FB4	HDU Box location
DKU-F205I-B4 (1st)	HDU Box (R10 - R13)
DKU-F205I-B4 (2nd)	HDU Box (R14 - R17)
DKU-F205I-B4 (3rd)	HDU Box (L10 - L13)
DKU-F205I-B4 (4th)	HDU Box (L14 - L17)
DKU-F205I-B4 (5th)	HDU Box (R20 - R23)
DKU-F205I-B4 (6th)	HDU Box (R24 - R27)
DKU-F205I-B4 (7th)	HDU Box (L20 - L23)
DKU-F205I-B4 (8th)	HDU Box (L24 - L27)

DKU R1(R10-R13)

HDU Box

☒ HDU Box(R10-R13)

☐ HDU Box(R14-R17)

Parts list

Name	Status	Name	Status	Name	Status
FAN	0 1 2	MPS-R180	[NORMAL]	DKUMN-R1F	[NORMAL]
FAN-R10	N N N	MPS-R101	[NORMAL]	DKUMN-R1R	[NORMAL]
FAN-R11	N N N	MPS-R110	[NORMAL]	AC BOX-R10	
FAN-R12	N N N	MPS-R111	[NORMAL]	AC BOX-R11	
FAN-R13	N N N	MPS-R120	[NORMAL]		
[N-NORMAL, F-FAILED]		MPS-R121	[NORMAL]		
		MPS-R130	[NORMAL]		
		MPS-R131	[NORMAL]		

Replace

5. <Specify special part Replacement>

Select part [XXXXXX] to be Replaced from [Parts list] (CL) and select:[Replace]

- DKUMN ----- [DKUMN-nnn]
- AC BOX ----- [AC BOX-n] Go to [5] (REP02-710)
- PS(DKU,5/12V) [MPS-nnnn]
- FAN(DKU) ----- [FAN]

DKU R1(R10-R13)

HDU Box

☒ HDU Box(R10-R13)

☐ HDU Box(R14-R17)

Parts list

Name	Status	Name	Status	Name	Status
FAN	0 1 2	MPS-R180	[NORMAL]	DKUMN-R1F	[NORMAL]
FAN-R10	N N N	MPS-R101	[NORMAL]	DKUMN-R1R	[NORMAL]
FAN-R11	N N N	MPS-R110	[NORMAL]	AC BOX-R10	
FAN-R12	N N N	MPS-R111	[NORMAL]	AC BOX-R11	
FAN-R13	N N N	MPS-R120	[NORMAL]		
[N-NORMAL, F-FAILED]		MPS-R121	[NORMAL]		
		MPS-R130	[NORMAL]		
		MPS-R131	[NORMAL]		

Replace

(6) <Special part Replacement>

Select [Yes] (CL) in response to "Do you want to replace the "XXXXXX?"".

XXXXXX represents one of the part names listed in step 5.

Valid [XXXXXX] values are listed below.

- 'DKUMN-nnn' -- Go to [2] (REP02-680)
- 'MPS-nnnn' ----- Go to [3] (REP02-690)
- 'FAN' ----- Go to [4] (REP02-700)

REPLACE

Do you want to replace the "DKUMN-R1F?"

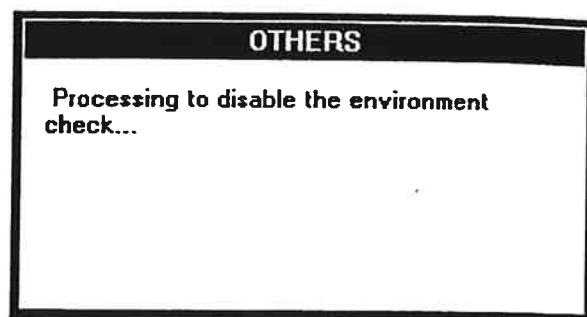
Yes No

[2] DKUMN PCB

1. <Environment monitor state>

"Processing to disable the environment check..." is displayed.

- DKUMN-R2n, DKUMN-L2n ----- Go to 3



2. <Disable DKUMN>

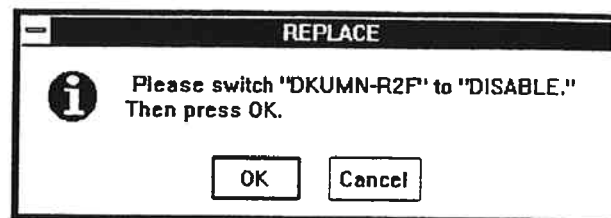
When DKUMN-XXX (listed below) is installed, this message is displayed.

Disable the DKUMN in response to "Please switch "DKUMN-XXX" to "DISABLE". Then press OK." (see HARDWARE T18 (REP03-1010)).

After confirming that the DKUMN-XXX has been disabled, select [OK] (CL).

DKUMN-XXX:

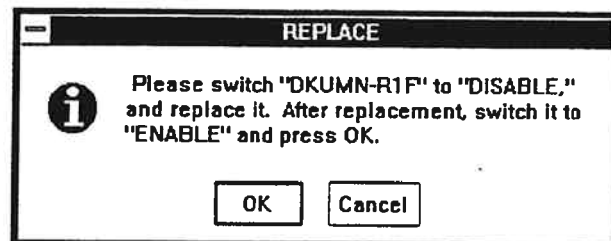
- For DKUMN-R1F: XXX=R2F ("DKUMN-R2F"), Switch DKUMN-R2F to DISABLE.
- For DKUMN-R1R: XXX=R2R ("DKUMN-R2R"), Switch DKUMN-R2R to DISABLE.
- For DKUMN-L1F: XXX=L2F ("DKUMN-L2F"), Switch DKUMN-L2F to DISABLE.
- For DKUMN-L1R: XXX=L2R ("DKUMN-L2R"), Switch DKUMN-L2R to DISABLE.



3. <Special part Replacement>

"Please switch "DKUMN-xxx" to "DISABLE," and replace it. After replacement, switch it to "ENABLE" and press OK." is displayed.

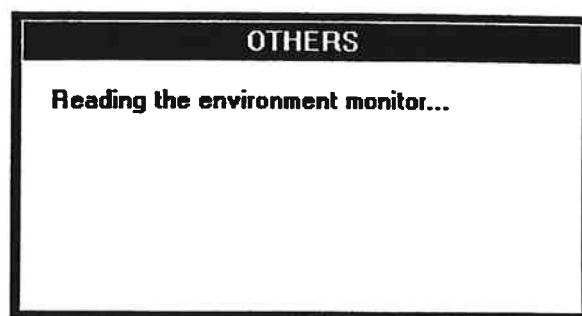
Go to [6] (REP02-720).



[3] MPS (DKU 5/12V)

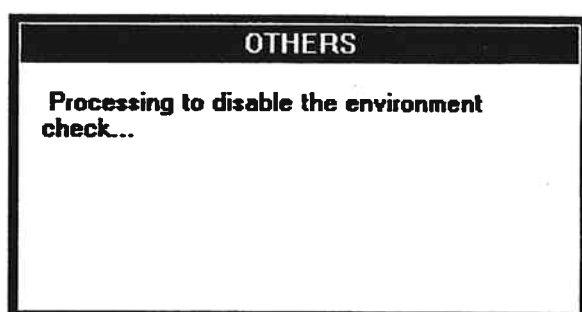
1. <Check matching power supply>

The SVP automatically checks that the mate power supply is normal.



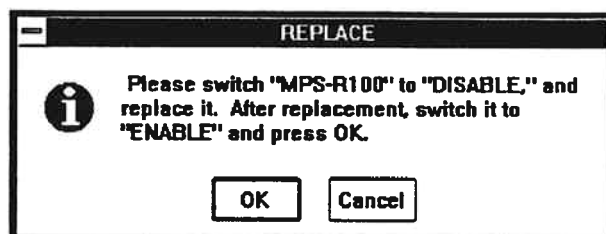
2. <Environment monitor state>

"Processing to disable the environment check..." is displayed.



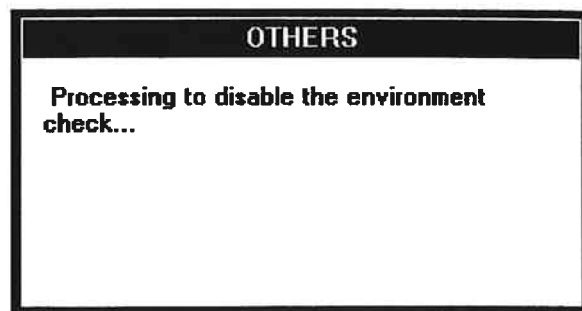
3. <Special part replacement>

The message shown on the right is displayed.
Go to [6] (REP02-720).

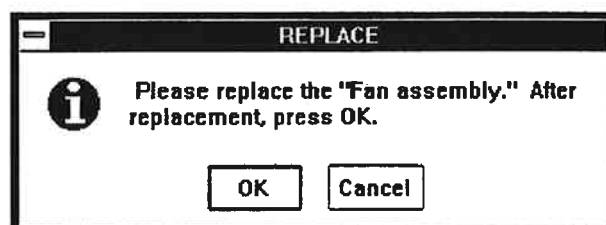


[4] FAN**1. <Environment monitor state>**

"Processing to disable the environment check..." is displayed.

**2. <Special part Replacement>**

"Please replace the "Fan assembly." After replacement, press OK." is displayed.
Go to [6] (REP02-720).

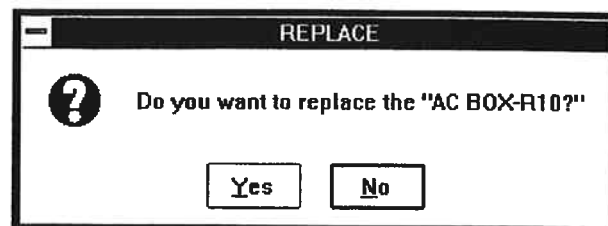


[5] AC BOX

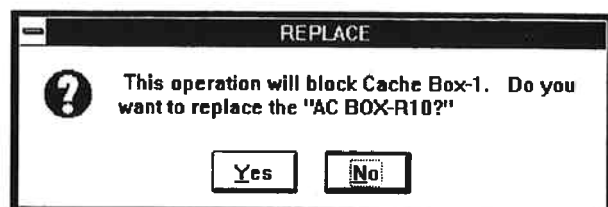
1. When part to be replaced is "AC-BOX-R10", go to 2.
When part to be replaced is "AC-BOX-R11", go to 6.
When part to be replaced is neither "AC-BOX-R10" nor "AC-BOX-R11", go to 10.

2. SVP will display one of the following messages.

- ① When "Do you want to replace the "AC BOX-R10?" is displayed.
Select [Yes] (CL). Go to 11.

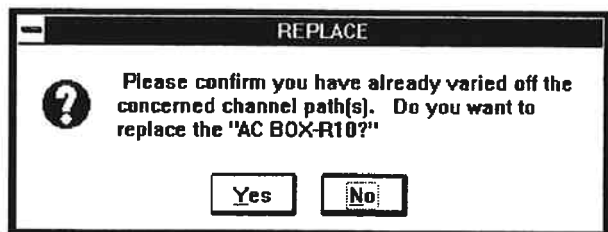


- ② When Logic redundant power supply is installed, and Cache Box is installed, and Cache redundant power supply is not installed, "This operation will block Cache Box-n. Do you want to replace the "AC BOX-XXX?" is displayed. Select [Yes] (CL).

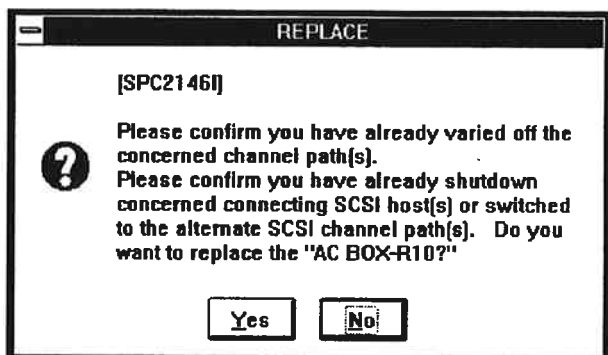


- ③ Otherwise

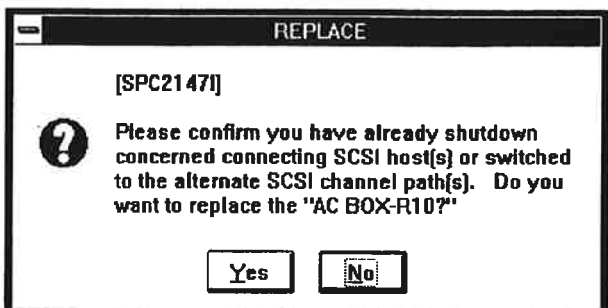
- When only serial or parallel channels, or they are mixed.
"Please confirm you have already varied off the concerned channel path(s). Do you want to replace the "AC BOX-XXX?" is displayed. Select [Yes] (CL).



- When SCSI channels and other kinds are mixed.
"Please confirm you have already varied off the concerned channel path(s). Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to replace the "AC BOX-XXX?" is displayed. Select [Yes] (CL).

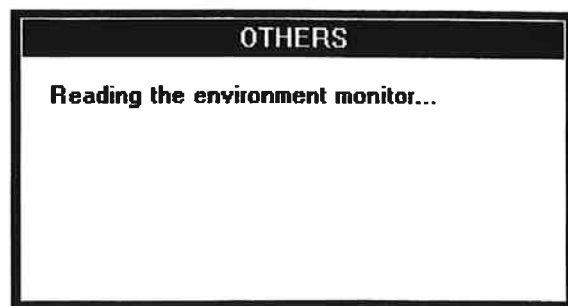


- When only SCSI channels are installed.
"Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to replace the "AC BOX-XXX?" is displayed. Select [Yes] (CL).

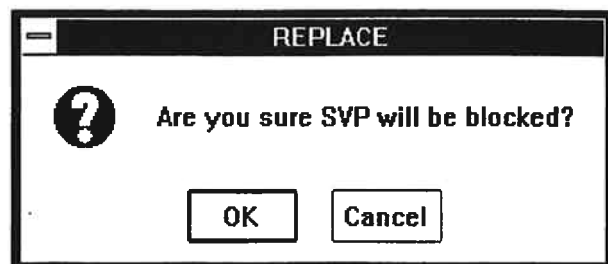


3. <Check mate power supply>

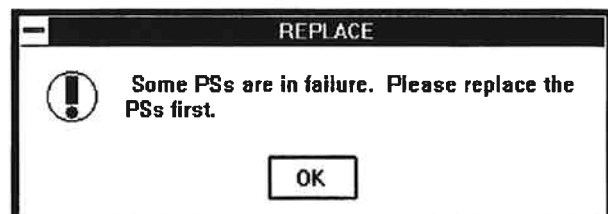
The SVP automatically checks that the pair power supply is normal.



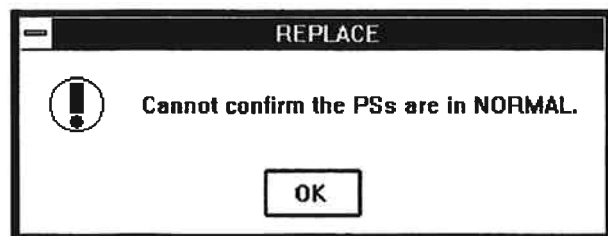
Select [OK] (CL) in response to "Are you sure SVP will be blocked?". Go to 4.



If it is not replaceable, "Some PSs are in failure. Please replace the PSs first." is displayed.



If an error has occurred in reading of environment monitor, the message shown on the right is displayed. Select [OK] (CL). Return to DKU-xx (xxx) screen.

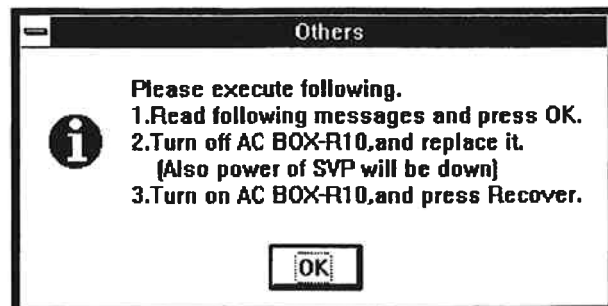


4. <Block cluster or Cache Box>

Blocking cluster or Cache Box has finished normally.

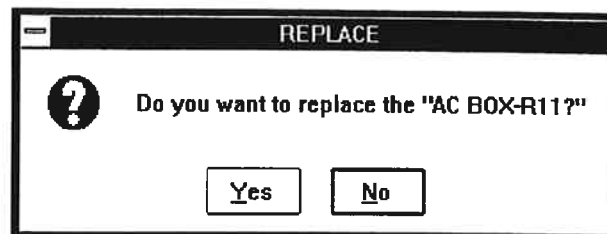
5. Read the displayed message carefully, select [OK] (CL).

Go to [6] (REP02-720).

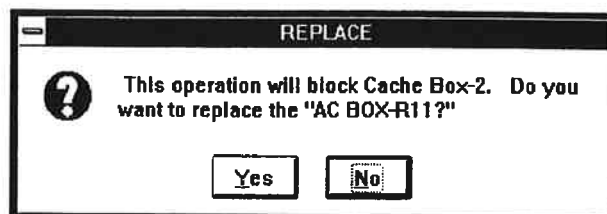


6. SVP will display one of the following messages.

- ① "Do you want to replace the "AC BOX-R11?" " is displayed. Select [Yes] (CL). Go to 11.



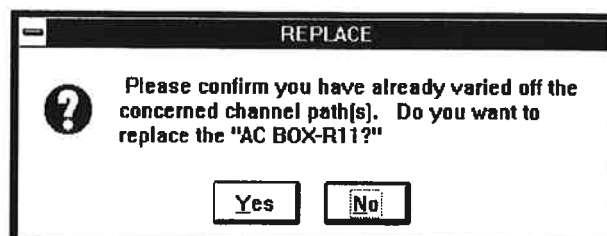
- ② When Logic redundant power supply is installed, and Cache Box is installed, and Cache redundant power supply is not installed, "This operation will block Cache Box-n. Do you want to replace the "AC BOX-XXX?" " is displayed. Select [Yes] (CL).



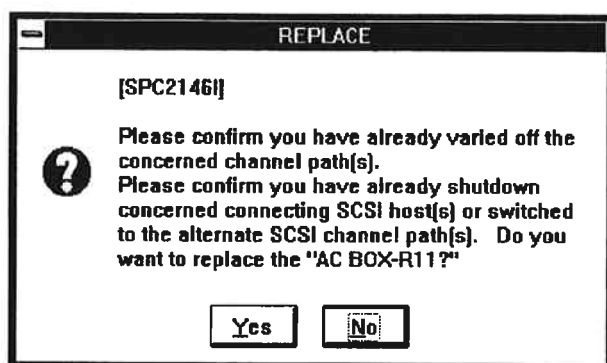
③ Otherwise

- When only serial or parallel channels, or they are mixed.

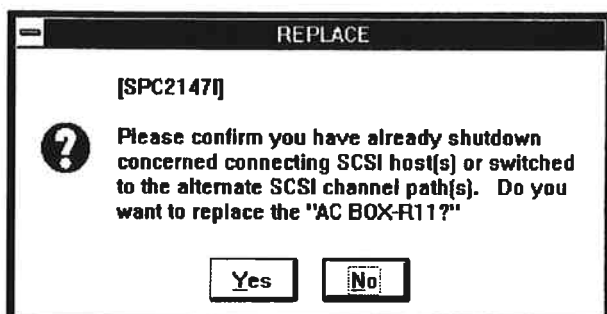
"Please confirm you have already varied off the concerned channel path(s). Do you want to replace the "AC BOX-XXX?" " is displayed. Select [Yes] (CL).



- When SCSI channels and other kinds are mixed.
- "Please confirm you have already varied off the concerned channel path(s). Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to replace the "AC BOX-XXX?" " is displayed. Select [Yes] (CL).

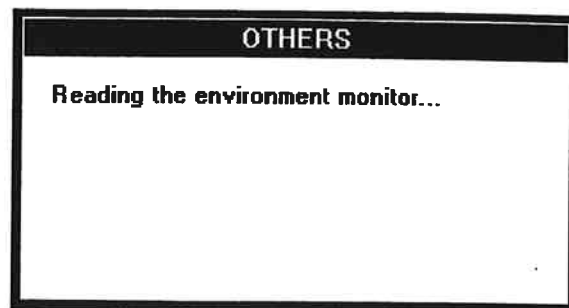


- When only SCSI channels are installed.
- "Please confirm you have already shutdown concerned connecting SCSI host(s) or switched to the alternate SCSI channel path(s). Do you want to replace the "AC BOX-XXX?" " is displayed. Select [Yes] (CL).

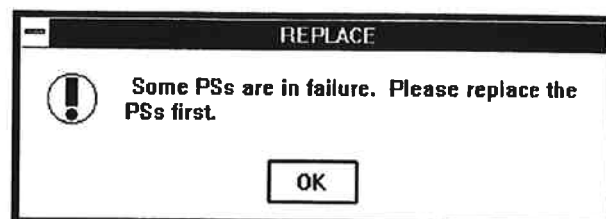


7. <Check mate power supply>

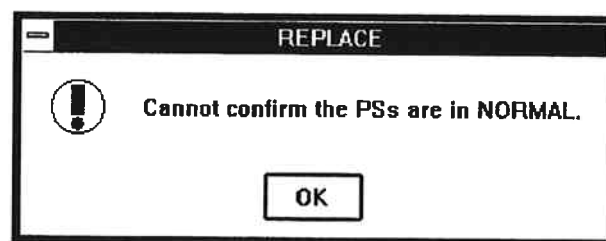
The SVP automatically checks that the pair power supply is normal.



If it is not replaceable, "Some PSs are in failure. Please replace the PSs first." is displayed. Select [OK] (CL).



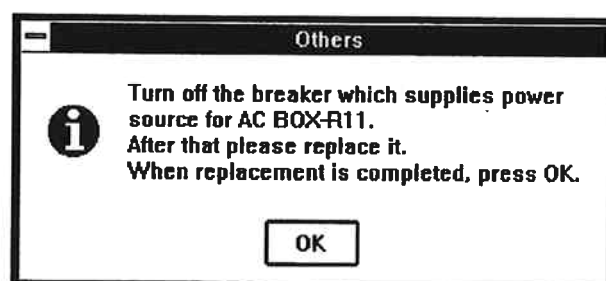
If an error has occurred in reading of environment monitor, the message shown on the right is displayed. Select [OK] (CL).
Return to DKU-xx (xxx) screen.



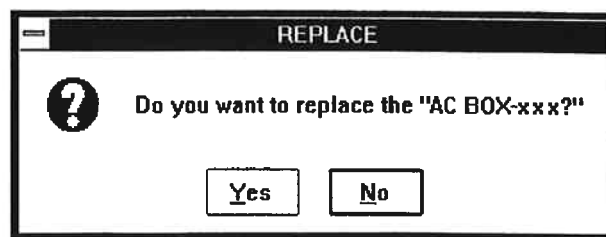
8. <Block cluster or Cache Box>

Blocking cluster or Cache Box has finished normally.

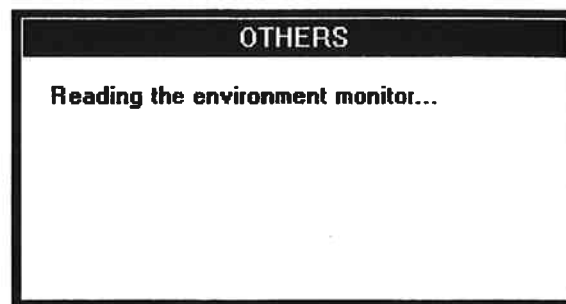
9. The message shown on the right is displayed.
(Reply with [OK] after performing the hardware procedure.)
Go to [6] (REP02-720).



10. "Do you want to replace the "AC BOX-xxx?" is displayed.
Select [Yes] (CL).

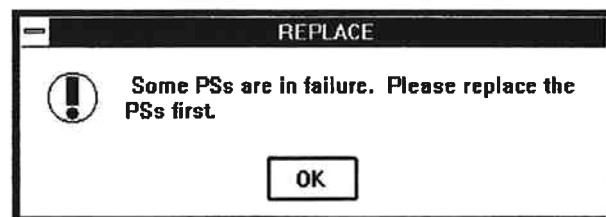


11. "Reading the environment monitor." is displayed.
The SVP automatically checks that the pair power supply is normal.

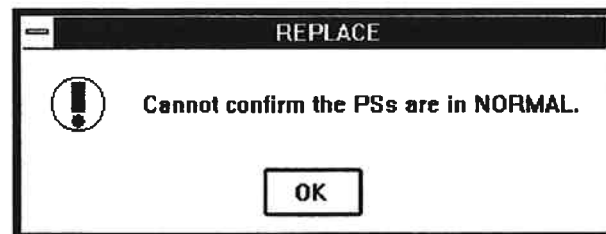


- "AC-BOX R10" Go to 12.
- "Others" Go to 16.

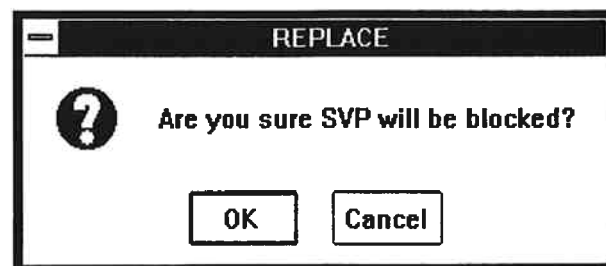
If it is not replaceable, "Some PSs are in failure. Please replace the PSs first." is displayed. Select [OK] (CL).



If an error has occurred in reading of environment monitor, the message shown on the right is displayed.
Select [OK] (CL).
Return to DKU-xx (xxx) screen.

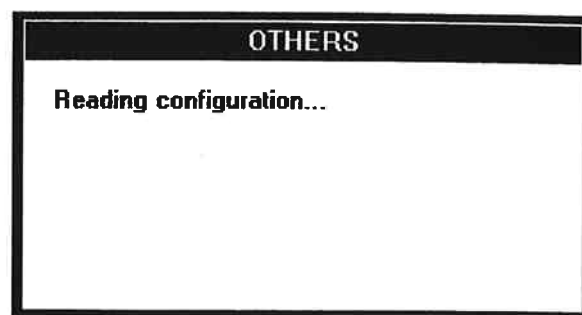


12. <Check shut down of SVP>
Select [OK] (CL) in response to "Are you sure SVP will be blocked?".

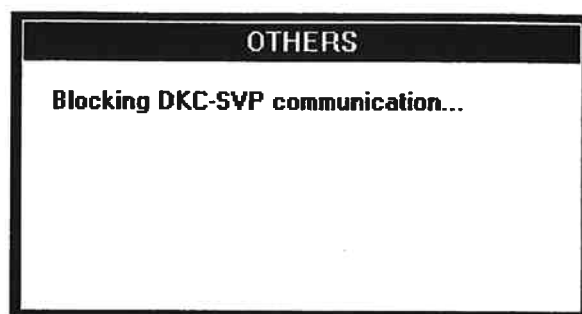


13. <SVP shutdown processing>

"Reading configuration..." is displayed.

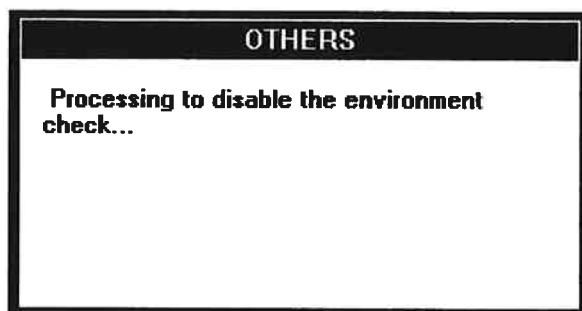


"Blocking DKC-SVP communication..." is displayed.



14. <Check environment monitor stopped state>

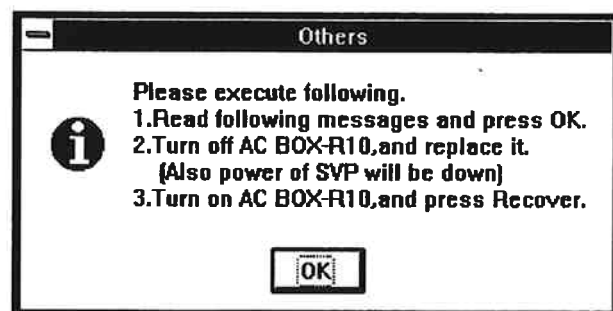
"Processing to disable the environment check..." is displayed.



15. After reading the displayed message carefully,

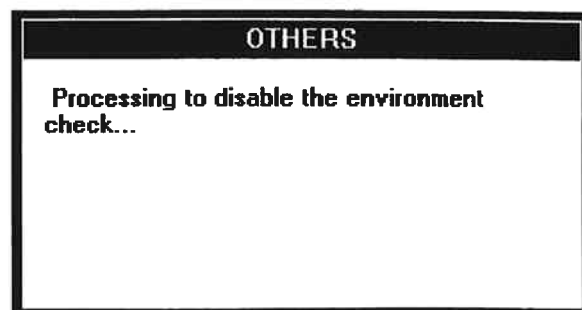
select [OK] (CL).

Go to [6] (REP02-720).

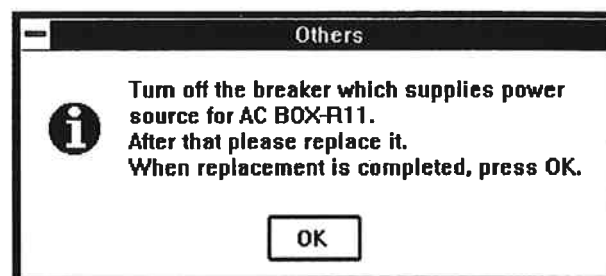


16. <Check environment monitor stopped state>

"Processing to disable the environment check..." is displayed.



17. "Turn off the breaker which supplies power source for AC-BOX-xxx. After that please replace it. When replacement is completed, press OK." is displayed.
(Reply with [OK] after performing the hardware procedure.)
Go to [6] (REP02-720).



[6] Replacement**1. <Replace special part>**

Replace the special part .

DKUMN ----- see HARDWARE T18 (REP03-1010)

PS(DKU) ----- see HARDWARE T19 (REP03-1090)

FAN(DKU) ----- see HARDWARE T20 (REP03-1110)

AC BOX-R10 ----- see HARDWARE T21 (REP03-1130)

AC BOX(except AC BOX-R10) ----- see HARDWARE T22 (REP03-1220)

[End of PRE-PROCEDURE]

[PRE-PROCEDURE V]

— OUTLINE —

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

NOTICE

This processing is a special operation for detecting a cause of a SCSI bus error. Ask the technical support center about the appropriateness of the operation.

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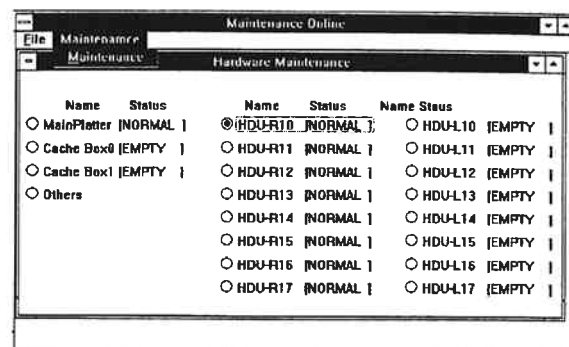
1. <Select HDU Box>

Make sure (other than preventive) that the status of [HDU-Rnn] or [HDU-Lnn] to be replaced from 'Hardware Maintenance' is:

* Warning threshold value -> [NORMAL]

* Block threshold value -> [WARNING]

After checking status, select [HDU-Rnn] or [HDU-Lnn] and select [Maintenance] from [Maintenance] (DR).



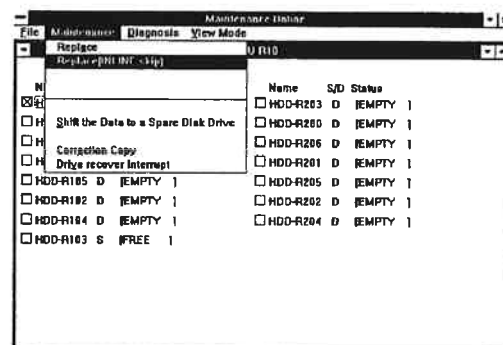
2. <Specify Replacement on HDU>

Make sure (other than preventive) that the status of HDD Canister[HDD-Rnnn] or [HDD-Lnnn] to be replaced from HDU Box[HDU-Rnn] or [HDU-Lnn] is:

* Warning threshold value -> [NORMAL]

* Block threshold value -> [FAILED]

After checking status, select Replacement [HDD-Rnnn] or [HDD-Lnnn] (CL) and select [Replace[INLINE skip]] from [Maintenance] (DR)



NOTICE

This processing is a special operation for detecting a cause of a SCSI bus error. Ask the technical support center about the appropriateness of the operation.

3. <Reading the subsystem configuration data and checking the P-DEV status>

"Reading the subsystem configuration data..." is displayed.

Online Maintenance

Reading the subsystem configuration data...

"Checking the physical device status..." is displayed.

NOTICE

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

Hardware Maintenance

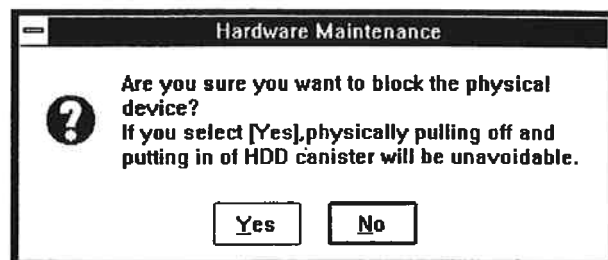
Checking the physical device status...

NOTICE

This processing is a special operation for detecting a cause of a SCSI bus error. Ask the technical support center about the appropriateness of the operation.

4. <P-DEV blocking>

Select [Yes] in response to "Are you sure you want to block the physical device? If you select [Yes], physically pulling off and putting in of HDD canister will be unavoidable." (CL).



5. <P-DEV blocking>

"The physical device is being blocked..." is displayed.



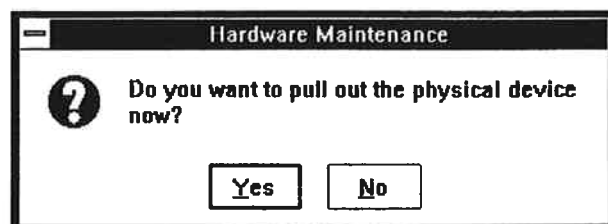
6. <End of P-DEV Blocking>

Select [OK] in response to "Blocking the physical device is completed" (CL).



7. <Confirm P-DEV removal>

Select [Yes] in response to "Do you want to pull out the physical device now?" (CL).

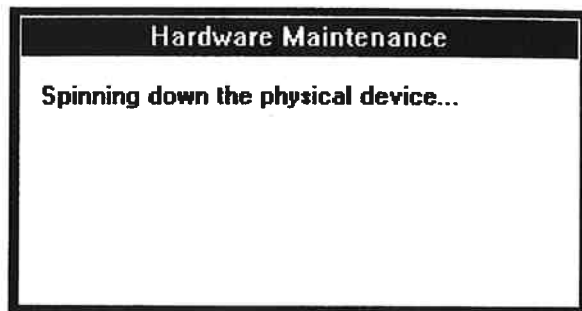


NOTICE

This processing is a special operation for detecting a cause of a SCSI bus error. Ask the technical support center about the appropriateness of the operation.

9. <Spin down progress>

"Spinning down the physical device..." is displayed
(shut down LED lit)



10. <Check shut down LED>

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 hardware work.

NOTICE

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

11. <Confirmation of replace>

Select [OK] (CL) in response to "Please replace the physical device. After replacement, please press OK." after replace the unit (Step 12).



12. <Replace HDD>

Replace HDD.
See HARDWARE A (REP03-10).