

## ***5. MICRO-FC SECTION***

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## 5. MICRO-FC

Two types of MICRO-FCs are provided with micro-program exchange and on-line patch. Micro-program exchange is explained in 5.1 to 5.4, and on-line patch in 5.5.

### 5.1 Overview

#### 5.1.1 Micro-program Types

The micro-programs listed below can be exchanged via the SVP. Therefore, the exchange of micro-programs requires operational knowledge of the SVP.

There are two total numbers of FDs. Confirm the number referring to the following:

For DKCMAIN versions earlier than 02-10: Total number is 14.

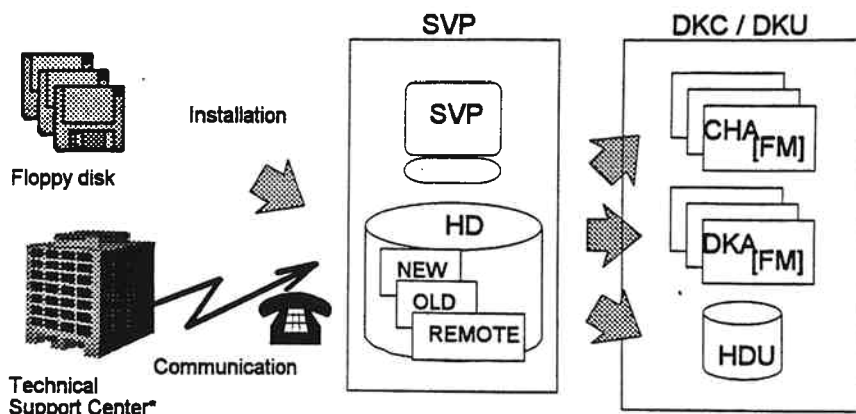
For DKCMAIN versions 02-10 and later: Total number is 19.

Micro-program	Written to
Setup installer	-
DKCMAIN	FM
SVP	Hard disk in the SVP
LCP/MCP/LCDG	FM
CUDG4	Hard disk in the SVP
DKU(306/308)	HCU
SSVP	Hard disk in the SVP
RAM BOOT	FM
CONFIG	Hard disk in the SVP

#### ALL SCSI configuration

Micro-program	Written to
Setup installer	-
DKCMAIN	FM
SVP	Hard disk in the SVP
CUDG4	Hard disk in the SVP
DKU(306/308)	HCU
SSVP	Hard disk in the SVP
RAM BOOT	FM
CONFIG	Hard disk in the SVP

### 5.1.2 Micro-program Exchange Flow



The SVP keeps two generations (new and old versions) of micro-programs.

\* Technical Support Center : A base of maintenance service and technical support

Micro-programs can be exchanged in four ways.

- (1) Downloading after storing the micro-programs from floppy disk to the hard disk
- (2) Downloading of the most versions on the hard disk in the SVP
- (3) Remote (downloading of the micro-programs transferred from the maintenance center)
- (4) Version Down (downloading of old versions on the hard disk)

### 5.1.3 Micro-program Exchange

Micro-programs can be exchanged off-line or on-line.

#### (1) Off-line

<If the SVP version is after 01-04>

Disable subsystem. → Micro-programs are rewritten. → Enable subsystem.

<If the SVP version is before 01-03>

All processors are blocked for maintenance. → Micro-programs are rewritten. → All processors are recovered. → The DKC is turned off then on again.

#### (2) On-line

The processor is blocked for maintenance. → Micro-programs are rewritten. → The processor is recovered.

↑  
This is performed for each processor.

NOTE: • The SVP checks the version of the micro-program to be substituted before rewriting it. When the SVP determines that the micro-program cannot be rewritten, it displays an error message and cancels the exchange of the micro-program.

• The SVP terminates the exchange of micro-programs when the error status is displayed (i.e. when a message "..... error ....." or "..... failed ....." is displayed) or when the [Cancel] button is selected.

If you want to retry the exchange, please start from the first step of the MICRO-FC procedure.

However, when the error status is displayed in downloading from SVP to DKC (FM) or DKU by 5.3.3

Transferring micro-program to the DKC or by 5.4.3 Transferring micro-program, you can retry by 5.3.4

Hard Disk Download or by 5.4.4 Hard Disk Download.

## 5.2 Micro-program substitution in the SVP

We remove replace procedure of PC from SVP section to Replace section, Because the procedure is held right after replacing PC.

### 5.3 Micro-program Exchange Procedure (Off-line)

If an error occurs during a micro-program exchange, retry the exchanging procedure from the beginning or execute the procedure explained in Chapter 5.7 "Trouble Recovery Procedure in Exchanging Micro-programs".

#### 5.3.1 Processing before exchange

- Check the subsystem status through the entire status display. (Check the versions of the all programs through the version display. Make sure that collection copy and other processing are not in progress.)
- Perform postprocessing for PIN data.
- Check that all processors are normal.
- Check that all CHL pass to the subsystem are off-line (to block all micro-programs).

<If the SVP version is after 01-04>

LCP, MCP, LCDG, DKCMAIN, RAMBOOT micro-programs can be exchanged on off-line.

Off-line Micro-Program Exchange time (approximate)

		(unit : minutes)	
	FD → HDD		Downloading
LCP	10	CHA	4
MCP			
LCDG		DKA	4
DKCMAIN			
RAM BOOT		Reboot	10
Total	10	Total	18

<If the SVP version is before 01-03>

Only DKCMAIN micro-program can be exchanged on off-line.

Off-line Micro-Program Exchange time (approximate)

		(unit : minutes)	
	FD → HDD		Downloading
DKCMAIN	6		50
Total	6		50

(Processors : 16)

NOTE: After you execute this operation, DKC will clear the condition that DKC reports SIM to the host.

Therefore, DKC will report the next SIM to the host when the host accesses 16K I/O, and after you will wait for an hour if P/S on is executed.

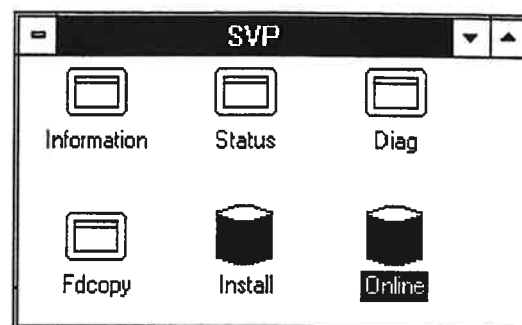
### 5.3.2 Storing the micro-programs to be substituted in the SVP

#### NOTICE

Performing this processing without placing the channel path offline may cause a system down. Accordingly, confirmation of the appropriateness of the procedure and input of a password on the succeeding password input screen is required.

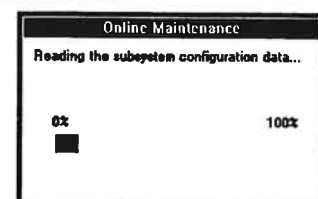
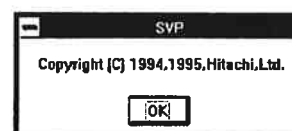
- (1) Select (DC) [Online] from the 'SVP' window.

The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

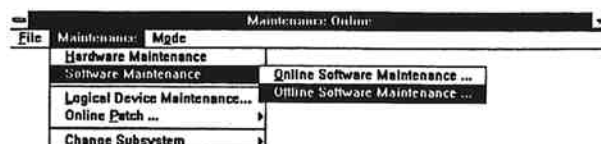
The message "Reading the subsystem configuration data..." will appear. After the configuration data is read, the 'Maintenance Online' window will be brought up.



- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].



- (4) In the 'Maintenance Online' window, select (DR) [Maintenance] , [Software Maintenance] , and [Offline Software Maintenance] in that order.



**NOTICE**

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

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

Password is needed for this operation.

Please call Technical Support Center to obtain password and authorization.

<If the SVP version is after 01-04>

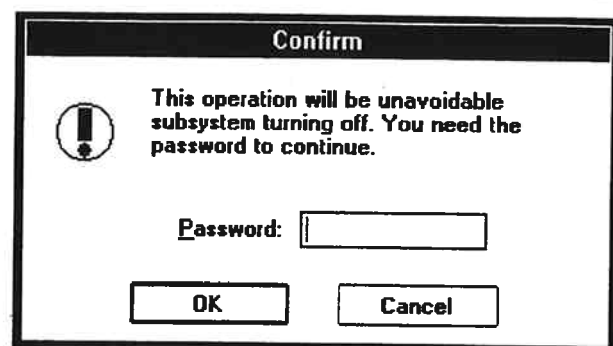
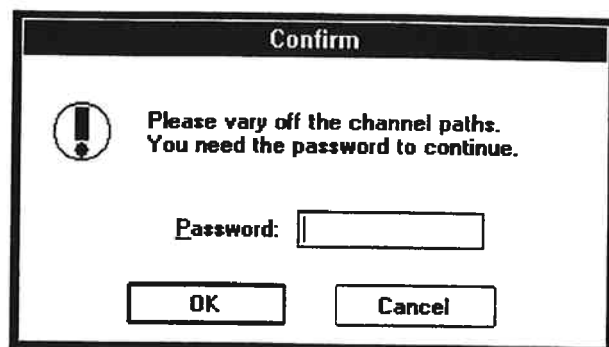
If [OK] is selected, go to (7).

If [Cancel] is selected, SVP will finish exchange the micro-programs.

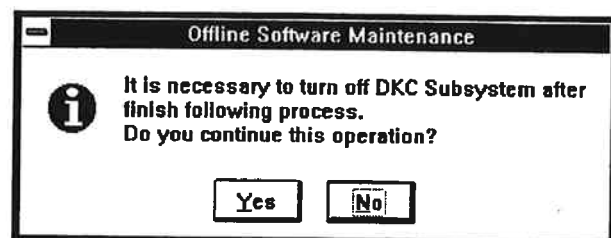
<If the SVP version is before 01-03>

If [OK] is selected, go to (6).

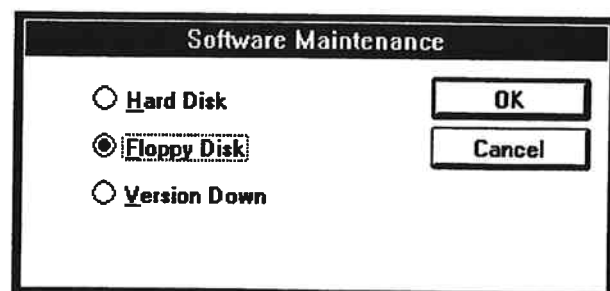
If [Cancel] is selected, SVP will finish exchange the micro-programs.



- (6) In response to message "It is necessary to turn off DKC Subsystem after finish following process. Do you continue this operation?" select [Yes] (CL).  
If you select [Yes] (CL) all processors of DKC subsystem will stop after this operation. You need to turn off and on DKC subsystem.



- (7) In the 'Software Maintenance' dialog box, select (CL) the source from which to store the micro-programs.  
Hard Disk: The latest versions on the SVP hard disk are downloaded. --- Go to 5.3.4 (1). (MICRO-FC03-81)  
Floppy Disk: After being stored on the hard disk from floppy disks, the micro-programs are downloaded. --- Select(CL) [OK] and Go to (8).  
Version Down: Old versions on the hard disk are downloaded. --- Go to 5.3.5 (1). (MICRO-FC03-83)



<<Error>>

When the target file is not found, processing is terminated with the error message "Old files erase failed, copy stop."

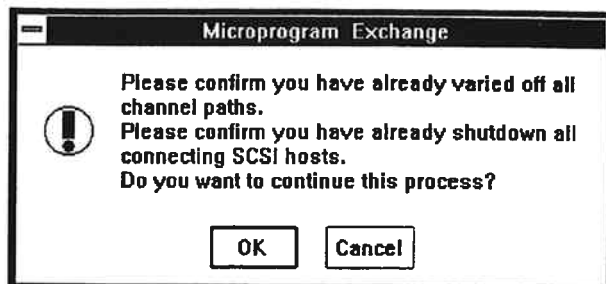
## (8) &lt;If the SVP version is after 01-04&gt;

After you confirm that you have already varied the all CHL paths to off-line, select (CL) [OK].



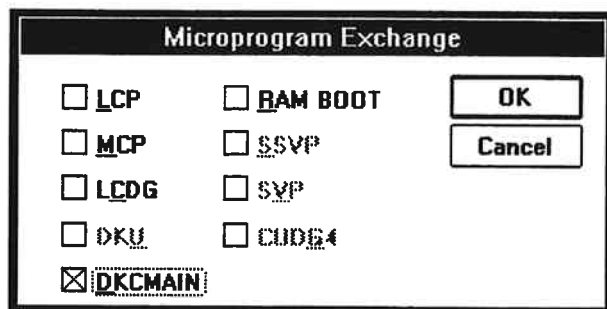
## &lt;When the CHA (SCSI) PCB and CHA coexist&gt;

Put all the CHL paths into the offline state, confirm that all the SCSI hosts are shut down, and then select (CL) [OK].



## &lt;When only the CHA (SCSI) PCB exists&gt;

Shut down all the SCSI hosts and select (CL) [OK].



## (9) In response to the message "Insert No.n FD in FDD", remove the inserted floppy disk and insert the appropriate floppy disk and select (CL) [OK].

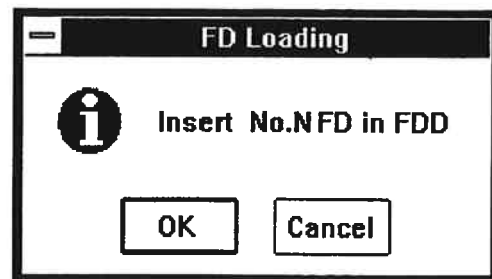
(n = 2,3, ..... ,N N: Number of floppy disks)

## &lt;&lt;Error&gt;&gt;

No floppy disk and uncorrect floppy disk in the floppy disk drive:  
The same message is displayed again, returning you to (9).

Internal error:

- "Old files erase failed, copy stop."
- "Memory error has occurred."
- "File I/O error has occurred."
- "Logical error has occurred."
- "The directory create error and copy stop."
- "The file size is Wrong and copy stop."



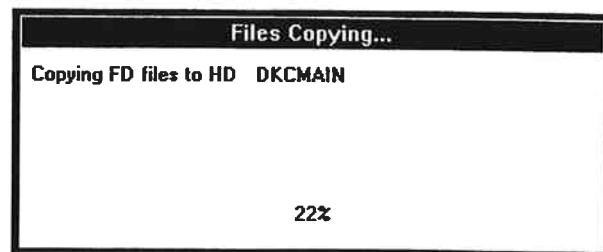
- (10) The message "Copying FD files to HD DKCMAIN" appears.

Execute the steps (9) to (10) once for each floppy disk.

<<Error>>

Internal error:

- "The file size is Wrong and copy stop."
- "The directory create error and copy stop."
- "Micro-program version disagreement and copy stop."
- "Logical error has occurred."
- "File I/O error has occurred."
- "Memory error has occurred."

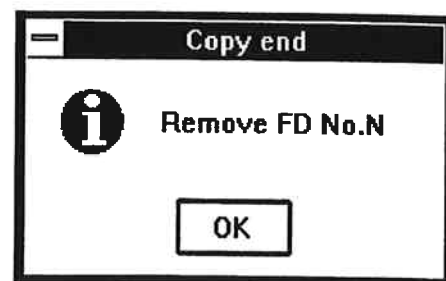


<<Note>>

When the error message "File I/O error has occurred." or "Memory error has occurred." is displayed, power SVP off and on again if the same message appears after reexecuting the micro-program exchange (see SVP01-50 in the SVP SECTION).

Then execute the same micro-program exchange again. If the same error occurs (the same error message is displayed), replace SVP hardware (see REP01-150 in the REPLACE SECTION).

- (11) Upon completion of reading from all floppy disks, the message "Remove No.N FD" appears. In response to this message, remove the floppy disk and select (CL) [OK].  
(N : Number of floppy disks)



After copy end, sum checker starts.  
While checking, the message appears.

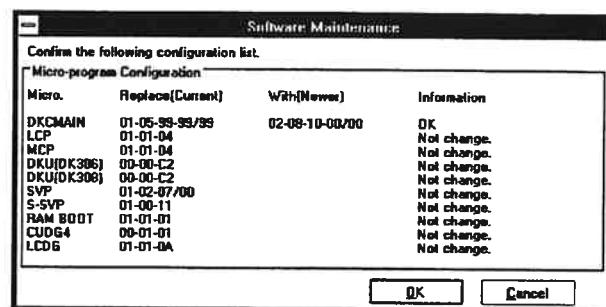


- (12) On the 'Software Maintenance' dialog box, the micro-program types, current versions, new versions, and message are displayed.

<Display with no error>

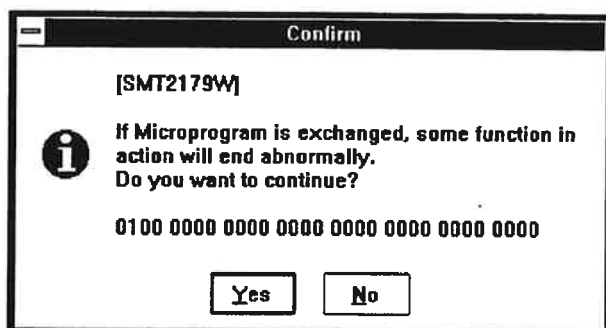
The message "Confirm the following configuration list." is displayed below the title bar. The micro-program can be replaced only when all rows in the information column show "OK".

To make processing progress, select (CL) [OK].  
To terminate micro-program replacement, select (CL) [Cancel].



<Display with Warning>

- If DKCMAIN microprogram does not support some functions using in DKCMAIN currently, "Warning" is displayed. To recognize this function, select (CL) [OK] to display function bit map of DKCMAIN. (DKCMAIN supports this function, but microprogram does not support this function.)



**NOTICE**

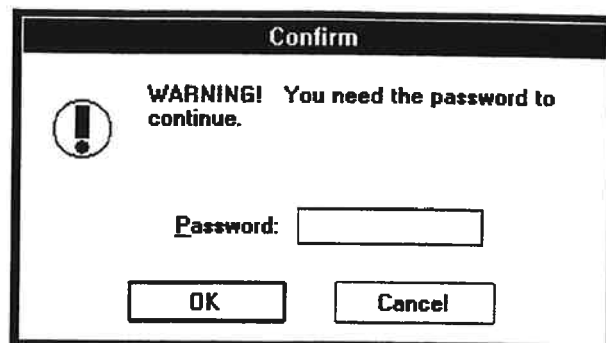
Refrain from selecting (CL) "OK" or "Cancel". Take a note of the display contents and ask the technical support center for a decision for selecting "OK" or "Cancel" according to the contents.

**NOTICE**

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

Select (CL) [Yes], and to make processing progress, input the password and select (CL) [OK].

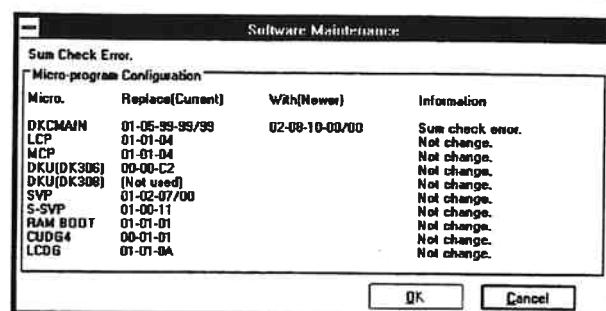
- If "Warning" is displayed and function bit map isn't displayed. To make processing progress, input the password and select (CL) [OK].  
Password is needed for this operation.



#### <Display with an error>

A sample display at occurrence of an error is shown on the right. An error message is displayed below the title bar. At the same time, error information is displayed in the information column.

Select (CL) [Cancel] to terminate micro-program replacement. (Note: The [OK] button is not displayed.)  
Before making an attempt to rerun, be sure to correct the cause of the error by referring to the entire status (STATUS SECTION), action code (ACC SECTION), and other information.



Below are messages and information that may be displayed in the Information column.

Version Check Message Table.

	Message :	Contents and Maintenance
1	Confirm the following configuration list.	Check the version (Normal or Warning). If Warning, it is necessary to be approved by TSC (Technical Support Center).
2	Version error.	Incorrect version. Confirm the micro-program version.
3	Can't read the configuration of the micro-program.	Error caused while the micro-program configuration is being read. Blockade processor exists, recover it.
4	Internal error. (On SVP Logic)	Inconsistent logic. (SVP logic) Retry exchange. If same message is displayed, power SVP off and on.
5	Internal error. (On SVP Memory)	Inconsistent logic. (SVP memory) Retry exchange. If same message is displayed, power SVP off and on.
6	Internal error. (On Temporary Files)	Inconsistent logic. (temporary file) Retry exchange. If same message is displayed, power SVP off and on.
7	Version error. (Previous maintenance needed)	Incorrect version. (partial replacement) Confirm the micro-program version.
8	Version error. (Incompatible MP exists)	Incorrect version. (partial replacement) Confirm the micro-program version.
9	Sum Check error.	Sum check code is incorrect. Micro-program data in FD isn't correct, exchange FD.
10	Revision error	Incorrect revision. Confirm the micro-program revision.
11	The micro-program is incompatible with the system.	Incorrect micro-program. Confirm the micro-program version and system. Contact TSC (Technical Support Center).
12	Combination error	Incorrect micro-program exchange process. Confirm the combination of micro-program version and exchange process.

	Information	Contents
1	OK	The micro-program is replaceable.
2	Version error [#xxxx]	MP has an incorrect micro-program version. [processor number]
3	FC Condition [#xxxx]	MP has an incorrect micro-program version with partial replacement. [processor number]
4	Internal error [#xxxx]	Inconsistent logic error has occurred. [internal error code]
5	Not change	The micro-program will not be replaced.
6	Read error	Error has occurred while reading the current configuration.
7	Sum Check error	Sum check code is incorrect.
8	Warning	It is necessary to approve TSC (Technical support center).
9	Revision error	MP has incorrect micro-program revision.
10	Package condition	The combination error of micro-program and package has occurred.
11	Facility condition [#xxxx]	MP has incorrect micro-program version with function of system. [Facility condition error code]
12	Combination error [#xxxx]	The combination error of more than two micro-program has occurred. [Combination error code]

	Internal error code	Contents
1	0001	Parameter error.
2	0002, 0003	Memory allocation error.
3	0005	File I/O error.

	Combination error code	Contents
1	8000	High Speed Adapter error
2	8001	Compressed LCDG error

	Facility condition error code	Contents
1	C000	High Speed Adapter error
2	C001	RAID 1/DK308 error
3	C003	HRC & HODM error
4	C004	SCSI Channel error
5	Reserve	
6	C006	Additional SM error
7	C007	EPW Performance error
8	C008	DK308-45 error
9	C009	Mixed RAID error
10	C00a	DK308-35 error
11	C00b	Emulation (3390-3A, 3380-KB/KA) error
12	C00c	Emulation (OPEN-9, 3390-3B) error
13	C00d	HMBR error
14	C00e	HRC-SCSI Channel error
15	C00f	SCSI-RAID 2MP error
16	C010	Parity Group (3D+1P) error

Function Bit Map Table			
Bit Pattern	Function	Contents	Action (*1)
0100 0000 0000 0000 0000 0000 0000 0000	XRC	XRC Support	Please delete all XRC pairs and retry exchanging again.
0010 0000 0000 0000 0000 0000 0000 0000	SCSI-RAID 2MP	CHS 2MP Support	Firstly please de-install 2MP CHS PCB and if necessary install 1MP CHS PCB instead of 2MP CHS PCB. Then retry microcode exchanging again.
0001 0000 0000 0000 0000 0000 0000 0000	HRC/HODM Phase3	DEV TYPE Extension PPRC Support by HOST:No Converter Connection ERS Multiple Control Performance Improvement	Please delete all HRC/HODM pairs and retry exchanging again.
0000 1000 0000 0000 0000 0000 0000 0000	HRC/HODM Phase4	Semi_Sync. mode Support 3390-9 Emuration Type support by HRC Small to Large support by HRC	Please delete the following HRC pairs and retry exchanging again.
0000 0100 0000 0000 0000 0000 0000 0000	CONCURRENT COPY	3390-9 Emuration Type support	Please delete all C.C Sessions for 3390-9 volume type and retry exchanging again.
0000 0010 0000 0000 0000 0000 0000 0000	HODM (DKC80-1/RAMAC)	DKC80-1/RAMAC Subsystem support by HODM	Please delete the following HODM pairs and retry exchanging again.
0000 0000 1000 0000 0000 0000 0000 0000	HODM (AMDAHL)	AMDAHL Subsystem support by HODM	Please delete the following HODM pairs and retry exchanging again.

(\*1) If SVP displayed an error message as 2179 during microcode exchange, please check which function is detected by this message, and do the corresponding action. After , please retry exchanging again.

(13) The message "Making a backup of micro-program files. Please Wait..." appears.

**Making a backup of  
microprogram files. Please  
wait...**

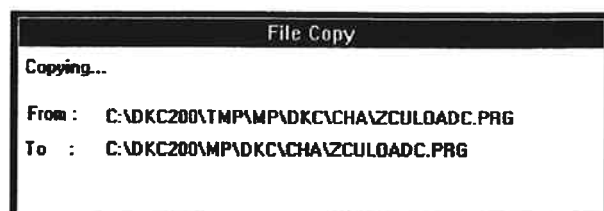
(14) File copy in SVP

<If the SVP version is after 01-04>

Go to 5.3.3 (6).

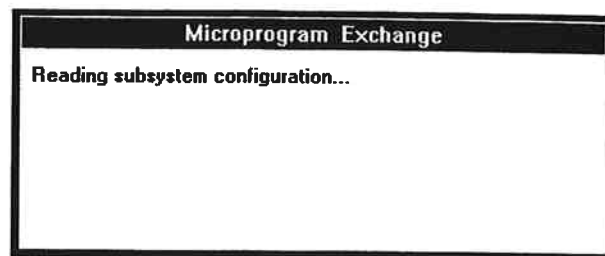
<If the SVP version is before 01-03>

Go to 5.3.3 (1).



### 5.3.3 Transferring micro-programs to the DKC

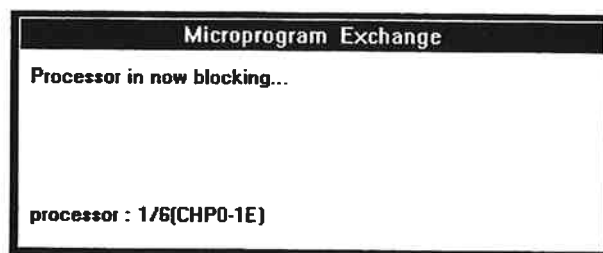
- (1) The message "Reading subsystem configuration..." appears.  
Read the current DKC configuration.



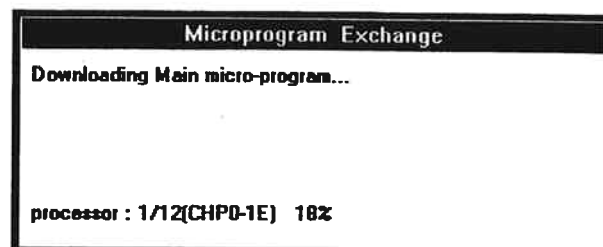
<<Error>>

- "On exchanging a micro-program, An error has occurred. XX processing is stopped"
- "The processor of an obstacle blockade exits. XX processing is stopped"
- "The processor that failed in an exchange of micro-program exists"
- "An error had occurred in XX blockade processing"
- "File size check error"
- "Invalid file contents"

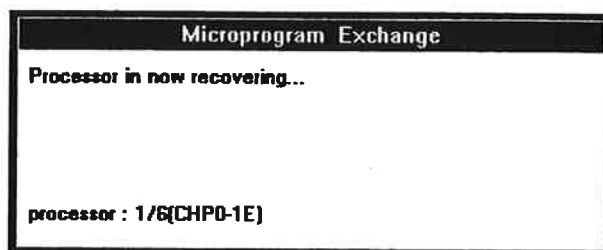
- (2) The message "Processor in now blocking ..." appears.  
All processors are blocked for maintenance.



- (3) The message "Downloading \*\*\* micro-program..."  
 (\*\*\*: MAIN, ...) appears.  
 The message is displayed for DKCMAIN micro-program to be downloaded for each target processor.



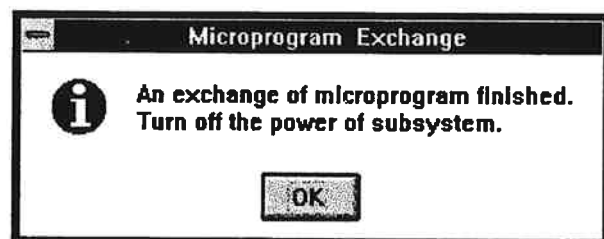
- (4) The message "Processor in now recovering..." appears.  
 All processors are recovered.



- (5) In response to the message "An exchange of microprogram finished. Turn off the power of subsystem.", select (CL) [OK].

Turn off subsystem, and then turn on subsystem.

Go to 5.3.6 (MICRO-FC03-90).



- (6) <If the MAIN version is after 01-06>

After downloading the micro-programs, SVP makes the sub-system to be enable and displays the following message "An exchange of a microprogram finished."  
 Go to 5.3.6 (MICRO-FC03-90).



<If the MAIN version is before 01-05>

After downloading the micro-programs, turn off subsystem.

And then turn on subsystem.

READY lamp is lit, select (CL) [OK].

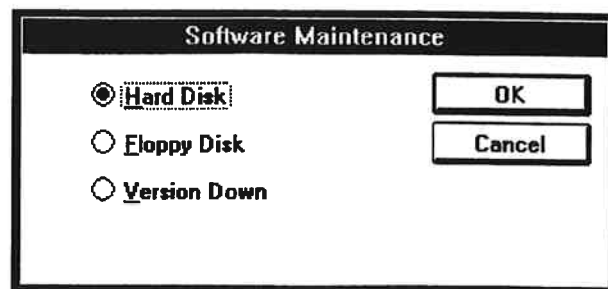


### 5.3.4 Hard Disk Download

The latest version of the DKCMAIN micro-program on the SVP hard disk is downloaded to the DKC.

- (1-1) Select (CL) [Hard Disk] in the 'Software Maintenance' dialog box.

And select [OK].



- (1-2) <If the SVP version is after 01-04>

After you confirm that you have already varied the all CHL paths to off-line, select "OK".

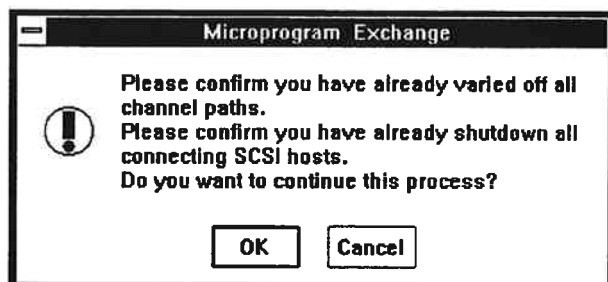
<If the SVP version is after 01-03-12>

Go to 5.3.2 (12) (MICRO-FC03-50).



<When the CHA (SCSI) PCB and CHA coexist>

Put all the CHL paths into the offline state, confirm that all the SCSI hosts are shut down, and then select (CL) [OK].

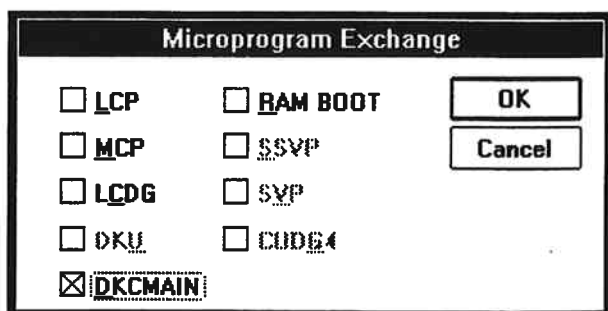


<When only the CHA (SCSI) PCB exists>

Shut down all the SCSI hosts and select (CL) [OK].



- (1-3) Check the microprogram to be exchanged and select (CL) [OK].



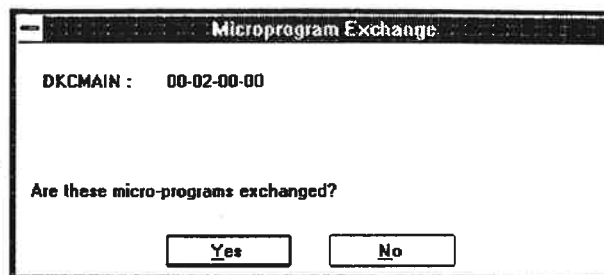
Check the sort and version of micro-programs to be substituted.

- DKCMAIN      Sort of micro-programs  
  (FD#2-5)      (only DKCMAIN)
- 00-02-00-00      Version of DKCMAIN

Note: When version and revision is unmatched between the micro-program in the DKC and that on the SVP hard disk, the micro-program cannot be exchanged on on-line.

In this case, the message "Is the device off-line?" appears, and the exchange is canceled.

When a processor is blocked due to a failure, the message "Processing cannot be continued because of a processor blocked due to a failure" appears, and exchange is canceled.



If an error occurs in downloading micro-programs to DKC (the error messages are displayed as shown below), remove the cause of an error to execute the exchange again. Then start from the first step of MICRO-FC procedure. At this time, you can select [Hard Disk] at 5.3.4 (MICRO-FC03-81) or [Floppy Disk] at 5.3.2 (5) (MICRO-FC-03-30).

- 
- (2) <If the SVP version is after 01-04>  
 Go to 5.3.3 (6) (MICRO-FC03-80).  
 <If the SVP version is before 01-03>  
 Go to 5.3.3 (1) (MICRO-FC03-70).

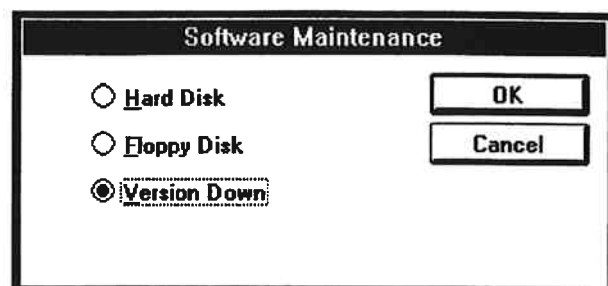
## 5.3.5 Version Down

**NOTICE**

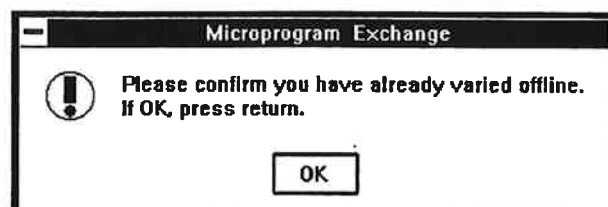
Please ask your TSC if you can operate this.

If you want to restore the DKCMAIN micro-program to the previous version of the micro-program after the exchange (by Floppy Disk or Remote function), execute the Version Down function.

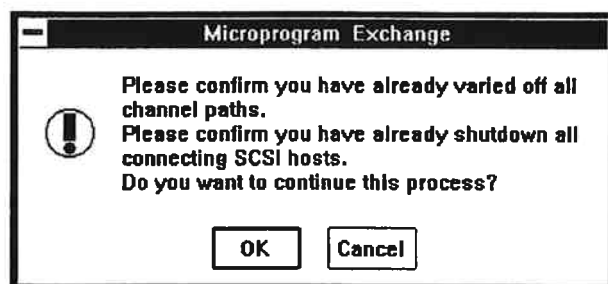
- (1-1) Select (CL) [Version Down] in the 'Software Maintenance' dialog box.  
And select (CL) [OK].



- (1-2) <If the SVP version is after 01-04>  
After you confirm that you have already varied the all CHL paths to off-line, select "OK".  
<If the SVP version is after 01-03-12>  
Go to 5.3.2 (12) (MICRO-FC03-50).



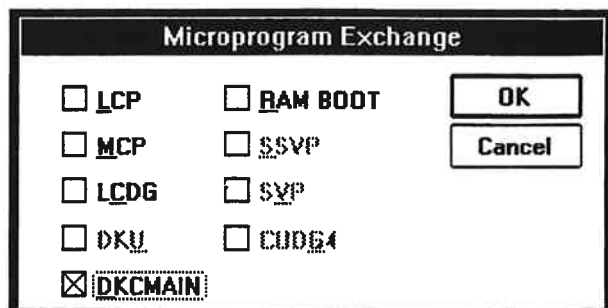
- <When the CHA (SCSI) PCB and CHA coexist>  
Put all the CHL paths into the offline state, confirm that all the SCSI hosts are shut down, and then select (CL) [OK].



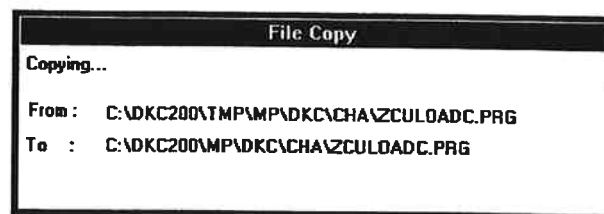
- <When only the CHA (SCSI) PCB exists>  
Shut down all the SCSI hosts and select (CL) [OK].



- (1-3) Check the microprogram to be exchanged and select (CL) [OK].



- (2) Copy source and copy destination are displayed.



- (3) <If the SVP version is after 01-04>

Go to 5.3.3 (6) (MICRO-FC03-80).

<If the SVP version is before 01-03>

Go to 5.3.3 (1) (MICRO-FC03-70).

Note : The Version Down function can restore only the DKCMAIN micro-program that has been exchanged by Floppy Disk or Remote function of the MICRO-FC.

When the MICRO-FC (Floppy Disk or Remote function) has not been executed, or after the Version Down function was executed, the Version Down function cannot be executed until the next MICRO-FC is completed.

### 5.3.6 Checking the functions after exchange

Check that the version of the recently installed micro-program is the same as that of the replaced micro-program by using version display in the STATUS function.

(See STATUS SECTION.)

## 5.4 Micro-program Exchange Procedure (On-line)

If an error occurs during a micro-program exchange, retry the exchanging procedure from the beginning or execute the procedure explained in Chapter 5.7 "Trouble Recovery Procedure in Exchanging Micro-programs".

Note : In case an error occurs during an exchange of the DKU micro-programs, make a note on the number of the DKU in which the error occurred when the error is recovered.

It takes enough time (maximum:  $80 \times n$  seconds (n: the number of DKUs)) to do DKU micro-program exchange 48%. If time out error has occurred in this procedure, execute micro-program exchange again after taking dump and FD Copy.

### 5.4.1 Processing before exchange

- Check the subsystem status through the entire status display. (Check the versions of all the programs through the version display. Make sure that, (collection copy) and other processing are not in progress.)
- Perform postprocessing for PIN data.
- Check that all processors are normal.

On-line Micro-Program Exchange time (approximate)

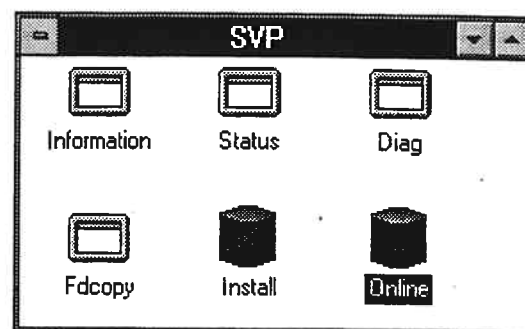
	(unit : minutes)	
	FD → HDD	Downloading
LCP	15	1
MCP		1
LCDG		1
DKU		60
DKCMAIN		80
RAM BOOT		35
SSVP		15
SVP		3
CUDG4		0
Total	15	196

(Processors : 16, Drive capacity : 180GB)

## 5.4.2 Storing the micro-programs to be substituted in the SVP

- (1) Select (DC) [Online] in the 'SVP' window.

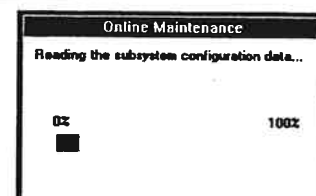
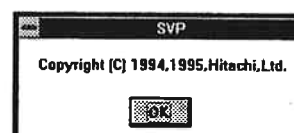
The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

The message "Reading the subsystem configuration data..." will appear.

After the configuration data is read, the 'Maintenance Online' window will be brought up.

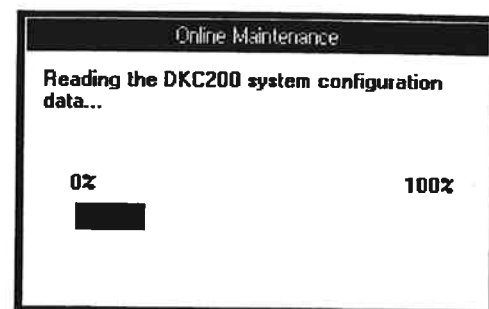
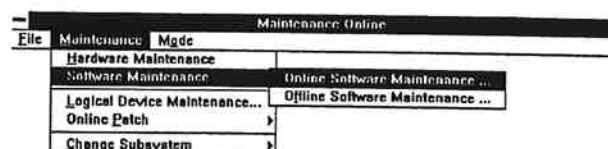


- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].



- (4) In the 'Maintenance Online' window, select (DR) [Maintenance], [Software Maintenance], and [Online Software Maintenance] in that order.

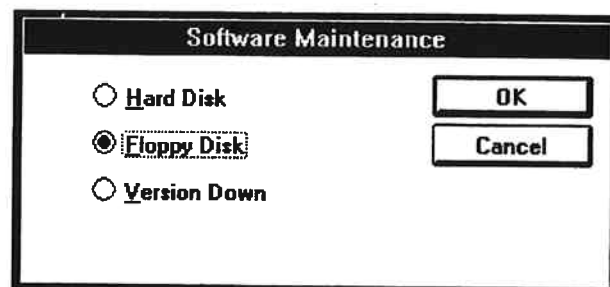
The 'Software Maintenance' dialog box will be displayed.



- (5) In the 'Software Maintenance' dialog box, select (CL) the source from which to store the micro-programs.

**Hard Disk:** The latest versions on the SVP hard disk are downloaded. --- Go to 5.4.4 (1). (MICRO-FC04-85)

**Floppy Disk:** After being stored on the hard disk from floppy disks, the micro-programs are downloaded. --- Select (CL) [OK] and Go to (6).



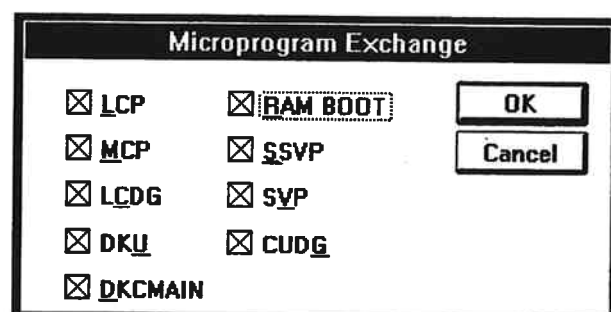
**Version Down:** Old versions on the hard disk are downloaded. --- Go to 5.4.5 (1). (MICRO-FC04-86)

<<Error>>

When the target file is not found, processing is terminated with the error message "Old files erase failed, copy stop."

- (6) The Micro-program exchange dialog box appears.  
Select (CL) one or more items from the list of the type of micro-programs, and select (CL) [OK].

☒ : Micro-programs to be substituted.



**Note :** SVP changed the message in FM download process above SVP 01-06-XX version. If an operator selected "LCP", "MCP" or "LCDG", SVP displayed a message as "LCP/LCDG" or "MCP/LCDG" during the download.

<When the CHA (SCSI) PCB exists and DKCMAIN or RAMBOOT is selected>

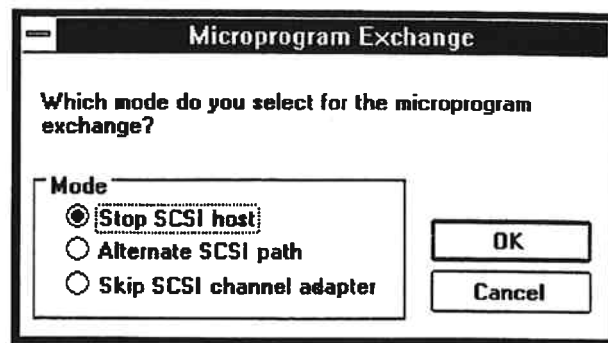
- (7) Select (CL) the microprogram exchange mode for the CHA (SCSI) PCB.

Stop SCSI host:

Shuts down all the SCSI hosts and execute the microprogram FC. Go to step (7-1).

#### NOTICE

You should request your customer to shut down the SCSI host.



Alternate SCSI path:

Executes the microprogram FC after switching to the alternate path. Go to step (7-2).

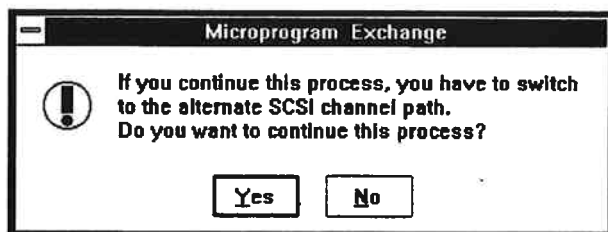
Skip SCSI channel adapter:

Skips the microprogram FC for the CHA (SCSI) PCB and execute the microprogram FC for the other PCBs only. Go to step (7-3).

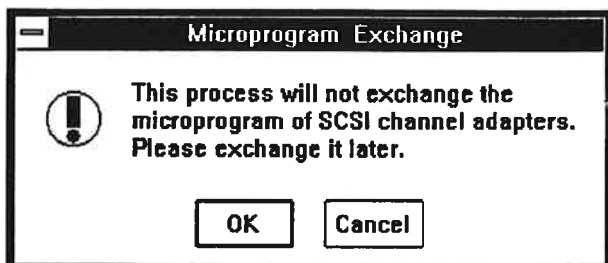
- (7-1) Shut down all the SCSI hosts and select (CL) [OK].  
Go to step (8).  
When [Cancel] is selected (CL), the processing step is returned to (7).



- (7-2) It is necessary to switch the SCSI path to the alternate path before executing the microprogram FC for the CHA (SCSI) PCB. To continue the processing, select (CL) [Yes]. Go to step (8).  
When [No] is selected (CL), the processing step is returned to (7).



- (7-3) The microprogram FC for the CHA (SCSI) PCB will not be executed. Execute it in the future in the Stop SCSI host mode or the Alternate SCSI path mode.  
When [OK] is selected (CL), the dialog below is outputted.  
When [Cancel] is selected (CL), the processing step is returned to (7).



- (8) In response to the message "Insert No.n FD in FDD", remove the inserted floppy disk and insert the appropriate floppy disk and select (CL) [OK].

(n = 2,3, ..... ,N, N : Number of floppy disks)

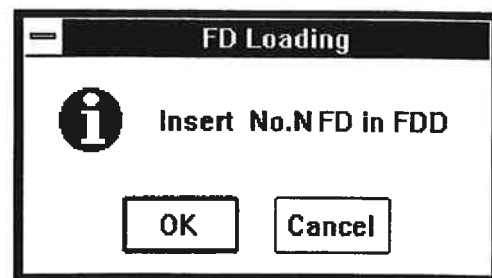
<<Error>>

No floppy disk and uncorrect floppy disk in the floppy disk drive:

The same message is displayed again, returning you to (8).

Internal error:

- "Old files erase failed, copy stop."
- "Memory error has occurred."
- "File I/O error has occurred."
- "Logical error has occurred."
- "The directory create error and copy stop."
- "The file size is Wrong and copy stop."



- (9) The message "Copying FD files to HD"

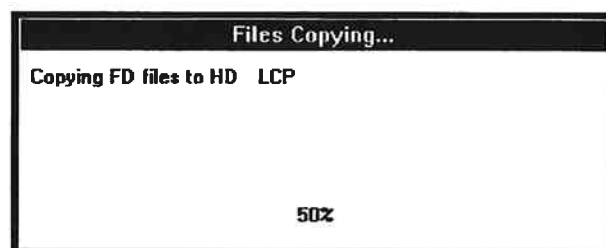
appears.

Execute the steps (8) to (9) once for each floppy disk.

<<Error>>

Internal error:

- "The file size is Wrong and copy stop."
- "The directory create error and copy stop."
- "Micro-program version disagreement and copy stop."
- "Logical error has occurred."
- "File I/O error has occurred."
- "Memory error has occurred."



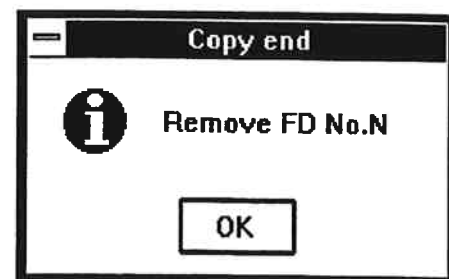
<<Note>>

When the error message "File I/O error has occurred." or "Memory error has occurred." is displayed, power SVP off and on again if the same message appears after reexecuting the micro-program exchange (see SVP01-50 in the SVP SECTION).

Then execute the same micro-program exchange again. If the same error occurs (the same error message is displayed), replace SVP hardware (see REP01-150 in the REPLACE SECTION.).

- (10) Upon completion of reading from all floppy disks, the message "Remove No.N FD" appears. In response to this message, remove the floppy disk and select (CL) [OK].

N : Number of floppy disks.



After copy end, sum checker starts.  
While checking, the message appears.



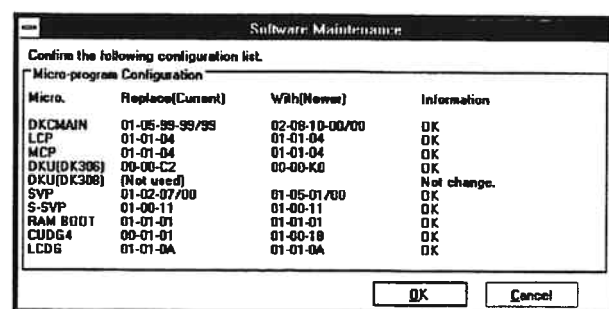
- (11) On the 'Software Maintenance' dialog box, the micro-program types, current versions, new versions, and message are displayed.

<Display with no error>

The message "Confirm the following configuration list." is displayed below the title bar. The micro-program can be replaced only when all rows in the information column show "OK" or "Warning".

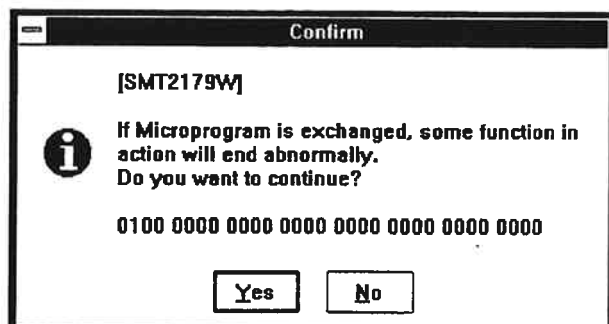
To continue processing, select (CL) [OK].

To terminate micro-program replacement, select (CL) [Cancel].



<Display with Warning>

- If DKCMAIN microprogram does not support some functions using in DKCMAIN currently, "Warning" is displayed. To recognize this function, select (CL) [OK] to display function bit map of DKCMAIN. (DKCMAIN supports this function, but microprogram does not support this function.)



#### NOTICE

Refrain from selecting (CL) "OK" or "Cancel". Take a note of the display contents and ask the technical support center for a decision for selecting "OK" or "Cancel" according to the contents.

#### NOTICE

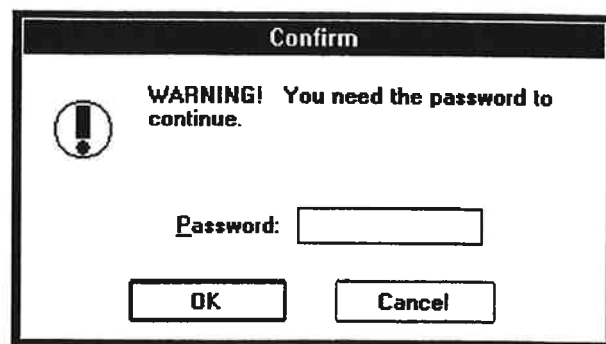
Ask the technical support center about the appropriateness of the operation, and input a password after getting an approval of executing the operation.

Select (CL) [Yes], and to make processing progress, input the password and select (CL) [OK].

- If "Warning" is displayed and function bit map isn't displayed.

To make processing progress, input the password and select (CL) [OK].

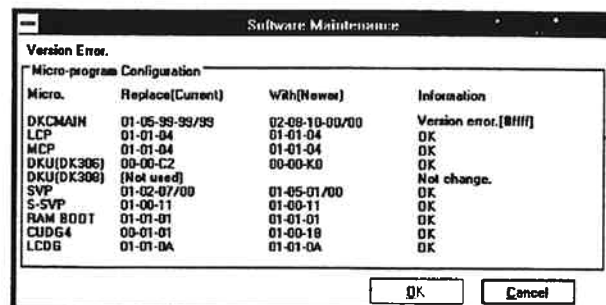
Password is needed for this operation.



#### <Display with an error>

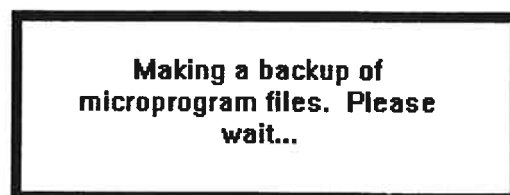
A sample error display is shown at the right. An error message is displayed below the title bar. At the same time, error information is displayed in the information column.

Select (CL) [Cancel] to terminate the micro-program replacement. (Note: The [OK] button is not displayed.) Before attempting to rerun, be sure to correct the cause of the error. Refer to the entire status (STATUS SECTION), action code (ACC SECTION), and other information.



See Version Check Message Table (MICRO-FC03-60).

- (12) The message "Making a backup of micro-program files. Please Wait..." appears.



- (13) File copy in SVP

Go to 5.4.3.1 (1) (MICRO-FC04-70) or  
5.4.3.2 (1) (MICRO-FC04-82) or  
5.4.3.2 (5) (MICRO-FC04-83).



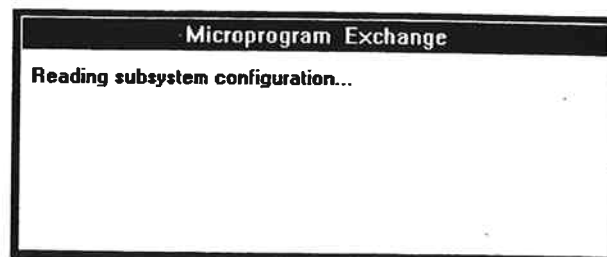
### 5.4.3 Transferring micro-programs

#### 5.4.3.1 Transferring micro-programs to the DKC/DKU

- (1) The message "Reading subsystem configuration..." appears.

Read the current DKC configuration.

**Note:** When a match is not found in the version and revision between the micro-program in the DKC and that on the SVP hard disk, the micro-program cannot be exchanged on on-line. In this case, the message "Is the device off-line?" appears, and the exchange is canceled. When a processor is blocked due to a failure, the message "Processing cannot be continued because of a processor blocked due to a failure" appears, and the exchange is canceled.



If an error occurs in downloading micro-programs (the error messages are displayed as shown below), resolve the cause of an error to execute the exchange again. Then start from the beginning of the MICRO-FC procedure. At this time, you can select [Hard Disk] at 5.4.4 (MICRO-FC04-85) or [Floppy Disk] at 5.4.2 (5) (MICRO-FC04-30).

### <<Error>>

- "On exchanging a micro-program. An error has occurred. XX processing is stopped"
- "The processor of an obstacle blockade exits. XX processing is stopped"
- "The processor that failed in an exchange of micro-program exits"
- "An error had occurred in XX blockade processing"
- "File size check error"
- "Invalid file contents"
- "The SCSI path of blockade state exists"
- "HDD-xx is a blockade state"

### <MCP/LCP Micro code Exchange>

If MCP/LCP Micro code Exchange, the following message appears.

- (a) The message displays the execution status of the online patch in the installed MCP or LCP.

#### <Explanation of status>

Not selected	Not selected as the target.
Waiting for Execution	Execution is awaited.
Executing...	Execution is in progress.
XXXX Blockade Error	Processor XXXX is blocked.

Processor	Status
MCP-1A	Not Selected
MCP-1B	Not Selected
MCP-1C	Not Selected
MCP-1D	Not Selected
LCP-1E	Normal End
LCP-1F	Normal End
MCP-2A	Not Selected
MCP-2B	Not Selected
MCP-2C	Not Selected
MCP-2D	Not Selected
LCP-2E	Executing...
LCP-2F	Executing...

- (b) When execution is completed for all targets, you will go to step (2). If some errors occur, you can now select the [OK] button.  
Select (CL) [OK].  
You will return to 5.4.2 (3).

Processor	Status
MCP-1A	Not Selected
MCP-1B	Not Selected
MCP-1C	Not Selected
MCP-1D	Not Selected
LCP-1E	Normal End
LCP-1F	Normal End
MCP-2A	Not Selected
MCP-2B	Not Selected
MCP-2C	Not Selected
MCP-2D	Not Selected
LCP-2E	Normal End
LCP-2F	Normal End

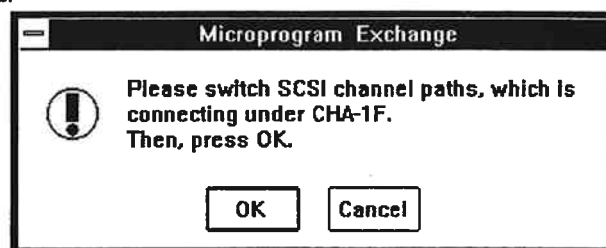
- (2) The message "Processor in now blocking ..."  
appears (only the DKC and RAM BOOT.)  
The processor is blocked for maintenance.



<In the Alternate SCSI path mode>

- (2-1) A message "Please switch SCSI channel..." is outputted.

Switch the SCSI path connected to the designated PCB  
to the alternate path and select (CL) [OK].  
When [Cancel] is selected (CL), the message shown  
below is outputted and the microprogram FC is  
aborted.

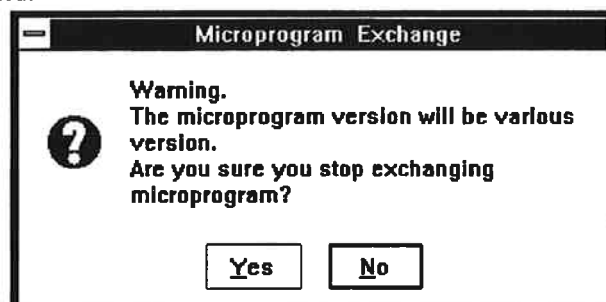


- (2-2) A message "Warning. The microprogram..." is outputted.

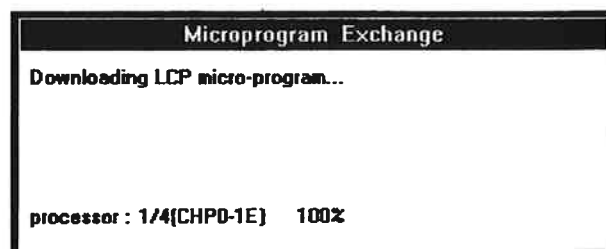
When the microprogram FC is aborted the version of  
the microprogram may become various.

[Yes]: The microprogram FC is aborted.

[No]: Processing step is returned to (2-1).

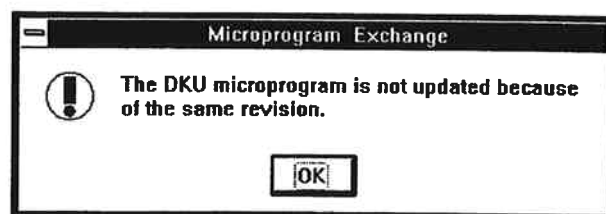


- (3) The message "Downloading \*\*\* micro-program..."  
(\*\*\*: MAIN, LCP, ...) appears.

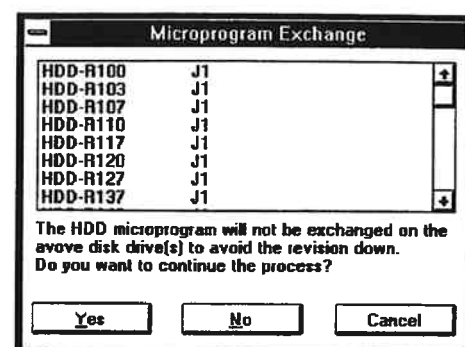


## &lt;Replacement of the DKU micro-program&gt;

- (a) When the SVP hard disk and the HDU have DKU micro-programs of the same revision, the replacement of the DKU micro-program ends with the following message on the screen:  
 "The DKU microprogram is not updated because of the same revision."

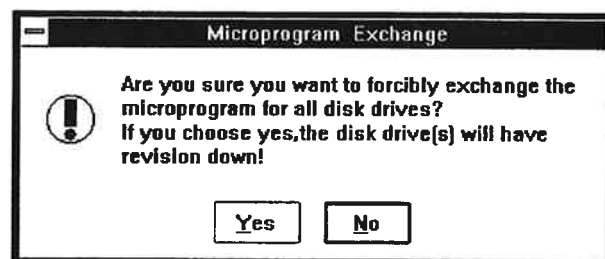


- (b) When the revision of the DKU micro-program in the HDU is older than that in the SVP hard disk, the HDD location number and the revision are displayed in the Revision Down HDU list. When you select [Yes] (CL), the DKU micro-program in the revised HDU only is updated.



When you select [No] (CL), the message shown on the right is displayed.

When you select [Yes] (CL) in response to the message, DKU micro-programs of the HDUs having micro-programs of different versions are updated.



- (c) When transferring micro-program to PDEV is time out, the following message is displayed on the screen:  
 "Time out error has occurred in transferring micro-program. Please execute micro-program after taking dump and FD copy." Select (CL) [OK] and execute micro-program exchange again after taking dump and FD copy.

- (4) The message "Processor in now recovering..." appears.  
 The processor is recovered.  
 Execute steps (2) to (4) once for each processor and micro-program.



- (5) In response to the message "An exchange of a micro-program finished.", select (CL) [OK].

Go to 5.4.6. (MICRO-FC04-90)



### 5.4.3.2 Transferring micro-programs to SVP/SSVP

- (1) Start of the exchange (SSVP).

The message "Changing SSVP microprogram. Wait..." is displayed.

**Changing SSVP microprogram.  
Wait...**

<<Error>>

Internal error :

- "Read/Write error has occurred !"
- "Information file doesn't exist or open error has occurred!"
- "SSVP RESET switch on."
- "Communication Initialize error!"
- "Cannot change SSVP micro-program while following process is in action. SSVP micro-program download. SSVP memory dump. SVP-SSVP communication error."
- "Information file doesn't exist or open error has occurred!"

- (2) The message "SSVP microprogram download." is displayed.

**SSVP microprogram download.  
[1/16]**

## (3) Start of the exchange (SVP).

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

<<Error>>

Internal error :

- "Information file doesn't exist or open error has occurred!"
- "SVP-SSVP communication blockade error has occurred."

**Blocking SVP-SSVP  
communication. Wait...**

---

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

<<Error>>

Internal error :

- "DKC-SVP communication blockade error has occurred."
- "DKC-SVP communication restore error has occurred. Confirm the cables are connected correctly."

**Blocking DKC-SVP  
communication. Wait...**

---

(5) The message "Changing SVP microprogram. Wait..." is displayed.

<<Error>>

Internal error :

- "Read/Write error has occurred !"
- "Information file doesn't exist or open error has occurred!"
- "Can't find a file (BKTASK.DAT)!"

**Changing SVP microprogram.  
Wait...**

(6) End of the exchange (SVP).

Select (CL) [OK].

Terminate some application programs, so SVP is rebooted automatically.

Go to 5.4.6. (MICRO-FC04-90)

<<Error>>

- "The change of SVP microprogram has failed."

<<Action>>

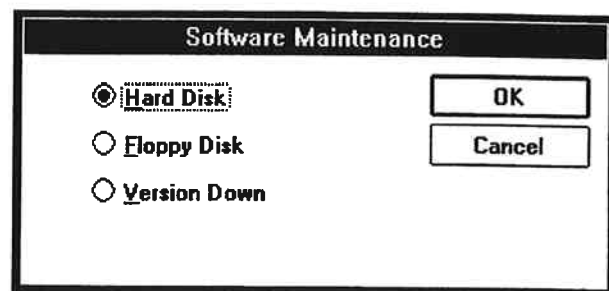
- Stop SVP and Power off PC.
- Power on PC again.



### 5.4.4 Hard Disk Download

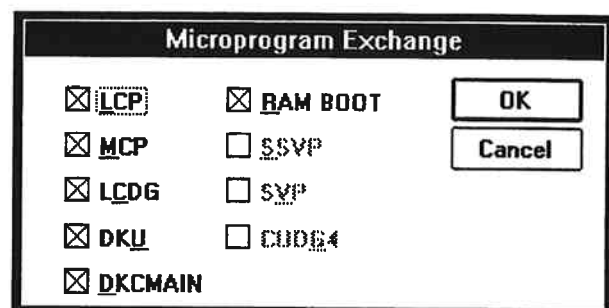
The latest version of micro-programs on the SVP hard disk are downloaded to DKC.

- (1) Select (CL) [Hard Disk] in the 'Software Maintenance' dialog box.  
And select [OK].



- (2) Select (CL) one or more items from the list of the type of micro-programs.

☒ : Micro-programs to be substituted.



<When the CHA (SCSI) PCB exists and DKCMAIN or RAMBOOT is selected>

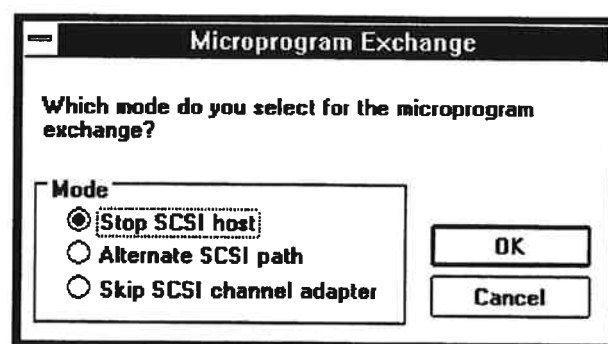
- (3) Select (CL) the microprogram exchange mode for the CHA (SCSI) PCB.

Stop SCSI host:

Shuts down all the SCSI hosts and execute the microprogram FC. Go to step (3-1).

#### NOTICE

You should request your customer to shutdown the SCSI host.



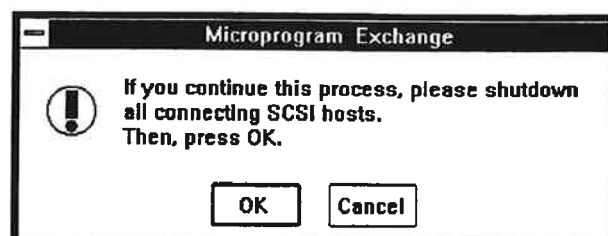
Alternate SCSI path:

Executes the microprogram FC after switching to the alternate path. Go to step (3-2).

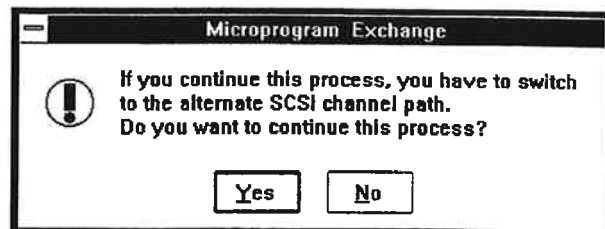
Skip SCSI channel adapter:

Skips the microprogram FC for the CHA (SCSI) PCB and execute the microprogram FC for the other PCBs only. Go to step (3-3).

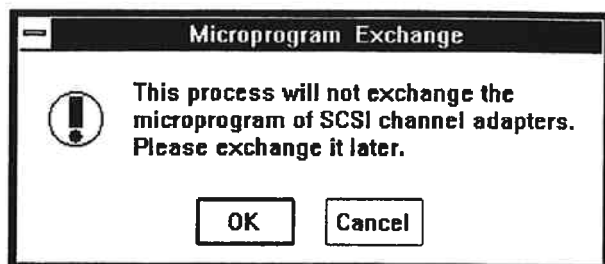
- (3-1) Shut down all the SCSI hosts and select (CL) [OK].  
Go to step (4).  
When [Cancel] is selected (CL), the processing step is returned to (3).



- (3-2) It is necessary to switch the SCSI path to the alternate path before executing the microprogram FC for the CHA (SCSI) PCB. To continue the processing, select (CL) [Yes]. Go to step (4).  
When [No] is selected (CL), the processing step is returned to (3).



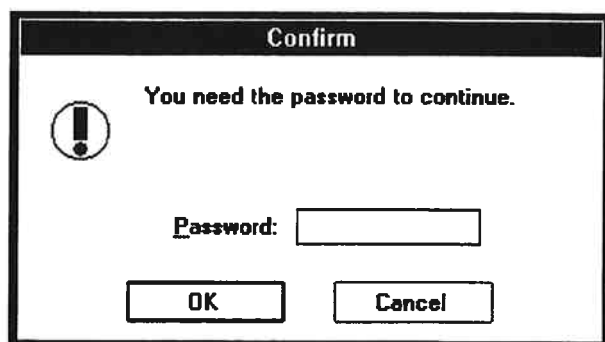
- (3-3) The microprogram FC for the CHA (SCSI) PCB will not be executed. Execute it in the future in the Stop SCSI host mode or the Alternate SCSI path mode.  
When [OK] is selected (CL), the dialog below is outputted.  
When [Cancel] is selected (CL), the processing step is returned to (3).



#### NOTICE

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

Enter the password and select (CL) [OK].  
Go to step (4).



- (4) <If the SVP version is after 01-03-12>  
Go to 5.4.2 (11) (MICRO-FC04-50).

- (5) Execute from 5.4.3.1 (1).  
Go to 5.4.3.1 (1) (MICRO-FC04-70).

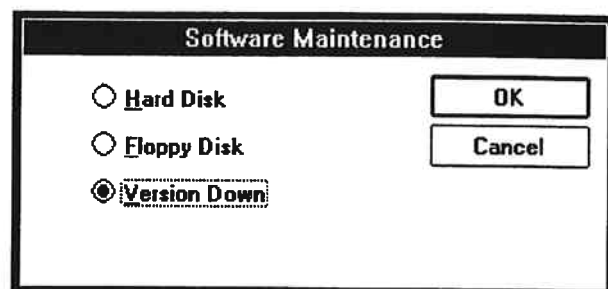
## 5.4.5 Version Down

**NOTICE**

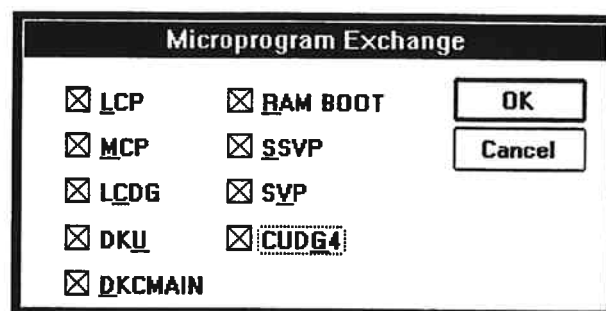
Please ask your TSC if you can operate this.

If you want to restore micro-programs to the previous versions of the micro-programs after the exchange (by Floppy Disk or Remote function), execute the Version Down function.

- (1) Select (CL) [Version Down] in the 'Software Maintenance' dialog box.  
And select (CL) [OK].



- (2) Micro-programs to be restored are displayed in the 'Micro-program Exchange' dialog box.



<When the CHA (SCSI) PCB exists and DKCMAIN or RAMBOOT is selected>

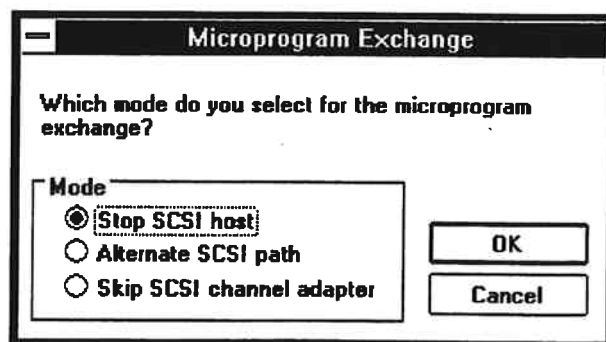
- (3) Select (CL) the microprogram exchange mode for the CHA (SCSI) PCB.

Stop SCSI host:

Shut down all the SCSI hosts and execute the microprogram FC. Go to step (3-1).

**NOTICE**

You should request your customer to shut down the SCSI host.



Alternate SCSI path:

Executes the microprogram FC after switching to the alternate path. Go to step (3-2).

Skip SCSI channel adapter:

Skips the microprogram FC for the CHA (SCSI) PCB and execute the microprogram FC for the other PCBs only. Go to step (3-3).

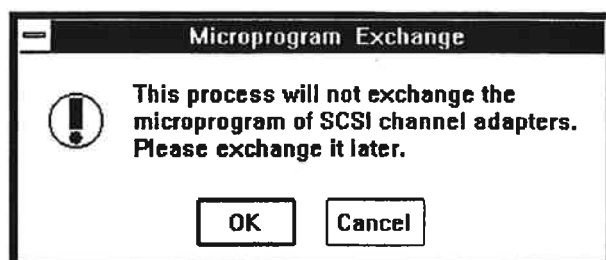
- (3-1) Shut down all the SCSI hosts and select (CL) [OK].  
Go to step (4).  
When [Cancel] is selected (CL), the processing step is returned to (3).



- (3-2) It is necessary to switch the SCSI path to the alternate path before executing the microprogram FC for the CHA (SCSI) PCB. To continue the processing, select (CL) [Yes]. Go to step (4).  
When [No] is selected (CL), the processing step is returned to (3).



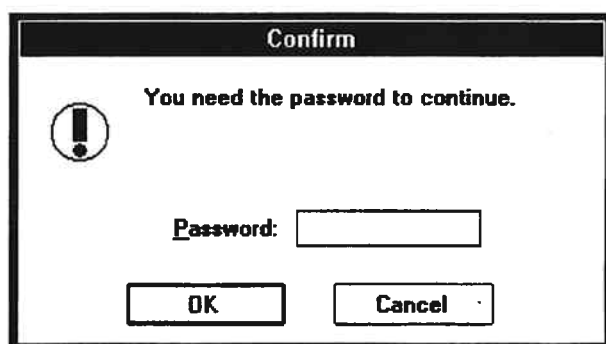
- (3-3) The microprogram FC for the CHA (SCSI) PCB will not be executed. Execute it in the future in the Stop SCSI host mode or the Alternate SCSI path mode.  
When [OK] is selected (CL), the dialog below is outputted.  
When [Cancel] is selected (CL), the processing step is returned to (3).



#### NOTICE

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

Enter the password and select (CL) [OK].  
Go to step (4).



- (4) <If the SVP version is after 01-03-12>  
Go to 5.4.2 (11) (MICRO-FC04-50).

- (5) Copy source and copy destination are displayed.

Execute 5.4.3 (1).

Go to 5.4.3.1 (1) (MICRO-FC04-70)



Note : • The Version Down function can restore only micro-programs that have been exchanged by Floppy Disk or Remote function of the MICRO-FC.

When the MICRO-FC (Floppy Disk or Remote function) has not been executed, or after the Version Down function was executed, the Version Down function cannot be executed until the next MICRO-FC is done.

- After LCP or MCP Version Down, replace the P/K.

#### 5.4.6 Checking the functions after exchange

Conduct the same testing performed installation.

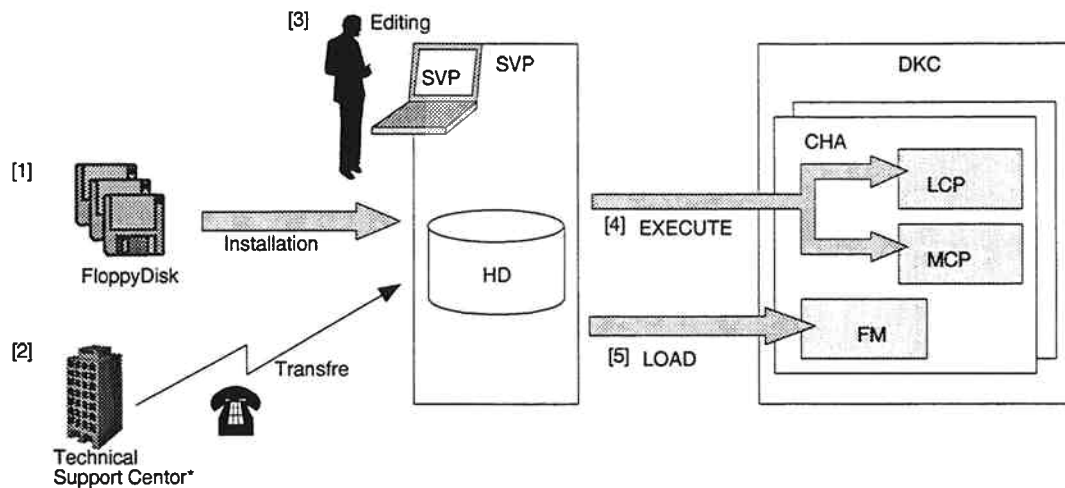
Check that the version of the recently installed micro-program is the same as that of the replaced micro-program by using the version display in the STATUS function.

(See STATUS SECTION.)

## 5.5 ONLINE PATCH FUNCTION

### 5.5.1 Overview

Online Patch functions can be used only LCP and MCP patches. They consist of patch input functions and patch send function.



#### Methods of entering a patch file

- [1] Copy the path file from the floppy disk. ----- MICRO-FC05-20
- [2] Copy the path file from the SVP by using a patch editor ----- MICRO-FC05-50
- [3] Enter the patch file from the SVP using a patch editor ----- MICRO-FC05-70

#### Methods of sending patch file

- [4] Rewrites LCP or MCP itself ----- MICRO-FC05-140
- [5] Include the patch into a load module and update FM ----- MICRO-FC05-170

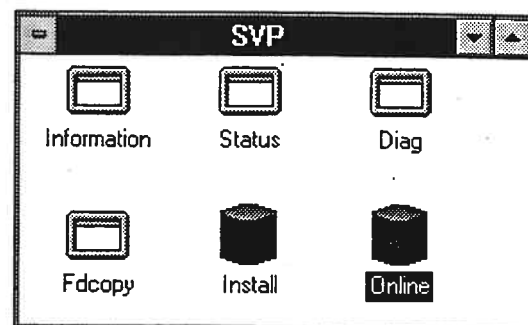
\*Technical Support Centor; A base of maintenance service and technical support

## 5.5.2 Methods of entering a patch file

### 5.5.2.1 Copying the patch file from the floppy disk

- (1) Select (DC) [Online] in the 'SVP' window.

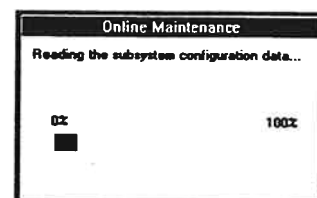
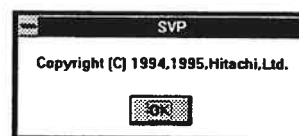
The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

The message "Reading the subsystem configuration data..." will appear.

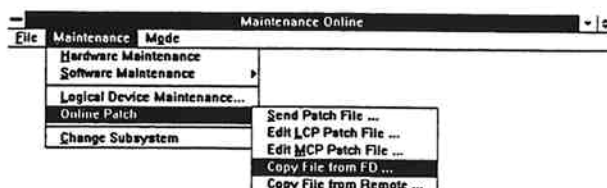
After the configuration data is read, the 'Maintenance Online' window will be brought up.



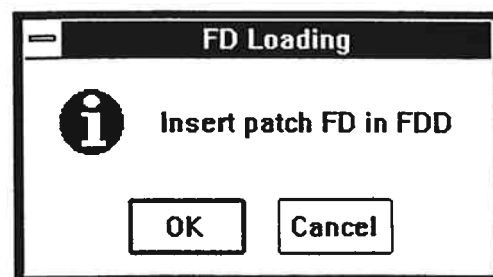
- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].



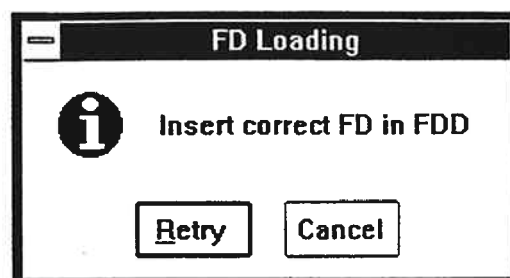
- (4) In the 'Maintenance Online' window, select (DR) [Maintenance], [Online Patch], and [Copy file from FD...] in that order.



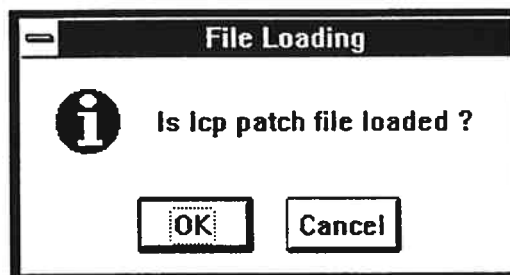
- (5) The message "Insert patch FD in FDD" is displayed.  
Insert the floppy disk containing the patch file into the floppy disk drive and select (CL) [OK].



If the floppy disk contains no patch file, the message "Insert correct FD in FDD" is displayed.  
Take out the floppy disk and insert another floppy disk containing the patch file. Then select (CL) [OK].



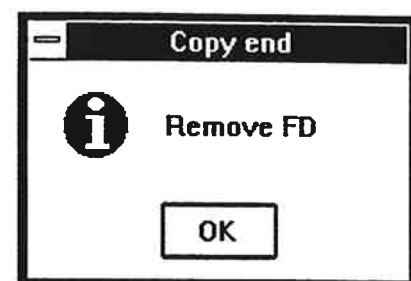
- (6) In response to the message "Is lcp patch file loaded?", and select (CL) [OK].  
In the same way, in response to the message "Is mcp patch file loaded?", and select (CL) [OK].



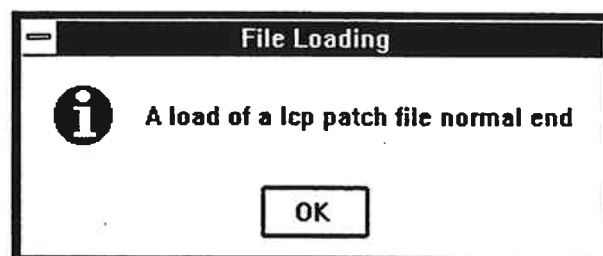
If an error occurs, the message "Microprogram version disagreement and file loading stop" is displayed.  
In response to this message, select (CL) [OK].  
You will return to the Maintenance Online screen.



- (7) Upon completion of copy operation, the message "Remove FD" is displayed. In response to this message, remove the floppy disk and select (CL) [OK].



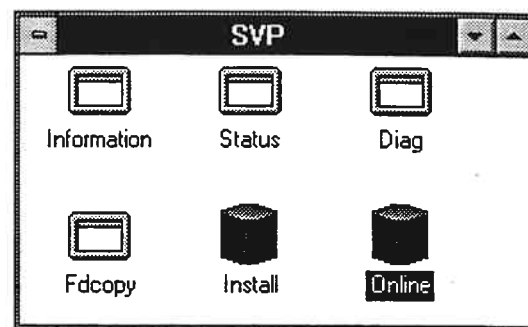
- (8) In response to the message "A load of a lcp patch file normal end", select (CL) [OK].



## 5.5.2.2 Copying the patch file transferred from the maintenance center.

- (1) Select (DC) [Online] in the 'SVP' window.

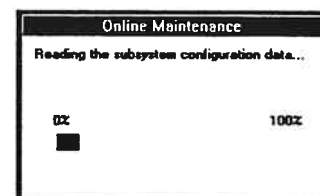
The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

The message "Reading the subsystem configuration data..." will appear.

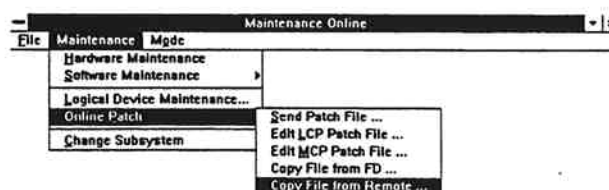
After the configuration data is read, the 'Maintenance Online' window will be brought up.



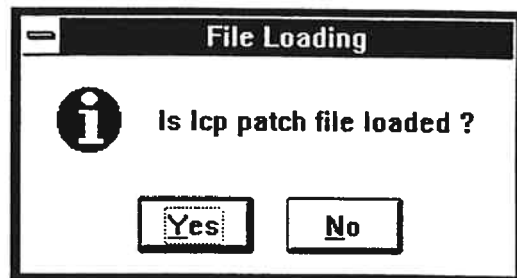
- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].



- (4) In the 'Maintenance Online' window, select (DR) [Maintenance], [Online Patch], and [Copy file from Remote...] in that order.

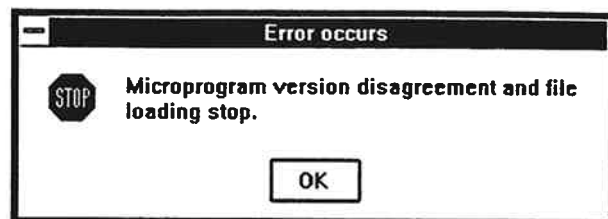


- (5) In response to the message "In lcp patch file loaded?", and select (CL) [OK].

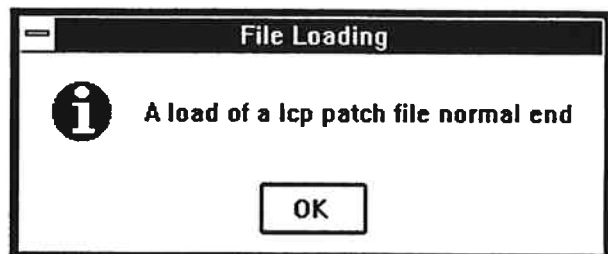


If an error occurs , the message "Microprogram version disagreement and file loading stop" is displayed. In response to this message, select (CL) [OK].

You will return to the Maintenance Online screen.



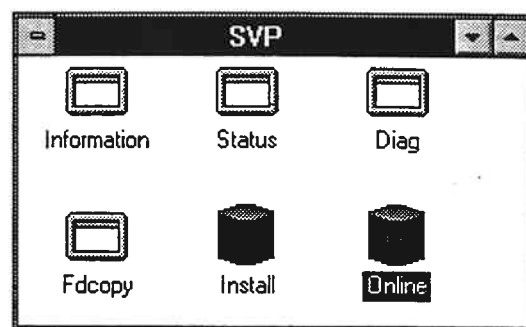
- (6) In response to the message "A load of a lcp patch file normal end", select (CL) [OK].



### 5.5.2.3 Entering the patch file from the SVP by using a patch editor

- (1) Select (DC) [Online] in the 'SVP' window.

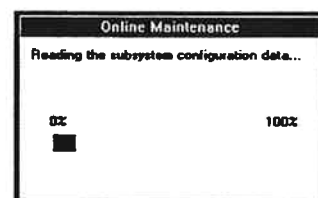
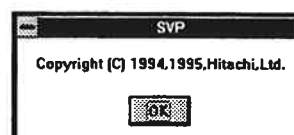
The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

The message "Reading the subsystem configuration data..." will appear.

After the configuration data is read, the 'Maintenance Online' window will be brought up.



- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].

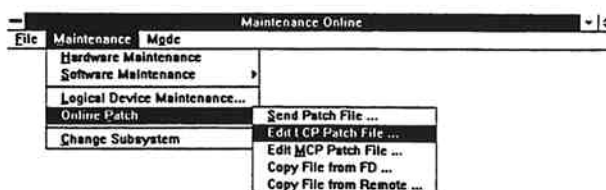


- (4) In the 'Maintenance Online' window, select (DR) [Maintenance], [Online Patch], and [Edit LCP Patch File...] in that order.

When you want to edit MCP patch file, in the

'Maintenance Online' window, select (DR)

[Maintenance], [Online Patch], and [Edit MCP Patch File...] in that order.



<If the SVP version is before 01-09-05/xx>

### (5) Editing patch data

The following descriptions are the example which [Edit LCP Patch File...] was selected. If [Edit MCP Patch File...] was selected, they are same.

#### (5-1) Changing patch data

#### (5-2) Adding patch data

#### (5-3) Deleting patch data

#### (5-4) Exiting the patch editor

#### (5-1) Changing patch data

- (1) Select (CL) the patch data you want to edit ,  
and enter it.

No.	CL	Address	Old Data	New Data	Entry No.	Comment
1	CL	00001000	95547700	95548010	01	DEC10 No.1
2	CL	00001001	95547701	95548011	01	DEC10 No.2
3	CL	00001002	95547702	95548012	01	DEC10 No.3
4	CL	00001003	95547703	95548013	01	DEC10 No.4
5	CL	11000000	76565412	96300000	02	byte swap
6	CL	77041234	12345678	FEEDBEEF	02	normal
7	CL	00000001	00000000	00000000	02	111
8	CL	00000000	00000000	00000000	02	111h31
9	CL	00000000	00000000	00000000	02	AAAA
10	CL	00000000	00000000	00000000	02	group 5 end
11	CL	00000000	00000000	00000000	03	group 5 start
12	CL	CCCCCCCC	CCCCCCCC	CCCCCCCC	00	CCCCCCCCCCCC
13	CL	00000000	00000000	00000000	05	00
14	CL	00000000	00000000	00000000	05	00
15	CL	00000000	00000000	00000000	05	group 5 end
16	CL	00000000	00000000	00000000	06	Group 6 start

- (2) After entering the patch data, press the ENT key  
or select (DR) [Edit] and then [Edit Confirm].  
The entered patch data will be registered.

No.	CL	Address	Old Data	New Data	Entry No.	Comment
1	CL	00001000	95547700	95548010	01	DEC10 No.1
2	CL	00001001	95547701	95548011	01	DEC10 No.2
3	CL	00001002	95547702	95548012	01	DEC10 No.3
4	CL	00001003	95547703	95548013	01	DEC10 No.4
5	CL	11000000	76565412	96300000	02	byte swap
6	CL	77041234	12345678	FEEDBEEF	02	normal
7	CL	00000001	00000000	00000000	02	111
8	CL	00000000	00000000	00000000	02	111h31
9	CL	00000000	00000000	00000000	02	AAAA
10	CL	00000000	00000000	00000000	02	group 5 end
11	CL	00000000	00000000	00000000	03	group 5 start
12	CL	CCCCCCCC	CCCCCCCC	CCCCCCCC	00	CCCCCCCCCCCC
13	CL	00000000	00000000	00000000	05	00
14	CL	00000000	00000000	00000000	05	00
15	CL	00000000	00000000	00000000	05	group 5 end
16	CL	00000000	00000000	00000000	06	Group 6 start

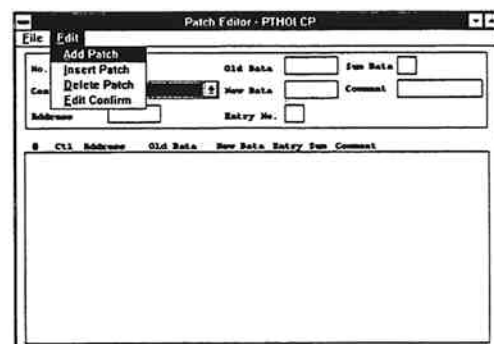
No.	CL	Address	Old Data	New Data	Entry No.	Comment
1	CL	00001000	95547700	95548010	01	DEC10 No.1
2	CL	00001001	95547701	95548011	01	DEC10 No.2
3	CL	00001002	95547702	95548012	01	DEC10 No.3
4	CL	00001003	95547703	95548013	01	DEC10 No.4
5	CL	11000000	76565412	96300000	02	byte swap
6	CL	77041234	12345678	FEEDBEEF	02	normal
7	CL	00000001	00000000	00000000	02	111
8	CL	00000000	00000000	00000000	02	111h31
9	CL	00000000	00000000	00000000	02	AAAA
10	CL	00000000	00000000	00000000	02	group 5 end
11	CL	00000000	00000000	00000000	03	group 5 start
12	CL	CCCCCCCC	CCCCCCCC	CCCCCCCC	00	CCCCCCCCCCCC
13	CL	00000000	00000000	00000000	05	00
14	CL	00000000	00000000	00000000	05	00
15	CL	00000000	00000000	00000000	05	group 5 end
16	CL	00000000	00000000	00000000	06	Group 6 start

## (5-2) Adding patch data

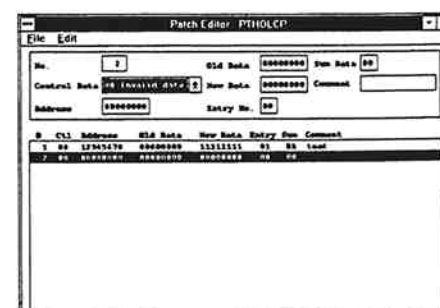
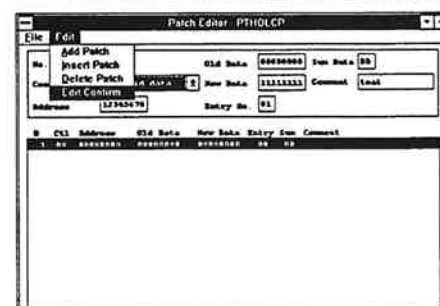
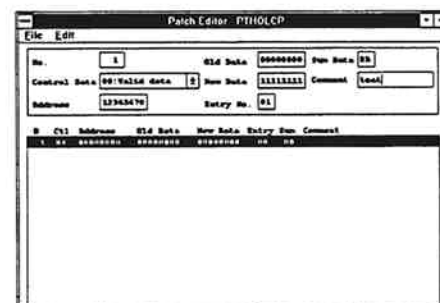
- (1) If the file has no patch data, In response to the message "This file has no data!!! Please select Add patch function before entering Patch data.",select (CL) [OK].



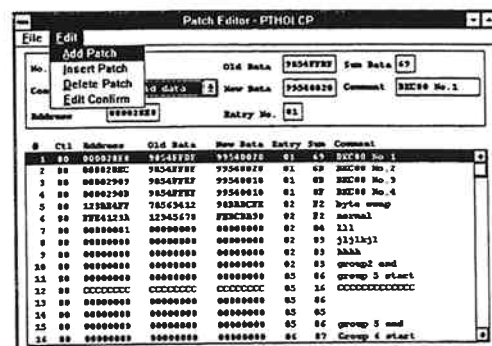
- (2) Select (DR) [Edit] and then [Add Patch].



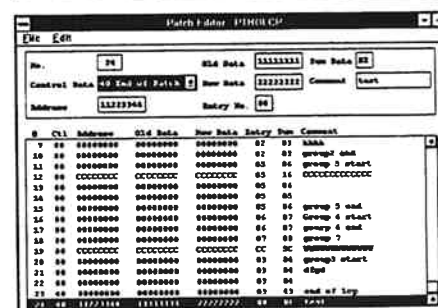
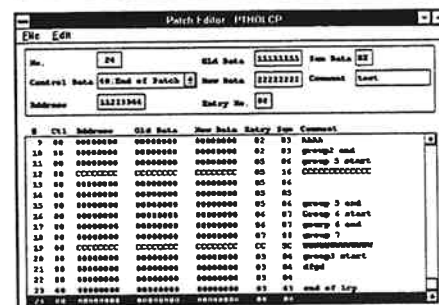
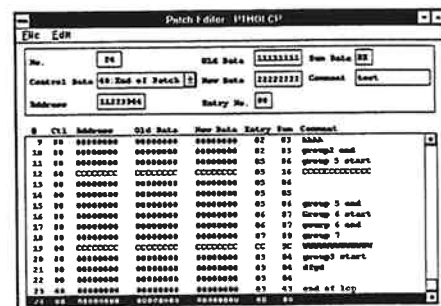
- (3) After entering the patch data, press the ENT key or select (DR) [Edit] and then [Edit Confirm]. The entered patch data will be registered.



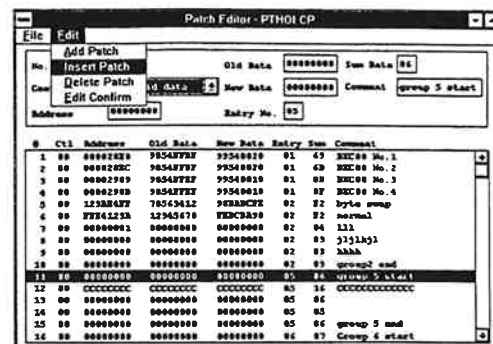
- (4) You may want to add patch data, starting from the line below the end of data. Select (DR) [Edit] and then [Add Patch].



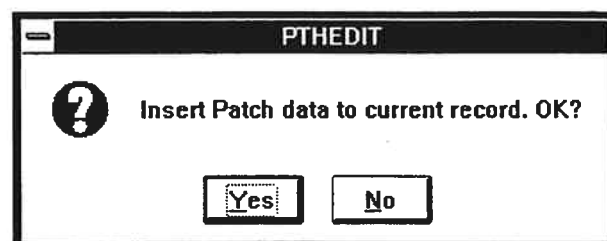
- (5) After entering the patch data, press the ENT key or select (DR) [Edit] and then [Edit Confirm]. The entered patch data will be registered.



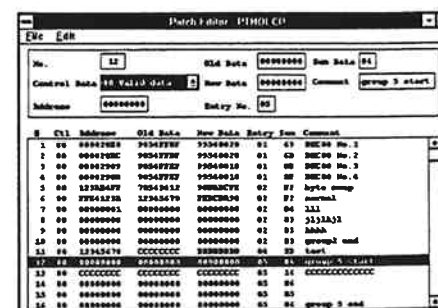
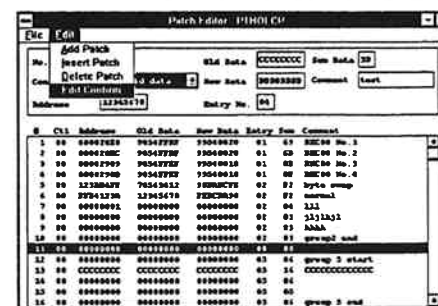
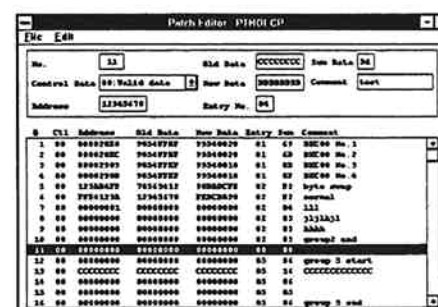
- (6) You may also want to add patch data, starting from the current position. Select (DR) [Edit] and then [Insert Patch].



- (7) In response to the message "Insert Patch data to current record. OK?", select (CL) [OK]

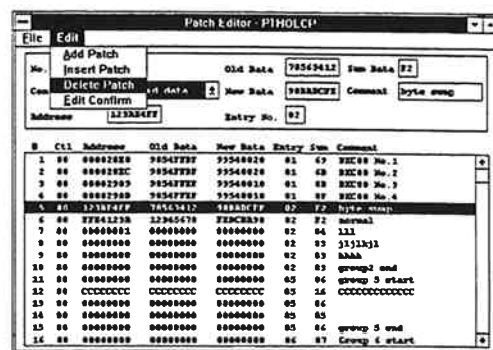


- (8) After entering the patch data, press the ENT key or select (DR) [Edit] and then [Edit Confirm]. The entered patch data will be registered.

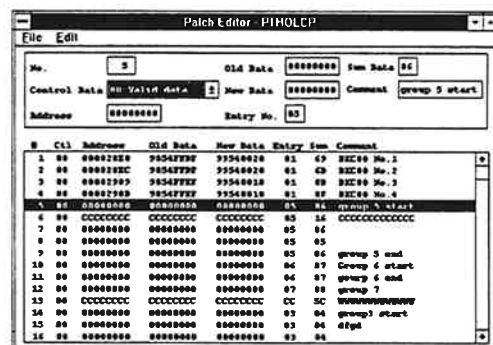
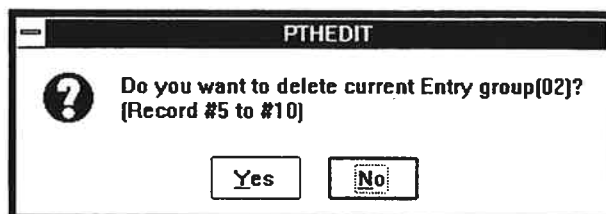


## (5-3) Deleting patch data

- (1) Select (CL) the patch data you want to delete.  
Then select (DR) [Edit] and then [Delete Patch].

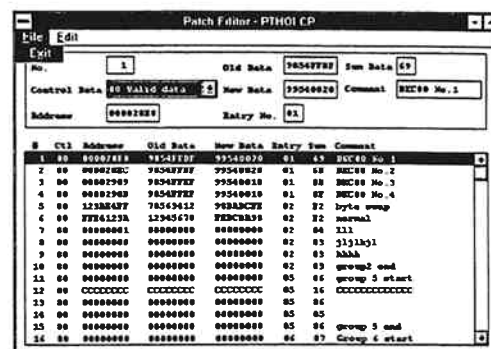


- (2) Check the number of the entry group or record you want to delete. Then select (CL) [OK].

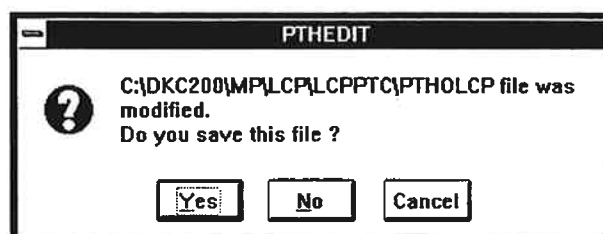


## (5-4) Exiting the patch editor

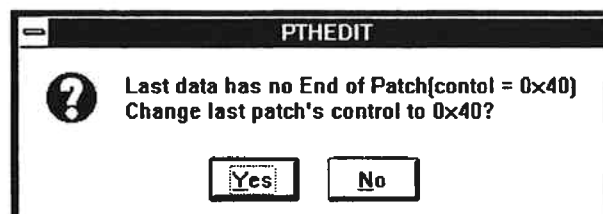
- (1) Select (DR) [File] and then [Exit].



- (2) To save the updated patch file, select (CL) [Yes].



- (3) If control information (0x40) indicating the end of the patch data is not entered on its last line, in response to the message "Last data has no End of Patch (control = 0x40). Change last patch's control to 0x40?", select (CL) [Yes].



- (4) You will return the Maintenance Online screen.

<If the SVP version is after 01-09-06/00>

(5) Editing patch data

A procedure to edit the LCP patch data is shown below as an example. MCP patch data is the same as the LCP patch data.

(5-0) Entry No. selection screen

(5-1) Changing of patch data

(5-2) Adding patch data

(5-3) Deleting patch data

(5-4) Ending editing screen

(5-5) Ending entry No. selection screen

(5-0) Entry No. selection screen

Execute "New addition (or insertion is allowed) of entry No." or "Selection of entry No. of registered data" on the entry No. selection screen.

When the [Editor...] button is selected, the patch data edition/list screen appears.

**LCP Patch**

Block No.  Entry No.  Editor...

**Block - Entry Table**

00 - 00	10 - 10	20 -	30 -
01 - FF	11 - 11	21 -	31 -
02 - 01	12 - 12	22 -	32 -
03 - 02	13 - F0	23 -	33 -
04 - 03	14 - E0	24 -	34 -
05 - 04	15 -	25 -	35 -
06 - 05	16 -	26 -	36 -
07 - 06	17 -	27 -	37 -
08 - 07	18 -	28 -	38 -
09 - 08	19 -	29 -	39 -
0A - 09	1A -	2A -	3A -
0B - 0A	1B -	2B -	3B -
0C - 0B	1C -	2C -	3C -
0D - 0C	1D -	2D -	3D -
0E - 0D	1E -	2E -	3E -
0F - 0E	1F -	2F -	3F -

Operation  
☒ Add  
☐ Change

Cancel OK

(5-1) Changing patch data

- (1) Select (CL) the patch data to be edited from the patch data list in the lower part of the screen and edit it in the upper part of the screen.

- (2) After editing, select (CL) the [Confirm] button and register the patch data.

**LCP Patch Editor**

No.  Old Data  Sum Data

Control Data  New Data  Comment

Address  Entry No.

No.	CL	Address	Old Data	New Data	Sum	Comment
1	00	0001EAB	0010EC2	1E345C73	B8	
2	00	0001EAD	00341800	0010EC2	5D	
3	00	0001EB0	00142040	00341800	5F	E5/03B024
4	00	0001EB0	0010EC2	00341800	5E	
5	00	0001EBA	0010EC2	00341800	5F	
6	00	0001EB0	0010EC2	00341800	5F	
7	00	0001EB1	0010EC2	00341800	5F	
8	00	0001EB2	0010EC2	00341800	5F	

Edit

Cancel OK

## (5-2) Adding patch data

- (1) When the [Add] button is selected (CL), data all digits of it are "0" is added to the end of the data list.  
Edit the data in the upper part of the screen.

No.	Ctrl	Address	Old Data	New Data	Sum	Comment
1	88	80018EAB	1E34BC32	80349088	88	CLB18W24
2	88	80018EAC	6010EC2	18246CA3	88	.
3	88	80018EAD	9B349000	5018EC2	50	.
4	88	80018ED8	D0140840	9B349088	5F	E5.63FMD11
5	88	80018ED8	101E7FD	FAB00000	8C	.
6	88	80018EDA	5010ED1	FAB00000	84	.
7	88	8008517	32200000	32390000	E3	ver.01-02-29
8	88	80011111	80000000	00000000	85	.

## (5-3) Deleting patch data

Deletion of patch data is done for each entry number.

- (1) Select (CL) the [Delete] button.
- (2) Confirm the entry number to be deleted by means of the message like the one shown in the illustration on the right and select (CL) [Yes].

PTHEDIT

? Do you delete current entry group [F0] ?

Yes No

## (5-4) Ending editing screen

Select (CL) the [OK] or [Cancel] button.

If there is unregistered patch data when the [OK] button is selected, the message like the one shown in the illustration on the right will be displayed.

The screen will be returned to the entry No. selection screen.

PTHEDIT

? No. 1 data was changed. Do you update altered data ?

Yes No

## (5-5) Ending entry No. selection screen

Select (CL) the [OK] or [Cancel] button.

The screen will be returned to the "Maintenance Online" screen.

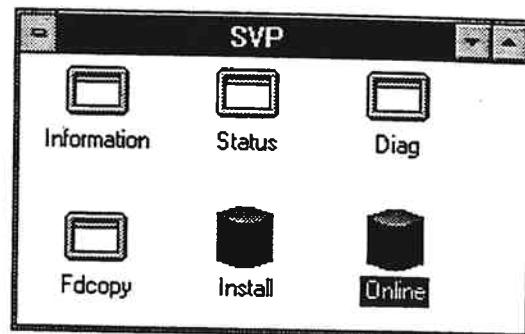
### 5.5.3 Methods of sending a patch file

#### 5.5.3.1 Rewriting LCP or MCP itself

Let's send the online-patch record specified by Exchange Entry No. to the processor specified by TARGET.

- (1) Select (DR) [Online] in the 'SVP'.

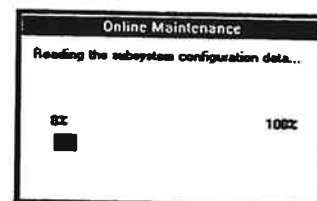
The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

The message "Reading the subsystem configuration data..." will appear.

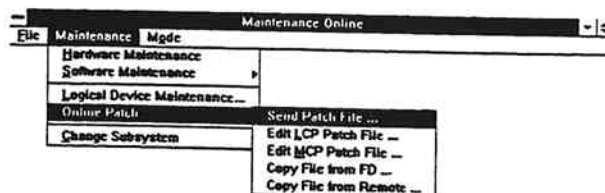
After the configuration data is read, the 'Maintenance Online' window will be brought up.



- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].



- (4) In the 'Maintenance Online' window, select (DR) [Maintenance], [Online Patch] and then [Send Patch File...].



- (5) Select (CL) the processor (LCP or MCP) to which to send the patch with TARGET on LCP/MCP Online Patch. Enter an execute entry number then select (CL) Execute.

Execute entry number: Specify the registration number (two-digit hexadecimal number) of the online-patch record.

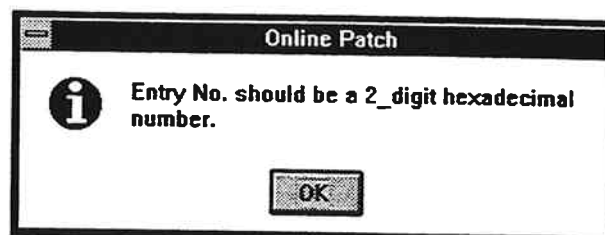
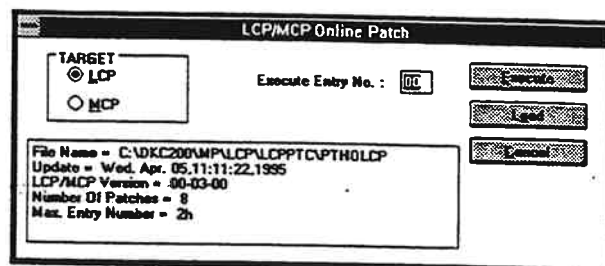
If the entered execute entry number is not a two-digit hexadecimal number, the message "Entry No. should be a 2-digit hexadecimal number." is displayed.

<Error message>

Entered Entry No. does not exist in file.

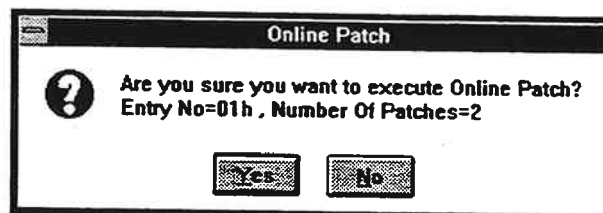
Checksum Error

Invalid Control Information.

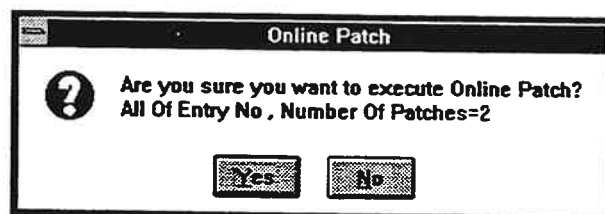


- (6) Check the execution of the online patch.  
If there is no problem, select (CL) [Yes].

When you specified the registration number of a particular online-patch record, the screen at right is displayed.



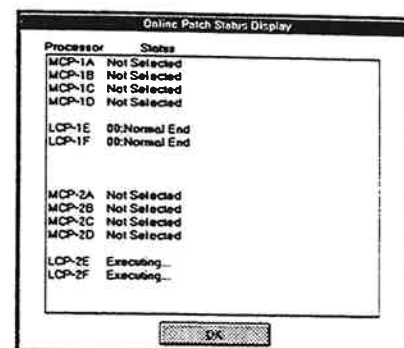
When you specified all records, the screen at right is displayed.



- (7) The execution status of the online patch in the installed MCP or LCP is displayed.

<Explanation of status>

Not selected	Not selected as the target.
Waiting for Execution	Execution is awaited.
Executing...	Execution is in progress.
XXXX Blockade Error	Processor XXXX is blocked.



- (8) When execution is completed for all targets, you can now select the [OK] button.  
Select (CL) [OK].  
You will return to step (5).

<Explanation of status>

Sumcheck Error

Version Error

Data Error

Bank Error

Address Error

Level Error

Record Count Over Error

ID Error

Access Mode Error

CBF CHK2 Error

Busy Time Out Error \*1

Not Ready Error

Time Out Error before Patch Transfer

Time Out Error during Patch Transfer

Time Out Error after Patch Transfer

Status = "Dead"

Status = "HOLD"

Abnormal Error Check

Busy Retry Error \*1

Other Frame Receive Error

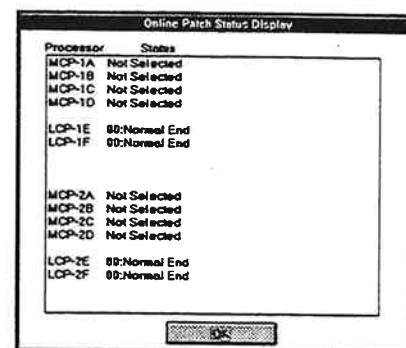
Time Out Error

Abnormal Error

DMA Abnormal Error

Parameter Error

Asynchronous Error



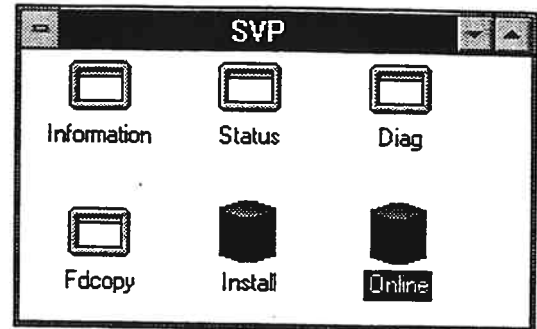
\*1 : When "Execute" is performed in the processor which is going along I/O, it turns into this error.  
Then, till it becomes Normal End, "Execute" is performed.

### 5.5.3.2 Including the patch into a load module and update FM.

Let's download the load module contain all records in the online-patch file to FM of the processor for which Execute has been executed. If Execute is not yet executed for the processor, the load module is downloaded to the processor currently specified by TARGET.

- (1) Select (DC) [Online] in the 'SVP' window.

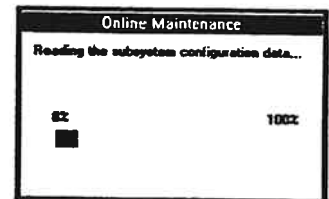
The copyright screen will appear.



- (2) Select (CL) [OK] in the 'SVP' dialog box.

The message "Reading the subsystem configuration data..." will appear.

After the configuration data is read, the 'Maintenance Online' window will be brought up.



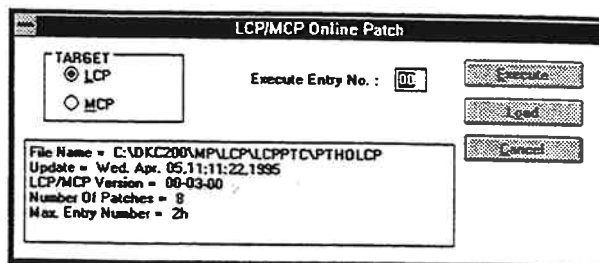
- (3) In the 'Maintenance Online' window, select (DR) [Mode] and then [Modify].



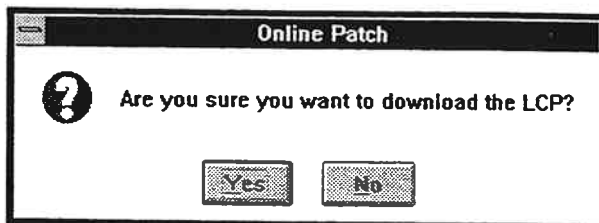
- (4) In the 'Maintenance Online' window, select (DR) [Online Patch] and then [Send Patch File...].



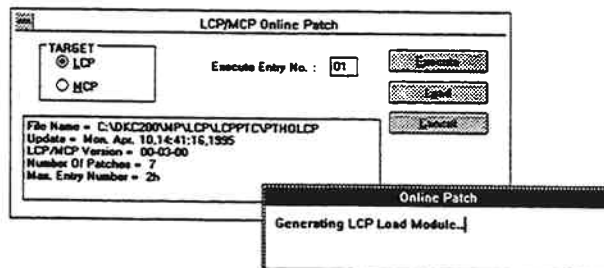
- (5) When you have executed Execute on LCP/MCP Online Patch, select (CL) [Load]. Otherwise, select (CL) the processor to which to download the patch with TARGET then select (CL) [Load].



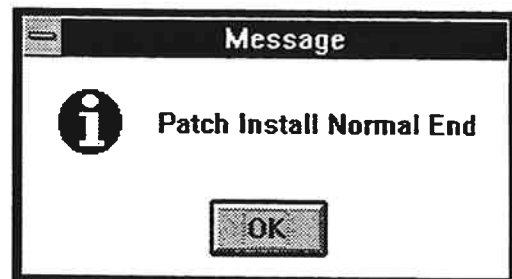
- (6) The message "Are you sure you want to download XXX" is displayed for the processor for which Execute has been executed or the processor specified by TARGET for which Execute is not yet executed. In response to this message, select (CL) [Yes].



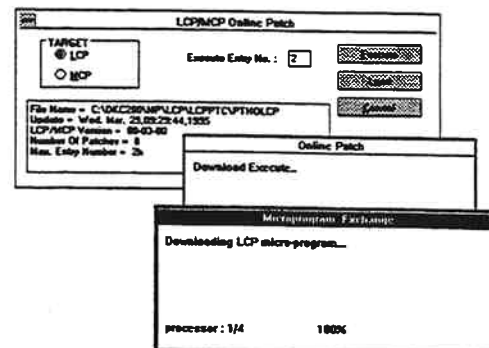
- (7) FM is being updated.



- (8) Upon completion of load module update, the message "Patch Install Normal End" is displayed. In response to this message, select (CL) [OK].

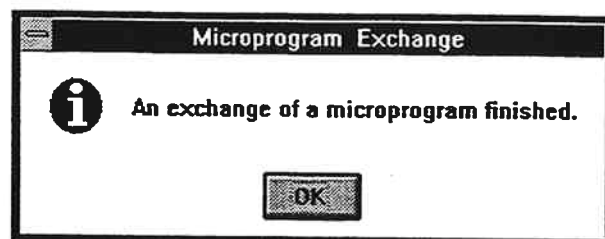


(9) FM is being updated.



(10) Upon completion of downloading, the message  
 “An exchange of a microprogram finished” is displayed.  
 In response to this message, select (CL) [OK].

You will to the ‘Maintenance Online’ screen.



## 5.6 MP Install

### 5.6.1 Over view

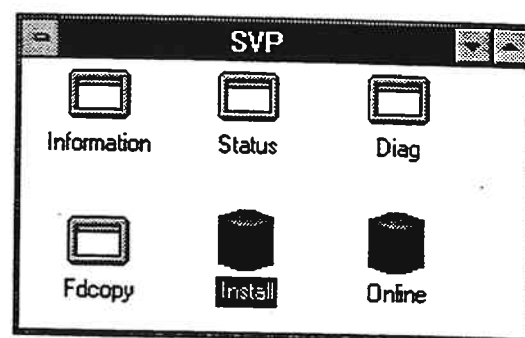
This facility is used to restore a processor that failed to complete the rewrite of the micro-programs in FM (Flash Memory) due to an error occurring during the micro-program download.

Since a processor that encountered such a problem started without loading micro-programs successfully, it is loaded with FM write only programs. Whenever FM write only program are loaded, an SIM with reference code = 7900X0 is reported. The user must examine this SIM and perform MP Install on the processor that issued the SIM.

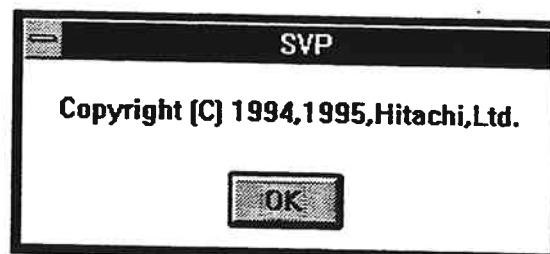
If MP Install has failed, please replace the PCB. (see REPLACE SECTION)

## 5.6.2 MP Install

- (1) Select (DC) the [Install] icon in the 'SVP' window.



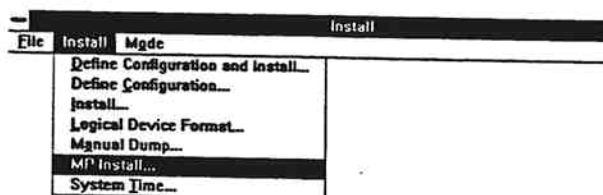
- (2) Select (CL) [OK] in the 'SVP' dialog box.



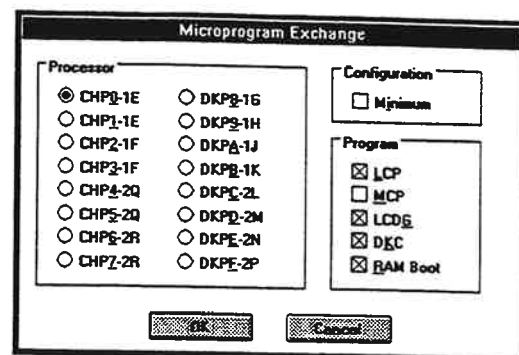
- (3) Select (CL) the [Mode] menu in the 'Install' window and select (DR) [Modify].



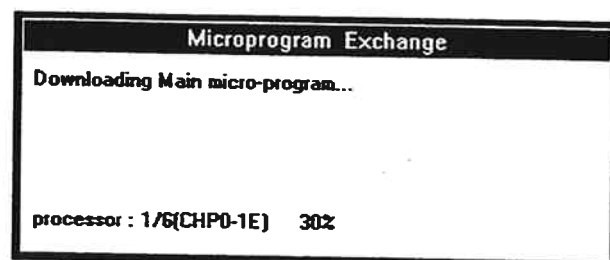
- (4) Select (CL) the [Install] menu in the 'Install' window and select (DR) [MP install].



- (5) Select (CL) processor in the 'Processor' and select (CL) [OK].

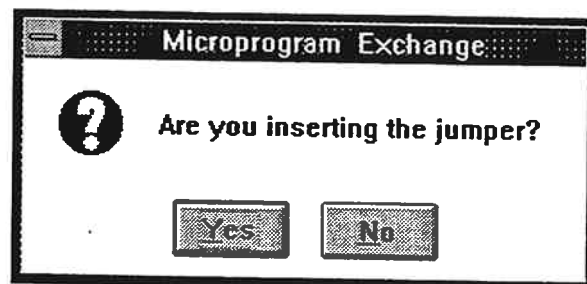


- (6) The message "Downloading Main micro-program..." appears.

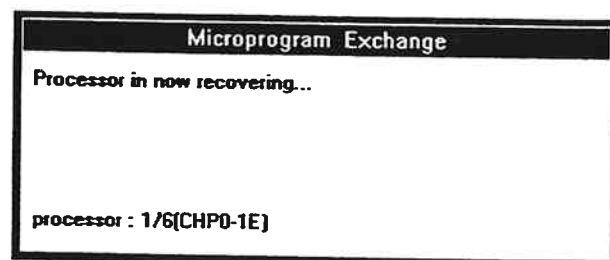


- (7) Make one of the following responses to message "Are you inserting the jumper?".

- When starting up DKC by connecting JP to SSVP JP2:  
Select [Yes] (CL). Then processor recovery processing is skipped and branches to (9).
- When starting up DKC as usual:  
Select [No] (CL).



- (8) The message "Processor in now recovering..." appears.  
The processor is recovered.



- (9) In response to the message "Micro Program Exchange is success.", select (CL) [OK].



- (10) You will return 'Install' screen.

## 5.7 Trouble Recovery Procedure in Exchanging Micro-programs

### 5.7.1 Recovery procedure in on-line menu was selected

If trouble occurs while the micro-programs are being exchanged, symptoms (1) to (5) below can be observed apparently. In these cases, use the recovery procedures shown in flowcharts [A] to [D].

And if you want to return the version of micro-program to the previous version, use the procedure shown in (6) and flowchart [E].

(1) A power failure occurs.

→Go to [A] (MICRO-FC07-20)

(2) The time-out message is displayed on the SVP screen.

(a) Trouble in downloading the micro-program (the message "Downloading Main micro-program" is displayed).

→Go to [B] (MICRO-FC07-30)

(b) Trouble in blocking the processor (the message "Processor in now blocking" is displayed).

→Go to [C] (MICRO-FC07-40)

(c) Trouble in recovering the processor (the message "Processor in now recovering" is displayed).

→Go to [C] (MICRO-FC07-40)

(d) Trouble in downloading the micro-program (the message "Downloading DKU micro-program" is displayed).

→Go to [F] (MICRO-FC07-66).

(3) An error occurs in data transferred to the DKC.

(The message "It failed in the writing to the flash memory" is displayed.)

→Go to [B] (MICRO-FC07-30)

(4) An I/O error occurs on the SVP hard disk.

(The message "File I/O error has occurred" is displayed)

(The message "Memory error has occurred" is displayed)

→Go to [D] (MICRO-FC07-50)

(5) An AP error occurs, resulting in PC trouble (Key-in operations are disabled and the screen disappears).

→Go to [B] (MICRO-FC07-30)

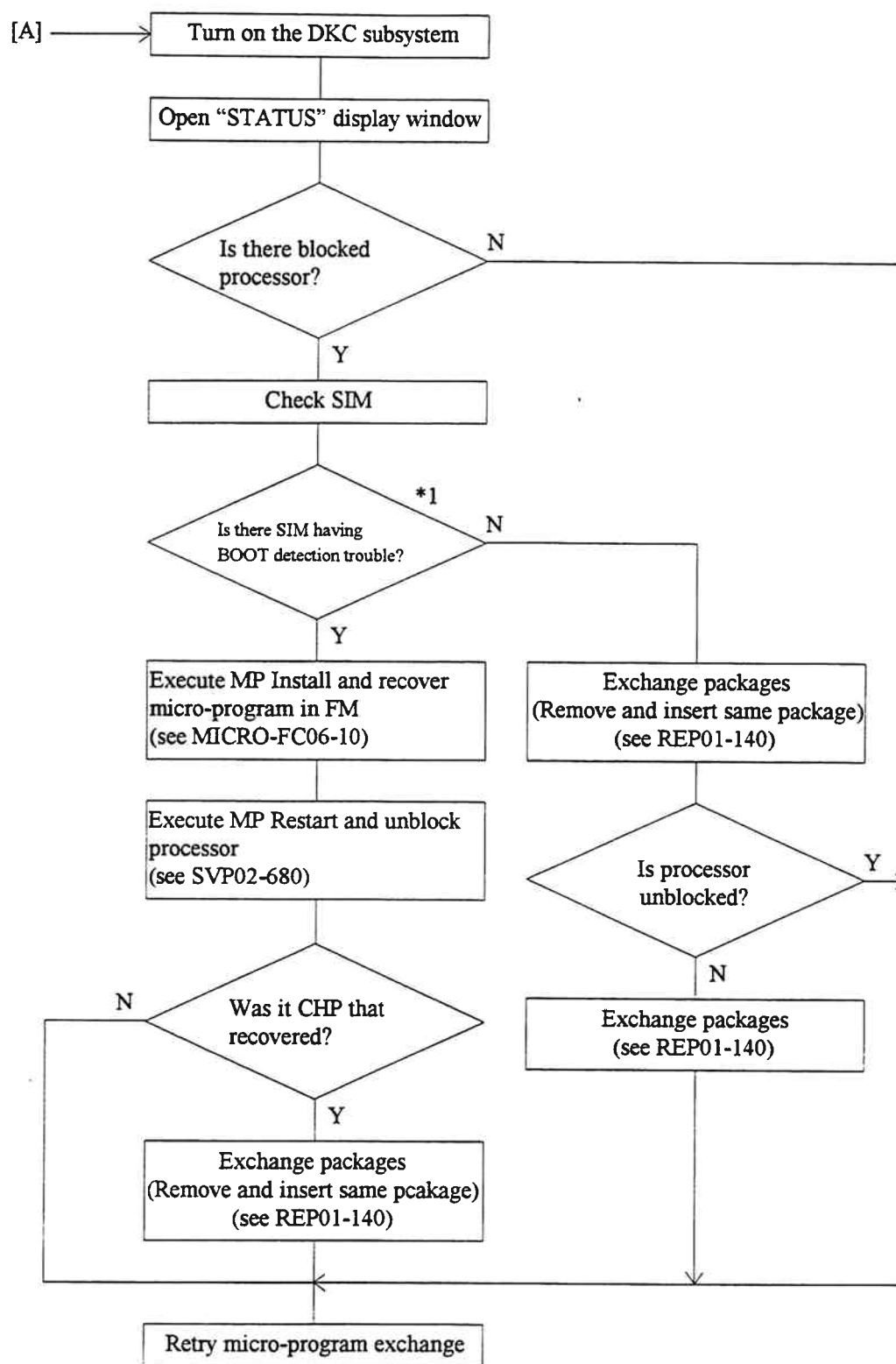
(6) Procedure for returning the micro-program version to the previous version.

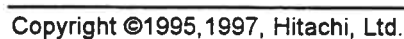
→Go to [E] (MICRO-FC07-60)

[Sections to be referenced for recovery procedure]

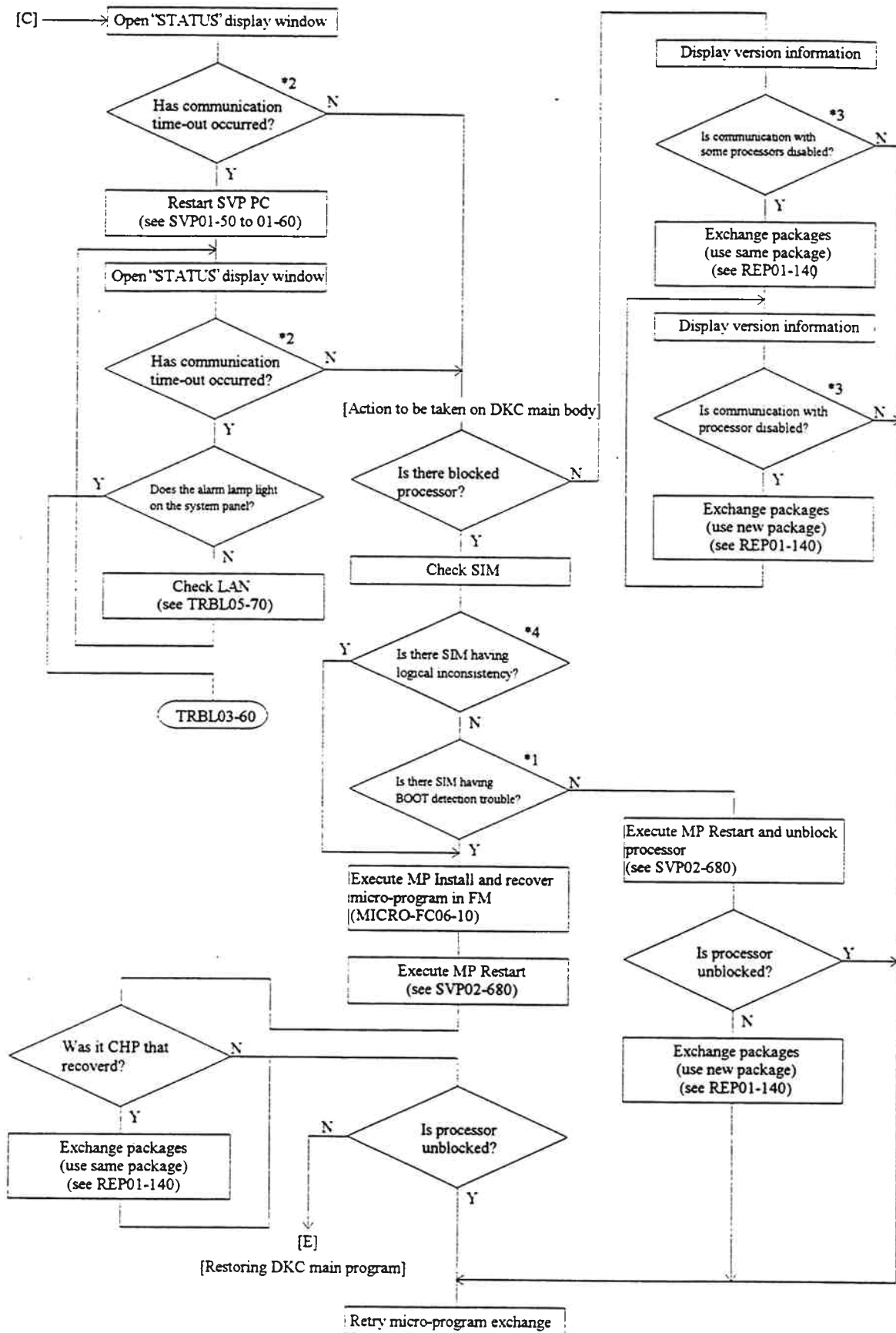
- (i) Status display : 4.5 STATUS Display
- (ii) Version display : 4.5.8 Micro-program version
- (iii) MP installation : 5.6 MP Install
- (iv) MP restart : 10.2.14 MP Restart
- (v) Package exchange : 7.1 Hot Replace
- (vi) PC exchange : 7.1 Hot Replace

## [Recovery Procedure for Power Failure]

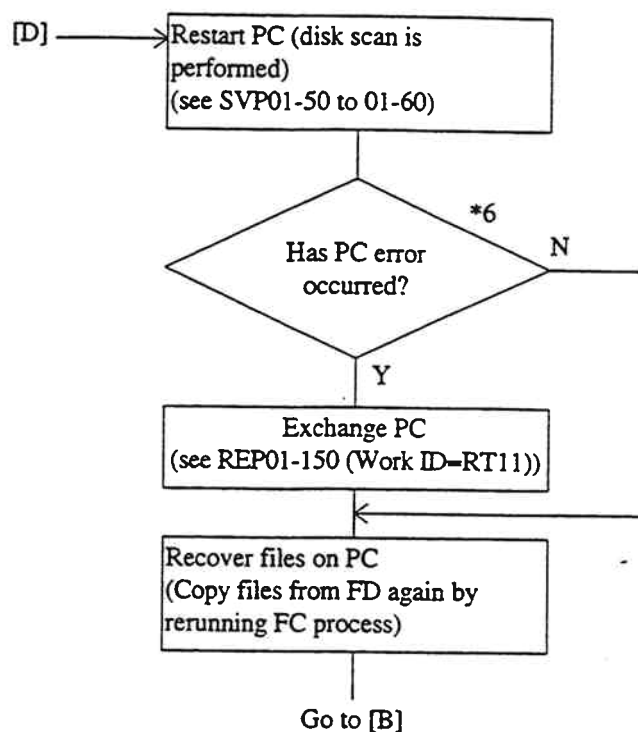




## [Recovery Procedure for Communication Time-out in Blocking/Unblocking Processor]



## [Recovery Procedure for I/O Error on SVP Hard Disk]



\*1) Reference code "7900X0"

X: Shows processor id. (see SIM-RC02-30)

For details of the trouble, refer to the explanation about BOOT detected error at SSB (Byte27 =8C).  
(see SSBLOG05-2270)

\*2) The message "connection error occurred SVP-DKC" is displayed.

\*3) "-" is displayed for each processor version.

\*4) Reference code

3080x0: Indicates that a WCHK1 dump has occurred.

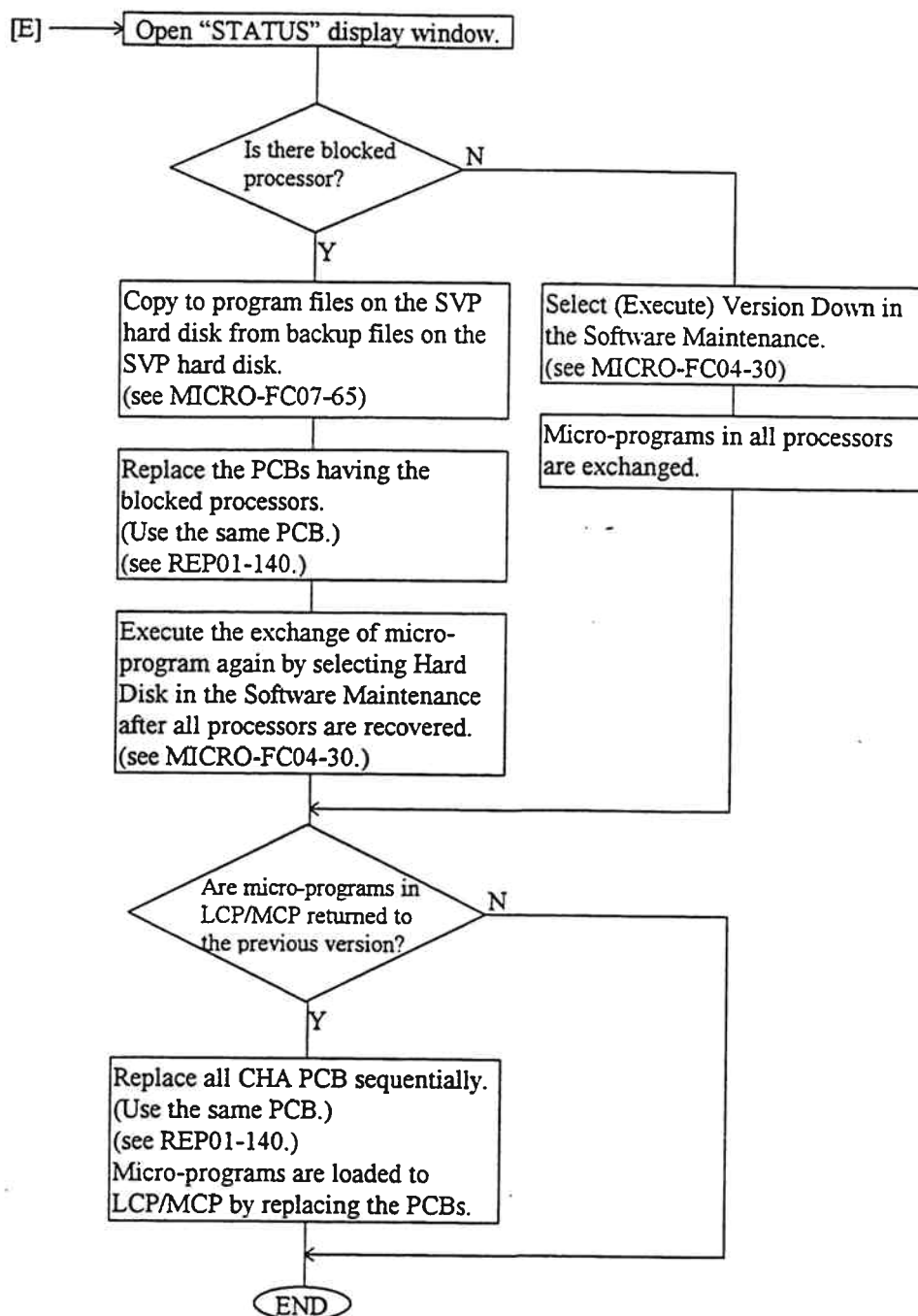
3081x0: Indicates that an ABEND dump has occurred.

x: Shows processor id.

\*5) The old program is downloaded when the package is exchanged and the start-up process is executed by that program.

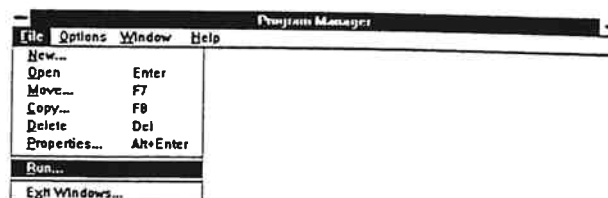
\*6) The message "Please turn off SVP and replace it" is displayed.

## [Procedure for returning the micro-program version to the previous version]



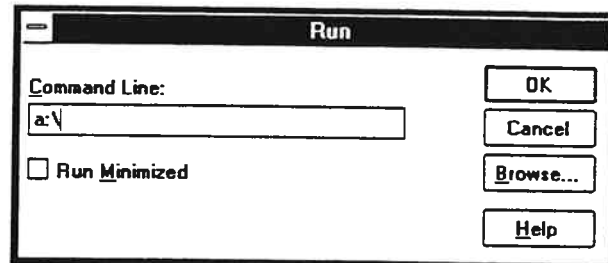
[Copy to program files from backup files on the SVP hard disk]

- (1) Select (CL) the [File] menu in the 'Program Manager' window and select (DR) [Run...].

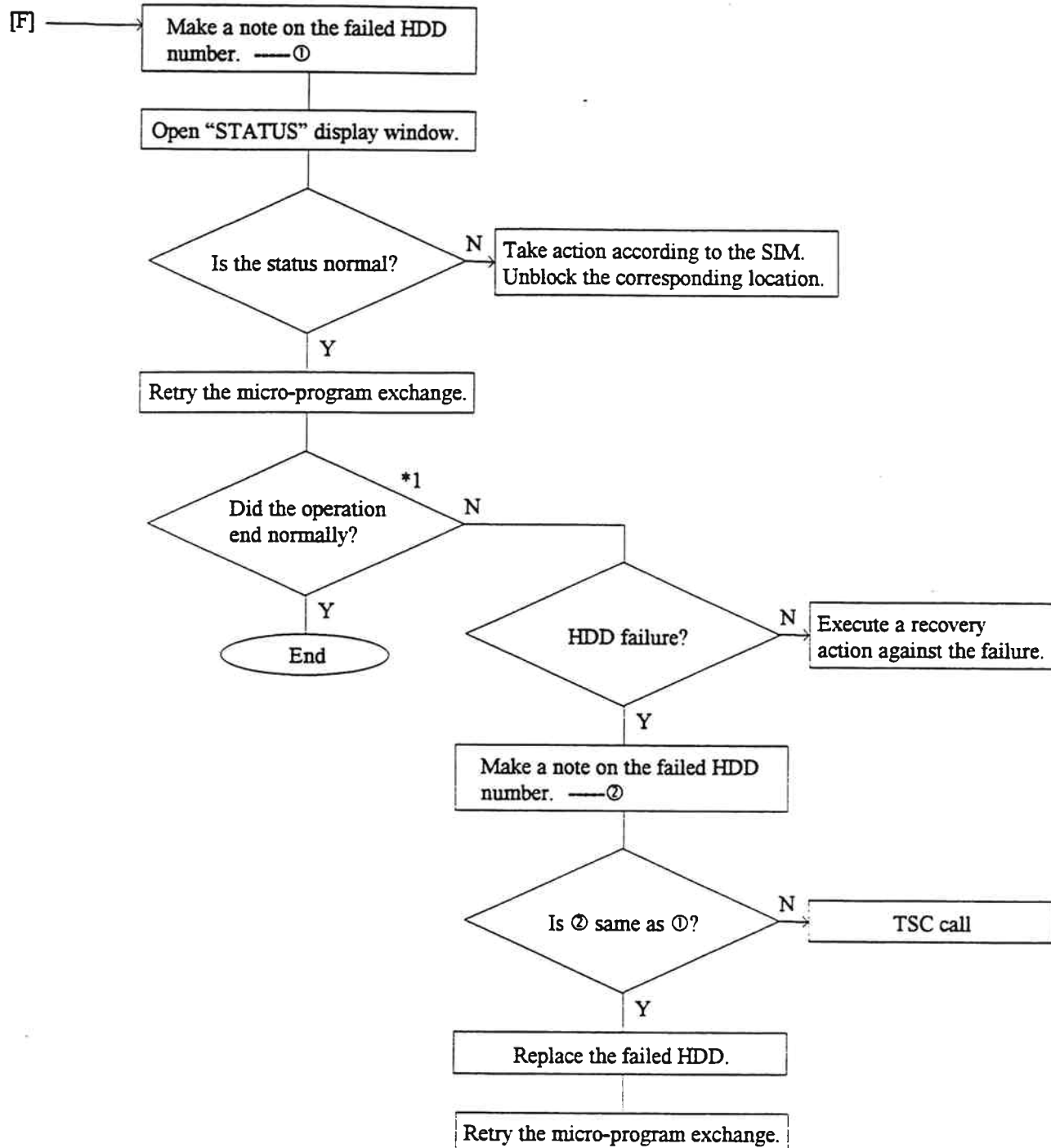


- (2) Insert Setup Installer (1/14) FD in FDD.

- (3) Input file name "a:\mainbk.bat" in 'Command Line' and select (CL) [OK].



Recovery procedure when a DKU error occurs during a downloading of the micro-program (DKU micro-program)



## 5.7.2 Recovery procedure in off-line menu was selected

If trouble occurs while the micro-programs are being exchanged, symptoms (1) to (7) below can be observed apparently. In these cases, use the recovery procedures shown in flowcharts [A] to [F].

The recovery procedure is valid only when the SVP version is 01-04 or later.

(1) A power failure occurs.

→Go to [A] (MICRO-FC07-80)

(2) Time-out display appears on SVP screen. ("On exchanging a microprogram. An error has occurred. Processing is stopped. Confirm the status and Version of subsystem. Phase: xxxx" message is displayed.)

(a) System block processing (phase: preprocedure display) error.

→Go to [B] (MICRO-FC07-90)

(b) Micro-program downloading (phase: download display) error.

→Go to [C] (MICRO-FC07-90)

(c) System recovery processing (phase: recover display) error.

→Go to [D] (MICRO-FC07-100)

(3) An error occurs in data transferred to the DKC.

(The message "It failed in the writing to the flash memory" is displayed.)

→Go to [E] (MICRO-FC07-110)

(4) An I/O error occurs on the SVP hard disk.

(The message "File I/O error has occurred" is displayed)

(The message "Memory error has occurred" is displayed)

→Go to [F] (MICRO-FC07-120)

(5) An AP error occurs, resulting in PC trouble (Key-in operations are disabled and the screen disappears).

→Go to [E] (MICRO-FC07-110)

(6) Interruption of micro-program exchange.

("File copy processing was interrupted. DKC subsystem will be recovered." message is displayed.)

Micro-program exchange processing was interrupted because a response to SVP was designated. DKC is automatically rebooted to return to the original status.

(7) Off-line micro-program exchange function not supported.

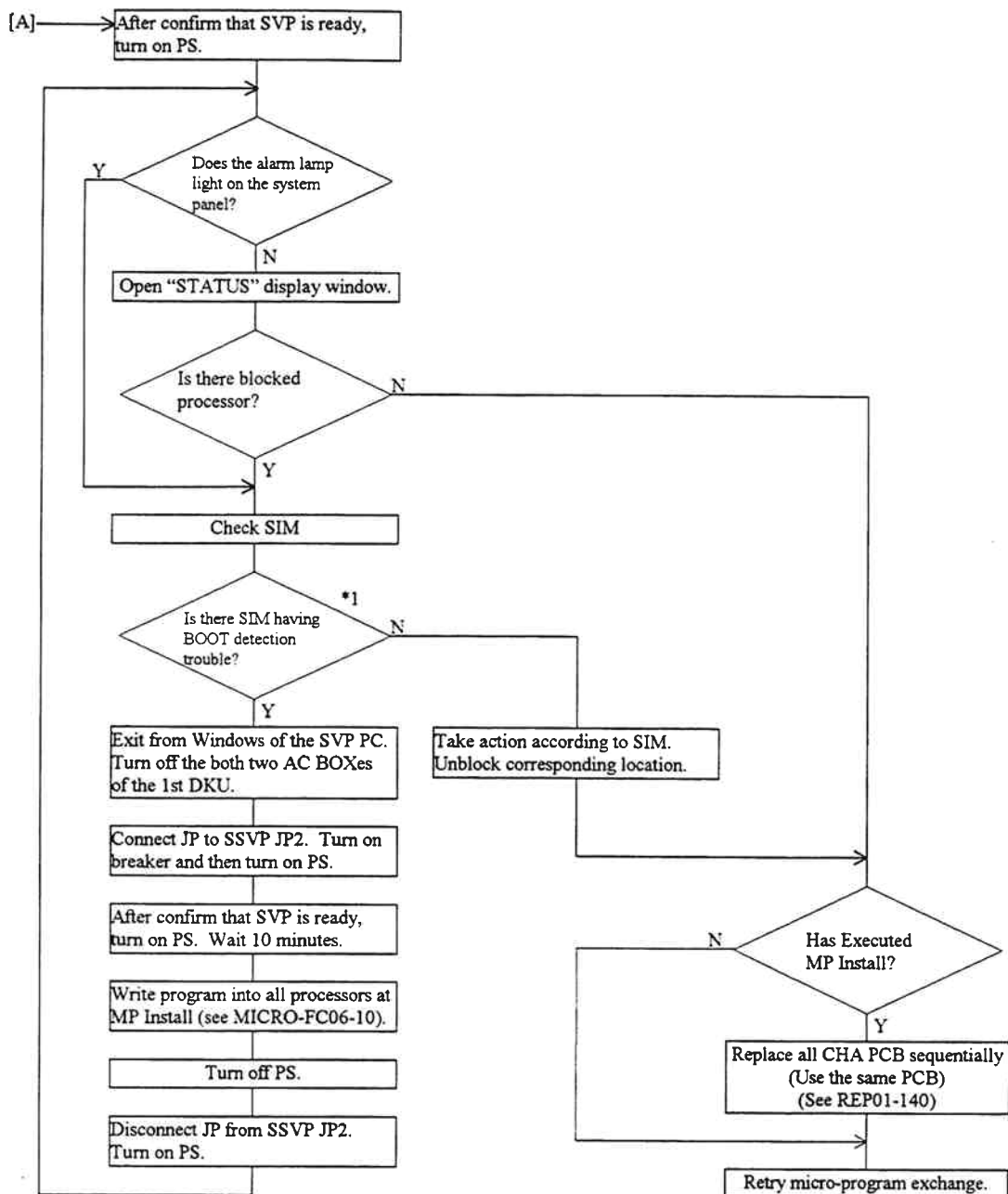
("The version of Main microprogram is inconsistent with the SVP." message is displayed.)

This function is available only when the DKC MAIN program version is 02-00 or later.

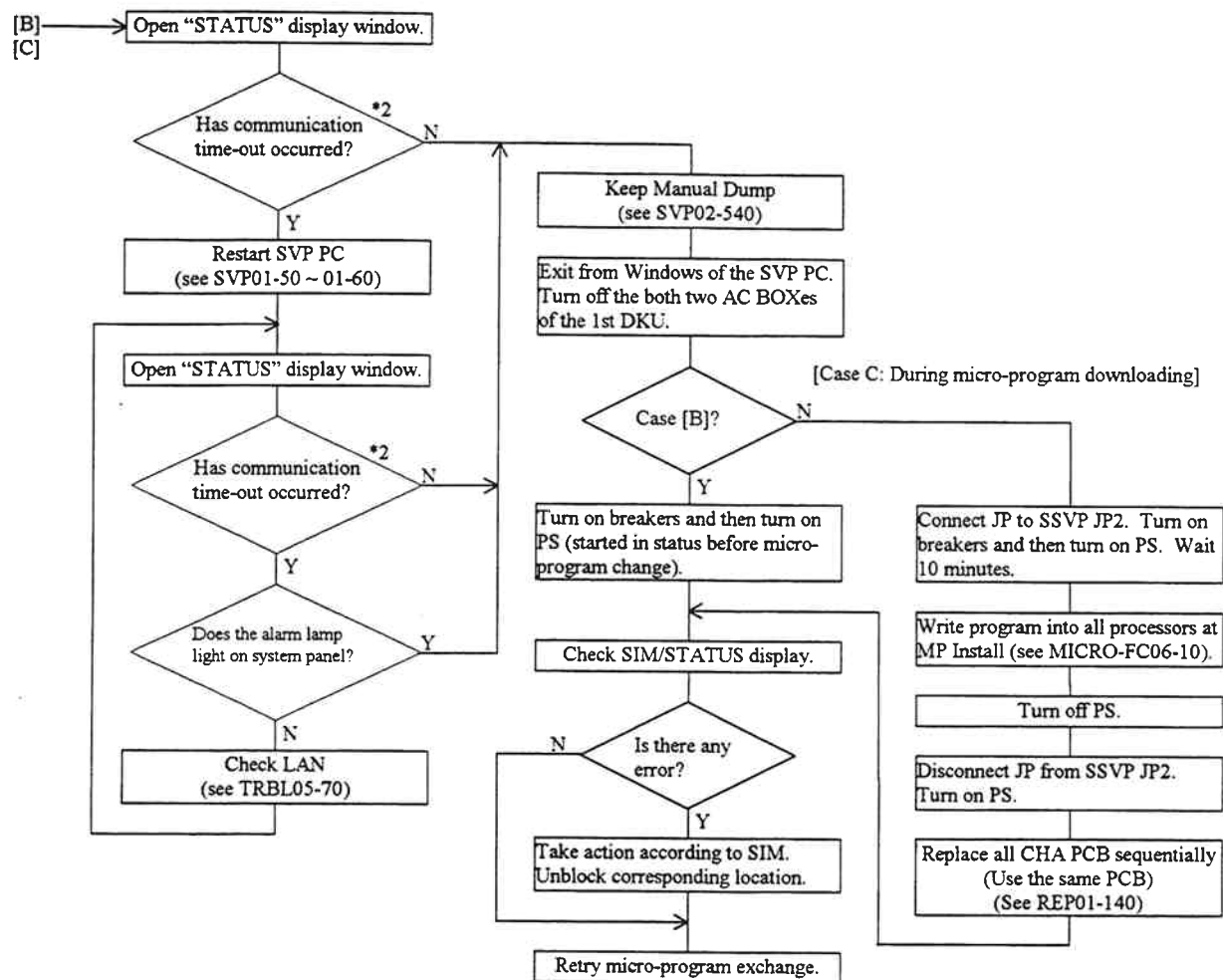
[Sections to be referenced for recovery procedure]

- (i) Status display : 4.5 STATUS Display
- (ii) Version display : 4.5.8 Micro-program version
- (iii) MP installation : 5.6 MP Install
- (iv) Package exchange : 7.1 Hot Replace
- (v) PC exchange : 7.1 Hot Replace

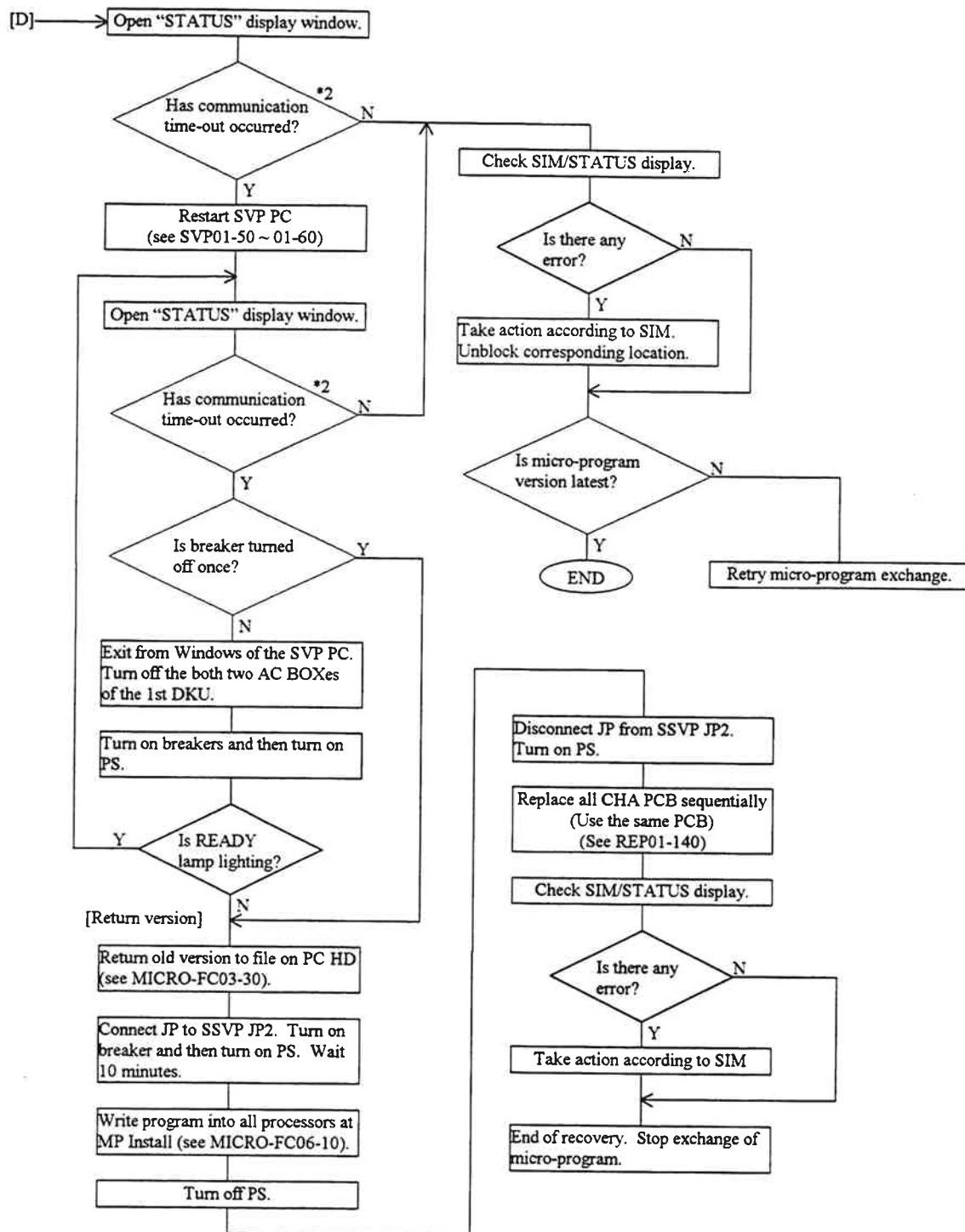
## [Recovery Procedure for Power Failure]



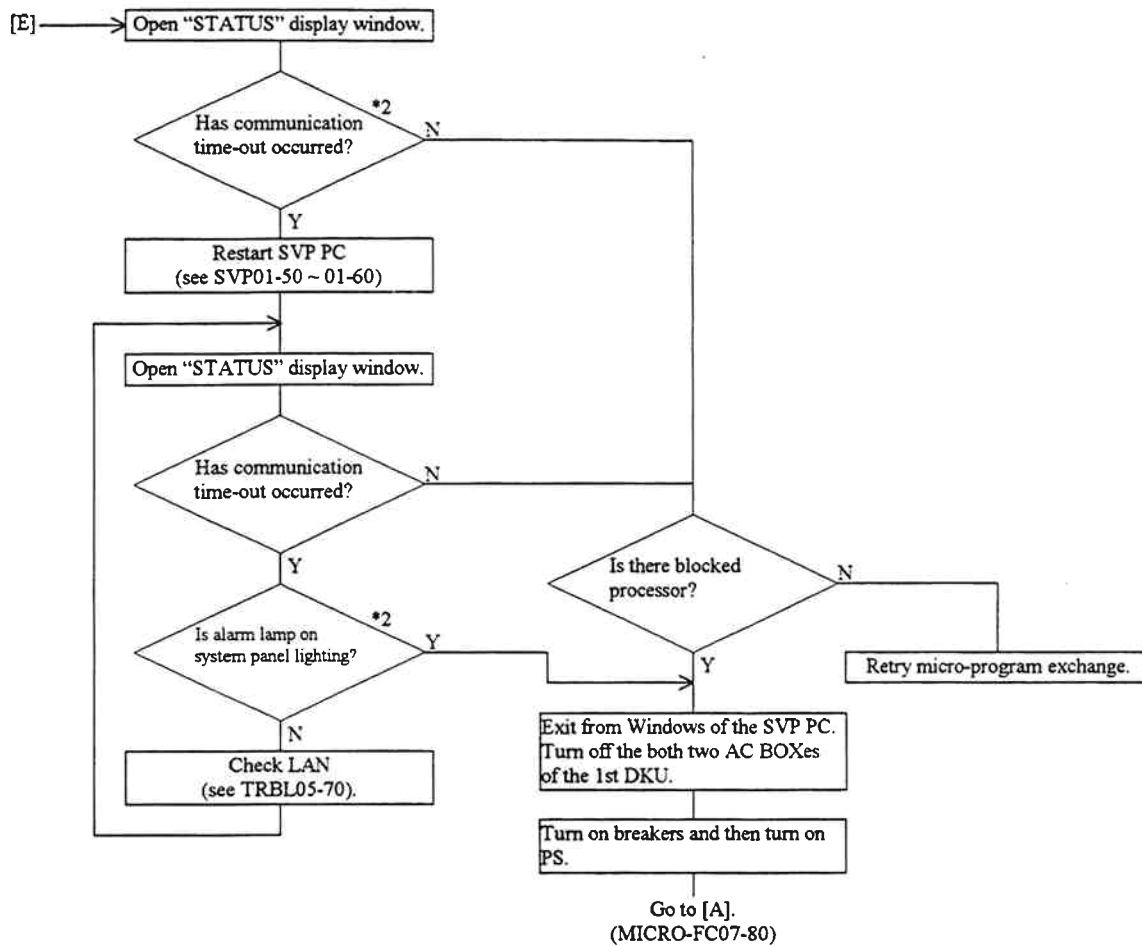
## [Recovery procedure in case of time-out during system block processing/micro-program downloading]



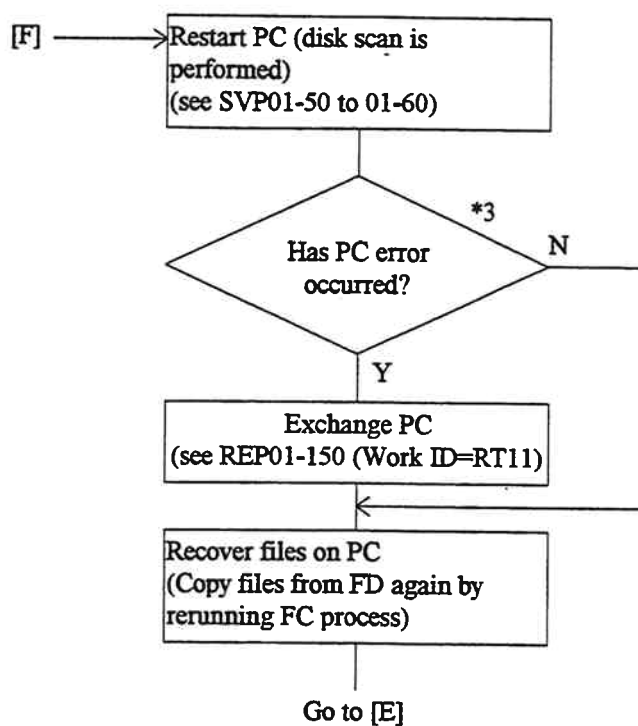
## [Recovery procedure in case of time-out during system recovery processing]



## [Recovery Procedure for an error in data transferred to the DKC/AP error/PC error]



## [Recovery Procedure for I/O Error on SVP Hard Disk]



\*1) Reference code "7900X0"

X: Shows processor id. (see SIM-RC02-30)

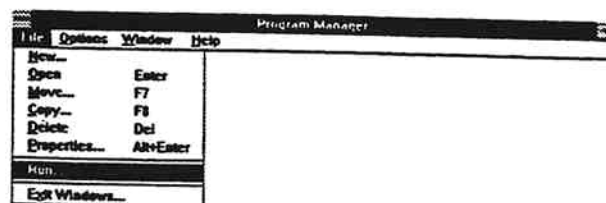
For details of the trouble, refer to the explanation about BOOT detected error at SSB (Byte27 =8C).  
(see SSBLOG05-2270)

\*2) The message "connection error occurred SVP-DKC" is displayed.

\*3) The message "Please turn off SVP and replace it" is displayed.

## 5.8 Config Exchange Procedure

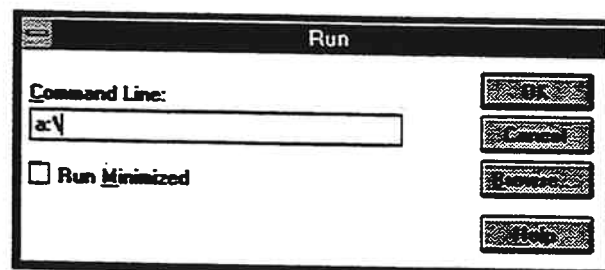
- (1) Select (CL) the [File] menu in the 'Program Manager' window and select (DR) [Run...].



- (3) Insert CONFIG FD in FDD.

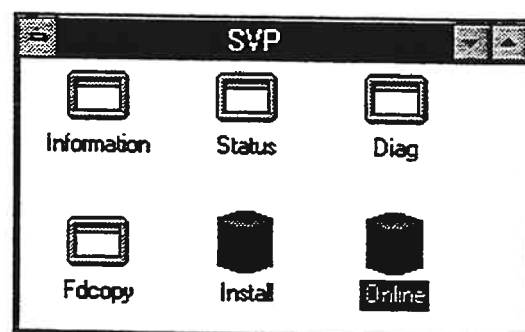
- (3) Input Bat file name in 'Command Line' and select (CL) [OK].

Bat file name	Contents
a:\def_conf.bat	Install inf.
a:\tun_conf.bat	Threshold inf.
a:\ini_conf.bat	Init install inf.

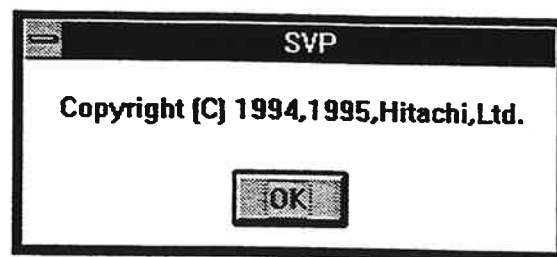


If you exchange Threshold inf., continue next process.  
If you exchange others, end at exchange process.

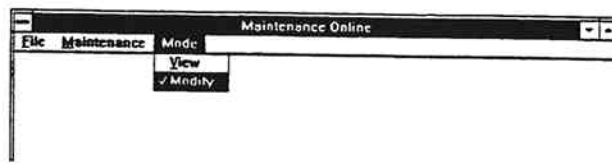
- (4) To send the configuration data to DKC, select (DC) the [Online] icon in the 'SVP' window.



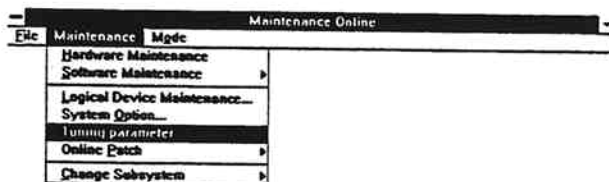
- (5) Select (CL) [OK] in the 'SVP' dialog box.



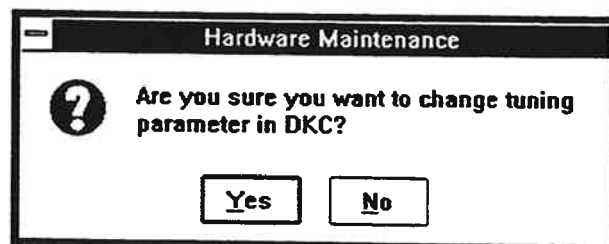
- (6) Select (CL) the [Mode] menu in the 'Maintenance Online' window and select (DR) [Modify].



- (7) Select (CL) the [Maintenance] menu in the 'Maintenance Online' window and select (DR) [Tuning Parameter].



- (8) Select [Yes] in response to "Are you sure you want to change tuning parameter in DKC?" (CL).



## (9) End of Config Exchange

Select [OK] in response to "Subsystem configuration data was changed" (CL).

