MICRO-FC SECTION

Contents

MICRO-FC

Two types of MICRO-FCs are provided with micro-program exchange and MP install. Micro-program exchange is explained in chapter 1 to 4, and MP install in chapter 5.

1. Overview

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.

Micro-program	Written to
Setup installer	—
DKCMAIN	MPB (FM/MP)
DKB	MPB (FM), DKB Port
SVP	Hard disk in the SVP
CUDG4	Hard disk in the SVP
RAM BOOT	MPB (FM/MP)
CMBK	MAIN Blade (FM)
Expander	DB (ENC)
Expander(DBF)	DBF (ENC)
CONFIG	Hard disk in the SVP
CFM	MAIN Blade (CFM)
HDD	DB (HDD)

1.2 Micro-program Exchange Flow
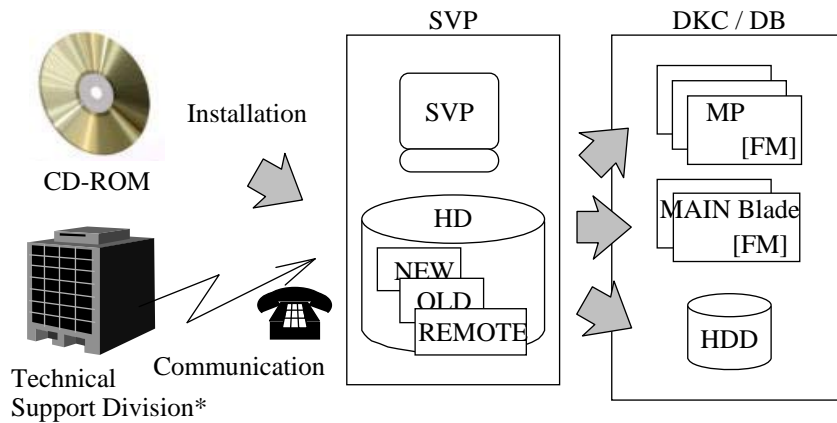
The SVP keeps two generations (new and old versions) of micro-programs.

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

Micro-programs can be exchanged in three ways.
(1) Downloading after storing the micro-programs from CD-ROM to the hard disk
(2) Downloading of the latest versions on the hard disk in the SVP
(3) Version Down (downloading of old versions on the hard disk)

1.2.1 About OSS media

In this Storage System, OSS (Open Source Software) contained in the media of a micro-program until now is stored in another media. This media is called OSS media. Tomcat, Flash player, Apache, JRE, and Perl are contained in this.
OSS media is used at an initial install or at these install when the version of one of Apache, JRE, or Perl is upgraded.

1.3 Micro-program Exchange

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

(1) Off-line

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 exchanging unit.

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 DB by "3.3 Transferring micro-programs to the DKC" or by "4.3 Transferring micro-programs", you can retry by "3.4 Hard Disk Download" or by "4.4 Hard Disk Download".

- If it is required to version down the current micro-program running on the DKC to a version that is not the last installed, do not attempt this without receiving guidance specific to your case from technical support division or the factory.
  This needs to be analyzed on a case by case basis and a unique procedure may need to be provided for each case.

> **NOTICE:** In case of ShadowImage/Volume Migration/Thin Image, the differential bitmap
> data on the shared memory of DKC is volatilized by the offline micro-program
> exchange operation. Also, in case of Thin Image, the pool is blocked.

Execute the online micro-program exchange operation not to volatilize the differential bitmap data on the shared memory of DKC and the Pool information on Thin Image.

2. Pre-Process Micro FC

2.1 Connect to SVP from Remote PC

Connect to SVP from Remote PC, with referring SVP SECTION "1.4 Connecting the PC to the SVP" (SVP01-60) and then execute following process.

3. Micro-program Exchange Procedure (Off-line)

If an error occurs during a micro-program exchange, retry the exchanging procedure from the beginning.

3.1 Processing before exchange

- Check the Storage System status through the entire status display (Check the versions of the all programs through the version display.).
- Make sure that correction copy and other processing are not in progress.
- Perform post processing for PIN data.
- Check that all processors are normal.
- Check that all channel paths to the Storage System are off-line (to block all micro-programs).
- DKCMAIN, RAMBOOT, and DKB micro-programs can be exchanged on off-line.
- In case that the off-line micro-program exchange operation is executed when there is a pair of Thin Image, it is necessary to delete all Thin Image pairs.
- In case of performing the off-line micro-program exchange for UR pairs, please make sure not to perform on the MCU and RCU simultaneously.
- When exchanging the micro-program offline in the remote copy configuration using multiple primary and secondary Storage Systems of Universal Replicator, first suspend all the pairs in this configuration.

NOTICE: If the status of LDEV which is created by external device mapping function is "Maintenance blockade" status and micro-program exchange is operated, the maintenance blockaded LDEV status is resorted and the status is changed to the normal status.

NOTICE: When off-line micro-program exchange is executed, monitor information on the collection on Dynamic Tiering is annulled. Therefore, the next relocation is not executed for the automatic execution mode. Please execute the termination processing of the monitor if necessary for the manual execution mode.
After off-line micro-program exchange, the relocation executed before off-line micro-program exchange is restarted regardless of the execution mode.

NOTICE: Please do not open the 'Maintenance' window during micro-program exchange. If the window is opened, micro-program exchange may end abnormally.
In the case that the 'Maintenance' window needs to be opened due to an error and so on, contact T.S.D. for help.

Table 3.1-1 Off-line Micro-program Exchange time (approximate)

(unit : minutes)

	CD-ROM reading	Micro-program exchange time
DKCMAIN		
RAMBOOT	1	30 (*1)
DKB		
Total	1	30

*1: This is the standard micro-program exchange time. The micro-program exchange time varies depending on the use situation, and is especially affected by the amount of write pending. When the amount of write pending is large, longer time than those shown in the above table might be required.

3.2 Storing the micro-programs to be substituted in the SVP

(1) <Initial screen>
Change the mode to [Modify] (CL).

(2)
Select (CL) [Install].

(3)
In the 'Install' window, select (CL) [Micro Program Install].
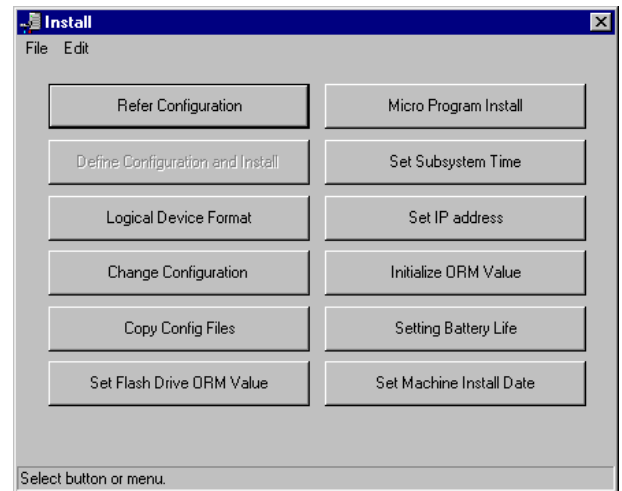
(4)
Select (CL) [Micro Program] and select (CL) [OK].

(5)
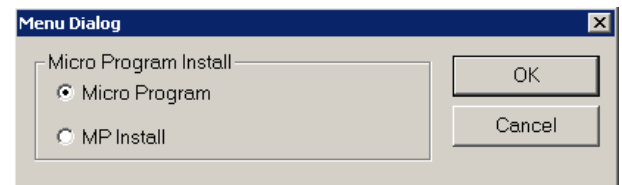
In the 'Microprogram Exchange' dialog box,
[How]: select (CL) [Offline FC].
[From]: select (CL) the source from which to store the
micro-programs.
[PC-Drive]: select (CL) the Client PC and the drive
letter from which to store the micro-programs (In the
case of CD-ROM).

[From]'s selection branch
CD-ROM: After being stored on the hard disk
                from CD-ROM, the micro-programs
                are downloaded.
                --- Select (CL) from the selection of PC-Drive.
Hard Disk: The latest versions on the SVP hard disk are downloaded.
                --- Go to 3.4 (1). (MICRO03-330)
Version Down: Old versions on the hard disk are downloaded.
                --- Go to 3.5 (1). (MICRO03-350)

[PC-Drive]'s selection branch
SVP: The SVP's drive --- Select (DR) the drive letter and Select (CL) [OK] and Go
                to (6)
Client PC: The Client PC's drive --- Select (DR) the drive letter and Select (CL) [OK]
                and Go to (6)

Selecting (CL) [Cancel] returns you to be step (3).
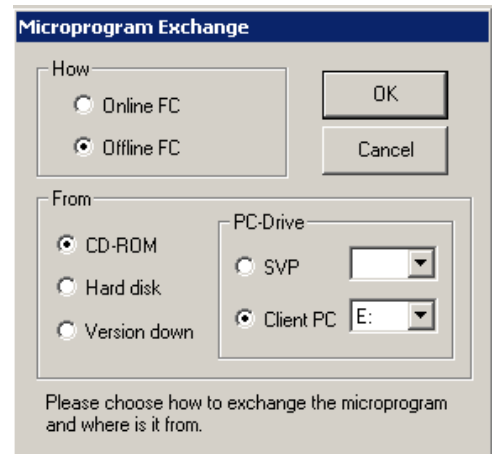
(6)

If you want to continue this process, enter the
password, and select (CL) [OK].

(7)

The 'Microprogram 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.

Microprogram Exchange

Please select micro-programs which you want to exchange.

☐ CMBK   ☐ RAM BOOT   ☐ SVP

☐ CFM   ☑ DKCMAIN   ☐ CUDG4

☐ DKB   ☐ Expander   ☐ CONFIG

☐ Expander(DBF)   ☐ HDD

OK   Cancel

One of messages are displayed by the storage system configuration.

Microprogram Exchange

[SMT2623W]

Confirm that you have already shut down all the connected SCSI hosts.
Do you want to continue processing?

Yes   No

Microprogram Exchange

[SMT2624W]

Please confirm you have already varied off all channel paths.
Do you want to continue this process?

Yes   No

Microprogram Exchange

[SMT2626W]

Confirm that you have already varied off all the channel paths.
Confirm that you have already shut down all the connected SCSI hosts.
Do you want to continue processing?

Yes   No
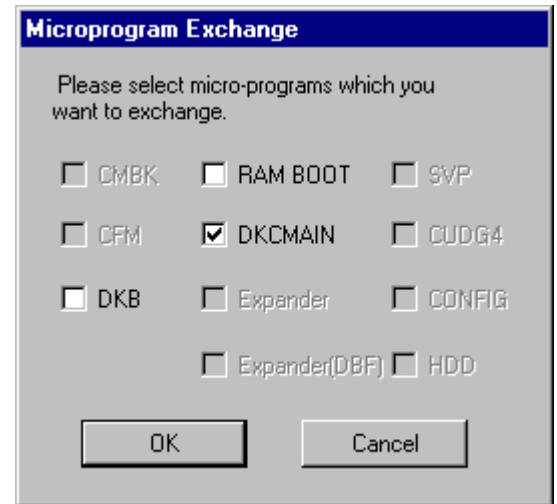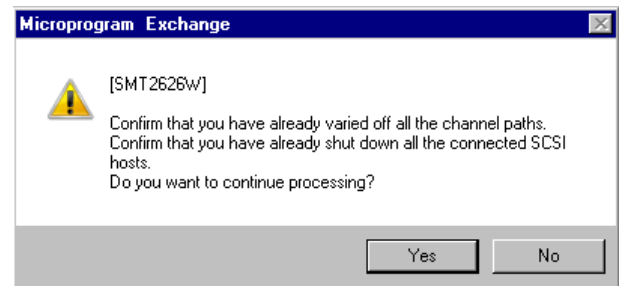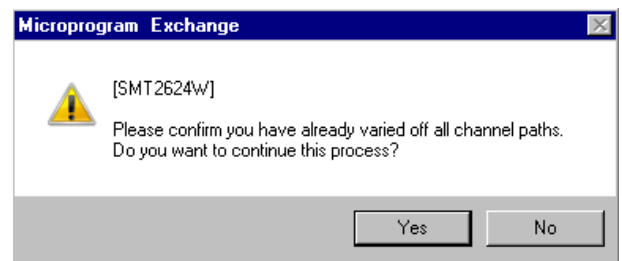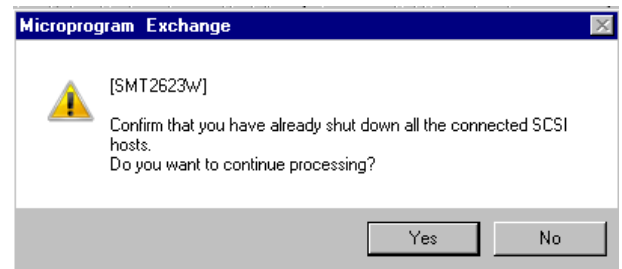
After you confirm that you have already varied all the channel paths to off-line, select (CL) [Yes].

(8)

If you select CD-ROM, a dialog "Insert the
CD-ROM in the CD-ROM drive." appears.
Insert the CD-ROM and select (CL) [OK].

Microprogram Exchange   ☒

ⓘ   [SMT3797i]

Insert the CD-ROM in the CD-ROM drive.

OK   Cancel

<<Error>>
No CD-ROM or uncorrect CD-ROM in the disk drive:
    The Message "Insert the correct CD-ROM." is displayed.
    Insert the correct CD-ROM and select (CL) [Retry].

(9)

If you select CD-ROM, the message
"Copying CD-ROM files to HD DKCMAIN"
appears.

Files Copying...

Copying CD-ROM files to HD   DKCMAIN

7%

(10)

If you select CD-ROM, a dialog "Remove the CD-ROM" appears.
Remove the CD-ROM and select (CL) [OK].

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", "Not change" or "Warning". To make processing progress, select (CL) [OK].
To terminate micro-program replacement, select (CL) [Cancel].
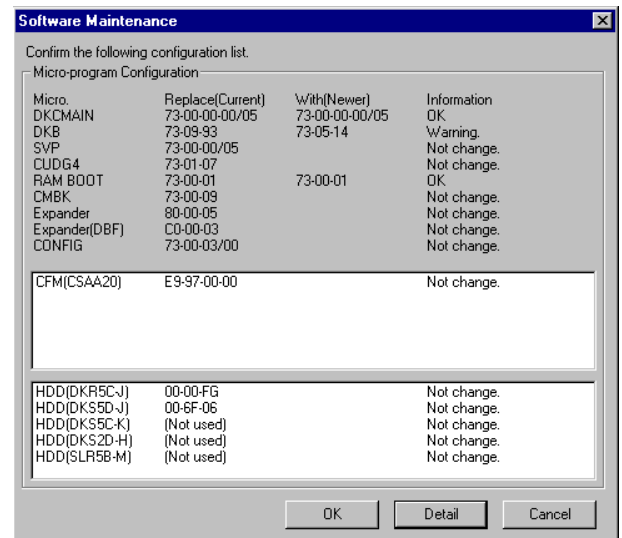
⚠ **CAUTION**

If "Warning" is displayed. Refrain from selecting (CL) "OK" or "Cancel". Select (CL) "Detail" surely. Confirm the contents and ask the technical support division for decision for selecting "OK" or "Cancel" according to the contents. To make processing progress, select (CL) [OK], input the password and select (CL) [OK]. Password is needed for this operation. Please call Technical Support Division to obtain password and authorization.

<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.

Select (CL) [Detail] to display detailed error
information.
Before making an attempt to rerun, be sure to
correct
the cause of the error by referring to the entire
status
(SVP SECTION), action code (ACC SECTION), and other information.
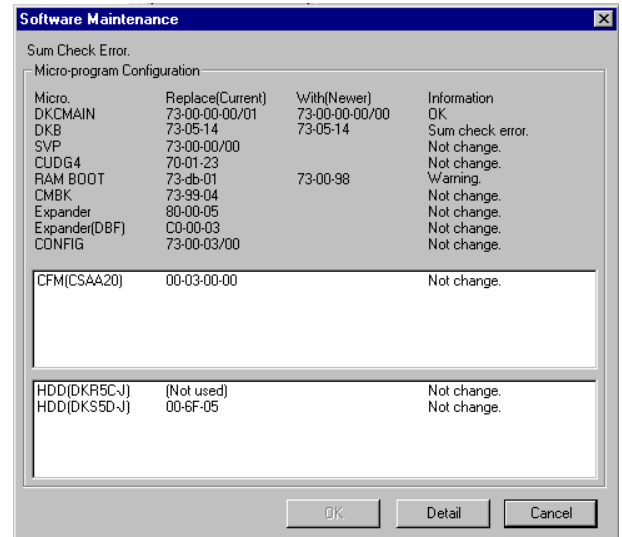
Below are messages and information that may be displayed in the Information column.

NOTE: Select (CL) [Detail] to display detailed error information, and confirm the cause of
        these errors.
        • "Version error"
        • "Revision error"
        • "Warning"
        • "Can't read the configuration of the micro-program."
        • "Warning" (Function bit map error)

Table 3.2-1 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 T.S.D. (Technical Support Division).
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. Recover the blockade of a concerned processor.
4	Internal error. (On SVP Logic)	Inconsistent logic. (SVP logic) Retry exchange. If the same message is displayed, reboot SVP.
5	Internal error. (On SVP Memory)	Inconsistent logic. (SVP memory) Retry exchange. If the same message is displayed, reboot SVP.
6	Internal error. (On Temporary Files)	Inconsistent logic. (temporary file) Retry exchange. If the same message is displayed, reboot SVP.
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 Micro-Media isn't correct. Exchange the Micro-Media.
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 T.S.D. (Technical Support Division).
12	Combination error	Incorrect micro-program exchange process. Confirm the combination of micro-program version and the exchange process.
13	Internal Version error.	If you perform the replacement of micro-program with the combination of these micro-program versions, there is a possibility that DKC/DB blockades the part. Confirm the micro-program version and replace process.

	Information	Contents
1	OK	The micro-program is replaceable.
2	Version error [#xxxx]	MP has an incorrect micro-program version. [processor number]
3	Internal error [#xxxx]	Inconsistent logic error has occurred. [internal error code]
4	Not change	The micro-program will not be replaced.
5	Read error	An error has occurred while reading the current configuration.
6	Sum Check error	The sum check code is incorrect.
7	Warning	It is necessary to contact TSD (Technical support Division) for approval.
8	Revision error	MP has an incorrect micro-program revision.

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

• FunctionID Table

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
00 : 26	RESERVE/PGR support for Nondisruptive Migration	Version down from RESERVE/PGR support for Nondisruptive Migration to unsupport micro is controlled.	Please confirm whether Nondisruptive Migration (NDM) is running or not. If NDM is running, please delete all of the volumes with NDM attribute (finish the migration) first. After that, please execute the micro program exchange to enter the password.
03 : 07	Shortening of RIOMIH TIME	Since the TC pair under RIOMIH time shortening operation exists, the version down to an unsupported micro is controlled.	Please execute the micro exchange again after dividing or deleting of all the TC pairs under RIOMIH time shortening operation.

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
05 : 11	Load Balance Mode support	Version down from UVM Load Balance Mode supported version to unsupported version is controlled.	Change Load Balance Mode of all of the external volumes from "Disabled" to "Normal Round-robin".
05 : 12	Generic Profile support	Version down from UVM Generic Profile supported version to unsupported version is controlled.	Delete all of the external volumes whose Model is displayed as "generic".
05 : 13	Support for policy setting per HDT page	Version down from support micro for Support for policy setting per HDT page to unsupport micro is controlled.	Please standby for one hour after turning on System Option Mode 912, and release the policy setting on each page. Afterwards, please execute the micro exchange again. *: Please turn off System Option Mode 912 after execute the micro exchange.
05 : 14	HDD coexistence in HDP/HDT Tier	Version down from support micro HDD coexistence in HDP/HDT Tier to unsupport micro is controlled.	Please execute the micro exchange again after doing the following procedures. (1) If the pool which uses four or more kinds of drives exists, please changes into three or less kinds. (2) If the pool which has two or more RAID levels in one tier exists, please change to one RAID level in one tier.
05 : 18	Support for Parity Group unit Rebalance	Version down from support micro for Parity Group unit Rebalance to unsupport micro is controlled.	Please execute the micro exchange again after deleting all HDP/HDT pool, or turning off System Option Mode 917, and after it does for a while.

05 : 19	Support of DBF and FMD	Suppress version downgrade to the micro-program that supports for DBF and FMD (NFH1x-PyyySS).
		• NFH1x-PyyySS
		  x: generation (A to Z)
		  y: capacity (TB)
			De-install all DBF and FMD (NFH1x-PyyySS) drives before the micro-program replacement, wait for two minutes, and then execute the micro-program replacement again.

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
05 : 25	Backend performance improvement	Version down from the Backend performance improvement supported version to unsupported version is controlled.	Please uninstall the P.P. license of "Flash Acceleration". And please execute the micro exchange again after 10 minutes or more pass.
05 : 27	Virtual LDEV ID support for Resource ID Takeover	Version down from Virtual LDEV ID support micro for Resource ID Takeover to unsupport micro is controlled.	Please execute the micro exchange again after deleting the LDEV where actual LDEV ID unlike virtual LDEV ID is set in a Resource ID Takeover.
05 : 29	HTI Support	Version down from support micro for HTI Support to unsupport micro is controlled.	Please execute the micro exchange again after deleting all the HTI pool and uninstalling the P.P. license of "HTI".

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
06 : 01	Support for Reclaim Zero Page of OPEN DP VOL using by ShadowImage/ VolumeMigration	Version down from Reclaim Zero Page of OPEN DP VOL using by ShadowImage/ VolumeMigraiton supported version to an unsupported version is controlled.	Please execute the micro-program exchange again after turning on System Option Mode 930, and confirming the output of SSB = 2cc9.
06 : 03	AIX GPFS Support	Downgrading the micro-program of GPFS supported version to an unsupported version is prevented.	Please execute the micro-program exchange again after the host mode option 72 is set to off on all Host Group.
06 : 04	ID Takeover OPEN-x and LUSE support	Downgrading the micro-program of ID Takeover OPEN-x and LUSE supported version to an unsupported version is prevented.	Please execute the micro-program exchange again after deleting all LDEVs whose product ID are virtualized.
06 : 07	Support for policy setting per HDT page Support for HDT Trial-Mode	Version down from support micro for HDT Trial-Mode to unsupport micro is controlled. Removing SM16/SM20 is controlled until the monitoring information for HDP Pool has been discarded.	Please execute the micro exchange again after 30 minutes have passed since System Option Mode 937 = OFF set.
06 : 08	NDM RAID500 Reserved Volume support	Downgrading the micro-program of NDM RAID500 Reserved Volume supported version to an unsupported version is prevented.	Please execute the micro-program exchange again and enter the password after confirming that data migration using NDM is not executed.
06 : 09	UR Path Group ID support	Version down from support micro for UR Path Group ID Support to unsupport micro is controlled.	Please execute the micro exchange again after deleting all Universal Replicator pairs set to Path Group ID excluding 0.

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
06 : 12	Improvement of asynchronous de-staging for UVM volume	Version down from support micro for improvement of asynchronous de-staging for UVM volume to unsupported micro is controlled.	Please execute the micro exchange again after setting System Option Mode 927 to "OFF".
06 : 17	Support for Nondisruptive Migration – ShadowImage Combination	Version down from support micro for Nondisruptive Migraiton – ShadowImage Combination to unsupported micro is controlled, when exist External VOL of NDM using by ShadowImage or System Option Mode 957 set "ON".	Please execute the micro exchange again after executing either the following. • Wait for completion of Nondisruptive Migraiton that is sharing a volume with ShadowImage and setting System Option Mode 957 to "OFF". • Delete of all ShadowImage pairs that is using External VOL of NDM and setting System Option Mode 957 to "OFF".
06 : 18	Support of fast registration of TI pairs generation	Version down from support micro for fast registration of TI pairs generation to unsupport micro is controlled.	Please execute the micro exchange again after checking all TI pairs finished pair split.
06 : 19	High-Speed Format progress indication improvement	Suppress version downgrade to the micro-program that supports for DKabc-HdddSS (4TB or more). • DKabc-HdddSS a: maker (R or S) b: size (2) c: generation (A to Z) d: capacity (4TB or more)	De-install all DKabc-HdddSS (4TB or more) drives before micro-program replacement, wait for two minutes, and then execute micro-program replacement again.

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
15 : 03	Flash optimization Support	Version down from the Flash optimization supported version to unsupported version is controlled.	Please uninstall the P.P. license of "Flash optimization". And please execute the micro exchange again after 10 minutes or more pass.
15 : 04	HAM (High Availability Manager) support	Suppress version downgrade to the HAM unsupported micro-program version.	Please execute the micro exchange again after deleting all the HAM Pair and Quorum Disk.
15 : 07	Support for Encrypt DKB	Version down from support micro for "Encrypt DKB" to unsupport micro is controlled.	Please de-install Encrypt DKB and execute micro exchange again.
15 : 08	Support for External LDEV tier rank	Version down from support micro for "External LDEV tier rank" to unsupport micro is controlled.	Please perform one of the following procedures, and execute the micro exchange again. • Delete the HDP/HDT pool which include External LDEV Tier Rank High or Low. • Shrink the pool-VOL set in External LDEV Tier Rank High or Low. • Change the setting of External LDEV Tier Rank High or Low to Middle.

FunctionID Table			
FunctionID	Function	Contents	Action (*1)
15 : 10	Nondisruptive Migration Support	Nondisruptive Migration Support	Please contact TSD (Technical Support Division).
15 : 11	Resource ID Takeover Support	Version down from support micro for Resource ID Takeover to unsupport micro is controlled.	Please execute the micro exchange again after releasing all Resource ID Takeover settings.
15 : 12	TC/UR Connection to USP V/VM Support	Version down from supported micro version of TC/UR Connection to USP V/VM to unsupported version is controlled.	Please execute the micro exchange again after releasing all TC pair, UR pair and Logical path to USP V/VM storage system.
15 : 13	Support for cache 16GB DIMM	Suppressing version downgrade to the micro-program version that does not support cache 16GB DIMM/BM256.	De-install all cache 16GB DIMM/BM256 and then execute the micro-program exchange again.
15 : 14	TC/UR Connection to VSP Support	Version down from supported micro version of TC/UR Connection to VSP to unsupported version is controlled.	Please execute the micro exchange again after releasing all TC pairs and UR pairs connected with VSP storage system.

*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.

(12)

The message "Making a backup of microprogram files. Please Wait..." appears.

Wait

Making a backup of
microprogram files. Please wait...
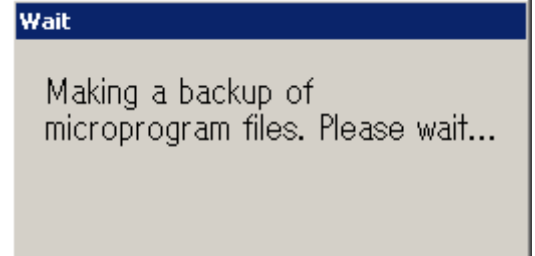
(13)

File copy in SVP.

Go to 3.3 (1).
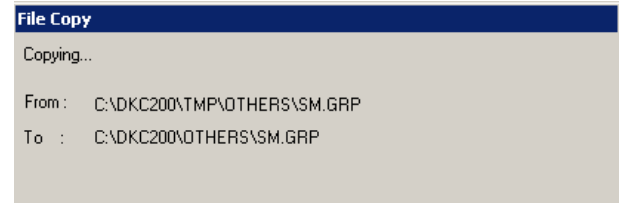
File Copy

Copying...

From : C:\DKC200\TMP\OTHERS\SM.GRP
To : C:\DKC200\OTHERS\SM.GRP

Blank Sheet

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3.3 Transferring micro-programs to the DKC

(1)

The message "Now Reading storage system configuration..." appears.

(2)
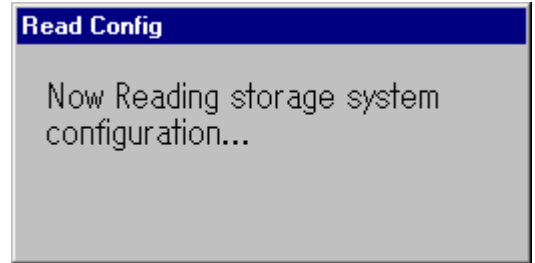
The message "Downloading *** micro-program..." (***: DKCMAIN, ...) appears.

(3)

The message "Now MP Rebooting... Group# n/N" appears.
All processors are recovered.

(4)

After downloading the micro-programs, SVP makes the Storage System to be enable and displays the following message "An exchange of a microprogram finished. Please check storage system status and microprogram version with MAINTENANCE.", select (CL) [OK].
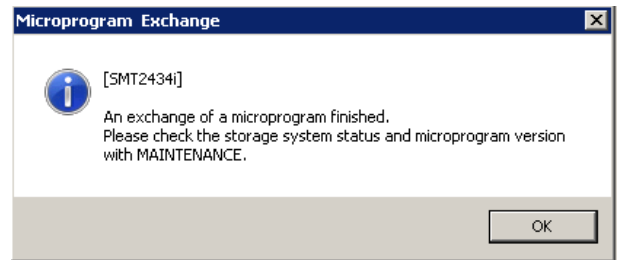
Go to 3.6 (MICRO03-380).

3.4 Hard Disk Download

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

(1)

[How]: Select (CL) [Offline FC].
[From]: Select (CL) [Hard Disk] in the 'Microprogram Exchange' dialog box.
And select (CL) [OK].
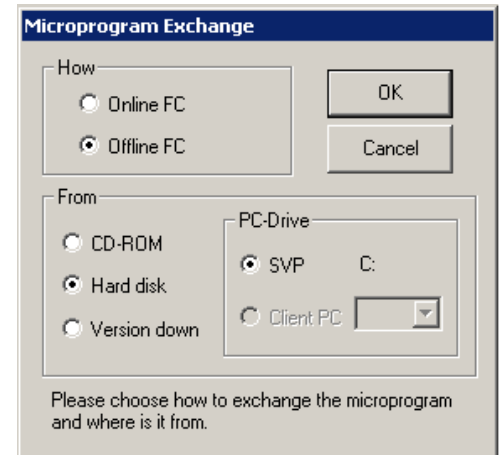
If you want to continue this process, enter the password, and select (CL) [OK].
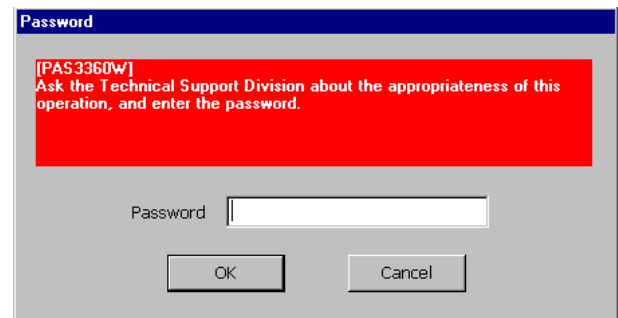
The 'Microprogram Exchange' dialog box appears. Select (CL) one or more items from the list of the type of micro-programs, and select (CL) [OK].

☑ : Micro-programs to be substituted.
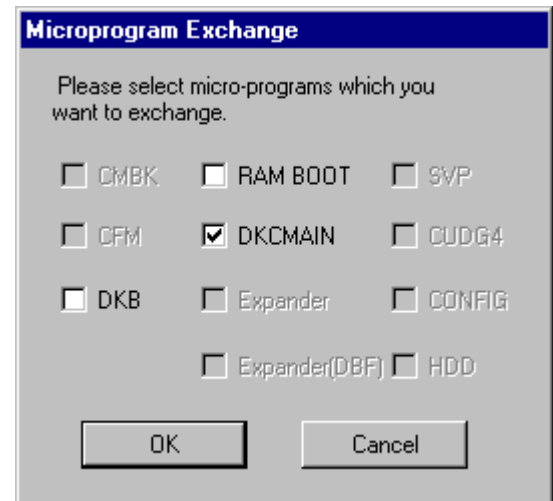
One of messages are displayed by the Storage System configuration.
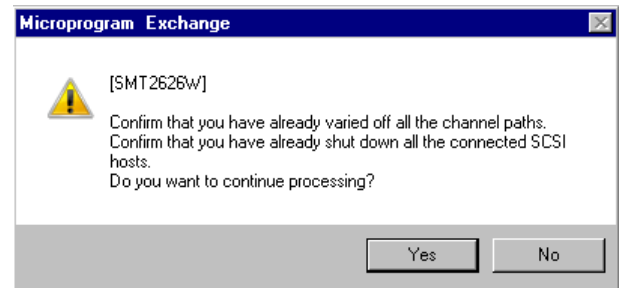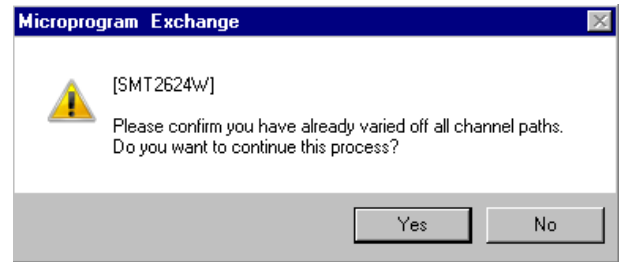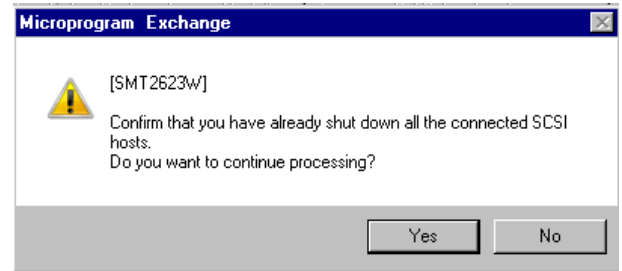
After you confirm that you have already varied all the channel paths to off-line, select (CL) [Yes].

Go to 3.2 (11). (MICRO03-70)

If an error occurs in downloading micro-programs to DKC, remove the cause of an error using Maintenance Display (SVP SECTION), Action Code (ACTION CODE SECTION), and other information to execute the exchange again. Then start from the first step of MICRO-FC procedure. At this time, you can select [Hard Disk] or [CD-ROM] at 3.2 (5) (MICRO03-40).

(2)
Go to 3.3 (1) (MICRO03-320).

3.5 Version Down

⚠ CAUTION

Ask the technical support division about the appropriateness of the operation.
Please do not execute the Version Down function during initial copy or resynchronization of TrueCopy or Universal Replicator. If you execute it, the micro-program exchange may fail.

If you want to restore the micro-program to the previous version of the micro-program after the exchange (by CD-ROM), execute the Version Down function.

(1)

[How]: Select (CL) [Offline FC].
[From]: Select (CL) [Version Down] in the 'Microprogram Exchange' dialog box.
And select (CL) [OK].
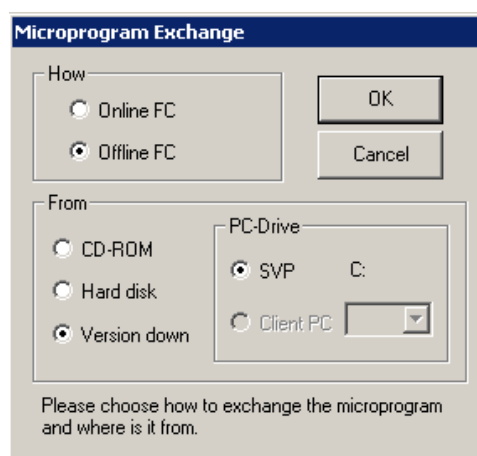
If you want to continue this process, enter the password, and select (CL) [OK].
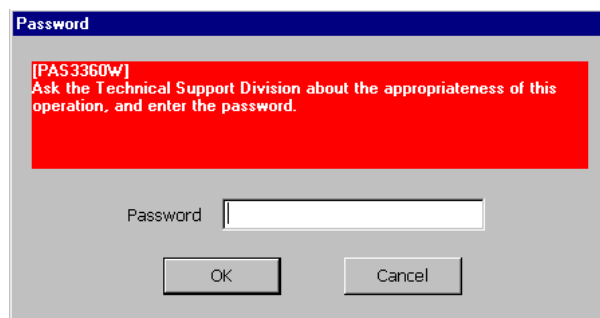
The 'Microprogram Exchange' dialog box appears. Select (CL) one or more items from the list of the type of micro-programs, and select (CL) [OK].

☑ : Micro-programs to be substituted.

NOTE: The Version Down function can restore only micro-programs that have been exchanged of the MICRO. When the MICRO has not been executed the Version Down function cannot be executed until the next MICRO is done.

One of messages are displayed by the Storage System configuration.
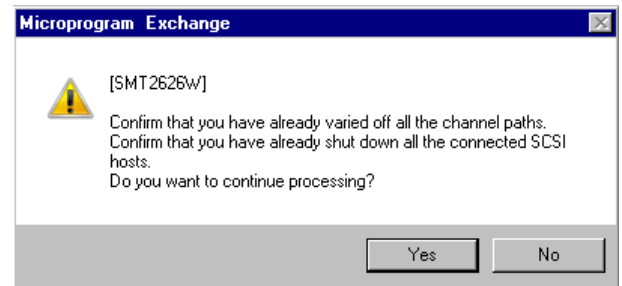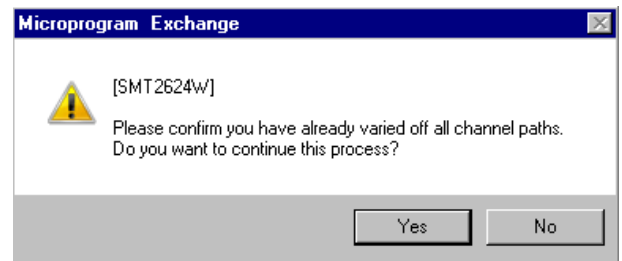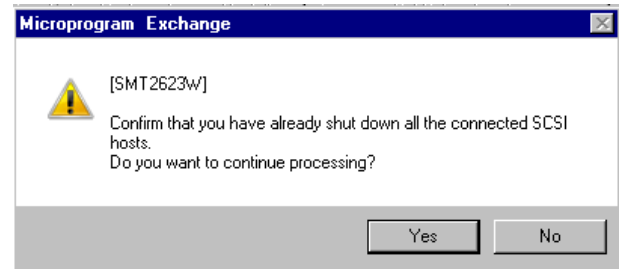
After you confirm that you have already varied all the channel paths to off-line, select (CL) [Yes].

Go to 3.2 (11). (MICRO03-70)

(2)

Copy source and copy destination are
displayed.

File Copy

Copying...

From :   C:\DKC200\TMP\OTHERS\SM.GRP
To   :   C:\DKC200\OTHERS\SM.GRP
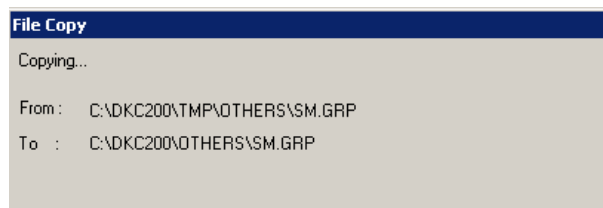
(3)

Go to 3.3 (1) (MICRO03-320).

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 the version display in the MAINTENANCE function.
(See SVP SECTION.)

> **NOTICE:** If you find "??-??···" or incompatibility version, recover the status following "6.2 Recovery procedure in off-line menu was selected" (MICRO06-110).

When you downgraded the version of the micro-program of SVP, the program (jar file) of Web Console may be cached and not operated. Clear the cache of Java. Refer to the WEB CONSOLE SECTION for clearing the cache of Java.

After changing the mode from [Modify Mode] to [View Mode], select (CL) the [Execute]-[Exit] menu on the maintenance screen and then check that Web Console starts. If it failed to start, recover it referring to troubleshooting in the WEB CONSOLE SECTION.

When the customer uses Storage Navigator, request the customer to restart the Storage Navigator running PC (Web client) surely after replacing the micro-program.

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 6 "Trouble Recovery Procedure in Exchanging Micro-programs".

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

4.1 Processing before exchange

- The following Online HDD Micro-program exchange is supported for all models.
- Check the Storage System status through the entire status display. (Check the versions of all the programs through the version display.)
- Make sure that no processing is in progress. (*1)
  - *1: In case Dynamic Sparing, Correction Copy, or Copy Back is running, the micro-program exchange can be performed if HDD micro-program is not included. For details, refer to "Notes on maintenance during LDEV Format/drive copy operations" on THEORY SECTION. (THEORY03-24-10)
- Perform post processing for PIN data.
- Check that all processors are normal.

NOTICE: It is recommended to execute this function in the status of all MP's utilization rates less than 50% because there is a possibility of receiving the influence of I/O processing at the processing time of this function.

NOTICE: If the status of LDEV which is created by external device mapping function is "Maintenance blockade" status and micro-program exchange is operated, the maintenance blockaded LDEV status is restored and the status is changed to the normal status.

NOTICE: Please do not use the newly supported function until all micro-program exchange operations are completed.

NOTICE: Please do not open the 'Maintenance' window during micro-program exchange. If the window is opened, micro-program exchange may end abnormally. In the case that the 'Maintenance' window needs to be opened due to an error and so on, contact T.S.D. for help.

Table 4.1-1 On-line Micro-Program Exchange time (approximate)

(unit : minutes)

	CD-ROM reading	Micro-program exchange time
DKCMAIN		13 (*1)
DKB		10
SVP		11
CUDG4		—
RAMBOOT	6	6 (*1)
CMBK		3
Expander		50
Expander(DBF)		
CONFIG		5
CFM		3
HDD		7
Total	6	108

(The number of Drive Boxes : 20, The number of Drives : 400)

*1: The time is that when "By 1/4" is selected for reboot processors.

4.2 Storing the micro-programs to be substituted in the SVP

(1) <Initial screen>
 Change the mode to [Modify] (CL).

(2)
 Select (CL) [Install].

(3)
 In the 'Install' window, select (CL) [Micro Program Install].
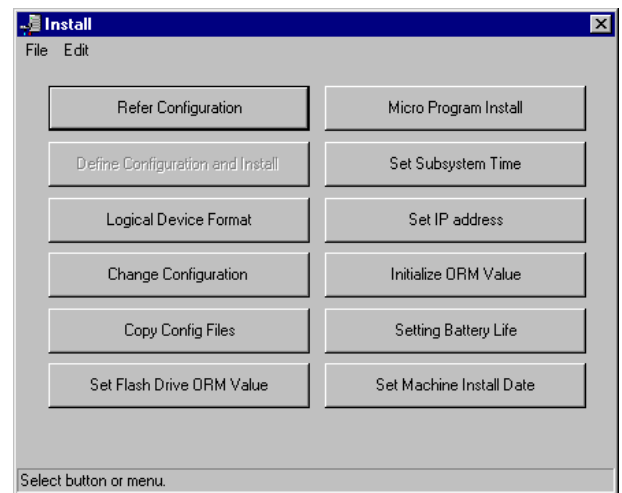
(4)
 Select (CL) [Micro Program].
 Select (CL) [OK].
 Selecting (CL) [Cancel] returns you to step (3).

(5)
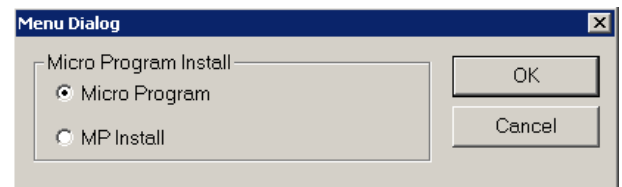
In the 'Microprogram Exchange' dialog box,
[How] : select (CL) [Online FC].
[From]: select (CL) the source from which to store the
micro-programs.
[PC-Drive]: select (CL) the Client PC and the drive
letter from which to store the micro-programs (In the
case of CD-ROM).

[From]'s selection branch
CD-ROM: After being stored on the hard disk
               from CD-ROM, the micro-programs are
               downloaded.
                --- Select (CL) from the selection of PC-Drive.
Hard Disk: The latest versions on the SVP hard disk are downloaded.
                --- Go to 4.4 (1). (MICRO04-190)
Version Down: Old versions on the hard disk are downloaded.
                --- Go to 4.5 (1). (MICRO04-200)

[PC-Drive]'s selection branch
SVP: The SVP's drive --- Select (DR) the drive letter and Select (CL) [OK] and Go
                to (6)
Client PC: The Client PC's drive --- Select (DR) the drive letter and Select (CL) [OK]
                and Go to (6)

Selecting (CL) [Cancel] returns you to be step (4).
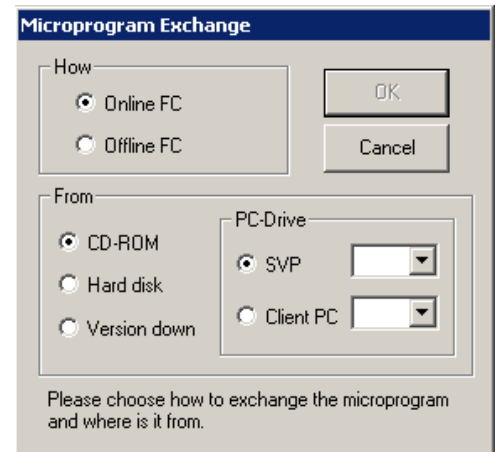
(6)

The 'Microprogram 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.
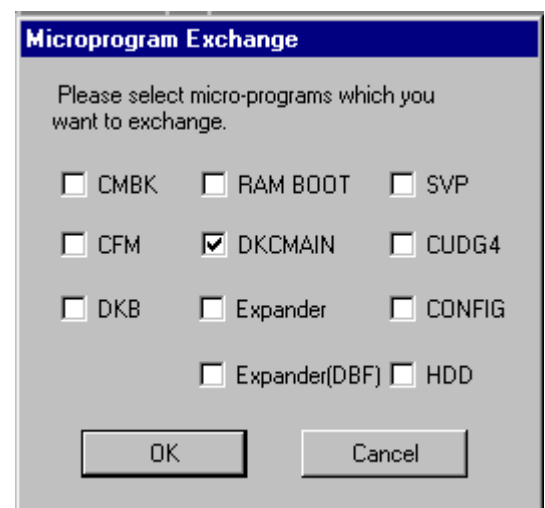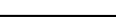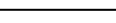
(7)
When DKCMAIN, or RAMBOOT were selected, you can select the reboot pattern from the list.

⚠ CAUTION

Please select a reboot pattern by taking the following table into account.

REBOOT PATTERN		BY 1/2	BY 1/4	BY 1/8	BY ONE
EXCHANGE TIME	STANDARD VALUE (*1) [MINUTE](APPROX.)	10	15	20	30
		SHORT ⟵⟶ LONG			
EFFECT ON PERFORMANCE OF DKC		BIG ⟵⟶ SMALL			

 *1: MEASURE CONDITION : 4MP Unit (MP Blade × 2), NO I/O.

Sometimes an "error" message is displayed temporarily in [Reboot status display].
But, there is no problem if the reboot is finished without error.

Please select (CL) one of these patterns and select (CL) [OK].

By 1/2 : Reboot by half MPs in the DKC storage system.
By 1/4 : Reboot by quarter MPs in the DKC storage system.
By 1/8 : Reboot by 1/8 MPs in the DKC storage system.
By One : Reboot by minimum reboot unit MPs in the DKC storage system.
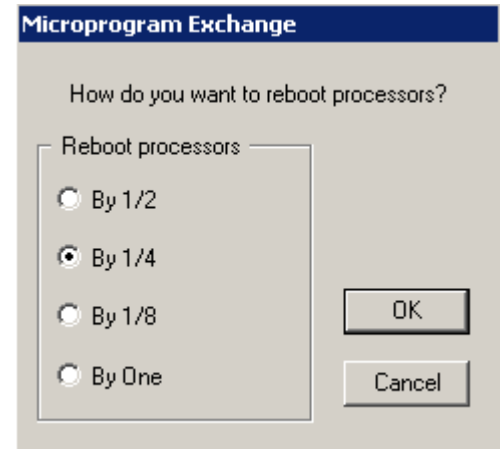
(8)

If you select CD-ROM, a dialog "Insert the
CD-ROM in the CD-ROM drive." appears.
Insert the CD-ROM and select (CL) [OK].

<<Error>>
No CD-ROM or uncorrect CD-ROM in the disk drive:
    The Message "Insert the correct CD-ROM." is displayed.
    Insert the correct CD-ROM and select (CL) [Retry].

(9)
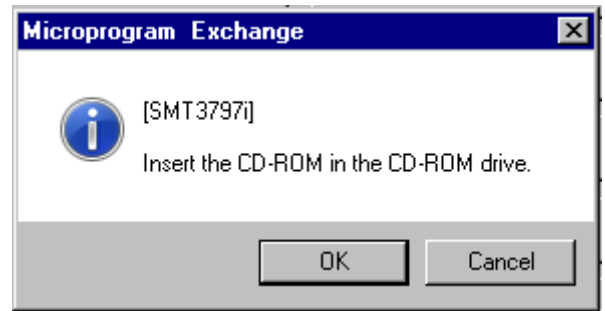
If you select CD-ROM, the message
"Copying CD-ROM files to HD DKCMAIN"
appears.

(10)
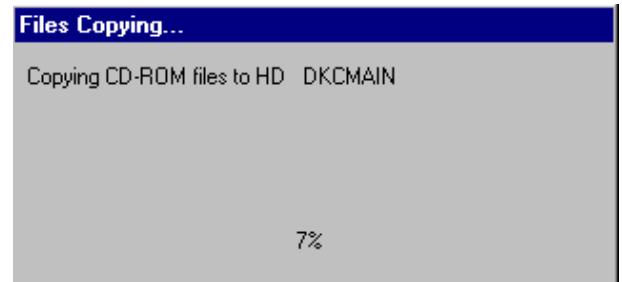
      If you select CD-ROM, a dialog "Remove the CD-ROM."
appears.
Remove the CD-ROM and select (CL) [OK].
If you select floppy disk, upon completion of reading from all
floppy disks, the message "Remove the FD" appears.
In response to this message, remove the floppy disk and
select (CL) [OK].
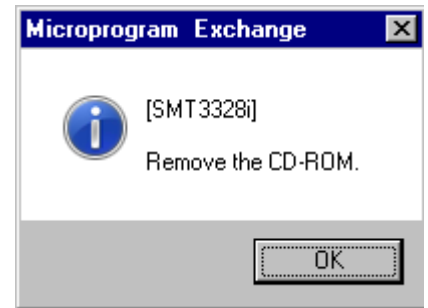
      After copy end, sum checker starts.
While checking, the message appears.
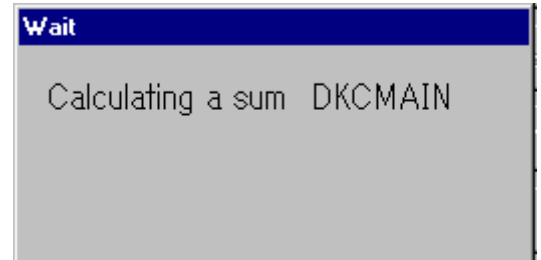
(11)

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", "Not change" or "Warning".
To continue processing, select (CL) [OK].
To terminate micro-program replacement,
select (CL) [Cancel].
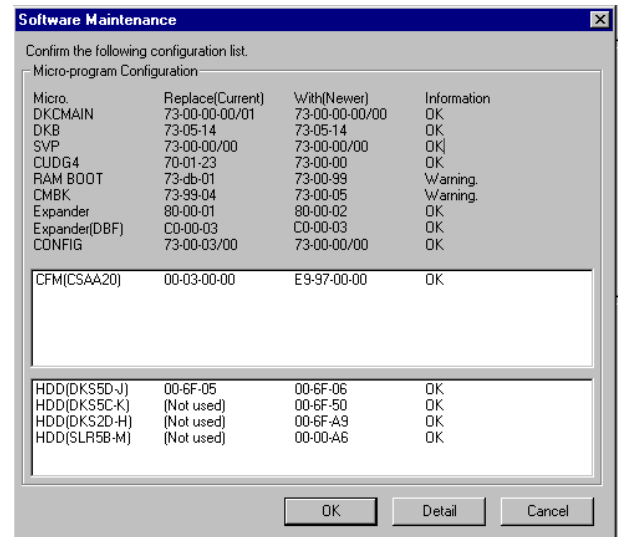
Software Maintenance			
Confirm the following configuration list.			
Micro-program Configuration			
Micro.	Replace(Current)	With(Newer)	Information
DKCMAIN	73-00-00-00/01	73-00-00-00/00	OK
DKB	73-05-14	73-05-14	OK
SVP	73-00-00/00	73-00-00/00	OK|
CUDG4	70-01-23	73-00-00	OK
RAM BOOT	73-db-01	73-00-99	Warning.
CMBK	73-99-04	73-00-05	Warning.
Expander	80-00-01	80-00-02	OK
Expander(DBF)	C0-00-03	C0-00-03	OK
CONFIG	73-00-03/00	73-00-00/00	OK
CFM(CSAA20)	00-03-00-00	E9-97-00-00	OK
HDD(DKS5D-J)	00-6F-05	00-6F-06	OK
HDD(DKS5C-K)	(Not used)	00-6F-50	OK
HDD(DKS2D-H)	(Not used)	00-6F-A9	OK
HDD(SLR5B-M)	(Not used)	00-00-A6	OK

[OK]   [Detail]   [Cancel]

⚠ CAUTION

If "Warning" is displayed. Select (CL) "Detail" surely. Confirm the contents and ask the
technical support division for decision for selecting "OK" or "Cancel" according to the
contents. To make processing progress, select (CL) [OK], input the password and select
(CL) [OK]. Password is needed for this operation. Please call Technical Support Division
to obtain password and authorization.

<Display with an error>
A sample error display 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 the micro-program replacement.

NOTE: The [OK] button is not displayed.

Select (CL) [Detail] to display detailed error information.
Before attempting to rerun, be sure to correct the cause of the error. Refer to the entire status (SVP SECTION), action code (ACC SECTION), and other information.
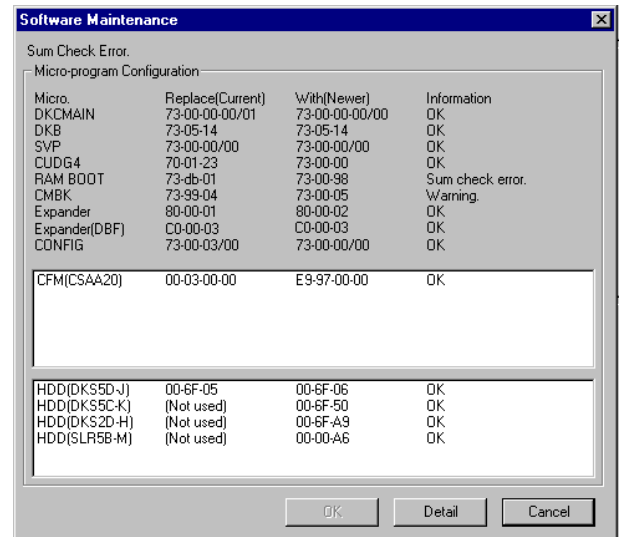
See Version Check Message Table (MICRO03-90).

NOTE: Select (CL) [Detail] to display detailed error information, and confirm the cause of these error
- "Version error"
- "Revision error"
- "Warning"
- "Can't read the configuration of the micro-program"
- "Warning" (Function bit map error)

(12)

The message "Making a backup of microprogram files. Please Wait..." appears.
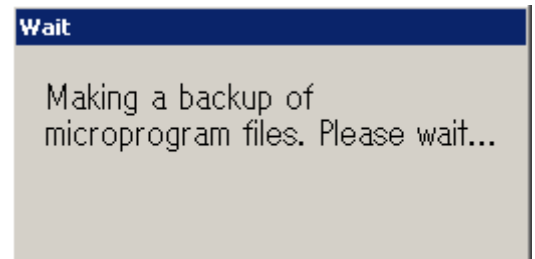
(13)

File copy in SVP

- DKC/DB: go to 4.3.1 (MICRO04-100).
- SVP: go to 4.3.2 (MICRO04-150).
- CONFIG: go to 4.3.3 (MICRO04-170).
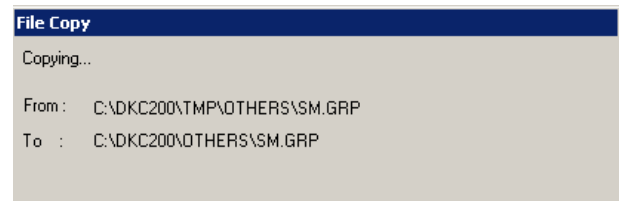
4.3 Transferring micro-programs

4.3.1 Transferring micro-programs to the DKC/DB

(1)

The message "Now Reading storage system configuration..." appears.

Read the current DKC configuration.
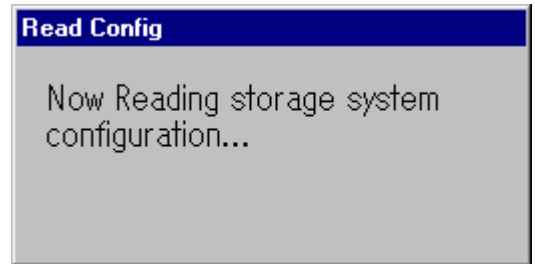
NOTE: When a match is not found in the version and revision between the micro-program in the DKC and that on the SVP hard disk, the micro-program cannot be exchanged on on-line. In this case, the message "Is the device off-line?" appears, and the exchange is canceled.
When a processor is blocked due 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, resolve the cause of an error using Maintenance Display (SVP SECTION), Action Code (ACTION CODE SECTION), and other information to execute the exchange again. Then start from the first step of MICRO-FC procedure. At this time, you can select [Hard Disk] or [CD-ROM] at 4.2 (5) (MICRO04-40).

(2)

The message "Downloading *** micro- program..." (***: DKCMAIN, DKB, ...) appears.

(3)

The message "Now MP Rebooting... Group# n/N" appears.
The processor is recovered.
SVP executes steps (2) and (3) for each exchanging unit.

<Replacement of the CMBK micro-program>
(a) When the revision of CMBK micro-program is older
     than that of MAIN Blade's, the location of MAIN
     Blade in the Revision Down is displayed.

   • When you select (CL) [Up], the CMBK micro-
     program in the revised MAIN Blade only is updated.
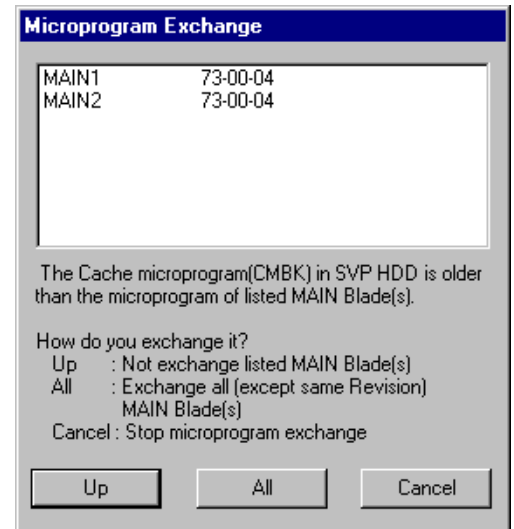
   • When you select (CL) [All], the message
     shown on the right is displayed.
     When you select (CL) [Yes] in response to
     the message, CMBK micro-programs of the
     MAIN Blades having micro-programs of
     different versions are updated.
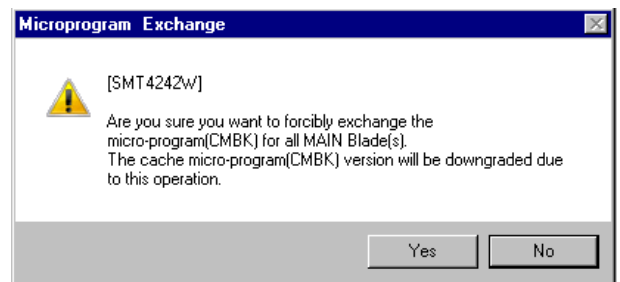
<Replacement of the CFM micro-program>
(a) When the revision of the CFM micro-program
     is older than that of CFM's, the location of
     CFM in the Revision Down is displayed.

   • When you select (CL) [Up], the CFM
     micro-program in the revised CFM only is
     updated.
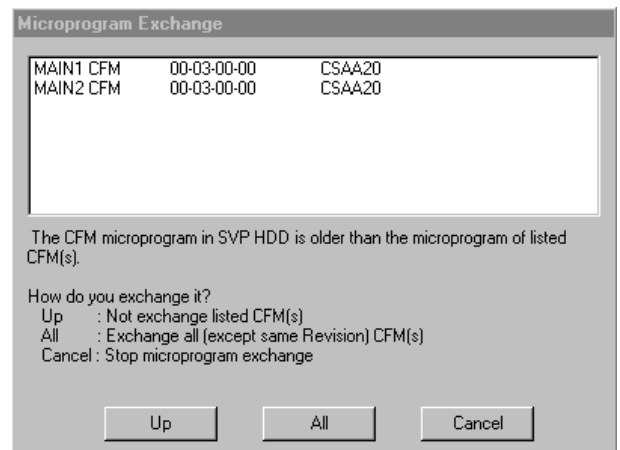
   • When you select (CL) [All], the message
     shown on the right is displayed.
     When you select (CL) [Yes] in response to
     the message, the CFM micro-programs of
     the CFM having micro-programs of
     different versions are updated.

<Replacement of the Expander/Expander(DBF) micro-program>
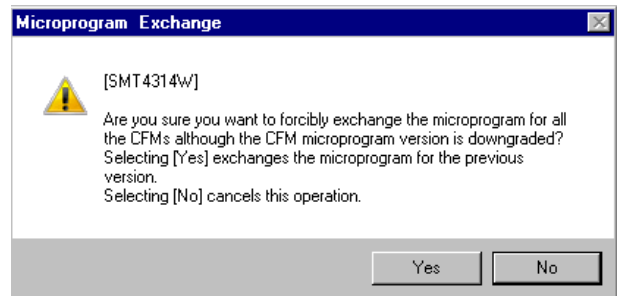
(a) When the revision of Expander/Expander(DBF) micro-program is older than that of ENC's, the location of ENC in the Revision Down is displayed.

- When you select (CL) [Up], the Expander/Expander(DBF) micro-program in the revised ENC only is updated.
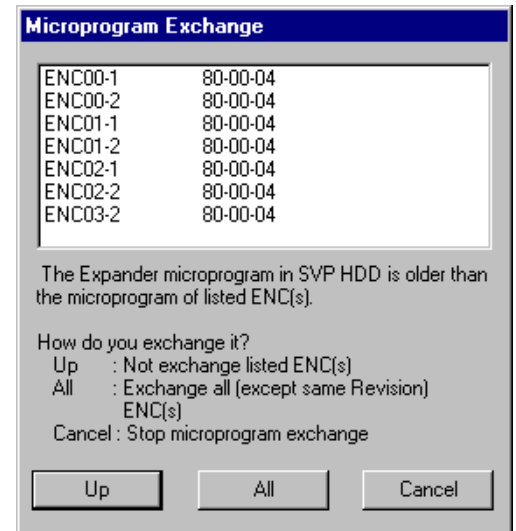
ENC00-1	80-00-04
ENC00-2	80-00-04
ENC01-1	80-00-04
ENC01-2	80-00-04
ENC02-1	80-00-04
ENC02-2	80-00-04
ENC03-2	80-00-04

Microprogram Exchange

The Expander microprogram in SVP HDD is older than the microprogram of listed ENC(s).

How do you exchange it?
Up : Not exchange listed ENC(s)
All : Exchange all (except same Revision) ENC(s)
Cancel : Stop microprogram exchange

[Up] [All] [Cancel]

- When you select (CL) [All], the message shown on the right is displayed.
  When you select (CL) [Yes] in response to the message, Expander/Expander(DBF) micro-programs of the ENC having micro-programs of different versions are updated.

Microprogram Exchange

[SMT4301W]

Are you sure you want to forcibly exchange the microprogram for all the expanders?
Select [Yes] downgrades the expander microprogram version.
Select [No] cancels this operation.

[Yes] [No]

<Replacement of the HDD micro-program>

(a)
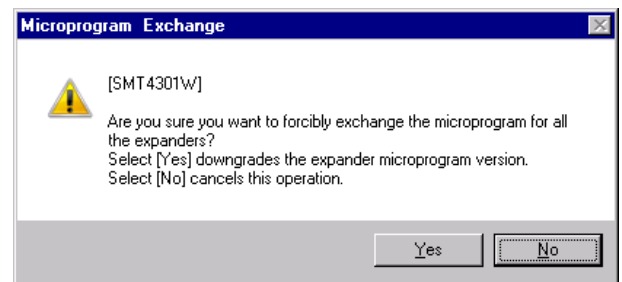
When the SVP hard disk and the HDD have HDD micro-programs of the same revision, the replacement of the HDD micro-program ends with the following message on the screen:
"The HDD microprogram version not upgraded because the type of HDD is different or the version of HDD microprogram is the same."
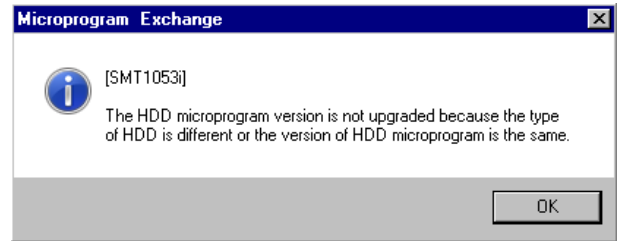
(b)

When the revision of the HDD micro-program is older than that of HDD's, the location of HDD in the Revision Down is displayed.
When you select (CL) [Up], the HDD micro-program in the revised HDD only is updated.
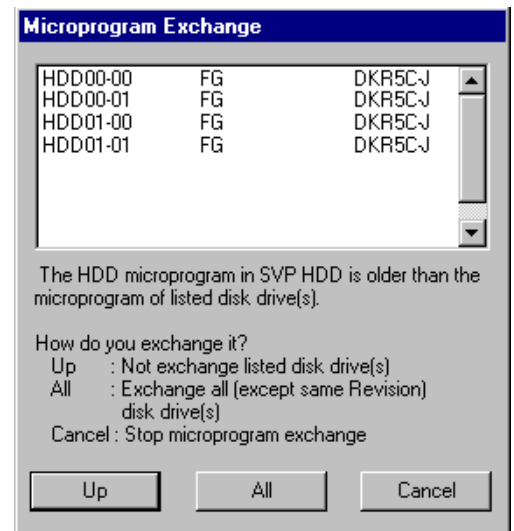
When you select (CL) [All], the message shown on the right is displayed.
When you select (CL) [Yes] in response to the message, HDD micro-programs of the HDDs having micro-programs of different versions are updated.
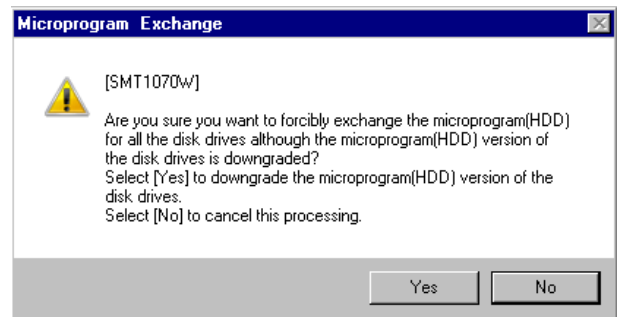
(4)

In response to the message "An exchange of a microprogram finished. Please check storage system status and microprogram version with MAINTENANCE.", select (CL) [OK].

Go to 4.6. (MICRO04-220)
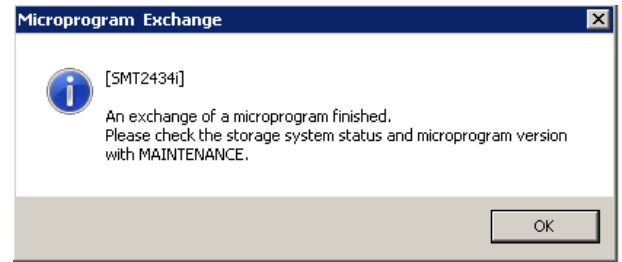
4.3.2 Transferring micro-programs to SVP

(1)

Start of the exchange (SVP).
The message "Now Uncompressing..." is displayed.
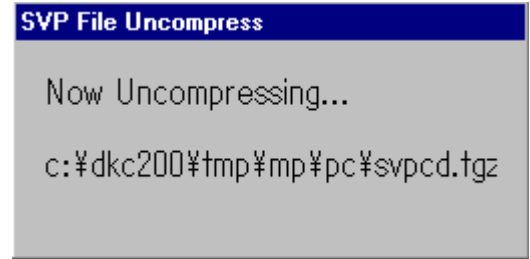
(2)

End of the exchange (SVP).
Select (CL) [OK].
Terminate some application programs, so SVP is rebooted automatically.

NOTE: After SVP reboot, because the connection with the Clients PC and the SVP goes out, make re-connection (refer to SVP 1.5.2) and check surely the message of the micro-program exchange end.

NOTE: Please perform a remote desktop reconnection after more than five minutes from pushing down the [OK] button of a [SMT1105i] message.

(3)

In response to the message "An exchange of a microprogram finished. Please check storage system status and microprogram version with MAINTENANCE.", select (CL) [OK].

Go to 4.6. (MICRO04-220)
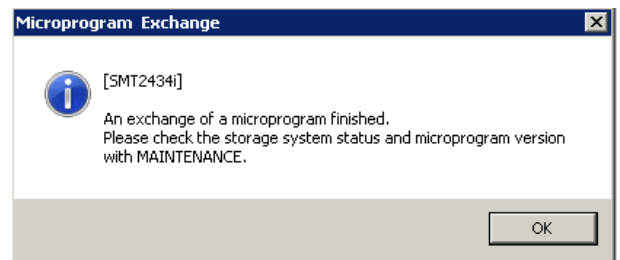
4.3.3 CONFIG Update

(1)

The message "Exchanging Configuration..." is displayed.
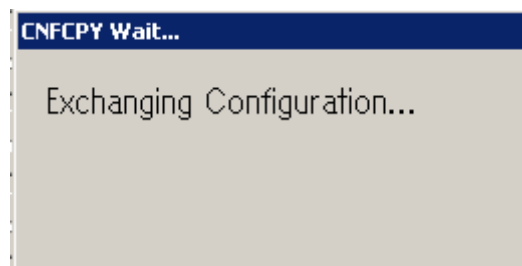
(2)

Execute an operation for backing up the configuration information.
Prepare the removable media for backup and insert the media.
Please select (CL) the [Refresh] button, and update drive information.
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.
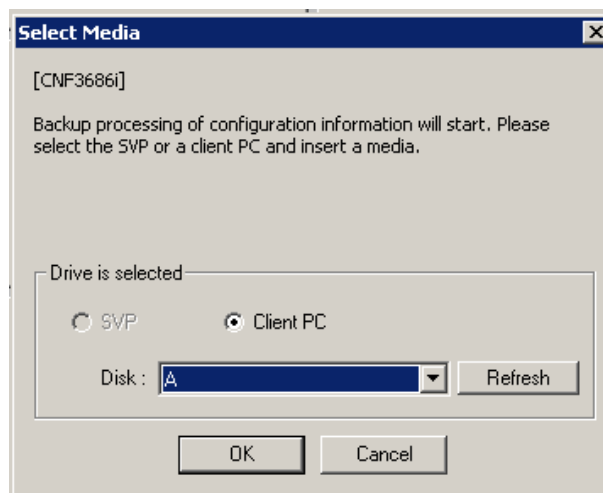
(3)

If the configuration information is not saved in the selected media, go to step (4).
If the configuration information is already saved in the selected media, the following information message is displayed. When you want to continue the process, select (CL) the [Yes] button. When the backup to the Config media is not necessary, select (CL) the [No] button and go to step (6).
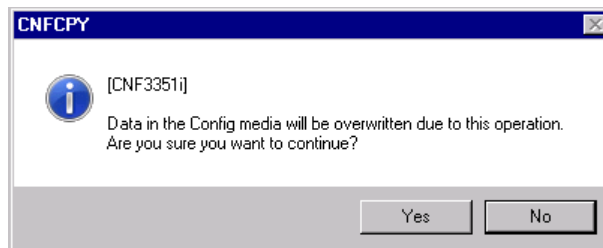
(4)

Backup the configuration information to the Config media for backup. While this operation is being done, the 'CNFCPY Wait...' window is displayed.

(5)
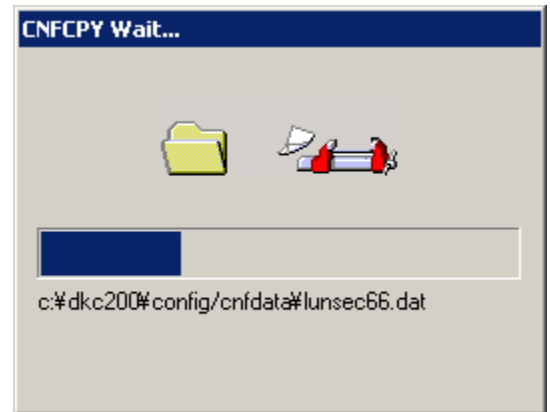
After the Config media is pulled out, select (CL) the [OK] in response to the message "Please remove the configuration information media.".
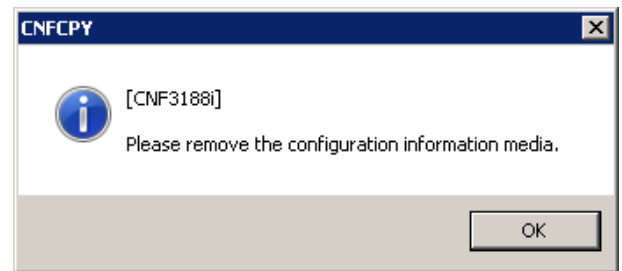
(6)

End of the exchange (SVP).
Select (CL) [OK].
Terminate some application programs, so SVP is rebooted automatically.

NOTE: After SVP reboot, because the connection with the Clients PC and the SVP goes out, make re-connection (refer to SVP 1.5.2) and check surely the message of the micro-program exchange end.

NOTE: Please perform a remote desktop reconnection after more than five minutes from pushing down the [OK] button of a [SMT1105i] message.

(7)

In response to the message "An exchange of a microprogram finished. Please check storage system status and microprogram version with MAINTENANCE.", select (CL) [OK].

Go to 4.6. ()
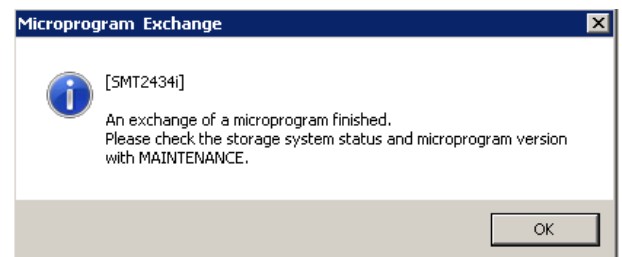
MICRO04-180

4.4 Hard Disk Download

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

(1)

[How]: Select (CL) [Online].
[From]: Select (CL) [Hard Disk] in the 'Microprogram
Exchange' dialog box.
And select (CL) [OK].
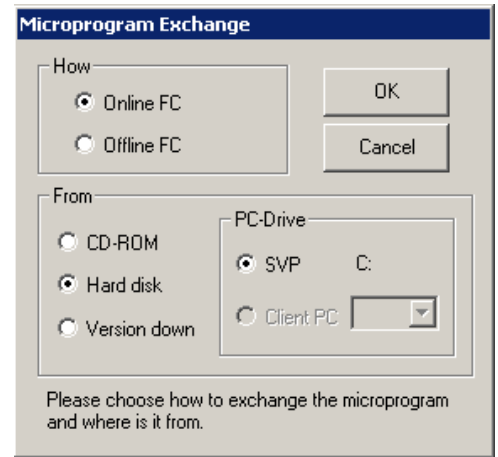
(2)

Select (CL) one or more items from the list of the
type of micro-programs.
And select (CL) [OK].

☑ : Micro-programs to be substituted.

(3)
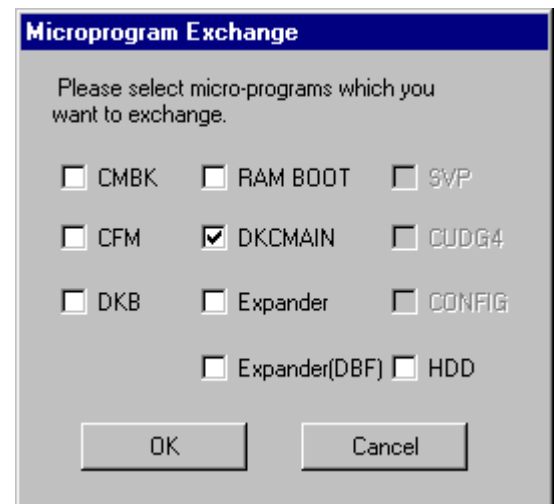
Go to 4.2 (7) (MICRO04-50).

(4)

Execute from 4.3.1 (1).
Go to 4.3.1 (1) (MICRO04-100).

4.5 Version Down

> ⚠ **CAUTION**
>
> Ask the technical support division about the appropriateness of the operation.
> Please do not execute the Version Down function during initial copy or resynchronization of TrueCopy or Universal Replicator. If you execute it, the micro-program exchange may fail.

If you want to restore micro-programs to the previous versions of the micro-programs after the exchange (by CD-ROM), execute the Version Down function.

(1)

    [How]: Select (CL) [Online FC].
    [From]: Select (CL) [Version Down] in the
    'Microprogram Exchange' dialog box.
    And select (CL) [OK].
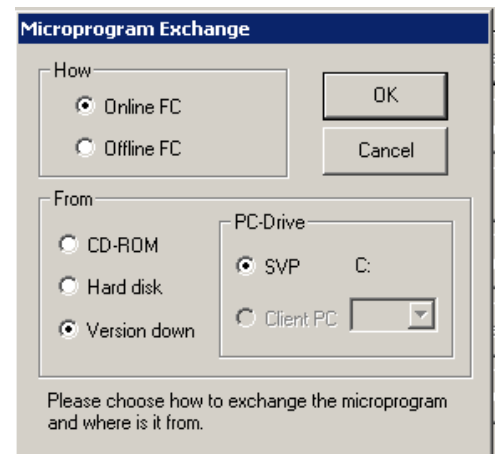
(2)

    Micro-programs to be restored are displayed in the 'Microprogram Exchange' dialog box.

    NOTE: The Version Down function can restore only micro-programs that have been exchanged of the MICRO.
            When the MICRO has not been executed the Version Down function cannot be executed until the next MICRO is done.

(3)
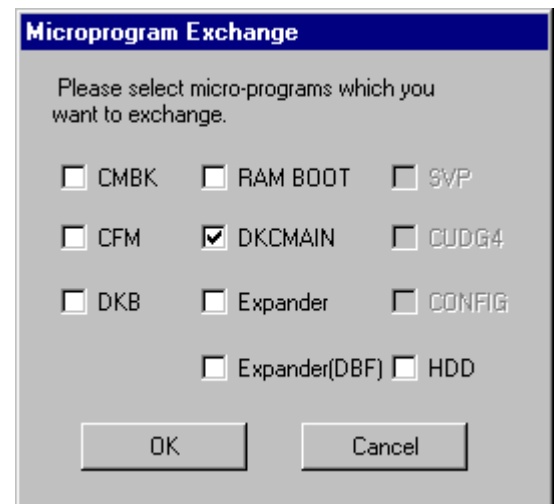
Go to 4.2 (7) (MICRO04-50).

(4)

Copy source and copy destination are displayed.

Execute 4.3.1 (1).
Go to 4.3.1 (1) (MICRO04-100)

File Copy

Copying...

From : C:\DKC200\TMP\OTHERS\SM.GRP
To   : C:\DKC200\OTHERS\SM.GRP
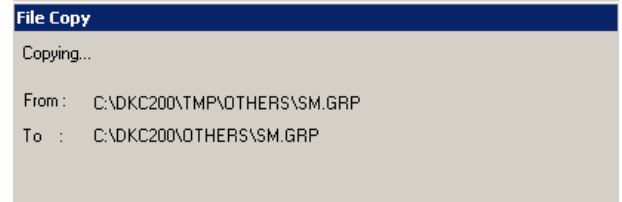
4.6 Checking the functions after exchange

Check that the version of the recently installed micro-program is the same as that of the replaced micro-program by using the version display in the MAINTENANCE function.
(See SVP SECTION.)

> **NOTICE:** If you find "??-??···" or incompatibility version, recover the status following "6.1 Recovery procedure in on-line menu was selected" (MICRO06-10).

When you downgraded the version of the micro-program of SVP, the program (jar file) of Web Console may be cached and not operated. Clear the cache of Java. Refer to the WEB CONSOLE SECTION for clearing the cache of Java.

After changing the mode from [Modify Mode] to [View Mode], select (CL) the [Execute]-[Exit] menu on the maintenance screen and then check that Web Console starts. If it failed to start, recover it referring to troubleshooting in the WEB CONSOLE SECTION.

When the customer uses Storage Navigator, request the customer to restart the Storage Navigator running PC (Web client) surely after replacing the micro-program.

5. MP Install

5.1 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 during the micro-program download.

Since a processor that encountered such a problem started unsuccessfully without loading micro-programs, in a state of waiting for FM write. In such a case, a SIM with reference code = 7900XY (for the MP (Channel adaptor)) is reported. Also, an SSB (F/M = 8C, EC = 3309) is reported. The user must examine this SIM or SSB and perform MP Install on the processor that issued the SIM or the SSB.

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

5.2 MP Install

(1)

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

(2)

Select (CL) [Micro Program Install] in the 'Install' window.
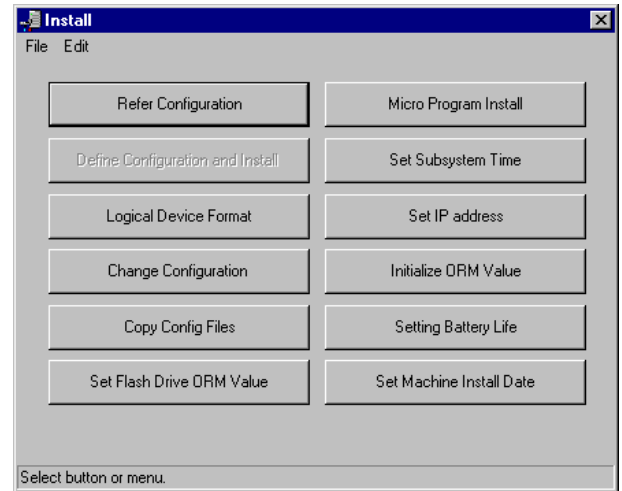
(3)

Select (CL) the [Install] menu in the 'Menu Dialog' window and select (CL) [MP Install].
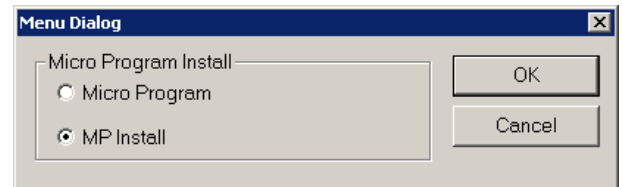
(4)

Select (CL) a processor in the 'Target' and select (CL) [OK].
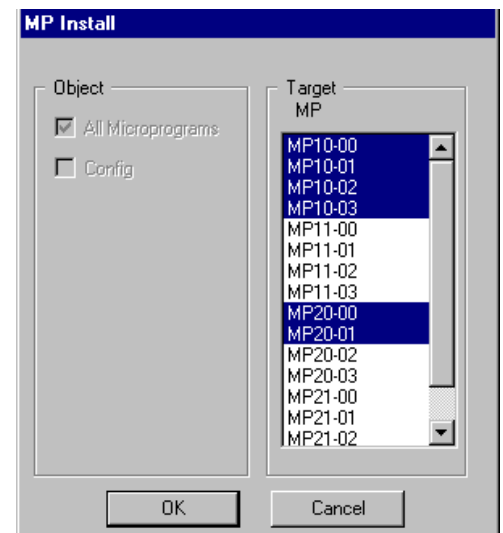
(5)

Progress Dialog appears.

Executing MPB button blink.

When MP Install process finished, the dialog will be closed automatically.

- [Detail]: You can see detail status. See following "Detail Status window".
- [Cancel]: You can interrupt MP Install process.
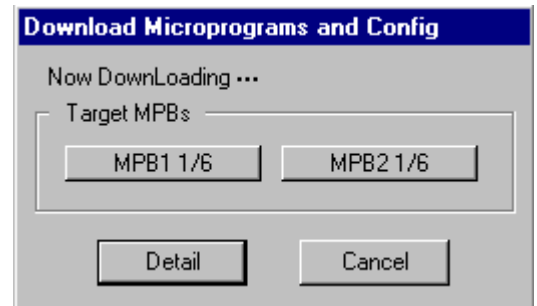
Detail Status window

Executing MP location and detail status are displayed.

Select (CL) [Close] and return progress dialog.
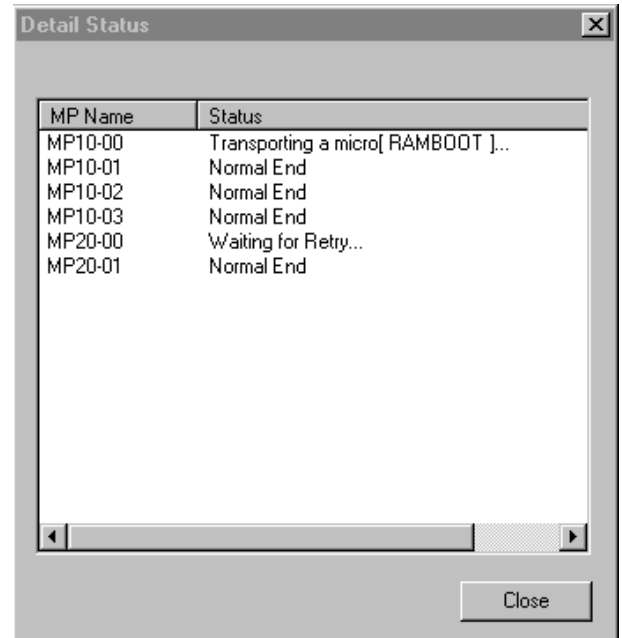
(6)

In response to the message "An exchange of a microprogram finished.", select (CL) [OK].
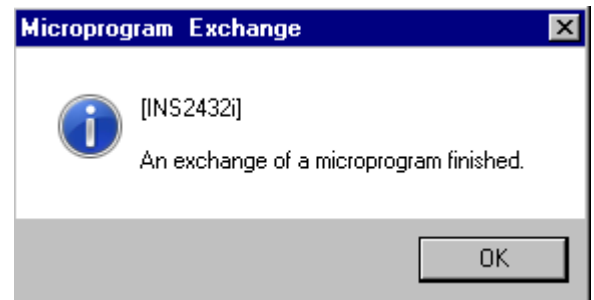
(7)

You will return to the 'Install' screen.

6. Trouble Recovery Procedure in Exchanging Micro-programs

6.1 Recovery procedure in on-line menu was selected

If trouble occurs while the micro-programs are being exchanged, symptoms (1) to (9) below can be observed apparently. In these cases, use the recovery procedures shown in flowcharts [A] to [H].

> **NOTICE:** When Virus Checker, Monitor, etc. are in operation so that the SVP is in the heavy load state, the Micro-program exchange may fail. In this case, please wait for a while, and then perform the Micro-program exchange again.
> If the Micro-program exchange operation still fails, please perform the recovery operations by following the procedures in this section.

(1) A power failure occurs.
→ Go to [A]. (MICRO06-30)

(2) An error message displayed. "On exchanging a micro-program, an error has occurred..."
  (a) The message "An error occurred while reading from the micro program media..." is displayed.
    → Retry the micro-program exchange according to the message.
  (b) The message "A file I/O error has occurred in a hard disk in the SVP..." is displayed.
    → Go to [D]. (MICRO06-60)
  (c) In the case before MP reboot. (Before display the IMPL status. : Not exist SSB = 0x334F.), excepting the case (a),(b).
    → Go to [B]. (MICRO06-40)
  (d) In the case after MP reboot. (After displayed the IMPL status. : Exist SSB = 0x334F.), excepting the case (a),(b).
    → Go to [C]. (MICRO06-50)
  (e) In the case of except (a)–(d)
    → Go to [C]. (MICRO06-50)

(3) An AP error occurs, resulting in SVP trouble (Key-in operations are disabled and the screen disappears).
→ Go to [B]. (MICRO06-40)

(4) Recovery of a cache failure during the micro-program exchange of DKCMAIN Action.
→ MICRO06-180

(5) Procedure for returning the micro-program version to the previous version.
→ Go to [E]. (MICRO06-70)

(6) In the case of incorrect version display ("??-??..." or incompatibility). (The disagreement of a binary version (Internal administrative information) contains it.) (Refer to SVP03-450.)
→ Go to [B]. (MICRO06-40)

(7) An error occurs in the HDD micro-program replacing.
→ Go to [F]. (MICRO06-80)

(8) An error occurs in the Expander/Expander(DBF) micro-program replacing.
→ Go to [G]. (MICRO06-90)

(9) An error occurs in the CFM micro-program replacing.
→ Go to [H]. (MICRO06-100)

[Sections to be referenced for recovery procedure]
    (i) Status display   : "Maintenance screen" on SVP SECTION (SVP03-10)
    (ii) Version display   : "Version of Microprogram" on SVP SECTION (SVP03-420)
    (iii) MP installation   : "MP Install" on MICRO-FC SECTION (MICRO05-10)
    (iv) Package exchange : "Hot Replace" on REPLACE SECTION (REP01-10)
    (v) SVP exchange   : "Hot Replace" on REPLACE SECTION (REP01-10)

[Recovery Procedure for Power Failure]

[A]⟶ Confirm that SVP is ready and then confirm that Main switch is turning on

Does the ALARM LED light on the Panel Unit? — Yes

No

Open the "MAINTENANCE" display window.

Is there any blocked processor? — No

Yes

Check SIM

Is there any SIM having BOOT detection trouble? (*1) — No

Yes

Shut down the SVP. Turn off the breaker of PDU connected with DKC and DB.

Turn on the CL1 CEMODE Switch of CL1 MAINTENANCE Switch and the CL2 CEMODE Switch of CL2 MAINTENANCE Switch. Turn on the PDU breaker.

Confirm that SVP is ready. Wait for 10 minutes.

Write the program into all processors at MP Install (See MICRO05-10).

Main switch turn off

Turn off the CL1 CEMODE Switch of CL1 MAINTENANCE Switch and the CL2 CEMODE Switch of CL2 MAINTENANCE Switch.

Main switch turn on

Take action according to SIM.Unblock the corresponding location.

Retry micro-program exchange.

[Recovery Procedure for Communication Time-out/PC Trouble in Downloading Micro-program /Version incompatibility]
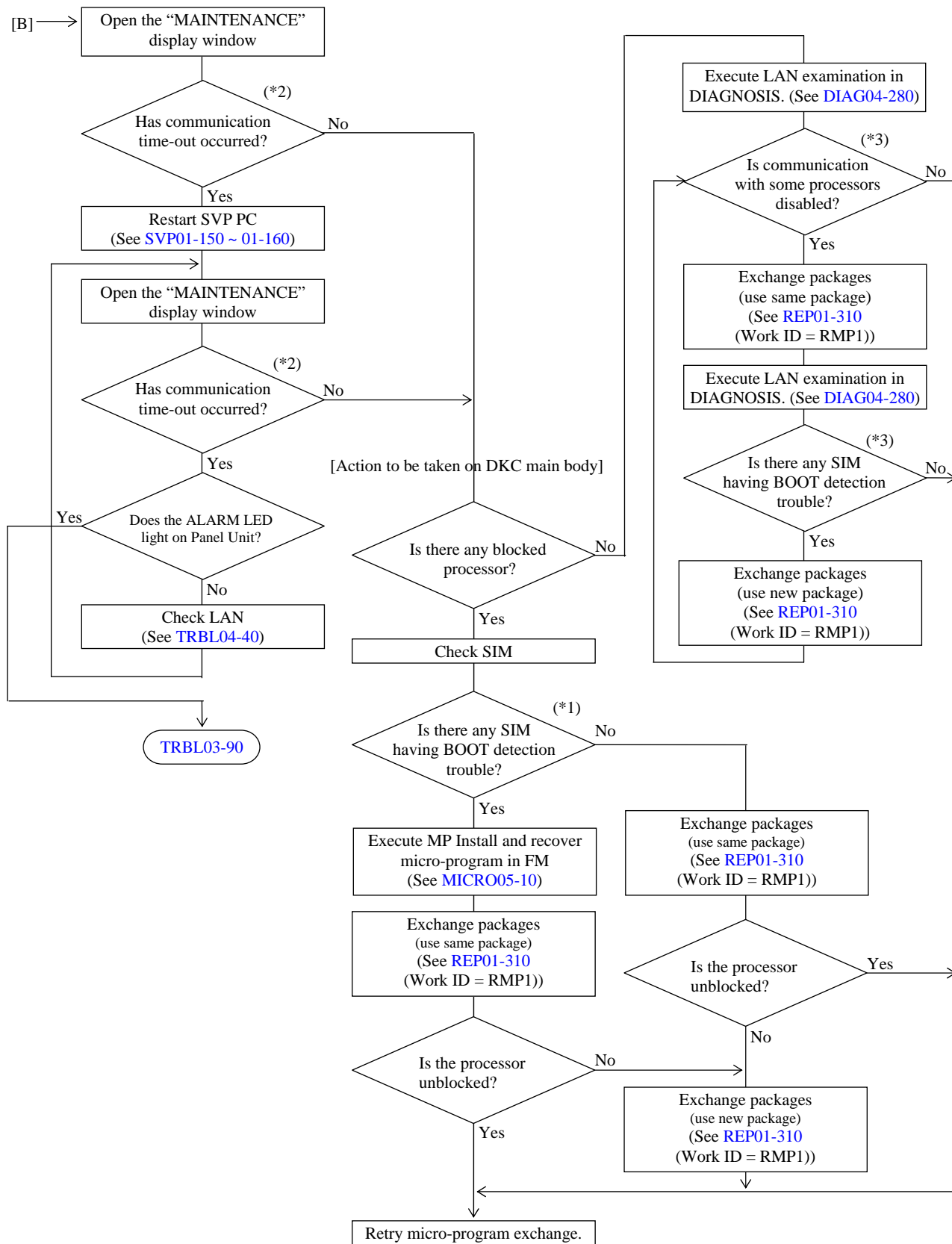
[Recovery Procedure for Communication Time-out in Blocking/Unblocking Processor]

[C] — Open the "MAINTENANCE" display window.

(*2)
Has communication time-out occurred? — No

Yes

Restart SVP (See SVP01-150)

Open the "MAINTENANCE" display window.

(*2)
Has communication time-out occurred? — No

Yes

Does the ALARM LED light on the system panel? — Yes

No

Check LAN (See TRBL04-40)

TRBL03-90

[Action to be taken on DKC main body]

Is there any blocked — No

Yes

Check SIM

(*1)
Is there any SIM having BOOT detection trouble? — Yes

No

(*4)
Is there any SIM having logical inconsistency? — No

Yes

(*5)
Execute the procedures corresponding to the error code of initialization function of the SSB with the error code 3309.

Execute the package replacement (Use the same package) (See REP01-310 (Work ID = RMP1))

Exchange packages (use new package) (See REP01-310 (Work ID = RMP1))

No — Is the processor unblocked?

[E]

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

Yes

Retry micro-program exchange.

Execute LAN examination in DIAGNOSIS. (See DIAG04-280)

(*3)
Is communication with some processors disabled? — No

Yes

Exchange packages (use same package) (See REP01-310 (Work ID = RMP1))

Execute LAN examination in DIAGNOSIS. (See DIAG04-280)

(*3)
Is the communication with processor disabled? — No

Yes

Exchange packages (use new package) (See REP01-310 (Work ID = RMP1))

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

[D] ⟶
```
┌─────────────────────────────┐
│      Restart the SVP.        │
│     (See SVP01-150)          │
└─────────────────────────────┘

           ◇
    Has the SVP error        No
      occurred?        ────────────┐
    (SSB = 0x335E)                 │
           ◇                       │
           │ Yes                   │
┌─────────────────────────────┐    │
│      Exchange the SVP        │    │
│ (See REP03-16-10 (Work ID=   │    │
│           RTC5))             │    │
└─────────────────────────────┘    │
           │ ◄──────────────────────┘
┌─────────────────────────────┐
│  Retry micro-program exchange.│
└─────────────────────────────┘
           │
       Go to [B]
```

*1: Reference code "7900XY"

XY: Shows processor id. (See SIMRC02-360)

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

(See SSBLOG05-3800)

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

*3: Each LAN error processor button blinks.

*4: Reference code

3080x0:Indicates that a WCHK1 dump has occurred.

x: Shows processor id.

*5: Refer to "SSBLOG05-3800" for the SSB with the error code 3309.

Also, the error code of initialization function is shown in 5C-5Fth byte of the SSB. The procedures corresponding to the error code of initialization function are as follows.

Error code of initialization function	Procedures	Note
56000041	① SVP Replace ② MP Install ③ Package Replace	Use the same package in ③. Refer to "REP03-16-10 (Work ID : RTC5)" for SVP Replace.
others	① MP Install ② Package Replace	Use the same package in ②.

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

```
[E] ────────▶  ┌─────────────────────────┐
               │    Open MAINTENANCE     │
               └─────────────────────────┘
                          │
                          ▼
                  ╱─────────────────╲           No
                 ╱  Is there any      ╲─────────────────┐
                 ╲  blockade processor?╱                 │
                  ╲─────────────────╱                    │
                          │ Yes                          │
                          ▼                              │
               ┌─────────────────────────┐              │
               │ Exchange packages       │              │
               │ (Remove and insert same │              │
               │  package)               │              │
               │ (See REP01-10)          │              │
               └─────────────────────────┘              │
                          │◀──────────────────────────────┘
                          ▼
               ┌─────────────────────────┐
               │ Execute "Version Down"  │
               │ in the Microprogram     │
               │ Exchange.               │
               │ (MICRO04-200)           │
               └─────────────────────────┘
                          │
                          ▼
               ┌─────────────────────────┐
               │ Micro-programs in all   │
               │ processors are replaced.│
               └─────────────────────────┘
                          │
                          ▼
                   ╭─────────────╮
                   │     END     │
                   ╰─────────────╯
```
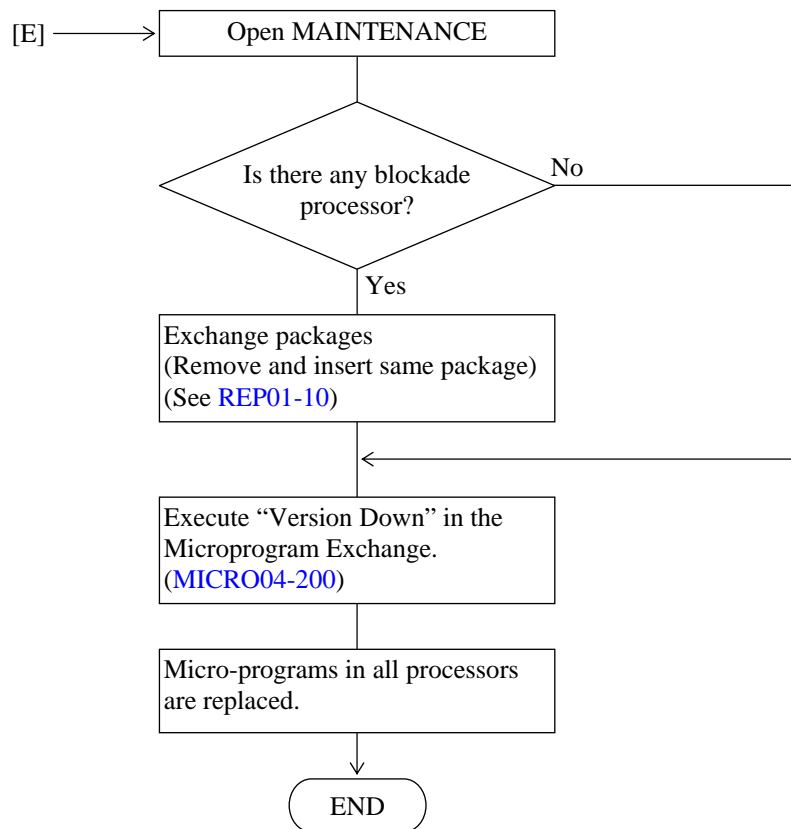
[Recovery procedure when a DB error occurs during a downloading of the micro-program (HDD micro-program)]

```
[F] ──────→ ◇ Is displayed ──Yes──→ ┌──────────────────────────┐
              the failed HDD?         │ Make a note on the failed HDD │
                   │                  │ number.   ------- ① │
                   No                 └──────────────────────────┘
                   ↓                              │
        ┌──────────────────┐                      │
        │ Take a DUMP.     │←─────────────────────┘
        └──────────────────┘
                   │
        ┌──────────────────────┐
        │ Open the "MAINTENANCE" │
        │ display window.       │
        └──────────────────────┘
                   │
            ◇ Is the status normal? ──No──→ ┌──────────────────────────┐
                   │                         │ Take actions according to the SIM. │
                   Yes                       │ Unblock the corresponding location. │
        ┌──────────────────────────────┐    └──────────────────────────┘
        │ Retry the micro-program exchange. │
        └──────────────────────────────┘
                   │
            ◇ Did the operation ──No──→
              end normally?         │
                   │                ↓
                   Yes       ◇ HDD failure? ──No──→ ┌────────────────────┐
                 ( END )          │                  │ Execute a recovery  │
                                  Yes                │ action against the failure. │
                     ┌──────────────────────────┐    └────────────────────┘
                     │ Make a note on the failed HDD │
                     │ number.   ------- ② │
                     └──────────────────────────┘
                                  │
                          ◇ Is ② same as ①? ──No──→
                                  │                    ↓
                                  Yes              ( T.S.D. call )
                     ┌──────────────────────────┐
                     │ Replace the failed HDD.  │
                     └──────────────────────────┘
                                  │
                     ┌──────────────────────────────┐
                     │ Retry the micro-program exchange. │
                     └──────────────────────────────┘
```

[Recovery procedure when a DB error occurs during a downloading of the micro-program (Expander/Expander(DBF) micro-program)]

```
[G] ──────→  ◇ Is displayed        ──Yes──→  ┌─────────────────────────────┐
               the failed ENC?                │ Make a note on the failed ENC│
                  │                            │ location.  ---- ①            │
                  No                           └─────────────────────────────┘
                  │                                         │
        ┌──────────────────┐                                │
        │ Take a DUMP.     │                                │
        └──────────────────┘←───────────────────────────────┘
                  │
        ┌──────────────────┐
        │ Open the "MAINTENANCE"│
        │ display window.  │
        └──────────────────┘
                  │
         ◇ Is the status normal? ──No──→ ┌─────────────────────────────────┐
                  │                       │ Take actions according to the SIM.│
                  Yes                     │ Unblock the corresponding location.│
                  │                       └─────────────────────────────────┘
        ┌──────────────────────────────┐
        │ Retry the micro-program exchange.│
        └──────────────────────────────┘
                  │
         ◇ Did the operation    ──No──┐
           end normally?               │
                  │                    ▼
                  Yes          ◇ ENC failure? ──No──→ ┌─────────────────────┐
                  │                    │               │ Execute a recovery  │
              ( END )                  Yes             │ action against the failure.│
                                       │               └─────────────────────┘
                          ┌─────────────────────────┐
                          │ Make a note on the failed ENC│
                          │ location.  ---- ②        │
                          └─────────────────────────┘
                                       │
                             ◇ Is ② same as ①? ──No──→ ( T.S.D. call )
                                       │
                                       Yes
                          ┌─────────────────────────┐
                          │ Replace the failed ENC.  │
                          └─────────────────────────┘
                                       │
                          ┌─────────────────────────┐
                          │ Retry the micro-program exchange.│
                          └─────────────────────────┘
```

[Recovery procedure when the micro-program exchange of CFM is failed]
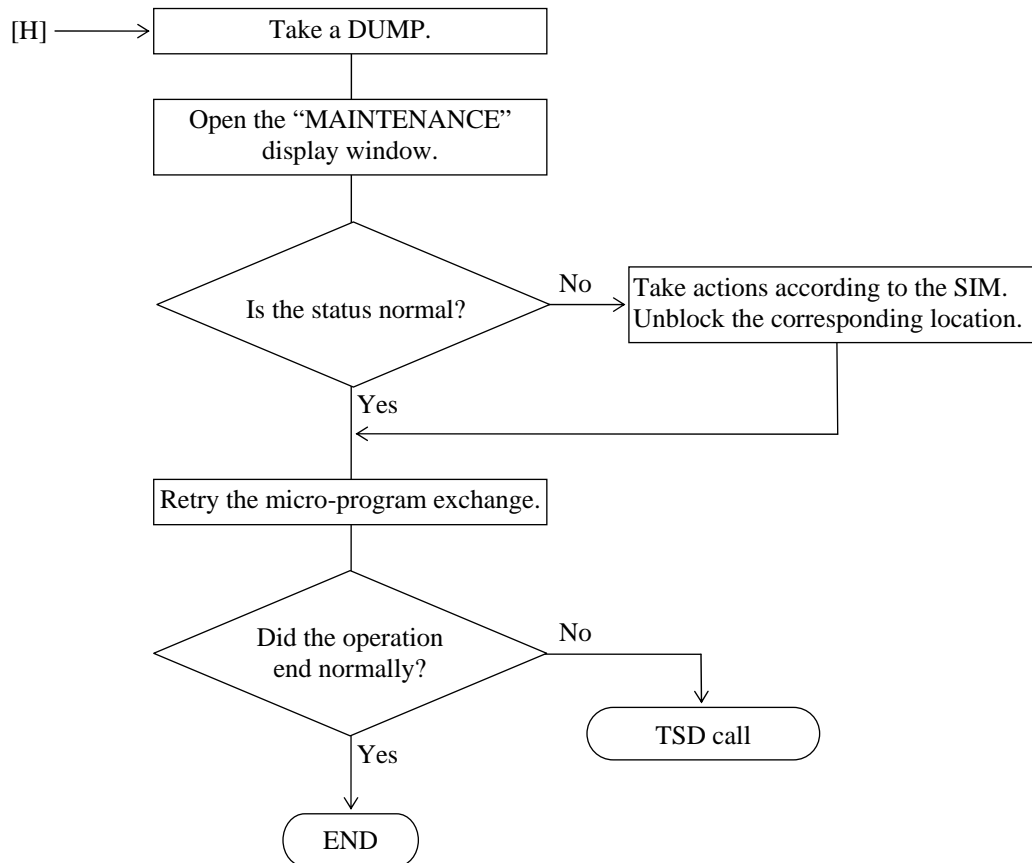
```
[H] ─────→  ┌──────────────────────┐
            │   Take a DUMP.       │
            └──────────────────────┘
                       │
            ┌──────────────────────┐
            │ Open the "MAINTENANCE" │
            │   display window.     │
            └──────────────────────┘
                       │
                      ╱╲
                     ╱  ╲        No   ┌────────────────────────────────┐
                    ╱ Is  ╲───────────→│ Take actions according to the SIM.│
                    ╲status ╱          │ Unblock the corresponding location.│
                     ╲normal?          └────────────────────────────────┘
                      ╲╱                              │
                      │ Yes                           │
                      │←──────────────────────────────┘
            ┌──────────────────────────────┐
            │ Retry the micro-program exchange.│
            └──────────────────────────────┘
                       │
                      ╱╲
                     ╱  ╲        No
                    ╱ Did the╲───────────┐
                    ╲operation╱           │
                    ╲end normally?        ▼
                     ╲╱              ╭────────────╮
                      │ Yes         │  TSD call  │
                      ▼             ╰────────────╯
                ╭────────────╮
                │    END     │
                ╰────────────╯
```

6.2 Recovery procedure in off-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 [F].

NOTICE: When Virus Checker, Monitor, etc. are in operation so that the SVP is in the heavy load state, the Micro-program exchange may fail. In this case, please wait for a while, and then perform the Micro-program exchange again.
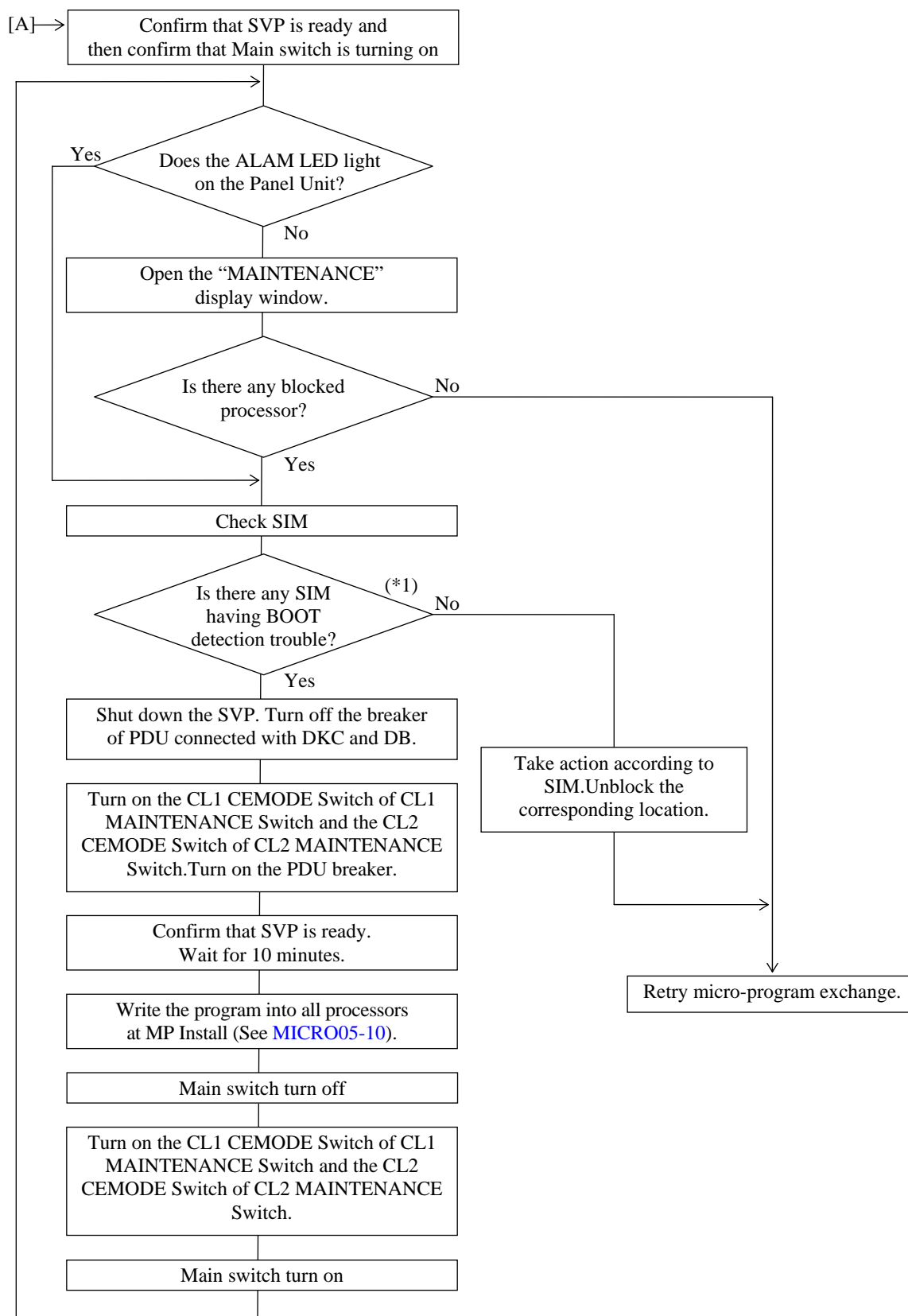If the Micro-program exchange operation still fails, please perform the recovery operations by following the procedures in this section.

---

(1)   A power failure occurs.
        → Go to [A]. (MICRO06-130)

(2) An error message displayed. "On exchanging a micro-program, an error has occurred..."
    (a)   The message "An error occurred while reading from the micro program media..." is displayed.
          → Retry the micro-program exchange according to the message.
    (b)   The message "A file I/O error has occurred in a hard disk in the SVP..." is displayed.
          → Go to [F]. (MICRO06-170)
    (c)   In the case before MP reboot. (Before display the IMPL status. : Not exist SSB = 0x334F), excepting the case (a),(b).
          → Go to [B]. (MICRO06-140)
    (d)   In the case after MP reboot. (After displayed the IMPL status. : Exist SSB = 0x334F.), excepting the case (a),(b).
          → Go to [D]. (MICRO06-150)
    (e)   In the case of except (a)−(d)
          → Go to [C]. (MICRO06-140)

(3)   An AP error occurs, resulting in SVP trouble (Key-in operations are disabled and the screen disappears).
        → Go to [E]. (MICRO06-160)

(4)   Recovery of a cache failure during the micro-program exchange of DKCMAIN Action.
        → MICRO06-180

(5)   In the case of incorrect version display ("??-??...") or incompatibility). (The disagreement of a binary version (Internal administrative information) contains it.) (Refer to SVP03-450.)
        → Go to [B]. (MICRO06-140)

[Sections to be referenced for recovery procedure]

    (i)   Status display   : "Maintenance screen" on SVP SECTION (SVP03-10)

    (ii) Version display   : "Version of Microprogram" on SVP SECTION (SVP03-420)

    (iii) MP installation   : "MP Install" on MICRO-FC SECTION (MICRO05-10)

    (iv) Package exchange : "Hot Replace" on REPLACE SECTION (REP01-10)

    (v) SVP exchange   : "Hot Replace" on REPLACE SECTION (REP01-10)

[Recovery Procedure for Power Failure]

[A]→ Confirm that SVP is ready and
then confirm that Main switch is turning on

Does the ALAM LED light
on the Panel Unit?
Yes →
No ↓

Open the "MAINTENANCE"
display window.

Is there any blocked
processor?
No →
Yes ↓

Check SIM

Is there any SIM
having BOOT
detection trouble?
(*1) No →
Yes ↓

Shut down the SVP. Turn off the breaker
of PDU connected with DKC and DB.

Take action according to
SIM.Unblock the
corresponding location.

Turn on the CL1 CEMODE Switch of CL1
MAINTENANCE Switch and the CL2
CEMODE Switch of CL2 MAINTENANCE
Switch.Turn on the PDU breaker.

Confirm that SVP is ready.
Wait for 10 minutes.

Write the program into all processors
at MP Install (See MICRO05-10).

Main switch turn off

Retry micro-program exchange.

Turn on the CL1 CEMODE Switch of CL1
MAINTENANCE Switch and the CL2
CEMODE Switch of CL2 MAINTENANCE
Switch.

Main switch turn on
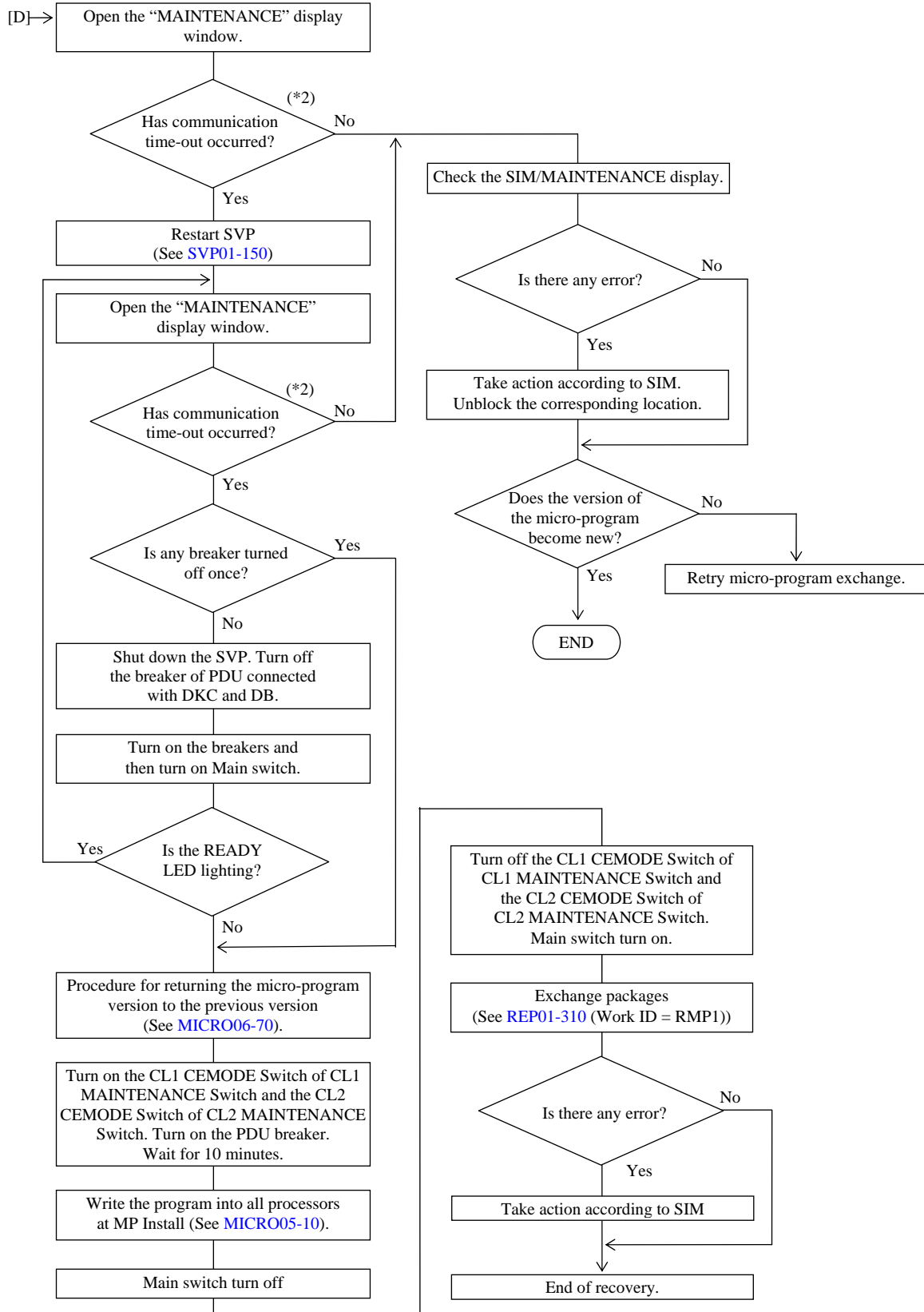
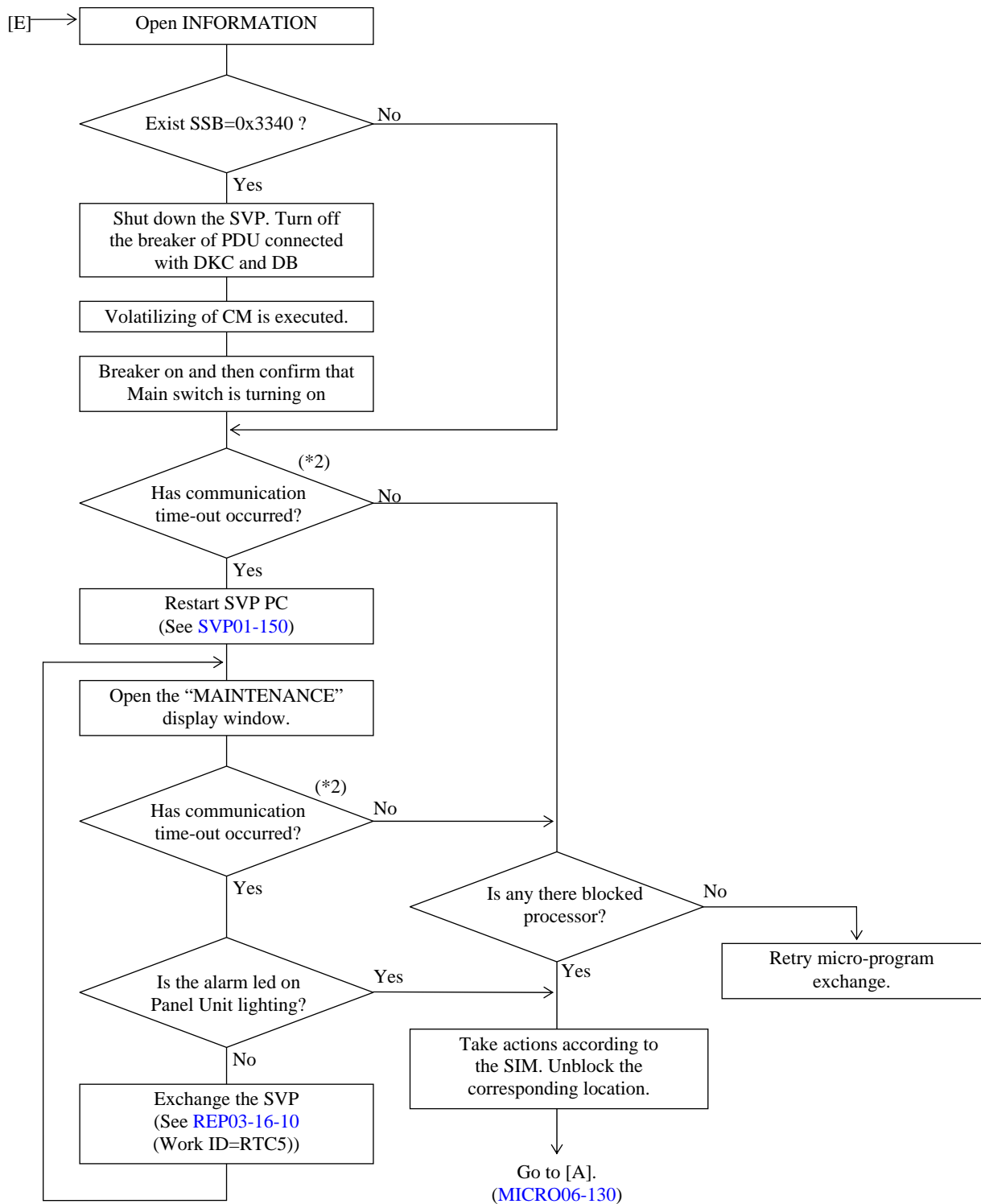[Recovery procedure for communication time-out during system block processing/micro-program downloading/Version incompatibility]
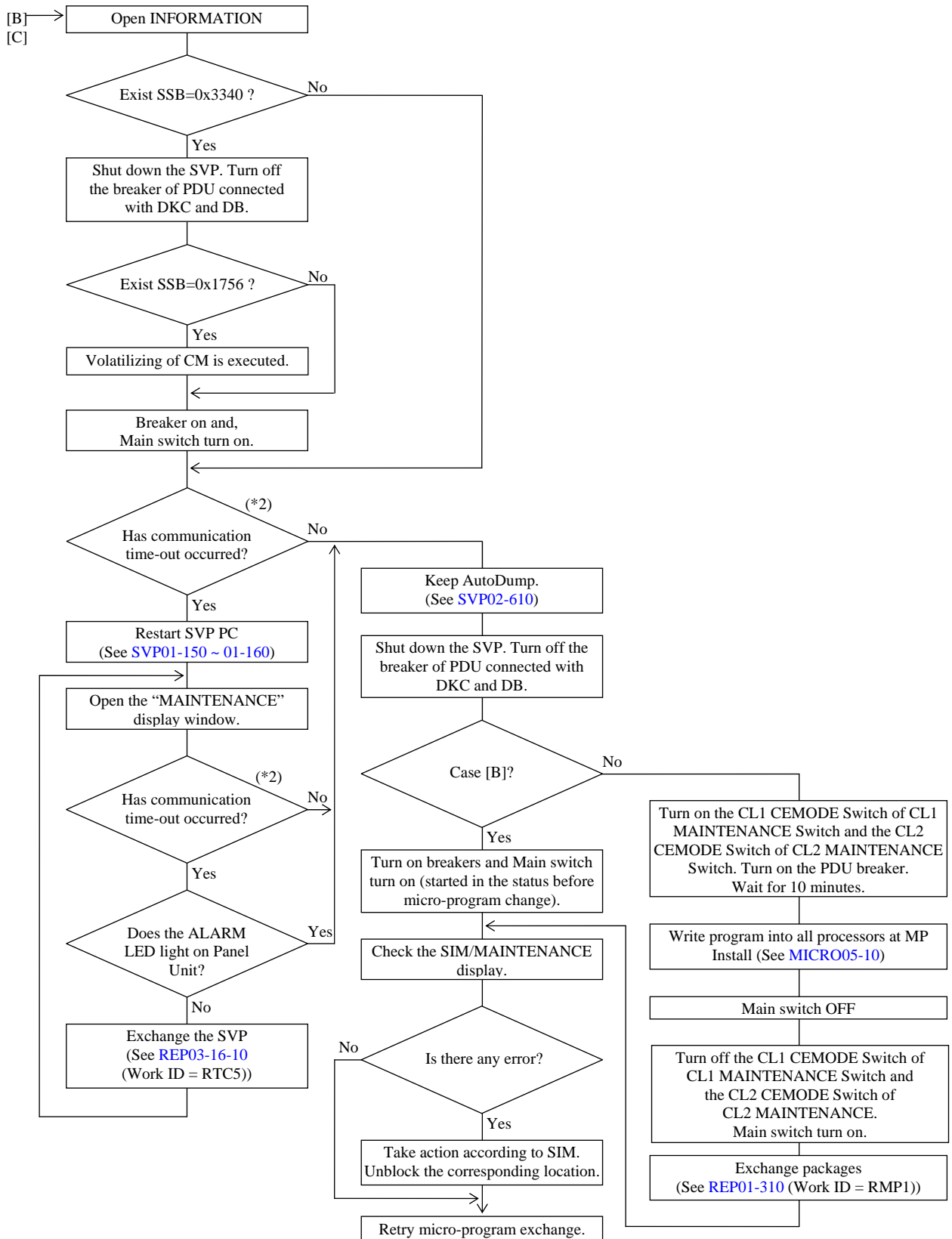
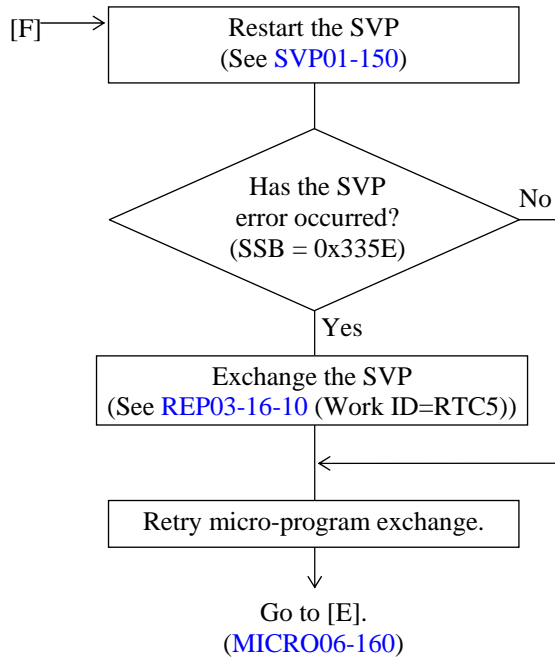[Recovery procedure for communication time-out during system recovery processing]

```
[D] ──→  ┌─────────────────────────┐
         │ Open the "MAINTENANCE"  │
         │      display window.     │
         └─────────────────────────┘
                     │
                                        (*2)
              ◇ Has communication ◇ ── No ──→
                time-out occurred?                ┌─────────────────────────────┐
                     │                            │ Check the SIM/MAINTENANCE   │
                    Yes                           │         display.            │
                     │                            └─────────────────────────────┘
         ┌─────────────────────────┐                          │
         │      Restart SVP        │                   ◇ Is there any error? ◇ ── No ──→
         │   (See SVP01-150)       │                          │
         └─────────────────────────┘                         Yes
                     │                            ┌─────────────────────────────┐
         ┌─────────────────────────┐             │ Take action according to SIM.│
         │ Open the "MAINTENANCE"  │             │ Unblock the corresponding    │
         │    display window.      │             │         location.            │
         └─────────────────────────┘             └─────────────────────────────┘
                     │                                        │
                                        (*2)                  │
              ◇ Has communication ◇ ── No ──→       ◇ Does the version of ◇ ── No ──→ ┌──────────────────────────┐
                time-out occurred?                    the micro-program                │ Retry micro-program      │
                     │                                become new?                      │      exchange.           │
                    Yes                                       │                        └──────────────────────────┘
                     │                                       Yes
              ◇ Is any breaker turned ◇ ── Yes ──→            │
                off once?                                 ( END )
                     │
                     No
         ┌─────────────────────────┐
         │ Shut down the SVP. Turn  │
         │ off the breaker of PDU   │
         │ connected with DKC and DB.│
         └─────────────────────────┘
                     │
         ┌─────────────────────────┐
         │ Turn on the breakers and │
         │ then turn on Main switch.│
         └─────────────────────────┘
                     │
      Yes ──  ◇ Is the READY ◇
               LED lighting?                 ┌──────────────────────────────┐
                     │                       │ Turn off the CL1 CEMODE Switch│
                     No                      │ of CL1 MAINTENANCE Switch and │
                     │                       │ the CL2 CEMODE Switch of      │
                     │                       │ CL2 MAINTENANCE Switch.       │
                     │                       │ Main switch turn on.          │
         ┌─────────────────────────┐         └──────────────────────────────┘
         │ Procedure for returning  │                      │
         │ the micro-program version│         ┌──────────────────────────────┐
         │ to the previous version  │         │     Exchange packages        │
         │ (See MICRO06-70).        │         │ (See REP01-310 (Work ID = RMP1))│
         └─────────────────────────┘         └──────────────────────────────┘
                     │                                      │
         ┌─────────────────────────┐              ◇ Is there any error? ◇ ── No ──→
         │ Turn on the CL1 CEMODE   │                      │
         │ Switch of CL1 MAINTENANCE │                    Yes
         │ Switch and the CL2       │         ┌──────────────────────────────┐
         │ CEMODE Switch of CL2     │         │ Take action according to SIM │
         │ MAINTENANCE Switch. Turn │         └──────────────────────────────┘
         │ on the PDU breaker.      │                      │
         │ Wait for 10 minutes.     │         ┌──────────────────────────────┐
         └─────────────────────────┘         │      End of recovery.         │
                     │                        └──────────────────────────────┘
         ┌─────────────────────────┐
         │ Write the program into   │
         │ all processors at MP     │
         │ Install (See MICRO05-10).│
         └─────────────────────────┘
                     │
         ┌─────────────────────────┐
         │   Main switch turn off   │
         └─────────────────────────┘
```

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

```
[E] ──→  ┌─────────────────────────┐
         │   Open INFORMATION      │
         └─────────────────────────┘
                      │
                ◇ Exist SSB=0x3340 ? ◇ ──No──┐
                      │Yes                     │
         ┌─────────────────────────┐          │
         │ Shut down the SVP. Turn off│        │
         │ the breaker of PDU connected│       │
         │   with DKC and DB        │          │
         └─────────────────────────┘          │
         ┌─────────────────────────┐          │
         │ Volatilizing of CM is executed. │   │
         └─────────────────────────┘          │
         ┌─────────────────────────┐          │
         │ Breaker on and then confirm that │  │
         │  Main switch is turning on │        │
         └─────────────────────────┘          │
                      │←─────────────────────── ┘
                  (*2)
         ◇ Has communication time-out occurred? ◇ ──No──┐
                      │Yes                                │
         ┌─────────────────────────┐                     │
         │   Restart SVP PC         │                     │
         │   (See SVP01-150)        │                     │
         └─────────────────────────┘                     │
                      │                                   │
         ┌─────────────────────────┐                     │
         │ Open the "MAINTENANCE"   │                     │
         │   display window.        │                     │
         └─────────────────────────┘                     │
                  (*2)                                    │
         ◇ Has communication time-out occurred? ◇ ──No──→│
                      │Yes                                │
         ◇ Is the alarm led on Panel Unit lighting? ◇ ──Yes──→│
                      │No                                 │
                                              ◇ Is any there blocked processor? ◇ ──No──┐
         ┌─────────────────────────┐              │Yes                                   │
         │  Exchange the SVP        │   ┌─────────────────────────┐      ┌──────────────────────┐
         │  (See REP03-16-10        │   │ Take actions according to │    │ Retry micro-program  │
         │  (Work ID=RTC5))         │   │ the SIM. Unblock the      │    │    exchange.         │
         └─────────────────────────┘   │ corresponding location.   │    └──────────────────────┘
                                        └─────────────────────────┘
                                                 Go to [A].
                                               (MICRO06-130)
```

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

```
[F] ──→  ┌─────────────────────────┐
         │   Restart the SVP       │
         │   (See SVP01-150)       │
         └─────────────────────────┘
                      │
                      ▼
                ╱─────────────╲
               ╱  Has the SVP  ╲      No
              ╱  error occurred? ╲──────────┐
              ╲  (SSB = 0x335E)  ╱          │
               ╲                ╱           │
                ╲──────────────╱            │
                      │ Yes                 │
                      ▼                     │
         ┌─────────────────────────┐        │
         │   Exchange the SVP      │        │
         │ (See REP03-16-10        │        │
         │  (Work ID=RTC5))        │        │
         └─────────────────────────┘        │
                      │ ◄───────────────────┘
                      ▼
         ┌─────────────────────────┐
         │ Retry micro-program     │
         │ exchange.               │
         └─────────────────────────┘
                      │
                      ▼
                Go to [E].
               (MICRO06-160)
```

*1: Reference code "7900XY"

XY: Shows processor id. (See SIMRC02-360)

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

(See SSBLOG05-3800)

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

<Recovery of a cache failure during the micro-program exchange of DKCMAIN Action>

1. Retry micro-program exchange of DKCMAIN program.
   - For Version up by micro-program exchange (Off-line) : Refer to MICRO03-330.
   - For Version up by micro-program exchange (On-line) : Refer to MICRO04-190.
   - For Version down by micro-program exchange (Off-line) : Refer to MICRO03-350.
   - For Version down by micro-program exchange (On-line) : Refer to MICRO04-210.

   NOTE:
   - The processors which had finished the micro-program exchange to new version will be skipped.
   - Password is necessary.

2. Then, replace the failure parts according to SIM message and M.M.

7. Config Exchange Procedure

7.1 Config Version Up

(1)

It changes into [Modify] mode on the 'SVP' window.

(2)

Select (CL) [Install] in the 'SVP' window and select (CL) [Copy Config Files] in the 'Install'.

(3)

Select (CL) [Configuration Update] in the 'Copy Config Files'.
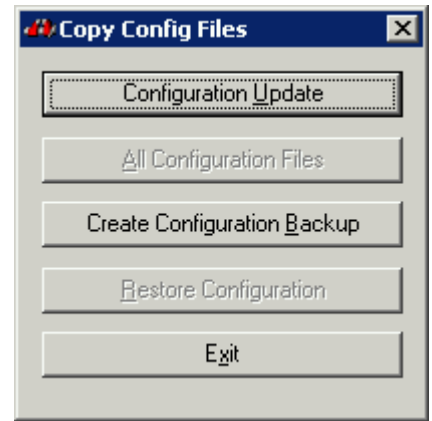
(4)

Insert the media for version up.
Please select (CL) the [Refresh] button, and update drive information.
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page "7.5 Storing a backup of configuration information (config) to a CD-R" (MICRO07-180).
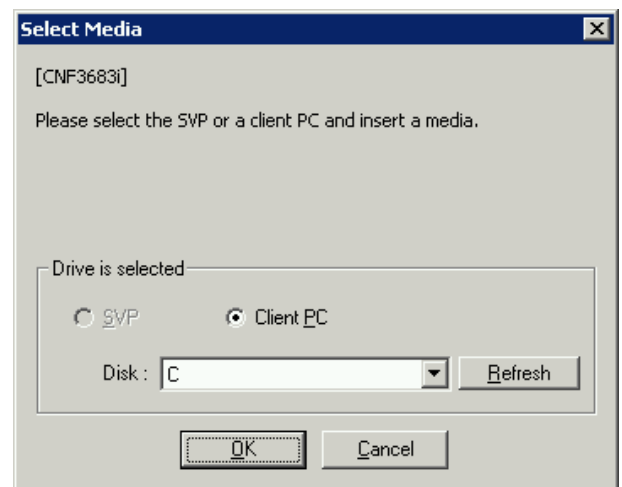
(5)

Copy the configuration information from the
Config media to the SVP.
While this operation is being done, the 'CNFCPY
Wait...' window is displayed.

---
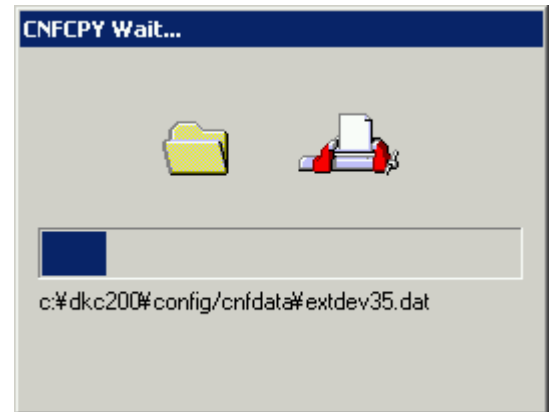
(6)

After the Config media is pulled out, select
(CL) the [OK] in response to the message
"Please remote the configuration information
media.".

---
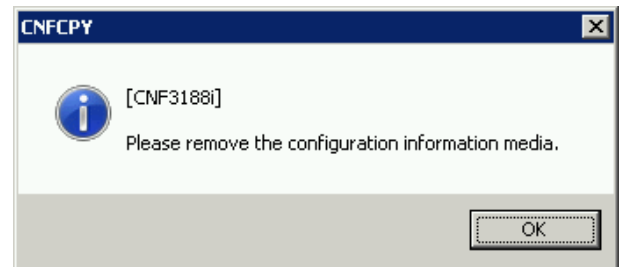
(7)

Processing for reflecting composition information is
performed.
In the meantime, the wait window is displayed.

---
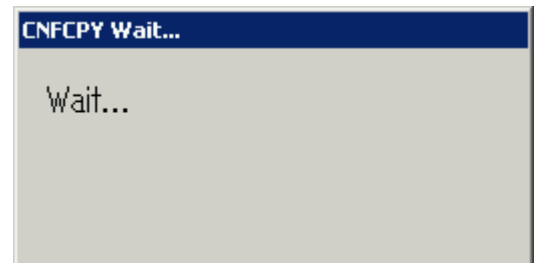
(8)

Execute an operation for backing up the
configuration information.
Prepare the removable media for backup and
insert the media.
Please select (CL) the [Refresh] button, and
update drive information.
Select (CL) the drive and the PC in which the
media was inserted. Select (CL) the [OK]
button.

NOTE: For the procedure of backing up the
          configuration information to a CD-R,
          see page "7.5 Storing a backup of
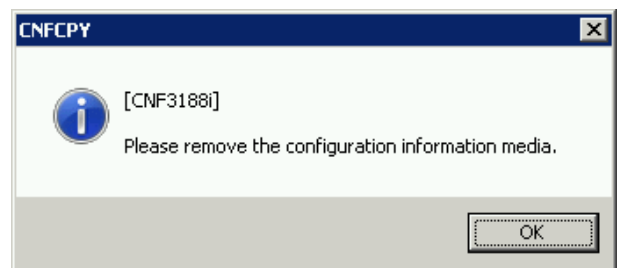   configuration information (config) to a CD-R" (MICRO07-180).
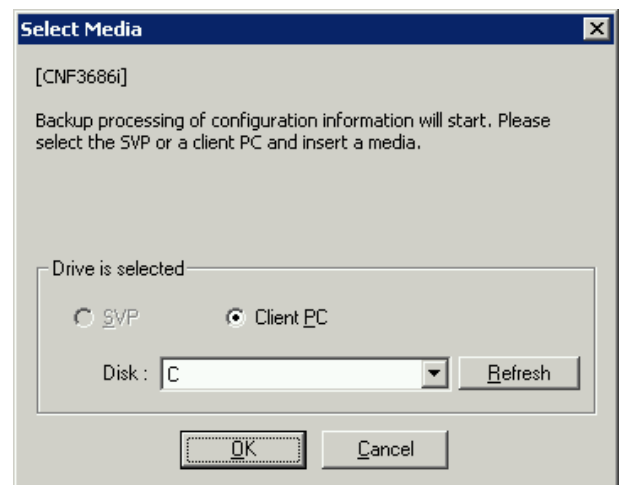
(9)

If you want to continue, select (CL) [Yes].
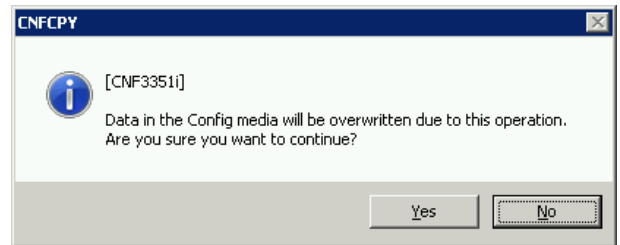
```
CNFCPY                                          ☒

   ⓘ   [CNF3351i]

        Data in the Config media will be overwritten due to this operation.
        Are you sure you want to continue?


                                    Yes        No
```

(10)

Back up the configuration information to the
Config media for backup. While this operation is
being done, the 'CNFCPY Wait...' window is
displayed.

```
CNFCPY Wait...



        📁           🖨



c:¥dkc200¥config/cnfdata¥extdev35.dat
```

(11)

After the Config media is pulled out, select
(CL) the [OK] button.

```
CNFCPY                                          ☒

   ⓘ   [CNF3188i]

        Please remove the configuration information media.


                                          OK
```
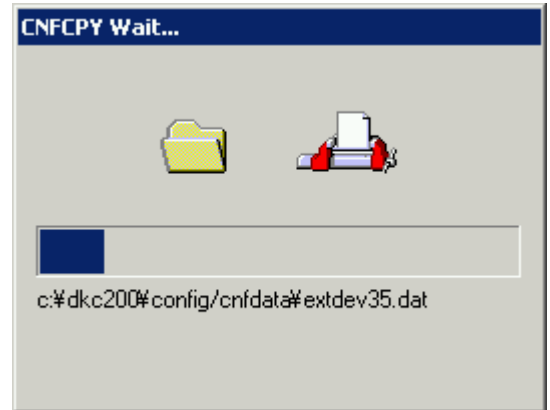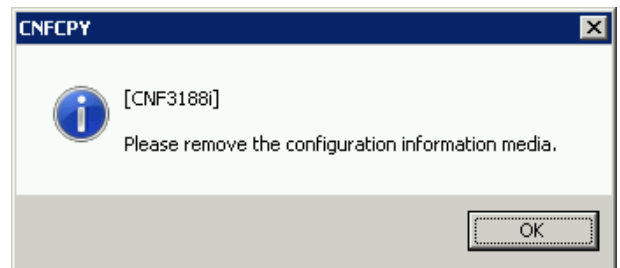
(12)

When Selecting [OK] to the message 'The
SVP will be rebooted. Please check the
storage system status in Maintenance panel
after the SVP status.' SVP PC reboots.

NOTE: After the SVP reboot, re-connect to
        the SVP with the Client PC.

```
CNFCPY                                          ☒

   ⓘ   [CNF3147i]

        The SVP will be rebooted.
        Please check the storage system status in Maintenance panel after
        the SVP starts.


                                          OK
```
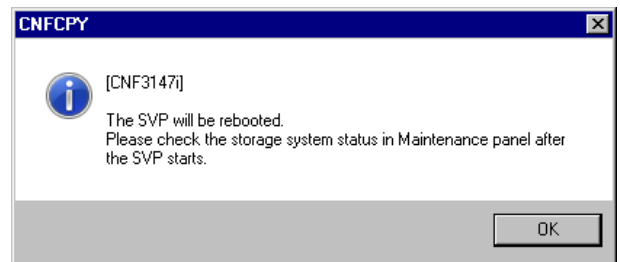
(13)

After SVP PC starts, select (CL) [MAINTENANCE] in the 'SVP' windows (See SVP03-10).

7.2 Config Backup

(1)

It changes into [Modify] mode on the 'SVP' window.

(2)

Select (CL) [Install] in the 'SVP' window and select (CL) [Copy Config Files] in the 'Install'.

(3)

Select (CL) [Create Configuration Backup] in the 'Copy Config Files'.
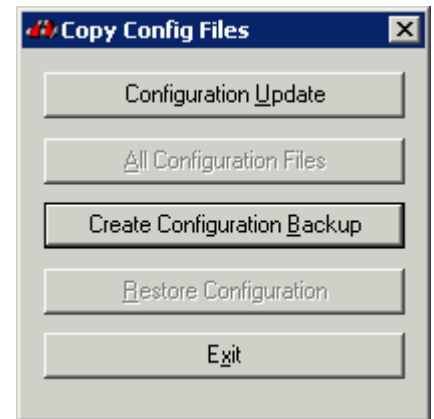
(4)

Execute an operation for backing up the configuration information.
Prepare the removable media for backup and insert the media.
Please select (CL) the [Refresh] button, and update drive information.
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page "7.5 Storing a backup of configuration information (config) to a CD-R" (MICRO07-180).
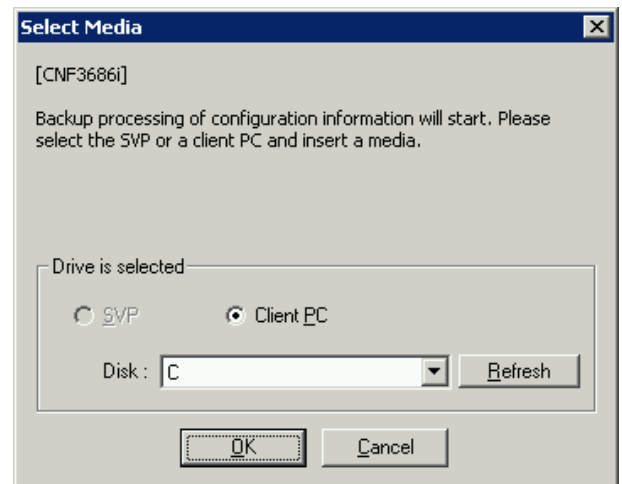
(5)

If the configuration information is not saved in the selected media, go to step (6). If the configuration information is already saved in the selected media, the information message shown on the right is displayed. When you want to continue the process, select the [Yes] button. When the backup to the Config media is not necessary, select the [No] button and go back to step (3).
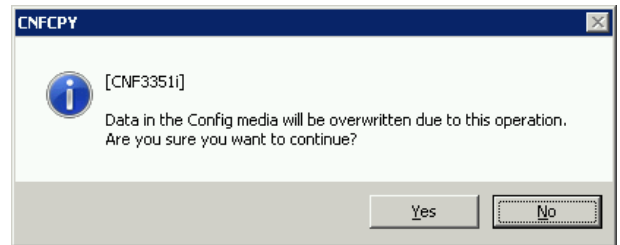
(6)

Backup the configuration information to the Config media for backup. While this operation is being done, the 'CNFCPY Wait...' window is displayed.
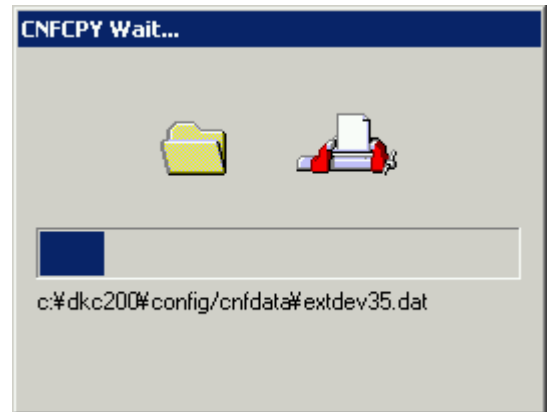
(7)

After the Config media is pulled out, select (CL) the [OK] in response to the message "Please remove the configuration information media.".
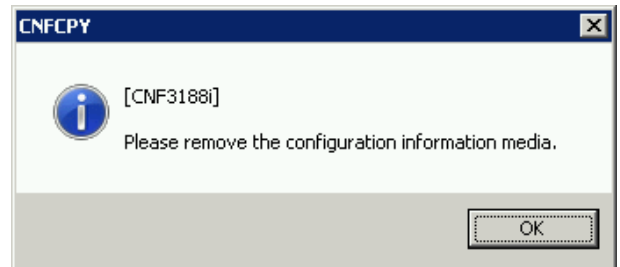
(8)

Select (CL) [Exit] of the 'Copy Config Files' to finish this operation.

(9)

It changes into [View] mode on the 'SVP' window.

7.3 Define Configuration & Install

(1)

It changes into [Initial Setting] mode on the 'SVP' window.
(Press the [Shift] + [Ctrl] + [I] keys, and enter the password and select (CL) [OK].)
Select (CL) [Install] in the 'SVP' window and select (CL) [Copy Config Files] in the 'Install'.

NOTE: The mode changes to [Initial Setting (Unlocked)] when the storage system is in CE
MODE.

(2)

Select (CL) [All Configuration Files] in the 'Copy Config
Files'.
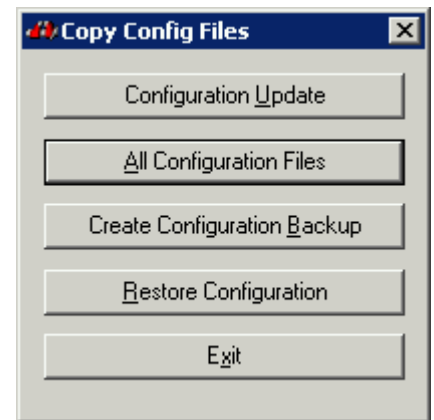
(3)

Insert the media.
Please select (CL) the [Refresh] button, and
update drive information.
Select (CL) the drive and the PC in which the
media was inserted. Select (CL) the [OK]
button.

NOTE: For the procedure of backing up the
configuration information to a CD-R,
see page "7.5 Storing a backup of
configuration information (config) to
a CD-R" (MICRO07-180).
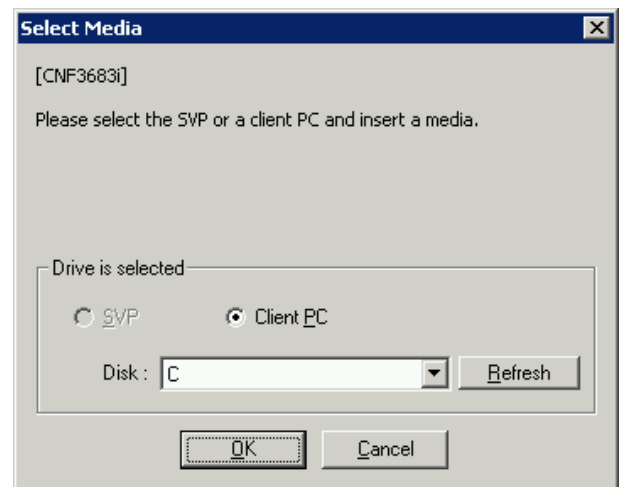
(4)

Copy the configuration information from the
Config media to the SVP.
While this operation is being done, the 'CNFCPY
Wait...' window is displayed.

(5)
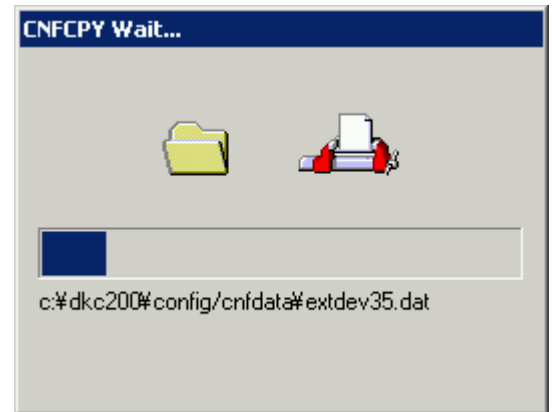
After the Config media is pulled out, select
(CL) the [OK] in response to the message
"Please remove the configuration information
media.".
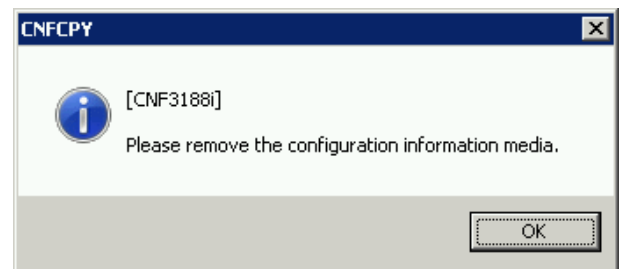
(6)

Select (CL) [Exit] of the 'Copy Config Files', and execute 'Define Configuration & Install' (go
to).

7.4 Restoring Configuration Information

(1)

It changes into [Initial Setting] mode on the 'SVP' window.
(Press the [Shift] + [Ctrl] + [I] keys and select (CL) the [OK] button after entering a password.)
Then select (CL) [Install]. Select (CL) [Copy Config Files] in the 'Install' window.

---

(2)

Select (CL) [Restore Configuration] in the 'Copy Config Files' window.
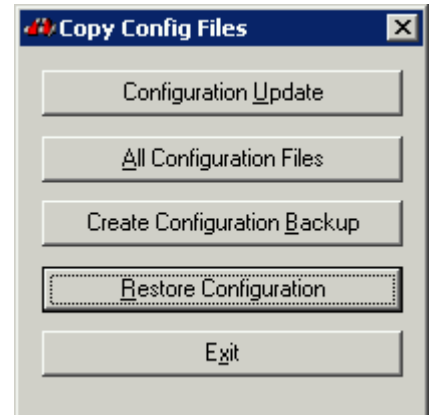
(3)

Select (CL) the configuration information to be restored. When restoring the configuration information using the Configuration Information media, select "Backup Config Media" and select (CL) the [OK] button. When restoring the configuration information using the configuration information backup data stored in a hard disk of the SVP, select "HDD Backup Data", and then select (CL) the [OK] button.
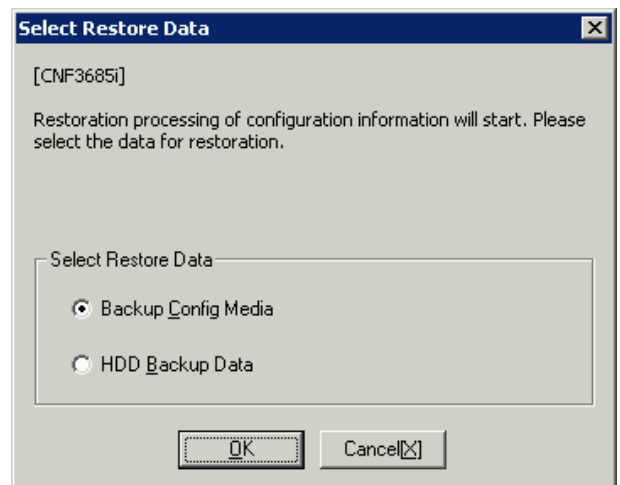
When you have selected the "Backup Config Media", go to Step (4).
When you have selected the "HDD Backup Data", go to Step (5).

(4)

Insert the media
Please select (CL) the [Refresh] button, and update drive information.
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page "7.5 Storing a backup of configuration information (config) to a CD-R" (MICRO07-180).
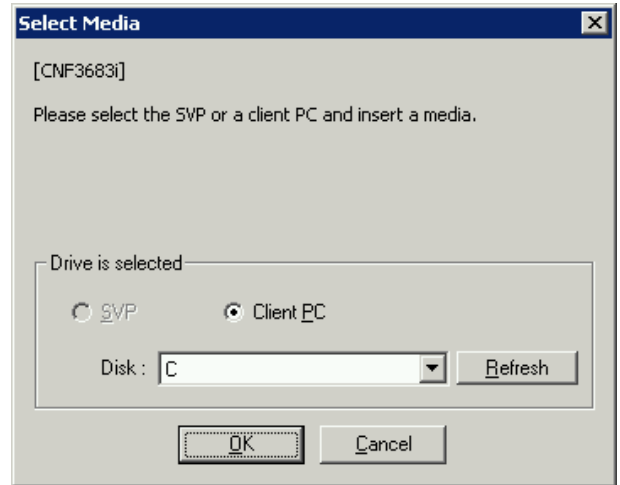
(5)

Make a copy of the configuration information. During the copying, the 'CNFCPY Wait...' window is displayed.
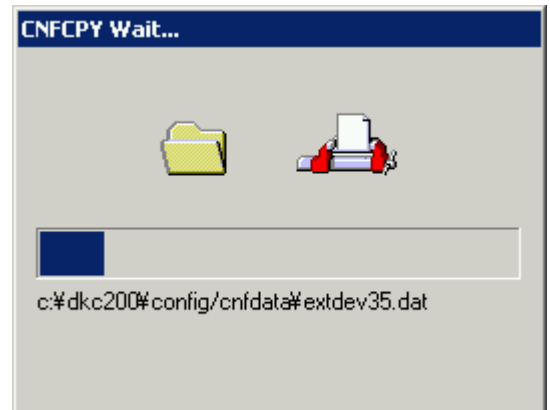
(6)

Since a message shown in the figure on the left is displayed when the "Backup Config Media" is selected in Step (3), pull off the Configuration Information media, and then select (CL) the [OK] button.

(7)

When you restore the configuration information successively, select (CL) the [Yes].
When you want to abort the restoration, select (CL) the [No].
When you have selected [Yes], go to Step (8).
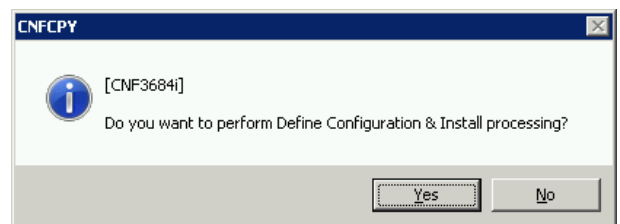
(8)

> ⚠ **CAUTION**
>
> This is a special (exceptional) operation that requires entry of a password and may cause a serious failure such as a system down and a data loss if executed in a case other than the restoration of the configuration information. Ask the Technical Support Division for propriety of the operation and enter a password after the performance of the operation is approved by the Technical Support Division.

Select (CL) the [OK] button in response to the cautionary message, "<IMPORTANT CAUTION> This operation will restore configuration. If you want to perform new installation, terminate this procedure by using the [Cancel] button and select "Define Configuration & Install" in the Install window.".
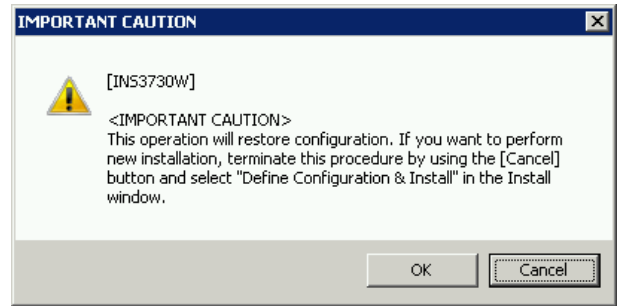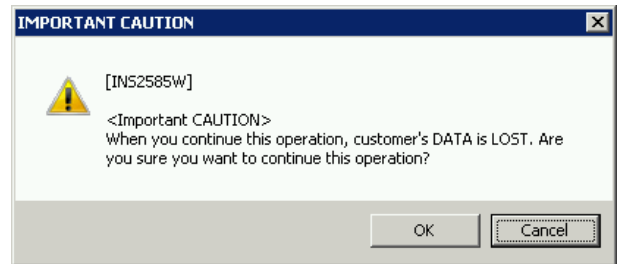

(9)

Select (CL) the [OK] button in response to the confirmatory message, "<Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".
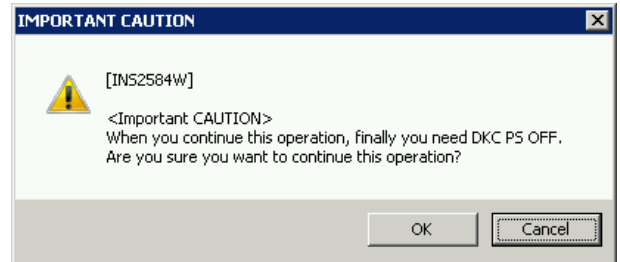
(10)

Select (CL) the [OK] button in response to the confirmatory message, "<Important CAUTION> When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".
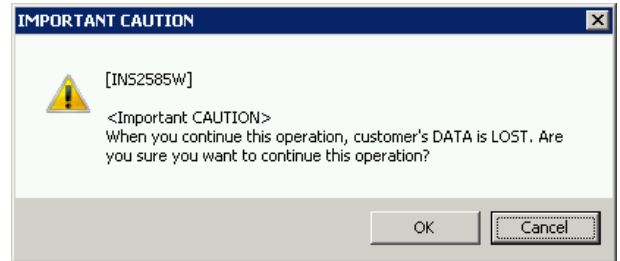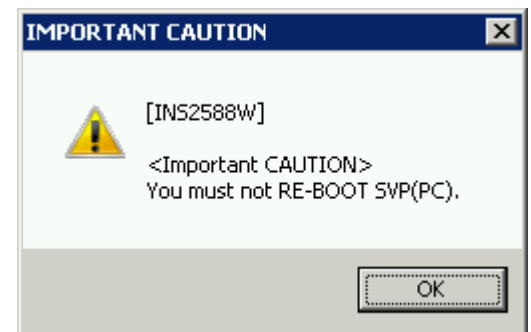

(11)

Enter a password and select (CL) the [OK] button.
To perform this operation, an entry of a password is required. For the password, ask the Technical Support Division.
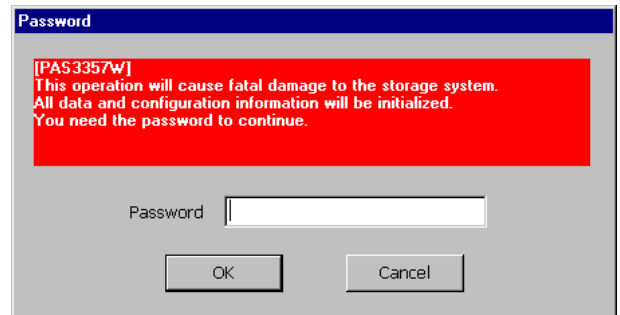
(12)

Response to the message "This operation should be in CE mode. Please check the state of the storage system.
[Yes]: When it is already in CE mode.
[No]: When it is not in CE mode or the operation is executed without the CE mode switch.
(Note) SIM (Reference Code=7900XX) occurs when powering on the storage system in CE mode.".
When it is already in CE mode (CL1/CL2 MNT SW#1), select (CL) [Yes].
When it is not in CE mode or the operation is executed without the CE mode switch (CL1/CL2 MNT SW#1), select (CL) [No].
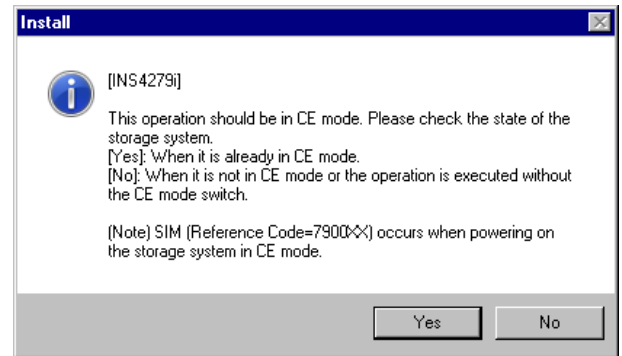
NOTE: When information of HDP/HDT-VOL implementation or progressing state of quick format is not included, go to Step (14).

(13)

Response to the message "The information of HDP/HDT-VOL implementation or the progressing status of quick format is included in backup data of the specified configuration information.
Do you want to take over the HDP/HDT-VOL data or the progressing status of quick format?".
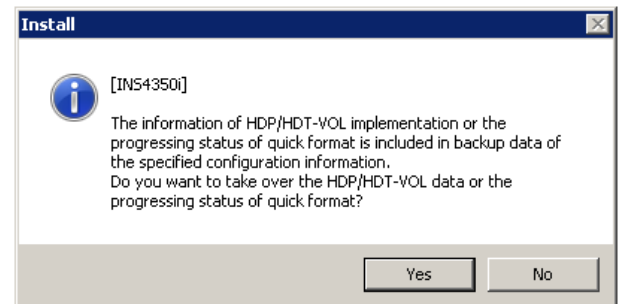
When you take over the data, select (CL) [Yes].
When you do not take over the data, select (CL) [No].

(14)

"The backup data of the specified configuration information includes blocked MAIN Blades. (MAINn)
Those MAIN Blades must be removed when starting up the storage system.
Remove all the MAIN Blades displayed on the window, and then select [OK]." is displayed.
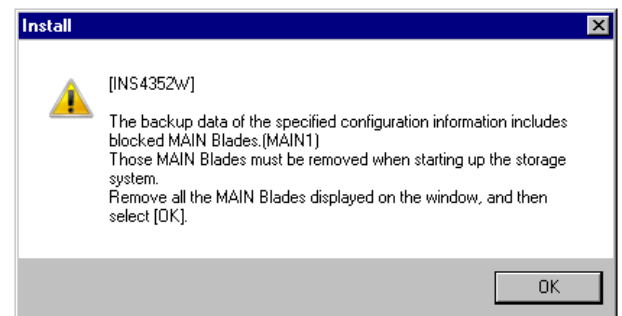
NOTE: When there is not a blocked part in MAIN Blade, this message is not displayed.

(15)

"The backup data of the specified configuration information includes blocked HDDs.
Those HDDs must be removed when starting up the storage system.
Remove all the HDDs displayed on the window, and then select [OK]." is displayed.

Select the DB list and remove the target HDD(s) because two or more DB might be listed.

NOTE: When there is not a blocked HDD, this message is not displayed.
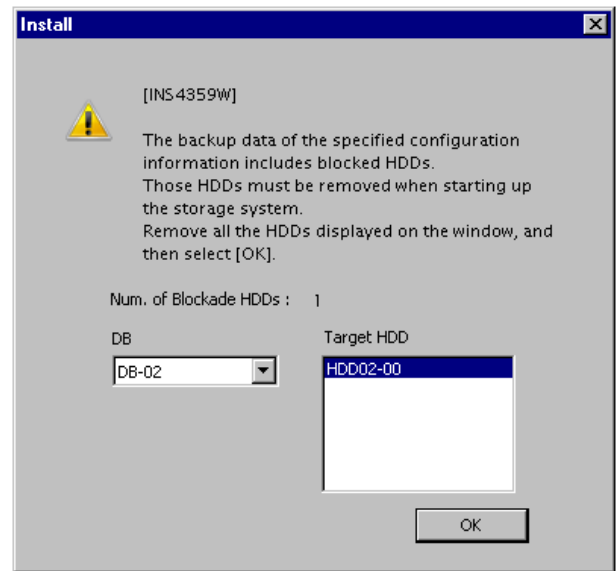
(16)

The window for storage system configuration information reference, in which the configuration information is to be restored, is displayed.
For details of the storage system configuration information reference window, refer to "3. <DKC Configuration window>" and following steps in Subsection "5.2.4 Refer Configuration" (INST05-490).

(17)

Select (CL) the [Yes] button in response to the confirmatory message, "Are you sure you want to install the defined configuration?".

(When the [No] button is selected, the restoration of the configuration information is suppressed and the procedure for the restoration is terminated.)
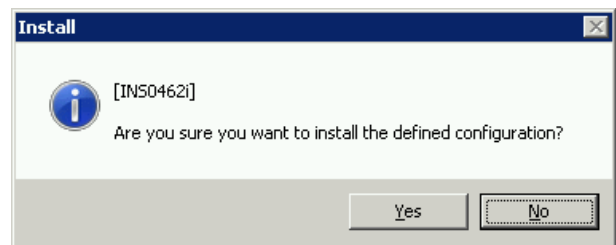
(18)

Select (CL) the [OK] button in response to the confirmatory message, "<Important CAUTION> When you continue this operation, finally you need DKC PS OFF. Are you sure you want to continue this operation?".

(19)

Select (CL) the [OK] button in response to the confirmatory message, "<Important CAUTION> When you continue this operation, customer's DATA is LOST. Are you sure you want to continue this operation?".

```
IMPORTANT CAUTION                        [×]

   ⚠   [INS2585W]

       <Important CAUTION>
       When you continue this operation, customer's DATA is LOST. Are
       you sure you want to continue this operation?

                              [  OK  ]   [ Cancel ]
```
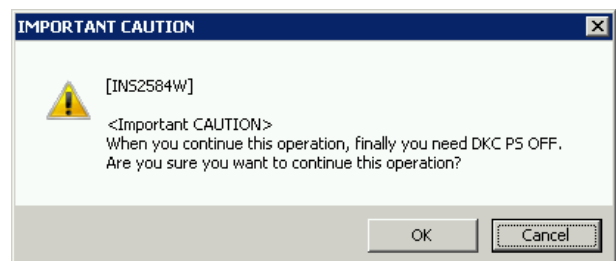
(20)

Select (CL) the [OK] button in response to the confirmatory message, "<Important CAUTION> When you select [OK] button, you can't cancel this operation. Are you sure you want to continue this operation? If you terminate this operation by some forcible method, the storage system be in UNRECOVERABLE SERIOUSLY DAMAGE.".

```
IMPORTANT CAUTION                        [×]

   ⚠   [INS2587W]

       <Important CAUTION>
       When you select [OK] button, you can't cancel this operation. Are
       you sure you want to continue this operation?
       If you terminate this operation by some forcible method, the storage
       system be in UNRECOVERABLE SERIOUSLY DAMAGE.

                              [  OK  ]   [ Cancel ]
```

(21)

Select (CL) the [OK] button in response to the cautionary message, "<Important CAUTION> You must not RE-BOOT SVP(PC).".

```
IMPORTANT CAUTION                 [×]

   ⚠   [INS2588W]

       <Important CAUTION>
       You must not RE-BOOT SVP(PC).

                          [    OK    ]
```

(22) <Compressing of the configuration information>
The configuration information is compressed.
The dialog of Config Compressing... is
displayed. After the compressing is
completed, go to Step (24)
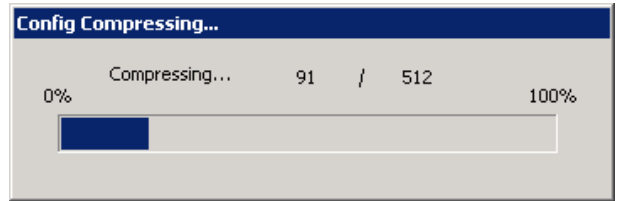
NOTE: However, on page
(12), it advances to Step (23) when [No] is selected (CL).

(23)
Select (CL) [OK] in response to the message
"Turn off the storage system. Make sure that
POWER LED at Panel Unit is in amber, and
then turn on the storage system. After that,
please confirm the SIM (Reference
Code=7900XX) has been reported for each of
mounted MPs, and then select [OK].".
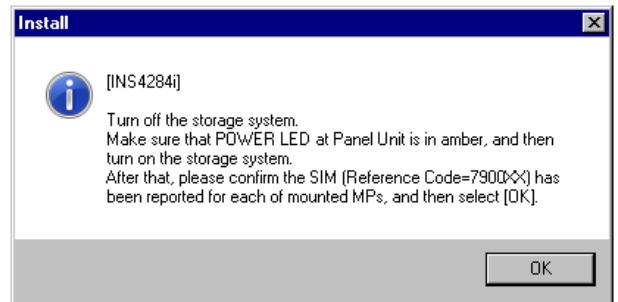
(24) <Download Objects window>
Select (CL) the [OK] button.

NOTE: Please do not select (CL) [All
Microprograms].
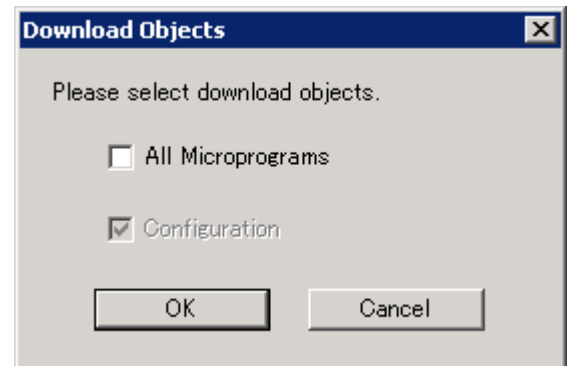
(25) <Configuration information transfer>
    The configuration information is forwarded.
    After the forward is completed, go to Step (26).
    Select (CL) the [Detail] button. Go to Step (25)-1.
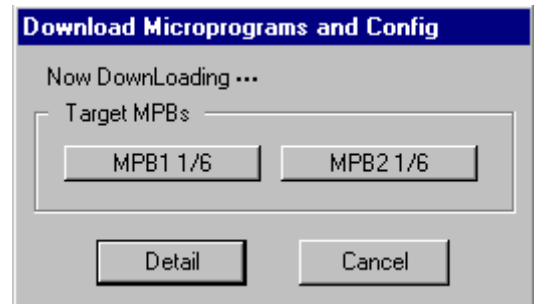
(25)-1
    Details of transfer situation are confirmed on
    'Detail Status' window.
    When you close the 'Detail Status' window,
    select (CL) the [Close] button.
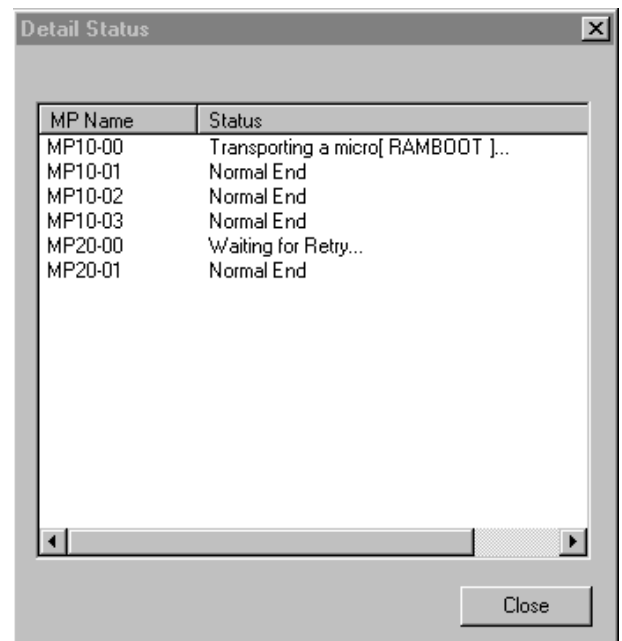
(26)

Execute an operation for backing up the configuration information.
Prepare the removable media for backup and insert the media.
Please select (CL) the [Refresh] button, and update drive information.
Select (CL) the drive and the PC in which the media was inserted. Select (CL) the [OK] button.

NOTE: For the procedure of backing up the configuration information to a CD-R, see page "7.5 Storing a backup of configuration information (config) to a CD-R" ().
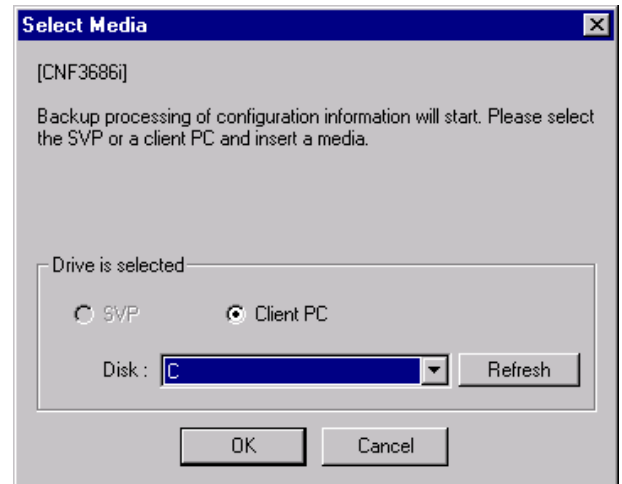
(27)

When this procedure is completed, the message "Please remove the configuration information media." is displayed.
Remove the configuration information media, and then select (CL) the [OK] button.
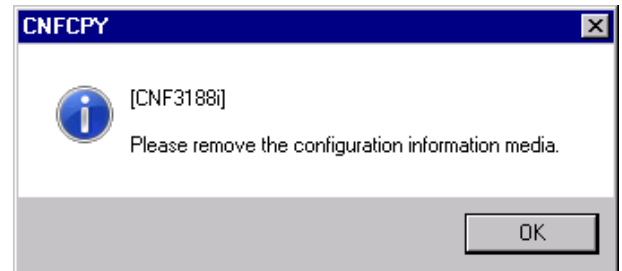
(28)

'Reconstructing device information...' is displayed.
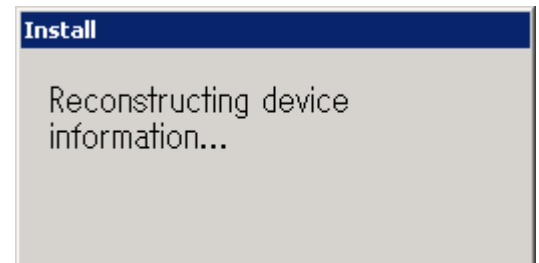
(29)

Select (CL) [OK] in response to the message "Turn off the storage system. Make sure that POWER LED at Panel Unit is in amber, and then turn on the storage system. If the CE mode switch has been ON, turn it OFF before turning the storage system ON. Make sure that POWER LED at Panel Unit is in green, and then select [OK].".

NOTE: When CE mode setup with the switch of the CE mode, turn off CL1/CL2 MNT SW#1.
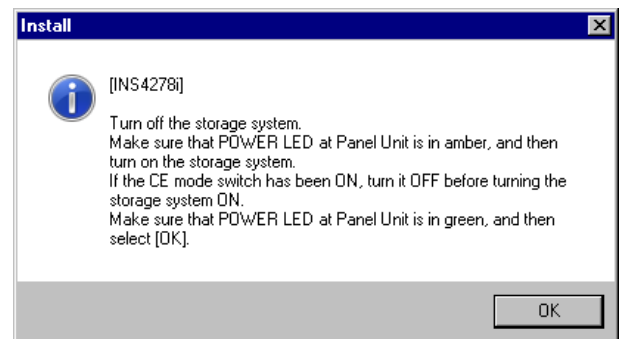
(30)

Select (CL) the [OK] button in response to the message, "This will reboot SVP.".

NOTE: Although the DKC is powered off, the SVP is neither powered off nor rebooted.

(31)

Execute the Config Version UP (MICRO07-10) with a media that is used in this operation.

7.5 Storing a backup of configuration information (config) to a CD-R

(1)

To store a backup of the config, prepare a blank CD-R.

(2)

If the DKC200 directory exists in the root of the hard disk (C drive) of the client PC to which the backup of the config is stored temporarily, delete the DKC200 directory.

(3)

Perform the backup processing of the config. Select the drive (C drive) prepared in (2).
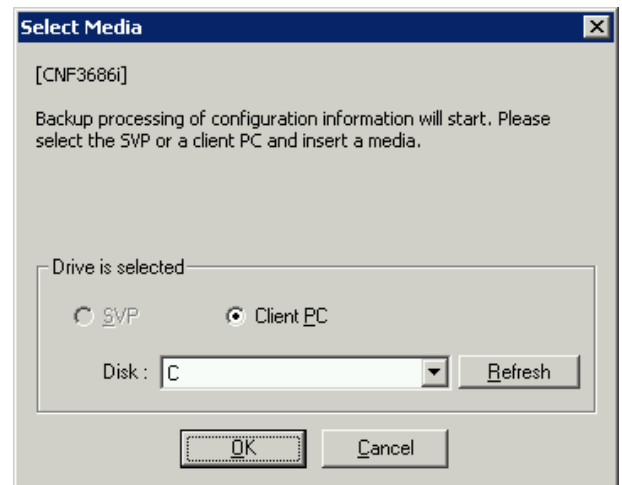
(4)

The backup processing is performed. The 'CNFCPY Wait...' window appears.

(5)

Select (CL) the [OK] button.

CNFCPY

[CNF3188i]

Please remove the configuration information media.

OK
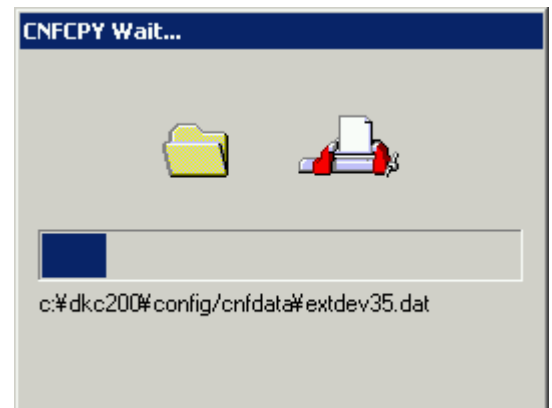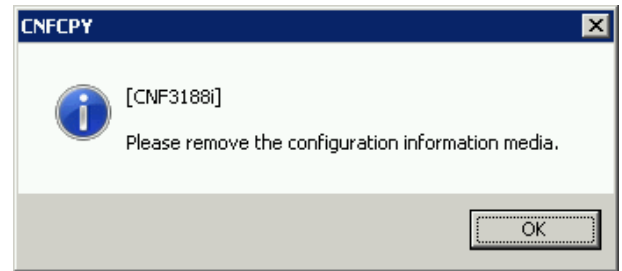
(6)

The DKC200 directory exists in the root of the drive (C drive) specified in (3). Use the CD writing tool to copy the DKC200 directory to the root directory of the CD-R, which was prepared in (1).

8. Microprogram Exchange Wizard

Only inserting the CD-ROM and execute the Microprogram-Exchange-Wizard, micro-program are exchanged automatically according to the contents of the definition.

> **NOTICE:** Perform the micro-program exchange when MP processing rate is less than 50%. If the MP processing rate is 50% or higher, micro-program exchange may end abnormally.

• The starting method

(1)

　Connect the Client PC to the SVP PC.

(2)

　Insert CD-ROM that the micro-program was stored in the CD-ROM drive of the Client PC.

(3)

　Change the SVP mode to [Modify].

(4)

　Select (CL) [FcWizard].

(5)

　The message "Are you sure you want to replace the microprogram by using FcWizard?" appears.
　Select (CL) [Yes].
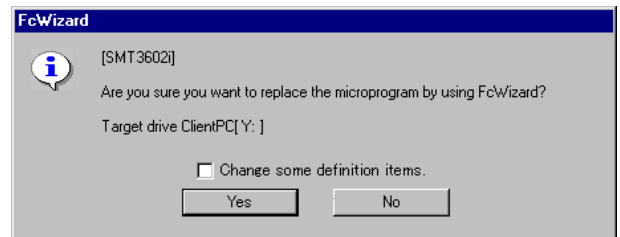
　If you check (CL) the "Change some definition items" these following dialog appears and you can change some definition of the micro-program exchange.

　'Microprogram Exchange' dialog
　If the target micro-programs contains DKCMAIN or RAMBOOT, you can select (CL) processors' reboot pattern.
　Refer to 4.2 (7).

(6)

According to the contents of the definition file stored in the CD-ROM, micro-program is exchanged automatically. (If you change some definitions FcWizard follows those.)

(7)

The progress dialog is displayed upper left, and the lamp of the micro-program under execution blinks in yellow.
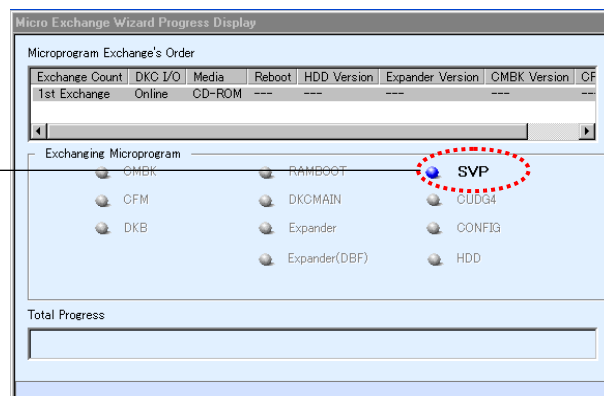
The lamp blinks in yellow.
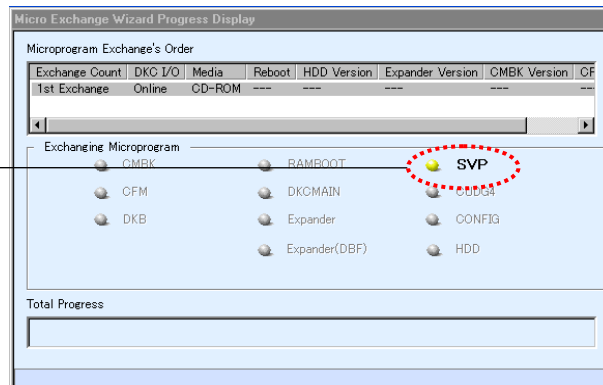
(8)

The lamp of the micro-program exchanged normally lights up blue.
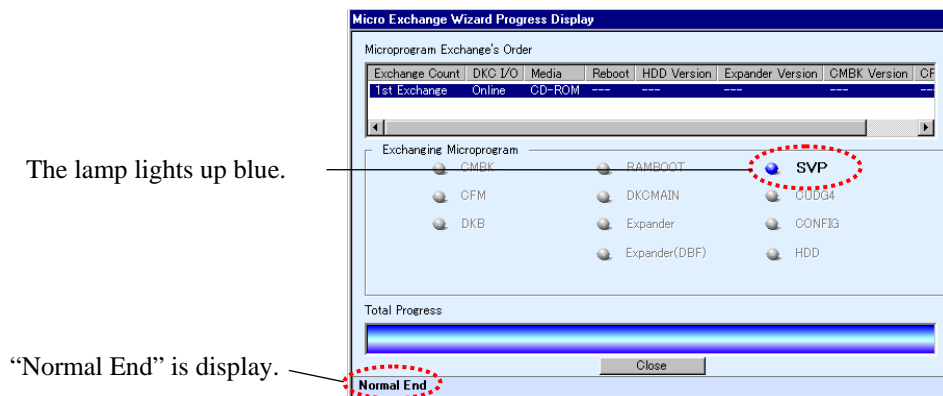
The lamp lights up blue.

(9)

After the micro-program exchange, [Close] button is displayed.

Normal End:

After all micro-program exchange finish, "Normal End" is displayed on the dialog lower left.

The lamp lights up blue.

"Normal End" is display.

Abnormal End:
The lamp of micro-program lights up red, and the error information is displayed on the dialog lower left.

The lamp lights up red.

The error information.
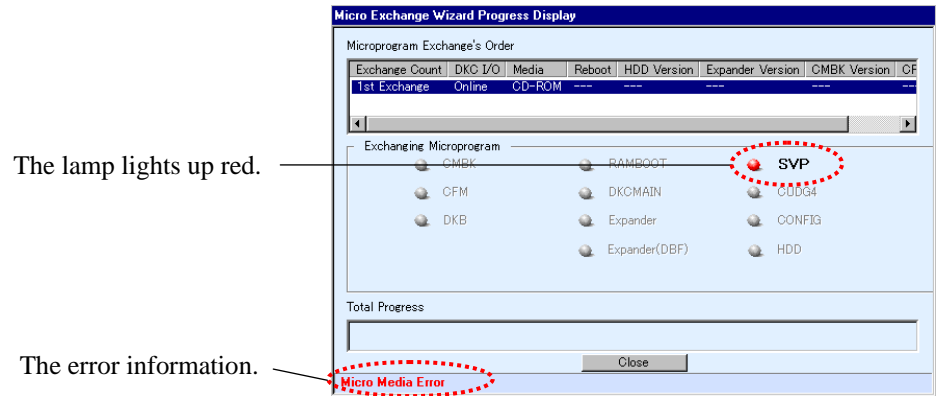
Error information	Action
MP Reboot stop, Due to heavy I/O load	The micro-program exchange is stopped because MP processing rate is 50% or higher. Reduce the MP processing rate less than 50% and then retry the micro-program exchange.
Micro Version Error	The micro-program version is incorrect. Confirm the version.
Micro Sum Check Error	Sum check code is incorrect. Micro-program data in micro-media isn't correct. Exchange the micro-media.
Micro Revision Error	The micro-program revision is incorrect. Confirm the revision.
Micro Combination Error	If you perform the micro-program exchange with the combination of these micro-program versions, DKC/DB may be partially blocked. Confirm the micro-program versions and exchange procedure.
Micro Media Error	The micro-media has an error. Replace the micro-media.
Errors other than above	Confirm SIM/Maintenance window, remove the error and then retry the micro-program exchange.

(10)
After confirming the message, push the [Close] button and end.

(11)
Change the SVP mode to [View].

9. Version upgrade of RAID Manager (SVP)

The procedure of the upgrade of RAID Manager installed in SVP is shown. Especially, work concerned is unnecessary execution when there is no instruction from the factory.
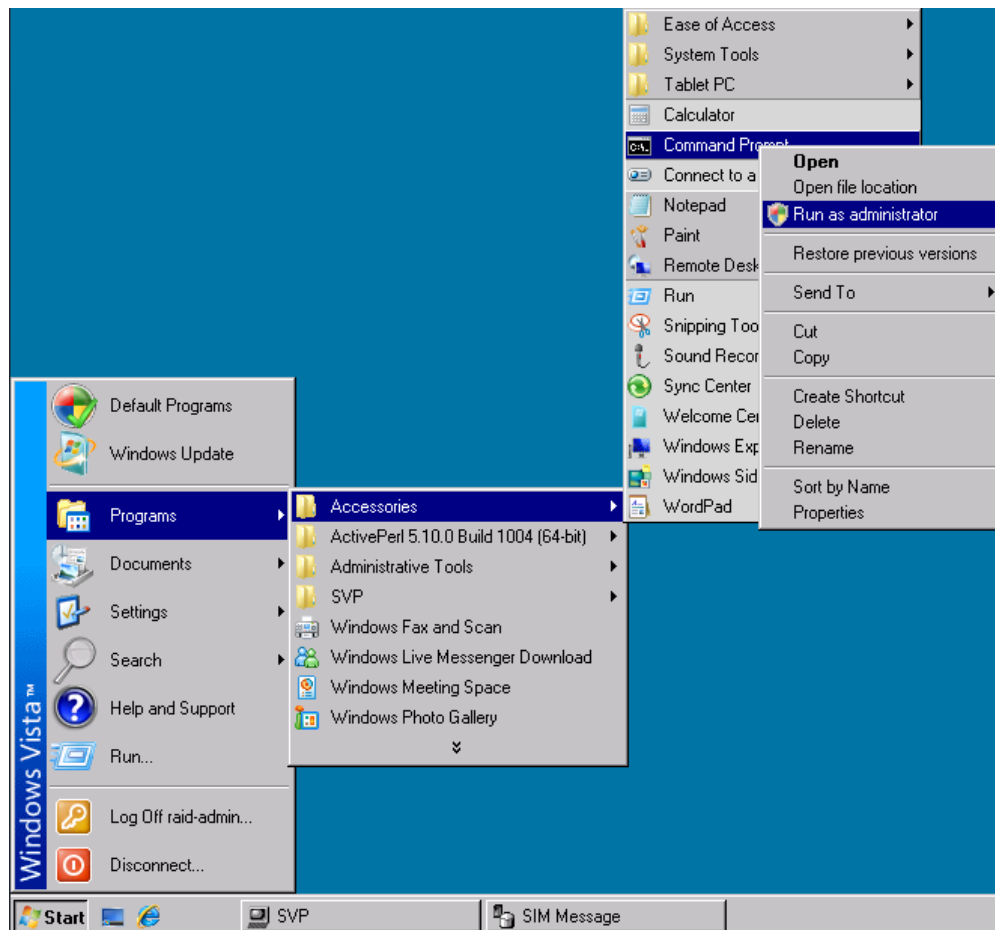
(1)

Insert the micro-program media.
Insert the micro-program media into the CD-ROM drive in the console PC.

(2)

Start the command prompt with the Administrator authority.
Select (CL) [Start]-[Programs]-[Accessories], right-click [Command Prompt], and select (CL) [Run as administrator].

(3)

Start the installer.
Enter "\\tsclient\D\RM\Setup.exe /SVP" in the command prompt and press the Enter key.
(Enter a space before /SVP).

NOTE: The format of the input value is "\\tsclient\<Drive name>\ RM\Setup.exe /SVP". Use
the name of the drive in which the media is inserted. In the example above, the media
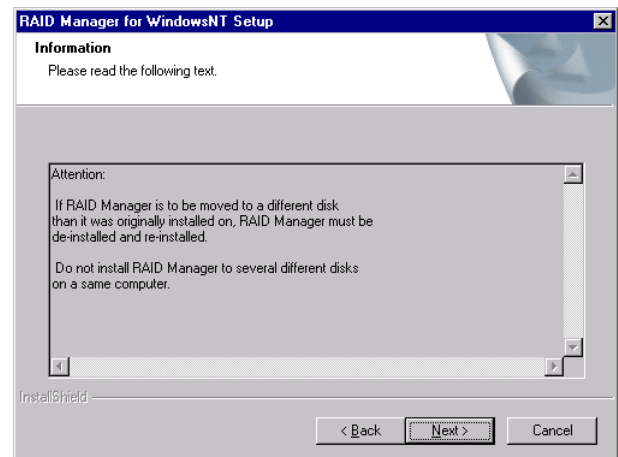is inserted in the D drive.

(4)

Move to the next dialog box.
The 'RAID Manager for WindowsNT Setup'
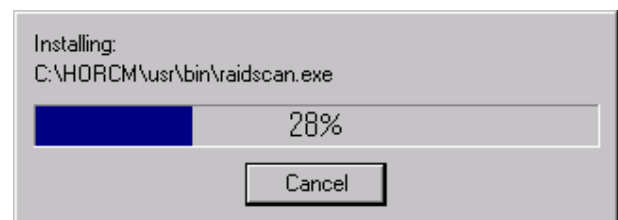dialog box appears. Select (CL) [Next>].
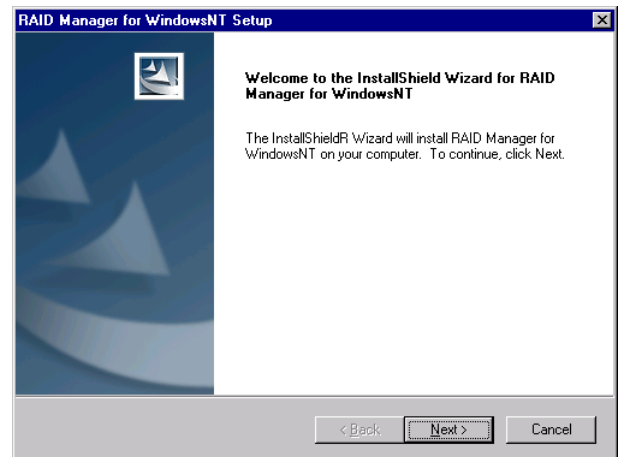
(5)

Move to the next dialog box.
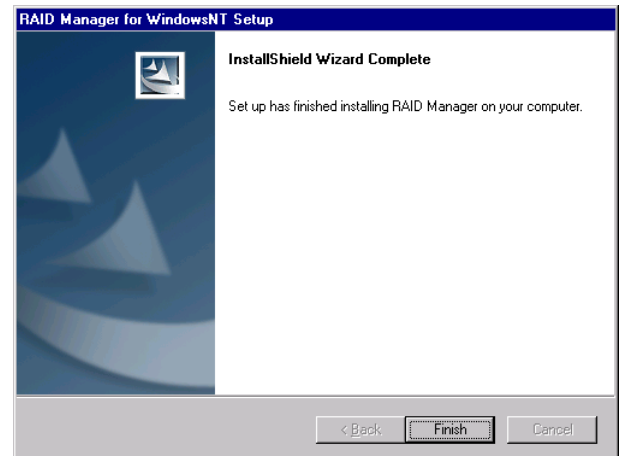Select (CL) [Next >].

(6)

Wait for the installation to complete.

(7)

Complete the installation operation.
Select (CL) [Finish].

(8)

Reboot SVP.
Select (CL) [Start]-[Run...].
Enter "shutdown /r /t 0" and select (CL) [OK].
SVP reboots.

10. Version upgrade of OSS

OSS media upgrade is done by reinstalling the software. Please refer to the instructions below.

WEB CONSOLE SECTION:
"4. Procedure of server software uninstallation / installation" (WEB04-10)

Especially, work concerned is unnecessary execution when there is no instruction from the factory.