23. ALLSCSI SECTION

Contents

23 ALLSCSI

23.1 All SCSI new installation

23.1.1 Preface

(1) Notice

This new installation procedure is applied to All SCSI dedicated product.

(2) Revision of micro-programs

The revision of ALLSCSI micro-programs must be as follows.

DKCMAIN 03-15-19-00/20 or later

SVP 01-09-0A/00 or later

CONFIG 21-00-03/00 or later

Table 23.1-2 FD labels of ALLSCSI Micro-program

FD Kind	ALLSCSI Support		VOL Kind
	FDs	FD Labels	
Setup installer	1	1	SETUP1
DKCMAIN	9	2-10	DKCMAIN1-9
SVP	3	11-13	SVP1-3
CUDG4	1	14	CUDG1
DKU306/DKU308	1	15	DKU1
SSVP	1	16	SSVP1
RAM BOOT	1	17	RAM1
CONFIG	1	18	CONFIG1

(3) Hardware condition

1) All DKAs must be High speed adapters.

2) All physical drives must be DK308-90.

(4) Terminology

-"CHS" is one kind of "CHA".

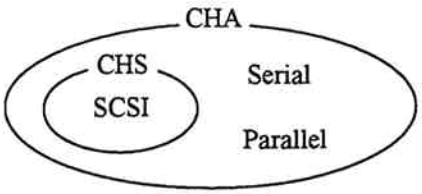
-CHS is abbreviation of CHA for SCSI.

-8 port SCSI adapter DKC-F210I-8C/8CD is one kind of channel option of DKC210.

-8 port SCSI adapter is called as "CHA" or "CHS".

-"CHS" is used in this manual to point SCSI adapter especially.

-"CHA" is used for general term for channel adapter in this manual.



(5) Note

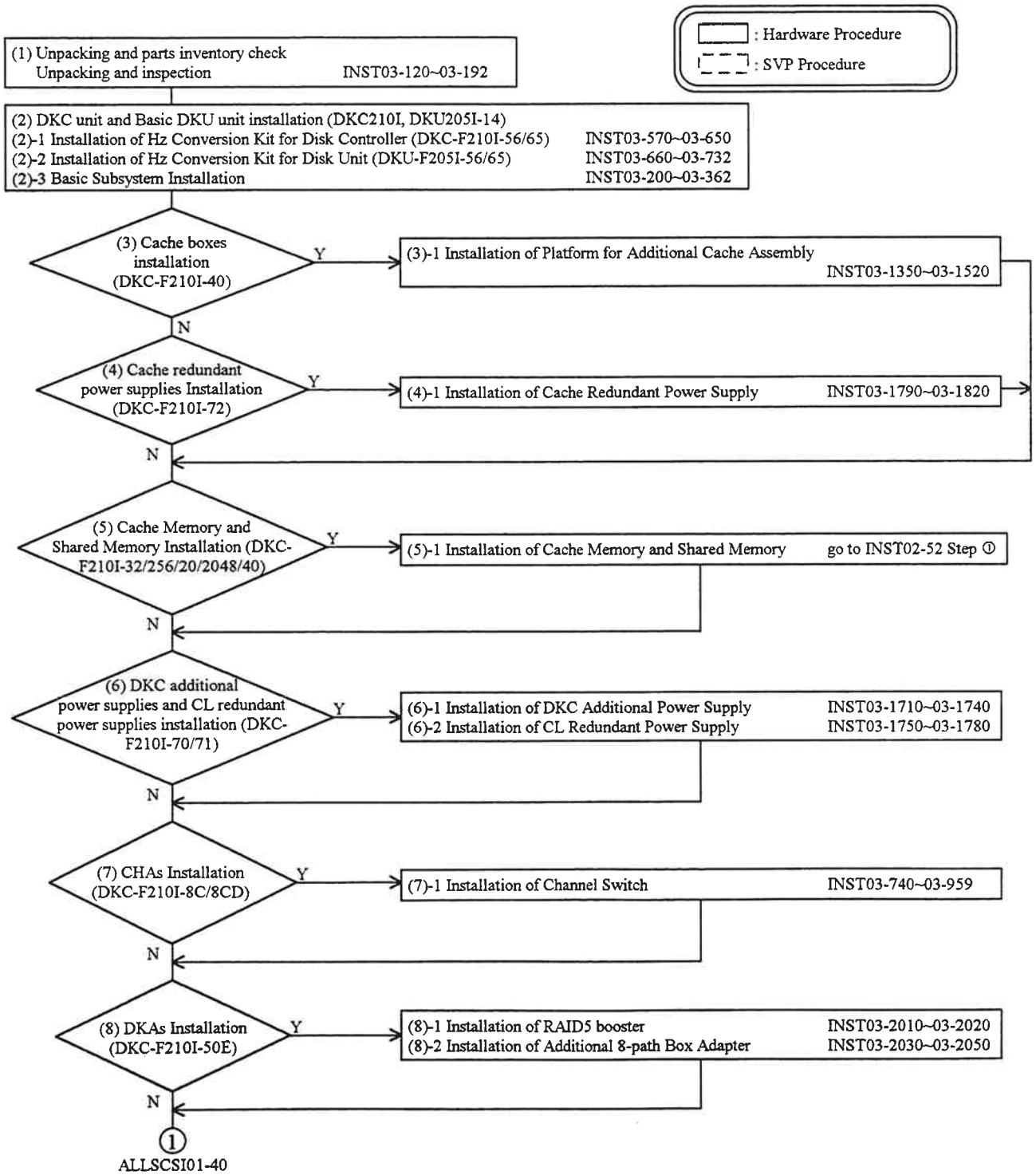
(a) In most case, CHS will be blocked.
But if power events are reported for all installed PCBs, ignore and proceed with this procedure.
In new installation, the Disk Subsystem starts up with the configuration data stored on the FM of one representative MP. In this case, the configuration data of the representative MP may not equal to the physical configuration of the Disk Subsystem and some MPs might be blocked by PCB type unmatch and SIM Reference Code=ffe800 might be reported.
It is not problem but expected in ALLSCSI new installation. If power events of all installed MPs are reported and SUB-SYSTEM ALARM LED is not lit, ignore MP being blocked and SIM Reference Code 3073xx, ffe800, ffe700 and proceed the procedure. The Define Configuration and Install procedure at step(34) will successfully complete and all installed MPs will become normal status.

(b) Don't forget to install RAID5 booster.
If RAID5 booster is not installed, WCHK1 might occer.
SSB EC=0008 will be reported one times per each blocked MP and SIM Reference Code=3992xx will be reported once per Disk Subsystem when RAID5 booster is not installed.

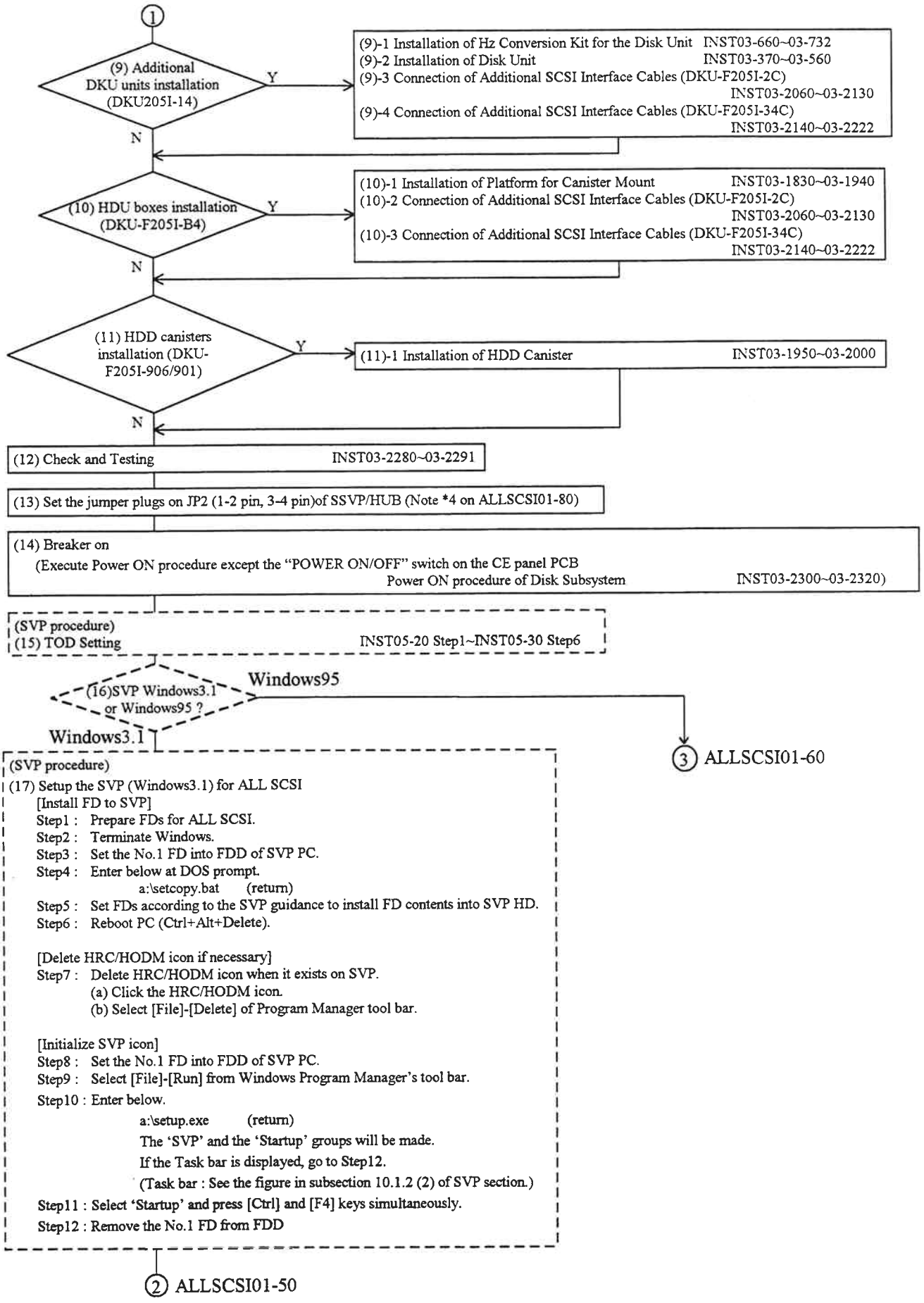
(c) DKC ready lamp control for All SCSI configuration
-DKC ready lamp is lit at P/S on timing when all LDEV status become normal or correction access.
-DKC ready lamp will be lit after LDEV formatting for All SCSI new installation.
-If some LDEV is blocked by some reason, DKC ready lamp will not be lit.
Please recover the blocked LDEV at this case.
-DKC ready lamp turning off control is same as before.
DKC ready lamp will not be off when LDEV become blocked.

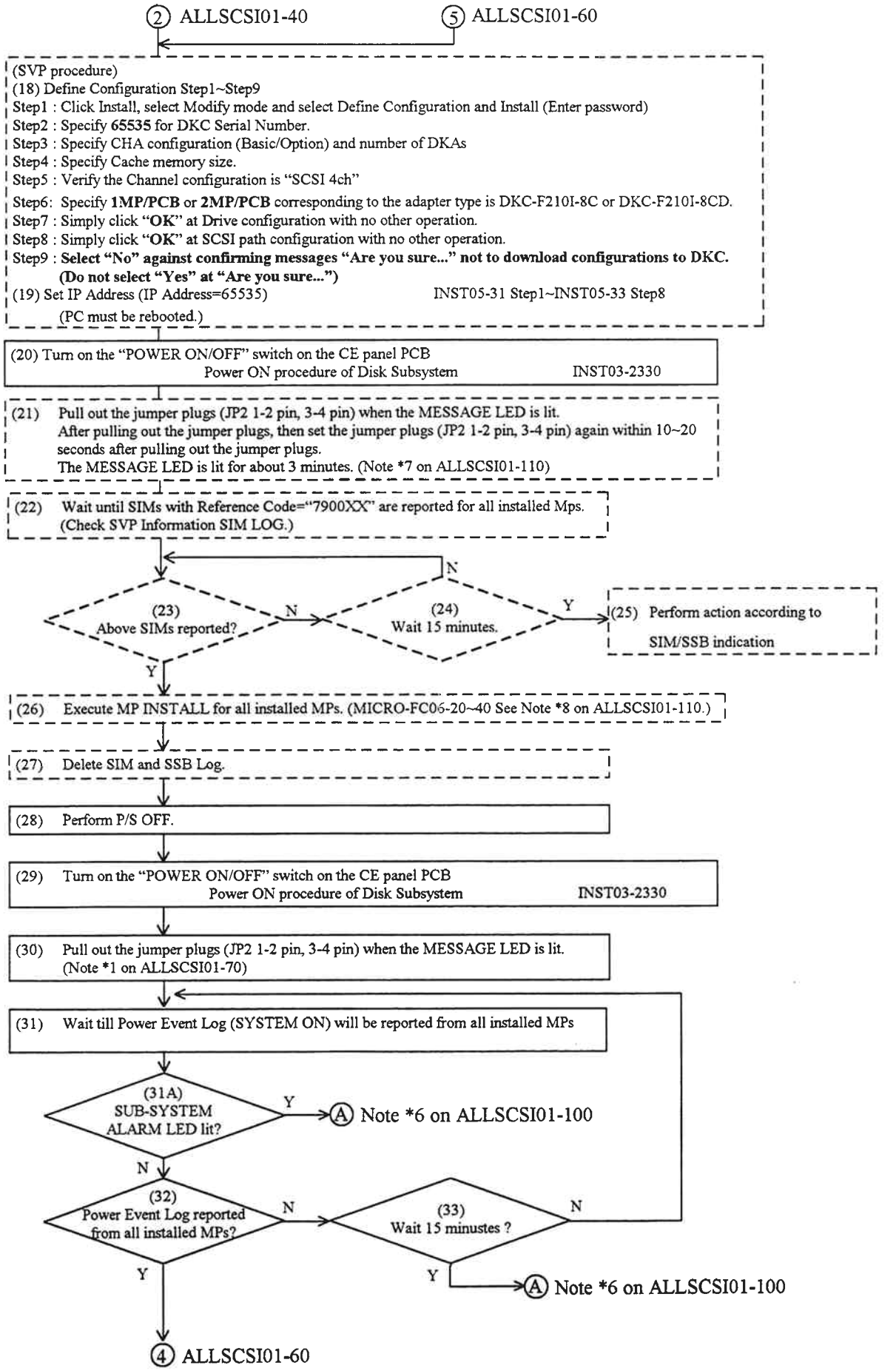
23.1.2 ALL SCSI

When installing DKC210I/DKU205I ALL SCSI subsystem for the first time, perform all hardware installation procedures before initiating the installation through SVP procedure.
The general procedure for installing a new DKC210I/DKU205I subsystem is shown below.
Each procedure is performed referring to the following flow chart.
Skip the next procedure when the procedure is not necessary.
If any problems arise during the following procedure, isolate failure part with analysis of SIM log or SSB log.
If neither SIM log nor SSB log has been created, see TROUBLE SHOOTING SECTION.
Do not use SVP online task until step (33) is finished.



ALLSCSI01-30





ALLSCSI01-50

④

(SVP procedure)
(34) Configuration information definition (Note*2 on ALLSCSI01-70) INST05-40 Step1~INST05-80W Step32

(SVP procedure)

(35) Check Procedure	INST05-81~05-100
(35)-1 Power ON CUDG execution	INST05-81 Step1
(35)-2 DKU Path inline test execution	INST05-81 Step2 (DKU PATH INLINE Test Procedure DIAG04-190~04-230)
(35)-3 Check subsystem status and all MP micro-version	INST05-81 Step3 (Activating and Terminating STATUS STATUS04-10~06-10)
(35)-4 L-DEV formatting	INST05-81 Step4~INST05-100 Step4.5 Ready lamp will be lit after LDEV formatting.
(35)-5 Check subsystem status	INST05-81 Step5 (Activating and Terminating STATUS STATUS04-10~06-10)
(35)-6 System interlock operation check	INST05-100 Step6
(35)-7 Delete err log (Note *3 on ALLSCSI01-70)	INST05-100 Step7 (Log delete SVP02-130~02-140 SIM Log Complete SVP02-510~02-530)

(36) Set High speed adapter check to "Do". (system option) (Refer to SVP02-740~750)

END

③ ALLSCSI01-40

(SVP procedure)
(37) Setup the SVP (Windows95) for ALL SCSI

[Install FD to SVP]
Step1 : Prepare FDs for ALL SCSI.
Step2 : Terminate Windows.
Step3 : Set the No.1 FD into FDD of SVP PC.
Step4 : Enter below at DOS prompt.
a:\setcopy.bat (return)
Step5 : Set FDs according to the SVP guidance to install FD contents into SVP HD.
Step6 : Reboot PC (Ctrl+Alt+Delete).

[Delete HRC/HODM icon if necessary]
Step7 : Delete HRC/HODM icon when it exists on SVP.
(a) Click [Start] by the lower click bottom and select [Explorer].
(b) Find HRC/HODM icon and select it.
(c) Select [File]-[Delete] of Explorer tool bar.

[Initialize SVP icon]
Step8 : Set the No.1 FD into FDD of SVP PC.
Step9 : Click [Start] by the upper click bottom and select [Run]
Step10 : Enter below.
a:\setup.exe (return)
The 'SVP' and the 'Startup' groups will be made.
If the Task bar is displayed, go to Step12.
(Task bar : See the figure in subsection 10.1.2 (2) of SVP section.)
Step11 : Select 'Startup' and press [Ctrl] and [F4] keys simultaneously.
Step12 : Remove the No.1 FD from FDD.

⑤

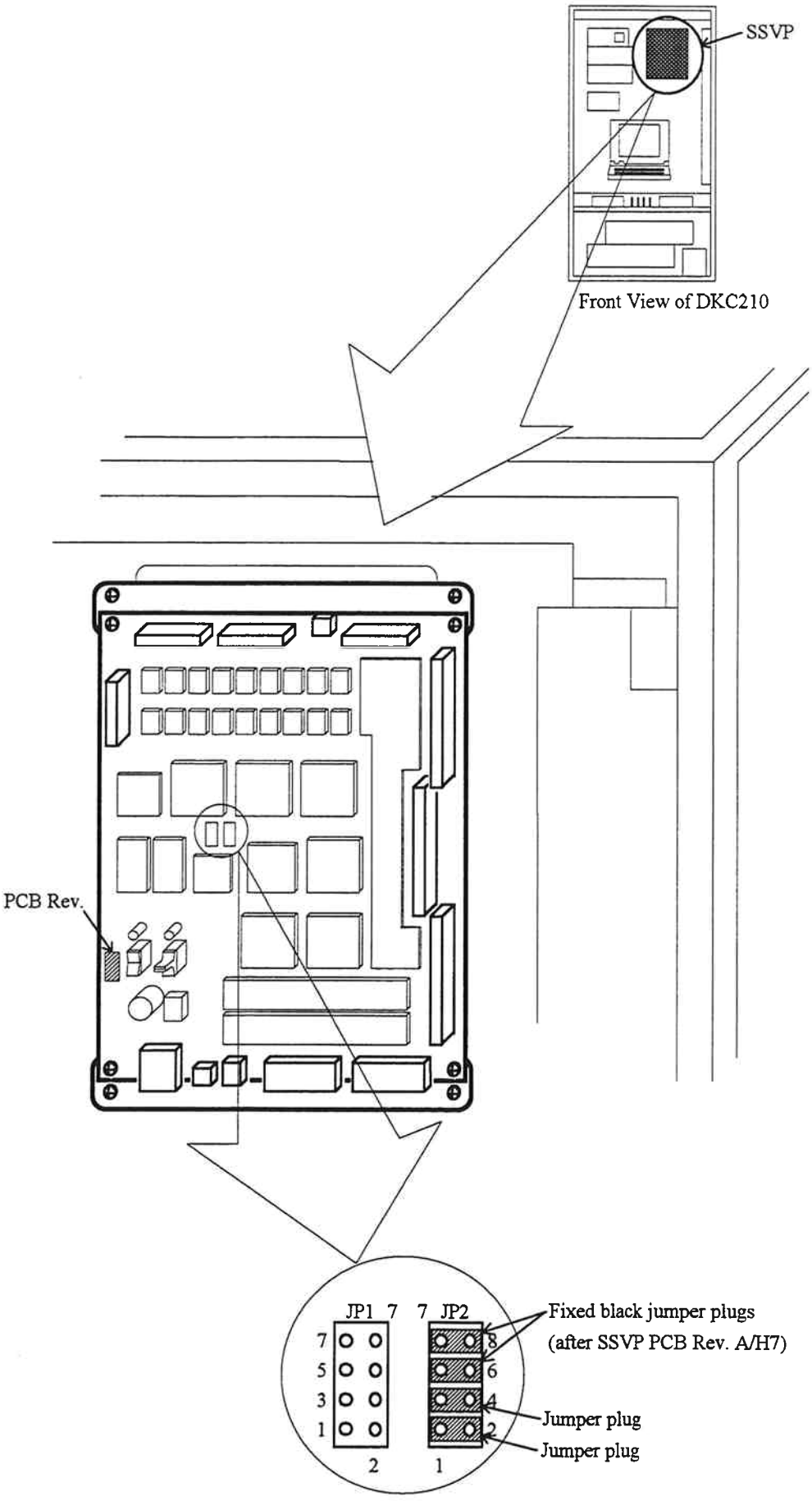
Go to (18) on ALLSCSI01-50

Note *1 : Pull out jumper plugs when the MESSAGE LED is lit and while it's lighting. The MESSAGE LED is lit for 3 minutes as soon as the Power on. The jumper plugs must not be set after it. If you forget or failed to pull out them while the MESSAGE LED is lighting, execute "Power Off Procedure". And then, re-execute from step (29).

Note *2 : At step(34) on ALLSCSI01-60, specify the actual DKC Serial Number, Drive configuration, SCSI path configuration and other necessary information that was not specified at step(18) on ALLSCSI01-50. Please refer to ALLSCSI01-90 Note *5 to know the "DKC Serial Number" of the DKC210.

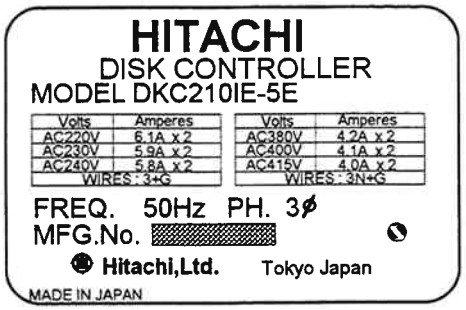
Note *3 : It's necessary to execute the procedure of "SIM Log Complete" before deleting SIM data.

Note *4

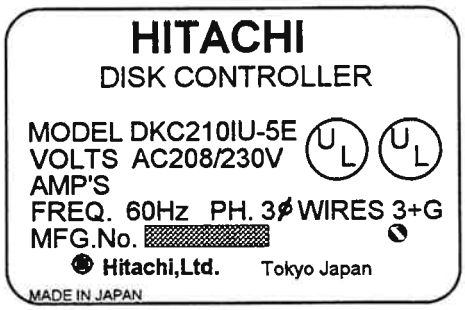


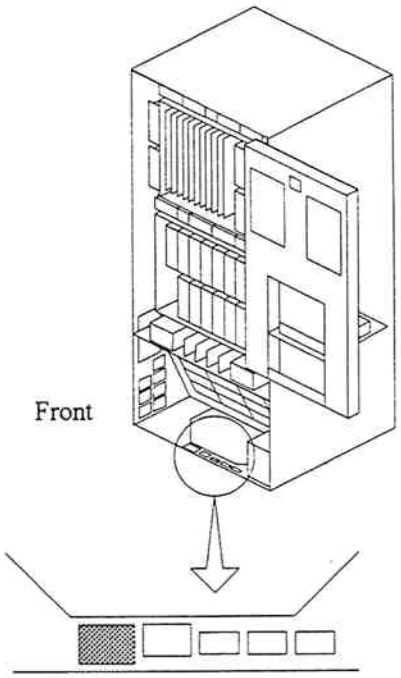
Note *5

• DKC210IE-5E

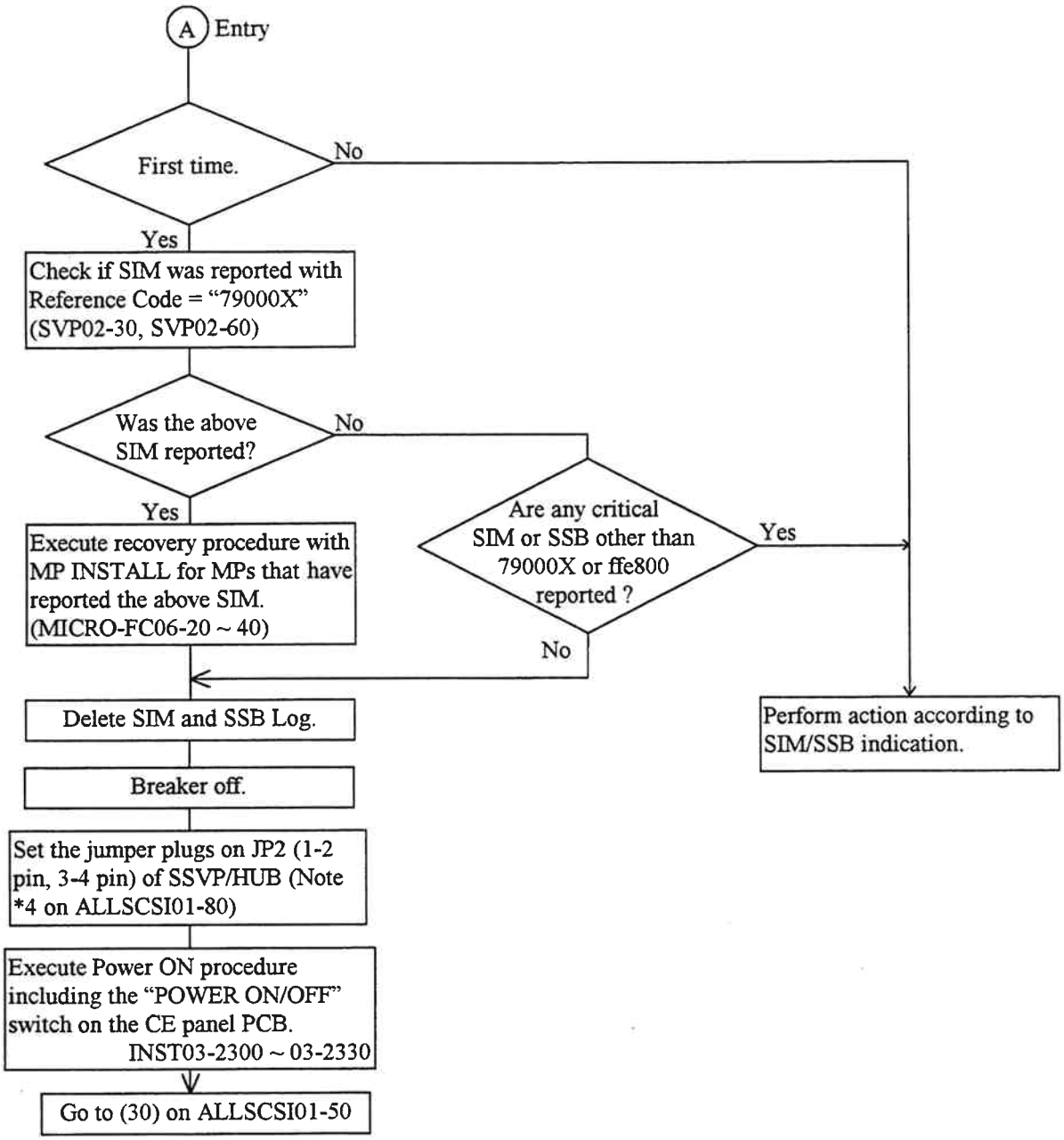


• DKC210IU-5E





Note *6 :



Note *7: Note about jumper plugs operation

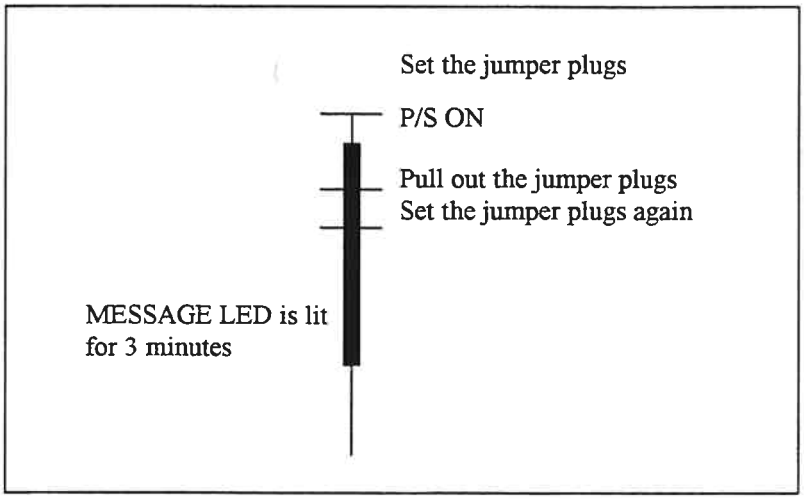
MESSAGE LED is lit after turning on P/S ON switch and the LED is lighting for about **3 minutes**.

(1) **Turn on P/S ON switch.**

(2) **Pull out the jumper plugs soon after MESSAGE LED is lit.**
The LED is lighting for about 3 minutes.
Please pull out the jumper plugs **within 10~20 seconds** after the LED is lit.

(3) **Set the jumper plugs soon again after pulling out the jumper plugs.**
Please set the jumper plugs **within 10~20 seconds** after pulling out the jumper plugs.

Operation (2) and (3) must be executed during the MESSAGE LED is lighting.



Note *8: Note about MP INSTALL at (26) on ALLSCSI01-50.

(1) Click Install Icon.

(2) Select Modify mode.

(3) Select MP Install.

(4) Execute MP Install about all MPs installed.
Please check that DKCMAIN and RAMBOOT are selected.

23.2 Notice about ALLSCSI Maintenance operations

There are some notices about ALLSCSI Maintenance operations.

CHS : "CHS" is used for a kind of CHA that has SCSI I/F. SCSI adapter.
ALLSCSI : "ALLSCSI" is used for SCSI dedicated product.

(1) New installation of ALLSCSI needs special installation procedure.
(2) When SCSI path configuration will be changed, SCSI I/O on the related SCSI port must be stopped before.
(3) When CHS or LDEV will be de-installed, the related SCSI path must be de-installed before.
(4) When CHS will be replaced, the related SCSI I/O must be stopped before.
(5) When micro-program will be changed, all SCSI I/O on the DKC must be stopped before.

Table 23.2-1 Notice about ALLSCSI Maintenance operations

No	Category	Maintenance operation	Notion
1	New installation	ALLSCSI	New installation of ALLSCSI must be done by special procedure. See section 23.1 ALLSCSI new installation.
2	Installation	SCSI path installation	When SCSI path(s) will be added on a SCSI port (SCP), SCSI I/O on the SCSI port must be stopped before the SCSI path(s) is installed.
3	De-installation	CHS de-installation	When CHS will be de-installed, all SCSI path on the CHS must be de-installed before the CHS is de-installed.
		LDEV de-installation	When LDEV having SCSI path will be de-installed, all SCSI path on the LDEV must be de-installed before the LDEV is de-installed.
		SCSI path de-installation	When SCSI path(s) on a SCSI port (SCP) will be de-installed, SCSI I/O on the SCSI port must be stopped before the SCSI path(s) is de-installed.
4	Replace	CHS replace	When CHS will be replaced, all SCSI I/O on the CHS must be stopped before the CHS is replaced.
5	Micro program exchange		When micro-program will be exchanged, all SCSI I/O on CHS's on the DKC must be stopped before micro-program exchanging.

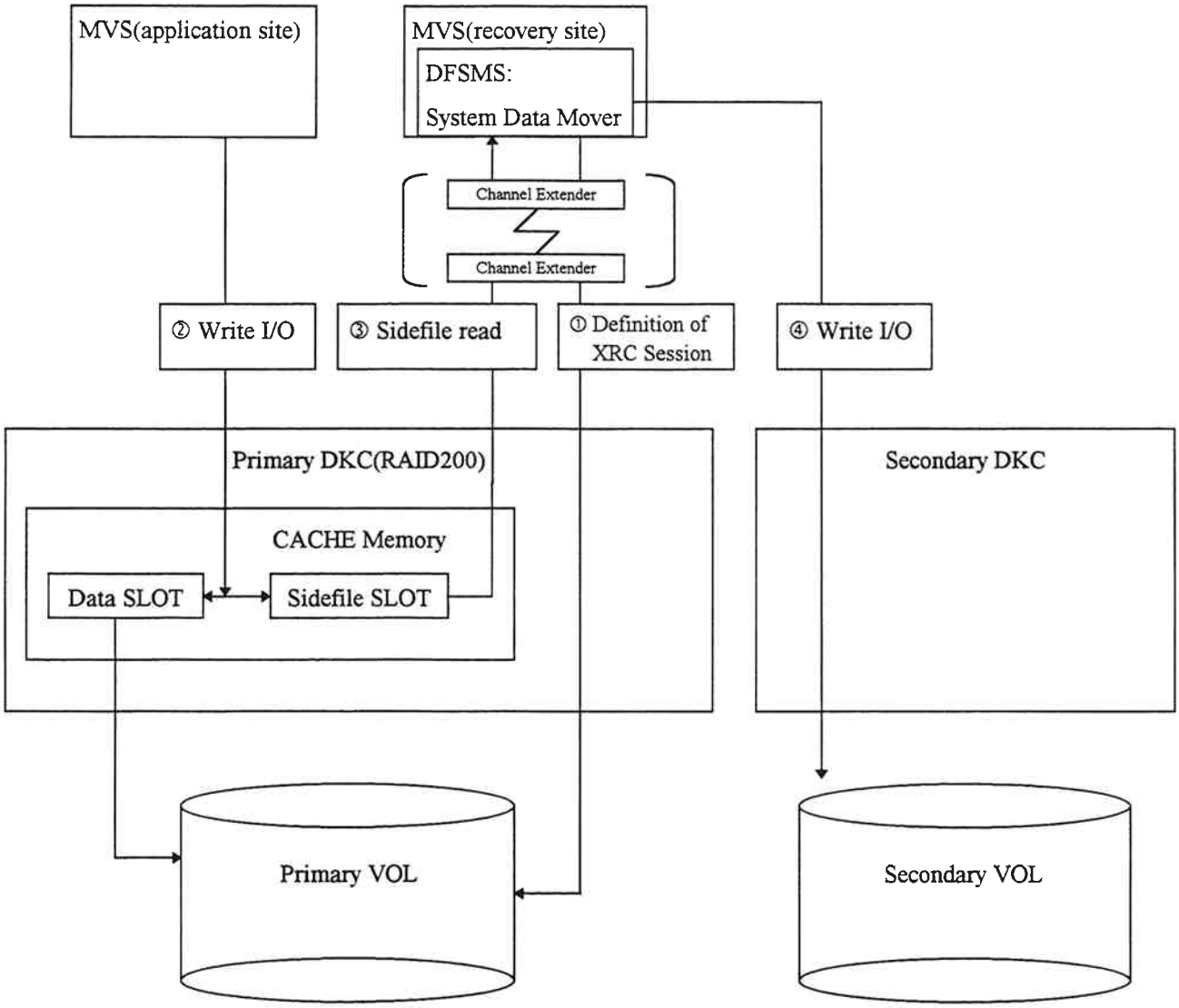
24. HXRC SECTION

Contents

24 HXRC

24.1 An outline of HXRC

HXRC(Hitachi eXtended Remote Copy) function provides for data replication at distance in order to recover at a disaster.



- System Data Mover defines a XRC pair session.(①)
- When a write command is issued to primary volume from application site, primary DKC makes a sidefile data(replication) on cache memory.(②)
- System Data Mover reads a sidefile data non-synchronously at distance, and writes it to secondary volume.(③, ④)

Fig.1.1-1 An outline of HXRC

24.2 HXRC Support Requirements

24.2.1 OS

(1) OS level

(a) MVS/ESA 4.3.0 or upper.

(b) DFSMS/MVS 1.1.0 or upper.

(2) Conditions of HXRC using

(a) The following conditions must be satisfied by OS before starting HXRC function,

- CACHE ON
- NVS ON

and must be CACHE ON status on DKC.

When CACHE OFF/NVS OFF commands are issued by OS or Cache malfunctions(includes 'Ref code=FFEE: Area temporary blocking) occur, HXRC function is stopped.

(b) I/O Patrol Value

(I) Without CHL Extender

- Current patrol time(more than 30sec).

(II) With CHL Extender

- More than 60sec.

(c) Session ID

- Up to 64 session ID's can be utilized per 1DKC for Concurrent Copy and HXRC.
- Up to 4Session ID's can be utilized per 1DKC for HXRC.
- Up to 16Session ID's can be utilized per 1VOL for Concurrent Copy and HXRC.
- Only 1Session ID can be utilized per 1VOL for HXRC.

(d) HRC/HODM

For MAIN Ver. 03-14-XX

- HXRC cannot be used for the same volumes using HRC/HODM pair volumes.
- HRC/HODM cannot be used for the same volumes using HXRC pair volumes.
- HXRC must be for that volumes after deleting HRC/HODM pair volumes.

For MAIN Ver. 03-15-XX or upper

- HXRC cannot be used for the same volumes using HODM pair volumes.
- HODM cannot be used for the same volumes using HXRC pair volumes.
- HXRC must be for that volumes after deleting HODM pair volumes.

24.2.2 Hardware

(1) HXRC Support Hardware Specification.

Table2.2-1 HXRC Support Hardware Specification

CU Type	3990-6/6E
DEV Type	3390-1/2/3/3R/9
DKC model	Primary:RAID200HA Secondary:RAID200HA/DKC80/DKC90
RAID level	RAID5/RAID1*
DKU model	DK306-45(DRAM) DK308-90(SRAM)
Channel	ESCON

*: RAID1 configuration is available from MAIN Ver.03-15 or upper.

(2) CACHE SIZE

Cache capacity should be doubled from current cache size.

(The amount of sidefile data may occupy up to 60% of total cache capacity.)

24.2.3 Micro-program

HXRC Support Micro-program Revision.

Table2.3-1 HXRC Support Micro-program Revision

DKCMAIN	03-14-xx-00/00 or upper
SVP	01-08-xx/xx or upper
LCP	01-02-xx/xx or upper
LCDG	01-01-xx or upper
CONFIG	01-08-xx/00 or upper

24.3 HXRC recommendations

(1) Recovery site CPU is the most ideal location for Data Mover.

(2) Data Mover's path should be utilized only to read sidefile.

(3) A low activity device should be selected as a Utility Device(1'st pair volume).

24.4 Online Maintenance while HXRC using

(1) Availability of Installation and DE-installation.

Component	Maintenance Type	During initial copy		Established		Suspend	
		Primary	Secondary	Primary	Secondary	Primary	Secondary
HDD canister	Installation	*	x	*	x	*	x
	De-installation	*	x	*	x	*	x
Cache PCB	Installation	*	x	*	x	*	x
	De-installation	*	x	*	x	*	x
CHA	Installation	x	x	x	x	x	x
	De-installation	x	x	x	x	x	x
DKA	Installation	x	x	x	x	x	x
	De-installation	x	x	x	x	x	x

x: Maintenance is available.

*: When a maintenance operation is needed while HXRC is using, I/O's for HXRC pair volumes or HXRC itself should be stopped before the maintenance operation.
If the maintenance operation must be done while HXRC is using, you must confirm that the usage of Sidefile monitor less than 20% of total Cache capacity before you start the maintenance operation. Only when the usage of Sidefile monitor is less than 20% of total Cache capacity, you can proceed the maintenance operation.
Refer to "Monitoring" in the SVP SECTION about sidefile monitor.
Select the [Information] icon in the 'SVP' window.
Next select the [Monitor] menu in the 'Information' window and select [start....].
Next select the 'Sideflie' box in the 'Item' menu in the 'Monitoring' window and select [OK].

(2) Availability of the System tuning .
When the following System tuning operation is needed while HXRC is using, HXRC should be stopped before the System tuning operation.

- It is impossible to change the DKC No, SSID, or DKC Emulation type by System tuning operation while HXRC is using.
- When the DRV emulation type of HXRC pair volumes are 3390-3 or 3390-3R, it is impossible to change the emulation type between 3390-3 and 3390-3R by CHANGE EMULATION operation while HXRC is using.

(3) Availability of the Replacement.

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

x: Maintenance is available

*: When a maintenance operation is needed while HXRC is using, I/O's for HXRC pair volumes or HXRC itself should be stopped before the maintenance operation.
If the maintenance operation must be done while HXRC is using, you must confirm that the usage of Sidefile monitor less than 20% of total Cache capacity before you the start maintenance operation. Only when the usage of Sidefile monitor is less than 20% of total Cache capacity, you can proceed the maintenance operation.
Refer to "Monitoring" in the SVP SECTION about Sidefile monitor.
Select the [Information] icon in the 'SVP' window.
Next select the [Monitor] menu in the 'Information' window and select [start....].
Next select the 'Sideflie' box in the 'Item' menu in the 'Monitoring' window and select [OK].

**: When a maintenance operation is needed while HXRC is using, HXRC should be stopped before the maintenance operation.