

- 24-hour Telephone Number: (937) 847-3200

Use for urgent or emergency needs for technical support, service and/or replacement parts

- Routine Technical Inquiries: techsupport@motoman.com

Allow up to 36 hours for response

DX200 UPGRADE PROCEDURE MANUAL

Upon receipt of the product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

MOTOMAN INSTRUCTIONS

MOTOMAN-□□□ INSTRUCTIONS

DX200 INSTRUCTIONS

DX200 OPERATOR'S MANUAL (for each purpose)

DX200 MAINTENANCE MANUAL (Volume1)(Volume2)

Have the following information available when contacting the YASKAWA Representative:

- System
- Primary Application
- Software Version (*Located on Programming Pendant by selecting: {Main Menu} - {System Info} - {Version}*)
- Warranty ID (*Located on Robot Controller*)
- Robot Serial Number (*Located on Manipulator data plate*)
- Robot Sales Order Number (*Located on Robot controller data plate*)



MANDATORY

- This manual explains the upgrading procedures of the DX200 system. Read this manual carefully and be sure to understand its contents before handling the DX200.
- General items related to safety are listed in the Chapter 1: Safety of the DX200 Instructions. To ensure correct and safe operation, carefully read the DX200 Instructions before reading this manual.



CAUTION

- Some drawings in this manual are shown with the protective covers or shields removed for clarity. Be sure all covers and shields are replaced before operating this product.
- The drawings and photos in this manual are representative examples and differences may exist between them and the delivered product.
- YASKAWA may modify this model without notice when necessary due to product improvements, modifications, or changes in specifications. If such modification is made, the manual number will also be revised.
- If your copy of the manual is damaged or lost, contact a YASKAWA representative to order a new copy. Be sure to tell the representative the manual number listed on the front cover.
- YASKAWA is not responsible for incidents arising from unauthorized modification of its products. Unauthorized modification voids your product's warranty.

Notes for Safe Operation

Read this manual carefully before installation, operation, maintenance, or inspection of your product.

In this manual, the Notes for Safe Operation are classified as “DANGER”, “WARNING”, “CAUTION”, “MANDATORY”, or “PROHIBITED”.



DANGER

Indicates an imminent hazardous situation which, if not avoided, could result in death or serious injury to personnel.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to personnel.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury to personnel and damage to equipment. It may also be used to alert against unsafe practices.



MANDATORY

Always be sure to follow explicitly the items listed under this heading.



PROHIBITED

Must never be performed.

Even items described as “CAUTION” may result in a serious accident in some situations. At any rate, be sure to follow these important items.



To ensure safe and efficient operation at all times, be sure to follow all instructions, even if not designated as “CAUTION”, “WARNING” and “DANGER.”



WARNING

- Before operating the manipulator, check that servo power is turned off when the emergency stop buttons on the front door of the DX 200 and programing pendant are pressed. When the servo power is turned off, the SERVO ON LED on the programing pendant is turned off.

Injury or damage to machinery may result if the emergency stop circuit cannot stop the manipulator during an emergency. The manipulator should not be used if the emergency stop buttons do not function.

Fig. : Emergency Stop Button



- Once the emergency stop button is released, clear the cell of all items which could interfere with the operation of the manipulator. Then turn the servo power ON.

Injury may result from unintentional or unexpected manipulator motion.

Fig. : Release of Emergency Stop



- Observe the following precautions when performing teaching operations within the P-point maximum envelope of the manipulator:
 - Be sure to use a lockout device to the safeguarding when going inside. Also, display the sign that the operation is being performed inside the safeguarding and make sure no one closes the safeguarding.
 - View the manipulator from the front whenever possible.
 - Always follow the predetermined operating procedure.
 - Keep in mind the emergency response measures against the manipulator's unexpected motion toward the operator.
 - Ensure to secure a safe place to retreat in case of emergency.

Improper or unintended manipulator operation may result in injury.

- Confirm that no person is present in the P-point maximum envelope of the manipulator and that you are in a safe location before:
 - Turning on the power for the DX200.
 - Moving the manipulator with the programming pendant.
 - Running the system in the check mode.
 - Performing automatic operations.

Injury may result if anyone enters the working envelope of the manipulator during operation. Always press an emergency stop button immediately if there are problems.

- The emergency stop button is located on the right of the front door of the DX200 and programing pendant.



CAUTION

- Perform the following inspection procedures prior to conducting manipulator teaching. If problems are found, repair them immediately, and be sure that all other necessary processing has been performed.
 - Check for problems in manipulator movement.
 - Check for damage to insulation and sheathing of external wires.
- Always return the programming pendant to the hook on the cabinet of the DX200 after use.

The programming pendant can be damaged if it is left in the manipulator's work area, on the floor, or near fixtures.

- Read and understand the Explanation of Warning Labels in the DX200 Instructions before operating the manipulator.

Definition of Terms Used Often in This Manual

The MOTOMAN is the YASKAWA industrial robot product.

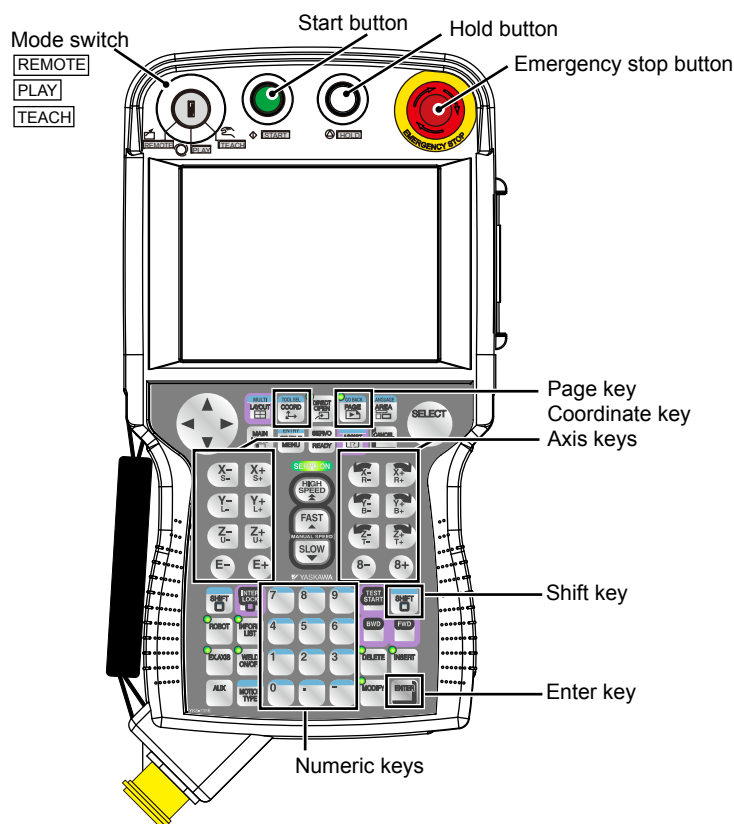
The MOTOMAN usually consists of the manipulator, the controller, the programming pendant, and manipulator cables.

In this manual, the equipment is designated as follows.

Equipment	Manual Designation
DX200 Controller	DX200
DX200 Programming Pendant	Programming Pendant
Cable between the manipulator and the controller	Manipulator cable

Descriptions of the programming pendant keys, buttons, and displays are shown as follows:

Equipment		Manual Designation
Programming Pendant	Character Keys /Symbol Keys	The keys which have characters or symbols printed on them are denoted with []. e.g. [ENTER]
	Axis Keys /Numeric Keys	[Axis Key] and [Numeric Key] are generic names for the keys for axis operation and number input.
	Keys pressed simultaneously	When two keys are to be pressed simultaneously, the keys are shown with a "+" sign between them, e.g. [SHIFT]+[COORD].
	Mode Switch	Mode Switch can select three kinds of modes that are denoted as follows: REMOTE, PLAY or TEACH.
	Button	The three buttons on the upper side of the programming pendant are denoted as follows: START, HOLD, or EMERGENCY STOP.
	Displays	The menu displayed in the programming pendant is denoted with { }. e.g. {JOB}



Description of the Operation Procedure

In the explanation of the operation procedure, the expression "Select • • •" means that the cursor is moved to the object item and [SELECT] is pressed.

Registered Trademark

In this manual, names of companies, corporations, or products are trademarks, registered trademarks, or brand names for each company or corporation. The indications of (R) and TM are omitted.

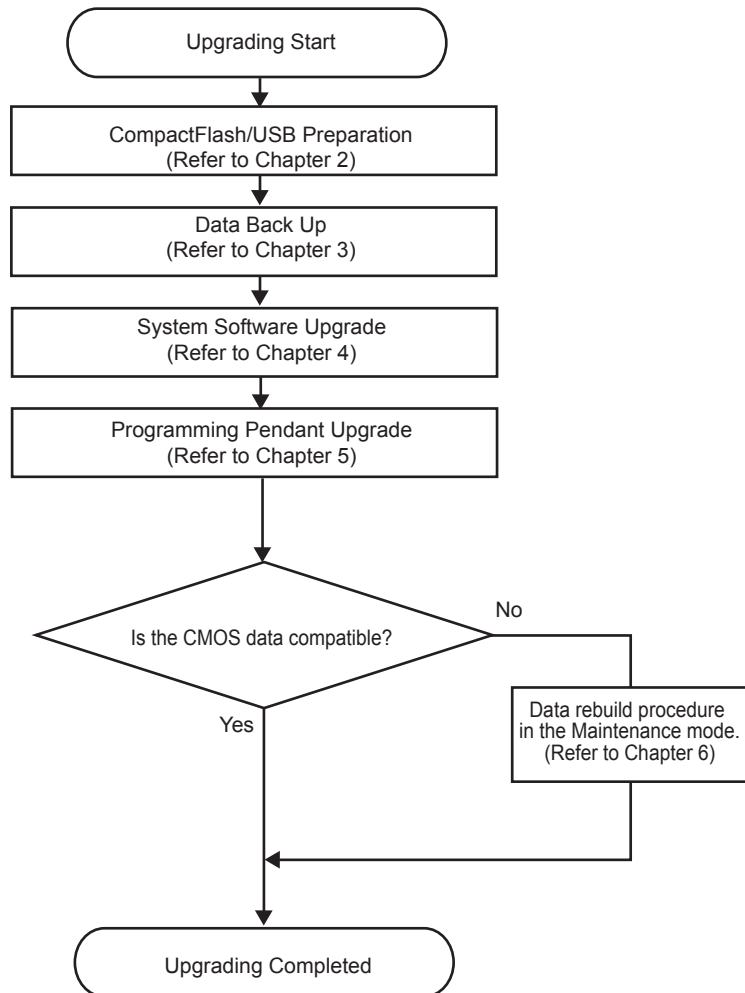
Contents

1	Outline	1-1
1.1	Outline of Upgrade Procedure	1-1
2	CompactFlash/USB Preparation	2-1
2.1	Pearrangements	2-1
2.2	Preparing CompactFlash/USB for Upgrade	2-2
3	Data Back Up	3-1
3.1	Data Back Up	3-1
3.2	Recording Other Information	3-6
3.3	Recording Information in Maintenance Mode	3-7
4	System Software Upgrade	4-1
4.1	System Software Upgrade	4-1
4.1.1	Upgrade Using CompactFlash	4-1
4.1.2	Upgrade Using USB	4-4
5	Programming Pendant Upgrade	5-1
5.1	Programming Pendant Upgrade	5-1
6	Procedure when Data Incompatibility Occurs after Upgrading	6-1
6.1	Data Rebuild Procedure in Maintenance Mode	6-3
6.2	Reset Procedure for the Machine Safety Board Flash data in Maintenance Mode	6-4
6.3	Initialize the Job Data (Only for Downgrade)	6-6
7	DX200 and APP21 Combinations	7-1
7.1	Combinations Table	7-2
7.2	APP21 Version Upgrade	7-3
8	Troubleshooting	8-1
8.1	Back Up the CompactFlash	8-1
8.2	How to Repair Programming Pendant when Fonts are Garbled	8-4

1 Outline

1.1 Outline of Upgrade Procedure

The upgrading procedures for the DX200 is outlined as follows:



The DX200 supports both the YPP21 and the APP21 starting from version DN4.00.00A(*)-00, and the version upgrade procedure depends on the pendant being used.

2 CompactFlash/USB Preparation

2.1 Prearrangements

2 CompactFlash/USB Preparation

To upgrade the DX200, it is required to set a CompactFlash memory card (hereinafter referred to as “CompactFlash”) or a USB memory stick (hereinafter referred to as “USB”) into the programming pendant.

This chapter describes on how to prepare the CompactFlash or USB for upgrading the DX200.



The APP21 uses an SD card instead of CompactFlash.

2.1 Prearrangements

Prepare the following items when making the CompactFlash/USB for the DX200 upgrade.

- Personal computer with Windows operating system, available to use CompactFlash/USB. (Windows is a registered trademark of Microsoft Corporation.)
- Data file for upgrade.
- CompactFlash
The following types are recommended for DX200.

<Recommended CompactFlash>

No.	Manufacturer	Model	Remarks
1	Hagiwara Sys-Com	MCF10P-256MS-YE	256MB
2	Hagiwara Sys-Com	MCF10P-512MS	512MB
3	Hagiwara Sys-Com	MCF10P-A01GS	1GB
4	Hagiwara Sys-Com	MCF10P-A02GS	2GB

- USB
The following type is recommended for DX200.

< Recommended USB Memory>

No.	Manufacturer	Model	Remarks
1	Hagiwara Sys-Com	UDG4-xGDRJS	1GB,2GB or 4GB



The above mentioned CompactFlash with different capacity (xxMB) is also available to use.

2 CompactFlash/USB Preparation

2.2 Preparing CompactFlash/USB for Upgrade

2.2 Preparing CompactFlash/USB for Upgrade

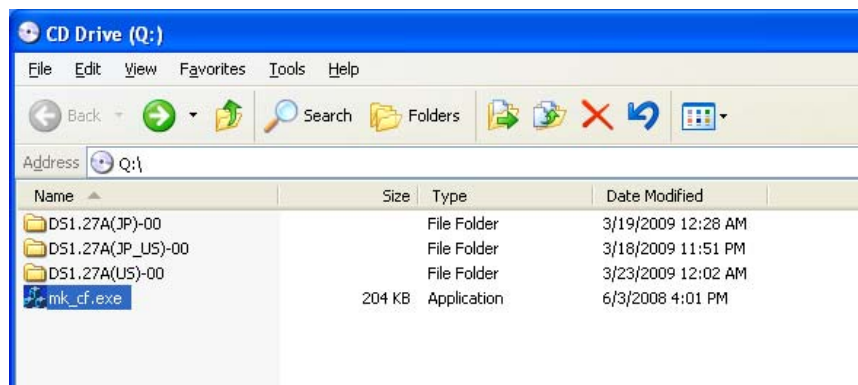
Prepare the CompactFlash/USB for upgrade with a personal computer.



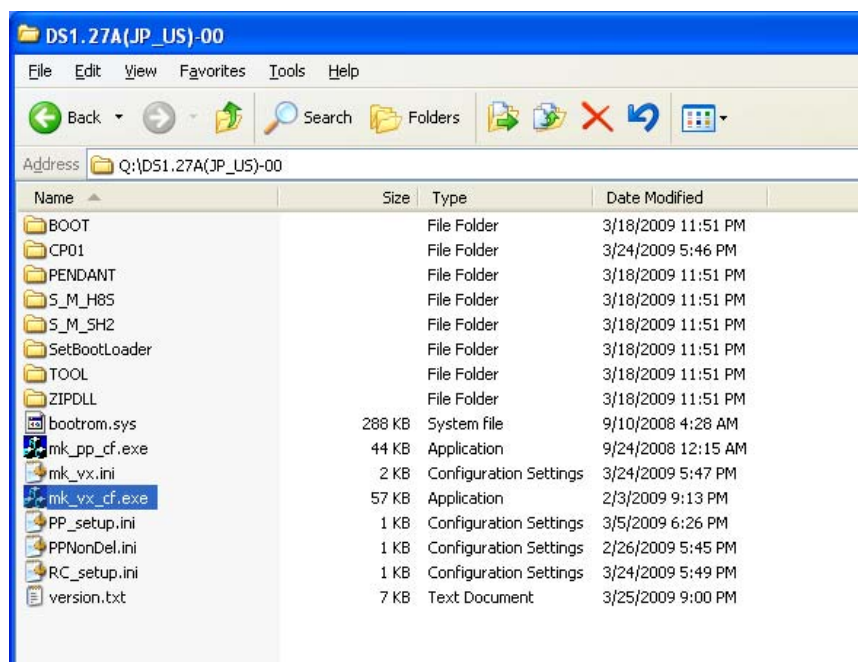
Be sure to delete all the data in the CompactFlash/USB before starting the operation.

For DN4.00.00A(*)-00 or later, the pendant type must also be selected.

1. Select the subject file of upgrade.
 - The figure below is an example in case where data exists in a CD.



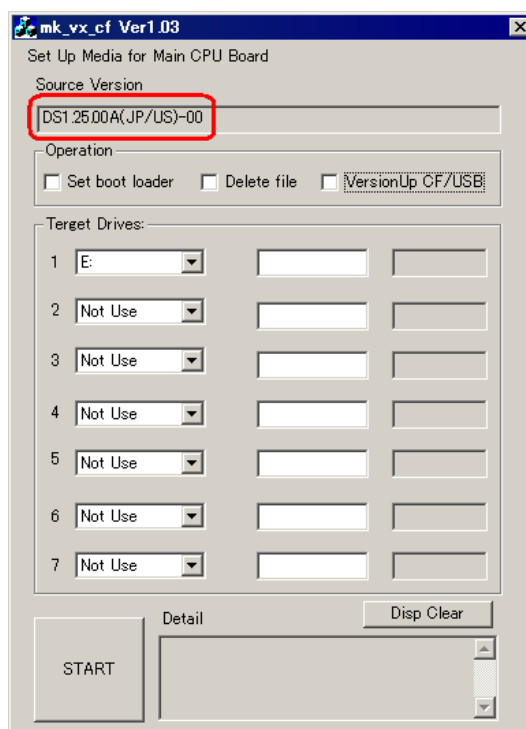
2. Run "MK_VX_CF.EXE".



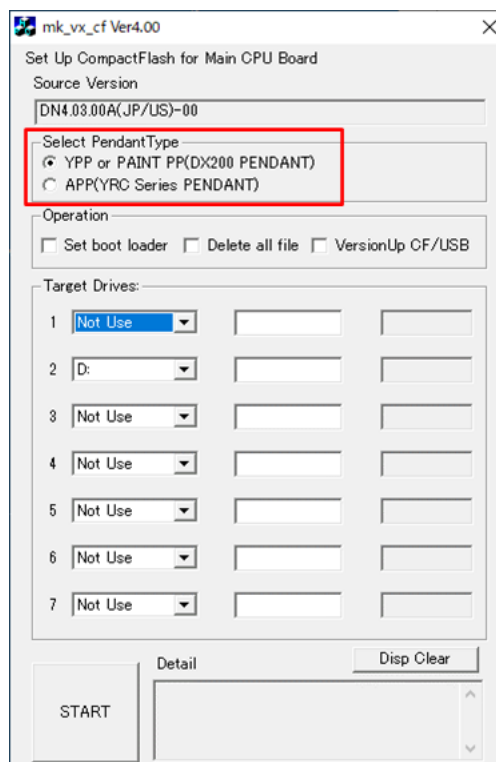
2 CompactFlash/USB Preparation

2.2 Preparing CompactFlash/USB for Upgrade

3. Check if the "Source Version" is correct.



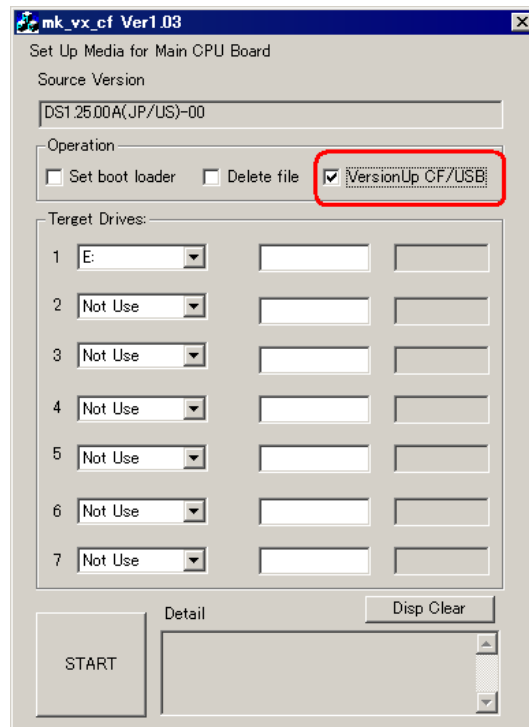
- For DN4.00.00A(*)-00 or later, select the pendant type.
 - For a combination with the DX200 and the YPP21 or the explosion-proof pendant for painting, select "YPP or PAINT PP(DX200 PENDANT)".
 - For a combination with the DX200 and the APP21, select "APP(YRC Series PENDANT)".



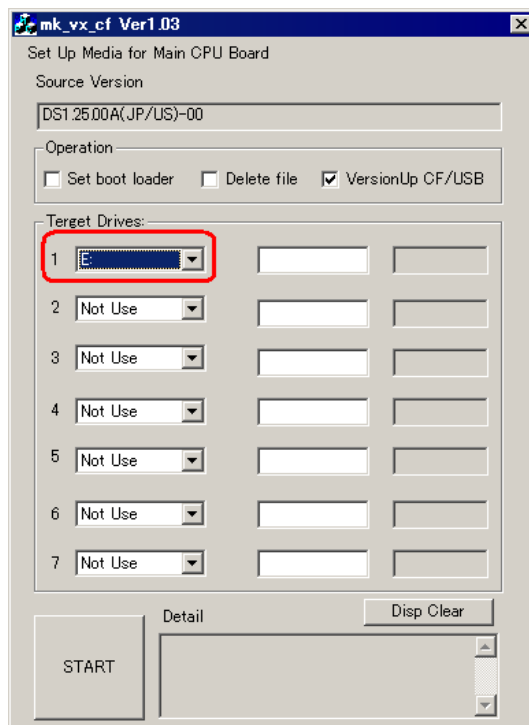
2 CompactFlash/USB Preparation

2.2 Preparing CompactFlash/USB for Upgrade

4. Select "VersionUp CF/USB".



5. Select a drive to prepare CompactFlash/USB for upgrade.



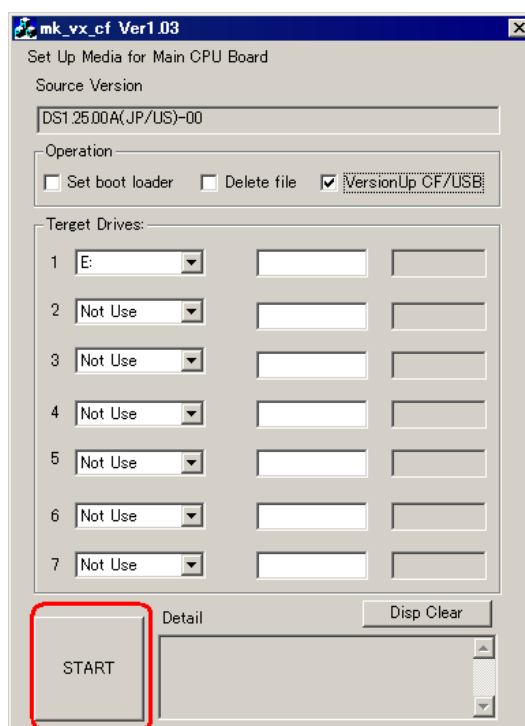
2 CompactFlash/USB Preparation

2.2 Preparing CompactFlash/USB for Upgrade



- Up to seven CompactFlash/USB for upgrade can be prepared at a time. (Depends on the number of drives for CompactFlash/USB.)
- The operation will not be executed in case when selecting "Not Use".

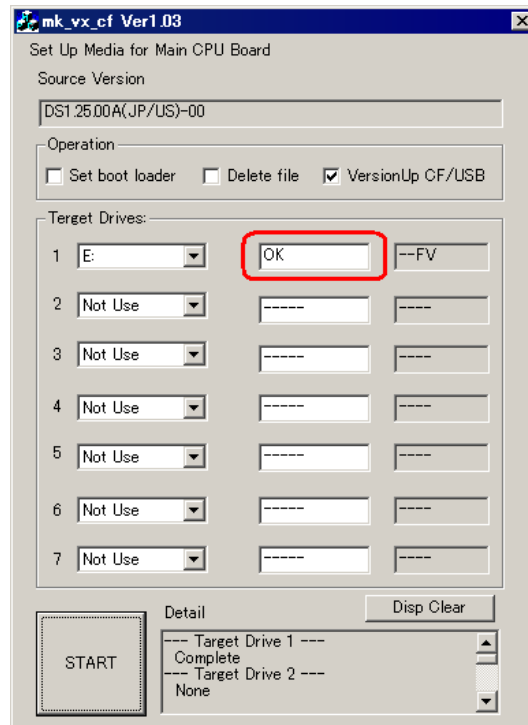
6. Start writing data on the CompactFlash/USB for upgrade by selecting "START".



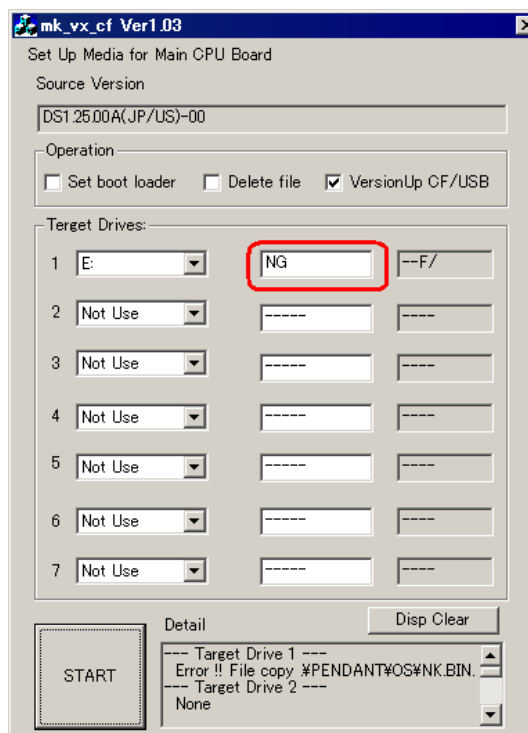
2 CompactFlash/USB Preparation

2.2 Preparing CompactFlash/USB for Upgrade

7. "OK" indication appears 40 seconds later when the CompactFlash/USB preparation is successfully completed.



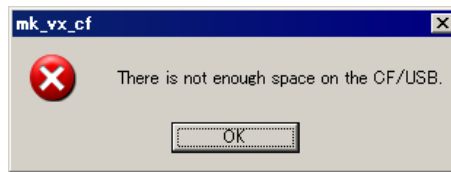
- "NG" indication appears as follows if the operation is unsuccessful.



-
- 2 CompactFlash/USB Preparation
 - 2.2 Preparing CompactFlash/USB for Upgrade
-

<Error causes and countermeasures>

Cause 1: Out of available space in the CompactFlash/USB.



Countermeasure: Delete all the data in the CompactFlash/USB, and retry the process.

Cause 2: Use of the CompactFlash/USB not specified in this manual.

Countermeasure: Use the specified CompactFlash/USB in *chapter 2.1 "Preatrangements"*.

Cause 3: Damage in the CompactFlash/USB.

Countermeasure: Replace it with a new one.

3 Data Back Up

3.1 Data Back Up

Perform the following operation in advance so that the data can be restored if upgrading is unsuccessful.

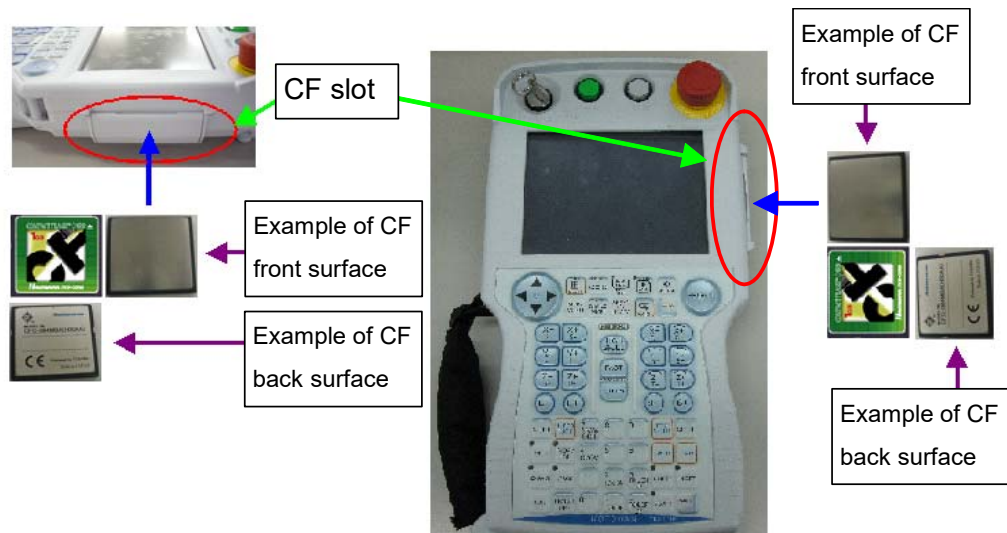


- For a version earlier than DN4.00.00A(*)-00, the system cannot be started with the DX200 and APP21 combination, and the data cannot be backed up. Ready the YPP21 or upgrade the DX200 system software to version DN4.00.00A(*)-00 or later by referring to *chapter 7 “DX200 and APP21 Combinations”*.
- The APP21 uses an SD card instead of CompactFlash.

3.1 Data Back Up

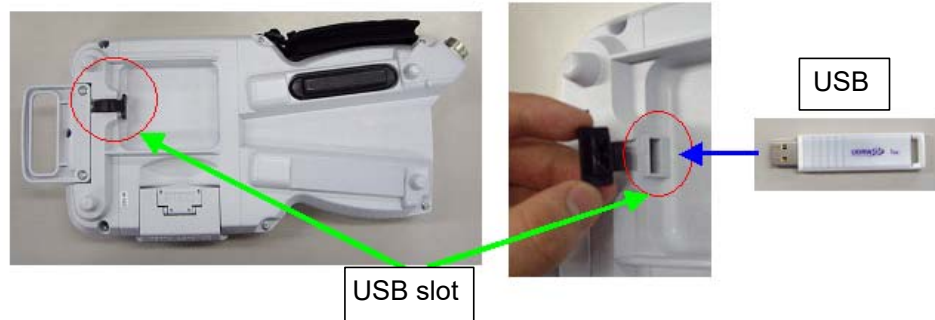
Back up the data which is required for setting up the data after the upgrade in the following procedures:

1. Check if the main power of the DX200 is turned OFF.
2. Insert the CompactFlash/USB prepared in *chapter 2.2 “Preparing CompactFlash/USB for Upgrade”* into the programming pendant.
 - When inserting the CompactFlash, open the CF slot cover. Pay attention to insert the CompactFlash in the correct direction. After that, close the CF slot cover.



3 Data Back Up
3.1 Data Back Up

- When inserting the USB, remove the rubber cap on the USB slot on the back of the programming pendant.



3 Data Back Up

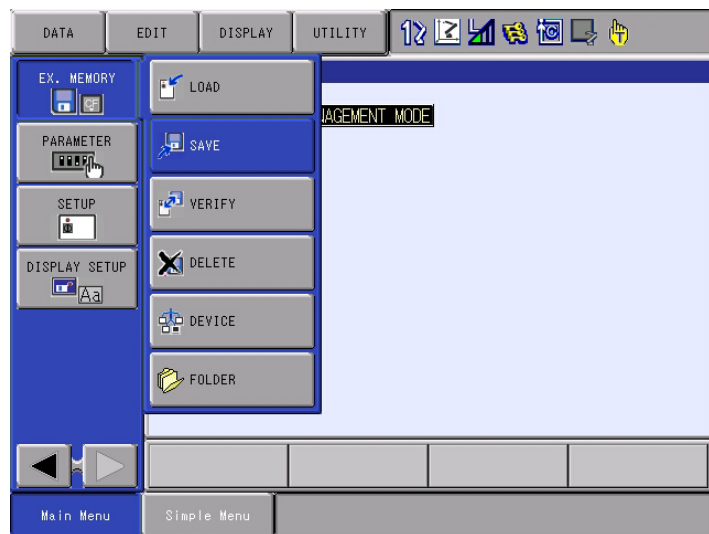
3.1 Data Back Up

3. Turn ON the main power of the DX200.

- Approx. 60 seconds later, the main menu window appears on the display of the programming pendant.



4. Select {EX. MEMORY} under the main menu. Select {SAVE}, and save all the following data individually:

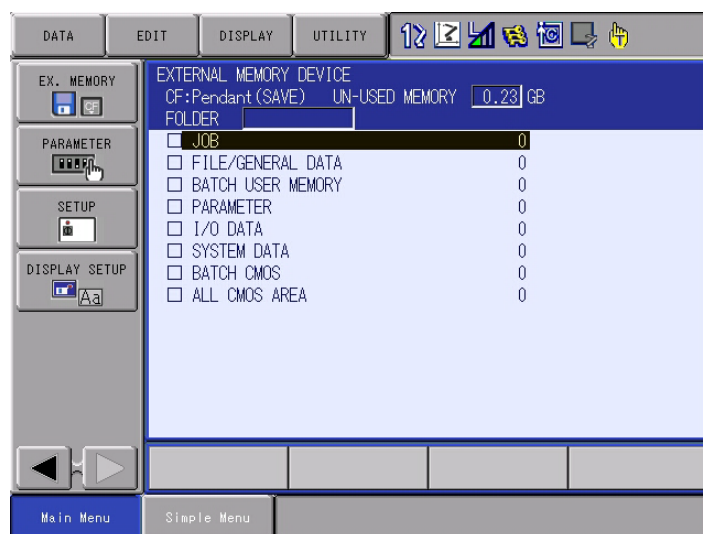


- JOB
- FILE/GENERAL DATA
- PARAMETER
- I/O DATA
- SYSTEM DATA

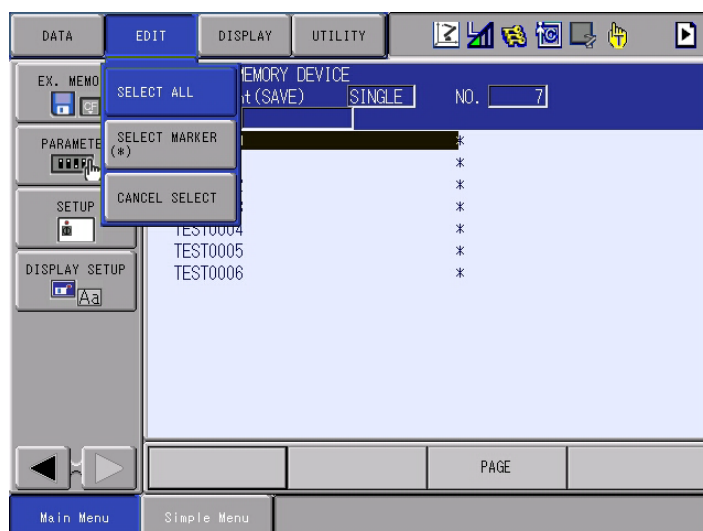
3 Data Back Up

3.1 Data Back Up

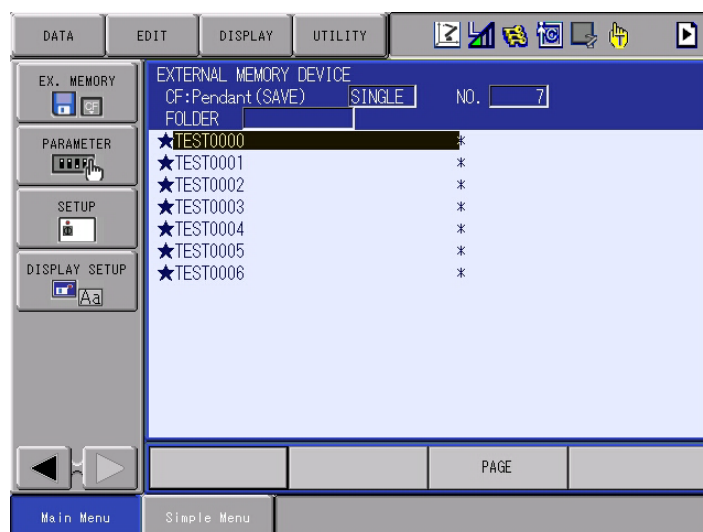
5. Move the cursor to {JOB} and press [SELECT].



6. Select {EDIT}, then select {SELECT ALL}.

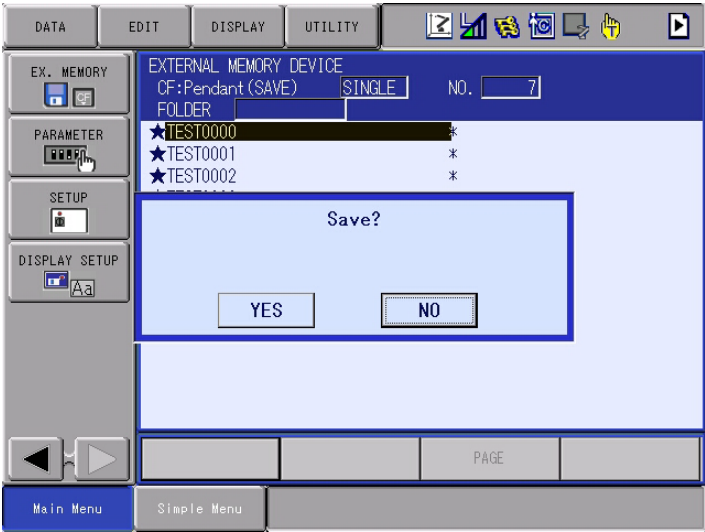


7. When the job is selected, it will be indicated with "★" mark. Press [ENTER] when all the jobs are selected.



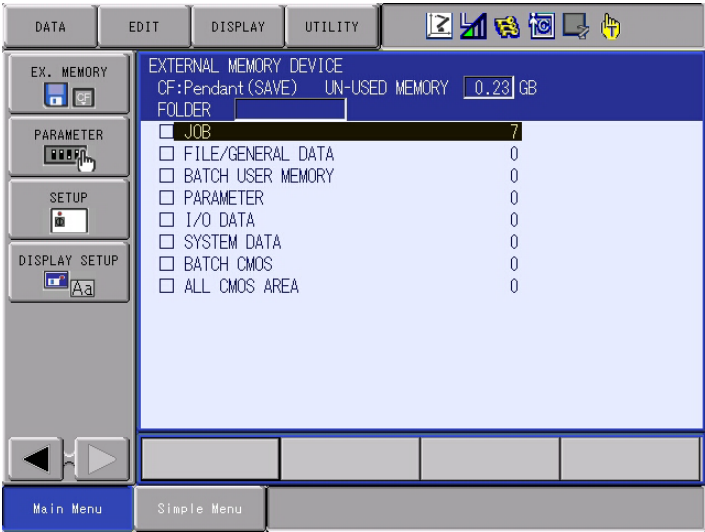
3 Data Back Up
3.1 Data Back Up

8. Select {YES} to start the data saving.



Select [STOP] to stop saving the data.
In this case, the window will return to the {JOB LIST} on the step 7.

9. Each job data is saved individually when the figure on the display changed as shown below.



10. Save the other data individually in the same way.

3	Data Back Up
3.2	Recording Other Information

3.2 Recording Other Information

The information listed below should be recorded individually because the data are not saved in the CompactFlash/USB.

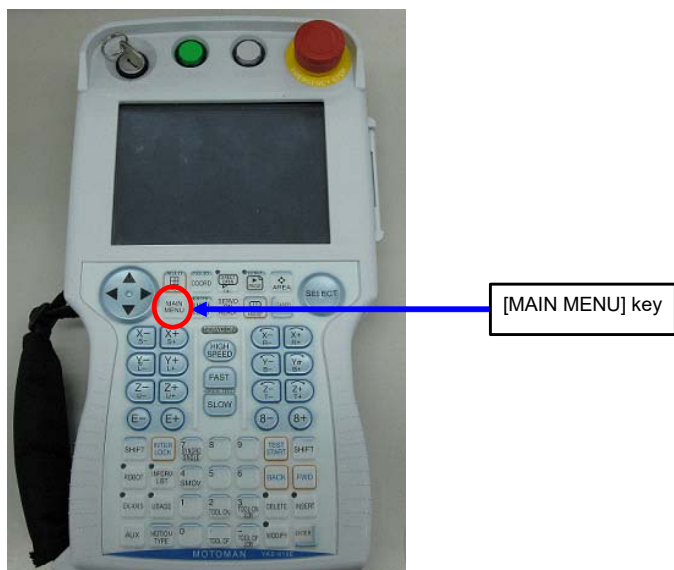
- MASTER JOB
- KEY ALLOCATION
- GROUP COMBINATION
- USER ID
- REGISTER SETTING

3 Data Back Up

3.3 Recording Information in Maintenance Mode

3.3 Recording Information in Maintenance Mode

1. Turn ON the power supply of the DX200 while pressing [MAIN MENU] simultaneously.



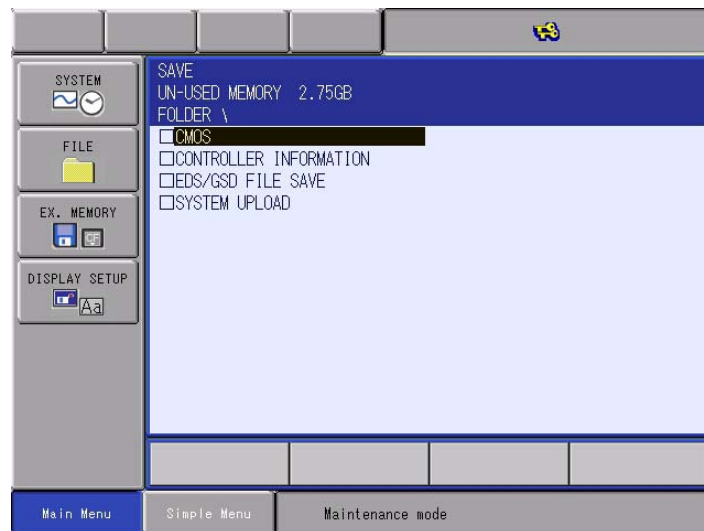
2. Approx. 60 seconds later, the top window of the Maintenance mode appears on the display of the programming pendant.



3. Select {SETUP} under the {SYSTEM}, then save the following data:
 - LANGUAGE
 - CONTROL GROUP (Data of axes configurations, data set for external axis motor, SERVOPACK, etc.)
 - APPLICATION
 - OPTION BOARD (Detailed settings of expansion boards, etc.)
 - OPTION FUNCTION (Detailed settings of optional functions, etc.)

3 Data Back Up
3.3 Recording Information in Maintenance Mode

4. Select {EX. MEMORY}, then select {Save}.
Select {CMOS} to save the binary file "CMOS.BIN".



5. Turn OFF the main power of the DX200 after the CMOS save is completed.

4 System Software Upgrade

4.1 System Software Upgrade

Upgrade the system software following the procedures below.

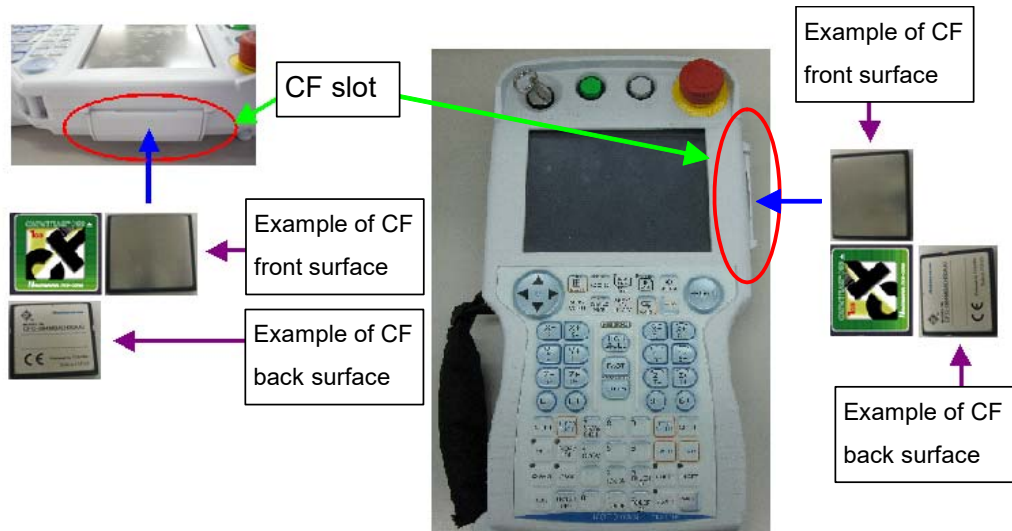
The upgrade is performed using either the CompactFlash or USB. If both the CompactFlash and USB are inserted in the programming pendant, the upgrade is performed using the CompactFlash.



- To upgrade the system software with the DX200 and APP21 combination, the APP21 must be configured with DN4.00.00A(*)-00 or later.
For details, refer to *chapter 7 “DX200 and APP21 Combinations”*.
- The APP21 uses an SD card instead of CompactFlash.

4.1.1 Upgrade Using CompactFlash

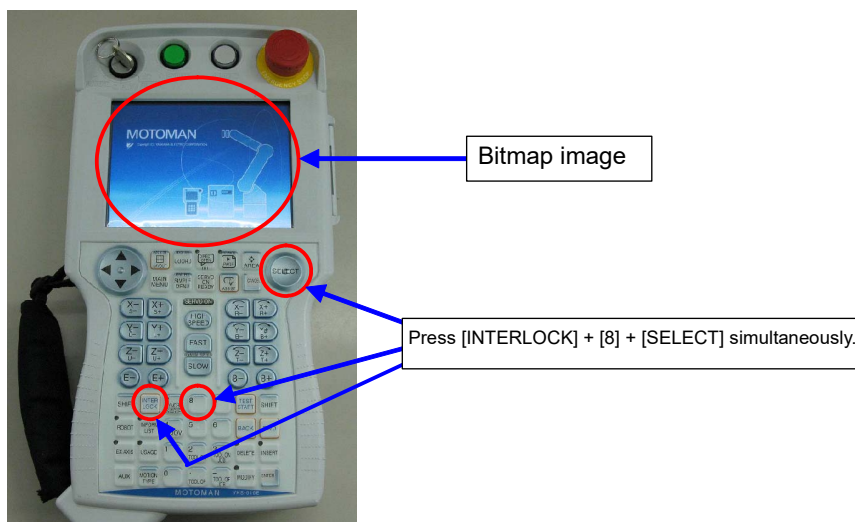
1. Check if the main power of the DX200 is turned OFF.
2. Open the CF slot cover on the programming pendant, and insert the CompactFlash prepared in *chapter 2.2 “Preparing CompactFlash/USB for Upgrade”*, then close the CF slot cover.
– Pay attention to insert the CompactFlash in the correct direction.



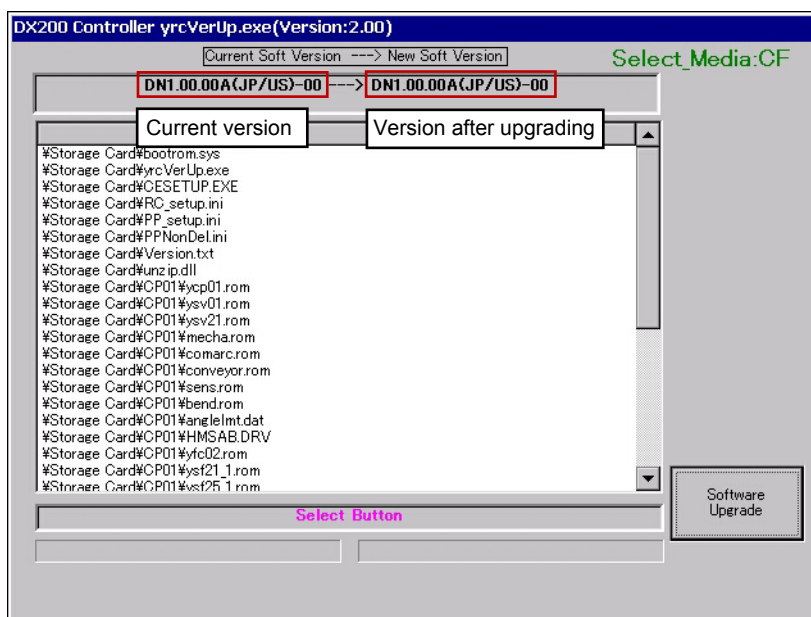
4 System Software Upgrade

4.1 System Software Upgrade

3. Turn ON the main power of the DX200 while pressing [INTERLOCK] + [8] + [SELECT].
 - Release [INTERLOCK] + [8] + [SELECT] when the bitmap image as shown below appears or when the programming pendant beeps.



4. The following window appears. Check the version and select {Software Upgrade}.
 - The upgrade starts.



If the above mentioned window does not appear, or if an error message appears, perform the corrective actions as follows:

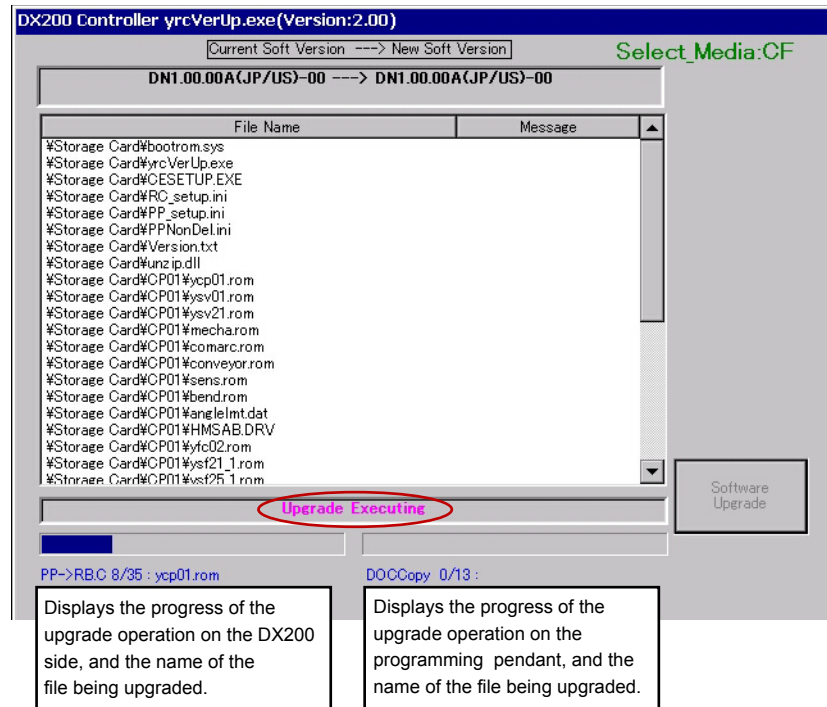


- (1) Turn OFF the main power of the DX200, then remove the CompactFlash from the CF slot on the programming pendant. Retry the upgrading procedures from *chapter 2.2 "Preparing CompactFlash/USB for Upgrade"*.
- (2) If the error status persists in spite of performing the corrective action (1), replace the CompactFlash or USB with a new one.

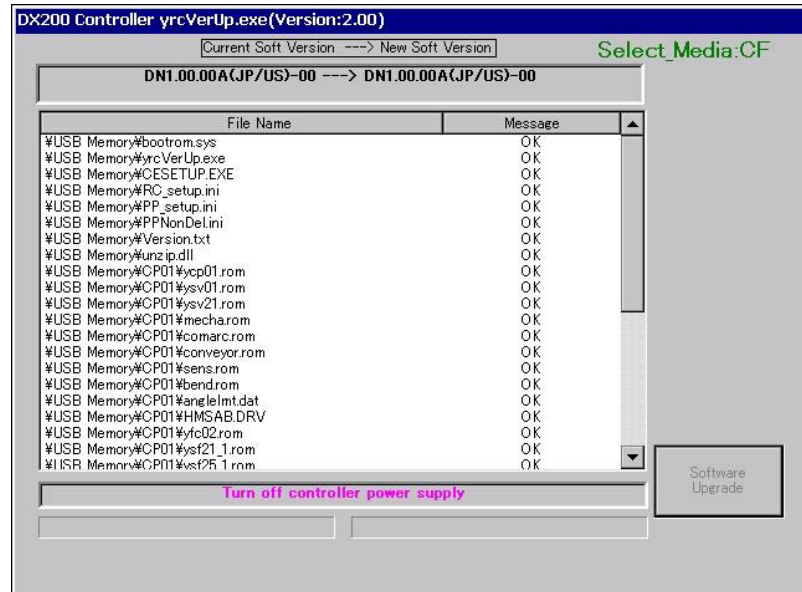
4 System Software Upgrade

4.1 System Software Upgrade

- During the upgrade, [HOLD] of the programming pendant lights, the message “Upgrade Executing” blinks, and the upgrade progress bar and the name of the file being upgraded are shown.



- When the message “Turn off controller power supply” appears, turn OFF the main power of the DX200.



4 System Software Upgrade

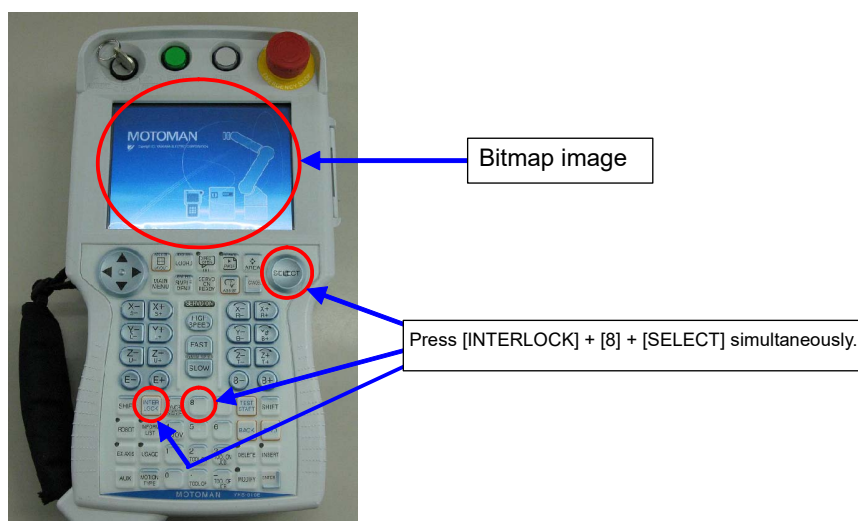
4.1 System Software Upgrade

4.1.2 Upgrade Using USB

1. Check if the main power of the DX200 is turned OFF.
2. Remove the rubber cap on the back of the programming pendant, and insert the USB prepared in *chapter 2.2 "Preparing CompactFlash/USB for Upgrade"*.



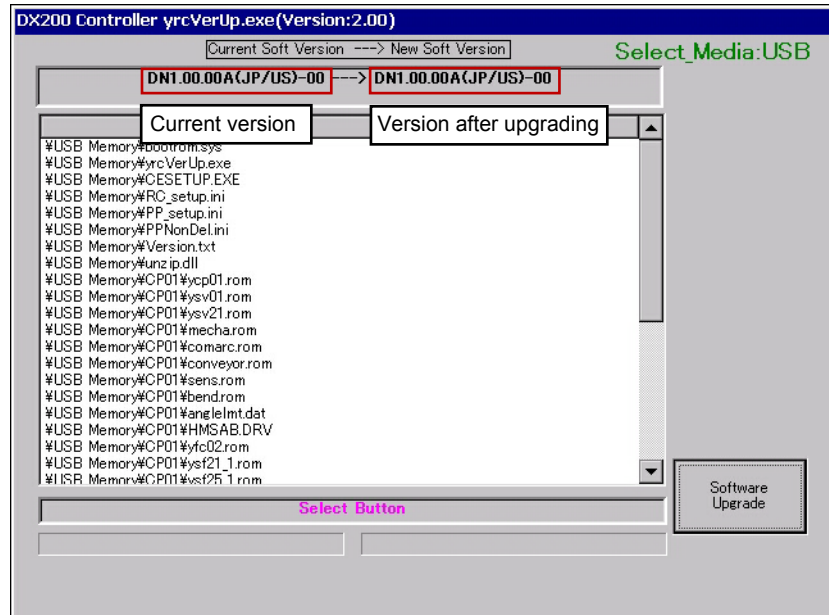
3. Turn ON the main power of the DX200 while pressing [INTERLOCK] + [8] + [SELECT].
 - Release [INTERLOCK] + [8] + [SELECT] when the bitmap image as shown below appears or when the programming pendant beeps.



4 System Software Upgrade

4.1 System Software Upgrade

4. The following window appears. Check the version and select {Software Upgrade}.
- The upgrade starts.



If the above mentioned window does not appear, or if an error message appears, perform the corrective actions as follows:

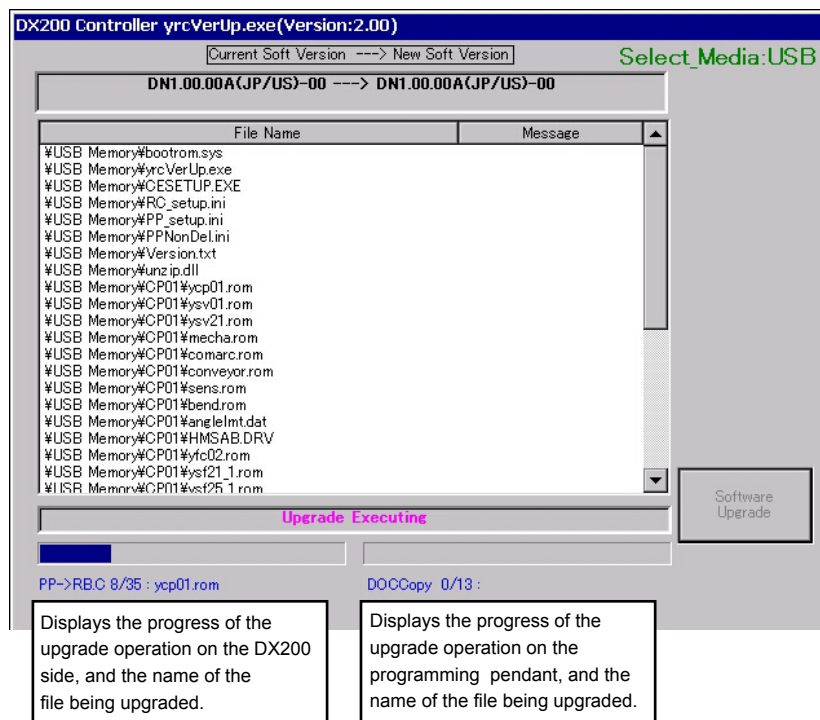


- (1) Turn OFF the main power of the DX200, then remove the USB from the USB slot on the programming pendant. Retry the upgrading procedures from *chapter 2.2 "Preparing CompactFlash/USB for Upgrade"*.
- (2) If the error status persists in spite of performing the corrective action (1), replace the USB with a new one.

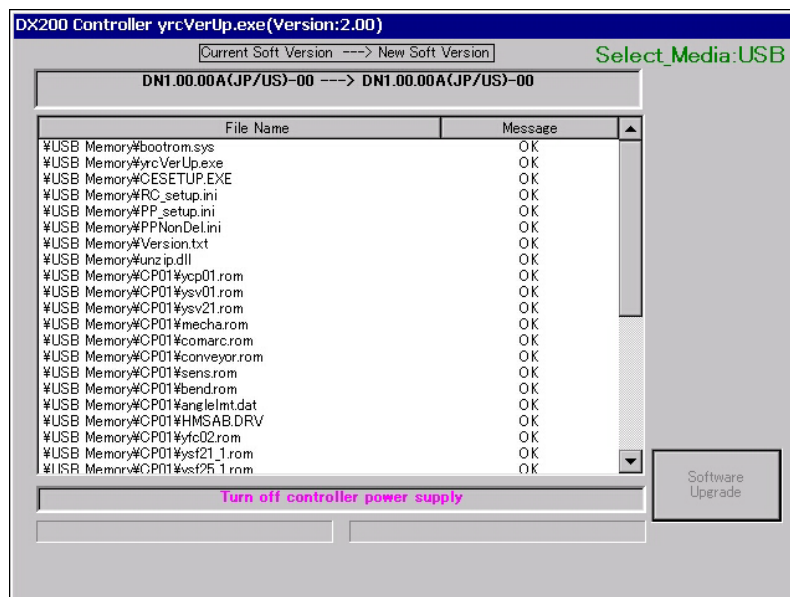
4 System Software Upgrade

4.1 System Software Upgrade

- During the upgrade, [START] of the programming pendant lights, the message “Upgrade Executing” blinks, and the upgrade progress bar and the name of the file being upgraded are shown. .



- When the message “Turn off controller power supply” appears, turn OFF the main power of the DX200.



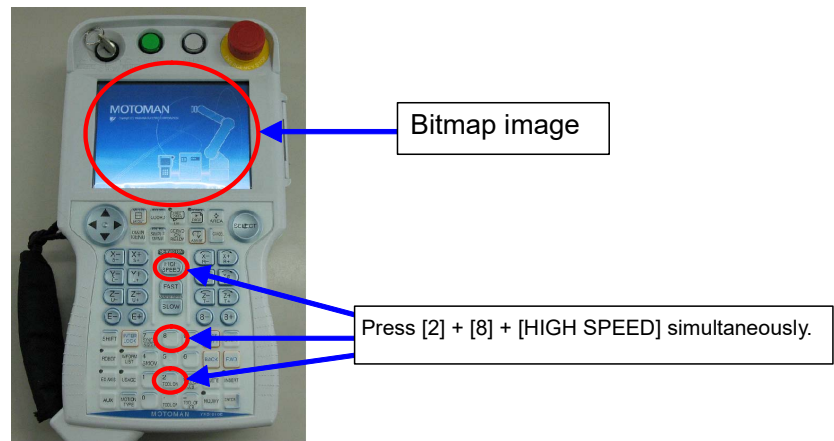
5 Programming Pendant Upgrade

This operation is not necessary when performing a normal upgrade.
 Additional information will be provided if this operation is required.

5.1 Programming Pendant Upgrade

Upgrade the system software following the procedures below:

1. Check if the main power of the DX200 is turned OFF.
2. Turn ON the main power of the DX200 while pressing [2] + [8] + [HIGH SPEED].
 - Release [2] + [8] + [HIGH SPEED] when the bitmap image as shown below appears or when the programming pendant beeps.



In case where an alarm sound of the programming pendant does not stop with all the LED indications light up, perform the corrective actions as follows:

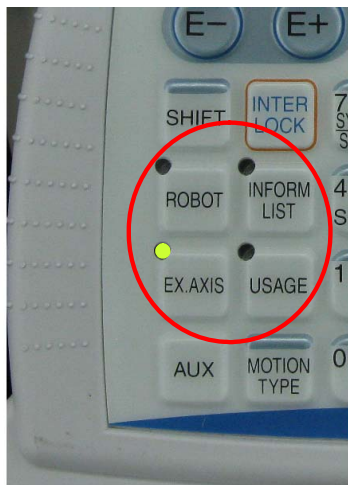
- (1) Turn OFF the main power of the DX200, then remove the CompactFlash/USB from the programming pendant. Retry the upgrading procedures from *chapter 2.2 "Preparing CompactFlash/USB for Upgrade"*.
- (2) If the error status persists in spite of performing the corrective action (1), replace the CompactFlash/USB with a new one.

5 Programming Pendant Upgrade

5.1 Programming Pendant Upgrade

- NK.BIN (OS: Windows CE) in the CompactFlash is written into SDRAM first; the NK.BIN (in the SDRAM) then be written into FlashRom of the programming pendant. The LED indications during the process change as described below:

(When reading NK.BIN from CompactFlash to SDRAM)



Data reading from CompactFlash to SDRAM:
4 LED indications blink clockwise.
The blink interval is irregular.
(The interval may be 1 to 2 seconds or 4 to 5 seconds.)
The time required for reading is approx. 3 minutes.

(When writing NK.BIN from SDRAM to FlashRom)



Data writing from SDRAM to FlashRom:
3 LED indications blink clockwise.
The blink interval is 1 to 2 seconds.
The time required for writing is approx. 4 minutes.



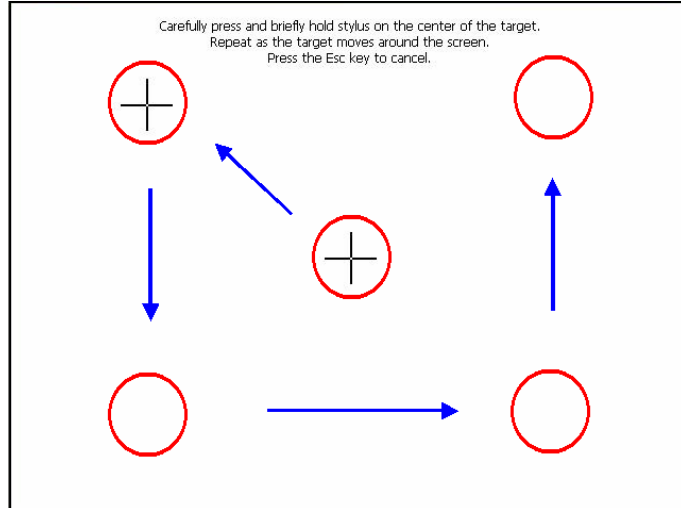
The total time required for data transfer and writing from CompactFlash to FlashRom is approx. 7 minutes.

3. The touch panel calibration appears on the display of the programming pendant approx. 7 minutes after turning ON the main power of the DX200.
 - Press the center of the display panel with a stylus for touch panel for approx. 2 seconds to perform the touch calibration.
If a stylus for touch panel is not available, use a pointed tool with a soft point, such as a ballpoint pen cap, as a substitute.

5 Programming Pendant Upgrade

5.1 Programming Pendant Upgrade

4. A crosshair cursor at the center of the display moves in the following order: Center → Upper left → Lower left → Lower right → Upper right.
- Press the center of the cursor for approx. 2 seconds at each point.
 - If the touch calibration is failed, the crosshair cursor returns to the center of the display. In this case, retry the calibration.



- When the touch calibration is successfully completed, the following display appears.



5 Programming Pendant Upgrade

5.1 Programming Pendant Upgrade

5. The following display appears by pressing [ENTER] on the programming pendant or by touching the display.
- (1) Select [OK] to close the dialog box.
 - (2) Make sure the dialog box has closed, then turn OFF the main power of the DX200.



- (3) After turning OFF the main power of the DX200, be sure to remove the CompactFlash from the CF slot or the USB from the USB slot of the programming pendant.

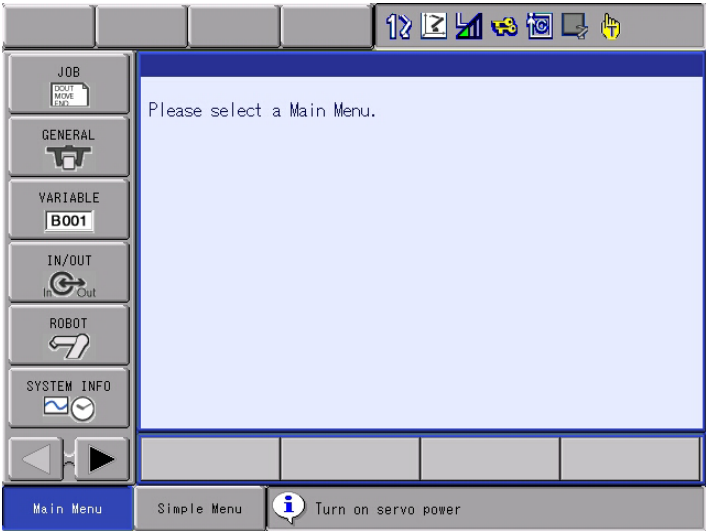
5

Programming Pendant Upgrade

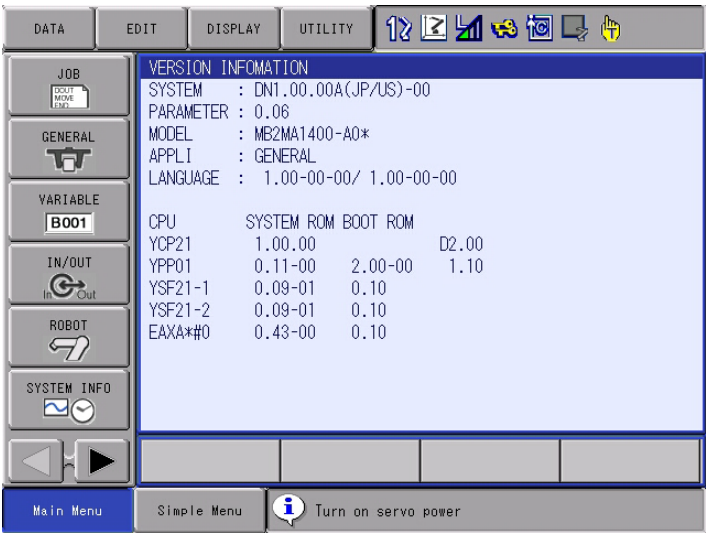
5.1

Programming Pendant Upgrade

6.
- Turn ON the main power of the DX200.
- The main menu window appears approx. 60 seconds later.



7.
- Select {SYSTEM INFO} and then {VERSION} under the main menu to confirm the version data.



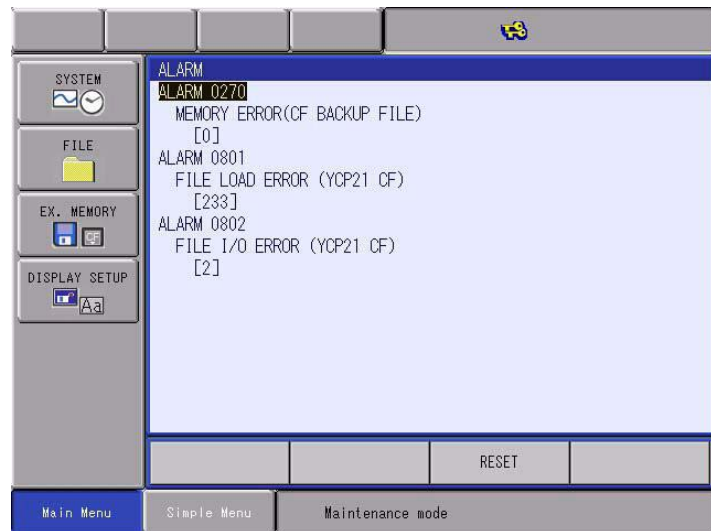
6 Procedure when Data Incompatibility Occurs after Upgrading

6 Procedure when Data Incompatibility Occurs after Upgrading

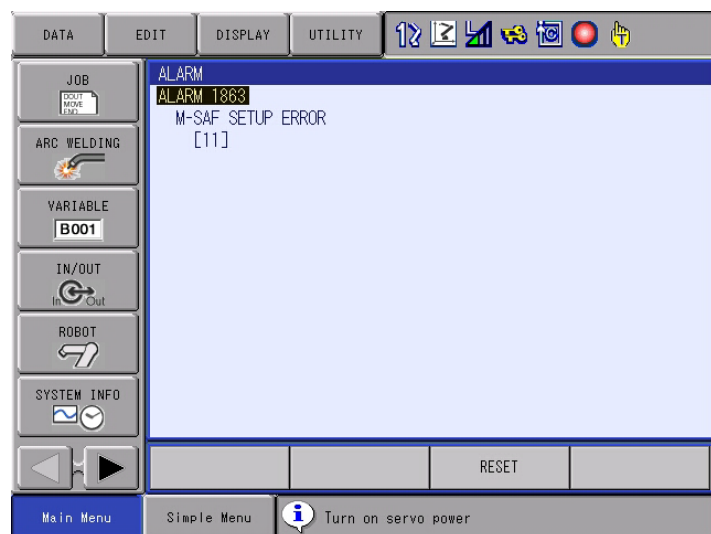
Following alarms occur if there is a difference in the data before and after the upgrade.

Alarm			Cause	Remedy
Number	Sub Code	Message (Alarm Name)		
0270	0	MEMORY ERROR(CF BACKUP FILE)	A failure occurs while reading the file defined in the CF in the YCP21 board.	Rebuild the data in the Maintenance mode. Perform the procedure in <i>chapter 6.1 "Data Rebuild Procedure in Maintenance Mode"</i> .
0801	kind of file	FILE LOAD ERROR (YCP21 CF)		
0802	2	FILE I/O ERROR (YCP21 CF)		
0804	None	DATA ACCESS ERROR (VARIABLE AREA)	The structure of the variable data area changed.	
1863	10	M-SAF SETUP ERROR	A failure occurs in the machine safety data consistency check.	Perform the procedure in <i>chapter 6.2 "Reset Procedure for the Machine Safety Board Flash data in Maintenance Mode"</i> .
	11			

<Example of alarm display window: when a failure occurs while reading the file stored in the CF>



<Example of alarm display window: when a failure occurs in the machine safety data consistency check>



6 Procedure when Data Incompatibility Occurs after Upgrading

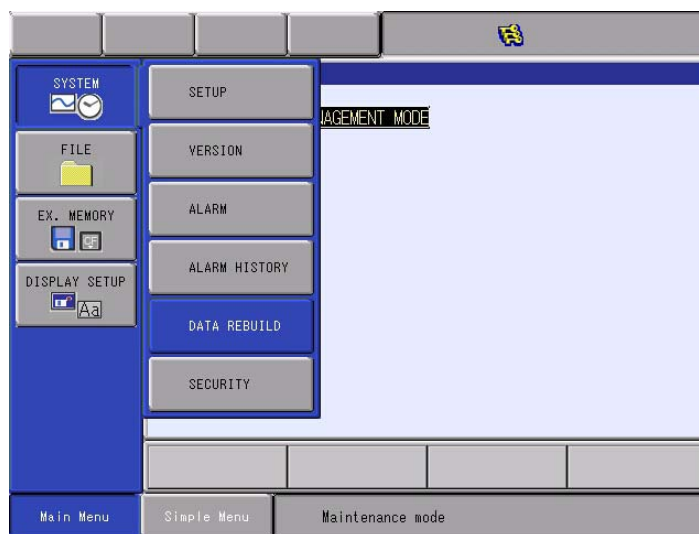
6.1 Data Rebuild Procedure in Maintenance Mode

6.1 Data Rebuild Procedure in Maintenance Mode

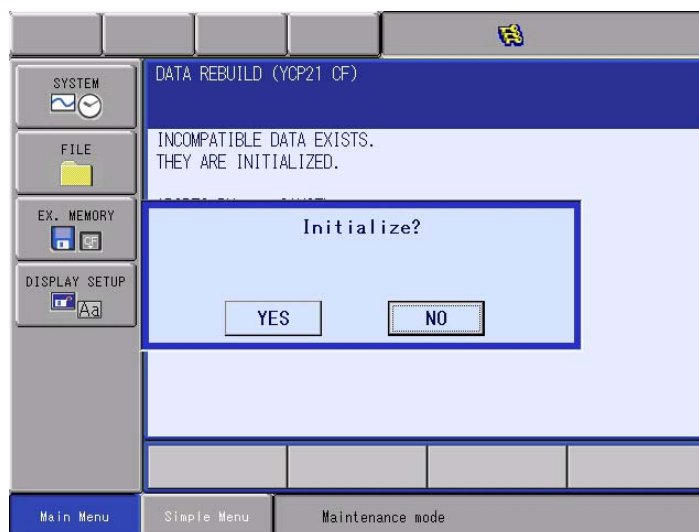
Follow the procedure below if the following alarms occur after the upgrade.

- ALARM 0270: MEMORY ERROR(CF BACKUP FILE)
- ALARM 0801: FILE LOAD ERROR (YCP21 CF)
- ALARM 0802: FILE I/O ERROR (YCP21 CF)
- ALARM 0804: DATA ACCESS ERROR (VARIABLE AREA)

1. Select {SYSTEM} then {DATA REBUILD} in MANAGEMENT MODE in the Maintenance mode.



2. Continue the operation by pressing [ENTER]. Select {YES} when "Initialize?" appears.



– When the initialization is completed, a beep sounds.

3. After the initialization, turn the power of DX200 OFF then back ON.
4. Confirm the version number to make sure the upgrade is successfully completed.

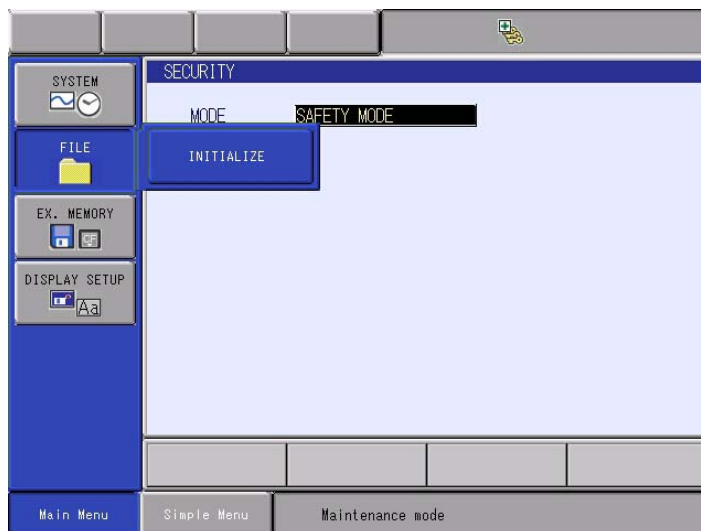
- 6 Procedure when Data Incompatibility Occurs after Upgrading
6.2 Reset Procedure for the Machine Safety Board Flash data in Maintenance Mode

6.2 Reset Procedure for the Machine Safety Board Flash data in Maintenance Mode

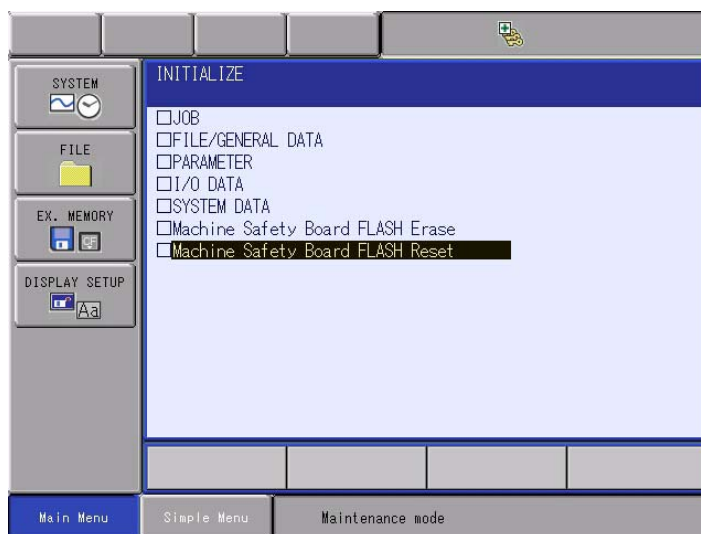
Follow the procedure below if the following alarms occur after the upgrade.

- ALARM 1863: M-SAF SETUP ERROR

1. Select {File} then {INITIALIZE} in SAFETY MODE in the Maintenance mode.

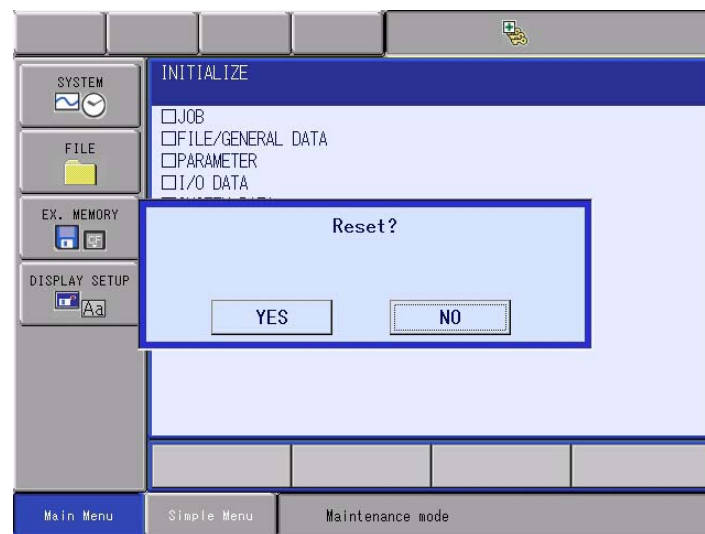


2. Select {Machine Safety Board FLASH Reset}.



6 Procedure when Data Incompatibility Occurs after Upgrading
6.2 Reset Procedure for the Machine Safety Board Flash data in Maintenance Mode

3. Select {YES} when “Reset?” appears.



- When the reset is completed, a beep sounds.
4. After the reset, turn the power of DX200 OFF then back ON.
5. Confirm the version number to make sure the upgrade is successfully completed.

- 6 Procedure when Data Incompatibility Occurs after Upgrading
 6.3 Initialize the Job Data (Only for Downgrade)

6.3 Initialize the Job Data (Only for Downgrade)

Only if the conditions meet the requirements below, proceed the operation in this chapter.



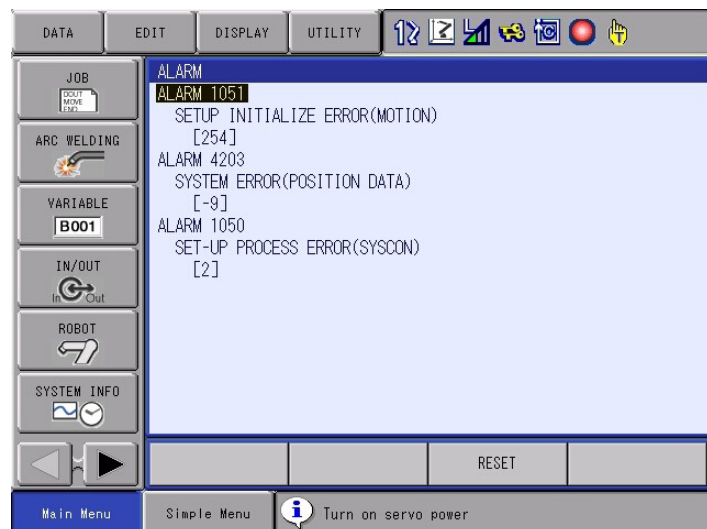
- Only for downgrade.
- Before and after the change of the system software version extends over DN 1.70.00A(□)-00.

Before the change: DN 1.70.00A(□)-00 or later

After the change : DN 1.70.00A(□)-00 or earlier

When the control power is turned ON after the downgrade which meets the requirements above is executed, there is a case that the alarm below occurs. At the same time, the SETUP INITIALIZE ERROR accompanies.

- Alarm 4203 System Error (Position Data) Sub Code [-3] or [-9]



This alarm does not occur by failure.

It occurs since the structure of the variable data (including the position data) has changed in the system software version DN 1.70.00A(□)-00.

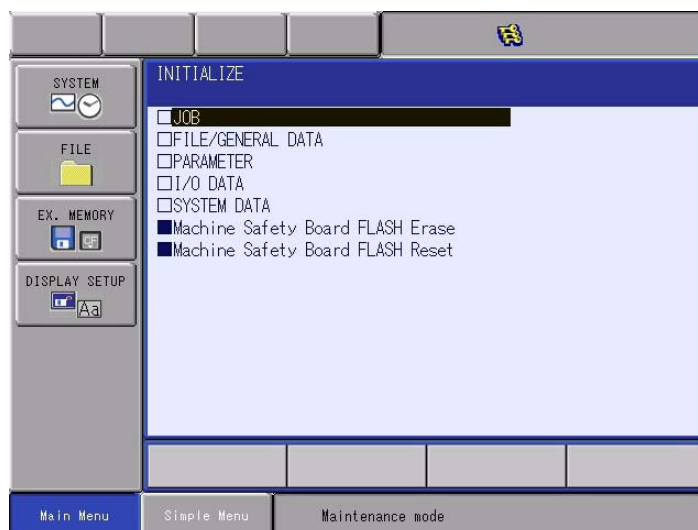
6 Procedure when Data Incompatibility Occurs after Upgrading

6.3 Initialize the Job Data (Only for Downgrade)

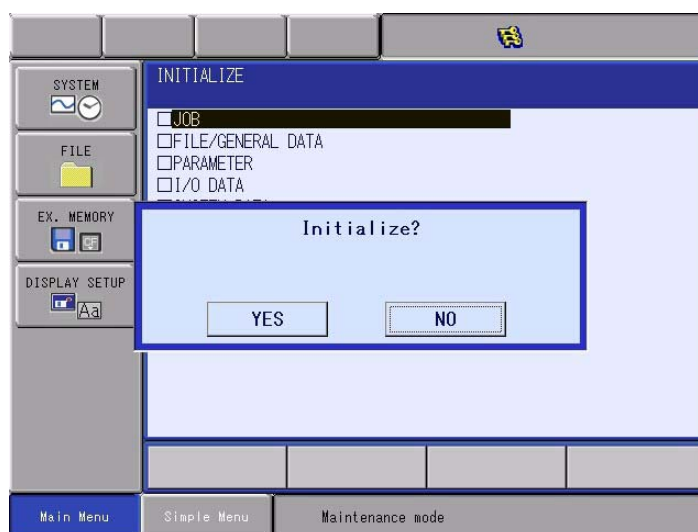
When this alarm occurs, execute the operations below in the Maintenance mode.

If the alarm doesn't occur, none of the operations need to be done.

1. Open INITIALIZE window by selecting {FILE} → {INITIALIZE} in the Maintenance mode.



2. Execute initializing the job data by selecting {JOB}.



3. Download the CMOS.BIN which was saved in the version earlier than DN 1.70.00A(□)-00.



Do not download the CMOS.BIN saved in the version DN 1.70.00A(□)-00 or later. When the control power is tuned ON again, the alarm occurs.

4. Start up the DX200 in the normal mode again, and download each file saved before the downgrade as necessary.

7 DX200 and APP21 Combinations

The DX200 supports both the YPP21 and the APP21 starting from version DN4.00.00A(*)-00. However, if the combination of controller and pendant is incorrect, the system fails to start correctly when the power is turned ON or the automatic version upgrade fails.

For details on the combinations, refer to *chapter chapter 7.1 “Combinations Table”*.

To connect the APP21 to the DX200, the following requirements must be satisfied.

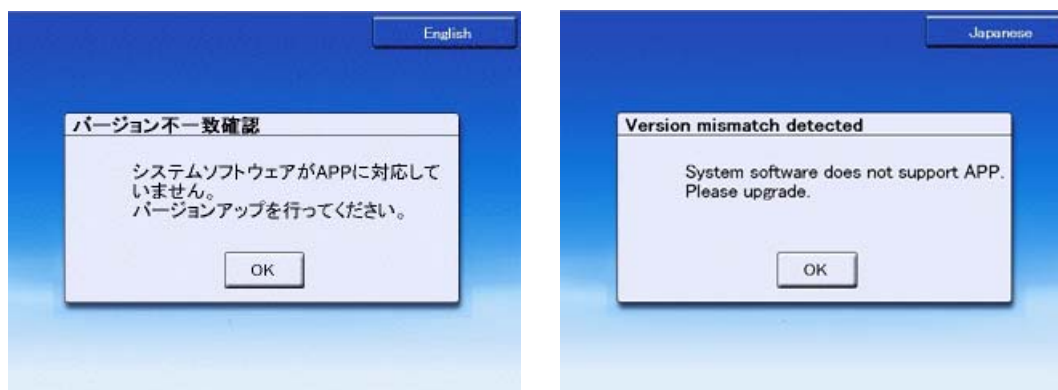
1. The APP21 is configured with DN4.00.00A(*)-00 or later.
 - If the APP21 is not configured with the correct version, perform the procedure in *chapter chapter 7.2 “APP21 Version Upgrade”*.
2. The DX200 is configured with DN4.00.00A(*)-00 or later.
 - If the DX200 is not configured with the correct version, connect an APP21 configured with the correct version in requirement 1 to the DX200, and then perform the procedure in *chapter 4 “System Software Upgrade”*.

7 DX200 and APP21 Combinations
7.1 Combinations Table

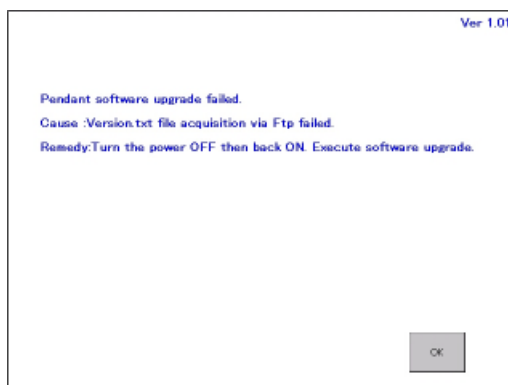
7.1 Combinations Table

Controller Software Version	Pendant		Startup Result	Status	Remarks
	Type	Software Version			
Earlier than DN4.00	YPP21	Earlier than DN4.00	OK		Correct combination
		DN4.00 or later	OK		Correct combination
	APP21	DN4.00 or later	Fails	The version mismatch message appears. (Automatic version upgrade cannot be performed, and notification of the mismatched versions is provided by displaying the message.) ¹⁾	The pendant can be used by upgrading the controller software to version DN4.00 or later.
	APP01	YRC1000 software	Fails	The automatic version upgrade failure message appears. ²⁾	
DN4.00 or later	YPP21	Earlier than DN4.00	OK	Normal startup after upgrading the pendant software version with the automatic version upgrade.	Correct combination
		DN4.00 or later	OK		Correct combination
	APP21	DN4.00 or later	OK		Correct combination
	APP01	YRC1000 software	Fails	Automatic version upgrade failure message ²⁾	

1 Version mismatch detected



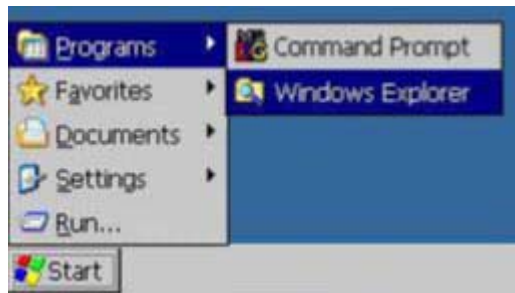
2 Automatic version upgrade failure



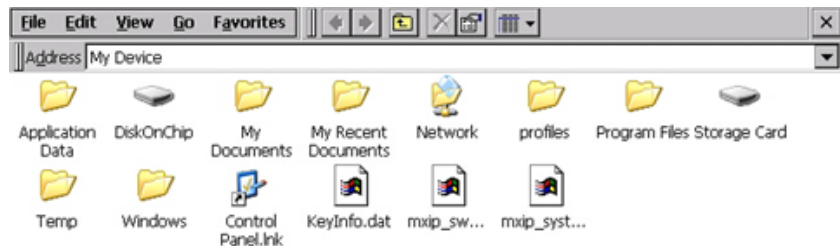
7.2 APP21 Version Upgrade

Upgrade the APP21 version following the procedure below.

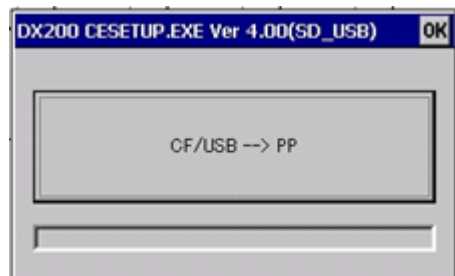
1. Check if the main power of the DX200 is turned OFF.
2. Insert the SD card or USB memory device for the version upgrade into the APP21.
3. Turn ON the main power of the DX200 while pressing [INTERLOCK] + [9] + [SELECT] on the APP21.
4. Touch the bottom of the screen to display the taskbar.
5. Select [Start] - [Programs] - [Windows Explorer] to display Windows Explorer.



If the SD card was inserted in the pendant, "Storage Card" appears.
If the USB memory device was inserted in the pendant, "USB Memory" appears.



6. Open the [Storage Card] folder or the [USB Memory] folder.
7. Double-click CESETUP.EXE or move the cursor to CESETUP.EXE and press the [ENTER] key.
8. Touch the CESETUP.EXE button.



9. After the END(Success) dialog box appears, turn the main power of the DX200 OFF and ON again.

8 Troubleshooting
8.1 Back Up the CompactFlash

8 Troubleshooting

Perform the following operation if the DX200 does not start up normally or does not operate correctly.

8.1 Back Up the CompactFlash

If the DX200 does not start up normally, or if a file load error occurs although the DX200 does start up after initialization or data reconstruction, restore the CompactFlash in the YCP21 board following the instructions below.



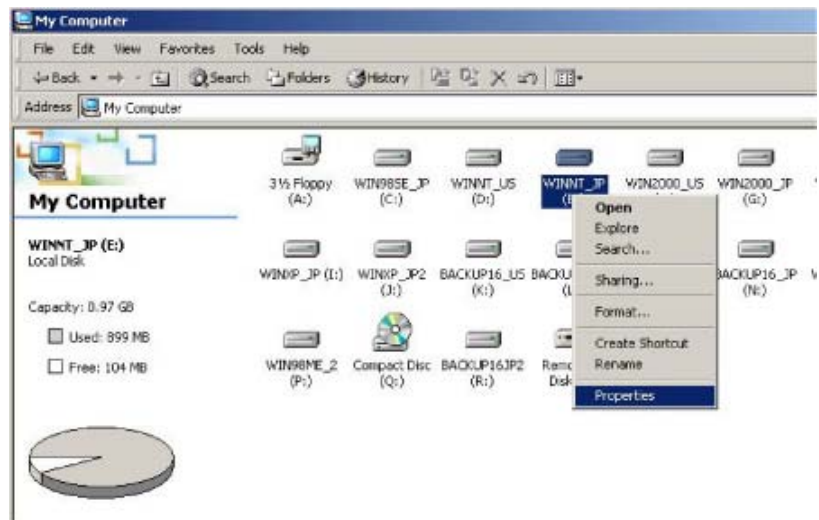
1. Remove the CompactFlash from the YCP21 board.
2. Connect the CompactFlash with a personal computer, save the data in the CompactFlash to an appropriate location.
3. Then delete all the data from the CompactFlash.
 - If no error occurs when deleting all the data from the CompactFlash, proceed to the following procedures starting from step 4 on page 7-3.

8 Troubleshooting

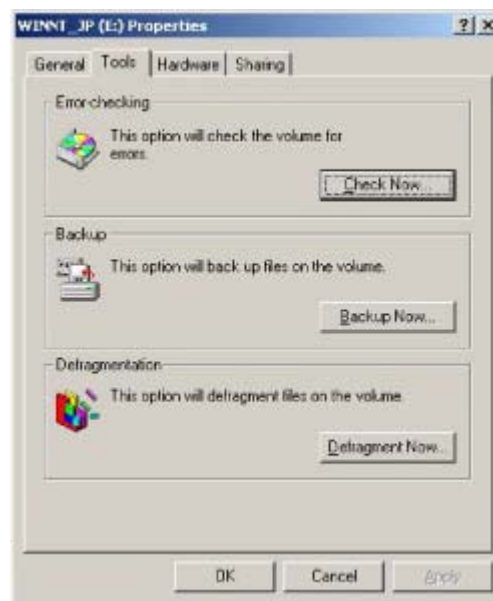
8.1 Back Up the CompactFlash

– If an error occurs at this point, follow the procedure below.

- (1) Right-click on the removable disk drive where the CompactFlash is inserted, and click [Properties].



- (2) Then, click the [Tools] tab and click "Check Now" in the [Error-checking] box.



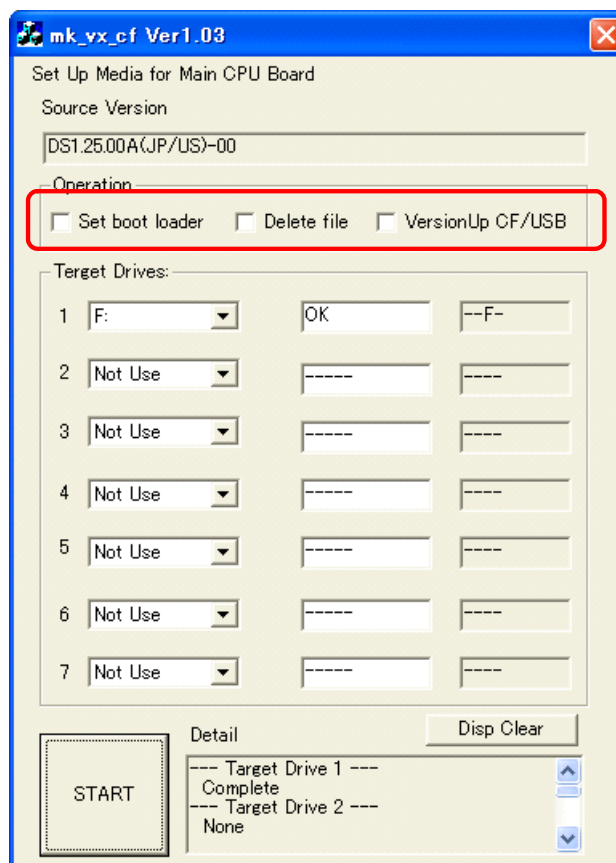
- (3) Tick the check boxes in the [Check disk options] and click [Start].



8 Troubleshooting

8.1 Back Up the CompactFlash

4. Perform the same operations as described in *chapter 2.2 “Preparing CompactFlash/USB for Upgrade”*. At this time, do not check any item in the “Operation” box, and just click [START].
 - Only the files used in the YCP21 board are copied into the CompactFlash.



5. After the files are copied into the CompactFlash, return it to the YCP21 board.
6. Perform initialization in the Maintenance mode.

8 Troubleshooting

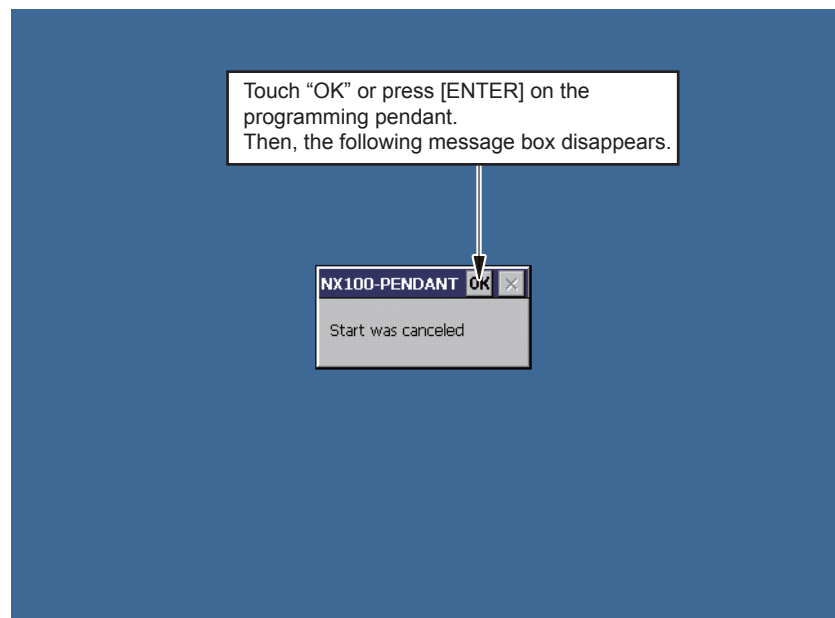
8.2 How to Repair Programming Pendant when Fonts are Garbled

8.2 How to Repair Programming Pendant when Fonts are Garbled

Followings are the procedures for repairing the garbled characters on the programming pendant window.

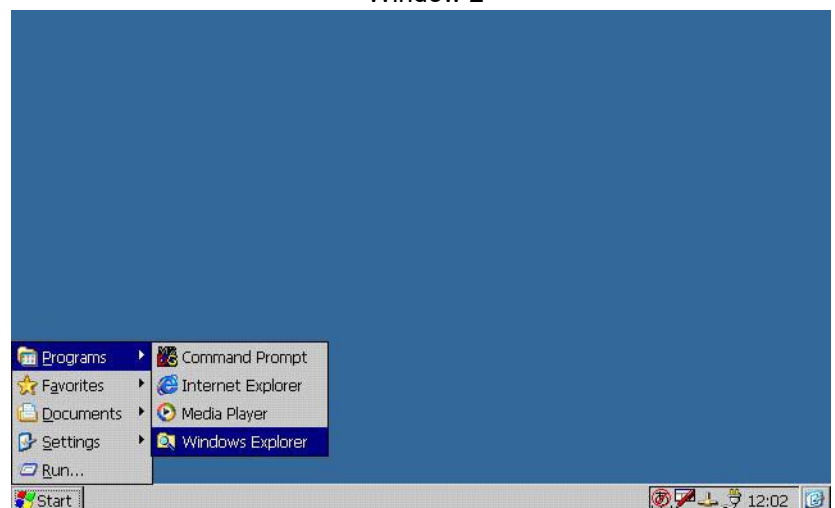
1. Prepare the CompactFlash for upgrading the DX200.
The CompactFlash can be replaced with the USB.
The preparing procedure using the CompactFlash is described in this manual.
2. Insert the CompactFlash for upgrading the DX200 to the CF slot on the programming pendant. Turn ON the main power of the DX200 by pressing [2] + [8] + [HIGH SPEED]. The DX200 is started-up in the OS(WindowsCE) writing mode. Then, calibrate the touch panel.
Window 1 appears as follows when the calibration is completed.

Window1



3. Select [Start] + [Programs] + [Windows Explorer] in Window 2.
Then, Window 3 appears.

Window 2



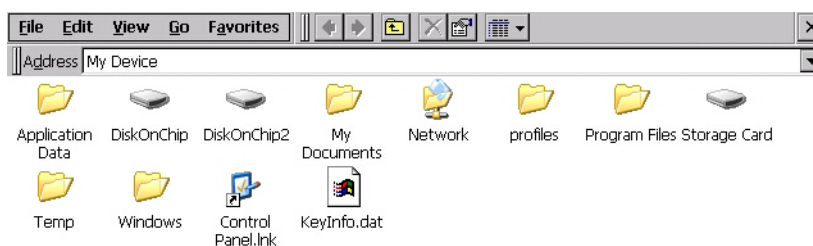
8 Troubleshooting

8.2 How to Repair Programming Pendant when Fonts are Garbled

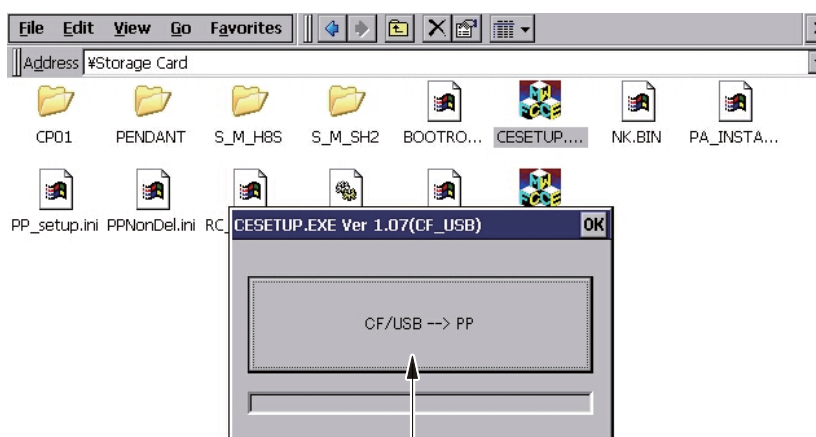
4. When Window 3 appeared as follows, either double click "DiskOnchip2" folder or move the cursor to "DiskOnchip2" folder and press [ENTER].
Then the list of files stored in "DiskOnchip2". After the list appears, delete all files. After the files are deleted, return to the list of folders like Window 3.
5. Double click "Storage Card" folder or move the cursor to "Storage Card" folder and press [ENTER].
The list of files stored in "Storage Card" folder appears.
Double click "CESETUP.EXE" folder or move the cursor to "CESETUP.EXE" folder and press [ENTER].
Then, Window 4 appears.

Select "USB Memory" in place of "Storage Card" in case USB is used for the repairing operation.

Window 3



Window 4

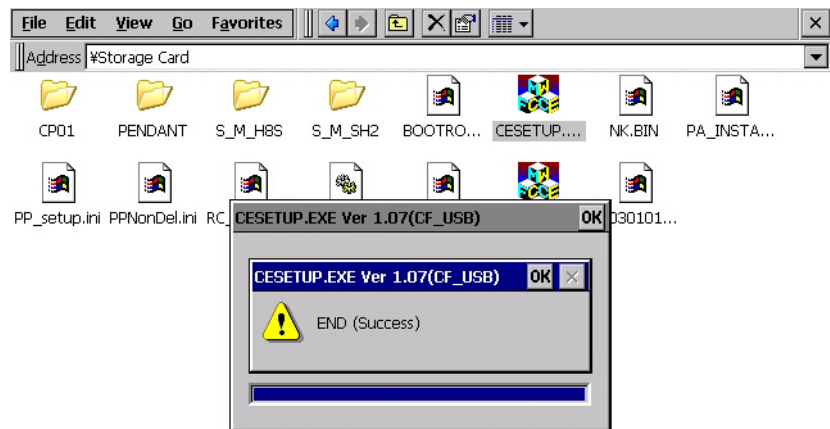


Press {CF--> PP}, then the programming pendant application file stored in {Storage Card} folder (CompactFlash) is copied to {DeskOnChip} or {DiscOnchip2} folder.
After copying is completed, Window 5 appears .

8 Troubleshooting8.2 How to Repair Programming Pendant when Fonts are Garbled

6. When Window 5 appeared, turn OFF the main power of the DX200. Insert the CompactFlash for upgrading the DX200, then turn ON the main power again by pressing [INTERLOCK] + [8] + [SELECT]. The window for upgrade appears, then, select {Software Upgrade} to execute upgrade.

Window 5



7. When upgrade operation is completed, turn OFF the main power of the DX200.

DX200

UPGRADE PROCEDURE MANUAL

For inquiries or after-sales service on this product, contact your local YASKAWA representative as shown below.

YASKAWA ELECTRIC CORPORATION

2-1 Kurosakishi-roishi, Yahatanishi-ku, Kitakyushu, 806-0004, Japan
Phone: +81-93-645-7703 Fax: +81-93-645-7802
www.yaskawa.co.jp

YASKAWA AMERICA, INC. (MOTOMAN ROBOTICS DIVISION)

100 Automation Way, Miamisburg, OH 45342, U.S.A.
Phone: +1-937-847-6200 Fax: +1-937-847-6277
www.motoman.com

YASKAWA EUROPE GmbH (ROBOTICS DIVISION)

Yaskawastrasse 1, 85391, Allershausen, Germany
Phone: +49-8166-90-0 Fax: +49-8166-90-103
www.yaskawa.eu.com

YASKAWA NORDIC AB

Verkstadsgratan 2, Box 504, SE-385 25 Torsås, Sweden
Phone: +46-480-417-800 Fax: +46-486-414-10
www.yaskawa.se

YASKAWA ELECTRIC (CHINA) CO., LTD.

22F, One Corporate Avenue, No.222 Hubin Road, Huangpu District, Shanghai 200021, China
Phone: +86-21-5385-2200 Fax: +86-21-5385-3299
www.yaskawa.com.cn

YASKAWA SHOUGANG ROBOT CO., LTD.

No.2 Building, No.6 Rongchang East Street, Beijing E&T Development Area, Beijing 100176, China
Phone: +86-10-6788-2858 Fax: +86-10-6788-2878
www.yasr-motoman.cn

YASKAWA ELECTRIC KOREA CORPORATION

6F, 112, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, 14118, Korea
Phone: +82-31-8015-4224 Fax: +82-31-8015-5034
www.yaskawa.co.kr

YASKAWA ELECTRIC TAIWAN CORPORATION

12F, No.207, Sec. 3, Beishin Rd., Shindian District, New Taipei City 23143, Taiwan
Phone: +886-2-8913-1333 Fax: +886-2-8913-1513
www.yaskawa.com.tw

YASKAWA ASIA PACIFIC PTE. LTD.

30A Kallang Place, #06-01, 339213, Singapore
Phone: +65-6282-3003 Fax: +65-6289-3003
www.yaskawa.com.sg

YASKAWA ELECTRIC (THAILAND) CO., LTD.

59, 1st-5th Floor, Flourish Building, Soi Ratchadapisek 18, Ratchadapisek Road, Huaykwang, Bangkok 10310, Thailand
Phone: +66-2-017-0099 Fax: +66-2-017-0199
www.yaskawa.co.th

PT. YASKAWA ELECTRIC INDONESIA

Secure Building-Gedung B Lantai Dasar & Lantai 1 Jl. Raya Protokol Halim Perdanakusuma, Jakarta 13610, Indonesia
Phone: +62-21-2982-6470 Fax: +62-21-2982-6471
www.yaskawa.co.id

YASKAWA INDIA PRIVATE LIMITED (ROBOTICS DIVISION)

No.136, Sector-8, Industrial Estate, IMT Manesar, Gurugram, Haryana 122050, India
Phone: +91-124-475-8500
www.yaskawaindia.in


© 2013 YASKAWA ELECTRIC CORPORATION
Published by YASKAWA

YASKAWA

YASKAWA ELECTRIC CORPORATION

August 2024 13-09

MANUAL NO.

HW1481995 

52/52