YASKAWA

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

The DX200 operator's manual above corresponds to specific usage. Be sure to use the appropriate manual.

Part Number: 165560-1CD
Revision: 3

MANUAL NO.
HW1481995 ③

Printed in the United States of America

First Printing, 2015

YASKAWA America, Inc.
Motoman Robotics Division
100 Automation Way
Miamisburg, OH 45342
Phone: 937-847-6200

www.motoman.com

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. The representatives are listed on the back cover. 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.

We suggest that you obtain and review a copy of the ANSI/RIA National Safety Standard for Industrial Robots and Robot Systems (ANSI/RIA R15.06-2012). You can obtain this document from the Robotic Industries Association (RIA) at the following address:

Robotic Industries Association

900 Victors Way

P.O. Box 3724

Ann Arbor, Michigan 48106

TEL: (734) 994-6088

FAX: (734) 994-3338

www.roboticsonline.com

Ultimately, well-trained personnel are the best safeguard against accidents and damage that can result from improper operation of the equipment. The customer is responsible for providing adequately trained personnel to operate, program, and maintain the equipment. NEVER ALLOW UNTRAINED PERSONNEL TO OPERATE, PROGRAM, OR REPAIR THE EQUIPMENT!

We recommend approved YASKAWA training courses for all personnel involved with the operation, programming, or repair of the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Notes for Safe Operation

Read this manual carefully before installation, operation, maintenance, or inspection of the DX200.

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.

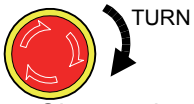
Injury or damage to machinery may result if the emergency stop circuit cannot stop the manipulator during an emergency. The manipulator should not be used if the emergency stop buttons do not function.

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 printed on them are denoted with [ ]. ex. [ENTER]
	Axis Keys Numeric Keys	“Axis Keys” and “Numeric Keys” 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, ex. [SHIFT]+[COORD]
	Displays	The menu displayed in the programming pendant is denoted with { }. ex. {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.

Safeguarding Tips

All operators, programmers, maintenance personnel, supervisors, and anyone working near the system must become familiar with the operation of this equipment. All personnel involved with the operation of the equipment must understand potential dangers of operation. General safeguarding tips are as follows:

- Improper operation can result in personal injury and/or damage to the equipment. Only trained personnel familiar with the operation of this equipment, the operator's manuals, the system equipment, and options and accessories should be permitted to operate this equipment.
- Improper connections can damage the equipment. All connections must be made within the standard voltage and current ratings of the equipment.
- The system must be placed in Emergency Stop (E-Stop) mode whenever it is not in use.
- In accordance with ANSI/RIA R15.06-2012, section 4.2.5, Sources of Energy, use lockout/tagout procedures during equipment maintenance. Refer also to Section 1910.147 (29CFR, Part 1910), Occupational Safety and Health Standards for General Industry (OSHA).

Mechanical Safety Devices

The safe operation of this equipment is ultimately the users responsibility. The conditions under which the equipment will be operated safely should be reviewed by the user. The user must be aware of the various national codes, ANSI/RIA R15.06-2012 safety standards, and other local codes that may pertain to the installation and use of this equipment.

Additional safety measures for personnel and equipment may be required depending on system installation, operation, and/or location. The following safety equipment is provided as standard:

- Safety barriers
- Door interlocks
- Emergency stop palm buttons located on operator station

Check all safety equipment frequently for proper operation. Repair or replace any non-functioning safety equipment immediately.

Programming, Operation, and Maintenance Safety

All operators, programmers, maintenance personnel, supervisors, and anyone working near the system must become familiar with the operation of this equipment. Improper operation can result in personal injury and/or damage to the equipment. Only trained personnel familiar with the operation, manuals, electrical design, and equipment interconnections of this equipment should be permitted to program, or maintain the system. All personnel involved with the operation of the equipment must understand potential dangers of operation.

- Inspect the equipment to be sure no potentially hazardous conditions exist. Be sure the area is clean and free of water, oil, debris, etc.
- Be sure that all safeguards are in place. Check all safety equipment for proper operation. Repair or replace any non-functioning safety equipment immediately.
- Check the E-Stop button on the operator station for proper operation before programming. The equipment must be placed in Emergency Stop (E-Stop) mode whenever it is not in use.
- Back up all programs and jobs onto suitable media before program changes are made. To avoid loss of information, programs, or jobs, a backup must always be made before any service procedures are done and before any changes are made to options, accessories, or equipment.
- Any modifications to the controller unit can cause severe personal injury or death, as well as damage to the robot! Do not make any modifications to the controller unit. Making any changes without the written permission from YASKAWA will void the warranty.
- Some operations require a standard passwords and some require special passwords.
- The equipment allows modifications of the software for maximum performance. Care must be taken when making these modifications. All modifications made to the software will change the way the equipment operates and can cause severe personal injury or death, as well as damage parts of the system. Double check all modifications under every mode of operation to ensure that the changes have not created hazards or dangerous situations.
- This equipment has multiple sources of electrical supply. Electrical interconnections are made between the controller and other equipment. Disconnect and lockout/tagout all electrical circuits before making any modifications or connections.
- Do not perform any maintenance procedures before reading and understanding the proper procedures in the appropriate manual.
- Use proper replacement parts.
- Improper connections can damage the equipment. All connections must be made within the standard voltage and current ratings of the equipment.

Maintenance Safety

Turn the power OFF and disconnect and lockout/tagout all electrical circuits before making any modifications or connections.

Perform only the maintenance described in this manual. Maintenance other than specified in this manual should be performed only by YASKAWA-trained, qualified personnel.

Summary of Warning Information

This manual is provided to help users establish safe conditions for operating the equipment. Specific considerations and precautions are also described in the manual, but appear in the form of Dangers, Warnings, Cautions, and Notes.

It is important that users operate the equipment in accordance with this instruction manual and any additional information which may be provided by YASKAWA. Address any questions regarding the safe and proper operation of the equipment to YASKAWA Customer Support.

Customer Support Information

If you need assistance with any aspect of your Upgrade Procedure system, please contact YASKAWA Customer Support at the following 24-hour telephone number:

(937) 847-3200

For **routine** technical inquiries, you can also contact YASKAWA Customer Support at the following e-mail address:

techsupport@motoman.com

When using e-mail to contact YASKAWA Customer Support, please provide a detailed description of your issue, along with complete contact information. Please allow approximately 24 to 36 hours for a response to your inquiry.

Please use e-mail for **routine** inquiries only. If you have an urgent or emergency need for service, replacement parts, or information, you must contact YASKAWA Customer Support at the telephone number shown above.

Please have the following information ready before you call Customer Support:

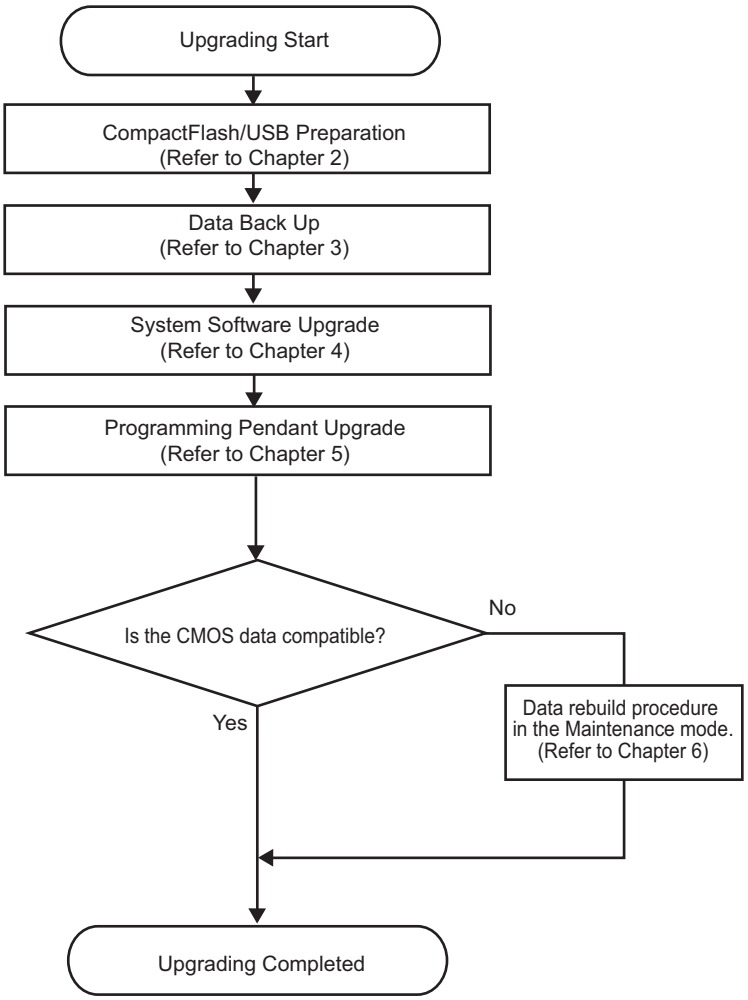
• System	Upgrade Procedure
• Primary Application	_____
• Controller	DX200
• Software Version	Access this information on the Programming Pendant's LCD display screen by selecting {MAIN MENU} - {SYSTEM INFO} - {VERSION}
• Robot Serial Number	Located on the robot data plate
• Robot Sales Order Number	Located on the DX200 controller data plate

Table of Contents

1 Outline

1.1 Outline of Upgrade Procedure

The upgrading procedures for the DX200 is outlined as follows:



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.

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

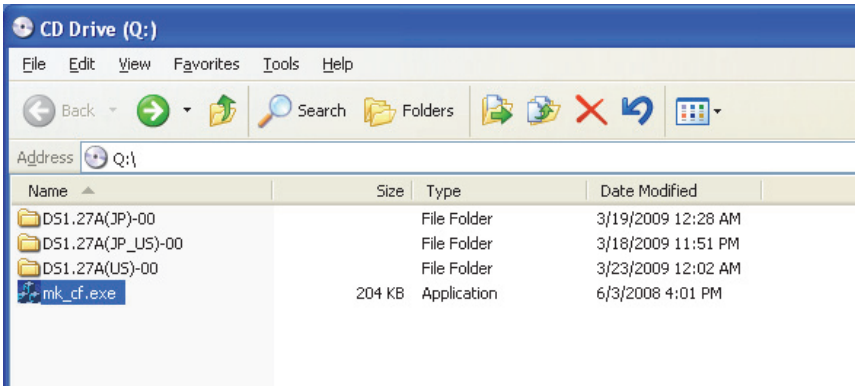
The above mentioned CompactFlash with different capacity (xxMB) is also available to use.

2.2 Preparing CompactFlash/USB for Upgrade

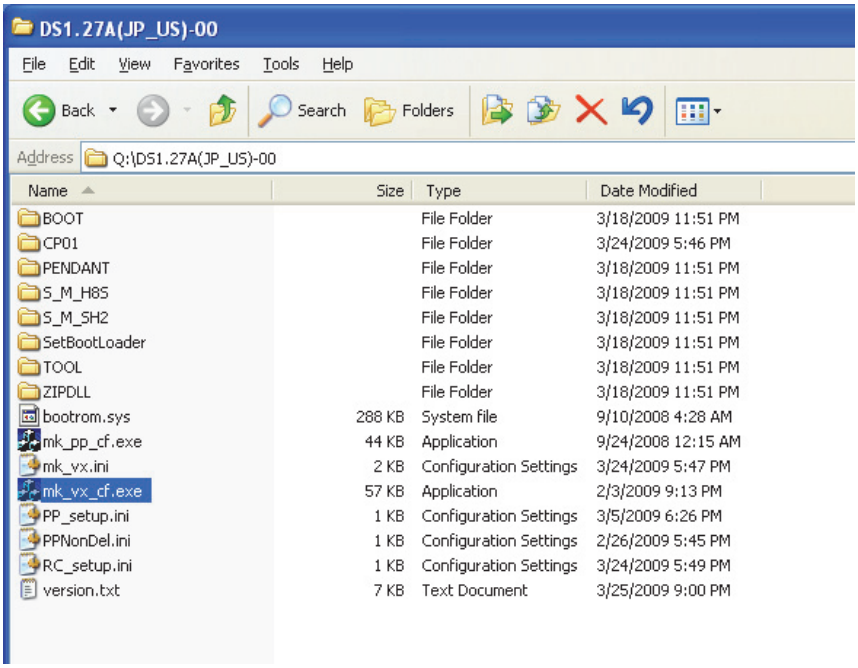
Prepare the CompactFlash/USB for upgrade with a personal computer.

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

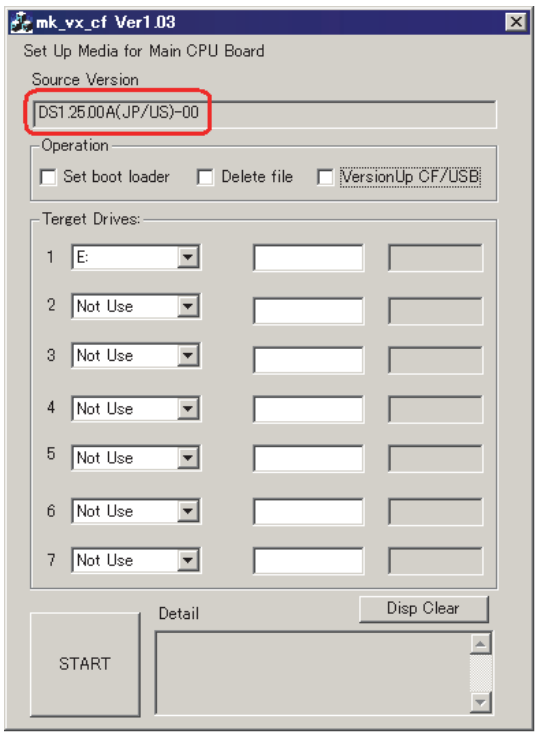
1. Select the subject file of upgrade.
   – The figure below is an example in case where data exists in a CD.



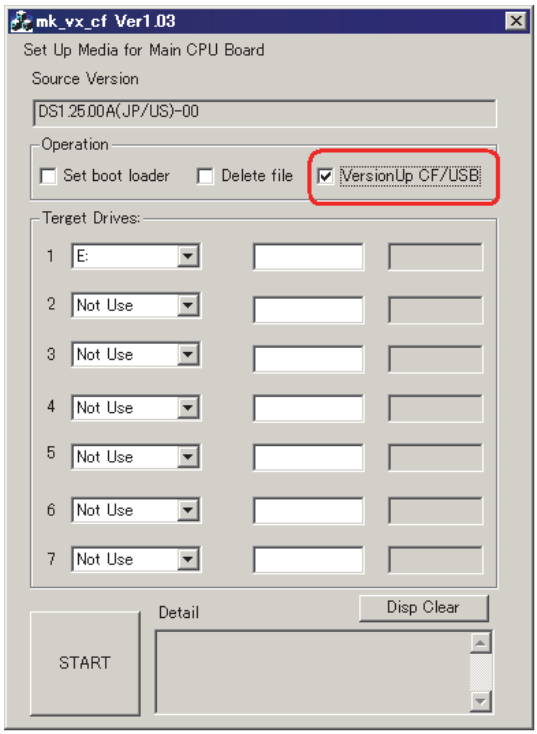
2. Run "MK_VX_CF.EXE".



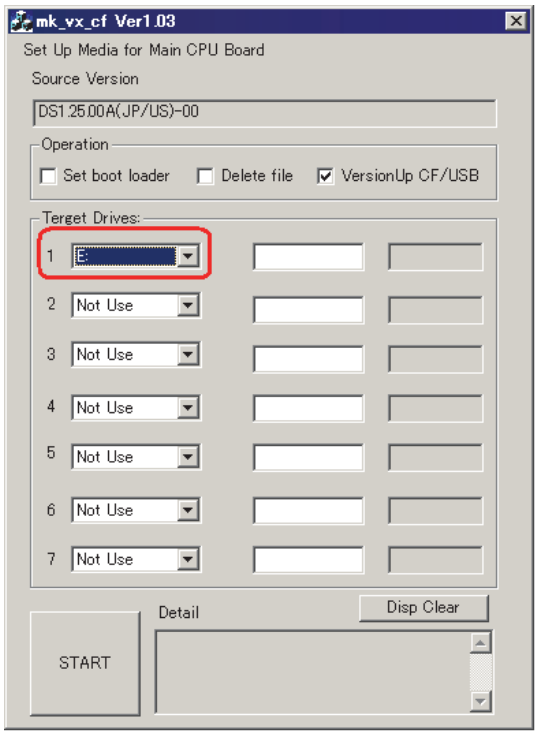
3. Check if the "Source Version" is correct.



4. Select "VersionUp CF/USB".



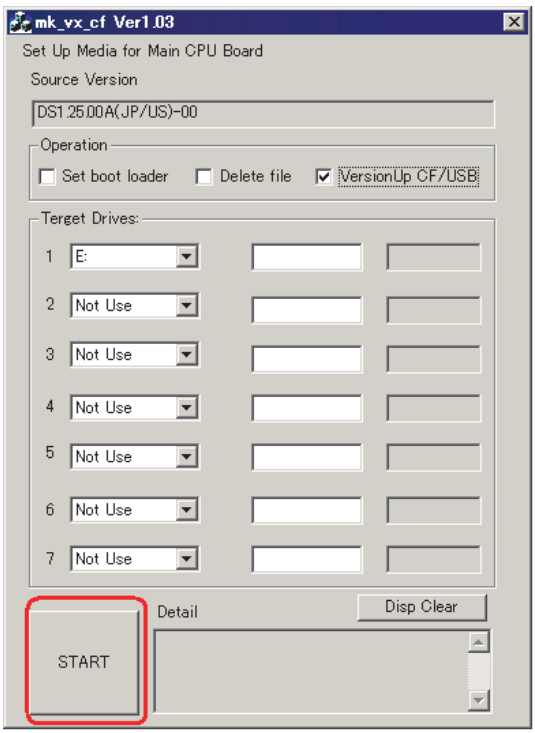
5. Select a drive to prepare CompactFlash/USB for upgrade.



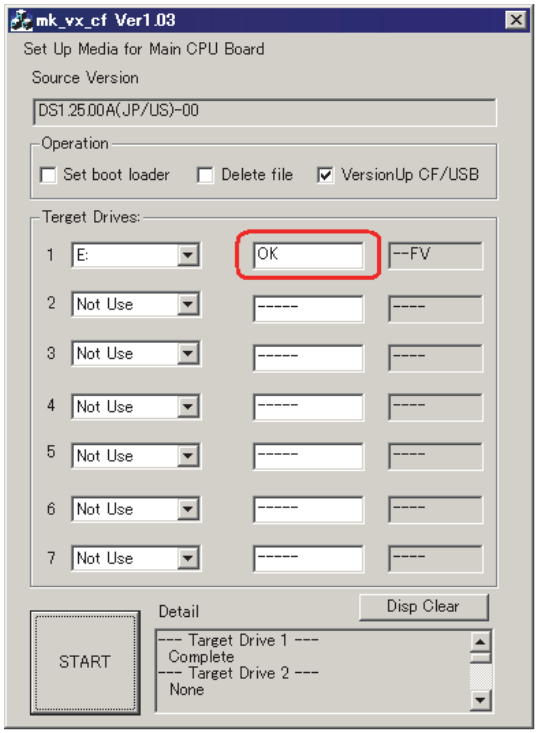
SUPPLE-MENT

- 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".

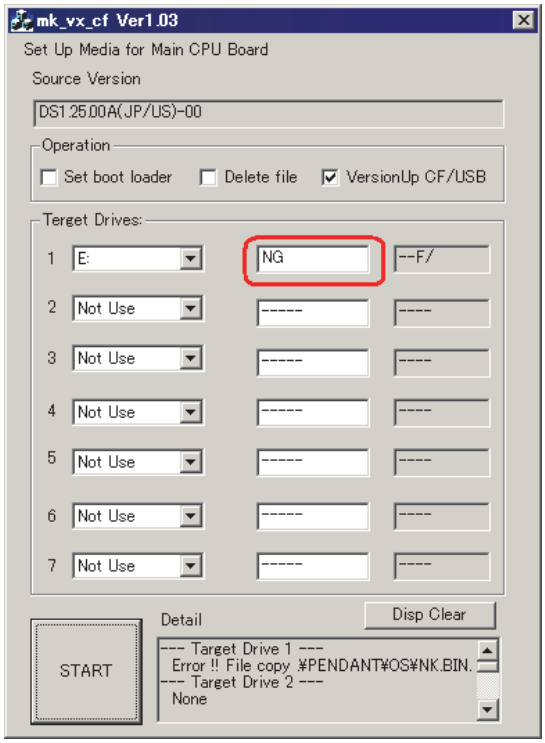
6. Start writing data on the CompactFlash/USB for upgrade by selecting "START".



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.



<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 *section 2.1 “Prearrangements”*.

Cause 3: Damage in the CompactFlash/USB.
Countermeasure: Replace it with a new one.

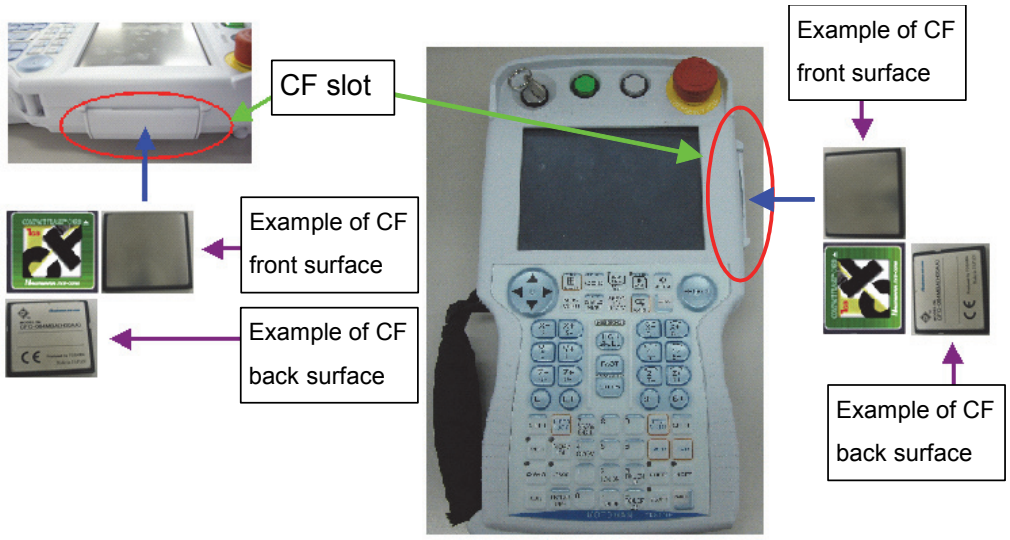
3 Data Back Up

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

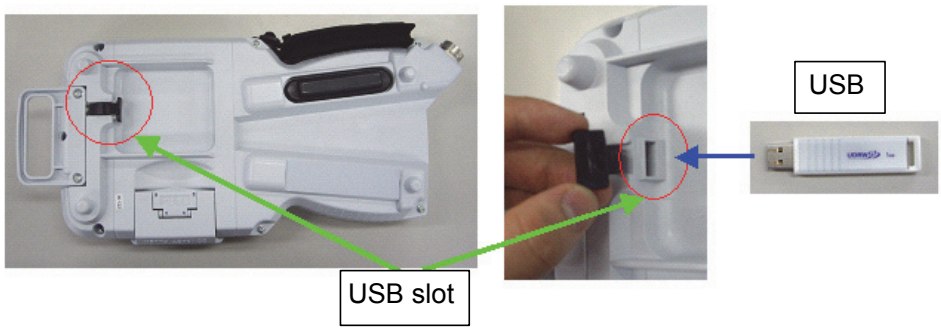
3.1 Data Back Up

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

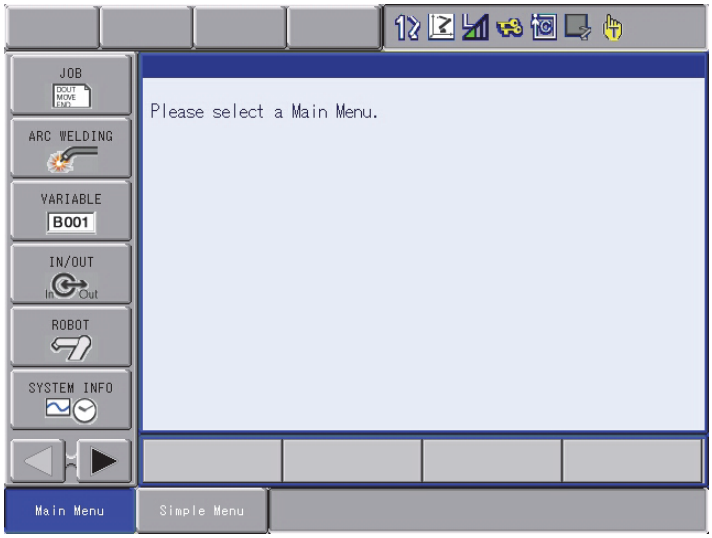
1. Check if the main power of the DX200 is turned OFF.
2. Insert the CompactFlash/USB prepared in *section 2.2 "Preparing CompactFlash/USB for Upgrade"* into the programming pendant.
   – When inserting the CompactFlash, open the CF slot cover. Pay attention to insert the CompactFlash in the correct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



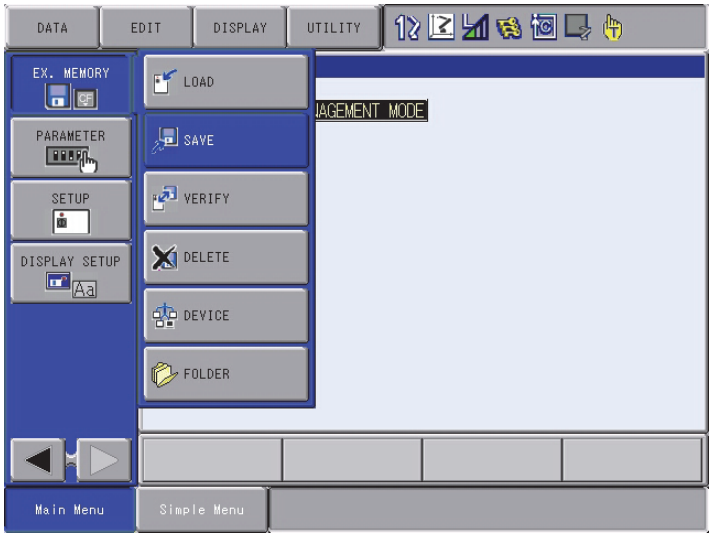
   – When inserting the USB, remove the rubber cap on the USB slot on the back of the programming pendant.



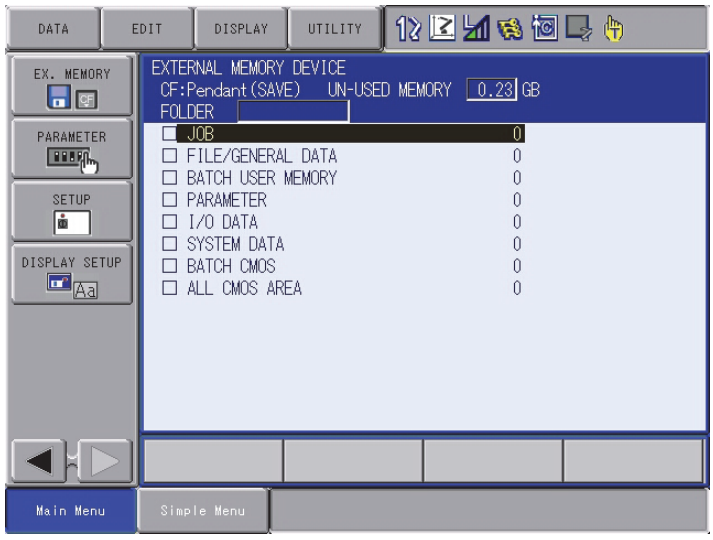
3. Turn ON the main power of the DX200.
   – Approx. 60 seconds later, the main menu window appears on the display of the programming pendant.



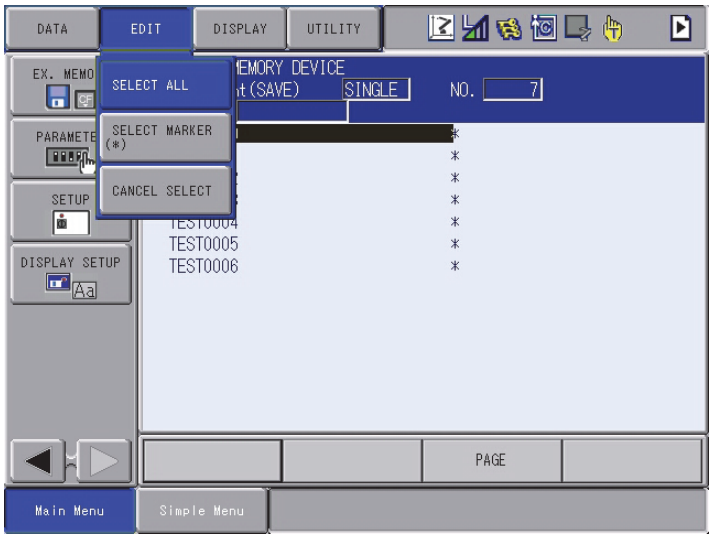
4. Change the security mode to the management mode.
5. Select {EX. MEMORY} under the main menu. Select {SAVE}, and save all the following data individually:
   - JOB
   - FILE/GENERAL DATA
   - PARAMETER
   - I/O DATA
   - SYSTEM DATA



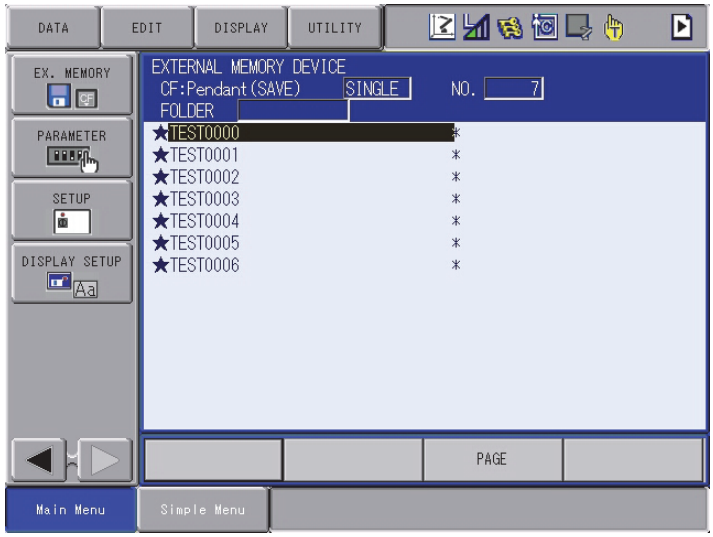
6. Move the cursor to {JOB} and press [SELECT].



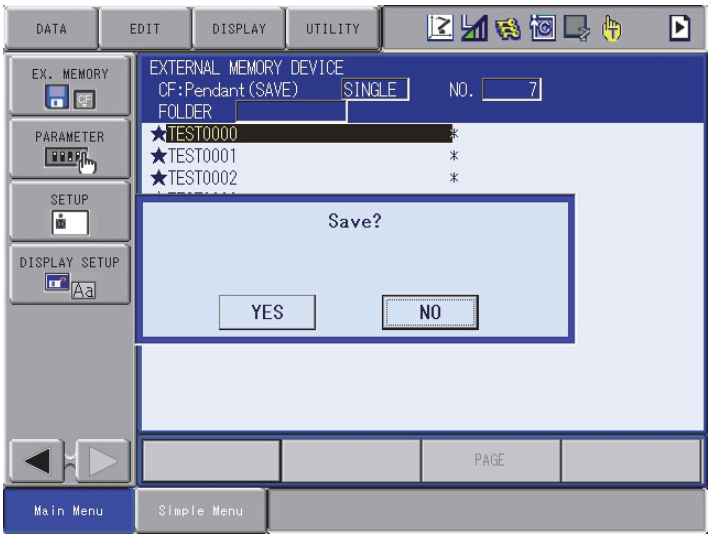
7. Select {EDIT}, then select {SELECT ALL}.



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



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

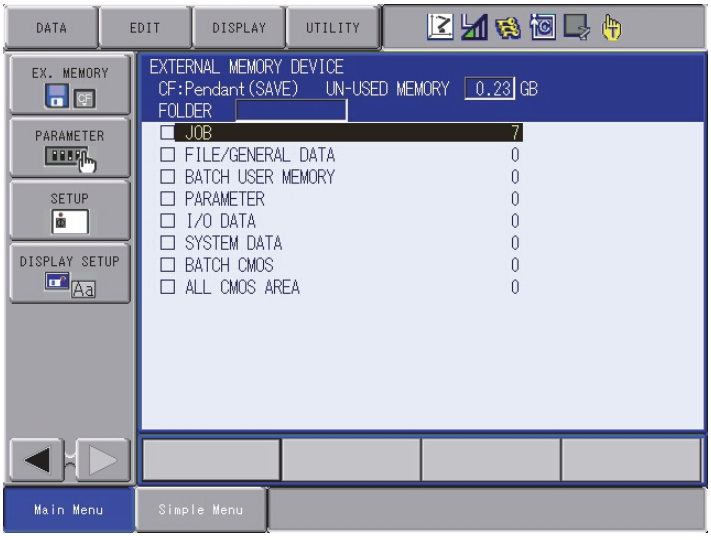


SUPPLE-MENT

Select [STOP] to stop saving the data.

In this case, the window will return to the {JOB LIST} from step 7.

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



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

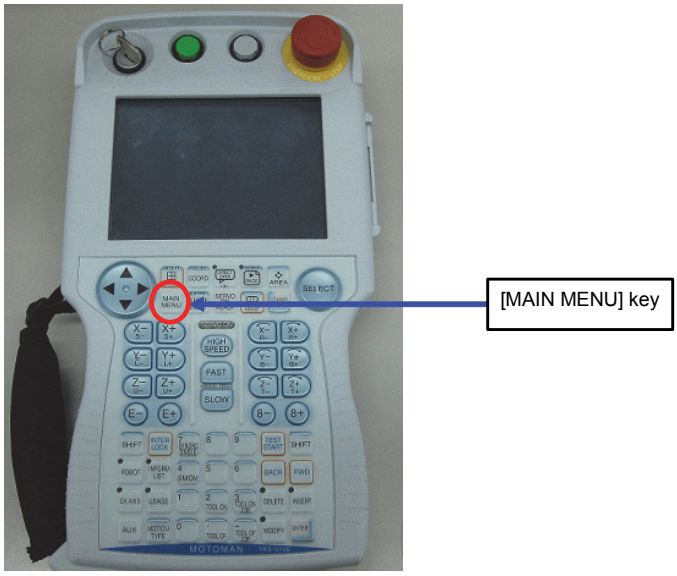
3.2 Recording Other Information

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

3.3 Recording Information in Maintenance Mode

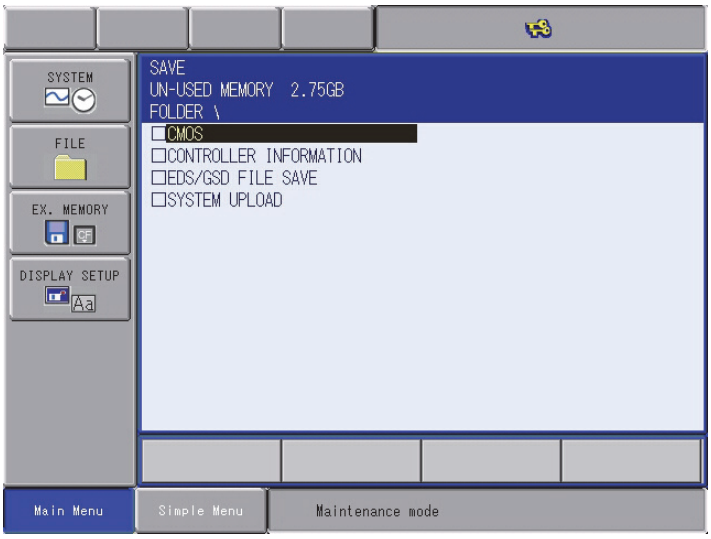
1. Turn ON the power supply of the DX200 while pressing [MAIN MENU] simultaneously.



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.)

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.

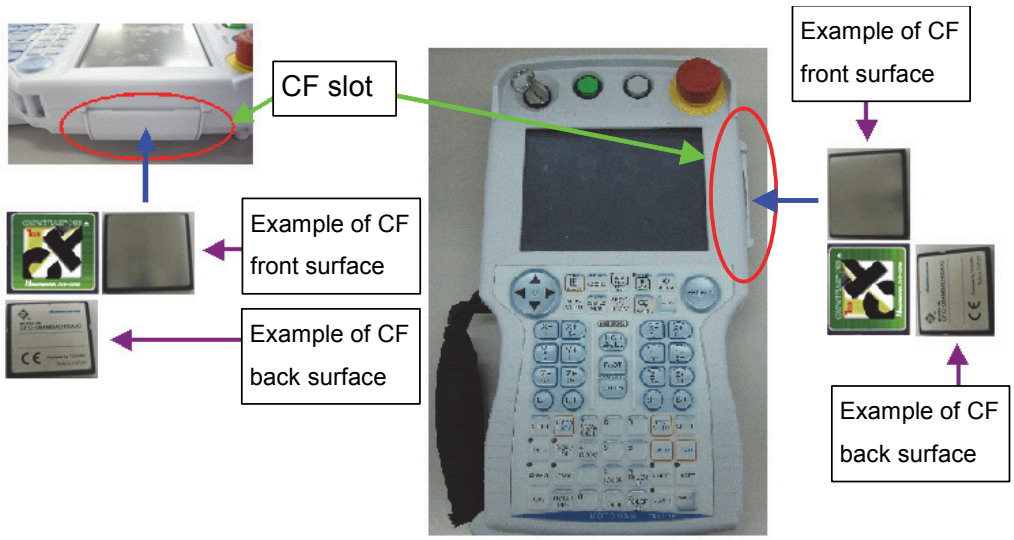
4 System Software Upgrade

4.1 System Software Upgrade

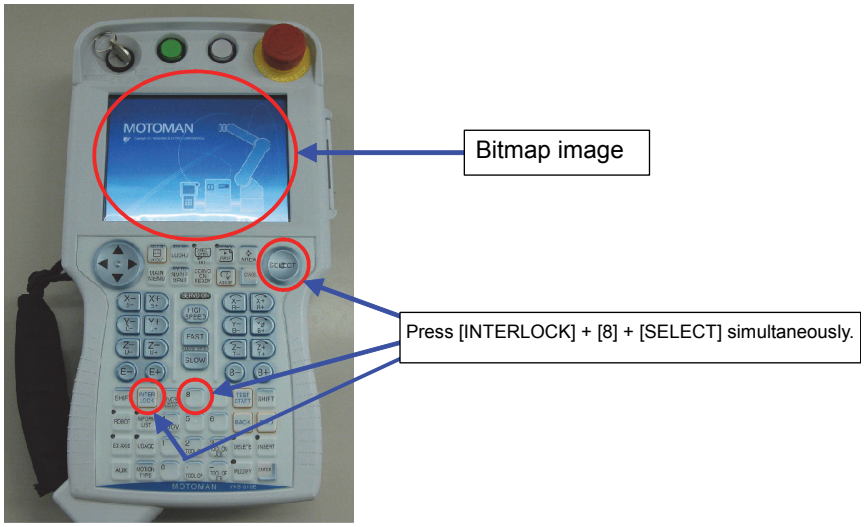
Upgrade the system software following the procedures below.
The upgrade is performed using either the CompactFlash or USB. If both the CompactFlash and USB are inserted in the programming pendant, the upgrade is performed using the CompactFlash.

4.1.1 Upgrade Using CompactFlash

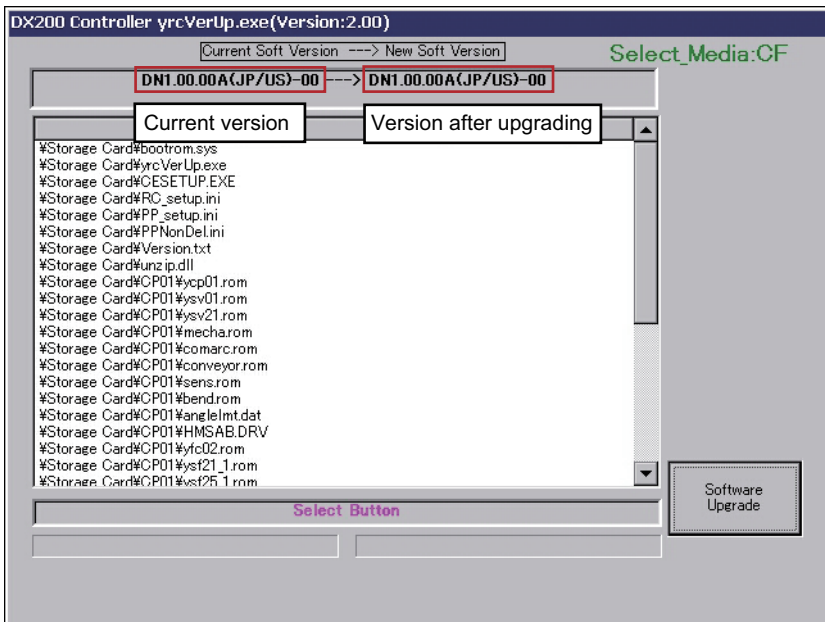
1. Check if the main power of the DX200 is turned OFF.
2. Open the CF slot cover on the programming pendant, and insert the CompactFlash prepared in *section 2.2 "Preparing CompactFlash/USB for Upgrade"*, then close the CF slot cover.
   – Pay attention to insert the CompactFlash in the correct direction.



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.



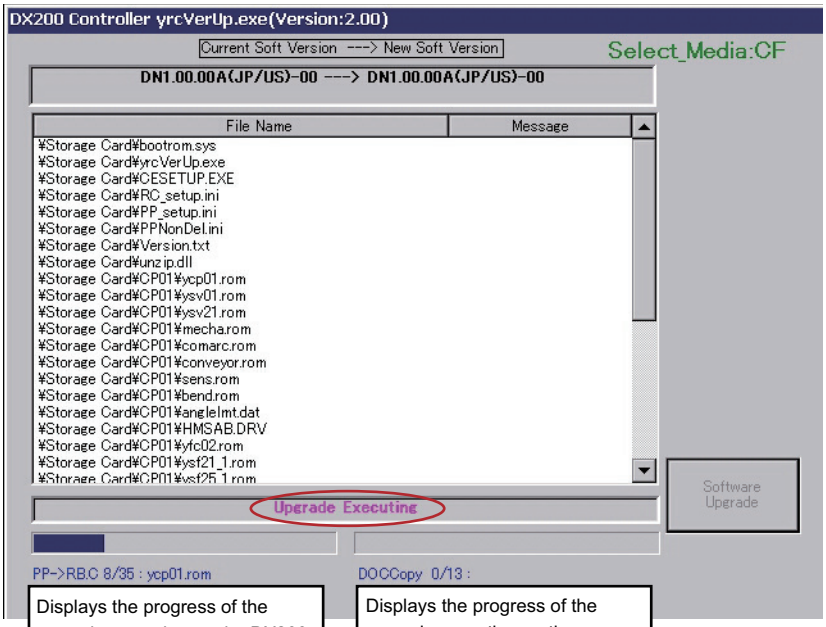
NOTE

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 *section 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.

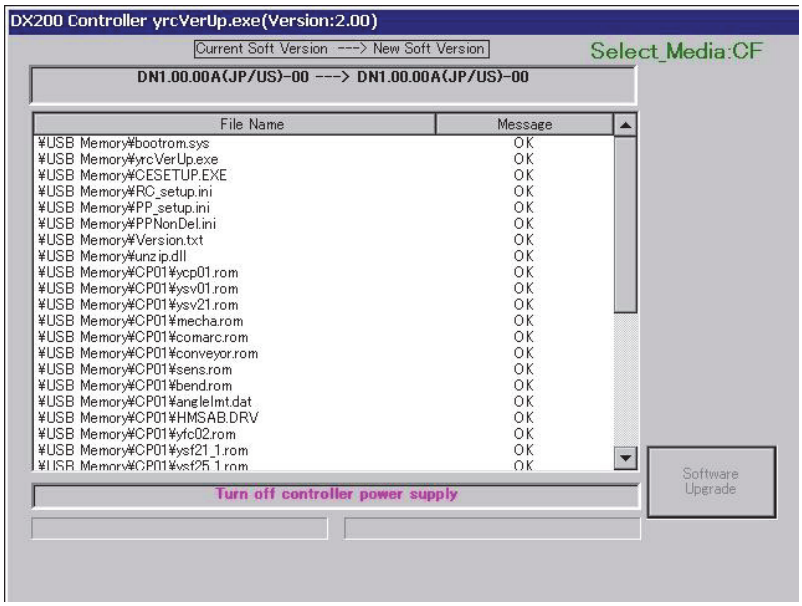
– During the upgrade, [HOLD] of the programming pendant lights, the message “Upgrade Executing” blinks, and the upgrade progress bar and the name of the file being upgraded are shown.



Displays the progress of the upgrade operation on the DX200 side, and the name of the file being upgraded.

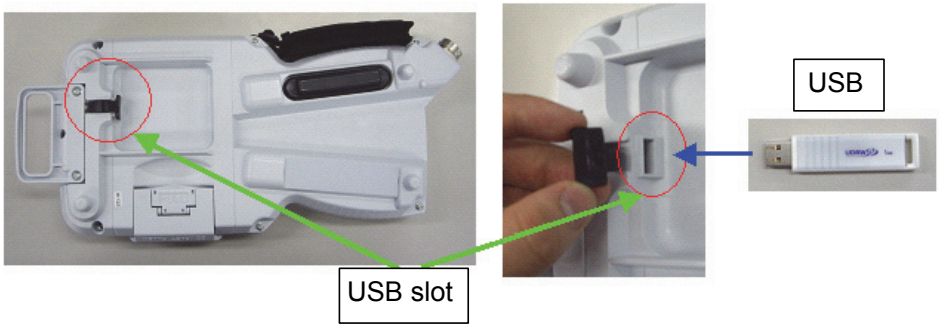
Displays the progress of the upgrade operation on the programming pendant, and the name of the file being upgraded.

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

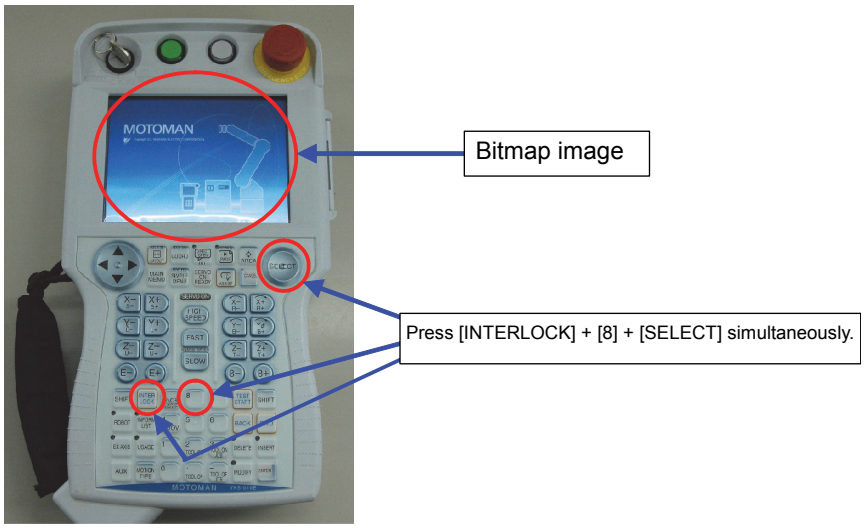


4.1.2 Upgrade Using USB

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 *section 2.2 "Preparing CompactFlash/USB for Upgrade"*.

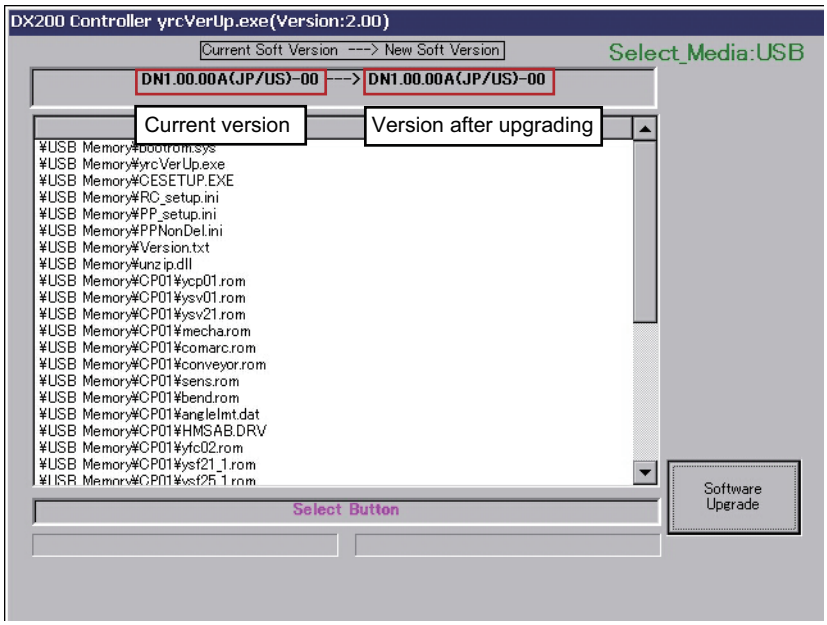


3. Turn ON the main power of the DX200 while pressing [INTERLOCK] + [8] + [SELECT].
   – Release [INTERLOCK] + [8] + [SELECT] when the bitmap image as shown below appears or when the programming pendant beeps.



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

   – The upgrade starts.



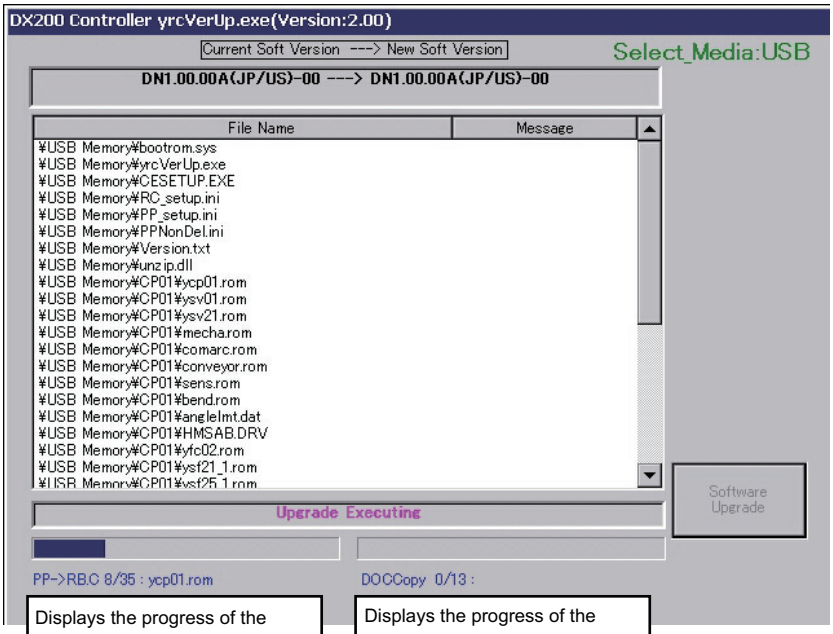
NOTE

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 *section 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.

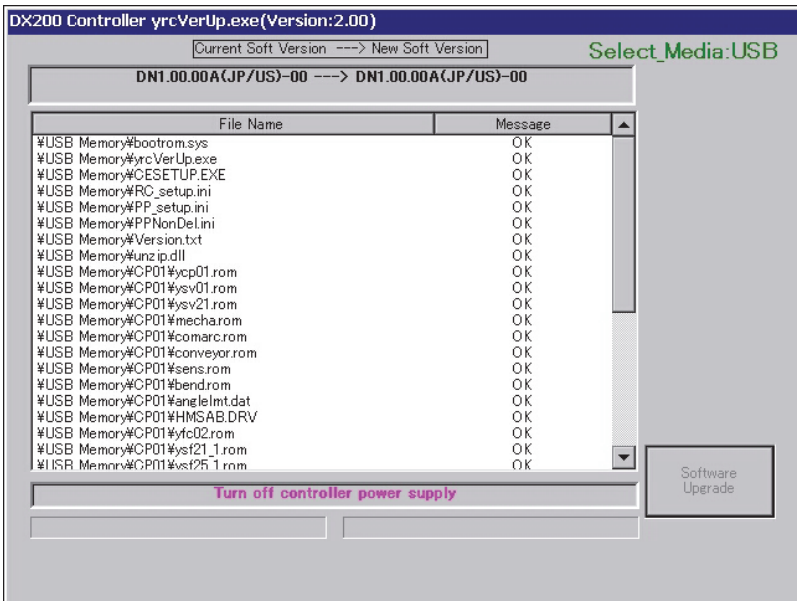
– During the upgrade, [START] of the programming pendant lights, the message “Upgrade Executing” blinks, and the upgrade progress bar and the name of the file being upgraded are shown. .



Displays the progress of the upgrade operation on the DX200 side, and the name of the file being upgraded.

Displays the progress of the upgrade operation on the programming pendant, and the name of the file being upgraded.

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



5 Programming Pendant Upgrade

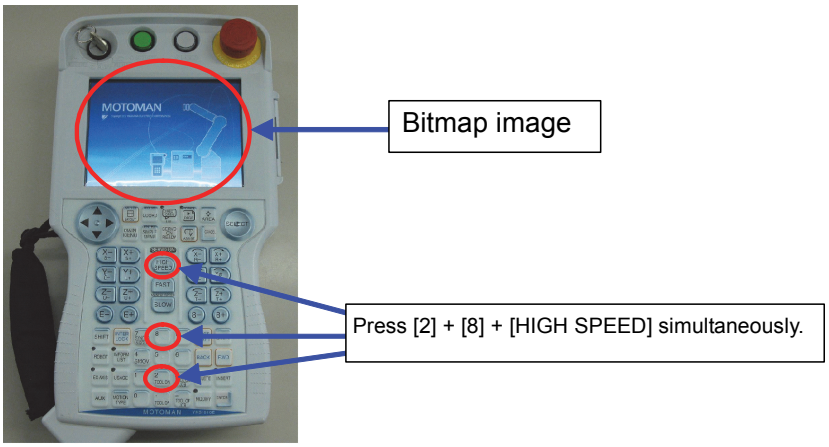
This operation is not necessary when performing a normal upgrade.

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.



NOTE

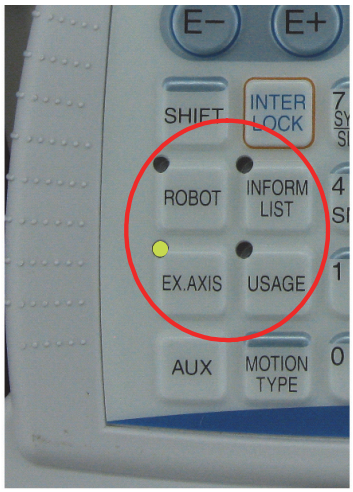
In case where an alarm sound of the programming pendant does not stop with all the LED indications light up, perform the corrective actions as follows:

(1) Turn OFF the main power of the DX200, then remove the CompactFlash/USB from the programming pendant. Retry the upgrading procedures from *section 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.

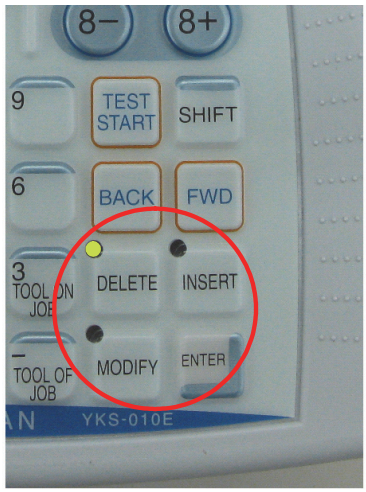
– NK.BIN (OS: Windows CE) in the CompactFlash is written into SDRAM first; the NK.BIN (in the SDRAM) then be written into FlashRom of the programming pendant. The LED indications during the process change as described below:

(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.

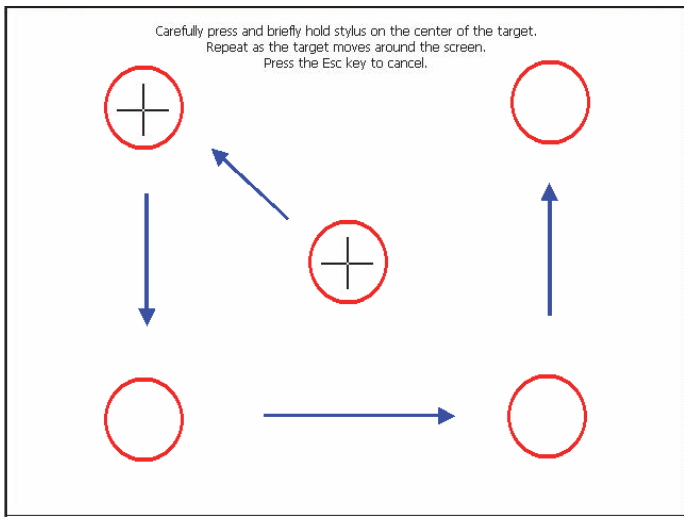
SUPPLE-MENT

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

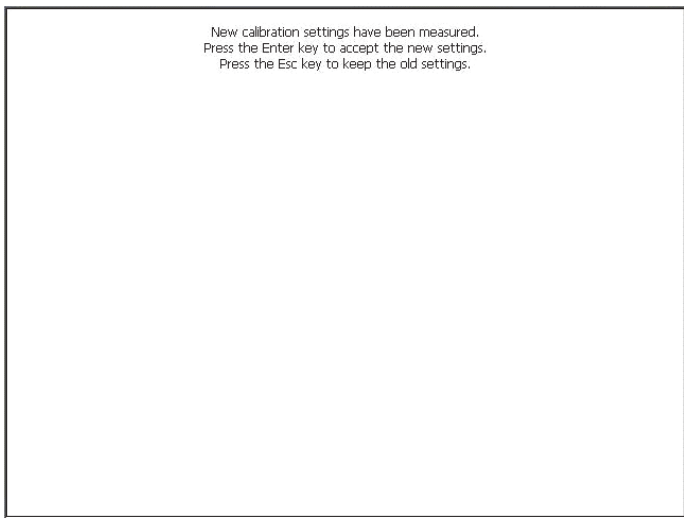
3. The touch panel calibration appears on the display of the programming pendant approx. 7 minutes after turning ON the main power of the DX200.

   – 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.

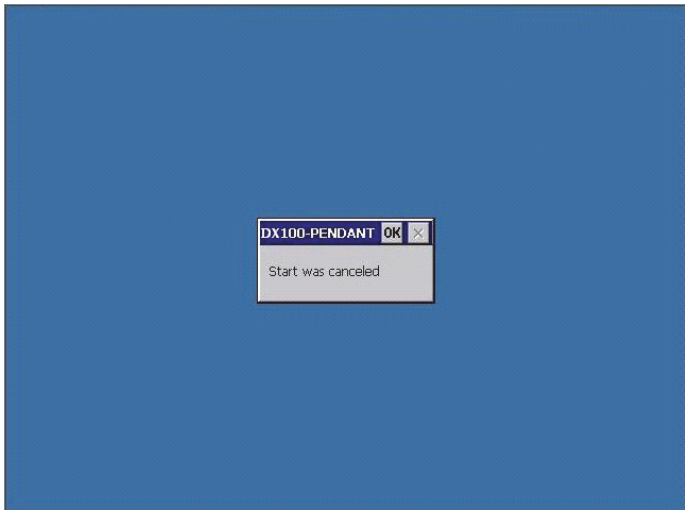
4. A crosshair cursor at the center of the display moves in the following order: Center → Upper left → Lower left → Lower right → Upper right.
   – Press the center of the cursor for approx. 2 seconds at each point.
   – If the touch calibration is failed, the crosshair cursor returns to the center of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



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

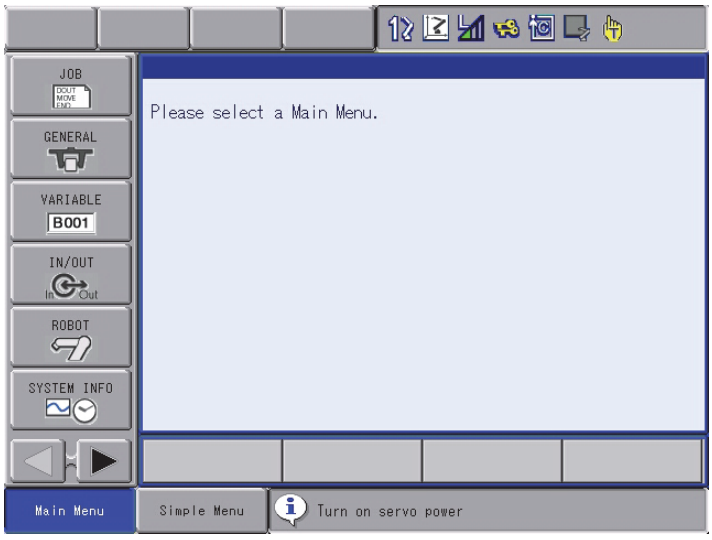


5. The following display appears by pressing [ENTER] on the programming pendant or by touching the display.
   (1) Select [OK] to close the dialog box.
   (2) Make sure the dialog box has closed, then turn OFF the main power of the DX200.

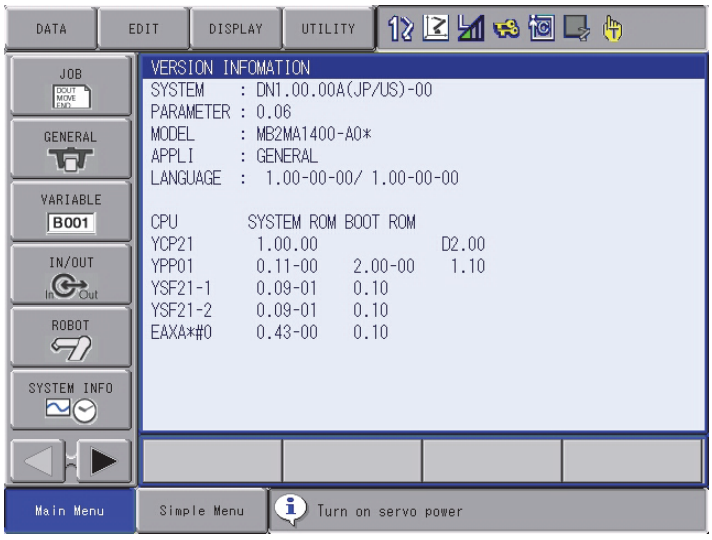


   (3) After turning OFF the main power of the DX200, be sure to remove the CompactFlash from the CF slot or the USB from the USB slot of the programming pendant.

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.

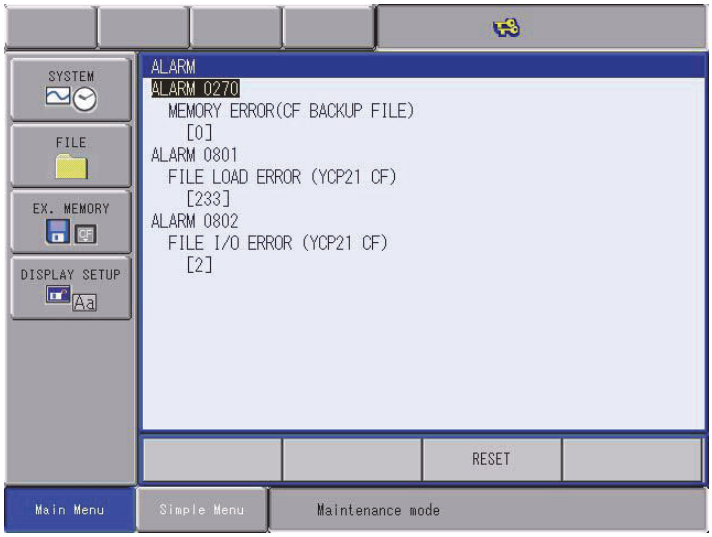


6 Procedure when Data Incompatibility Occurs after Upgrading

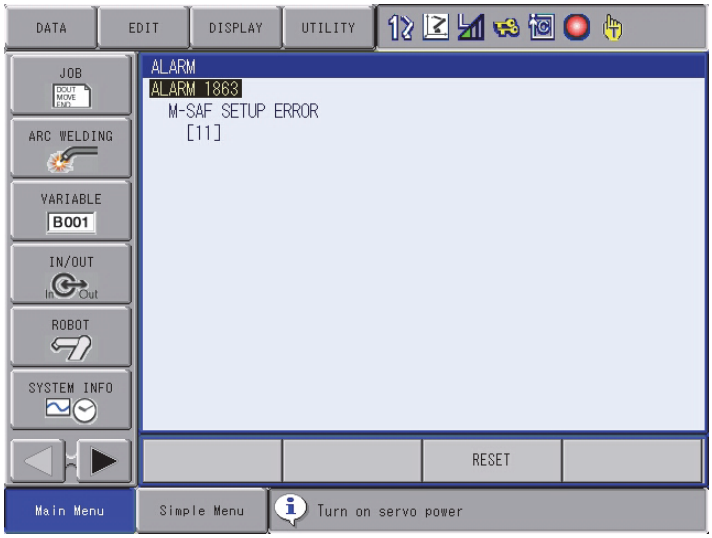
Following alarms occur if there is a difference in the data before and after the upgrade.

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 *section 6.1 "Data Rebuild Procedure in Maintenance Mode"*.
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 *section 6.2 "Reset Procedure for the Machine Safety Board Flash data in Maintenance Mode"*.
	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>

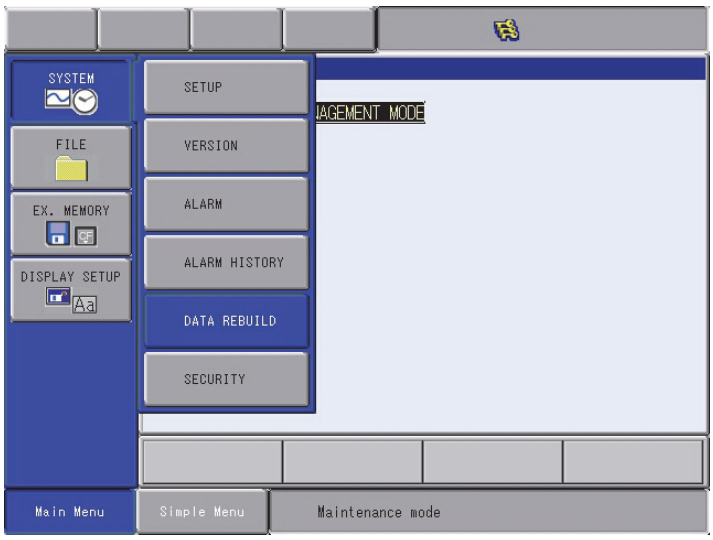


6.1 Data Rebuild Procedure in Maintenance Mode

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.

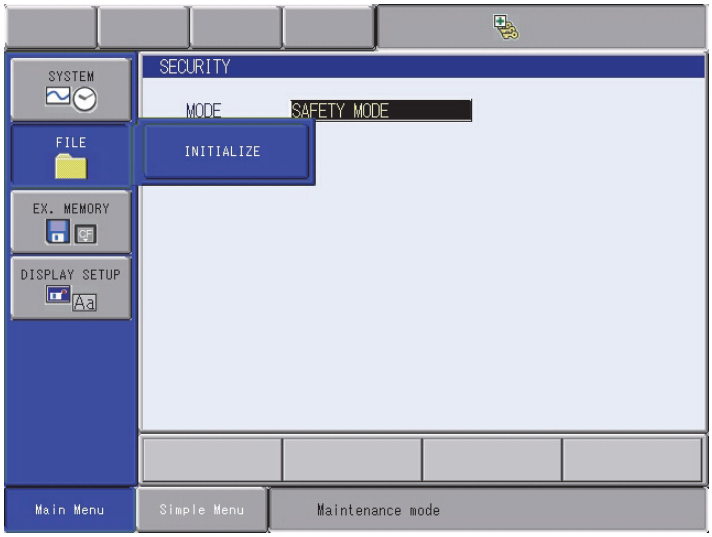
3. After the initialization, turn the power of DX200 OFF then back ON.
4. Confirm the version number to make sure the upgrade is successfully completed.

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

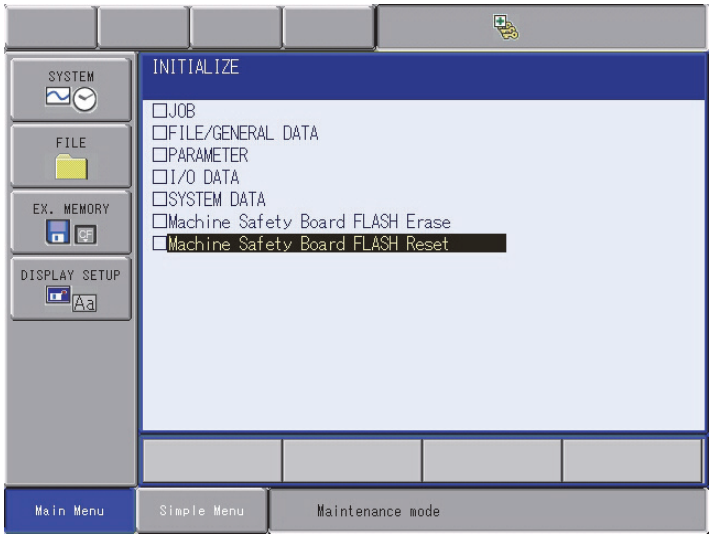
Follow the procedure below if the following alarms occur after the upgrade.

- ALARM 1863: M-SAF SETUP ERROR

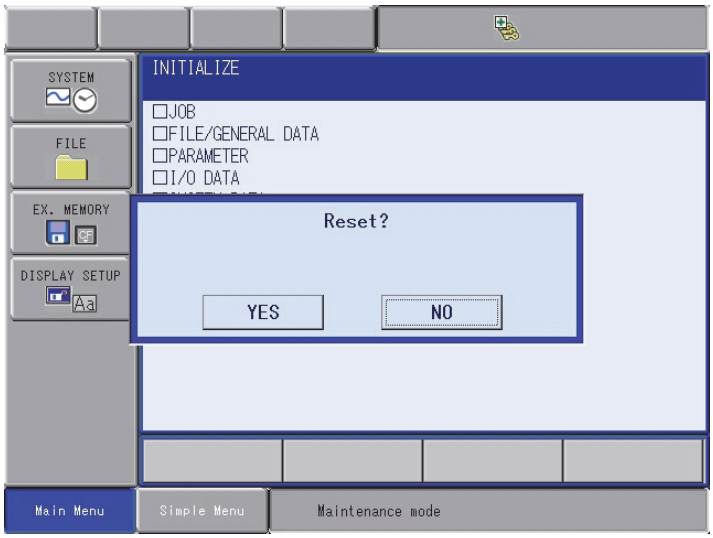
1. Select {File} then {INITIALIZE} in SAFETY MODE in the Maintenance mode.



2. Select {Machine Safety Board FLASH Reset}.



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.

6.3 Initialize the Job Data (Only for Downgrade)

NOTE

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

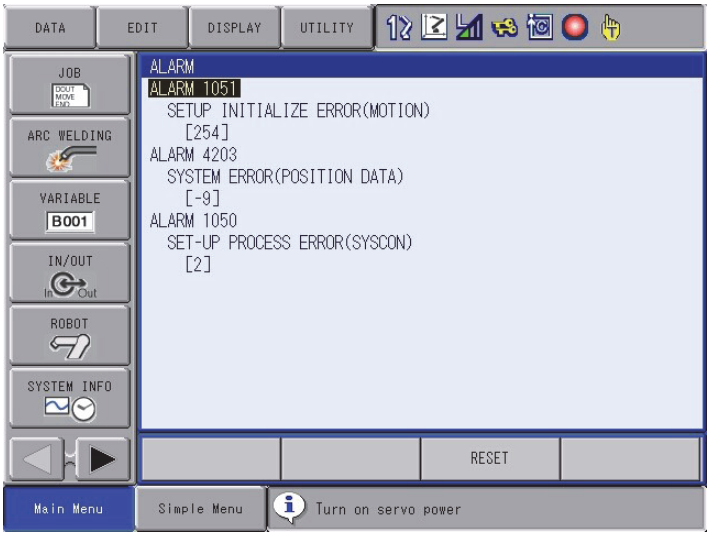
- Only for downgrade.
- Before and after the change of the system software version extends over DN 1.70.00A(☐)-00.

  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]

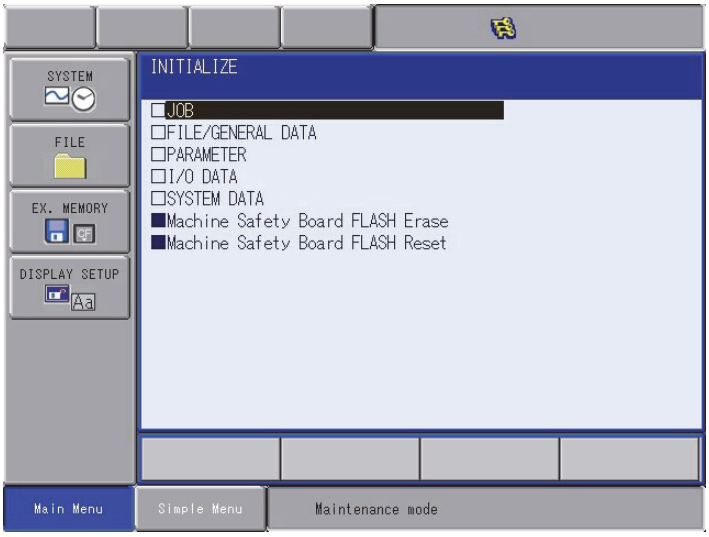


NOTE

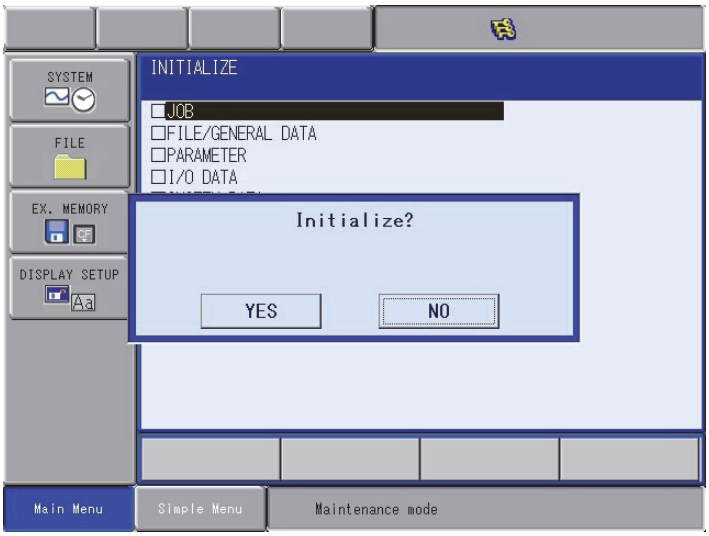
This alarm does not occur by failure.
It occurs since the structure of the variable data (including the position data) has changed in the system software version DN 1.70.00A(☐)-00.

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.

NOTE 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.

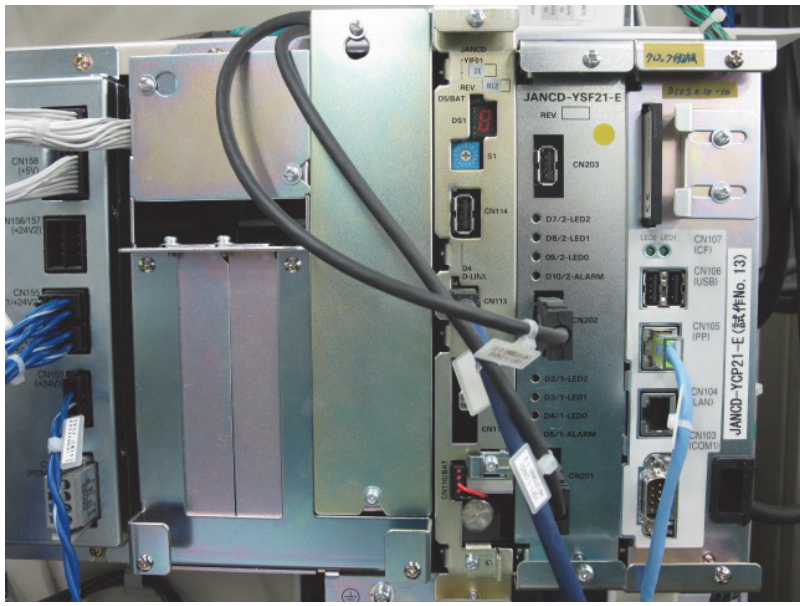
4. Start up the DX200 in the normal mode again, and download each file saved before the downgrade as necessary.

7 Troubleshooting

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

7.1 Back Up the CompactFlash

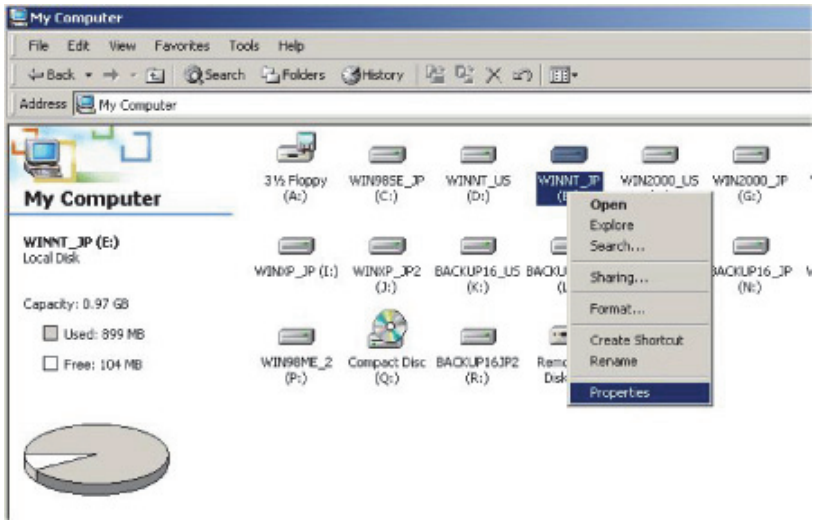
If the DX200 does not start up normally, or if a file load error occurs although the DX200 does start up after initialization or data reconstruction, restore the CompactFlash in the YCP21 board following the instructions below.



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.

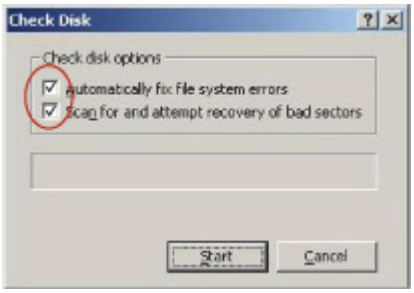
– If an error occurs at this point, follow the procedure below.

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

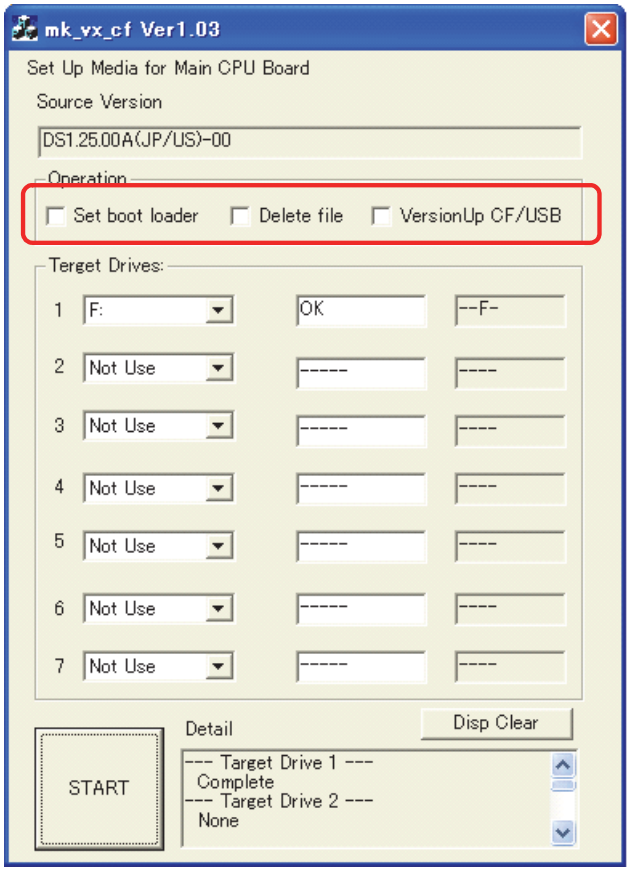


(2) Then, click the [Tools] tab and click "Check Now" in the [Error-checking] box.

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



4. Perform the same operations as described in *section 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.



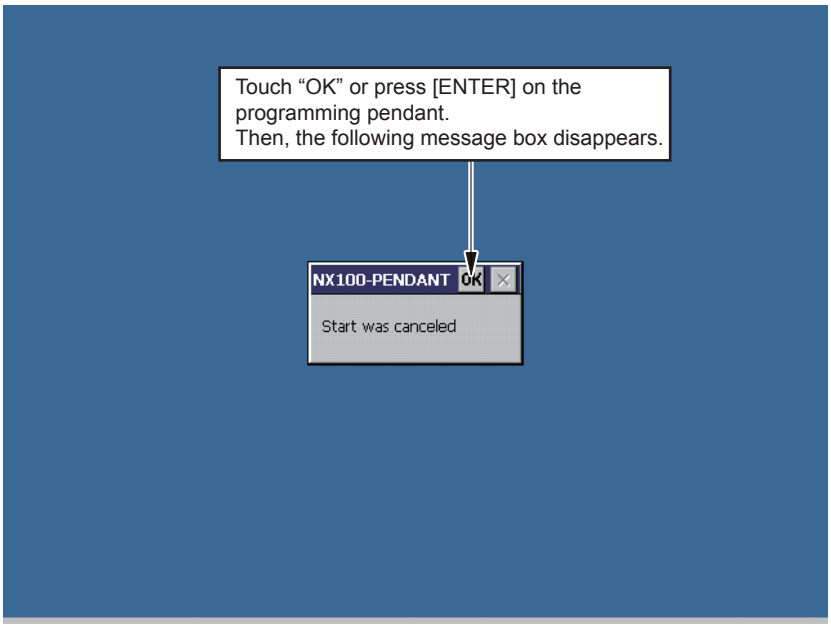
5. After the files are copied into the CompactFlash, return it to the YCP21 board.
6. Perform initialization in the Maintenance mode.

7.2 How to Repair Programming Pendant when Fonts are Garbled

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

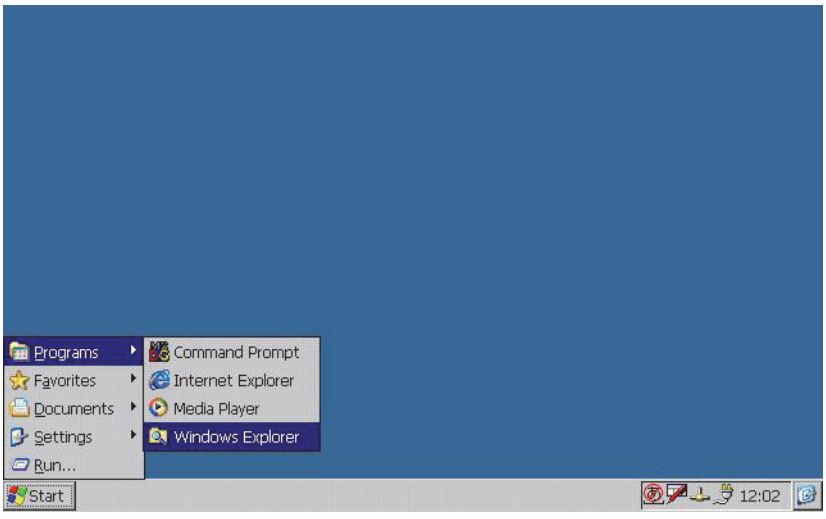
1. Prepare the CompactFlash for upgrading the DX200.
   The CompactFlash can be replaced with the USB.
   The preparing procedure using the CompactFlash is described in this manual.
2. Insert the CompactFlash for upgrading the DX200 to the CF slot on the programming pendant. Turn ON the main power of 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

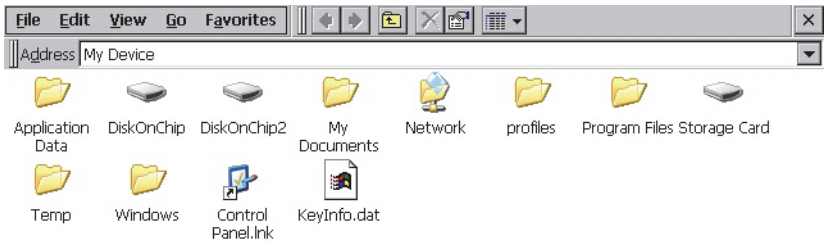


4. When Window 3 appeared as follows, either double click “DiskOnchip2” folder or move the cursor to “DiskOnchip2” folder and press [ENTER].
   Then the list of files stored in “DiskOnchip2”. After the list appears, delete all files. After the files are deleted, return to the list of folders like Window 3.

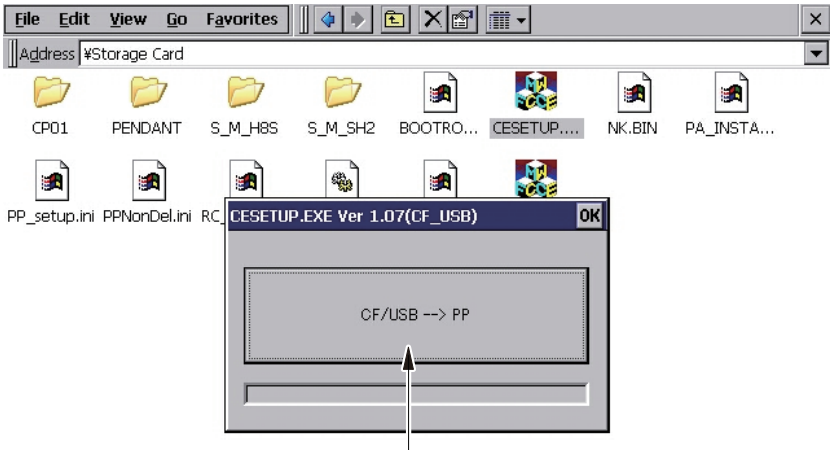
5. Double click “Storage Card” folder or move the cursor to “Storage Card” folder and press [ENTER].
   The list of files stored in “Storage Card” folder appears.
   Double click “CESETUP.EXE” folder or move the cursor to “CESETUP.EXE” folder and press [ENTER].
   Then, Window 4 appears.

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

Window 3



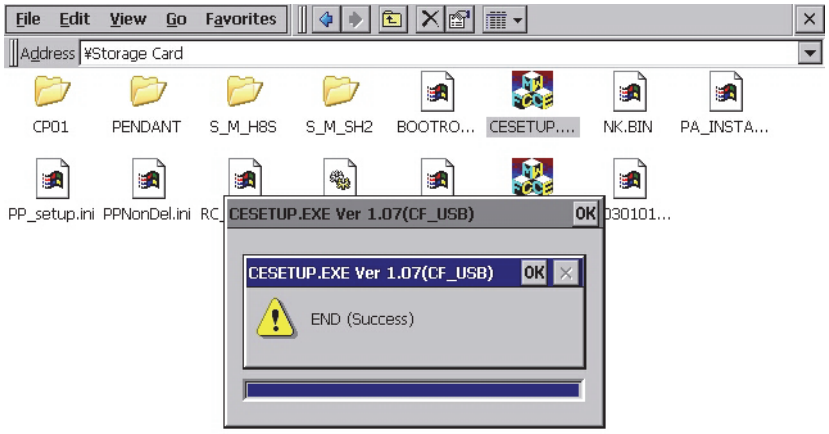
Window 4



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 .

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

HEAD OFFICE
2-1 Kurosakishiroishi, Yahatanishi-ku, Kitakyushu 806-0004, Japan
Phone +81-93-645-7703 Fax +81-93-645-7802

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

YASKAWA Europe GmbH（Robotics Divsion ）
Yaskawastrasse 1, 85391 Allershausen, Germany
Phone +49-8166-90-100 Fax +49-8166-90-103

YASKAWA Nordic AB
Verkstadsgatan 2, Box 504 ,SE-385 25 Torsas, Sweden
Phone +46-480-417-800 Fax +46-486-414-10

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

YASKAWA SHOUGANG ROBOT Co. Ltd.
No7 Yongchang North Road, Beijing E&T Development Area, China 100176
Phone +86-10-6788-2858 Fax +86-10-6788-2878

YASKAWA India Private Ltd. (Robotics Division)
#426, Udyog Vihar, Phase- IV, Gurgaon, Haryana, India
Phone +91-124-475-8500 Fax +91-124-475-8542

YASKAWA Electric Korea Corporation
35F, Three IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, Korea 07326
Phone +82-2-784-7844 Fax +82-2-784-8495

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

YASKAWA Electric (Singapore) PTE Ltd.
151 Lorong Chuan, #04-02A, New Tech Park, Singapore 556741
Phone +65-6282-3003 Fax +65-6289-3003

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

PT. YASKAWA Electric Indonesia
Secure Building-Gedung B Lantai Dasar & Lantai 1 JI. Raya Protokol Halim Perdanakusuma,
Jakarta 13610, Indonesia
Phone +62-21-2982-6470 Fax +62-21-2982-6741

YASKAWA

MANUAL NO.
HW1481995 ③