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MITSUBISHI ELECTRIC

CNC

MELDAS MAGIC 64

SETUP INSTRUCTION MANUAL

BNP-B2191A(ENG)

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Introduction

This manual is a guide to use of the MELDASMAGIC series. This manual describes the NC card setting method, software installation method, etc. Before starting NC card connection or software installation, please read this manual carefully.

To use the MELDASMAGIC series safely, please use the product after fully understanding the "SAFETY PRECAUTIONS" on the next page.

Precautions for Safety

Before starting installation, operation, programming or maintenance/inspection, always read the specification issued by the machine manufacturer, this manual, relevant manuals and supplied documents carefully to use the product correctly. Use the product after fully understanding all the knowledge, safety information and precautions of this numeral control unit.
In this manual, the safety instructions are ranked as "DANGER", "WARNING" and "CAUTION".

⚠ **DANGER**	When the user may be subject to imminent fatalities or major injuries if handling is mistaken.
⚠ **WARNING**	When the user may be subject to fatalities or major injuries if handling is mistaken.
⚠ **CAUTION**	When the user may be subject to injuries or when physical damage may occur if handling is mistaken.

Note that the "⚠CAUTION" level may lead to a serious consequence according to the circumstances. Always follow the instructions because they are important.

⚠ **DANGER**
Not applicable in this manual.

⚠ **WARNING**
Not applicable in this manual.

⚠ **CAUTION**
Items related to product and manual ⚠ If the descriptions relating to the “restrictions” and “allowable conditions” conflict between this manual and the machine manufacturer’s instruction manual, the latter has priority over the former. ⚠ The operations to which no reference is made in this manual should be considered impossible. ⚠ This manual is complied on the assumption that your machine is provided with all optional functions. Confirm the functions available for your machine before proceeding to operation by referring to the specification issued by the machine manufacturer. ⚠ In some NC system versions, there may be cases that different pictures appear on the screen, the machine operates in a different way on some function is not activated.

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1. Outline

This setup instruction manual explains how to set up the MELDASMAGIC64 NC Card, and how to install the software.

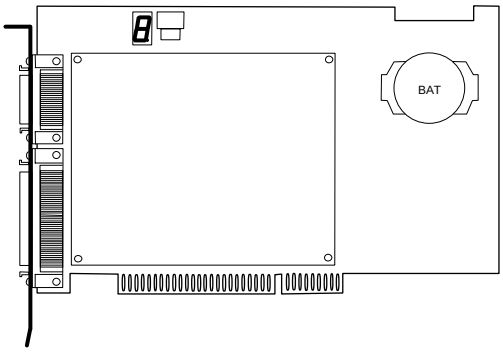
Before setup, read the instruction manuals attached to the products, and the README_E.TXT (English)/README_J.TXT (Japanese) files on the respective floppy disks. These files include the latest information not described in this instruction manual.

2. Introduction

2.1 Types of NC Card

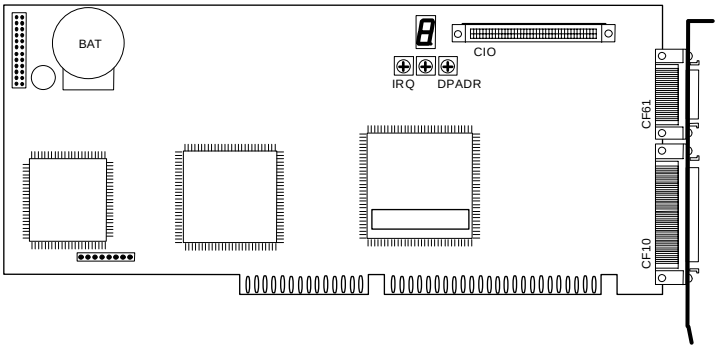
Two types are available as MELDASMAGIC64 NC Card: one type is connected to the PCI bus and the other connected to the ISA bus. In this manual, the former type is referred to as PCI NC Card and the latter type as ISA NC Card.
System requirements for using NC Card are different between PCI NC Card and ISA NC Card. Check “2.2 System Requirements” to set up NC Card.

Figure2.1 PCI NC Card

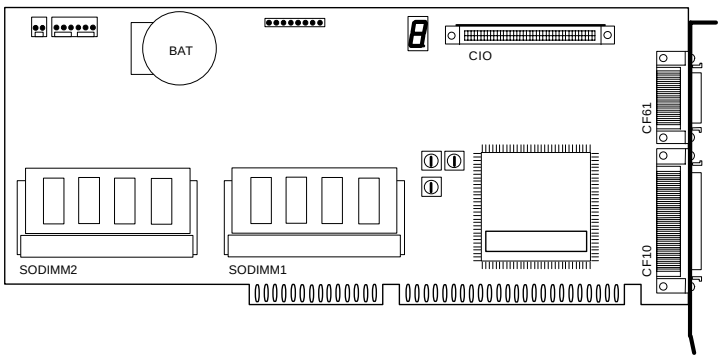


HR655A+HR183 card

Figure2.2 ISA NC Card



HR623C card



HR621B card

2.2 System Requirements

Table 2.1 System Requirements

		PCI NC Card	ISA NC Card
Applicable PC		IBM PC/AT or its compatible computer	
CPU/clock		Depends on the OS used (Refer to the table below).	
Memory		Depends on the OS used (Refer to the table below).	
Hard disk capacity		A free space of 20 MB or more	
Floppy disk drive unit		One or more floppy disk drive of 3.5 in. and 1.44 MB	
Pointing device		A mouse or its compatible pointing device	
Display device		Display device with a resolution of 640x480 dots or more and 256 colors or more	
Expansion slot		PCI bus (PCI bus standard 2.0 or more)	ISA bus
		Card size: 90 x 175 mm	Card size: 100 x 249 mm
		+3V (0.2A or more) supply needed	-
		+5V (2.5A or more)	
		+12V (0.5A or more)	
Drooping characteristic of internal power supply when PC is turned off		It must take 1 ms or more for +5V voltage to drop from +4.5V to +4.0V.	
Applicable OS	Windows95	-	○
	Windows98	-	○
	Windows98 Second Edition	○	○
	WindowsNT4.0	-	○
	Windows2000	○	-
	WindowsXP	○	-

Applicable OS, and recommended CPU/clock and memory

		CPU/clock	Memory
Applicable OS	Windows95 OSR2	Pentium/100 MHz or more Pentium /150 MHz or more recommended	16 MB or more 24 MB or more recommended
	Windows98	Pentium/200 MHz or more Pentium /233 MHz or more recommended	16 MB or more 24 MB or more recommended
	Windows98 Second Edition	Pentium/200 MHz or more Pentium /233 MHz or more recommended	24 MB or more 32 MB or more recommended
	Windows NT4.0 Workstation (SP3 or later)	Pentium/200 MHz or more Pentium /233 MHz or more recommended	24 MB or more 32 MB or more recommended
	Windows2000	Pentium/300 MHz or more	64 MB or more 128 MB or more recommended
	WindowsXP	Pentium/300 MHz or more	128 MB or more

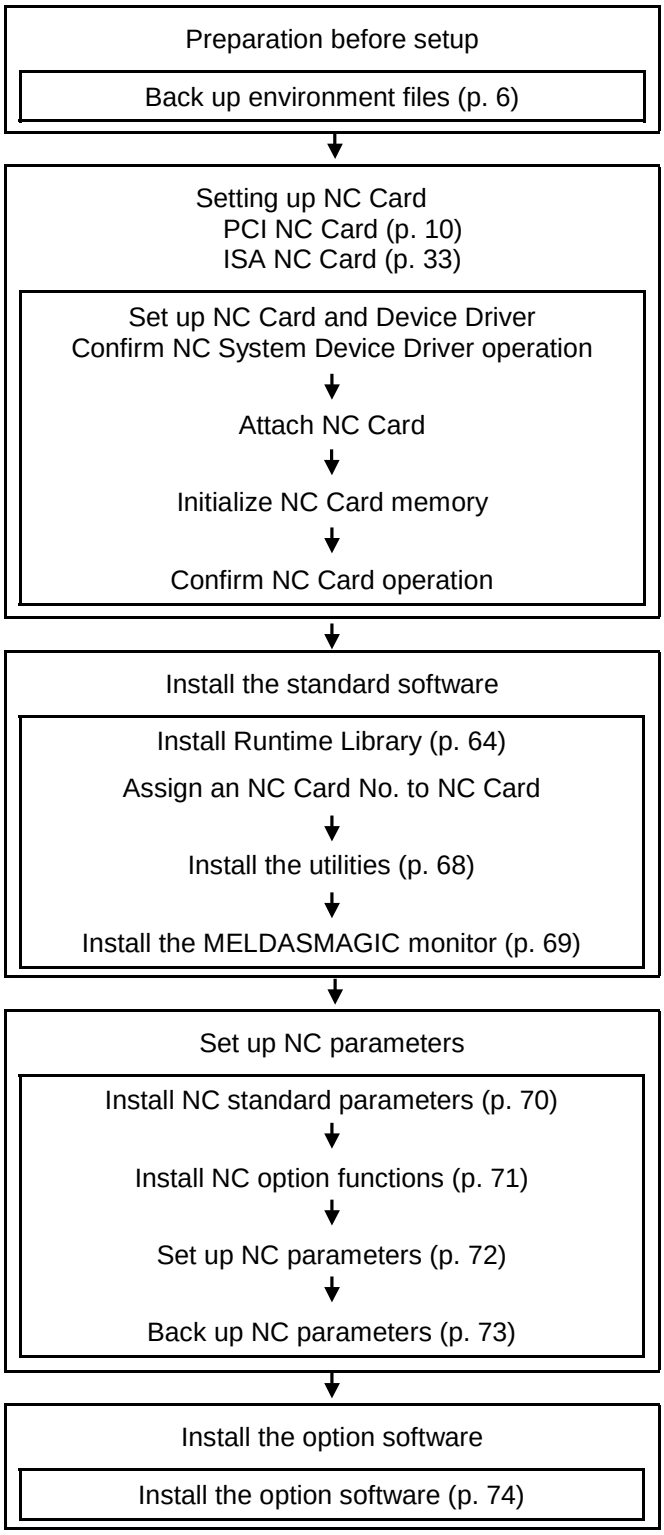
Note: The recommended values above are standards and do not guarantee the comfortable operation of the software you add.

3. Outline of Setup Operations

3.1 New Setup

When newly setting up MELDASMAGIC64 in the personal computer, follow the procedures below.

Set up the MELDASMAGIC64 system



3.2 Upgrading Software Version

3.2.1 Upgrading NC System Version

There are two methods for upgrading version of NC System as shown below.

Method 1: Carry out change operations on the device driver.

Method 2: Reinstall the device driver.

The method to be used depends on the changed object of the software. The followings are the typical examples of which methods is used for what.

- When the device driver for NC Card is changed ..... Method 1
- When the NC System software is changed ..... Method 1
- When NC Card is replaced with a card of a different model (for example HR621B, HR623C) ..... Method 2
- When using Windows NT/2000/XP ..... Method 2

The above methods are only applicable to general cases. For more details, refer to the instruction manual attached to each version of NC System software, and README_E.TXT (English) / README_J.TXT(Japanese).

When NC Card is replaced, it is necessary to copy the data saved in the NC Card to the new card. Be sure to follow the directions on the instruction manual attached to the product to perform the copy operation.

■ Method 1: Change NC System Device Driver

Use the [Change Driver] button on the property sheet of NC System Device Driver to change NC System Device Driver. In this case, personal computer's resources (memory, I/O port, and IRQ) used by the NC Card is not changed. Therefore, setting up NC Card is not needed.

■ Method 2: Reinstall NC System Device Driver

Reinstall NC System Device Driver by deleting the currently used device driver once and then installing NC System Device Driver again. In this case, personal computer's resources (memory, I/O port, and IRQ) used by the NC Card may be changed. Consequently, setting up NC Card is necessary when you use ISA NC Card. For PCI NC Card, resources are set up automatically, and setting up NC Card is not needed.

When reinstalling NC System Device Driver, set the same NC Card No. as the one used before deletion. If a different NC Card No.is set, environment settings may be erased.

3.2.2 Upgrading Other Application Version

Version upgrade of other applications can be executed basically by overwriting the currently used software. Be careful about using this method because information customized by the user, such as software operational environment or execution information, may be erased.

For practical upgrading methods, refer to the instruction manual attached to each application software.

4. Setting up MELDASMAGIC64 System

4.1 Before You Begin Setup

4.1.1 Backing Up Environment Files

When using PCI NC Card, the procedures of this chapter are not needed. Proceed to chapeter 4.2.1.

When using ISA NC Card, be sure to save the personal computer's environment files before setup. The files saved here will be necessary for restoration in case the further installation operations cause failure in the personal computer.

The backup methods of environment files depend on the OS type.
For Windows 95 or Windows 98 (including Second Edition), proceed to chapter 4.1.1.1.
For Windows NT, proceed to chapter 4.1.1.2.

4.1.1.1 Backing up Windows 95/98 Environment Files

■ Save the Windows environment files.

Create a backup directory (C:\backup\), and save the copies of the following files. (If any file is not displayed, refer to Problem 1 of chapter 6.3.)

The following files in the root directory (normally C:\) of the boot drive

- autoexec.bat
- config.sys

The following files in the Windows 95/98 directory (normally C:\Windows\)

- system.ini
- win.ini
- user.dat
- system.dat

[Procedures]

(1) Start "Explorer."

1) Click [Start] - [Program] - [Explore].

(2) Create a folder titled "backup" in the C:\ folder.

1) Select drive C, and click [File] - [New] – [Folder].
2) Select the created “New folder”, click [File] – [Rename]
3) Input “backup”, and press the Enter key.

(3) Copy the following files from the C:\ folder and C:\Windows folder to C:\backup folder.

*Note: Be sure to copy these file. If these files are moved, return to the original location.

- autoexec.bat file in the C:\ folder
- config.sys file in the C:\ folder
- system.ini file in the C:\Windows folder
- win.ini file in the C:\Windows folder
- user.dat file in the C:\Windows folder
- system.dat file in the C:\Windows folder

1) Click autoexec.bat in the C:\ folder.
2) Click [Edit] - [Copy].
3) Open the C:\backup folder.
4) Click [Edit] - [Paste].
5) By the same operation, copy other files to C:\backup folder.

4.1.1.2 Backing Up Windows NT Environment Files

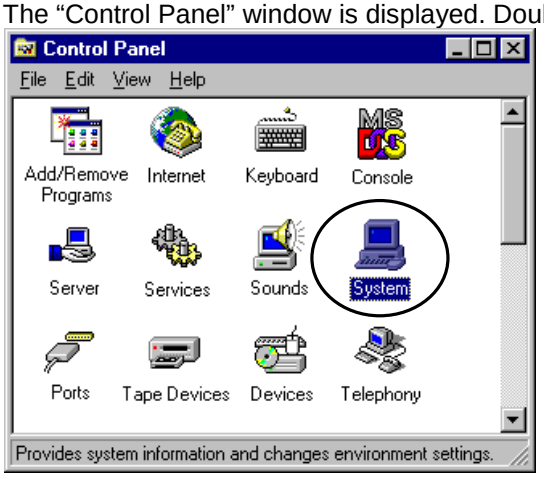
■ Copy the hardware profile.

To copy the hardware profile, you must log in Windows NT as Administrator.
When all the setup operations have completed without failure, delete the copied hardware profile.

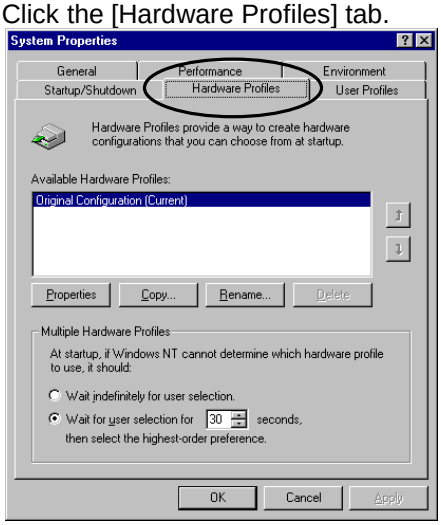
[Procedures]

(1) Click the [Settings] - [Control Panel] menus on the [Start] menu.

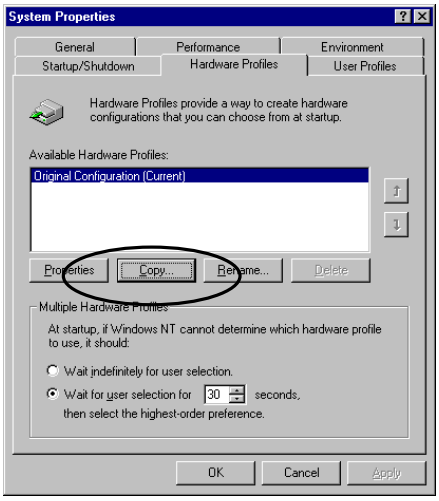
(2) The “Control Panel” window is displayed. Double-click the [System] icon.



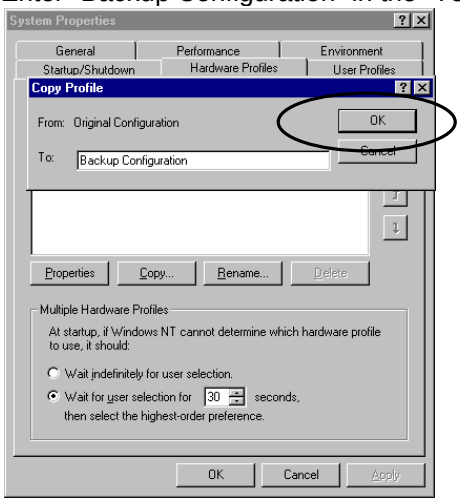
(3) Click the [Hardware Profiles] tab.



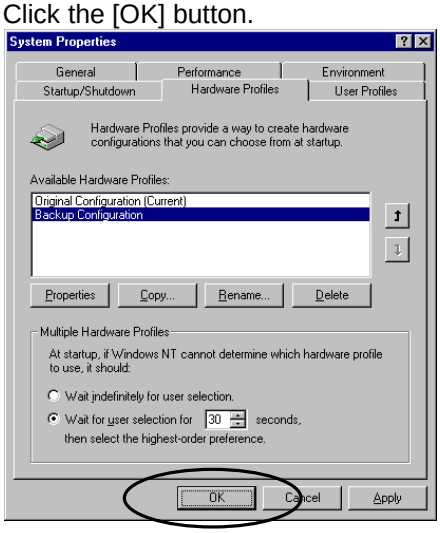
(4) Select “Original Configuration (Current)” from [Available Hardware Profiles], and click the [Copy...] button.



(5) Enter “Backup Configuration” in the “To:” field of the profile, and click the [OK] button.



(6) Click the [OK] button.



4.2 Setting Up NC Card and Device Driver (PCI NC Card)

This chapter describes the installation of NC System Device Driver for PCI NC Card and the procedures for mounting NC Card. (For ISA NC Card, refer to chapter 4.3)
By installing NC System Device Driver, the device driver for NC Card and the MELDASMAGIC64 NC System Software are installed.
For the details of the method for mounting NC Card, refer to “Connection Manual (BNP-B2203).”

The installation procedures of NC System Device Driver differ by each Windows model.
For Windows 2000/XP, refer to chapter 4.2.1. For Windows 98 Second Edition, refer to chapter 4.2.2.
* PCI NC Card cannot be used for any OS other than Windows 2000/XP or Windows 98 Second Edition.

⚠CAUTION
Be sure to remove NC Card out of the personal computer before installing NC Device Driver.

4.2.1 Installing NC System Device Driver for Windows 2000/XP

4.2.1.1 Installing NC System Device Driver

Install NC System Device Driver according to the procedures below.

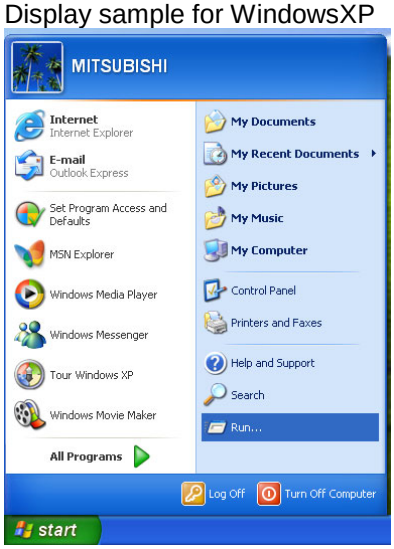
■ Install Device Driver by executing Setup on NC System Disk.

[Procedures]

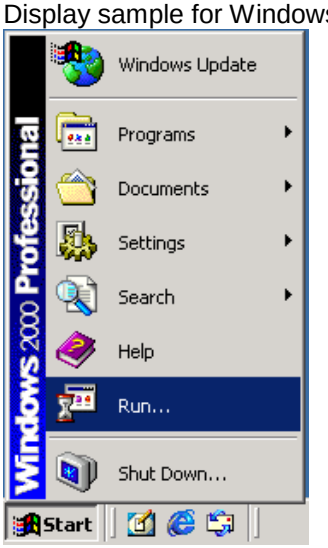
(1) Turn on the personal computer. After Windows starts up, insert the floppy disk titled “NC System Disk 1” into drive A.

(2) Click [Run...] on the [Start] menu of the task bar.

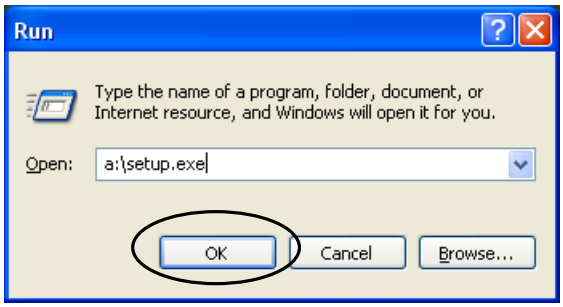
Display sample for WindowsXP

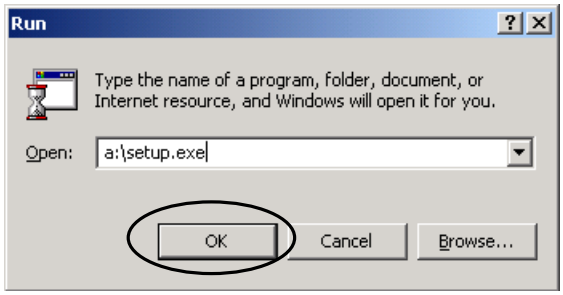


Display sample for Windows2000

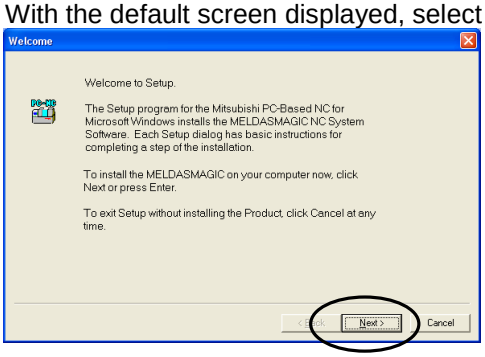


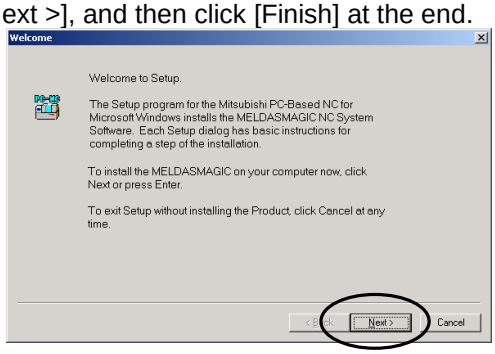
(3) The [Run…] window appears.
Fill in the [Open:] field as below, and then click [OK].
a:\setup.exe

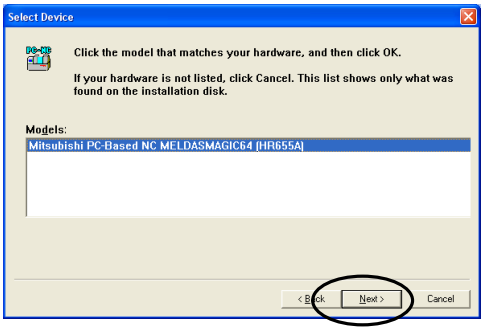


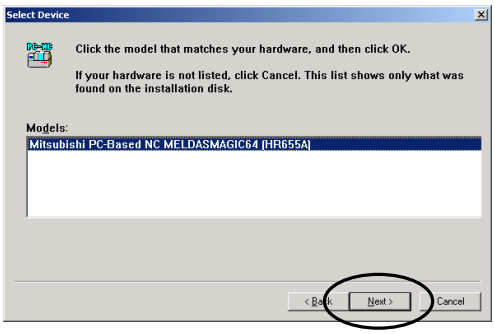


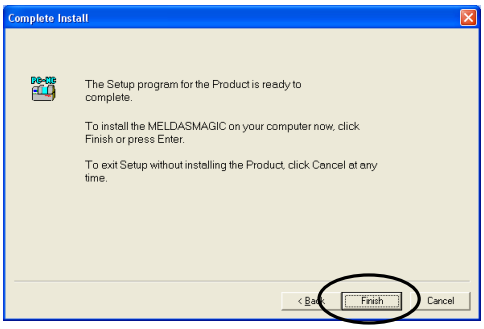
(4) Install the software according to the directions of the installation program.
With the default screen displayed, select [Next >], and then click [Finish] at the end.

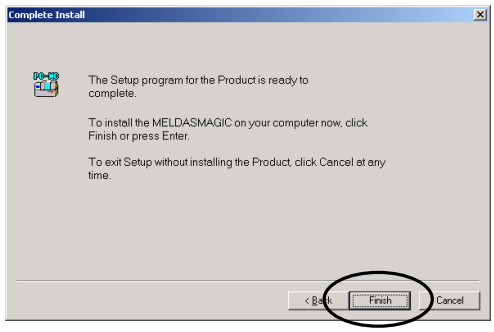




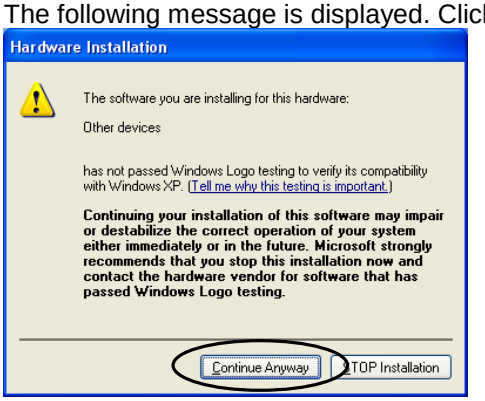






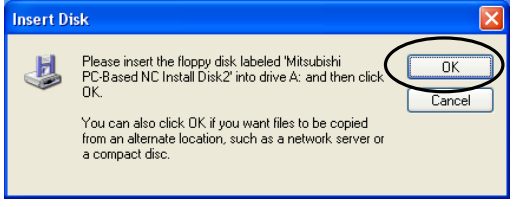


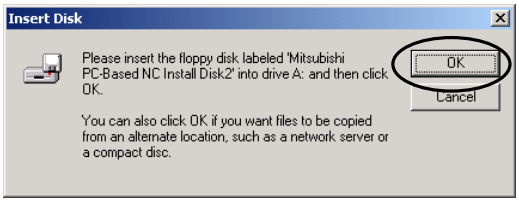
(5) The following message is displayed. Click [Continue Anyway].



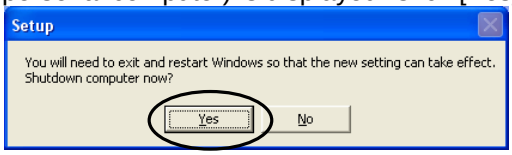
*The screen does not exist for Windows2000.

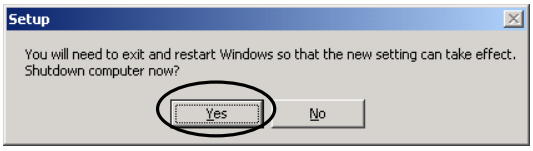
(6) If the “Insert Disk” window is displayed, insert the next disk into drive A, and then click [OK].





(7) A message confirming the shutdown of the personal computer (exit Windows and turn off the personal computer) is displayed. Click [Yes].





(8) Exit Windows and turn off the personal computer. (In some cases, the personal computer is turned off automatically.)
*Take out the floppy disk.

4.2.1.2 Mounting NC Card

Mount NC Card according to the procedures below.

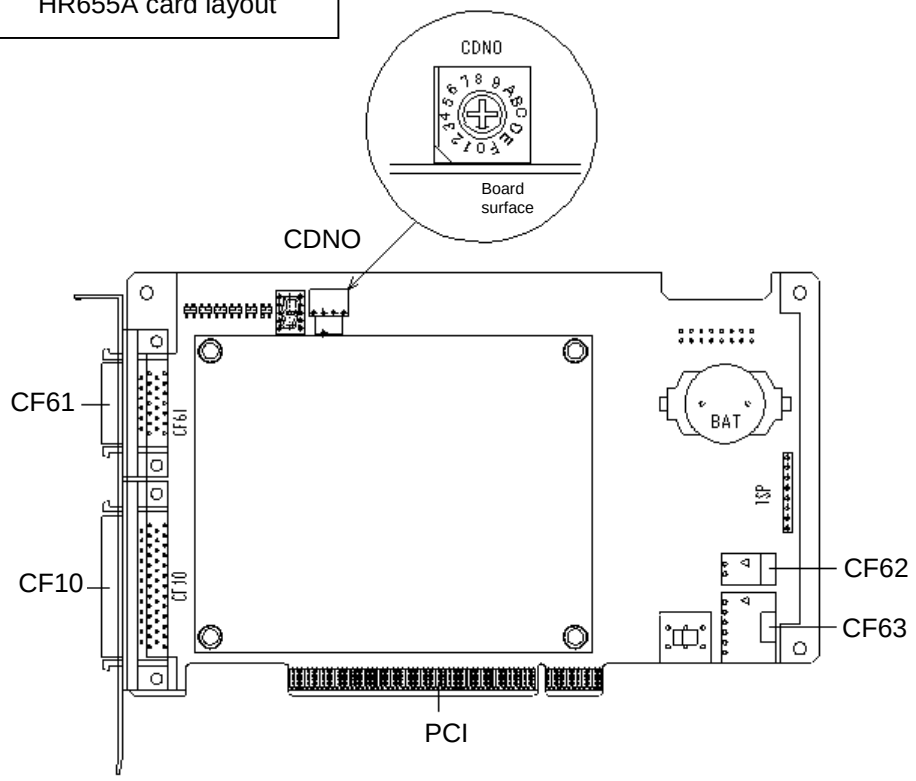
> ⚠**CAUTION**
> **Be sure to unplug the personal computer before mounting NC Card. In case this operation is executed with the power on, the devices may be damaged.**

■ Set the rotary switch on NC Card.

[Procedure]

(1) Refer to the following NC Card layout, and set the rotary switch (CDNO). If there is only one NC Card to be mounted, set 0. If there is more than one NC Card to be mounted, set the switches on the respective NC Cards to different values.

HR655A card layout



Symbol	Description	No. of pins	Factory setting
CF61	Connector relay board connection connector	26 pins	-
CF10	Connector relay board connection connector	50 pins	-
CF62			-
CF63			-
PCI	PCI bus connector		-
CDNO	PCI NC Card station number		0

■ Mount NC Card on the personal computer.

[Procedures]

(1) Mount the battery on NC Card.

(2) Attach NC Card to the personal computer's PCI bus.
*When mounting two or more NC cards, mount all the NC cards at once.

(3) Connect peripheral devices.

* For the details of NC Card mounting and peripheral device connection, refer to "Connection Manual (BNP-B2203)."

4.2.1.3 Installing NC System Device Driver (2)

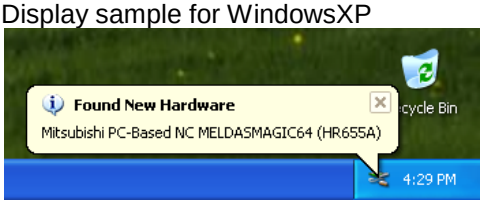
■ Installation of the device driver is continued automatically.

[Procedures]

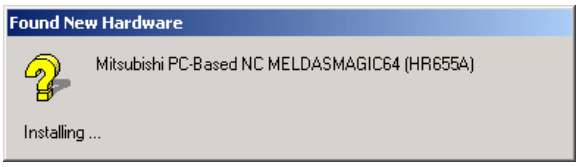
(1) Check the connection of NC Card, and then turn on the personal computer.

Operation: The following message appears on the lower right corner of the screen, and then the "Found New Hardware" wizard is opened.

Display sample for WindowsXP

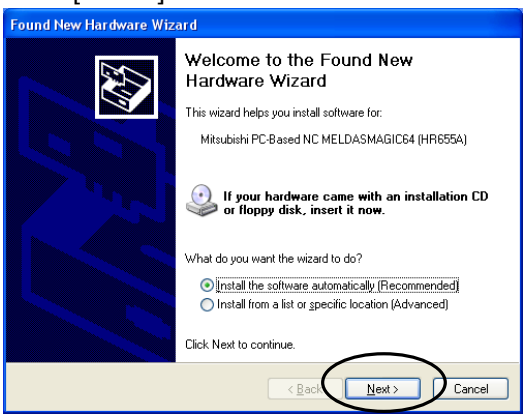


Display sample for Windows2000



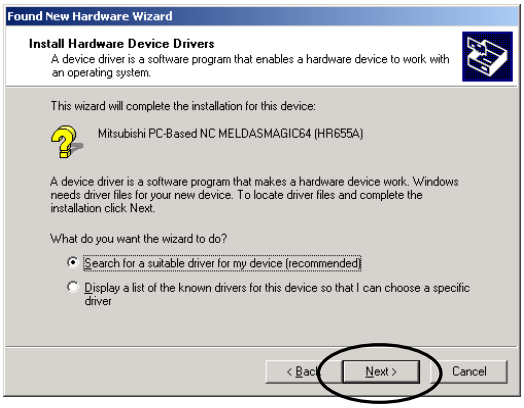
* This message disappears after a period of time.

(2) Click [Next >].



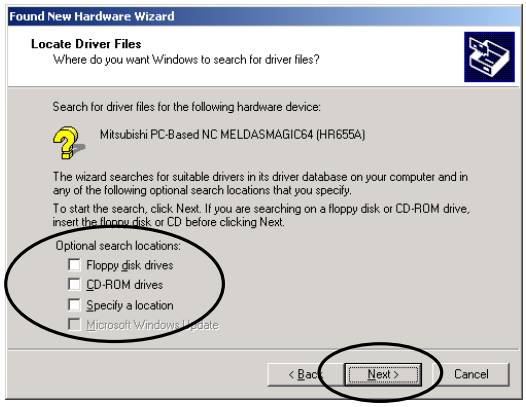
* In some cases, it takes several minutes for this screen to appear.

* This screen does not exist for WindowsXP.

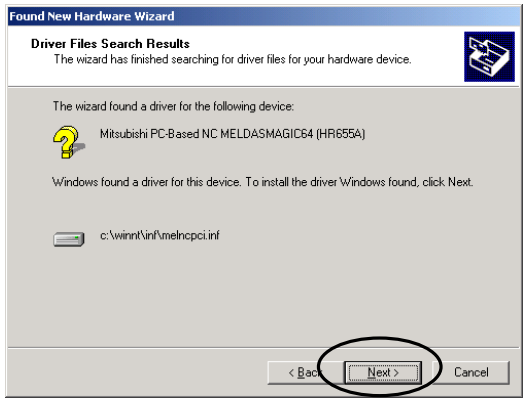


For Windows2000, uncheck all the boxes under "Optional search locations" and click [Next>].

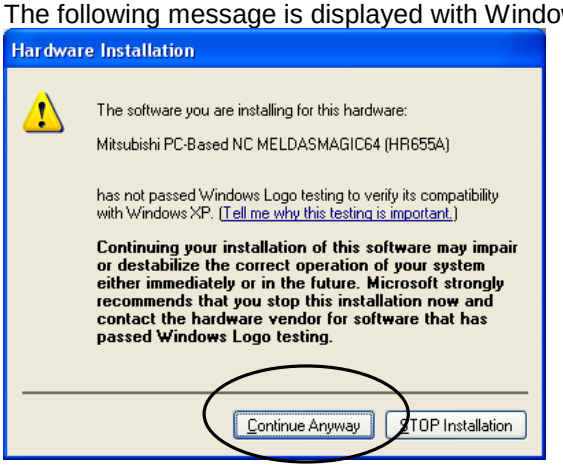
* This screen does not exist for WindowsXP.



* This screen does not exist for WindowsXP.

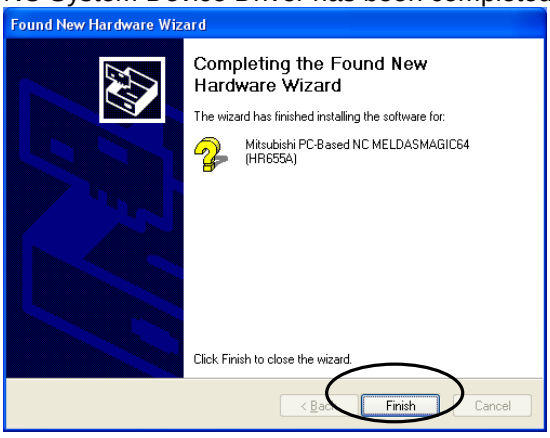


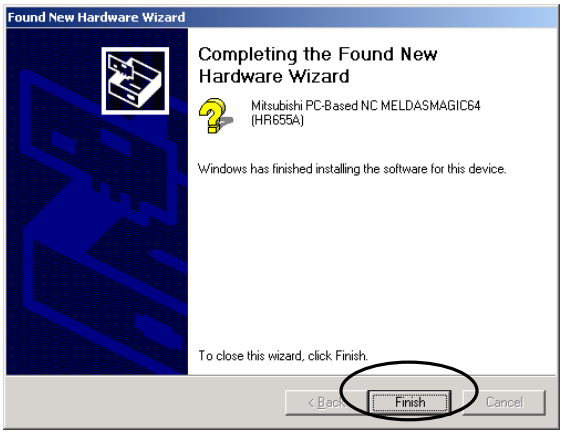
(3) The following message is displayed with WindowsXP. Click [Continue Anyway].



*This screen does not exist for Windows2000.

(4) “Completing the Found New Hardware Wizard” is displayed. Click [Finish]. Now the installation of NC System Device Driver has been completed.





4.2.1.4 Confirm NC System Device Driver Operation

Confirm the installed Device Driver operating normally according to the procedures below.

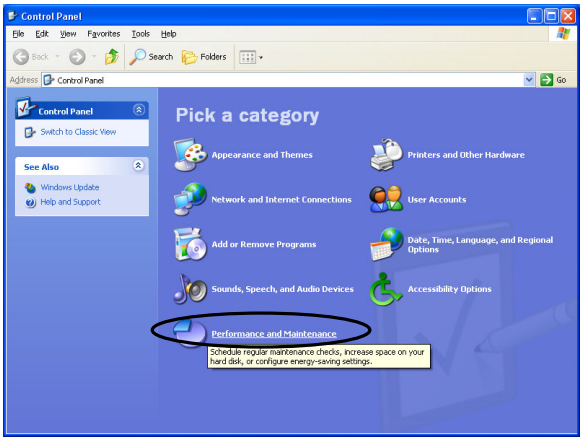
■ Open Device Manager

[Procedures]

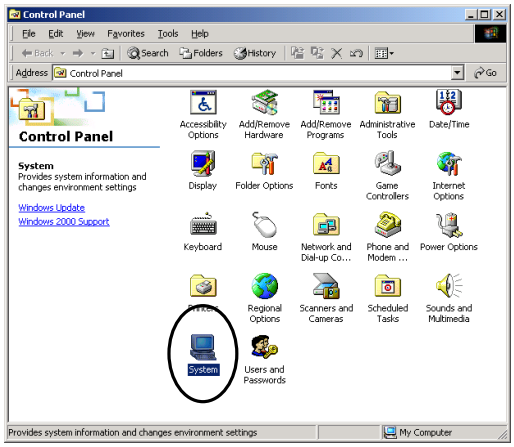
(1) For WindowsXP, click the [Control Panel] menus of the [Start] menu.
For Windows2000, click the [Settings] - [Control Panel] menus of the [Start] menu.

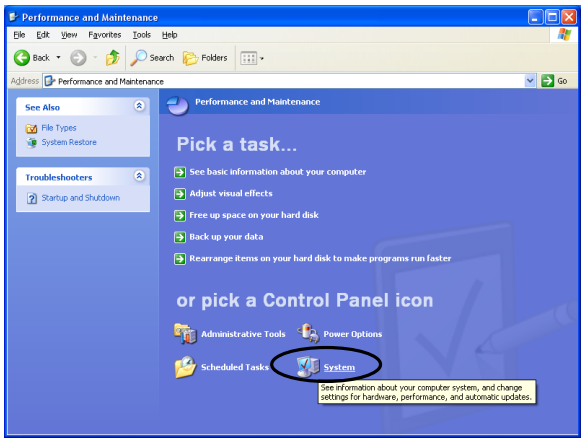
(2) The “Control Panel” window is displayed.
For WindowsXP, click the “Performance and Maintenance” icon on “Control Panel”, and click “System” icon on the “Performance and Maintenance” window.
For Windows2000, Double-click the “System” icon on Control Panel.

Display sample for WindowsXP



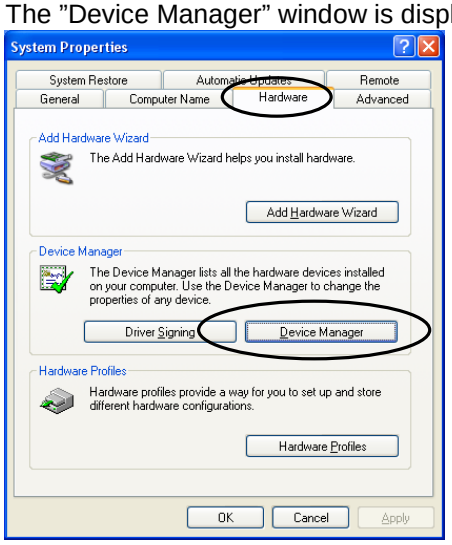
Display sample for Windows2000

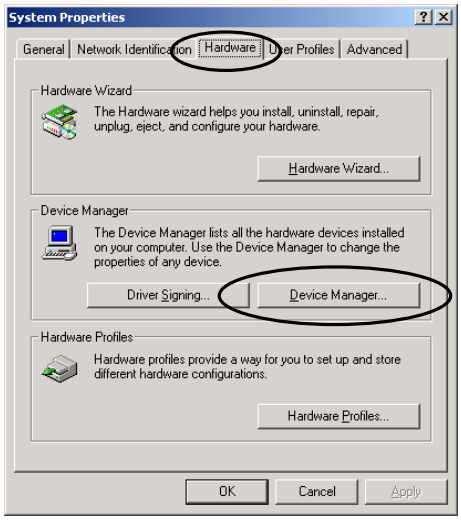


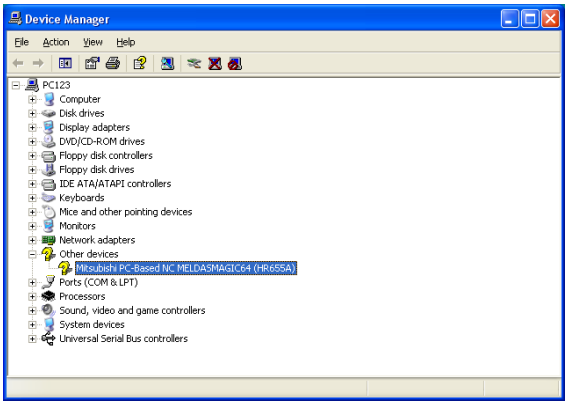


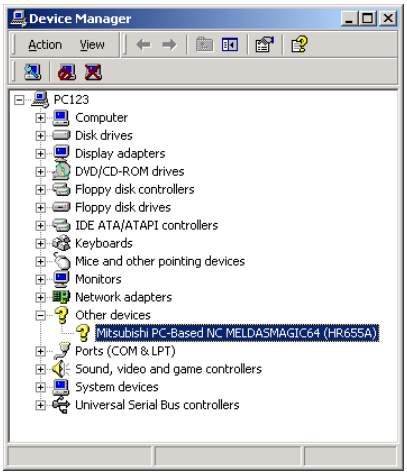
*This screen does not exist for Windows2000.

(3) Click the [Hardware] tab, and click the [Device Manager] button.
The ”Device Manager” window is displayed.







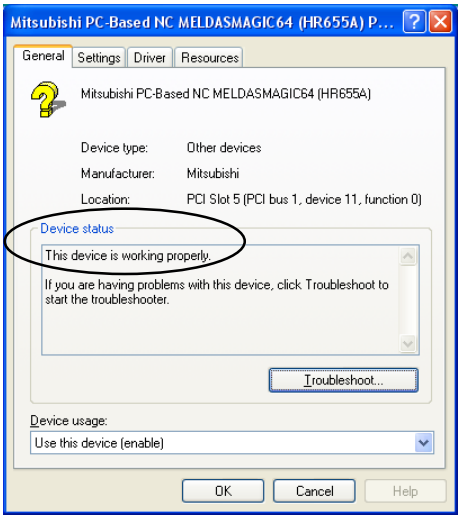


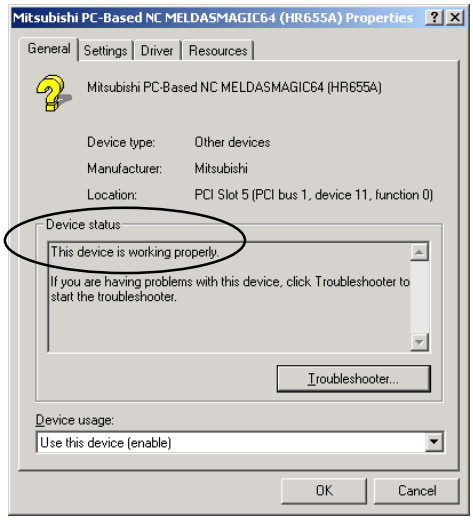
■ Confirm the [Device Status] of NC System Device Driver

[Procedures]

(1) Select [Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A)] below [Other devices], and then click the [Action] - [Properties] menus.

(2) The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A) Properties” window is displayed. If the message of “This device is working properly” is displayed in the “Device status” field, the device is in the normal condition.





4.2.1.5 Initializing the NC Card Memory

Initialize the NC Card memory when starting up NC Card for the first time or replacing the battery of NC Card.

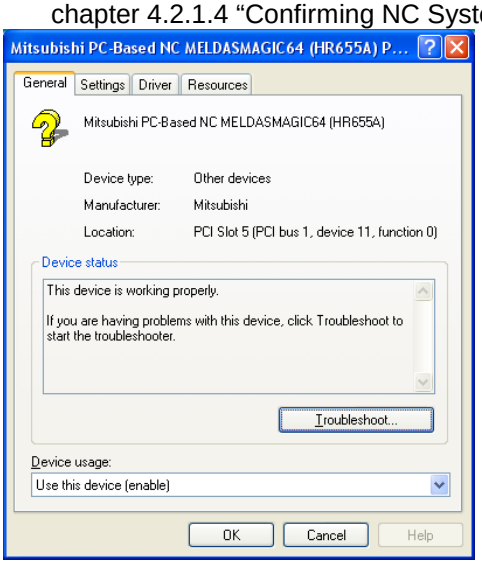
> **⚠CAUTION**
> **All the memory information (such as parameters, machining programs, and ladders) in NC Card is erased when the memory is initialized. When initializing the memory of the NC Card in use, be sure to back up the parameters and so on, as needed, prior to initialization.**

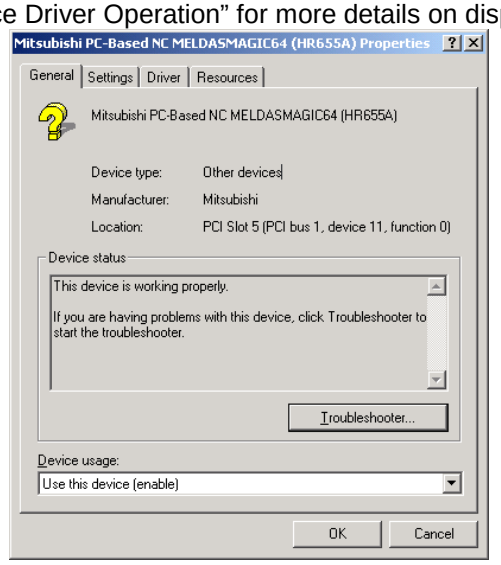
Initialize the NC Card memory according to the procedures below.

■ Open the “Settings” page of "Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A) Properties" screen, and clear the memory of NC Card.

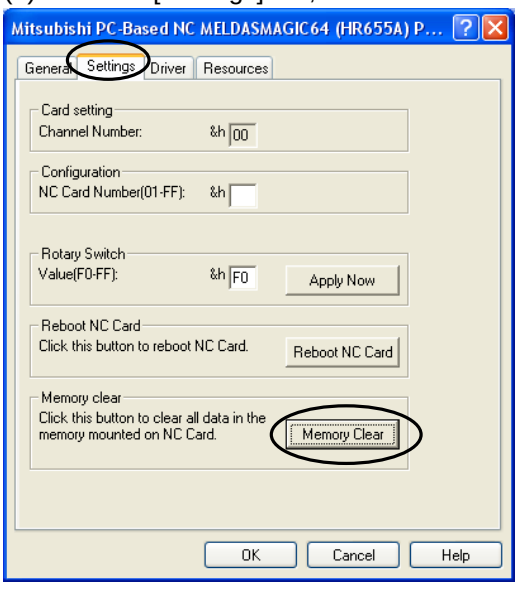
[Procedures]

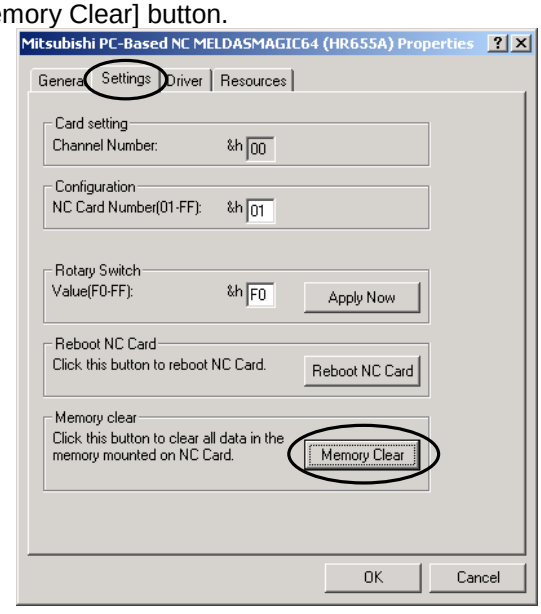
(1) Display the "Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A) Properties" window. Refer to chapter 4.2.1.4 “Confirming NC System Device Driver Operation” for more details on displaying.



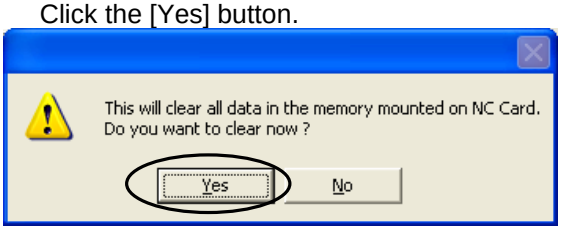


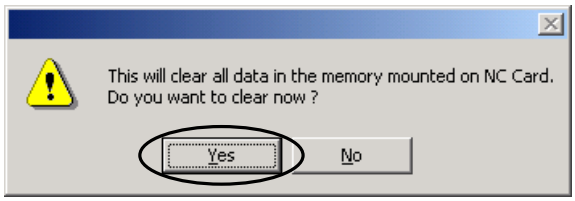
(2) Click the [Settings] tab, and then click the [Memory Clear] button.





(3) A confirmation message whether to execute memory clear is displayed.
Click the [Yes] button.





Operation: The mouse cursor changes to an hourglass, and the NC Card memory is cleared. It takes approximately 1 minute to clear the memory. When the memory clear has finished, the “Memory clear complete!” message is displayed.

(4) Close all the open windows.

4.2.1.6 Confirming NC Card Operation

Confirm the installed Device Driver operating normally according to the procedures below.

■ Confirm the display status of the 7-segment LED on NC Card.
[Procedure]
(1) NC Card is working normally if the 7-segment LED on the NC Card is blinking.

Proceed to chapter 4.4.

4.2.2 Installing NC System Device Driver for Windows 98 (Second Edition)

4.2.2.1 Installing NC System Device Driver

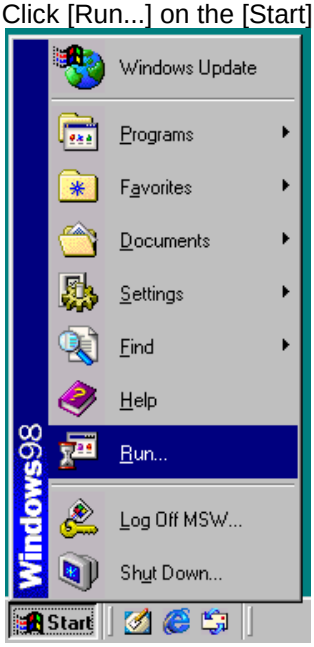
Install NC System Device Driver according to the procedures below.

■ Install Device Driver by executing Setup on NC System Disk.

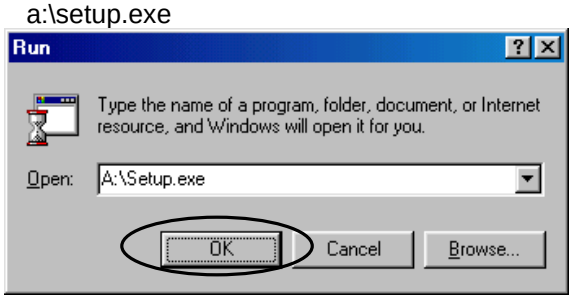
[Procedures]

(1) Turn on the personal computer. After Windows starts up, insert the floppy disk titled “NC System Disk 1” into drive A.

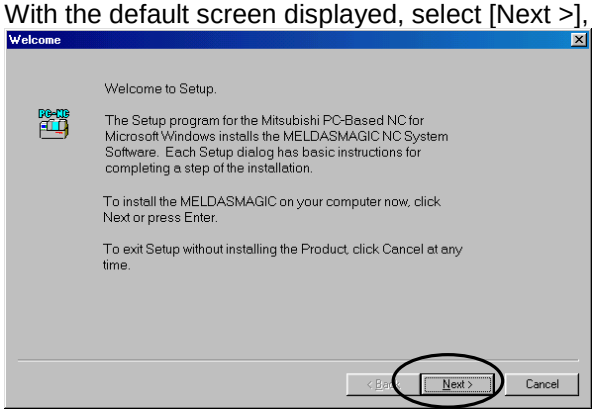
(2) Click [Run...] on the [Start] menu of the task bar.

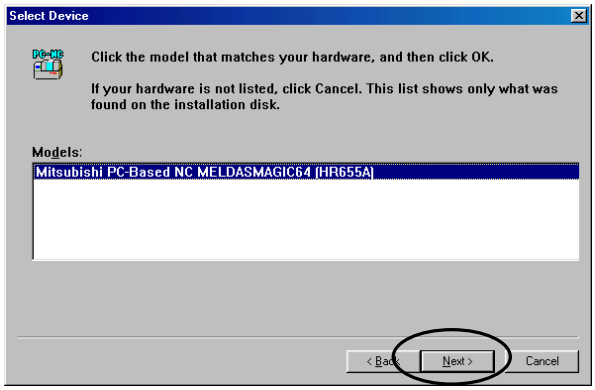


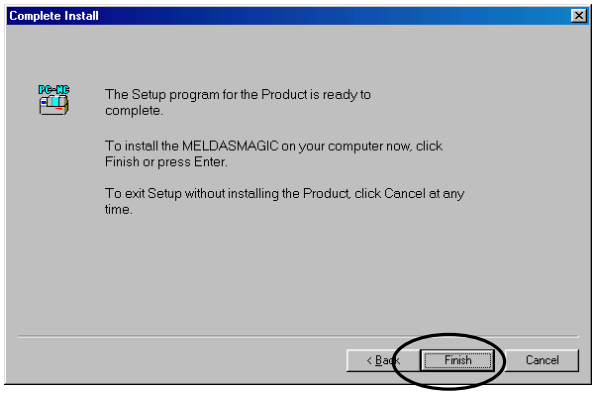
(3) The "Run..." window appears.
Fill in the [Open:] field as below, and then click [OK].
a:\setup.exe



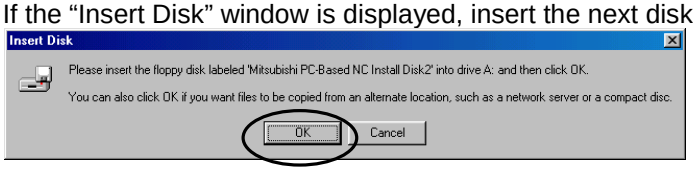
(4) Install the software according to the directions from the installation program.
With the default screen displayed, select [Next >], and then click [Finish] at the end.



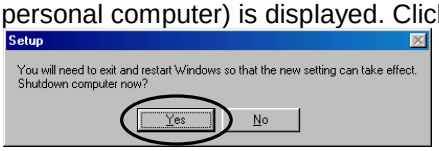




(5) If the “Insert Disk” window is displayed, insert the next disk into drive A, and then click [OK].



(6) A message confirming the shutdown of the personal computer (exit Windows and turn off the personal computer) is displayed. Click [Yes].



(7) Exit Windows and turn off the personal computer. (In some cases, the personal computer is turned off automatically.)
*Take out the floppy disk.

4.2.2.2 Mounting NC Card

Mount NC Card according to the procedures below.

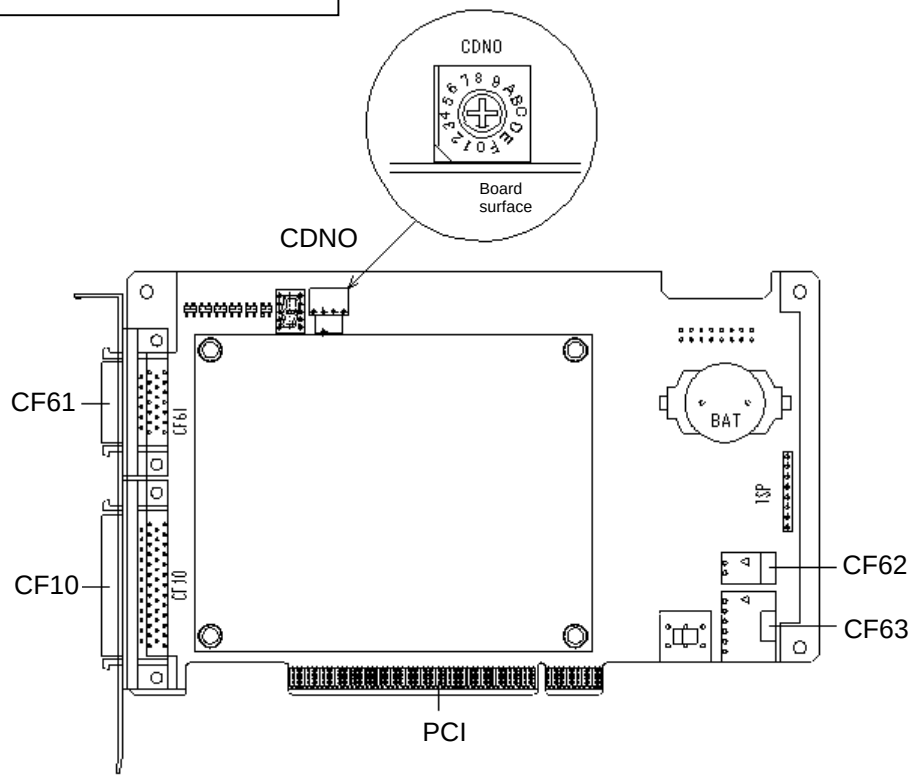
> ⚠**CAUTION**
> **Be sure to unplug the personal computer before mounting NC Card. In case this operation is executed with the power on, the devices may be damaged.**

■ Set the rotary switch on NC Card.

[Procedure]

(1) Refer to the following NC Card layout, and set the rotary switch (CDNO). If there is only one NC Card to be mounted, set 0. If there is more than one NC Card to be mounted, set the switches on the respective NC Cards to different values.

HR655A card layout



Symbol	Description	No. of pins	Factory setting
CF61	Connector relay board connection connector	26 pins	-
CF10	Connector relay board connection connector	50 pins	-
CF62			-
CF63			-
PCI	PCI bus connector		-
CDNO	PCI NC Card station number		0

■ Mount NC Card on the personal computer.

[Procedures]

(1) Attach the battery to NC Card.

(2) Mount NC Card on the personal computer's PCI bus.
*When mounting two or more NC Cards, mount all the NC Cards at once.

(3) Connect peripheral devices.

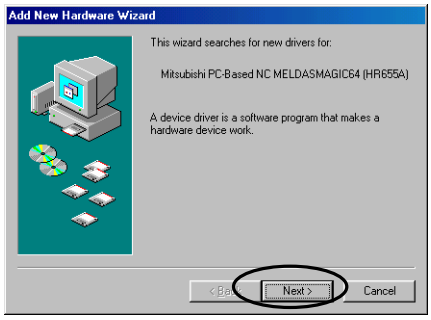
* For the details of NC Card mounting and peripheral device connection, refer to "Connection Manual (BNP-B2203)."

4.2.2.3 Installing NC System Device Driver (2)

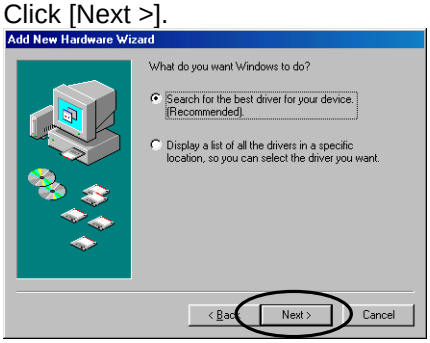
■ Installation of the device driver is continued automatically.

[Procedures]

(1) Check the connection of the NC Card, and then turn on the personal computer. When “Add New Hardware Wizard” opens, click [Next>].

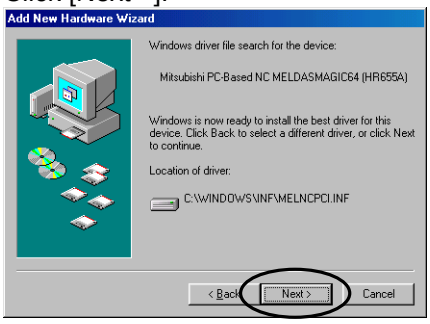


(2) Click [Next >].

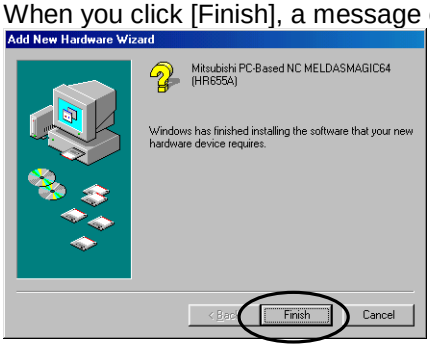


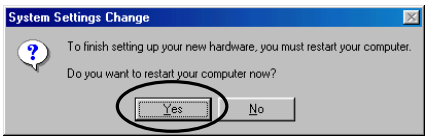
(3) Uncheck all the check boxes as shown in the figure below, and then click [Next >].

(4) Click [Next >].



(5) The installation has been completed.
When you click [Finish], a message confirming restart is displayed. Click [Yes].





4.2.2.4 Confirm NC System Device Driver Operation

Confirm the installed Device Driver operating normally according to the procedures below.

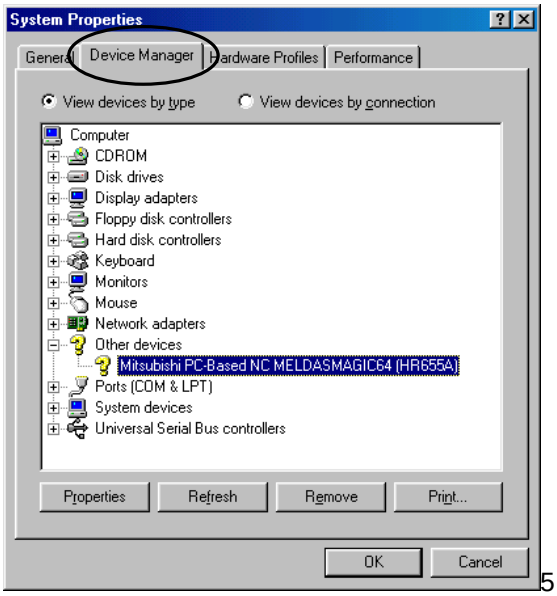
■ Open Device Manager

[Procedures]

(1) After the personal computer is restarted, click [Settings] - [Control Panel] menus of the [Start] menu.

(2) The “Control Panel” window is displayed.
Double-click the “System” icon on Control Panel.

(3) The “System Properties” window is displayed.
Click the “Device Manager” tab.

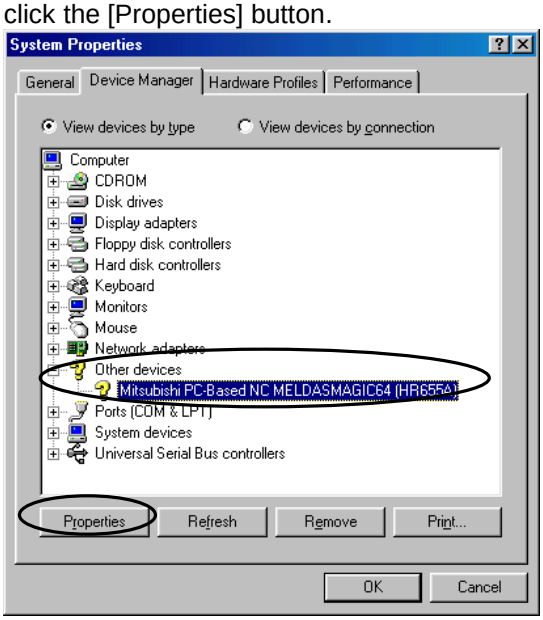


5

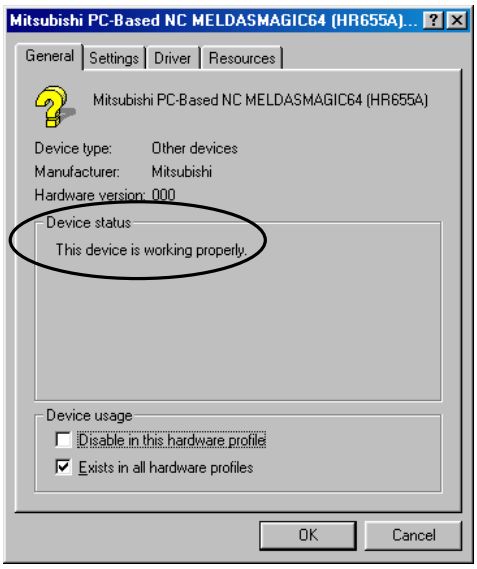
■ Confirm the [Device Status] of NC System Device Driver

[Procedures]

(1) Select [Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A)] below [Other devices], and then click the [Properties] button.



(2) The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A) Properties” window is displayed. If the message of “This device is working properly” is displayed in the “Device status” field, the device is in the normal condition.



4.2.2.5 Initializing the NC Card Memory

Initialize the NC Card memory when you start up NC Card first or replace the battery of NC Card.

> **⚠CAUTION**
> **All the memory information (such as parameters, machining programs, and ladders) in NC Card is erased when the memory is initialized. When initializing the memory of the NC Card in use, be sure to back up the parameters and so on, as needed, prior to initialization.**

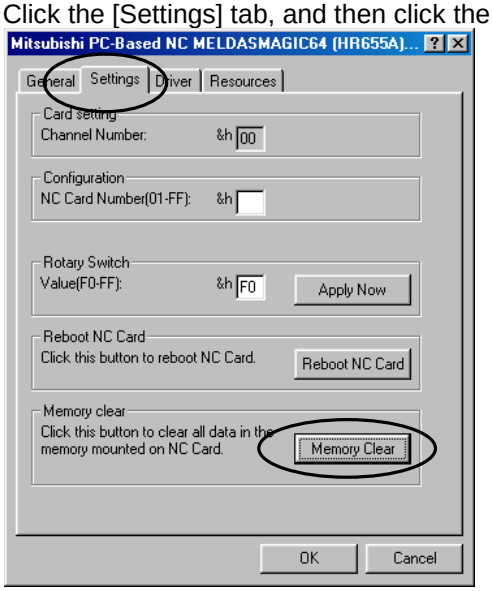
Initialize the NC Card memory according to the procedures below.

■ Open the [Settings] page of the "NC System Device Driver's Properties" screen, and clear the memory of NC Card.

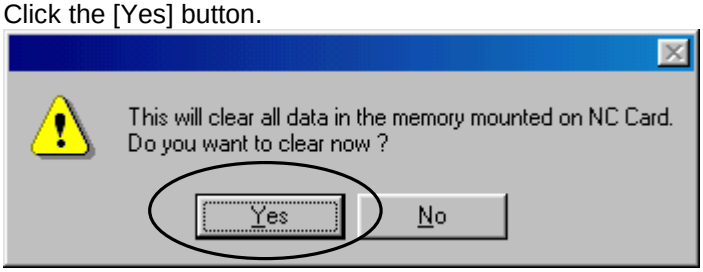
[Procedures]

(1) Display the "Mitsubishi PC-Based NC MELDASMAGIC64 (HR655A) Properties" window. Refer to chapter 4.2.2.4 "Confirming NC System Device Driver Operation" for more details on displaying.

(2) Click the [Settings] tab, and then click the [Memory Clear] button.



(3) A confirmation message whether to execute memory clear is displayed.
Click the [Yes] button.



Operation: The mouse cursor changes to an hourglass, and the NC Card memory is cleared. It takes approximately 1 minute to clear the memory. When the memory clear has finished, the “Memory clear complete!” message is displayed.

(4) Close all the open windows.

4.2.2.6 Confirming NC Card Operation

Using the procedures below to confirm whether the installed NC Card is working normally.

■ Confirm the display status of the 7-segment LED on NC Card.
[Procedure]
(1) NC Card is working normally if the 7-segment LED on the NC Card is blinking.

Proceed to chapter 4.4.

4.3 Setting up NC Card and Device Driver (ISA NC Card)

This chapter describes the installation of NC System Device Driver for ISA NC Card and the procedures for mounting NC Card. (For PCI NC Card, refer to chapter 4.2)

> **⚠CAUTION**
> **Be sure to install NC System Device Driver before mounting NC Card on the expansion slot of the personal computer.**
> **If NC Card has already been mounted on the personal computer, unplug the personal computer and remove NC Card before installing the software.**

By installing NC System Device Driver, the device driver for the NC Card and MELDASMAGIC64 NC System Software are installed.

The installation procedures of NC System Device Driver differ by each Windows model.
For Windows95, refer to chapter 4.3.1. For Windows98 (including Second Edition), refer to chapter 4.3.2. For WindowsNT, refer to chapter 4.3.3.

4.3.1 Installing NC System Device Driver for Windows 95

4.3.1.1 Installing NC System Device Driver

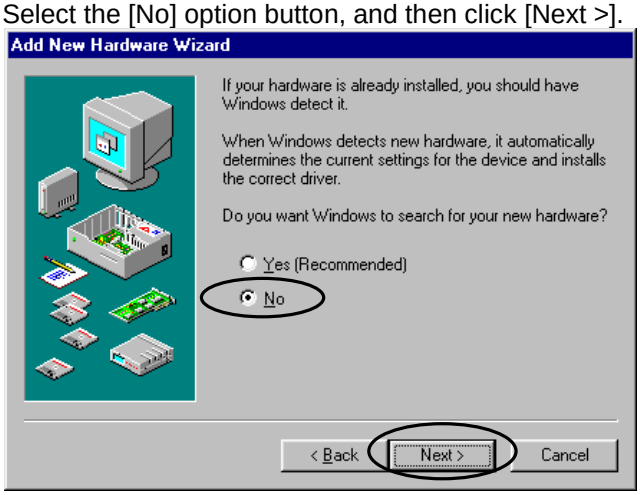
Install NC System Device Driver according to the procedures below.

■ Install Device Driver using a hardware wizard. (Hardware is not detected automatically.)
[Procedures]
(1) Click the [Settings] - [Control Panel] menus of the [Start] menu on the task bar.

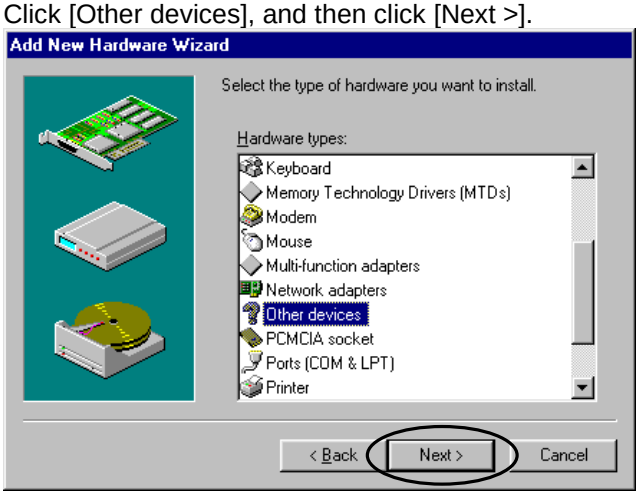
(2) When the “Control Panel” window is displayed, double-click the “Add New Hardware” icon.

(3) The "Add New Hardware Wizard" window appears. Click [Next>].

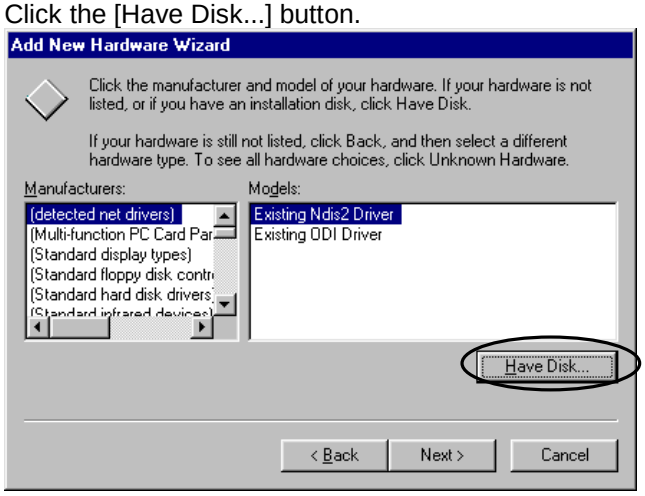
(4) A window confirming the automatic detection of new hardware is displayed. Select the [No] option button, and then click [Next >].



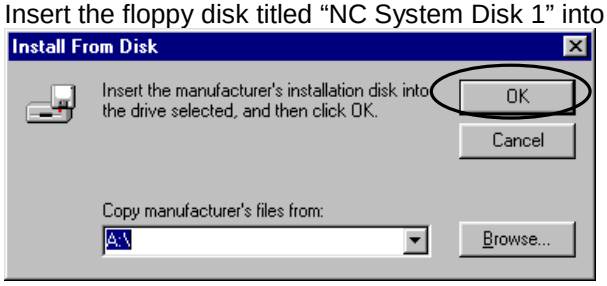
(5) A window for selecting the type of the hardware to be installed is displayed. Click [Other devices], and then click [Next >].



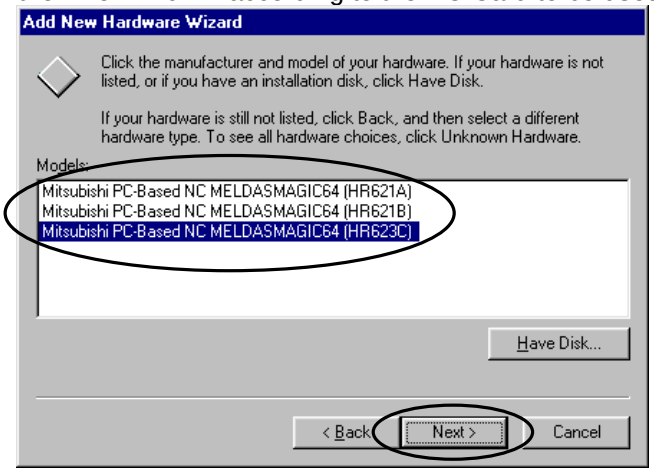
(6) A window for selecting the manufacturer and model of the hardware is displayed.
Click the [Have Disk...] button.



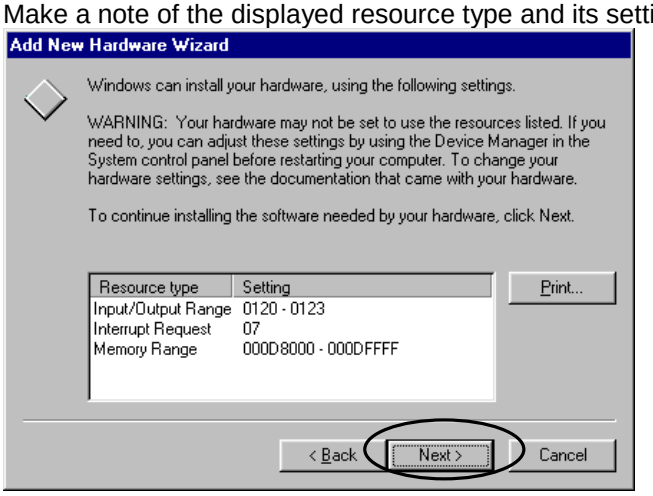
(7) The “Install From Disk” window is displayed.
Insert the floppy disk titled “NC System Disk 1” into drive A, and then click the [OK] button.



(8) A window for selecting the manufacturer and model of the hardware is displayed.
Select “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx),” and then click [Next >]. (Specify the xx of HR62xx according to the NC Card to be used.)



(9) A window for confirming the setup conditions of the hardware to be installed is displayed. Make a note of the displayed resource type and its setting, and then click [Next>].



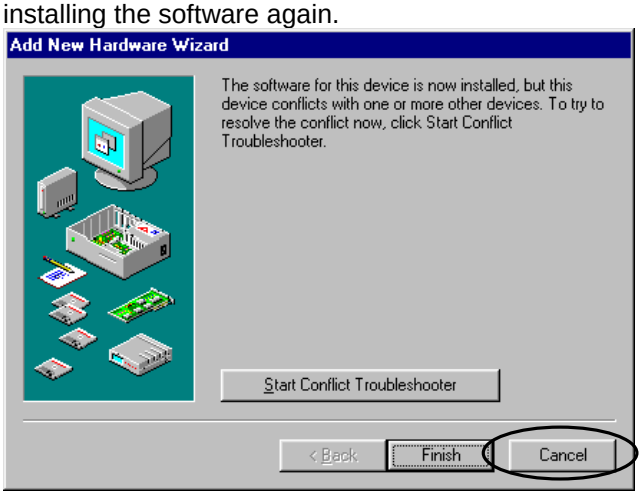
Fill in:

Resource type (The rotaty switch of card)	Setting
I/O port address (IOPADR)	
IRQ (IRQ)	
Memory range (DPADR)	

* The setting may differ every time per installation.

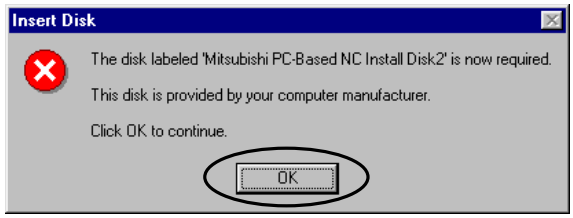
⚠CAUTION
Since the setting will be necessary for the future installation (4.3.1.2 Mounting NC Card), be sure to make a note of it.

(10) Here, if the message of “The software for this device is now installed, but this device conficts with one or more other devices…” is displayed, installation cannot be continued. Click [Cancel]. In this case, refer to Problem 2 of chapter 6.3 “Troubleshooting,” and fix the hardware conflict before installing the software again.

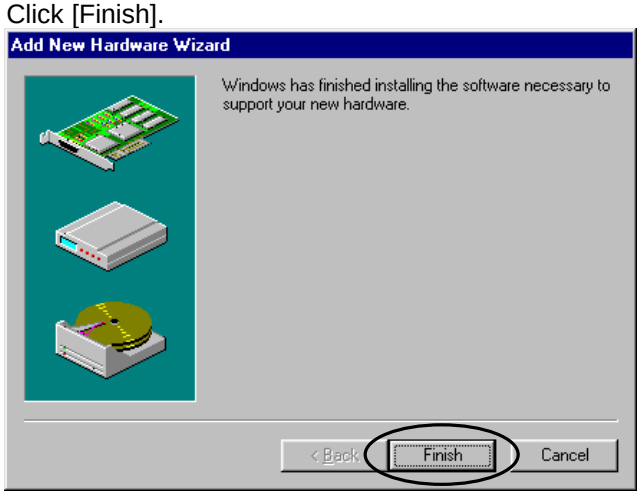


⚠CAUTION
If hardware conflict occurs, <u>be sure to click the [Cancel] button to abort installation</u>. If you click [Next >] to continue to install the software, <u>the personal computer may not start up normally.</u>

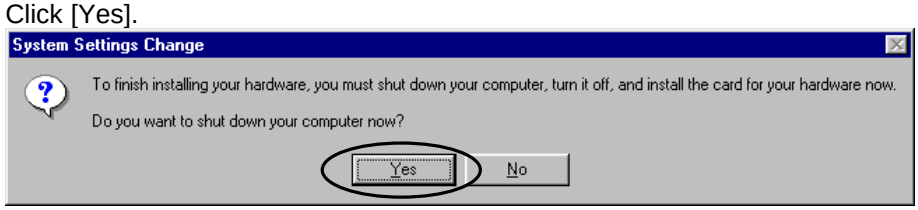
(11) Files are copied. A message prompting a disk change is displayed while the files are copied. Insert the floppy disk into drive A according to the message, and then click [OK].



(12) Copying the files is continued. When copying the files has finished, the finish window is displayed. Click [Finish].



(13) The “System Settings Change” window is displayed.
Click [Yes].



(14) Windows is shutdown, and you can turn off the computer.

(15) Turn off the personal computer. (In some cases, the personal computer is turned off automatically.)
*Take out the floppy disk.

Now the installation of NC System Device Driver has been completed. Proceed to chapter “4.3.1.2 Mounting NC Card.”

⚠CAUTION
Do not turn on the personal computer until you mount NC Card according to the procedures of chapter 4.3.1.2 “Mounting NC Card.” If you turn on the personal computer without mounting NC Card, the personal computer may not start up properly.

4.3.1.2 Mounting NC Card

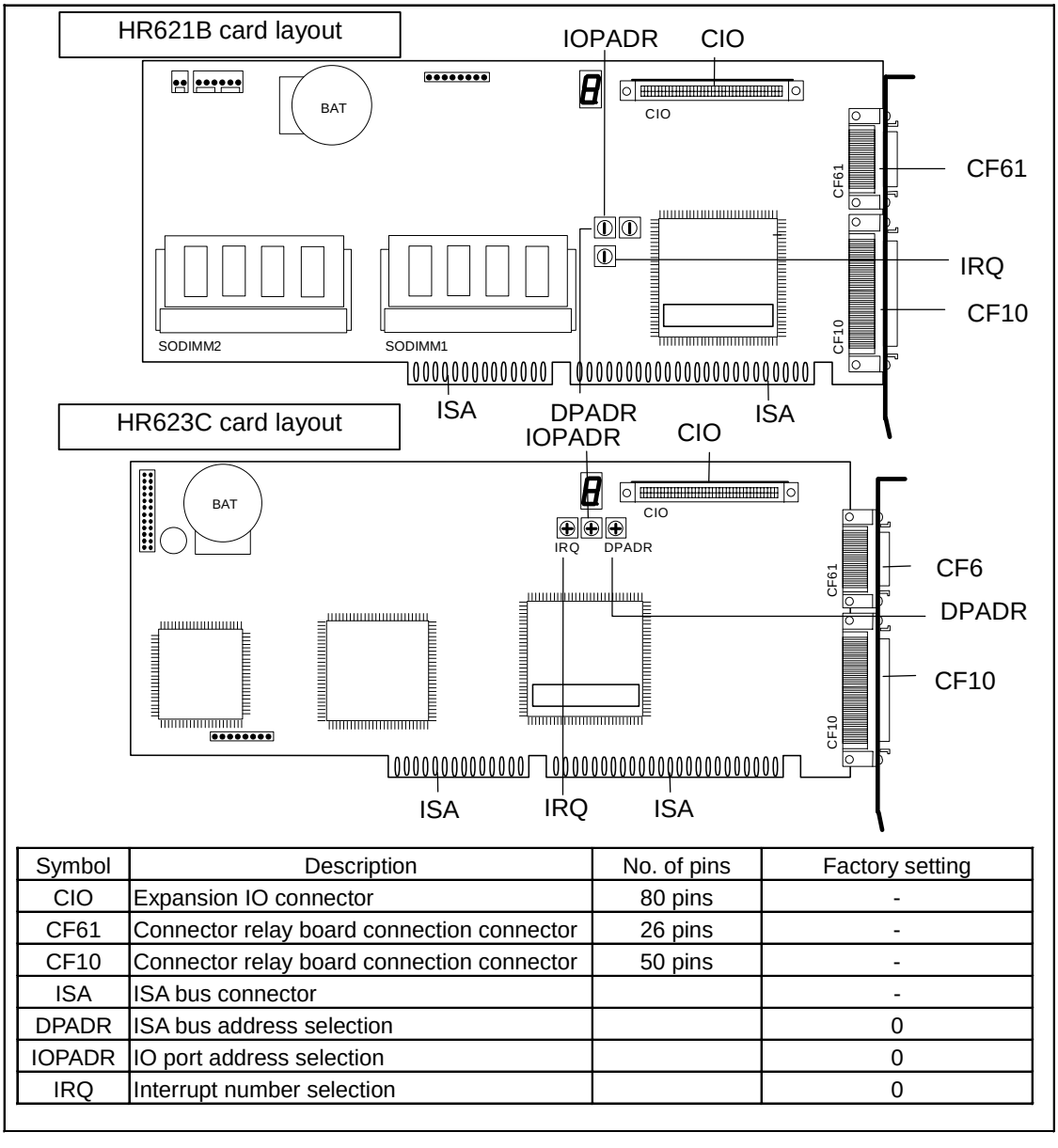
Mount NC Card according to the procedures below.

> ⚠**CAUTION**
> **Be sure to unplug the personal computer before mounting NC Card. In case this operation is executed with the power on, the devices may be damaged.**

■ Set the rotary switch on NC Card.

[Procedure]

(1) Refer to the following table of correspondence between NC Card layout and rotary switch settings, and set the DPADR, IOPADR, and IRQ settings of the rotary switch to the resource settings of the personal computer of which you made a note in chapter 4.3.1.1 “Installing NC System Device Driver.”



Symbol	Description	No. of pins	Factory setting
CIO	Expansion IO connector	80 pins	-
CF61	Connector relay board connection connector	26 pins	-
CF10	Connector relay board connection connector	50 pins	-
ISA	ISA bus connector		-
DPADR	ISA bus address selection		0
IOPADR	IO port address selection		0
IRQ	Interrupt number selection		0

Settings of the IRQ rotary switch

Enable IRQ	Switch on the NC Card (IRQ)
None	0
IRQ5	1
IRQ7	2
IRQ9	4
IRQ10	8

Settings of the IOPADR rotary switch

I/O port address	Switch on NC Card (IOPADR)	I/O port address	Switch on NC Card (IOPADR)
120-123	0	220-223	8
140-143	1	240-243	9
160-163	2	260-263	A
180-183	3	280-283	B
1A0-1A3	4	2A0-2A3	C
1C0-1C3	5	2C0-2C3	D
1E0-1E3	6	2E0-2E3	E
200-203	7	300-303	F

Settings of the DPADR rotary switch

2 port memory	Switch on the NC Card (DPADR)
D8000 - DFFFF	0
D0000 - D7FFF	1
C8000 - CFFFF	2
C0000 - C7FFF	3

■ Mount NC Card on the personal computer.

[Procedures]

(1) Attach the battery to NC Card.

(2) Mount NC Card on the personal computer's ISA bus.

(3) Connect peripheral devices.

* For the details of NC Card mounting and peripheral device connection, refer to "Connection Manual (BNP-B2203)."

4.3.1.3 Confirming NC System Device Driver Operation

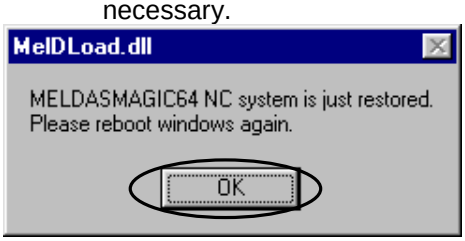
Confirm the installed Device Driver operating normally according to the procedures below.

■ Open Device Manager.

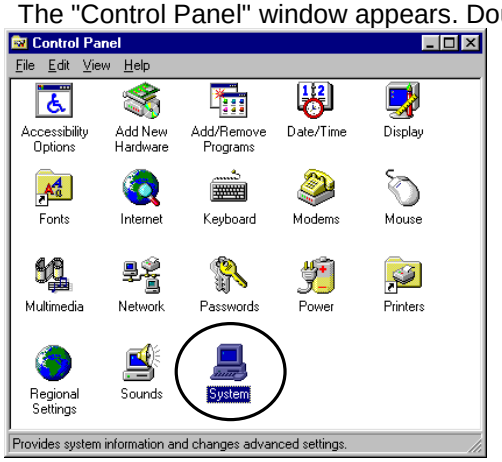
[Procedures]

(1) Turn on the personal computer.
Operation: Windows starts up.

If the message below is displayed for the version B5 or later of NC System, reboot Windows. Press the [OK] button and wait for about 30 seconds, then Windows starts up. After the startup of Windows has finished, reboot Windows once.
Caution: The operation above is necessary only once right after installation. Since this message is not displayed for the NC System version B4 or older, the operation above is not necessary.



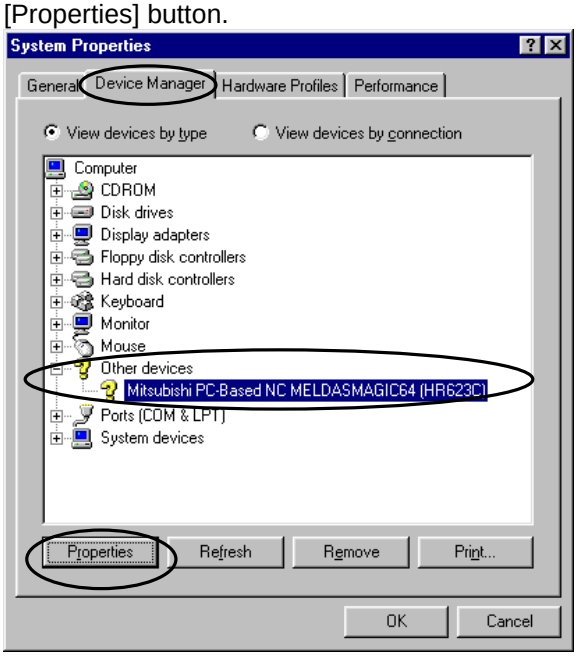
(2) Click the [Settings] - [Control Panel] menus of the [Start] menu.
The "Control Panel" window appears. Double-click the "System" icon.



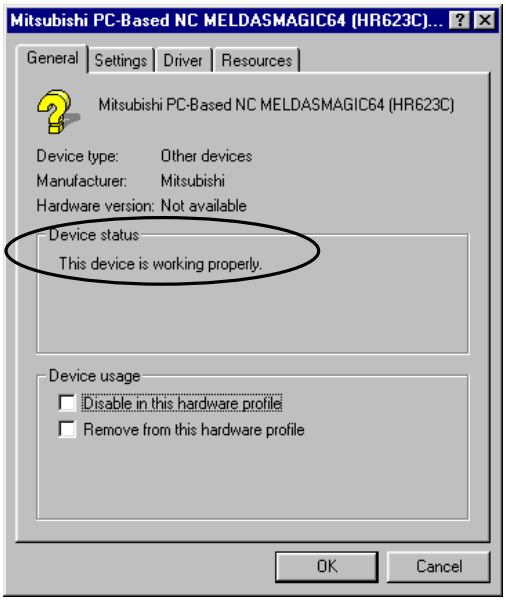
■ Confirm the device status of NC System Device Driver

[Procedures]

(1) The “System Properties” window appears. Click the “Device Manager” tab. Select “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx)” below “Other devices,” and then click the [Properties] button.



(2) The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties” window is displayed. If the message of “This device is working properly” is displayed in the “Device status” field, the device is in the normal condition.



4.3.1.4 Initializing NC Card Memory

Initialize the NC Card memory when starting up NC Card for the first time or replacing the battery of NC Card.

> **⚠CAUTION**
> **All the memory information (such as parameters, machining programs, and ladders) in NC Card is erased when the memory is initialized. When initializing the memory of the NC Card in use, be sure to back up the parameters and so on, as needed, prior to initialization.**

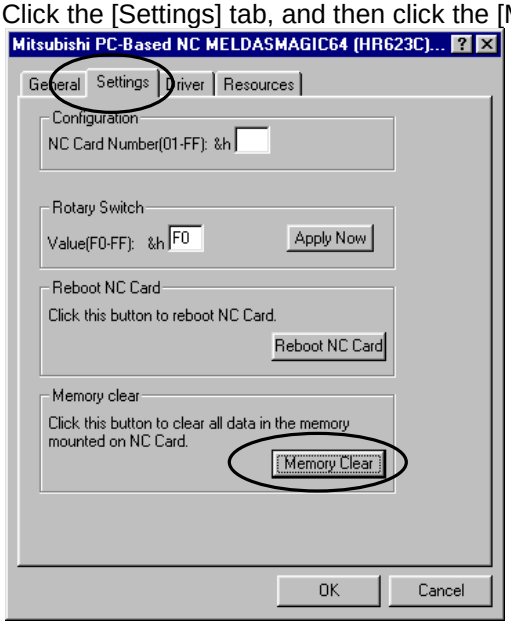
Initialize the NC Card memory according to the procedures below.

■ Open the “Settings” page of the NC System Device Driver Properties screen, and clear the NC Card memory.

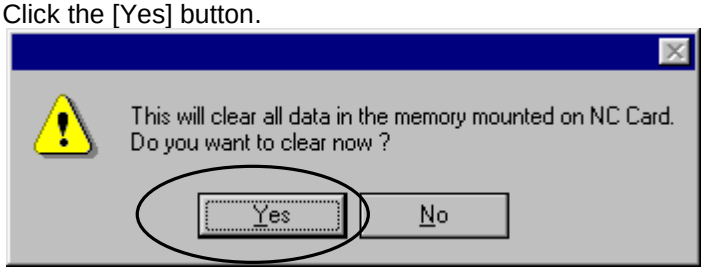
[Procedures]

(1) Display the "Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties" window. For the method of displaying the window, refer to chapter 4.3.1.3 “Confirming NC System Device Driver Operation."

(2) Click the [Settings] tab, and then click the [Memory Clear] button.



(3) A confirmation message whether to execute memory clear is displayed.
Click the [Yes] button.



Operation: The mouse cursor changes to an hourglass, and the NC Card memory is cleared. It takes approximately 1 minute to clear the memory. When the memory clear has finished, the “Memory clear complete!” message is displayed.

(4) Close all the open windows.

4.3.1.5 Confirming NC Card Operation

Confirm the installed Device Driver operating normally according to the procedures below.

■ Confirm the display status of the 7-segment LED on NC Card.
[Procedure]
(1) NC Card is working normally if the 7-segment LED on the NC Card is blinking.

Proceed to chapter 4.4.

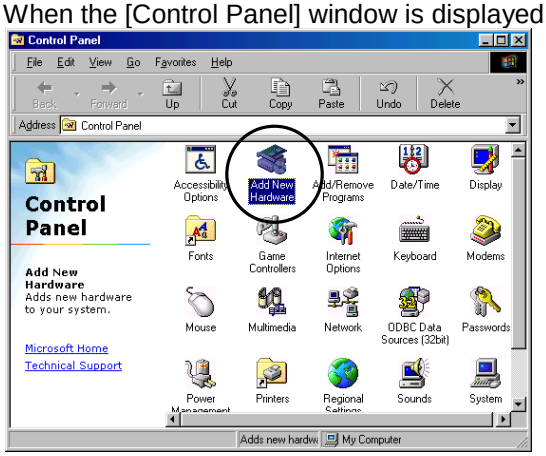
4.3.2 Installing NC System Device Driver for Windows 98

4.3.2.1 Installing NC System Device Driver

Install NC System Device Driver according to the procedures below.

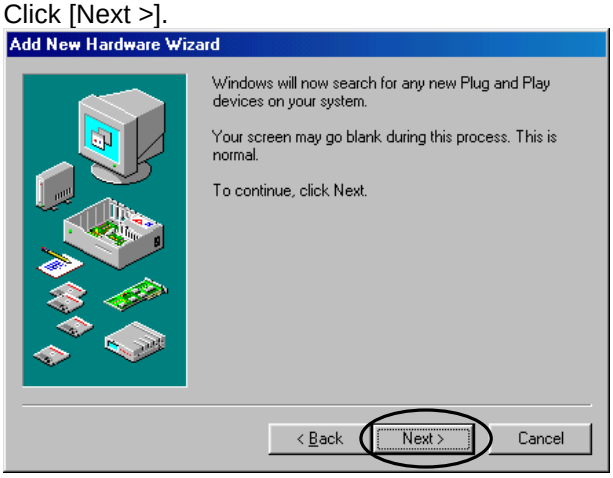
■ Install Device Driver using the hardware wizard.
(Hardware is not detected automatically.)
[Procedures]
(1) Click the [Settings] - [Control Panel] menus of the [Start] menu on the task bar.

(2) When the [Control Panel] window is displayed, double-click the “Add New Hardware” icon.

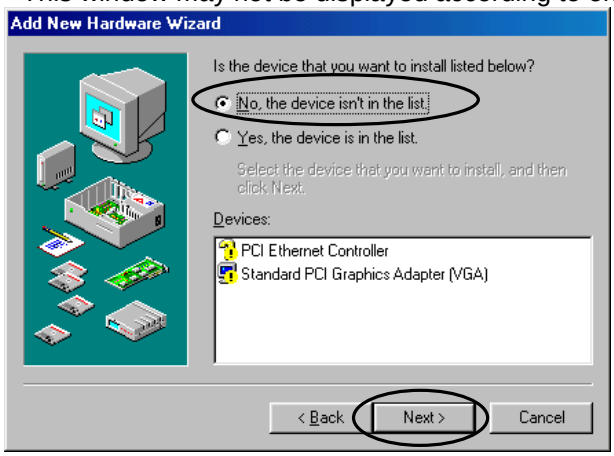


(3) The "Add New Hardware Wizard" window appears.
Close all the open applications, then click [Next >].

(4) Click [Next >].

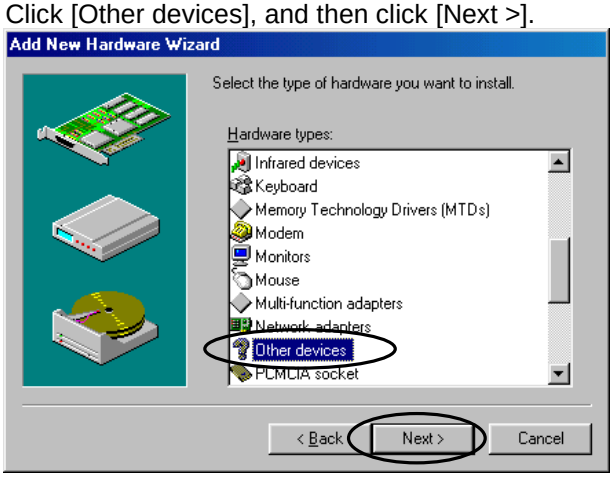


(5) A window for selecting the device to be installed is displayed.
Select the [No, the device isn't in the list] option button, and then click [Next >].
* This window may not be displayed according to environments.

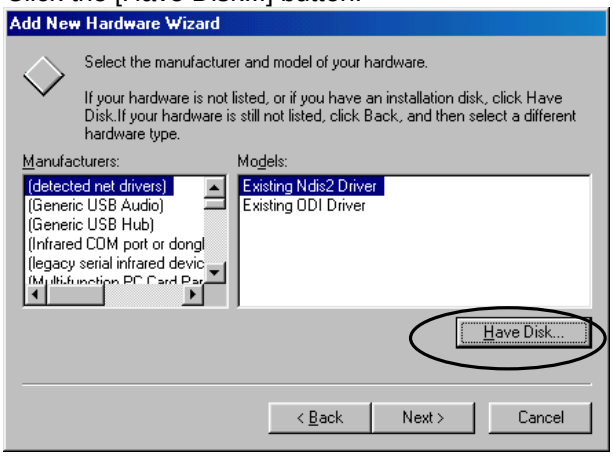


(6) A window confirming the automatic detection of new hardware is displayed.
Select the [No] option button, and then click [Next >].

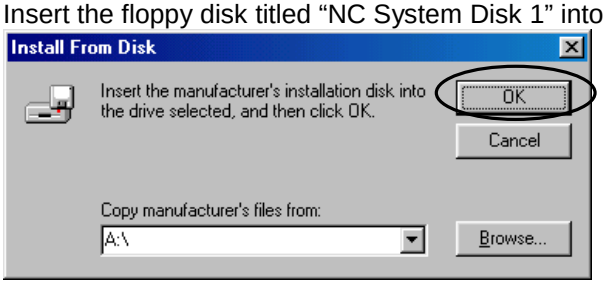
(7) A window for selecting the manufacturer and model of the hardware is displayed.
Click [Other devices], and then click [Next >].



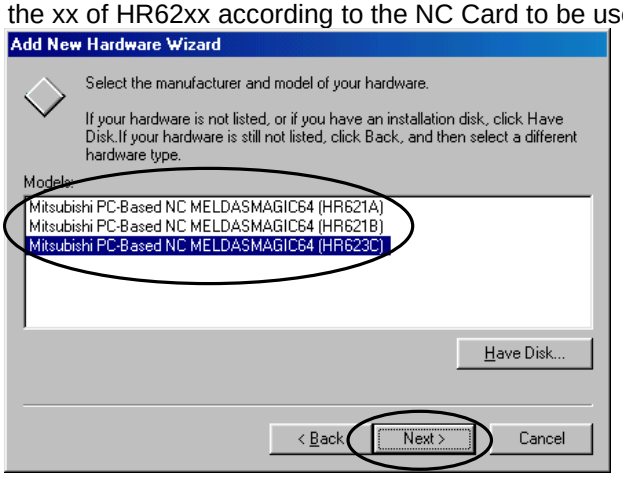
(8) A window for selecting the manufacturer and model of the hardware is displayed.
Click the [Have Disk...] button.



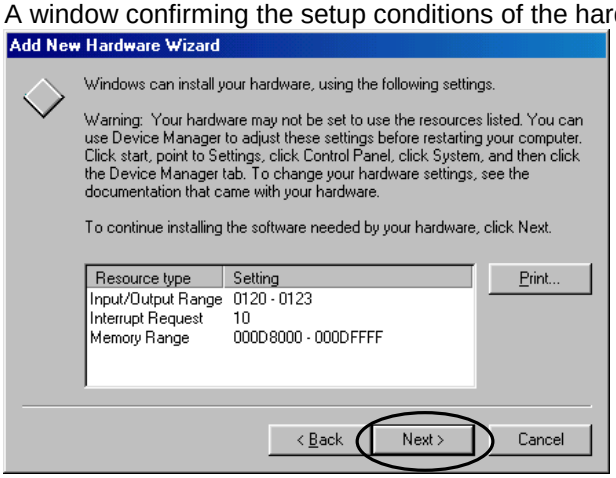
(9) The “Install From Disk” window is displayed.
Insert the floppy disk titled “NC System Disk 1” into drive A, and then click the [OK] button.



(10) A window for selecting the manufacturer and model of the hardware is displayed.
Select “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx),” and then click [Next >]. (Specify the xx of HR62xx according to the NC Card to be used.)



(11) A window confirming the setup conditions of the hardware to be installed is displayed.



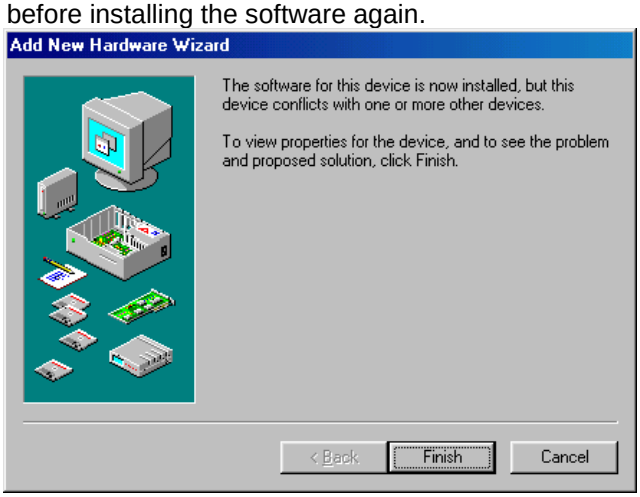
Fill in:

Resource type (The rotaty switch of card)	Setting
IRQ (IRQ)	
I/O port address (IOPADR)	
Memory range (DPADR)	

* The setting may differ per installation.

⚠CAUTION
Since the setting is necessary for the future installation (chapter 4.3.2.2 “Mounting NC Card”), be sure to make a note of it.

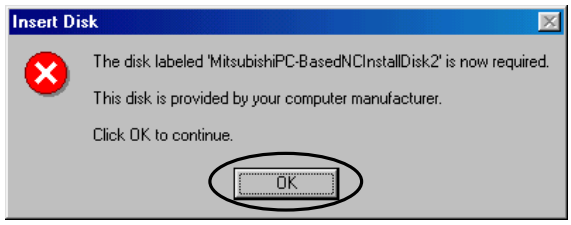
(12) Here, if the message of “The software for this device is now installed, but this device conficts with one or more other devices…” is displayed, installation cannot be continued. Click [Cancel]. In this case, refer to Problem 2 of chapter 6.3 “Troubleshooting,” and fix the hardware conflict before installing the software again.



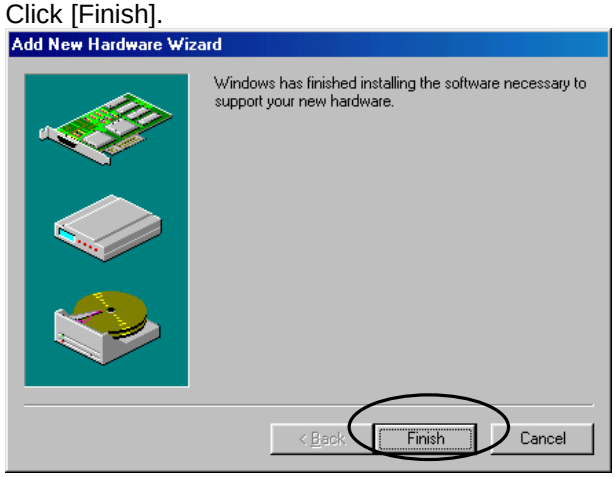
⚠CAUTION

If hardware conflict occurs, be sure to click the [Cancel] button to abort installation. If you click [Next >] to continue to install the software, the personal computer may not start up properly.

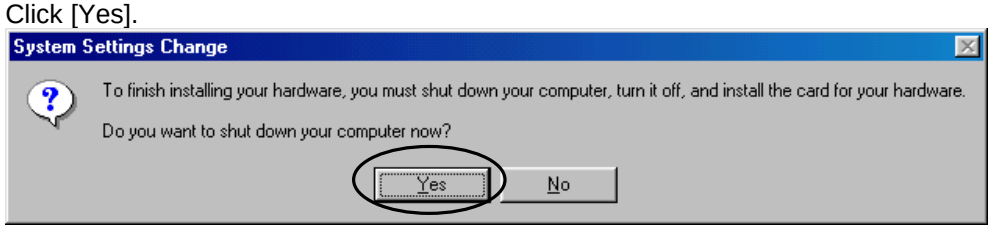
(13) Files are copied. A message prompting a disk change is displayed while the files are copied. Insert the floppy disk into drive A according to the message, and then click [OK].



(14) Copying the files is continued. When the copy has finished, the finish window is displayed. Click [Finish].



(15) The “System Settings Change” window is displayed. Click [Yes].



(16) Windows is shutdown, and you can turn off the computer.

(17) Turn off the personal computer. (In some cases, the personal computer is turn off automatically.)
*Take out the floppy disk.

Now installing NC System Device Driver has finished. Proceed to chapter 4.3.2.2 “Mount NC Card.”

⚠CAUTION
Do not turn on the personal computer until you mount NC Card according to the procedures of chapter 4.3.2.2 “Mounting NC Card.” If you turn on the personal computer without mounting NC Card, the personal computer may not start up properly.

4.3.2.2 Mounting NC Card

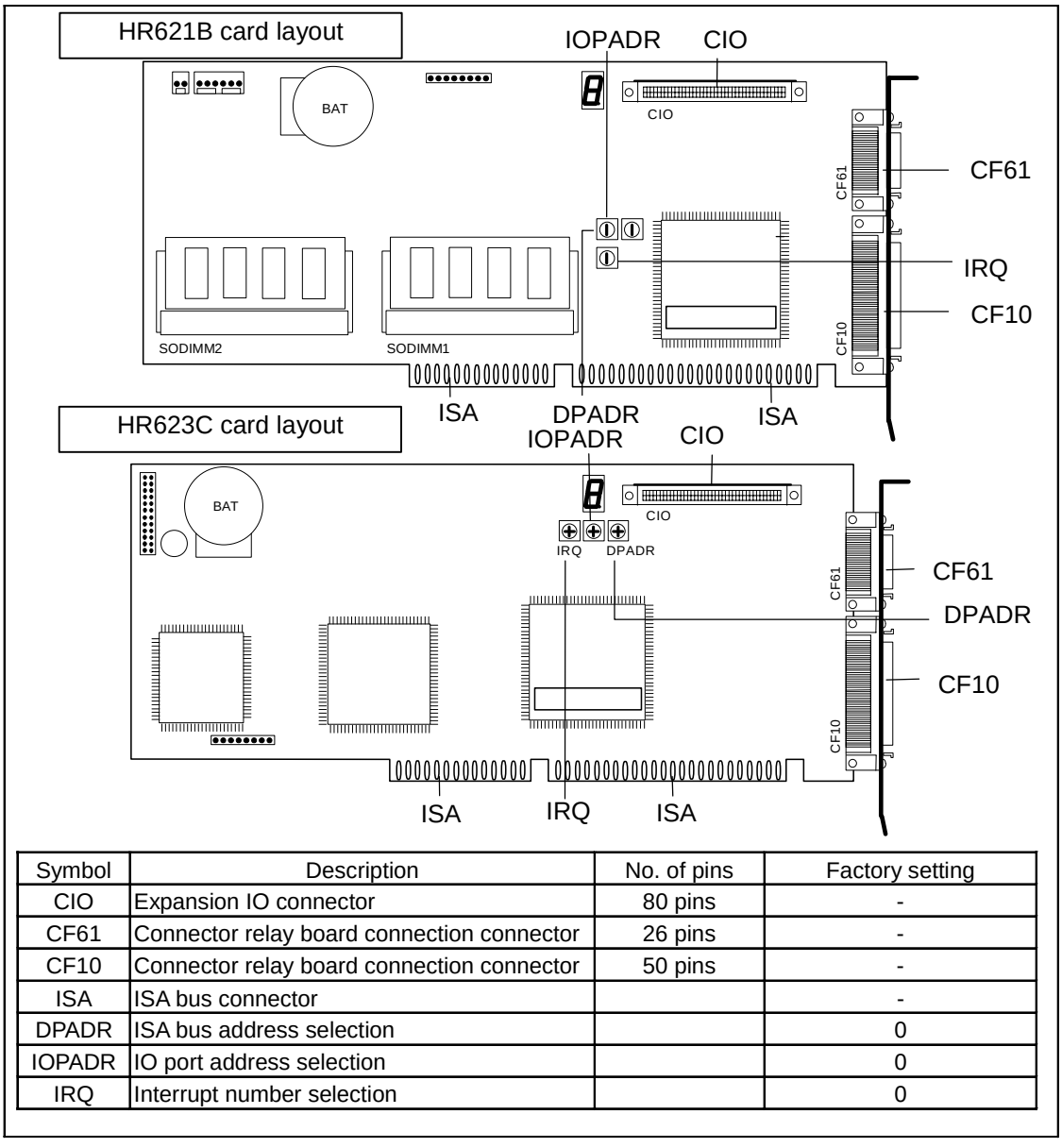
Mount NC Card according to the procedures below.

> ⚠**CAUTION**
> **Be sure to unplug the personal computer before mounting NC Card. In case this operation is executed with the power on, the devices may be damaged.**

■ Set the rotary switch on NC Card.

[Procedure]

(1) Refer to the following table of correspondence between NC Card layout and rotary switch settings, and set the DPADR, IOPADR, and IRQ settings of the rotary switch to the resource settings of the personal computer of which you made a note in chapter 4.3.2.1 “Installing NC System Device Driver.”



Symbol	Description	No. of pins	Factory setting
CIO	Expansion IO connector	80 pins	-
CF61	Connector relay board connection connector	26 pins	-
CF10	Connector relay board connection connector	50 pins	-
ISA	ISA bus connector		-
DPADR	ISA bus address selection		0
IOPADR	IO port address selection		0
IRQ	Interrupt number selection		0

Settings of the IRQ rotary switch

Enable IRQ	Switch on the NC Card (IRQ)
None	0
IRQ5	1
IRQ7	2
IRQ9	4
IRQ10	8

Settings of the IOPADR rotary switch

I/O port address	Switch on NC Card (IOPADR)	I/O port address	Switch on NC Card (IOPADR)
120-123	0	220-223	8
140-143	1	240-243	9
160-163	2	260-263	A
180-183	3	280-283	B
1A0-1A3	4	2A0-2A3	C
1C0-1C3	5	2C0-2C3	D
1E0-1E3	6	2E0-2E3	E
200-203	7	300-303	F

Settings of the DPADR rotary switch

2-port memory	Switch on the NC Card (DPADR)
D8000 - DFFFF	0
D0000 - D7FFF	1
C8000 - CFFFF	2
C0000 - C7FFF	3

■ Mount NC Card on the personal computer.

[Procedures]

(1) Mount the battery on NC Card.

(2) Attach NC Card to the personal computer’s ISA bus.

(3) Connect peripheral devices.

* For the details of NC Card mounting and peripheral device connection, refer to “Connection Manual (BNP-B2203).”

4.3.2.3 Confirming NC System Device Driver Operation

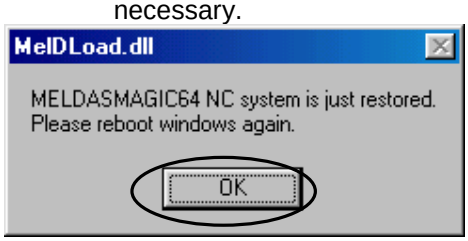
Confirm the installed Device Driver operating normally according to the procedures below.

■ Open Device Manager.

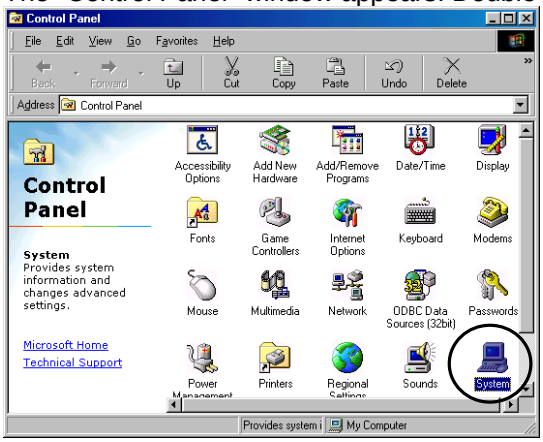
[Procedures]

(1) Turn on the personal computer.
Operation: Windows starts up.

If the message below is displayed for the version B5 or later of NC System, reboot Windows. Press the [OK] button and wait for about 30 seconds, then Windows starts up. After the startup of Windows has finished, reboot Windows once.
Caution: The operation above is necessary only once right after installation. Since this message is not displayed for the NC System version B4 or older, the operation above is not necessary.



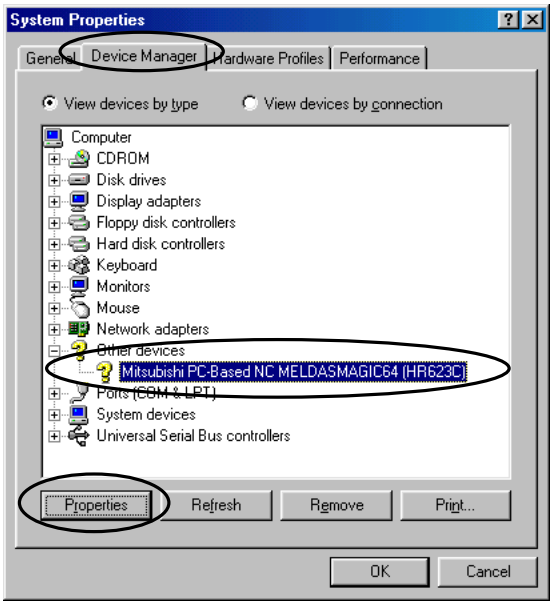
(2) Click the [Settings] - [Control Panel] menus of the [Start] menu.
The "Control Panel" window appears. Double-click the "System" icon.



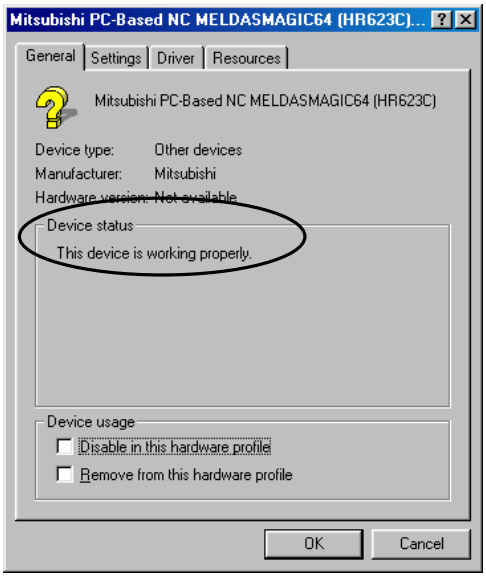
■ Confirm the “Device status” of NC System Device Driver.

[Procedures]

(1) The "System Properrties" window appears. Click the "Device Manager" tab. Select “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx)” from “Other devices,” and then click the [Properties] button.



(2) The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties” window is displayed. If the message of “This device is working properly” is displayed in the “Device status” field, the device is in the normal condition.



4.3.2.4 Initializing NC Card Memory

Initialize the NC Card memory when starting up NC Card for the first time or replacing the battery of NC Card.

> ⚠**CAUTION**
> **All the memory information (such as parameters, machining programs, and ladders) in NC Card is erased when the memory is initialized. When initializing the memory of the NC Card in use, be sure to back up the parameters and so on, as needed, prior to initialization.**

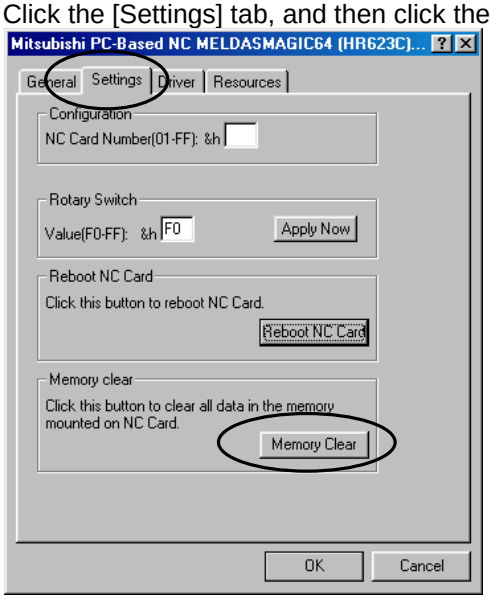
Initialize the NC Card memory according to the procedures below.

■ Open the “Settings” page of the NC System Device Driver’s Properties screen, and clear the NC Card memory.

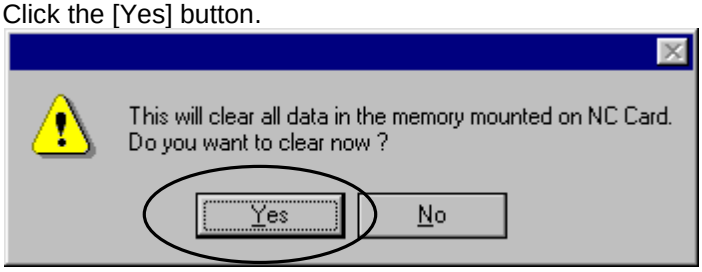
[Procedures]

(1) Display the "Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties" window. For the method of displaying the window, refer to chapter 4.3.2.3 “Confirming NC System Device Driver Operation."

(2) Click the [Settings] tab, and then click the [Memory Clear] button.



(3) A confirmation message whether to execute memory clear is displayed.
Click the [Yes] button.



Operation: The mouse cursor changes to an hourglass, and the NC Card memory is cleared. It takes approximately 30 seconds to clear the memory. When the memory clear has finished, the “Memory clear complete!” message is displayed.

(4) Close all the open windows.

4.3.2.5 Confirming NC Card Operation

Using the procedures below to confirm whether the installed NC Card is working normally.

■ Confirm the display status of the 7-segment LED on NC Card.
[Procedure]
(1) NC Card is working normally if the 7-segment LED on NC Card is blinking.

Proceed to chapter 4.4.

4.3.3 Installing NC System Device Driver for Windows NT

4.3.3.1 Installing NC System Device Driver

Install NC System Device Driver according to the procedures below.

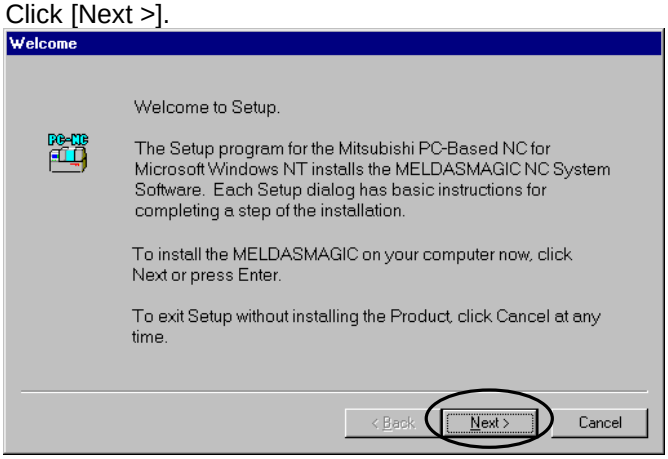
■ Install Device Driver by executing setup.exe on the NC System Disk 1 floppy disk. (Hardware is not detected automatically.)

When you install NC System Device Driver, be sure to log in Windows NT as Administrator.

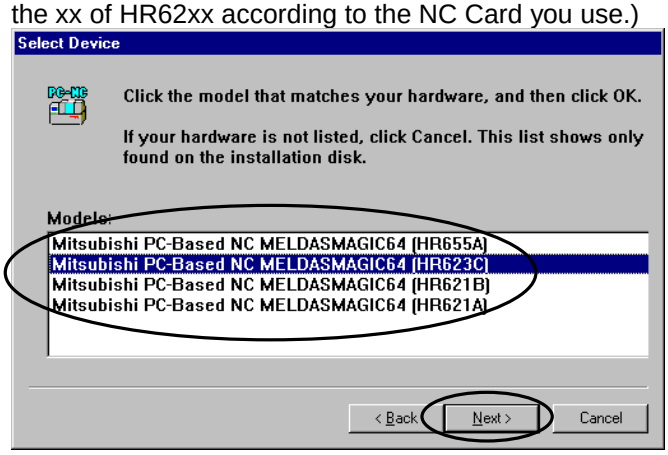
[Procedures]
(1) Insert the floppy disk titled “NC System Disk 1” into drive A.

(2) Click [Run...] on the [Start] menu of the task bar.

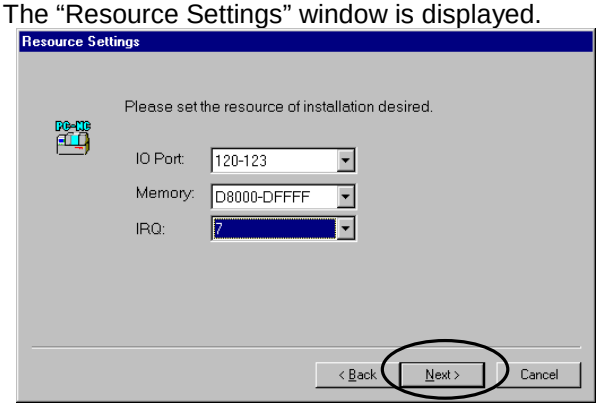
(3) Fill in the [Open:] field as below, and then click [OK].
a:\setup.exe
(4) The “Welcome” window is displayed.
Click [Next >].



(5) The “Select Device” window is displayed.
Select “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx),” and then click [Next >]. (Specify the xx of HR62xx according to the NC Card you use.)



(6) The “Resource Settings” window is displayed.

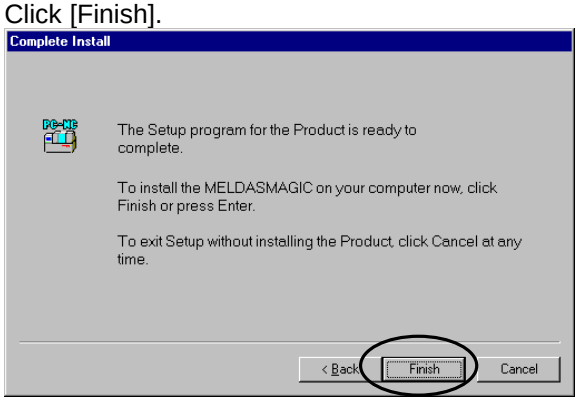


Set the resources used by NC Card. Resource type and setup range depend on the type of the NC Card. Setup range for each selected NC Card is set in the combo box of each resource in advance. Select a value you want to use from the list.
The resource value available for NC Card depends on the status of the personal computer to which the software is installed. The status of the resource in the destination personal computer can be confirmed via the [Resource] tab page on the [Start] - [Program] - [Management Tool (Common)] - [Windows NT Diagnostic Program] menus. Assign a resource not used by other device currently to the NC Card.
Make a note of the selected resource type and setting, and then click [Next >].

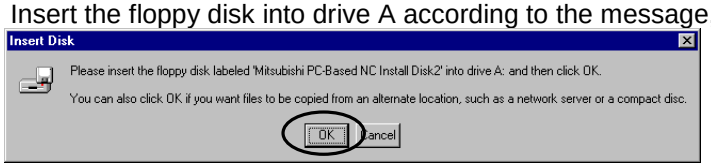
Fill in:

Resource type (The rotaty switch of card)	Setting
I/O port (IOPADR)	
Memory (DPADR)	
IRQ (IRQ)	

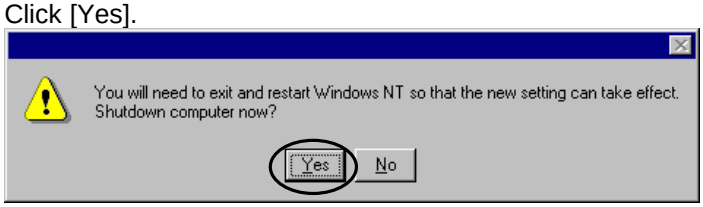
(7) The “Complete Install” window is displayed.
Click [Finish].



(8) Files are copied. A message for indicating to change the disk is displayed while the files are copied. Insert the floppy disk into drive A according to the message, and then click [OK].



(9) Copying the files is continued. When the copy has finished, the finish window is displayed. Click [Yes].



(10) Windows is shutdown.

(11) Turn off the personal computer. (In some cases, the personal computer is turned off automatically.)
*Take out the floppy disk.

Now installing NC System Device Driver has finished. Proceed to chapter “4.3.3.2 Mounting NC Card”.

⚠CAUTION
Do not turn on the personal computer until you mount NC Card according to the procedures of chapter 4.3.3.2 “Mounting NC Card.” If you turn on the personal computer without mounting NC Card, the personal computer may not start up properly.

4.3.3.2 Mounting NC Card

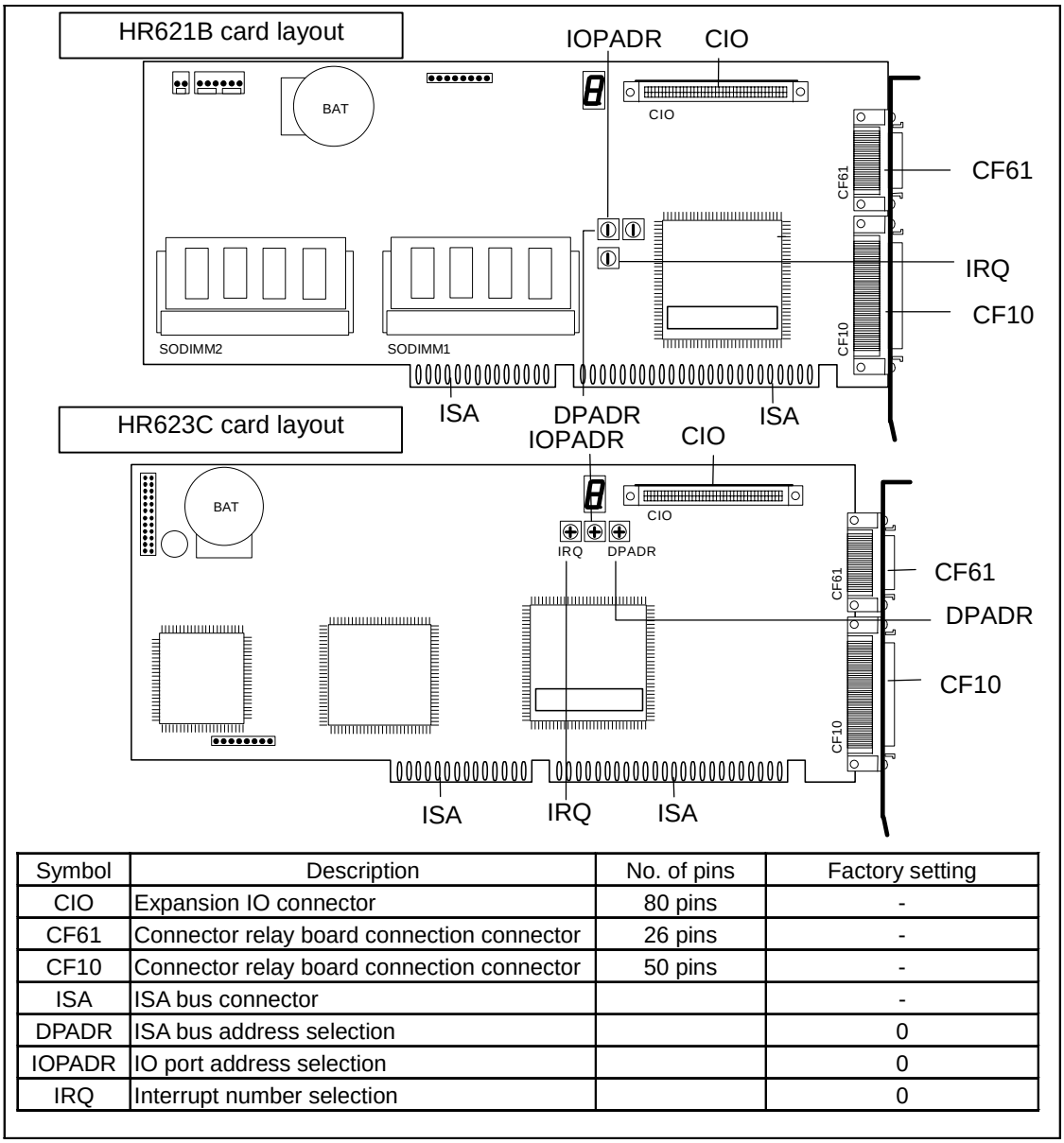
Mount NC Card according to the procedures below.

> ⚠**CAUTION**
> **Be sure to unplug the personal computer before mounting NC Card. In case this operation is executed with the power on, the devices may be damaged.**

■ Set the rotary switch on NC Card.

[Procedure]

(1) Refer to the following table of correspondence between NC Card layout and rotary switch settings, and set the DPADR, IOPADR, and IRQ settings of the rotary switch to the resource settings of the personal computer of which you made a note in chapter 4.3.3.1 “Installing NC System Device Driver.”



Symbol	Description	No. of pins	Factory setting
CIO	Expansion IO connector	80 pins	-
CF61	Connector relay board connection connector	26 pins	-
CF10	Connector relay board connection connector	50 pins	-
ISA	ISA bus connector		-
DPADR	ISA bus address selection		0
IOPADR	IO port address selection		0
IRQ	Interrupt number selection		0

Settings of the IRQ rotary switch

Enable IRQ	Switch on the NC Card (IRQ)
None	0
IRQ5	1
IRQ7	2
IRQ9	4
IRQ10	8

Settings of the IOPADR rotary switch

I/O port address	Switch on NC Card (IOPADR)	I/O port address	Switch on NC Card (IOPADR)
120-123	0	220-223	8
140-143	1	240-243	9
160-163	2	260-263	A
180-183	3	280-283	B
1A0-1A3	4	2A0-2A3	C
1C0-1C3	5	2C0-2C3	D
1E0-1E3	6	2E0-2E3	E
200-203	7	300-303	F

Settings of the DPADR rotary switch

2-port memory	Switch on the NC Card (DPADR)
D8000 - DFFFF	0
D0000 - D7FFF	1
C8000 - CFFFF	2
C0000 - C7FFF	3

■ Mount NC Card on the personal computer.

[Procedures]

(1) Attach the battery to NC Card.

(2) Mount NC Card to the personal computer’s ISA bus.

(3) Connect peripheral devices.

* For the details of NC Card mounting and peripheral device connection, refer to “Connection Manual (BNP-B2203).”

4.3.3.3 Confirming NC System Device Driver's Operation

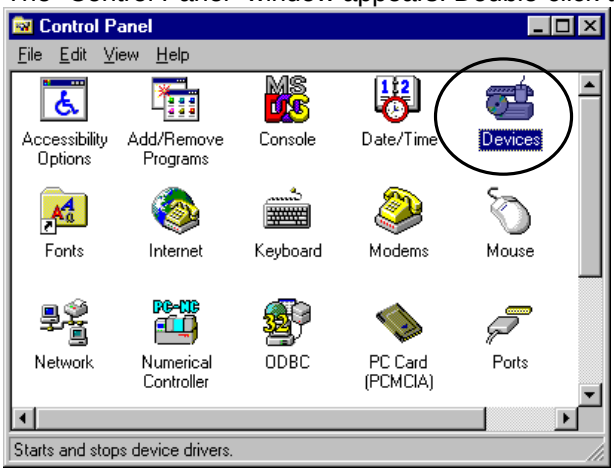
Confirm the installed device driver working properly according to the procedures below.

■ Open Device Manager.

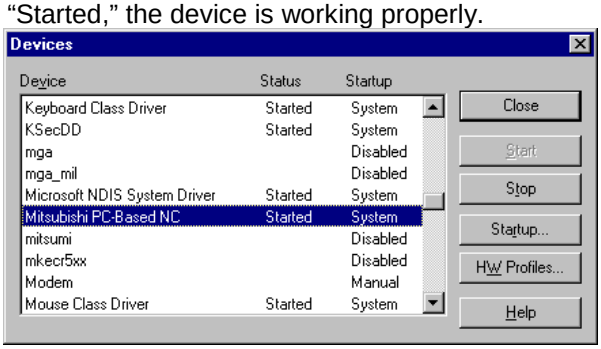
[Procedures]

(1) Turn on the personal computer.
Operation: Windows starts up.

(2) Click the [Settings] - [Control Panel] menus of the [Start] menu.
The "Control Panel" window appears. Double-click the "Devices" icon.



(3) The "Devices" window appears.
Confirm that "Mitsubishi PC-Based NC" is found on the "Devices" list. If "Status" indicates "Started," the device is working properly.



(4) Click the [Close] button.

4.3.3.4 Initializing NC Card Memory

Initialize the NC Card memory when starting up NC Card for the first time or replacing the battery of NC Card.

> ⚠**CAUTION**
> **All the memory information (such as parameters, machining programs, and ladders) in NC Card is erased when the memory is initialized. When initializing the memory of the NC Card in use, be sure to back up the parameters and so on, as needed, prior to initialization.**

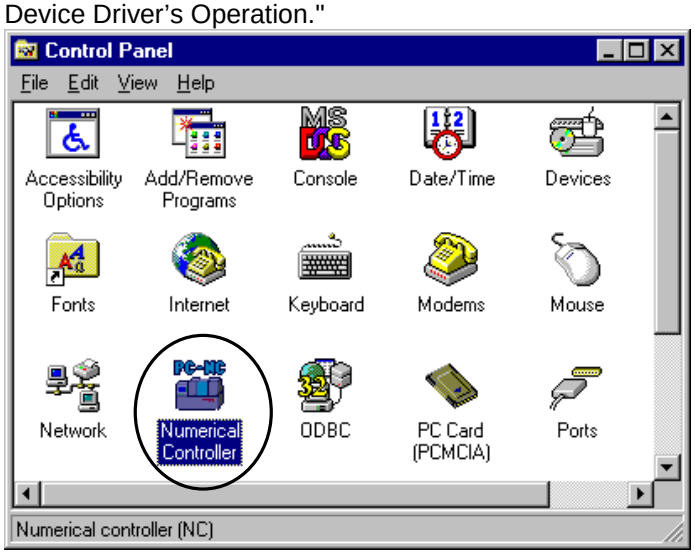
Initialize the NC Card memory according to the procedures below.

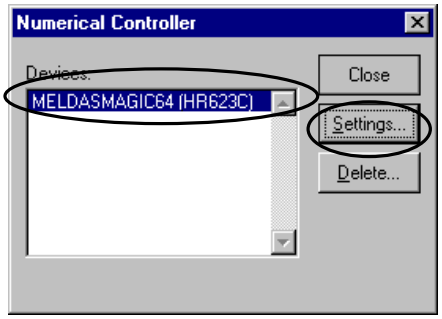
■ Open the “Settings” page of the NC System Device Driver’s Properties screen, and clear the NC Card memory.

[Procedures]

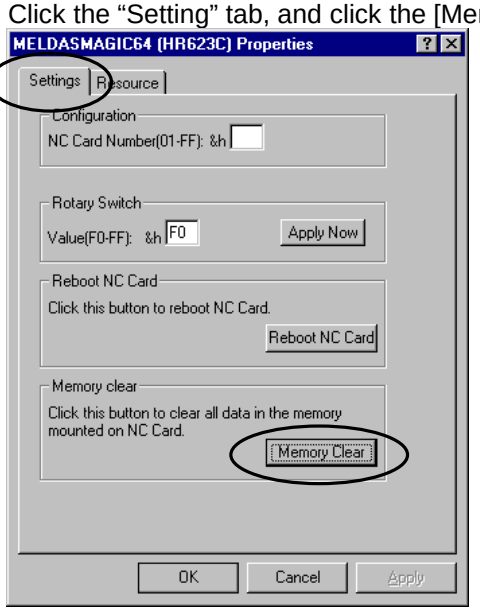
(1) Double-click the “Numerical Controller” icon on “Control Panel.”
The “Numerical Controller” window appears.
Click “MELDASMAGIC64 (HR62xx)” on the “Devices:” field of the “Numerical Controller” window, and then click the [Settings...] button.

For the method of displaying Control Panel, refer to chapter 4.3.3.3 “Confirming NC System Device Driver’s Operation."

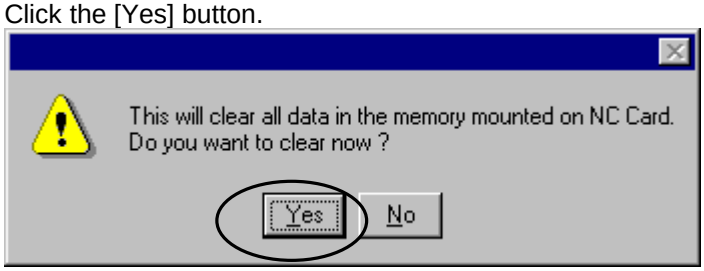




(2) The “MELDASMAGIC64 (HR62xx) Properties” window is displayed.
Click the “Setting” tab, and click the [Memory Clear] button.



(3) A confirmation message whether to execute memory clear is displayed.
Click the [Yes] button.



Operation: The mouse cursor changes to an hourglass, and the NC Card memory is cleared. It takes approximately 1 minute to clear the memory. When the memory clear has finished, the “Memory clear complete!” message is displayed.

(4) Close all the open windows.

4.3.3.5 Confirming NC Card Operation

Using the procedures below to confirm whether the installed NC Card is working properly.

■ Confirm the display status of the 7-segment LED on NC Card.
[Procedure]
(1) The NC Card is working properly if the 7-segment LED on NC Card is blinking.

4.4 Setting Up Runtime Library

Here, set up Runtime Library for controlling NC Card from application software on the personal computer. In the setup operation, install Runtime Library and configure NC Card.

4.4.1 Installing Runtime Library

Install Runtime Library according to the procedures below.

■ Install Runtime Library by executing setup.exe on the "Custom API Library Runtime Disk 1" floppy disk.

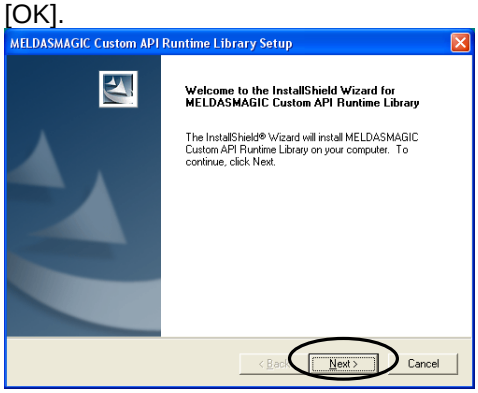
[Procedures]

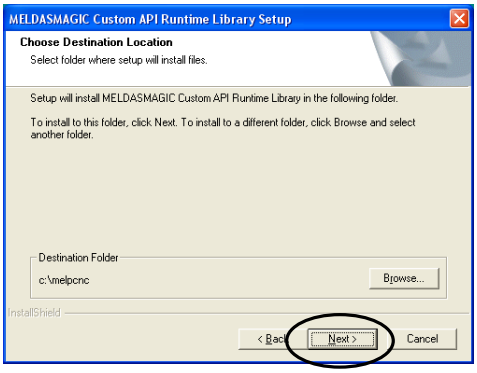
(1) Insert the floppy disk titled "Custom API Library Runtime Disk 1" into drive A.

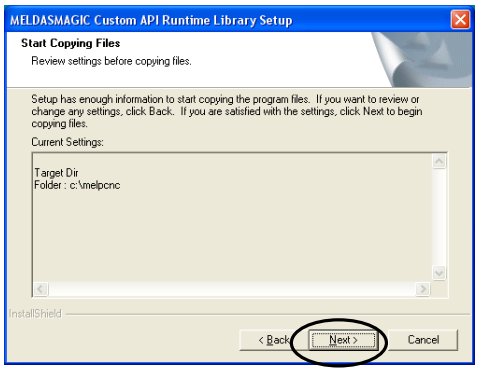
(2) Click the [Run...] menu of the [Start] menu on the task bar.
Operation: The [Run...] window appears.

(3) Enter the following in the [Open:], and then click [OK].
A:\setup.exe
Operation: The installation program is started up.

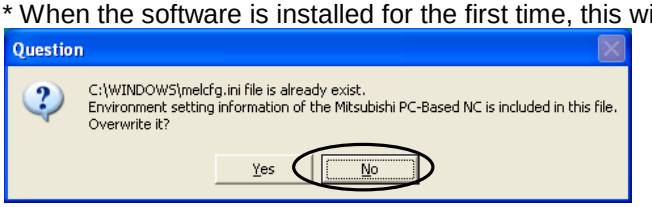
(4) Install the software according to the directions from the installation program.
In ordinary cases, leave the settings default and select [Next >].
If “Setup Needs The Next Disk” window appears, insert the next disk into drive A, and then click [OK].



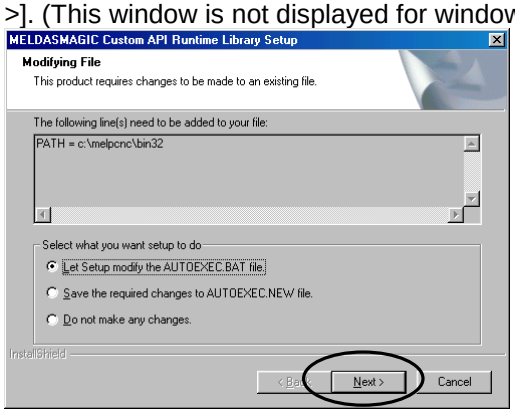




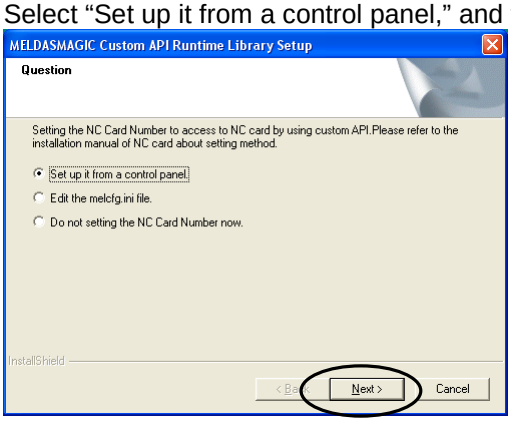
(5) If a window confirming overwriting the environment setup files used by Runtime Library is displayed, select “No.”
* When the software is installed for the first time, this window is not displayed.



(6) For Windows95, Windows98 (including Second Edition), and WindowsNT, since the location for saving Runtime Library is specified in AUTOEXEC.BAT, the window below is displayed. When the window is displayed, select “Let Setup modify the AUTOEXEC.BAT file” and click [Next >]. (This window is not displayed for windows2000/XP.)



(7) Select “Set up it from a control panel,” and then click [Next >].



4.4.2 Assigning an NC Card No. to PCI NC Card

Here, assign an NC Card No. to NC Card. This NC Card No. allows the application operating NC Card to identify the NC Card.
The NC Card No. is necessary even if only one NC Card is actually mounted on the personal computer.

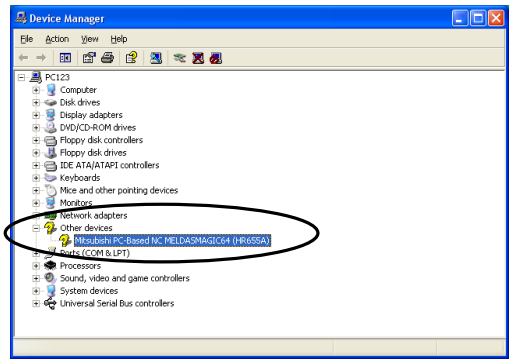
Assign an NC Card No. according to the procedures below.

■ Input the NC Card No. on the [Settings] page of "Mitsubishi PC-Based NC MELDASMAGIC64 (HR6xxx) Properties" window.

[Procedures]

(1) Double-click [Other Device] on [Device Manager], and [Mitsubishi PC-Based NC MELDASMAGIC64 (HR6xxx) Properties].
For WindowsNT, [Numerical Controller] window is displayed. Click [MELDASMAGIC64 (HR62xx)] on [Devices], and then click [Settings…] button.

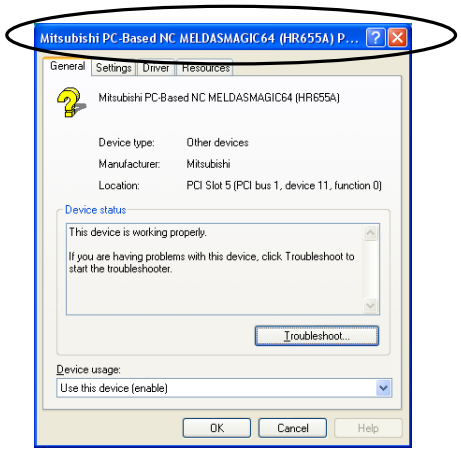
Display sample for WindowsXP



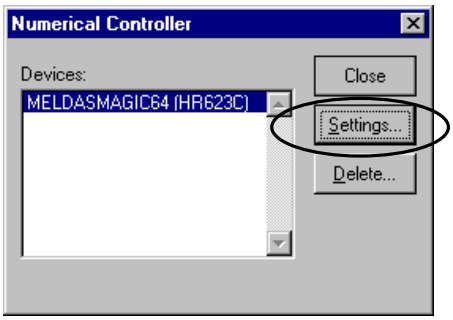
* For the method of displaying the [Device Manager], refer to each chapter as follows.

For WindowsXP	chapter 4.2.1.4
For Windows2000	chapter 4.2.1.4
For Windows98/98SE	chapter 4.2.2.4
For Windows95	chapter 4.3.1.3

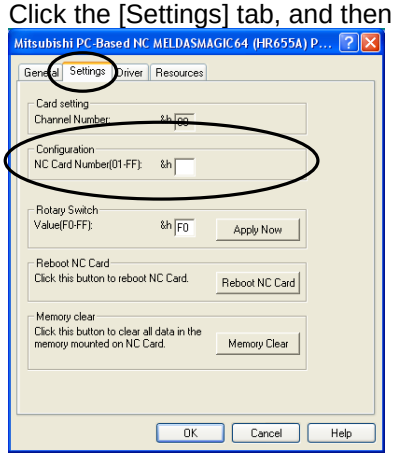
* For WindowsNT, [Numerical Controller] is displayed. For the method of displaying the window, refer to chapter 4.3.3.4.



Display sample for WindowsNT



(2) Click the [Settings] tab, and then input NC Card No.



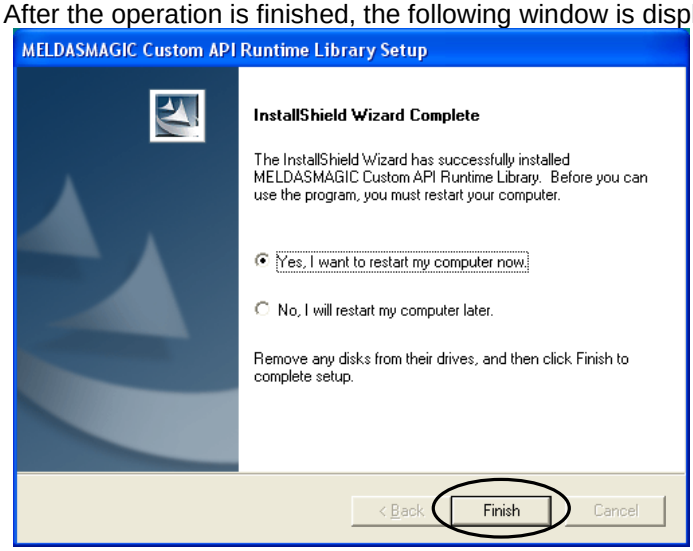
* For ISA NC Card, the [Card setting] does not exist.
* For WindowsNT, [General] and [Driver] tabs do not exist.

Set an NC Card No. in [NC Card Number(01-FF): &h] of [Configuration]. The setup range for an NC Card No. is 01-FF in hex. If one NC Card is used only, set 01 normally.
Example: NC Card Number (01-FF): &h01

Note: When reinstalling or upgrading NC System Device Driver, set the same NC Card No. as the one used so far. If a different NC Card No. is set, the environment setup may be erased.

(3) Click the [OK] button.
Operation: The “Properties” window is closed.

(4) Close [Device Manager].
After the operation is finished, the following window is displayed.



(5) Take out the floppy disk, and then click [Finish] button.
Proceed to chapter 4.5 after rebooting the personal computer.

4.5 Setting Up the Utility

Here, set up the utility software for MELDASMAGIC.
In the utility, many convenient tools are available for using MELDASMAGIC. Refer to "Utility Instruction Manual (BNP-B2196)" for details on the utility.

4.5.1 Installing the Utility

Install the utility according to the procedures below.

■ Install the utilitiy by executing “setup.exe” in the “Utility Software Disk 1” floppy disk
[Procedures]
(1) Insert the floppy disk titled "Utility Software Disk 1" into drive A.

(2) Click the [Run...] menu of the [Start] menu on the task bar.
Operation: The "Run" window appears.

(3) Enter the following in the [Open:], and then click [OK].
A:\setup.exe
Operation: The installation program is started up.

(4) Install the software according to the directions from the installation program.

4.6 Setting up MELDASMAGIC Monitor

Here, set up MELDASMAGIC Monitor. MELDASMAGIC Monitor is a maintenance tool used for the adjustment of MELDASMAGIC NC parameters and so on. Refer to "MELDASMAGIC Monitor Operation Manual (BNP-B2192)" for details on MELDASMAGIC Monitor.
Be sure to install the utility before using MELDASMAGIC Monitor.

4.6.1 Installing MELDASMAGIC Monitor

Install MELDASMAGIC Monitor according to the procedures below.

■ Install MELDASMAGIC Monitor by executing “setup.exe” on the “MELDASMAGIC Monitor” floppy disk.

[Procedures]

(1) Insert the floppy disk titled "MELDASMAGIC Monitor" into drive A.

(2) Click the [Run...] menu of the [Start] menu on the task bar.
Operation: The "Run" window appears.

(3) Enter the following in the [Open:], and then click [OK].
A:\setup.exe
Operation: The installation program is started up.

(4) Install the software according to the directions from the installation program.

4.7 Setting Up NC data

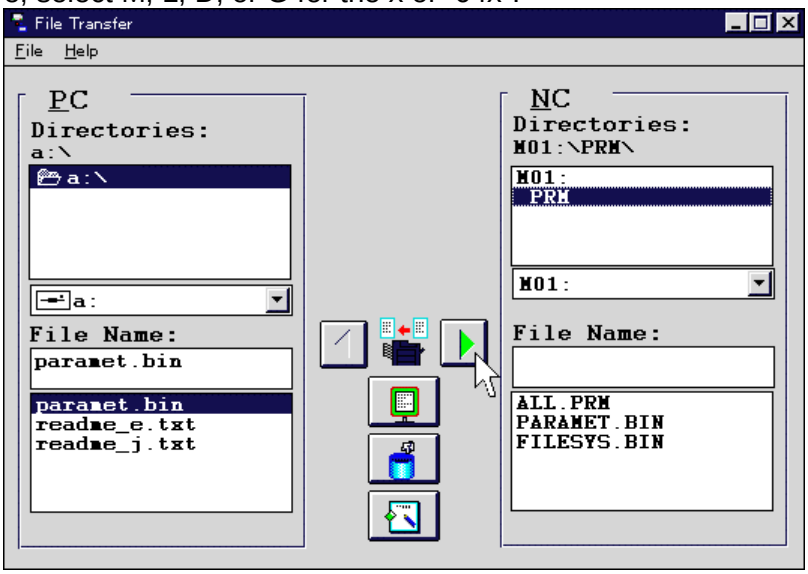
Parameters, ladder programs and so on will be lost when NC Card is started up for the first time or NC Card memory is erased in changing batteries. In this case, set up these data according to the procedures below.

4.7.1 Installing NC Standard Parameters

Install NC standard parameters using the file transfer utility (magictrs.exe) to copy the NC standard parameter file to NC Card.

Install NC standard parameters according to the procedures below.

■ Overwrite the "paramet.bin" file on the "NC Data (64x)" floppy disk to the "\PRM\PARAMET.BIN" file on NC Card using the file transfer utility (magictrs.exe).
* Here, select M, L, D, or G for the x of "64x".



[Procedures]
(1) Insert the floppy disk titled "NC Data (64x)" into drive A.
* Here, select M, L, D, or G for the x of "64x".

(2) Click [Programs] - [MELDASMAGIC] - [File Transfer] menus from the taskbar [Start] menu, and then start the file transfer utility.

(3) Select the "A:\paramet.bin" file on the [PC] side of the "File Transfer" window.

(4) Select the "Mxx:\PRM\" directory on the [NC] side.
* Here, specify the NC Card No. being set up on the xx of "Mxx."

(5) Click the button for copying parameters (from the personal computer to NC Card) to copy parameters.
Operation: Files are overwritten.

■ Exit the file transfer utility.

■ Exit Windows, and restart the personal computer.

4.7.2 Installing NC Option Functions

If you have purchased the NC option functions of MELDASMAGIC, install NC option data.
Install the NC option data according to the procedures below.

■ Start the installer (setup.exe) of NC option data on the floppy disk.

[Procedures]

(1) Insert the floppy disk titled "NC Option" into drive A.

(2) Click the [Run...] menu from the taskbar [Start] menu.
Operation: The [Run...] window appears.

(3) Enter the following in the [Open:], and then click [OK].
A:\setup.exe
Operation: The installer of NC option data starts.

■ Install NC option data according to the directions on the screen.

■ Exit Windows, and restart the personal computer.

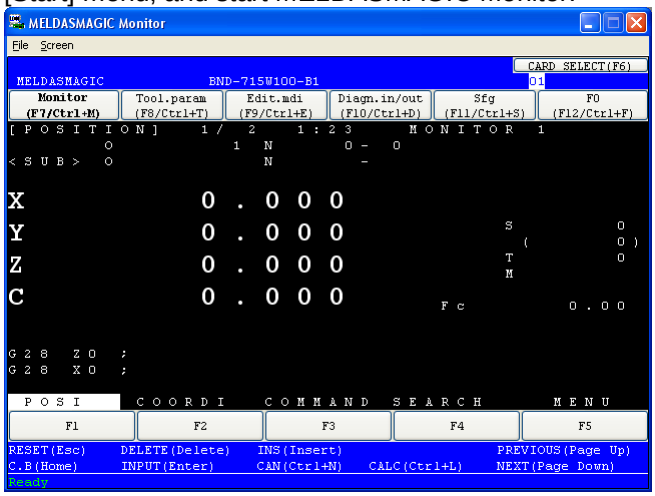
4.7.3 Setting Up NC Parameters

Here, set up and adjust NC parameters according to the machine configuration and machine specifications. Use MELDASMAGIC Monitor to set up and adjust NC parameters.

■ Start MELDASMAGIC Monitor (magicmon.exe).

[Procedures]

(1) Click the [Programs] - [MELDASMAGIC] - [MELDASMAGIC Monitor] menus from the taskbar [Start] menu, and start MELDASMAGIC Monitor.



■ Set up and adjust NC parameters according to the machine configuration and machine specifications.

Refer to "MELDASMAGIC Monitor Operation Manual (BNP-B2192)" for MELDASMAGIC Monitor handling. Refer to "MELDAS60/60S series Operation Manual (BNP-B2180)" for the screens and parameters.

■ Exit Windows, and restart the personal computer.

■ Start the MELDASMAGIC monitor again.

■ Format the NC file system.

[Procedures]

(1) Open the “Setup Parameters” menu from MELDASMAGIC Monitor.

(2) Set "1" on the [#1060 Setup] parameter of [BASE SPEC. PARAM], and then press the Enter key.
Operation: The message of " BASE PARA SET (Y/N)" appears in the MELDASMAGIC Monitor window.

(3) Set "N," and then press the Enter key.
Operation: The message of "FORMAT ? (Y/N)" appears in the MELDASMAGIC Monitor window.

(4) Set "Y," and then press the Enter key.
Operation: The NC file system is formatted. When formatting has finished, the message of "SETUP COMPLETE" is displayed.

4.7.4 Backing Up NC Parameters

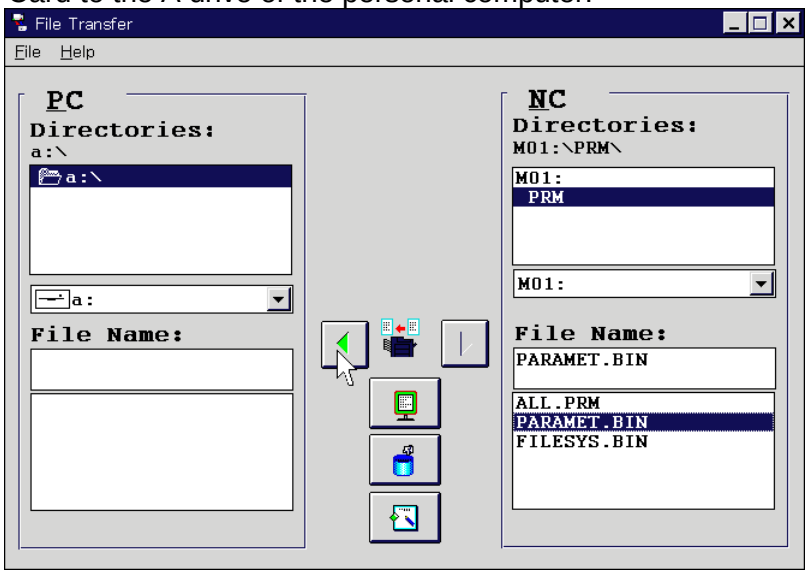
When NC data have been set up, create a backup file for the parameters.

> **⚠CAUTION**
> **If NC data are lost due to some unforeseen problem, the parameters can be restored using the file created here. Be sure to create the backup file.**

Create the backup file according to the procedures below.

■ Insert the formatted floppy disk into drive A.

■ Use the file transfer utility (magictrs.exe) to copy the "\PRM\PARAMET.BIN" file on NC Card to the A drive of the personal computer.



[Procedures]
(1) Click the [Programs] - [MELDASMAGIC] - [File Transfer] menus from the taskbar [Start] menu to start the file transfer utility.

(2) Select the "Mxx:\PRM\PARAMET.BIN" file on the [NC] side of the "File Transfer" window.
* Specify the NC Card No. being set up on the xx of "Mxx."

(3) Select the "A:\" directory on the [PC] side.

(4) Click the button (for copying the file from NC Card to the personal computer) to copy the file.
Operation: The file is copied.

■ Exit the file transfer utility.

■ Store the floppy disk with the copied parameter file in a safe place.

5. Installing the Option Software

If you have purchased the option software, install the software according to the procedures below.

5.1 Installing MELDASMAGIC MMI

MELDASMAGIC MMI is an application for displaying the operation status of MELDASMAGIC, editing machining programs, and setting up user parameters.

Refer to the following documents attached to the software for the installation method of MELDASMAGIC MMI.
“MELDASMAGIC MMI Operation Manual (D/M)(BNP-B2193)” or
“MELDASMAGIC MMI Operation Manual (L/G)(BNP-B2194)”

5.2 Installing Custom API Library

The Custom API Library is a software development kit for creating applications to operate MELDASMAGIC.

Refer to the following document attached to the software for the installation method of Custom API Library.
“Custom Application Interface Library Instruction Manual (Programming Edition) (BNP-B2197)”

5.3 Installing Personal Computer Direct Operation Function

Personal Computer Direct Operation Function is a function by which NC Card operates the memory as directly reading machining programs on the personal computer’s drive.

Refer to the following document attached to the software for the installation method of this function.
“Personal Computer Direct Operation Instruction Manual (BNP-B2195)”

6. Troubleshooting

6.1 Checklist (PCI NC Card)

If a problem occurs during setup, check the items below.

<Items to be checked after the personal computer is turned off>	Refer to:

⚠CAUTION
Be sure to turn off the personal computer before confirming the items below.

1. Check that all cables are correctly connected.	4.2 Setting Up NC Card and Device Driver (PCI NC Card)
2. Check that the mounted NC Card is securely inserted into the PCI bus slot.	4.2 Setting Up NC Card and Device Driver (PCI NC Card)
3. Check that the rotary switch on NC Card (CDNO) is set up properly.	4.2 Setting Up NC Card and Device Driver (PCI NC Card)

<Items to be checked after the personal computer is turned on>	Refer to:
1. Check that NC System Device Driver has been installed.	4.2 Setting Up NC Card and Device Driver (PCI NC Card)
2. Check that Runtime Library has been installed.	4.4 Setting Up Runtime Library
3. Check that an NC Card number has been set properly.	4.4.2 Assigning an NC Card No. of PCI NC Card
4. Check that the utility and MELDASMAGIC Monitor have been installed.	4.5.1 Installing the Utility 4.6.1 Installing MELDASMAGIC Monitor
5. Check that the station number of the PCI NC Card set on the rotary switch of NC Card is not duplicated with that of other PCI NC Card.	4.2 Setting Up NC Card and Device Driver (PCI NC Card)

If the problem is not fixed even after carrying out these steps, try operations again after turning on the personal computer again. If the problem still remains, refer to chapter 6.3 “Troubleshooting.”

6.2 Checklist (ISA NC Card)

If a problem occurs during setup, check the items below.

<Items to be checked after the personal computer is turned off>	Refer to:

⚠CAUTION
Be sure to turn off the personal computer before confirming the items below.

1. Check that all the cables are correctly connected.	4.3 Setting Up NC Card and Device Driver (ISA NC Card)
2. Check that the mounted NC Card is securely inserted into the PCI bus slot.	4.3 Setting Up NC Card and Device Driver (ISA NC Card)
3. Check that the rotary switches on NC Card (DPADR, IOPADR, and IRQ) are set up properly.	4.3 Setting Up NC Card and Device Driver (ISA NC Card)

<Items to be checked after the personal computer is turned on>	Refer to:
1. Check that NC System Device Driver has been installed.	4.3 Setting Up NC Card and Device Driver (ISA NC Card)
2. Check that Runtime Library has been installed.	4.4 Setting Up Runtime Library
3. Check that an NC Card number has been set properly.	4.4.3 Assigning an NC Card No. of ISA NC Card
4. Check that the utility and MELDASMAGIC Monitor have been installed.	4.5.1 Installing the UtilityInstalling MELDASMAGIC Monitor
5. Check that the memory address and IO port address set on the rotary switch of NC Card is the same as those selected on the way to installation.	4.3 Setting Up NC Card and Device Driver (ISA NC Card)

If the problem is not fixed even after carrying out these steps, try operations again after turning on the personal computer again. If the problem still remains, refer to chapter 6.3 “Troubleshooting.”

6.3 Troubleshooting

Problem 1: The environment files backed up are not found.

The file view option may not be set properly in Explorer. Change the [file view] option to [Display All Files.]

[Procedures]

(1) Click the [View] - [Option...] menus (or [Folder Option]) to open the [View] page.

(2) Click the [Display All Files] option button of the [file view] group. (Select a setting so that all files are displayed.)

(3) Uncheck the check box of [Not display the extensions of registered files.] (Select a setting so that extensions are displayed.)

(4) Click [OK].

Problem 2: When NC System is installed, the message of "You are using other hardware that conflicts with the hardware you are trying to install." appears, and installation is stopped (for ISA NC Card).

Examine the vacancy of the resources (memory, I/O port, and IRQ) used by the personal computer, and adjust the resources used by each expansion card.

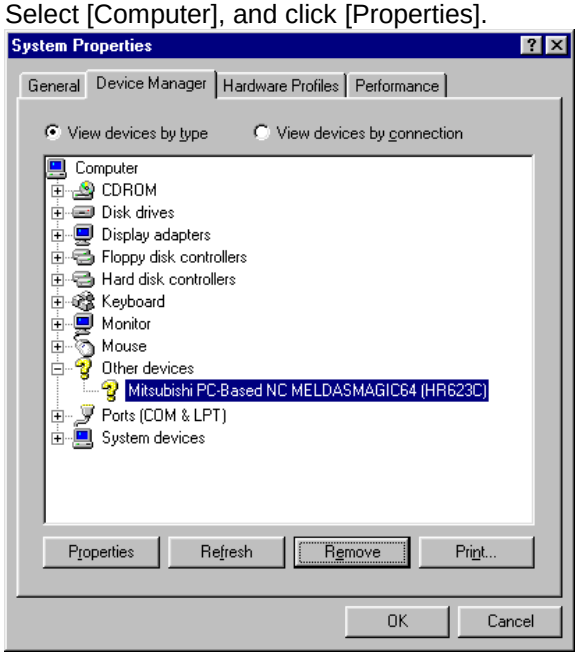
[Procedures]

(1) Click [Settings] - [Control Panel] menus from the [Start] menu.
Operation: The "Control Panel" window appears.

(2) Double-click the "System" icon of "Control Panel."
Operation: The "System Properties" window appears.

(3) Click the "Device Manager" tab.

(4) Select [Computer], and click [Properties].



(5) Click the [Interrupt request (IRQ)] option button, and check that an IRQ is available for NC Card.
There is no problem concerning IRQ if one or more of IRQ5, IRQ7, IRQ9, and IRQ10 is not used. When all the IRQ are used by other hardware, change the IRQ of the hardware if the IRQ can be changed. If the IRQ cannot be changed, the hardware must be removed before NC Card can be installed.

(6) Click the [Inport/outport (I/O)] option button, and check that an IO port is available for NC Card. There is no problem concerning the I/O port address if one or more following addresses set is not used:
120-123, 140-143, 160-163, 180-183, 1A0-1A3, 1C0-1C3, 1E0-1E3, 200-203, 220-223, 240-243, 260-263, 280-283, 2A0-2A3, 2C0-2C3, 2E0-2E3, and 300-303. When all the I/O port addresses are used by other hardware, change the IO port addresses of the hardware if the addresses can be changed. If the addresses cannot be changed, the hardware must be removed before NC Card can be installed.

(7) Click the [Memory] option button, and check if any of the following (a) to (c) address ranges is available.
(a) C0000 - C7FFF
(b) C8000 - CFFFF
(c) D8000 - DFFFF
(d) D8000 - DFFFF
There is no problem concerning the memory if any of the above ranges is vacant. If none of the ranges is vacant, change the settings of the hardware or memory driver being used to reserve one of the above four ranges.

Problem 3: After installing NC System Device Driver, Windows will not start up when the personal computer is turned on.
- The screen disappears on the way to starting up Windows.
- The wallpaper appears, however, the mouse cursor stays as an hourglass, and other symptoms.

Possible causes are as follows:
- NC Card is not mounted on the personal computer properly.
- The rotary switch on NC Card is not set up properly.
- Device Driver was added before the older version of Device Driver was removed.

Check the settings and mounting of the NC Card. In addition, check the installation of the Device Driver using the procedures below.

[Procedures]
(1) Start Windows in the Safe mode.
(2) Display the "Device Manager" from "System" on “Control Panel.”
(3) Check that the number of NC System Device Drivers is equal to the number of the NC Cards mounted on the personal computer.
(4) If the number of installed NC System Device Drivers is larger than the number of the NC Cards, delete the NC System Device Drivers and install them again.

If Windows will not start up after carrying out the above procedures, delete all the NC System Device drivers. If Windows will not start up even after deleting all the NC System Device Drivers, restore the Windows environment according to the procedures below, and then install Device Drivers again.

[Procedures]
(1) Start Windows in the Safe mode.
(2) Overwrite the environment files of the personal computer with the files saved before installation.
(3) Restart Windows.

Problem 4: After installing NC System Device Driver, the message of "NC Card not respond!" appears when Windows is started up.

Possible causes are as follows:

• NC Card is not mounted on the personal computer properly.

• The rotary switch on NC Card is not set up properly.

Check the settings and mounting of NC Card.

In addition, the following causes are also possible.

• An old version of BIOS is installed on the personal computer.

• BIOS is not set properly on the personal computer.

For some types of BIOS, it may be necessary to set up the cache of expansion memory addresses and memory shadow. In this case, set the cache of expansion memory addresses and memory shadow to "Disabled."

Problem 5: There is no rotary switch (DPADR, IOPADR, and IRQ) on ISA NC Card.

You may use an incorrect NC Card. Check that the card name printed on the NC Card reads HR621B or HR623C. In addition, confirm that card's present state (an alphabet stamped on the card in ink) is one of C-Z.

Problem 6: Windows starts up, however, the LED of NC Card is not blinking but remains "8."

NC System Device Driver has not been installed or disabled temporarily.

Display the "Device Manager" of "System" from Control Panel, and confirm that NC System Device Driver is installed. Install Device Driver if it has not been installed. In addition, confirm that the [Device usage] checkbox is checked on the [General] page of the Properties sheet of NC System Device Driver. Check the checkbox if it has not been checked.

Problem 7: Although Windows starts up normally when the personal computer is turned on, the LED of NC Card is not blinking. (Expect "8." is displayed in the LED.)

NC data have been destroyed or NC System has gone down. First, turn on the personal computer again. If condition does not change after the computer is restarted, initialize the NC Card memory.

If the memory is initialized properly, install NC standard parameters. Here, use the file saved in the chapter of "Backing Up NC parameters" to install the NC parameter file (parmet.bin).

If the memory is not initialized successfully, open "System" from "Control Panel," and delete NC System Device Driver before installing NC System Device Driver again.

Problem 8: When starting the file transfer utility or an MMI application, "device cannot open" or error No. 0x82000008 is displayed.

The device driver for Runtime Library may not be installed properly. The device driver is installed when Runtime Library is installed. Refer to chapter 4.4.1 "Installing Runtime Library" and install the device driver for Runtime Library.

Problem 9: When you attempted to select an NC Card drive using the file transfer utility, the target drive name could not be found.

NC Card No. may not be set. Refer to "4.4.2 Assigning an NC Card No. of PCI NC Card" to set an NC Card number.

Problem 10: After ISA NC Card is removed, Windows will not start, or an error occurs during startup.

NC Device Driver may be still in the condition of “in use” even after NC Card is removed. Start Windows in the Safe mode, and then refer to chapter 7.2 “Removing NC Card," and delete the NC Device Driver or disable it temporarily.

Problem 11: When the file transfer utility was started, the message of "File Not Found" appeared, and the file transfer utility could not be started.

The PATH environment variable may not be set properly. Check the setting of the PATH environment variable using the procedures below.

[Procedures]

(1) Open the C:\autoexec.bat file using an editor such as Notepad.

(2) On the row of the PATH environment variable, check that the path of the directory to which Runtime Library was installed is found.

Example: When “C:\melpcnc\” is specified on the destination,
(This directory is the default destination.)
Check that there is a search path of “C:\melpcnc\bin32.”

(3) Add the setting of the PATH environment variable if it is not found at step (2).

(4) Check the order of search paths if the PATH environment variable is found at step (2). If “C:\melpcnc\bin” is found on the setting of the PATH environment variable, set “C:\melpcnc\bin32” before the setting of “C:\melpcnc\bin.”

Example:

PATH=%PATH%;C:\mlepcnc\bin;C:\melpcnc\mmi
↓
PATH=%PATH%;C:\melpcnc\bin32;C:\melpcnc\bin;C:\melpcnc\mmi

(5) Check that there is no mistake on the expression of the PATH environment variable.

Example: PATH=%PATH%;C:melpcnc\bin32;... (There is no \ after the C:)

Problem 12: An NC drive name not used actually is displayed on the [NC Card Select] of MELDASMAGIC Monitor or the drive list on the [NC] side of the file transfer utility.

A contradiction may have occurred in the content of the MELCFG.INI file in the Windows directory. Check that there is no unnecessary [MachineXX] (XX is 01-FF) section in the MELCFG.INI file, and delete any unnecessary [MachineXX] section.

Problem 13: An error message indicating “An error occurred while files are copied: -115” was displayed when the installation program is executed, so that files could not be installed.

An application such as MMI may have been executed during the installation. Exit all Windows applications before executing the installation program. In addition, if the “PC Direct file server” icon is displayed on the indicator area of the taskbar (in the area opposite to the [Start] menu button) or “NcPccom” is found on the task list (displayed by pressing [Ctrl] + [Alt] + [Delete]), exit these applications. You can exit “PC Direct file server” via the pop-up menu displayed by pointing to and right-clicking the icon on the indicator.

Problem 14: A message indicating “NC card setting error. PCI channel number is conflict. (CDNO:xx)” is displayed on the way to starting Windows (for PCI NC Card).

The PCI NC Card’s station number may be duplicated. When you use more than one PCI NC Card, respective NC Cards must have different station numbers. Change the station number so that the settings of the rotary switches (CDNO) on the respective NC Cards are not duplicated each other.

7. Appendices

7.1 How to Remove NC Card (PCI NC Card)

Remove NC Card according to the procedures below.

7.1.1 Removing NC Card

Remove NC card out of the personal computer according to the procedures below.

- Exit Windows, and turn off the personal computer.
- Remove NC Card.

7.1.2 Removing NC Card Temporarily

Remove NC Card temporarily out of the personal computer according to the procedures below.

- Exit Windows, and turn off the personal computer.
- Remove NC Card.

7.1.3 Resuming Using NC Card Removed Temporarily

Resume the use of temporarily removed NC Card according to the procedures below.

- Exit Windows, and turn off the personal computer.
- Mount NC Card, and connect peripheral devices.

> ⚠**CAUTION**
> **Mount NC Card on the same slot as used before removing it. If you mount the card on the different slot, NC System Device Driver must be installed again.**

7.2 How to Remove NC Card (ISA NC Card)

If you remove the NC Card in use out of the personal computer, be sure to delete or temporarily disable NC System Device Driver.
If you remove NC Card with NC System Device Driver enabled, an error may occur when Windows is started or Windows may not start.
Remove the NC Card according to the procedures below.

7.2.1 Removing NC Card

Remove the NC Card out of the personal computer according to the procedures below.

■ Open Device Manager.

[Procedures]

(1) Turn on the personal computer.
Operation: Windows starts up.

(2) Click the [Settings] - [Control Panel] menus from the [Start] menu.
Operation: The "Control Panel" window appears.

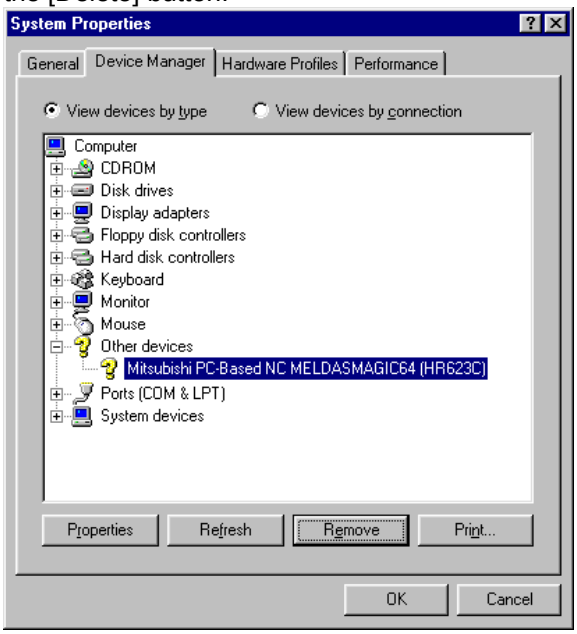
(3) Double-click the "System" icon of "Control Panel."
Operation: The "System Properties" window appears.

(4) Click the "Device Manager" tab.

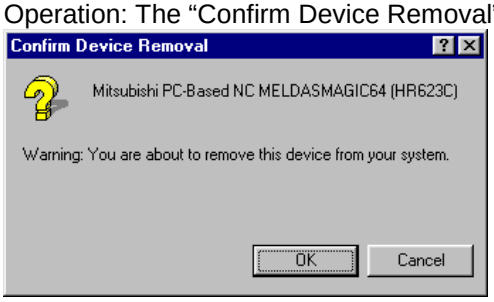
■ Delete NC System Device Driver.

[Procedures]

(1) Select [Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx)] below [Other devices,] and click the [Delete] button.



Operation: The “Confirm Device Removal” window is displayed.



(2) Click the [OK] button.
Operation: The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx)” device is deleted.

(3) Click the [OK] button on the “System Properties” window.
Operation: The “System Properties” window is closed.

■ Exit Windows, and turn off the personal computer.

■ Remove NC Card.

7.2.2 Removing NC Card Temporarily

Remove the NC Card temporarily out of the personal computer according to the procedures below.

■ Open Device Manager.

[Procedures]

(1) Turn on the personal computer.
Operation: Windows starts up.

(2) Click the [Settings] - [Control Panel] menus of the [Start] menu.
Operation: The "Control Panel" window appears.

(3) Double-click the "System" icon of "Control Panel."
Operation: The "System Properties" window appears.

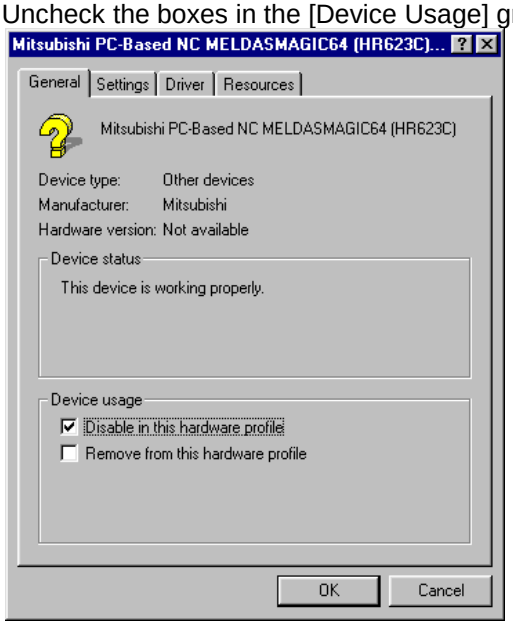
(4) Click the "Device Manager" tab.

■ Quit using NC System Device Driver.

[Procedures]

(1) Select “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx)” below “Other devices,” and click the [Properties] button.
Operation: The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties” window is displayed.

(2) Uncheck the boxes in the [Device Usage] group.



(3) Click the [OK] button.
Operation: The “Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties” window is closed.

(4) Click the [OK] button on the “System Properties” window.
Operation: The “System Properties” window is closed.

■ Exit Windows, and turn off the personal computer.

■ Remove NC Card.

7.2.3 Resuming Using NC Card Removed Temporarily

Resume the use of temporarily removed NC Card according to the procedures below.

■ Exit Windows, and turn off the personal computer.

■ Mount NC Card, and connect peripheral devices.

■ Open Device Manager.

[Procedures]

(1) Turn on the personal computer.
Operation: Windows starts up.

(2) Click the [Settings] - [Control Panel] menus of the [Start] menu.
Operation: The "Control Panel" window appears.

(3) Double-click the "System" icon of "Control Panel."
Operation: The "System Properties" window appears.

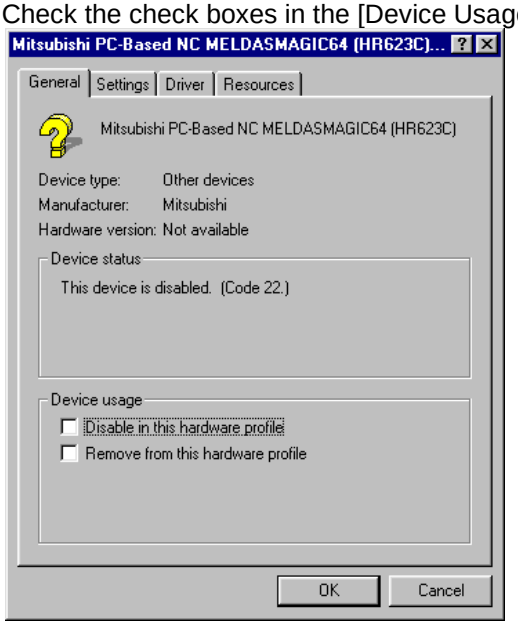
(4) Click the "Device Manager" tab.

■ Resume Using NC System Device Driver.

[Procedures]

(1) Select [Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx)] below [Other Devices,] and click the [Properties] button.
Operation: The "Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties" window appears.

(2) Check the check boxes in the [Device Usage] group.

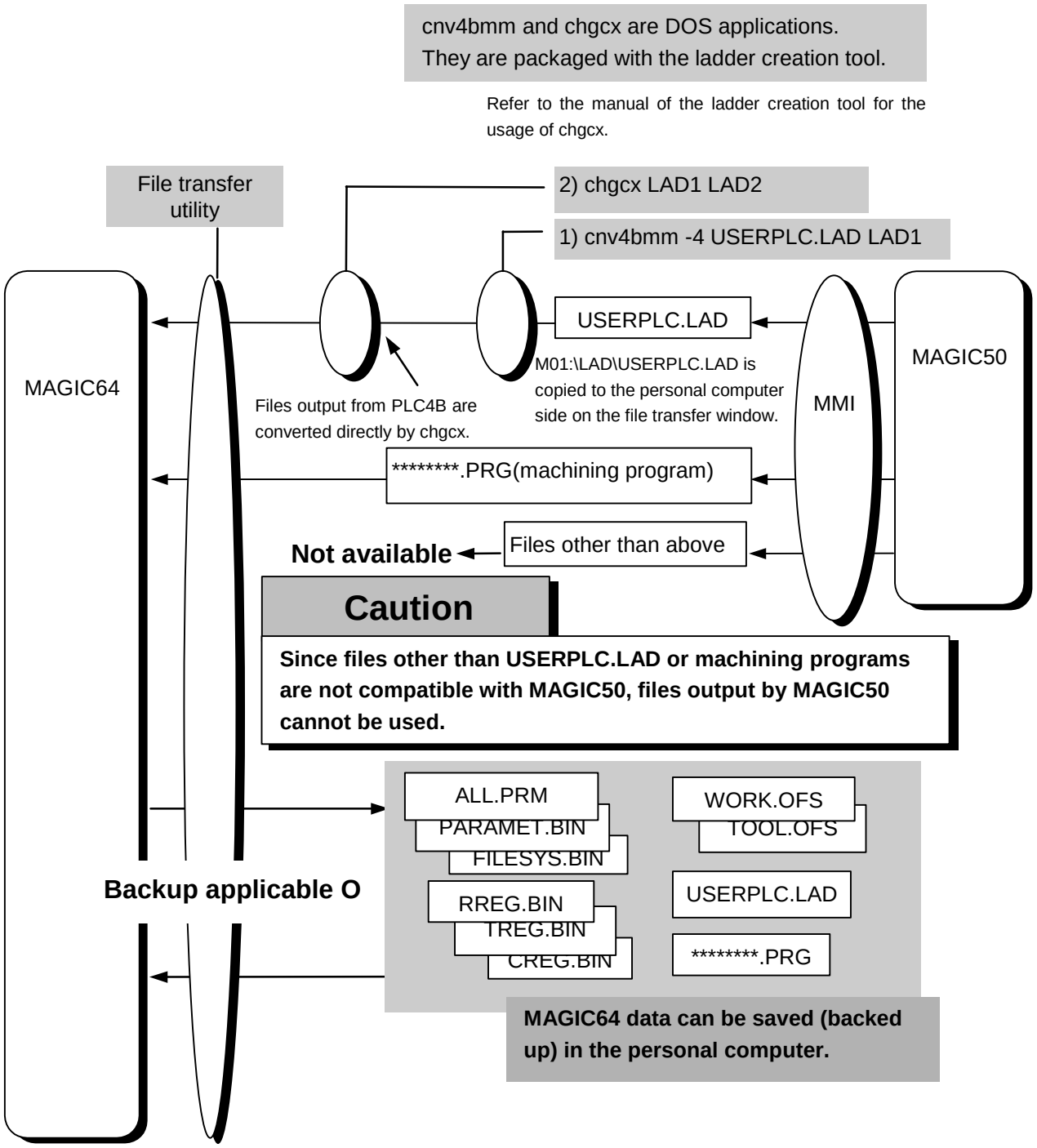


(3) Click the [OK] button.
Operation: The "Mitsubishi PC-Based NC MELDASMAGIC64 (HR62xx) Properties" window is closed.

(4) Click the [OK] button of the "System Properties" window.
Operation: The "System Properties" window is closed.

7.3 Data Compatibility with MELDASMAGIC50

USERPLC.LAD and data (parameters and so on) other than machining programs, created by MAGIC50, cannot be used by MAGIC64.
The ladder program files (USERPLC.LAD) created by MAGIC50 can be converted into the ladder program file for MAGIC64 using the cnv4bmm.exe and chgcx.exe tools. (Refer to operarion of 1) and 2) in the figure below.)
The machining program files created by MAGIC50 can be used directly by MAGIC64.



7.4 List of Related Documents

“MELDAS60/60S Series Operation Manual (BNP-B2180)”
“Connection Manual (BNP-B2203)”
“MELDASMAGIC Monitor Operation Manual (BNP-B2192)”
“MELDASMAGIC MMI Operation Manual (D/M) (BNP-B2193)”
“MELDASMAGIC MMI Operation Manual (L/G) (BNP-B2194)”
“Personal Computer Direct Operation Instruction Manual (BNP-B2195)”
“Utility Instruction Manual (BNP-B2196)”
“Custom Application Interface Library Instruction Manual (Programming Edition) (BNP-B2197)”

Revision History

Date of revision	Manual No.	Revision details
Mar. 1998	BNP-B2191*	First edition
Aug. 2003	BNP-B2191A	Description on ISA NC Card for Windows 98/NT was added. Description on PCI NC Card was added.

Notice

Every effort has been made to keep up with software and hardware revisions in the contents described in this manual. However, please understand that in some unavoidable cases simultaneous revision is not possible.

Please contact your Mitsubishi Electric dealer with any questions or comments regarding the use of this product.

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