MITSUBISHI ELECTRIC
Changes for the Better

Numerical Control (CNC)

CNC Remote Operation Software
NC Explorer Instruction Manual

MELSOFT

Introduction

This instruction manual describes how to use NC Explorer. Incorrect handling may lead to unforeseen accidents, so make sure to read this instruction manual thoroughly before operation to ensure correct usage.

NC Explorer supports the following NC series.

Appropriate NC
M800VW/M800VS/M80VW/M80V Series
M800W/M800S/M80W/M80/E80/C80 Series
M700VW/M700VS/M70V/M700/M70/E70 Series

Notes on Reading This Manual

(1) For the specifications of individual machine tools, refer to the manuals issued by the respective machine tool builders. The "restrictions" and "available functions" described by the machine tool builders have precedence over this manual.

(2) This manual describes as many special operations as possible, but it should be kept in mind that operations not mentioned in this manual cannot be performed.

Precautions for Safety

Always read the specifications issued by the machine tool builder, this manual, related manuals and attached documents before installation, operation, programming, maintenance or inspection to ensure correct use. Understand this numerical controller, safety items and cautions before using the unit.

This manual ranks the safety precautions into "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 property damage may occur if handling is mistaken.

Note that even items ranked as "⚠ **CAUTION**", may lead to major results depending on the situation. In any case, important information that must always be observed is described.

⚠ **DANGER**

Not applicable in this manual.

⚠ **WARNING**

Not applicable in this manual.

⚠ **CAUTION**

1. Items related to product and manual

⚠ If the descriptions relating to the "restrictions" and "allowable conditions" conflict between this manual and the machine tool builder'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 compiled 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 tool builder.

⚠ 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.

⚠ Check condition of the NC device to transfer NC data and machining program by NC Explorer to NC device connected to the network. It may cause unintended rewriting of the program.

⚠ To protect the availability, integrity and confidentiality of the NC system against cyber-attacks including unauthorized access, denial-of-service (DoS) (*1) attack, and computer virus from external sources via a network, take security measures such as firewall, VPN, and anti-virus software.
(*1) Denial-of-service (DoS) refers to a type of cyber-attack that disrupts services by overloading the system or by exploiting a vulnerability of the system.

⚠ Mitsubishi Electric assumes no responsibility for any problems caused to the NC system by any type of cyber-attacks including DoS attack, unauthorized access and computer virus.

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Contents

1. Outline

This chapter explains the outline of NC Explorer.

1.1 What is NC Explorer?

"NC Explorer" enables the host PC's Explorer connected to NCs to operate the NCs' machining data files via Ethernet.

Displays "NC Explorer" group under the desktop of Explorer, and displays the hierarchical structure of NC devices and directory by tree structure.
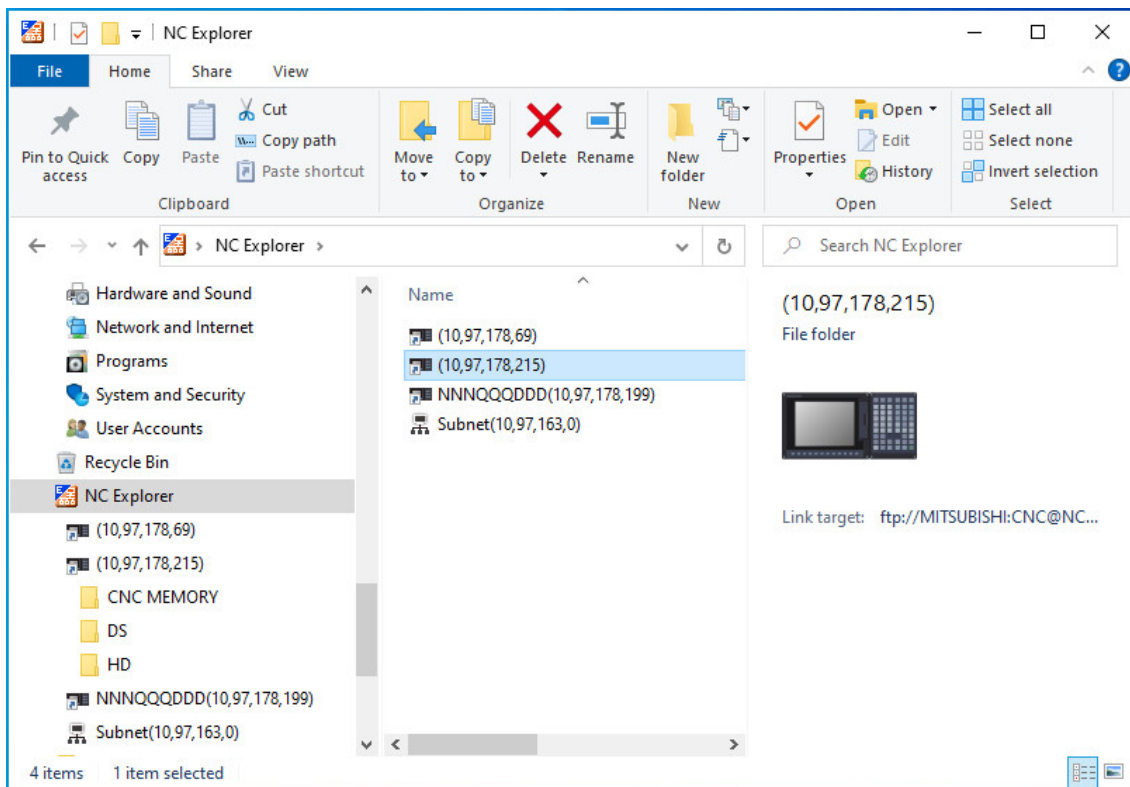
Fig. 1-1 NC Explorer's screen

1.2 Specification of NC Explorer

1.2.1 Device Configuration of NC Explorer

The device configuration of NC Explorer is as follows.

The network environment and device configuration which is covered by this system is as in Fig.1-2.

Targets of file operation are NCs on the same subnet as the host PC's, and NCs on a different subnet.
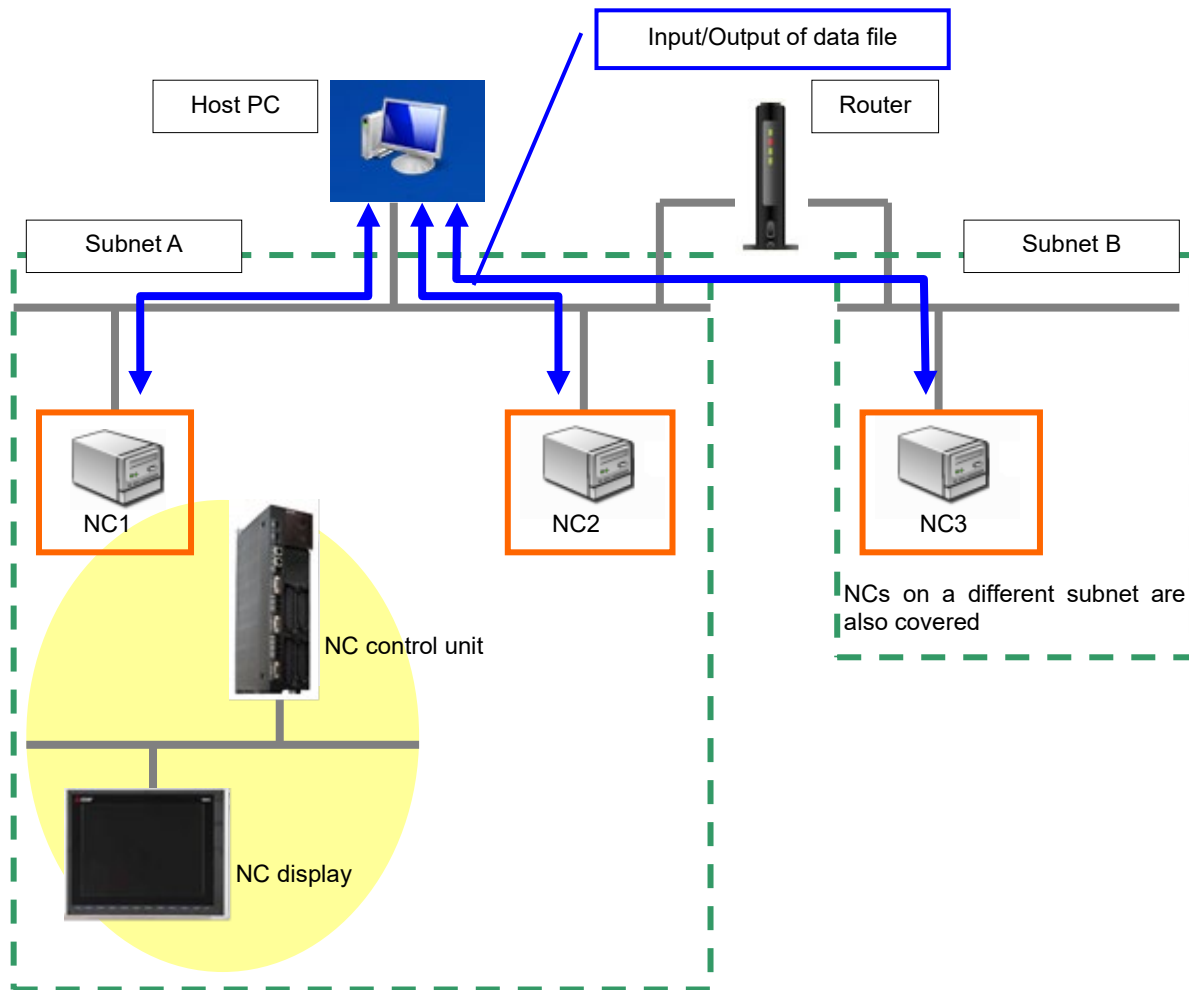
Fig. 1-2 Network environment and device configuration

(Note)   Do not disconnect the LAN cable while communicating with the NC device.
Also do not turn the host PC and the NC device OFF while communicating with NC device.

1.2.2 Screen Specification of NC Explorer

The screen of NC Explorer is as in Fig. 1-3.
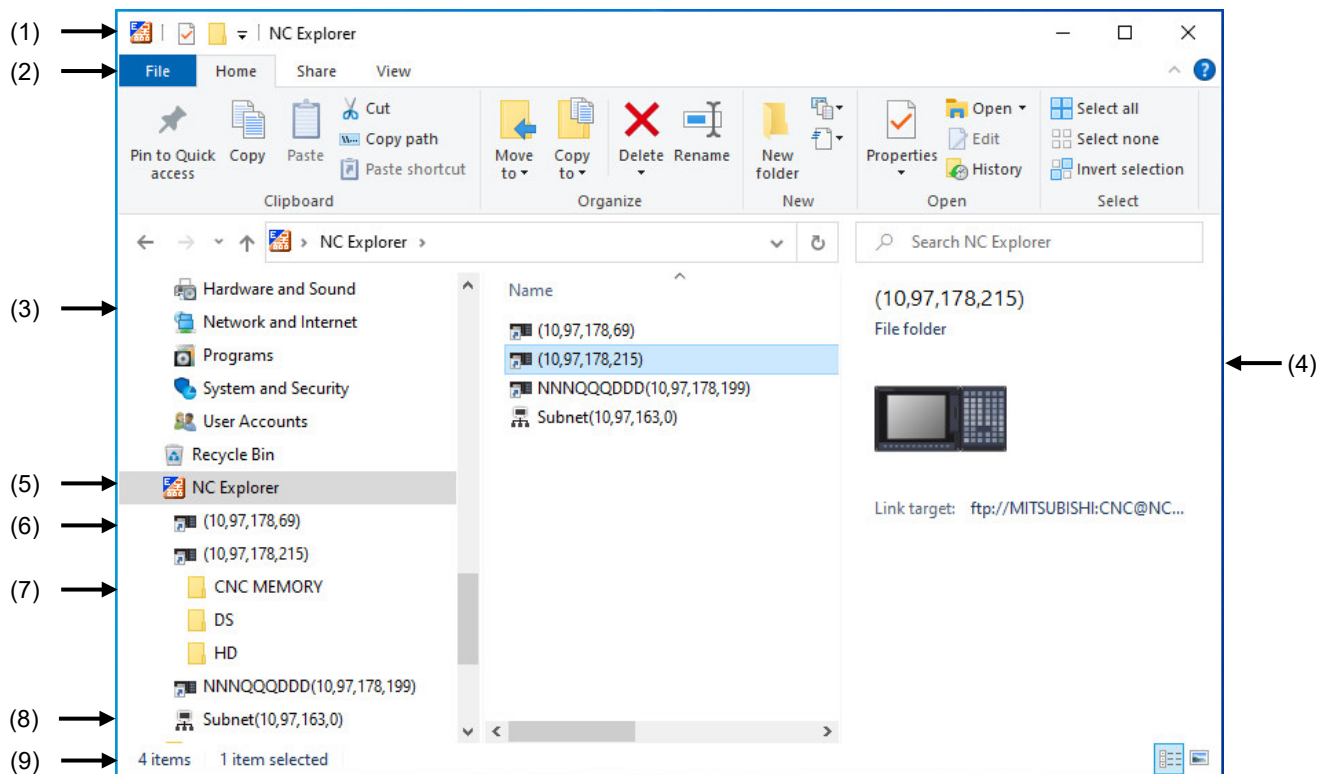
Fig. 1-3 NC Explorer's screen structure

Table 1-1 Screen structure

Name	Outline
(1) Address bar	Explorer's address bar
(2) Ribbon tabr	Explorer's ribbon tab
(3) Navigation window (Note 1)	Displays NC devices of NC Explorer group in the tree of the desktop.
(4) Main window	Displays files and folders of the selected NC device.
(5) NC Explorer	NC device group which is a target of file operation by NC Explorer connected to the network (Note 2)
(6) NC device	NC device which is a target of file operation by NC Explorer.
(7) Directory	NC device's folder which is a target of file operation by NC Explorer.
(8) Subnet folder	Different network folder from the host PC.
(9) Detail window	Displays detailed information of selected files and folders.

(Note 1) If the navigation window is not displayed, click " View", check "Navigation pane" to open the navigation window.

(Note 2) "NC Explorer" is not displayed in Windows default settings. Click [View] - [Navigation pane] - [Show all folder] to display NC Explorer.

1.2.3 Data Operated with NC Explorer

The correspondence between files and file operations which are handled by NC explorer is shown in Table 1-2, and the correspondence between files and NC devices is shown in Table 1-3.

Table 1-2 File list

Folder name			File name	Description	Copy	Paste	Rename	Cut	Delete	Compare (Note 6)
CNC Memory (Note 1)	PRG	USER	Program name	Machining program file	○	○	○	○	○	○
		IMG	Image data name	Image data file	○	○	○	○	○	○
	PRM		ALL.PRM	Parameter	○	×	×	×	×	×
			AUXAXIS.PRM	Auxiliary axis parameter	○	×	×	×	×	×
			DEVICENT.PRM	Device net parameter	○	×	×	×	×	×
			SAFEPARA.BIN	Safety parameter	○	×	×	×	×	×
	LAD		USERPLC.LAD	User PLC ladder	○	×	×	×	×	×
			SAFEPLC1.LAD, SAFEPLC2.LAD	Safety PLC program file	○	×	×	×	×	×
			PROJECTxx.LAD xx: 01 to Usable project No.	User PLC program file per project	○	×	×	×	×	×
	DAT		COMMON.VAR	Common variable	○	○	×	×	×	×
			TOOL.OFS	Tool offset data	○	○	×	×	×	×
			TLIFE.TLF (Note 2)	Tool life management data	○	○	×	×	×	×
			SRAM.BIN	SRAM data	○	×	×	×	×	×
			WORK.OFS	Workpiece offset data	○	○	×	×	×	×
			TOOLMNG.DAT (Note 2)	Tool management data	○	○	×	×	×	×
			DEVOPEN.DAT	Device open data	○	○	×	×	×	×
			SRAMOPEN.DAT	SRAM open data	○	○	×	×	×	×
			RNAVI.DAT	Rnavi data	○	○	×	×	×	×
			TOOLALL.DAT	Tool all data	○	○	×	×	×	×
			UPROTECT.BIN	Data protection by user's level file	○	×	×	×	×	×
			OBSTACL.DAT	Interference check III data	○	○	×	×	×	×
			MAILSET.DAT	Email transmission setting file	○	×	×	×	×	×
			POSTURE.DAT	Spatial error compensation data file (text format)	×	○	×	×	×	×
			POSTURE.BIN	Spatial error compensation data file (binary format)	○	○	×	×	×	×
			TEACHPOS.DAT	Robot teaching data	○	○	×	×	×	×

Folder name		File name	Description	Copy	Paste	Rename	Cut	Delete	Compare (Note 6)
	LOG	NCSAMP.CSV	Sampling data	○	×	×	×	×	×
		ALLLOG.LOG	Log data (All log)	○	×	×	×	×	×
		KEYLOG.LOG	Log data (Key log)	○	×	×	×	×	×
		TOUCHLOG.LOG	Touchscreen log data file	○	×	×	×	×	×
		MAILSENDxx.LOG (xx: 1 to 10)	Email transmission log file	○	×	×	×	×	×

Folder name		File name	Description	Copy	Paste	Rename	Cut	Delete	Compare (Note 6)
CNC Memory (Note 1)	LOGEX	ALM-SVn.LOG (n: 1 to 5)	Detailed alarm information history of servo/spindle	○	×	×	×	×	×
		ALM-OTRn.LOG (n: 1 to 5)	Detailed alarm information history of other than servo/spindle	○	×	×	×	×	×
		ALLLOGm.LOG (m: 1 to 3)	Saved all history	○	×	×	×	×	×
	FNET	EIPCONFDATA.BIN	Ethernet/IP configuration file	○	×	×	×	×	×
		CNFDEVIC.001 CNFMAST.001 CNFNAME.001 copycross10.bin	PROFINET configuration file	○	×	×	×	×	×
	PLCUMSG	PLCUMSG_XXX.TXT (XXX: Abbriviation of the language)	マクロアラームメッセージファイル(テキスト形式)	○	○	×	×	×	×
DS (Note 3)				○	○	○	○	○	○
MEMORY CARD (Note 4)				○	○	○	○	○	○
USB MEMORY				○	○	○	○	○	○
HD	NCFILE (Note 5)			○	○	○	○	○	○
CNC Memory2		Program name	Machining program file	○	○	○	○	○	○
	IMG	Image data name	Image data file	○	○	○	○	○	○

○ : Available
× : Unavailable

(Note 1) The files in CNC Memory (except the files listed under PRG-USER、PRG-USER-IMG) are displayed as the files that the size is 10MB and the file update date is the current time regardless of an actual data.

(Note 2) File operation can be performed only for M7 Series.

(Note 3) The following js the DS folder reference. For the other models, the DS folder is not displayed.

M800VW/M80VW/M800W/M80W: SD card in the control unit

M800VS/M80V/M800S/M80/E80: Back-side SD card of the display unit

M700VW/M700: CF card in the control unit

(Note 4) The following js the MEMORY CARD folder reference. For the other models, the DS folder is not displayed.

M800VS/M80V/M800S/M80/E80: Front-side SD card

M700VS/M70V/M70/E70: Front-side IC card

When connecting to E70, the guidance data may be stored in CF. Do not access the guidance data.

HD folder is not displayed when connecting to the CNC unit which is registered to subnet.

(Note 5) The following js the HD/NCFILE folder reference. For the other models, the HD folder or HD/NCFILE folder is not displayed.

M800VW/M80VW/M800W/M80W: "D:\NCFILE" folder in the CNC display unit

M80V/M80: "D:\NCFILE" folder in the IPC (Industrial PC)

M700VW/M700: "D:\NCFILE" folder in the CNC display unit

(Note 6) Enable the file comparison by the setting dialog (Refer to "3.6.2 Settings Menu"). When the file comparison is disabled, this function compares only the file size.

(Note 7) When standard user mode, only CNC_MEMORY/PRG/USER, DS, MEMORY CARD, USB MEMORY, HD, and CNC_MEMORY2 folders are displayed. when administrator mode, all folders are displayed.

(Note 8) The file stored in the DAT folder has the upper compatibility.

Table 1-3 List of files handled by NC device (M8V/M8 Series)

Folder name			File name	M800VW	M800VS	M80VW	M80V	M800W	M800S	M80W	M80	E80	C80
CNC Memory	PRG	USER	Program name	○	○	○	○	○	○	○	○	○	○
		IMG	Image data name	○	○	○	○	×	×	×	×	×	×
	PRM		ALL.PRM	○	○	○	○	○	○	○	○	○	○
			AUXAXIS.PRM	×	×	×	×	×	×	×	×	×	×
			DEVICENT.PRM	○	○	○	○	○	○	○	○	○	×
			SAFEPARA.BIN	○	○	○	○	○	○	○	○	○	○
	LAD		USERPLC.LAD	○	○	○	○	○	○	○	○	○	×
			SAFEPLC1.LAD, SAFEPLC2.LAD	○	○	○	○	○	○	○	○	○	○
			PROJECTxx.LAD xx: 01 to Usable project No.	○	○	○	○	○	○	○	○	○	×
	DAT		COMMON.VAR	○	○	○	○	○	○	○	○	○	○
			TOOL.OFS	○	○	○	○	○	○	○	○	○	○
			TLIFE.TLF (Note 1)	○	○	○	○	○	○	○	○	○	×
			SRAM.BIN	○	○	○	○	○	○	○	○	○	○
			WORK.OFS	○	○	○	○	○	○	○	○	○	○
			TOOLMNG.DAT (Note 1)	○	○	○	○	○	○	○	○	○	×
			DEVOPEN.DAT	○	○	○	○	○	○	○	○	○	×
			SRAMOPEN.DAT	○	○	○	○	○	○	○	○	○	×
			RNAVI.DAT	○	○	○	○	○	○	○	○	○	×
			TOOLALL.DAT	○	○	○	○	○	○	○	○	○	○
			UPROTECT.BIN	○	○	○	○	○	○	○	○	○	×
			OBSTACL.DAT	○	○	×	×	○	○	×	×	×	×
			MAILSET.DAT	○	○	○	○	○	○	○	○	○	×
			MAILADDR.DAT	○	○	○	○	○	○	○	○	○	×
			POSTURE.DAT	○	○	×	×	○	○	×	×	×	×
			POSTURE.BIN	○	○	×	×	○	○	×	×	×	×
			TEACHPOS.DAT	○	○	○	○	○	○	○	○	○	×
	LOG		NCSAMP.CSV	○	○	○	○	○	○	○	○	○	○
			ALLLOG.LOG	○	○	○	○	○	○	○	○	○	○
			KEYLOG.LOG	○	○	○	○	○	○	○	○	○	○
			TOUCHLOG.LOG	○	○	○	○	○	○	○	○	×	○
			MAILSENDxx.LOG (xx: 1 to 10)	○	○	○	○	○	○	○	○	○	×
	LOGEX		ALM-SVn.LOG (n: 1 to 5)	○	○	○	○	○	○	○	○	○	○
			ALM-OTRn.LOG (n: 1 to 5)	○	○	○	○	○	○	○	○	○	○
			ALLLOGm.LOG (m: 1 to 3)	○	○	○	○	○	○	○	○	○	×

Folder name		File name	M800VW	M800VS	M80VW	M80V	M800W	M800S	M80W	M80	E80	C80
CNC Memory	FNET	EIPCONFDATA.BIN	○	○	○	○	○	○	○	○	○	×
		CNFDEVIC.001 CNFMAST.001 CNFNAME.001 copycross10.bin	○	○	○	○	○	○	○	○	○	×
	PLCUMSG	PLCUMSG_XXX.TXT (XXX: Abbriviation of the language)	○	○	○	○	○	○	○	○	○	×
DS			○	○	○	○	○	○	○	○	○	×
MEMORY CARD			○	○	○	○	○	○	○	○	○	×
USB MEMORY			○	○	○	○	○	○	○	○	○	×
HD	NCFILE		○	×	○	○	○	×	○	○ (Note 2)	×	×
CNC Memory2		Program name	○	○	○	○	×	×	×	×	×	○
	IMG	Image data name	○	○	○	○	×	×	×	×	×	×

○ : Available

× : Unavailable

(Note 1) Only writing is available due to M7 Series compatibility.

(Note 2) NC system software version E4 or later is supported.

Table 1-3 List of files handled by NC device (M7 Series)

Folder name			File name	M700VW	M700VS	M700	M70V	M70	E70
CNC Memory	PRG	USER	Program name	○	○	○	○	○	○
		IMG	Image data name	×	×	×	×	×	×
	PRM		ALL.PRM	○	○	○	○	○	○
			AUXAXIS.PRM	○	×	○	×	×	×
			DEVICENT.PRM	○	○	○	○	○	○
			SAFEPARA.BIN	×	×	×	×	×	×
	LAD		USERPLC.LAD	○	○	○	○	○	○
			SAFEPLC1.LAD, SAFEPLC2.LAD	×	×	×	×	×	×
			PROJECTxx.LAD xx: 01 to Usable project No.	×	×	×	×	×	×
	DAT		COMMON.VAR	○	○	○	○	○	○
			TOOL.OFS	○	○	○	○	○	○
			TLIFE.TLF	○	○	○	○	○	○
			SRAM.BIN	○	○	○	○	○	○
			WORK.OFS	○	○	○	○	○	○
			TOOLMNG.DAT	○	○	○	○	○	○
			DEVOPEN.DAT	○	○	○	○	○	○
			SRAMOPEN.DAT	○	○	○	○	○	○
			RNAVI.DAT	○	○	○	○	○	○
			TOOLALL.DAT	×	×	×	×	×	×
			UPROTECT.BIN	×	×	×	×	×	×
			OBSTACL.DAT	×	×	×	×	×	×
			MAILSET.DAT	×	×	×	×	×	×
			MAILADDR.DAT	×	×	×	×	×	×
			POSTURE.DAT	×	×	×	×	×	×
			POSTURE.BIN	×	×	×	×	×	×
			TEACHPOS.DAT	×	×	×	×	×	×
	LOG		NCSAMP.CSV	○	○	○	○	○	○
			ALLLOG.LOG	○	○	○	○	○	○
			KEYLOG.LOG	○	○	○	○	○	○
			TOUCHLOG.LOG	×	×	×	×	×	×
			MAILSENDxx.LOG (xx: 1 to 10)	×	×	×	×	×	×
	LOGEX		ALM-SVn.LOG (n: 1 to 5)	×	×	×	×	×	×
			ALM-OTRn.LOG (n: 1 to 5)	×	×	×	×	×	×
			ALLLOGm.LOG (m: 1 to 3)	×	×	×	×	×	×

Folder name		File name	M700VW	M700VS	M700	M70V	M70	E70
CNC Memory	FNET	EIPCONFDATA.BIN	×	×	×	×	×	×
		CNFDEVIC.001 CNFMAST.001 CNFNAME.001 copycross10.bin	×	×	×	×	×	×
	PLCUMSG	PLCUMSG_XXX.TXT (XXX: Abbriviation of the language)	×	×	×	×	×	×
DS			○	×	○	×	×	×
MEMORY CARD			×	○	×	○	○	○
USB MEMORY			×	×	×	×	×	×
HD	NCFILE		○	×	○	×	×	×
CNC Memory2		Program name	×	×	×	×	×	×
	IMG	Image data name	×	×	×	×	×	×

○ : Available

× : Unavailable

2. Installation and Setup

2.1 Operating Environment of NC Explorer

The system environment necessary for the operation of NC Explorer is shown below.

OS	Windows 8.1(32bit version)
	Windows 8.1(64bit version)　Use WOW64
	Windows 10 (32bit version)
	Windows 10 (64bit version)　Use WOW64
Connected NC device	M800VW/M800VS/M80VW/M80V Series
	M800W/M800S/M80W/M80/E80/C80Series
	M700VW/M700VS/M70V/M700/M70/E70 Series

(Note 1)　Windows Internet Explorer 11.0 or later/Microsoft Edge is required.

(Note 2)　In public network mode, exceptions setting must be made for the Windows Firewall.
When the dialog of Explorer [Windows Security Alert] is displayed, select [Allow Access] or follow "Appendix 2. Setting Firewall Exceptions" for the registration.

(Note 3)　Install NC Explorer on PC logged in by User Account Control.

2.2 Installation Procedure

Double-click NCExplorer.exe and install by following the instruction on the screen.

2.3 Uninstallation Procedure

Uninstall by "carry out from Control Panel", or "double-click NCExplorer.exe" and follow the instruction on the screen.

(Note)　The dialog below displays when uninstallation has started, because NC Explorer is constantly active. Click "Postpone".
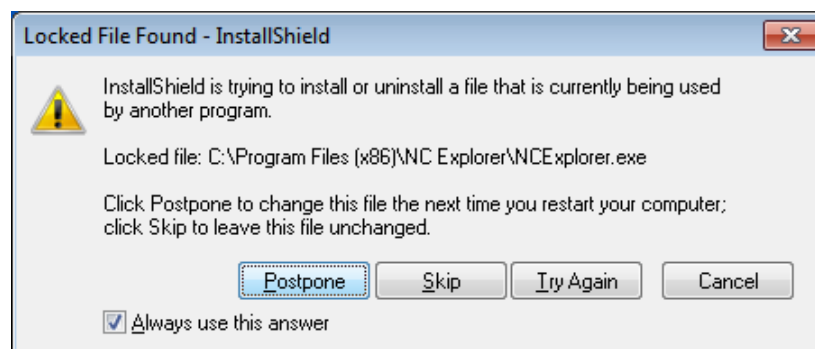
3. How to Use NC Explorer

This chapter explains how to use NC Explorer.

3.1 How to Start NC Explorer

3.1.1 Usual Start-up

NC Explorer starts automatically by starting the host PC.

The icon will display in the indicator area when the activation has succeeded.

The icon that shows failure will display in the indicator area when the activation has failed.

Check the network connection such as cable and duplicated port number.

Double-click the icon ("NC Explorer") on the desktop of Windows after the activation is succeeded.

    (Note 1) NC Explorer can not be ended until logoff or the host PC is turned OFF.

    (Note 2) The user account control dialog appears when the host PC is turned ON.

    (Note 3) When notification by user account control (UAC) is valid permit a change to the computer before double-clicking the icon on the desktop. If you have double-clicked the icon on the desktop before permitting a change to the computer, restart Windows.

Icon	Explanation
	The icon will display in the indicator area when the activation has succeeded.
	The icon will display in the indicator area when the activation has failed.
	The icon will display on the desktop.

3.1.2 How to Start when there are Multiple Network Cards

When the host PC has multiple network cards (such as Cable LAN and Wireless LAN), set a fixed IP address and start.

Set the start argument as follows.

  "C:\…NC Explorer\NCEAutoRun.exe"   /NIC xxx.xxx.xxx.xxx

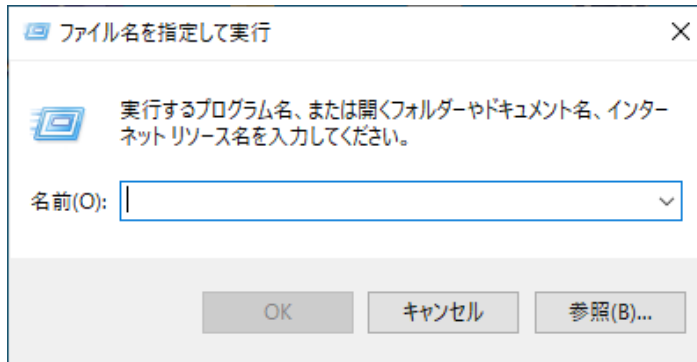   (Note)   Put a space between ["C:\…NC Explorer\NCEAutoRun.exe"] and [/NIC].

    (Note)   Put a space between [/NIC] and [xxx.xxx.xxx.xxx].
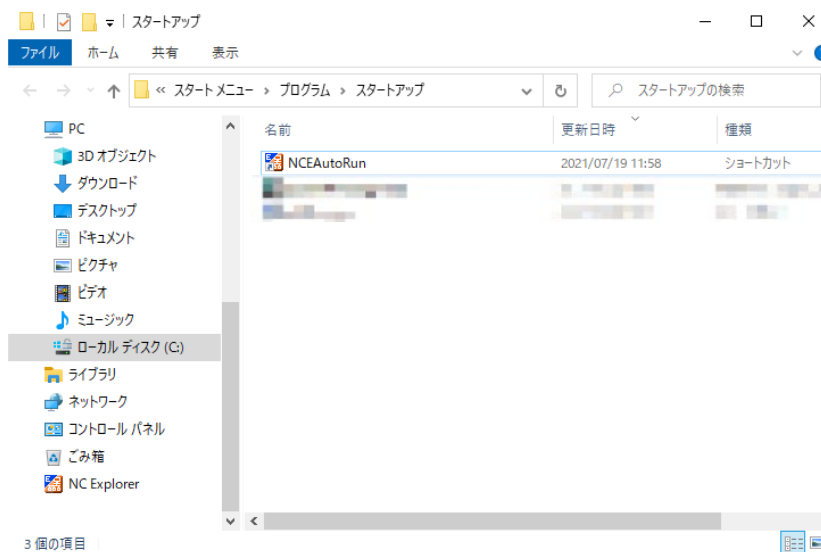
IB-1500904-N

The start argument is applied when the host PC is restarted. The setting from the last time will be kept until the host PC is restarted.

(Example) When 192.168.1.1 is IP address for the host PC
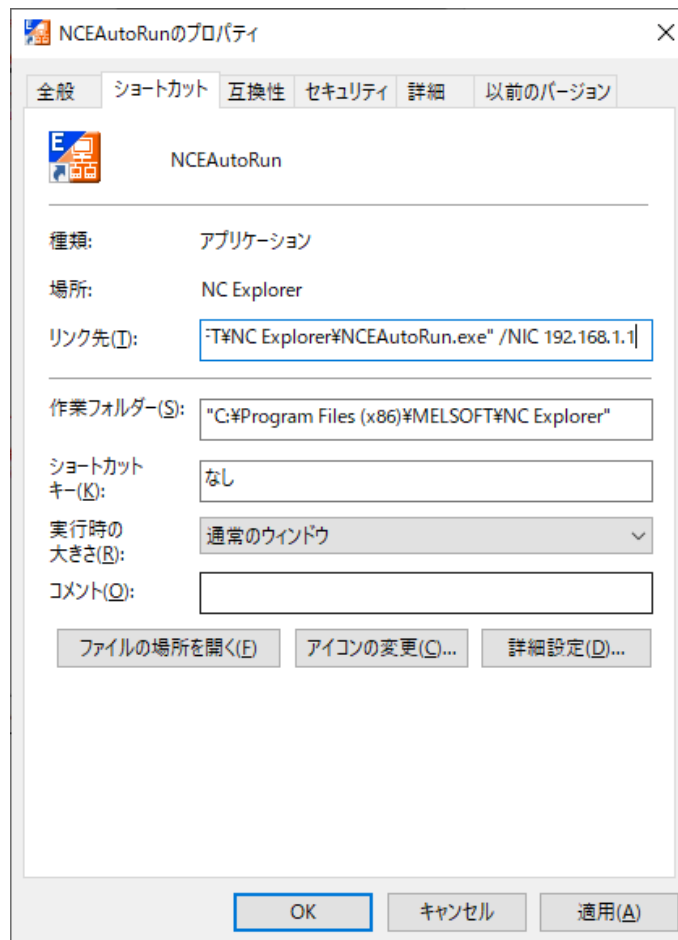
(1) Right-click "Start" and select "Run".

(2) Input "shell:common startup" and click the "OK" button to open the Startup folder (*1).

(3) Select "NCEAutoRun" in the Startup folder and select "Properties" from the menu.

(4) Add the argument "/NIC 192.168.1.1" to "Target" on the Properties dialog and click "OK".

(*1) The Startup folder can also be opened by inputting "shell:common startup" in the address bar of Windows Explorer and clicking the "Enter" key.

An error message will display when the IP address set to the start argument does not exist. Check the IP address of the host PC when the error message displays.

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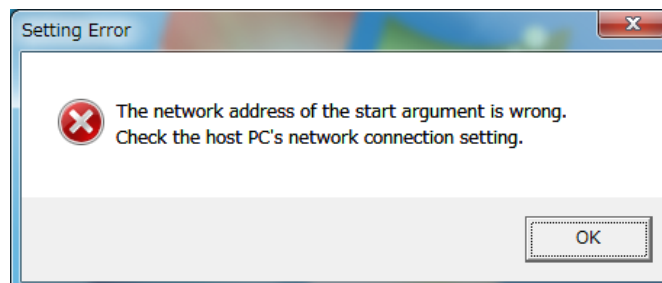
3.2 Selecting NC Devices

3.2.1 Searching NC Devices

When the host PC is started up, NC devices on the same subnet with the host PC are automatically searched at every refresh cycle specified by user, and they will be listed under "NC Explorer" of Explorer.

Names of NC devices are displayed in the order of priority as follows.

(1) Device name registered by user using NC Explorer.

(2) "NC device name (IP address)" ... (If (1) is not registered.)

(3) "Serial No. (IP address)" ... (If (1) and (2) are not registered.)
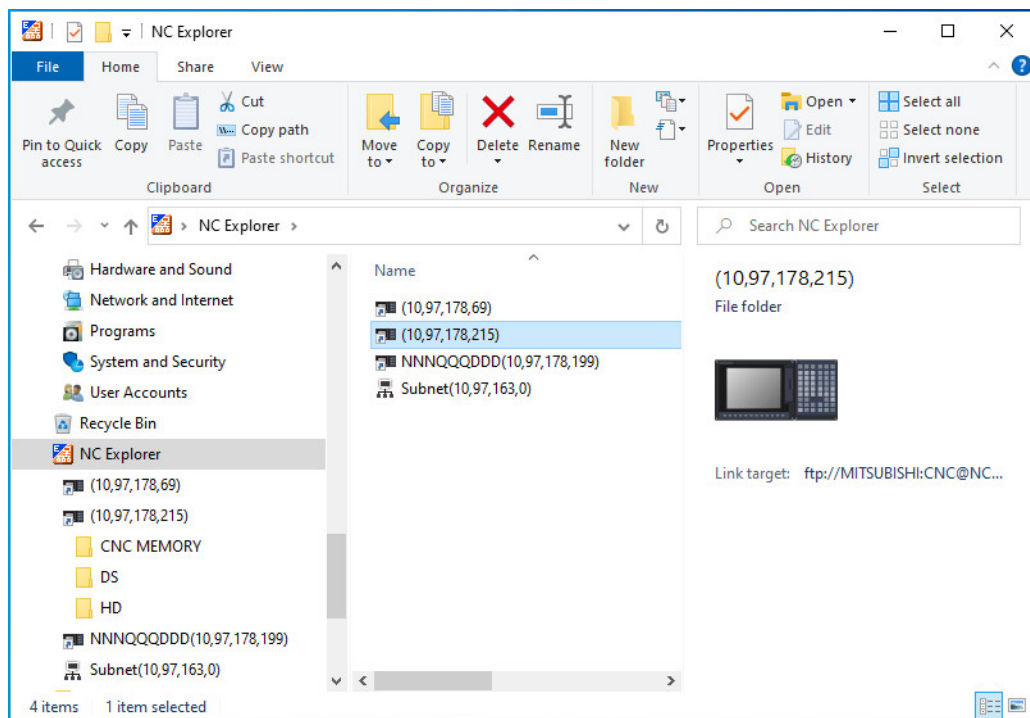
Fig. 3-1 How NC devices are shown

(Note 1) An NC device on a subnet different from that of the host PC is not searched automatically. To refer to an NC device on various subnets, register the NC device by following the procedure of "3.2.2 Registering Various Subnets".

(Note 2) When connecting an NC device using the IP address of the NC device that had been connected to NC Explorer, the name of the NC device that had been connected in the past may be displayed. Change the name of the NC device by referring to "3.2.3 Changing Name of NC Device".

3.2.2 Registering Various Subnets

Set the information of an NC device on a subnet different from that of the host PC.

(Note)   Set subnet information is applied when the host PC is restarted.
           The display will not change until the host PC is restarted.

Right-click "NC Explorer" in the indicator area and select "Subnet" from the displayed menu.
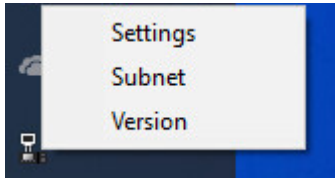
Follow the instruction on the screen to register, edit or delete the subnet.

3.2.3 Changing Name of NC Device

The name of NC device will be editable by right-click on the editing target NC device and selecting "Rename" from the menu.

(Note)   Duplicated name can not be set.

3.2.4 Inputting Password

For M800VW/M80VW/M800W/M80W Series and M700VW/M700 Series, in order to access the HD of NC device, verification is required.
For M80V/M80 Series, verfication is not required since it accesses the HD of IPC.

M800VW/M80VW/M800W/M80W Series:
    User ID: "M800" (Default value)
    Password: "CNC" (Default value)

M700VW/M700 Series:
    User ID: "Administrator" (Default value)
    Password: "CNC" (Default value)

(Note)   An error message may be displayed when the password is input. In that case, close the error message and access the HD again.

When shipped from the plant, the default value is set.
Contact with your MTB for details.

3.3 Operating Files

The following operations are enabled on NC Explorer.

- Copying files or folders

- Deleting files or folders

- Changing a file name or folder name

- Creating a new folder

3.4 File Comparison

The file comparison function compares the file contents between the copy destination and the source after the file is transferred from the host PC to the copy destination NC device.

Check the Option -Compare(from PC to NC) in the Settings dialog box to use this function.

Problems such as garbled data or missing data in the copy destination file can be detected by using this function.

3.4.1 Comparison Status Display

File comparison starts after the completion of file transfer from host PC to the copy destination NC device. The following dialog box is displayed during the comparison. The dialog box will be closed automatically when the file comparison is completed.

When a difference such as garbled data or missing data is detected in the transferred file, the error message will be displayed.

Once you press "OK", the comparison error file of the NC device will be deleted.
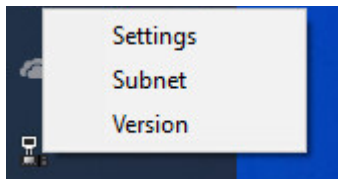
3.5 Setting NC Explorer

You can set start-up setting of NC Explorer and an NC device on a subnet different from that of the host PC.

3.5.1 Displaying Menu

Pop-up menu will display when the icon of NC Explorer in the indicator area is right-clicked.

There are three pop-up menus : "Settings", "Subnet" and "Version".

4. Precautions

4.1 General

(1) When operating files in the HD of NC device, the warning message will be displayed. Confirm that the file is not being edited or operated. During editing or operating the files in the HD of M80, the error message is displayed and files cannot be operated.

(2) During editing or operating the files on CNC_Memory, DS, MEMORY CARD, USB MEMORY or CNC_Memory2, the error message is displayed and files cannot be operated.
Error dialog appears; however, when the followings are applied to the connected NC, confirm the file is not being edited before operation because you can operate the file being edited.
- System software is M700V/M70V series before version G2.
- System software is M700/M70 series before version F9.
- For the files on USB MEMORY
The image data files can be operated while the linked machining programs are being edited or operated.

(3) If edit lock B, C is set, you cannot carry out a file operation such as copy and delete for a program in CNC_Memory/CNC_Memory2 (M8V Series) of the NC device.
Edit lock B…Protect the program number 8000 to 9999
Edit lock C…Protect the program number 9000 to 9999

(4) If data protection key (1 to 3, memory card or DS) is set, you cannot carry out a file operation such as copy and delete for each data.
Data protection key 1: For protecting the overall tool data and the coordinate system presettings as based on origin setting.
Data protection key 2: For protecting the user parameters and common variables.
Data protection key 3: For protecting the machining programs.
Data protection key (memory card): For protecting the data on the memory card.
Data protection key (DS): For protecting the data on the DS.

(5) If the file which has been set as edit lock or data protection key is downloaded to the NC device, the message "An error occurred while copying the file." will be displayed and the download will not be completed.

(6) The characters that can be used for the file name and folder name are 1-byte number, 1-byte capital alphabetical letters and 1-byte symbols recognized by the system. Note that the following characters cannot be used:
¥, /, :, "," (comma), *, ?, ", <, >, |, a to z (small letters), space
The number of characters has the following restrictions:
File name: Up to 32 characters (including extension)
Folder name: Up to 99 characters

(7) When the object file is under the graphic check, do not delete the file, change the name, or overwrite the file.

(8) The display may not be updated with some file operations. In that case, update the display (F5).

(9) If the operation parameter "#8931 Display/Set limit" has been set to "1" or "2" for the connected NC device, the list of files or folders is displayed, however, the file or folder operation cannot be performed.

(10) When a LAN cable is slipped off, or when a personal computer is shut down or logged off while copying the file, problems that a file cannot be deleted, a temporary file remains, etc., may occurs. If a problem has occurred, turn the power supply of the personal computer and the connected NC ON again.

(11) On NC Explorer, the update date and time of the files/folders in CNC Memory, DS, MEMORY CARD, USB MEMORY, CNC Memory2, and HD differs depending on the files/folders. The following are the update date and time of each file/folder.

File/folder	Displayed update date and time
Machining programs of CNC Memory/CNC Memory2, file/folder of DS/MEMORY CARD/USB MEMORY	Time of NC device
Files other than the machining programs of CNC Memory/CNC Memory2 (such as ALL.PRM)	Local time of the PC on which NC Explorer is used
HD of NC display	Time of the display
IPC HD	IPC local time converted to Coordinated Universal Time (UTC)

If the files/folders on the PC are uploaded to the NC device, the update date and time above is displayed. The update date and time of the uploaded files/folders displayed on Windows Explorer and on NC Explorer may not match.

When changing the time zone or daylight saving time settings (*1), restart the PC for which this setting was changed.

The update date and time may not be displayed correctly until the PC is restarted.

(*1) For Windows 10, daylight saving time settings can be changed with [Start menu] - [Settings (cog wheel icon)] - [Time & Language] - [Adjust for daylight saving time automatically].

(12) When you operate multiple NCs simultaneously, up to two NCs are available.

(13) If the connection to IPC is cut off for M80, communication with the connected NC becomes unstable and cannot operate normally. Restart the IPC, then turn the power supply of the connected NC ON and restart the PC on which NC Explorer is used.

(14) If an error occurs during while operating multiple folders/files, the operation stops at that point.

(15) To start NC Explorer version C6 or later on Windows 8.1, all the following Windows Update programs must be applied to the PC.

- KB2919442: Servicing stack update program
- KB2919355: Update program of Windows 8.1 Update (apply KB2919442 before this)
- KB2999226: Update program of Windows Universal C Runtime (CRT) (apply KB2919355 before this)

The release date for each Windows update program is as follows.

- KB2919442: 10 Mar. 2014
- KB2919355: 5 May 2014
- KB2999226: 15 Sep. 2015

4.2 Precautions for Copying File or Folder

(1) File (Folder) cannot be transferred between NC devices directly. To transfer a file (folder) between NC devices, transfer it to the host PC from an NC device, and then transfer it to the target NC device from the host PC.

(2) Copy destination file will be deleted when overwrite copying file is canceled.

(3) Check condition of the NC device to transfer NC data and machining program by NC Explorer to NC device connected to the network. It may cause unintended rewriting of the program.

(4) When copying over files/folders to the NC device, the overwrite confirmation dialog and upload time calculation dialog appear. Make sure to select the operation because copying files or canceling operation cannot be completed if you do not select the operation in overwrite confirmation dialog. To cancel the overwrite copy, cancel the overwrite confirmation dialog first before the upload time calculation dialog. If you have canceled the upload time calculation dialog first, the calculation cancel starts, however, just cancel the overwrite confirmation dialog.

(5) The file or folder is copied retaining the same name regardless of the settings of the operation parameter "8936 Delete leading 0" for the connected NC device.

(6) When an error such as FTP error occurs during copying multiple files, decrease the number of files to be transferred and copy files again.

(7) When the storage capacity is deficient during copying files, delete the temporary files begin with "~", secure the storage capacity for the files to be copied, and then copy files again.

(8) When you copy a file into the DS or MEMORY CARD, an error message related to #8931 (Refer to "Appendix 1 List of Messages") may appears although the operation parameter "#8931 Display/Set limit" of the connected NC device is set to "0", or you may not be able to copy the file properly. In such cases, try formatting the SD card of the connected NC device.

(9) When the operation parameter "#1285 ext21/bit0 (Multi-part system program management)" on the connected NC is set to "1" (Use), and multi-part system program files are copied to the memory on NC, the files are not copied per part system, but they are copied as one file and are not treated as multi-part system program.
When you want to copy the multi-part system program files, copy the program files divided per part system.

(10) When overwriting the machining program to the NC device, if image data (image drawn by 2D/3D program check) related to the machining program is saved on the NC device, image data on the NC device and that of machining program do not match. Execute 2D/3D program check of the machining program on the NC device to update image data.

(11) When a file is downloaded to the PC from the NC device, the update date and time is displayed in Coordinate Universal Time (UTC). When a folder is downloaded to the PC from the NC device, the local time of the PC on which NC Explorer is used is displayed.

[When downloading files]
If a file (update date and time displayed on NC Explorer is 9:00) is downloaded to the PC which time zone is Japan (UTC + 9:00), the update date and time displayed on Windows is 0:00.

4.3 Precautions for Deleting Folder

(1) The folders in CNC_Memory cannot be deleted.

(2) When the target folder contains a file being edited or operated in DS, MEMORY CARD or USB MEMORY, the folder cannot be deleted. The error dialog appears.

However, when the followings are applied to the connected NC, confirm the file is not being edited before operation because you can delete the folder with the file being edited.
- System software is M700V/M70V series before version G2.
- System software is M700/M70 series before version F9.

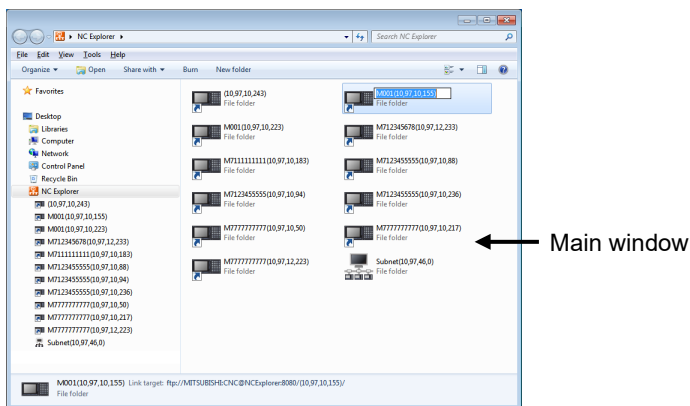(3) For M80V/M80, the folders in the HD cannot be deleted.

4.4 Precautions for Deleting File

(1) If image data (image drawn by 2D/3D program check) related to the machining program is saved on the NC device, the image data file is automatically deleted.

(2) When deleting the image data file, the machining program file linked to it is not automatically deleted.

4.5 Precautions for Changing Folder Name

(1)   The folder name in CNC_Memory cannot be changed.

(2)   When the target folder contains a file being in edit or operation in DS, MEMORY CARD or USB MEMORY, the folder name cannot be changed. The error dialog appears.
However, when the followings are applied to the connected NC, confirm the file is not being edited before operation because you can rename the folder with the file being edited.
- System software is M700V/M70V series before version G2.
- System software is M700/M70 series before version F9.

(3)   If you rename any folder in DS, MEMORY CARD, USB MEMORY or HD in NC device, rename it on the main window of the Explorer.

4.6 Precautions for Changing File Name

(1)   If image data (image drawn by 2D/3D program check) related to the machining program to change the file name is saved on the NC device, the image data file is automatically deleted.

(2)   When changing the file name of the image data, the name of the machining program file linked to it is not automatically changed.

4.7 Precaution for Executing Comparison

(1)   Error files in NC device that are detected with the file comparison will be deleted.

(2)   The file comparison is carried out only for machining program files in CNC Memory and files in DS, MEMORY CARD, USB MEMORY, HD folders and CNC Memory2.

(3)   File names in NC device are displayed as temporary file name "NCE□□□.tmp" during the comparison. The file names in the NC device will be rewritten to the transferred file name after the comparison is completed.

(4)   Even when the comparison is completed, the temporary file names may remain on NC Explorer. If the display on the NC Explorer is not updated, press the F5 key to update the display.

(5)   Files cannot be copied, cut, and deleted and the file names cannot be changed during the comparison.

(6)   Do not change the NC device name during file comparison. If the NC device name is changed during the comparison, the comparison status will not be displayed properly.

(7)   If multiple files are transferred, both transfer dialog and comparison dialog may appear.

(8)   While multiple files are being transferred, the transfer of the remaining files and comparison will be carried out even when the cancellation button is pressed. It is better not to handle multiple files at a time when using the comparison function.

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APPENDIX

Appendix 1. Parameters

The relevant parameters when using NC Explorer are listed below.
For parameters with (PR), turn OFF the power of the CNC after setting. The settings become valid after turning ON the power again.

Appendix 1.1 Operation Parameters

The file operation to the connected NC device via NC Explorer by setting the operation parameters in the NC.
The file operation includes all the available file operation (Copying and deleting files or folders, changing names, and creating new folders or files) by NC Explorer.

#	Item	Description	Setting range
8931	Display/Set limit	Select the restriction of the file operation to the connected NC devices via NC Explorer 0: Permit the file operation to the connected NC device via NC Explorer. 1: Restrict the file operation to the connected NC device via NC Explorer.	0 to 2

(Note) If the setting of the operation parameter "#8931 Display/Set limit" on the NC device is changed while the folder in the connected NC device is open, the change is applied immediately.

Appendix 1.2 Ethernet Parameters

#	Item	Description
1926 (PR)	Global IP address	Set the main CPU's IP address. Set the NC IP address seen from an external source.
1927 (PR)	Global Subnet mask	Set the subnet mask for the IP address.
1928 (PR)	Global Gateway	Set the IP address for the gateway.

Appendix 1.3 Wireless LAN Parameters (Only for M8V Series)

#	Item	Description	Setting range
75000 (PR)	WLAN STA/AP mode	Specify the operation mode of wireless LAN. 0: No mode (Wireless LAN function invalid) 1: Station (STA) mode 2: Access point (AP) mode	0 to 2
75001 (PR)	WLAN IP address	Set the IP address for the wireless LAN. (Note) This parameter is ignored when "DHCP client" is enabled.	0.0.0.0 to 255.255.255.255
75002 (PR)	WLAN Subnet mask	Set the subnet mask for the wireless LAN. (Note) In Station (STA) mode, this parameter is ignored when "DHCP client" is enabled.	0.0.0.0 to 255.255.255.255
75003 (PR)	connect SSID	For Station (STA) mode Specify the SSID of the access point to be connected.	Up to 32 characters in length, containing alphanumeric characters and symbols
75004 (PR)	connect BSSID	For Station (STA) mode Specify the BSSID (MAC address of the wireless LAN network) of the access point to be connected. When this parameter is not set, the access point that has the strongest radio wave intensity is connected.	00:00:00:00:00:00 to FF:FF:FF:FF:FF:FF 0: No setting
75005 (PR)	SSID	For Access Point (AP) mode Specify the SSID used when a station connects to the CNC.	Up to 32 characters in length, containing alphanumeric characters and symbols
75006 (PR)	Encryption mode	For Access Point (AP) mode Specify the data encryption and authentication method for the wireless communications. 0: WPA-PSK TKIP 1: WPA2-PSK AES	0/1
75007 (PR)	Encryption key	In Access point (AP) mode, specify the encryption key to be used when the station is connecting to CNC. In Station (STA) mode, specify the encryption key of the access point to be connected.	8 or more to 32 characters in alphanumeric characters or symbols

#	Item	Description	Setting range
75008 (PR)	WLAN channel	For Access Point (AP) mode Specify the channel (frequency band) to be used for the wireless communication. 0: Automatic 1 to 13: Channel for 2.4 GHz 36, 40, 44, and 48: Channel for 5 GHz (W52) 149, 153, 157, 161, and 165: Channel for 5 GHz (W58) (Note) Only channels that correspond to the country code can be set. JP: 1 to 13, 36, 40, 44, and 48 CN: 1 to 13, 36, 40, 44, 48, 149, 153, 157, 161, and 165 US: 1 to 11, 36, 40, 44, 48, 149, 153, 157, 161, and 165 TR: 1 to 13, 36, 40, 44, and 48 TW: 1 to 11, 36, 40, 44, 48, 149, 153, 157, 161, and 165 GB: 1 to 13, 36, 40, 44 and 48 EU countries: 1 to 13, 36, 40, 44, and 48	0, 1 to 13, 36, 40, 44, 48, 149, 153, 157, 161, 165
75009 (PR)	Frequency band	For Access Point (AP) mode Specify the operation frequency band for the wireless communication. 0: 2.4GHz 1: 5GHz	0/1
75010 (PR)	ESSID stealth	For Access Point (AP) mode Specify whether to enable ESSID stealth. 0: Disable 1: Enable	0/1
75011 (PR)	AP isolation OFF	For Access Point (AP) mode Specify whether to disable AP isolation. 0: Disable 1: Enable	0/1
75012 (PR)	abg mode	For Access Point (AP) mode Specify whether to enable abg mode. 0: Disable 1: Enable (not communicate with IEEE802.11n) (Note) Set this parameter if the station to be communicated malfunctions when communicating with IEEE802.11n.	0/1
75050 (PR)	DHCP client	Specify whether to enable DHCP client. 0: Disable 1: Enable (Note) This parameter is enabled when station (STA) mode is valid.	0/1

#	Item	Description	Setting range
75051 (PR)	DHCP server	Specify whether to enable DHCP server. 0: Disable 1: Enable (Note) This parameter is enabled when access point (AP) mode is valid.	0/1
75052 (PR)	StartIP DHCPserver	Specify the beginning of the IP addresses to be allocated to devices in the LAN by DHCP. (Note) If the IP addresses used by the CNC are included in the allocatable IP addresses, they are not allocated.	0.0.0.0 to 255.255.255. 255
75053 (PR)	IP num DHCPserver	Specify the number of IP addresses to be allocated to devices in the LAN by DHCP. When "0" is set, the IP num DHCPserver is "20". (Note) If the IP addresses used by the CNC are included in the allocatable IP addresses, they are not allocated.	0 to 20

For details of the wireless LAN function of the NC device, refer to chapter 14 "Appendix 1: Wireless LAN Function" of "M800V/M80V Series Instruction Manual (IB-1501618(ENG)).

Appendix 2. List of Messages

Messages shown during using NC Explorer are as follows.

Message	Contents	Remedy
Cannot copy file/directory. Permission denied.	Failed to copy.	Refer to "4.1 General" and "4.2 Precautions for Copying File or Folder".
Cannot delete file/directory. Permission denied.	Failed to delete.	Refer to "4.1 General" and "4.3 Precautions for Deleting Folder".
Cannot rename file/directory. Permission denied.	Failed to rename file.	Refer to "4.1 General" and "4.5 Precautions for Changing Folder Name".
Cannot create directory. Permission denied.	Failed to create new directory.	Refer to "4.1 General".
File is protected.	Data protection key is valid.	Disable the data protection key.
File is locked.	Edit lock is valid.	Disable the edit lock.
The designated file is being edited.	Editing file.	Save the file or stop editing.
Executing automatic operation.	Program is executing.	Complete the program operation or reset the operation.
Login or password incorrect!	Password is wrong.	Enter the correct password.
User name or password error.	User name or password is wrong.	Enter the correct user name or password.
Login is canceled.	Login is canceled.	Enter a user name and a password from the authentication dialog if you need to login.
The network address of the start argument is wrong. Check the host PC's network connection setting.	Network address of the start argument is wrong.	Designate the correct network address to the start argument.
File save error.	Failed to save log file.	Confirm the access permission to the storage destination.
Failed to detect DS.	Failed to detect DS.	Mount a DS into the NC.
Failed to detect MEMORY CARD.	MEMORY CARD is not found.	Mount a memory card into the NC.
Failed to detect USB MEMORY.	USB MEMORY is not found.	Mount a USB MEMORY into the NC.
Enter an integer between 1 and 65535.	Entered value is over the setting range of port No.	Set the port No. within the setting range (1 to 65535).
Enter an integer between 1 and 99.	Entered value is over the setting range of update cycle.	Set the update cycle within the setting range (1 to 99).
This work may not be safe when the program is operating or during edit. Do you want to continue?	You attempted to operate the HD folder of the NC device. The program may be being edited or operated.	Press "OK" to continue the operation for the HD folder of NC device or "Cancel" to stop the operation.
You have not selected an item. Please select first.	Subnet address is no selected.	Select the subnet address.
Settings have been changed. Restart or logoff the computer to take the effect.	The settings have been changed. Restart or logoff the computer.	Restart or log off the computer to enable the change.

| Message	Contents	Remedy
NC Explorer is uploading or downloading.	NC Explorer is uploading or downloading.	Force-quit or log off the computer to stop the file operation by NC Explorer or select "Cancel" to continue the operation.
Connect Error.	Failed to start NC Explorer.	Check the port No.
The connection with the server was reset.	Failed to transfer file.	Check to see if it is not overloaded.
Comparison error. <File name> will be deleted.	An error occurs on the file comparison. The error file will be deleted.	Try copying the file again. Also, refer to "4.7 Precautions for Executing Comparison".
Comparing this file will be cancelled. Are you OK?	This is the confirmation message to cancel the file comparison. The file comparison is suspended while the message is being displayed. Click the cancel button to restart the file comparison.	Press "OK" to stop the file comparison or "Cancel" to continue it.
Write file error. Please check the memory size.	An error occurs while the file is being written to NC device.	Check the memory size.
Write file error. Please check the network connection.	A network connection error occurred while the file is being written to NC device.	Check the network connection.
Read file error. Please check the network connection.	A network connection error occurred while the file is being read from the NC device.	Check the network connection.
Setting operation is restricted. Confirm the setting of the connected NC's operation parameter "#8931 Display/Set limit".	Because the connected NC's operation parameter "#8931 Display/Set limit" is set to other than "0", the directory or file cannot be operated.	Change the setting value of the connected NC's operation parameter "#8931 Display/Set limit" to "0".
PLC is running.	The file transfer cannot be performed during PLC RUN in the connected NC.	Transfer the file after changing the PLC status to "STOP" in the connected NC.
File/Directory name is illegal.	Character(s) that cannot be used in file/folder names are included	Change the file/folder name. Refer to "4.1 General" for the characters can be used.
Comparison error. The file <Original file name> will be renamed to <Renamed file name>.	An error occurs on the file comparison. The error file will be renamed.	Try copying the file again.
Cannot rename file from <Original file name> to <Renamed file name>.	The file could not be renamed due to reasons such as a file with the same name already existing etc.	Rename the file manually as necessary.

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Appendix 3. Setting Firewall Exceptions

Follow the procedure below to register the exceptions for the Firewall function. (This setting can be performed by a user having the administrative right.)
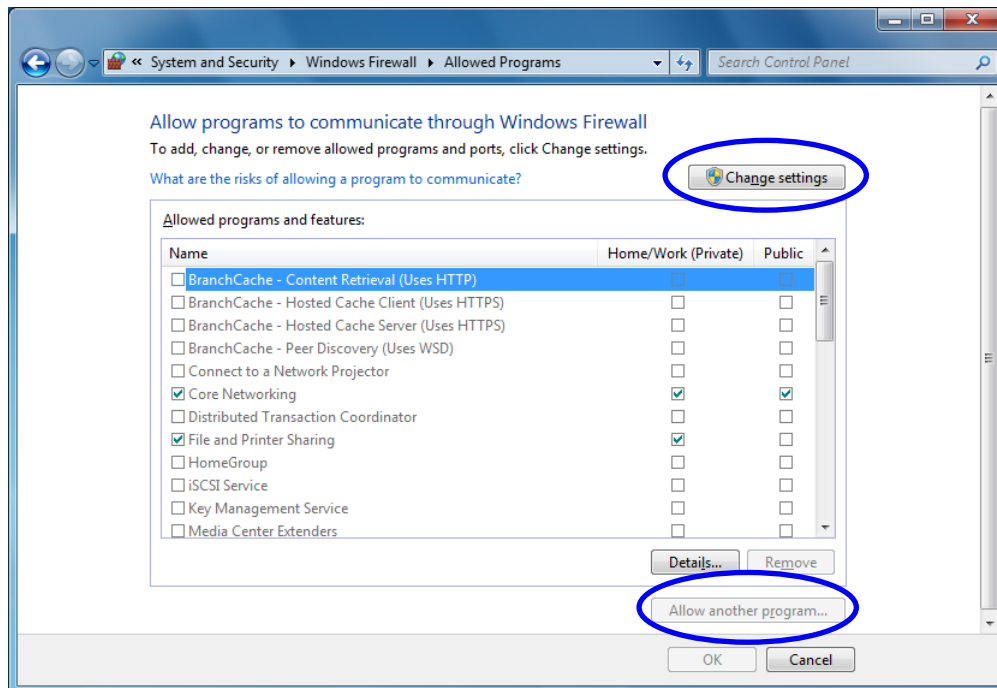
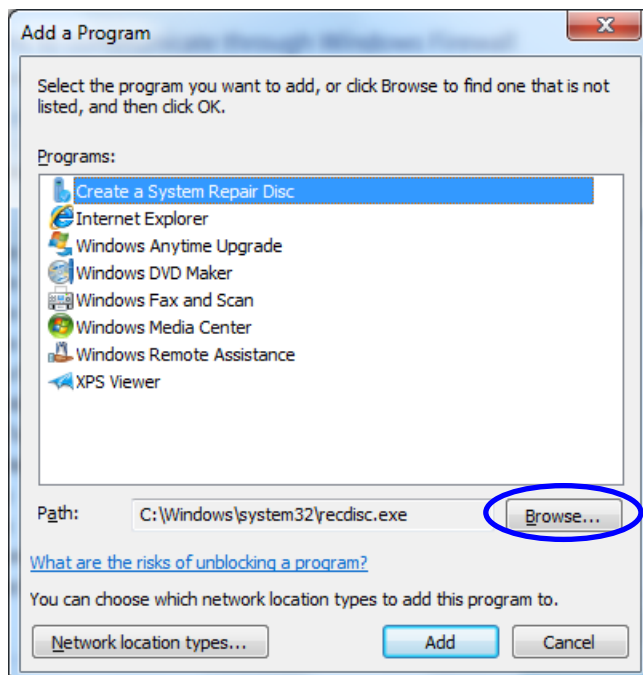1. Open the [Control Panel].

2. Click [System and Security].

3. Click [Allow a program through Windows Firewall].
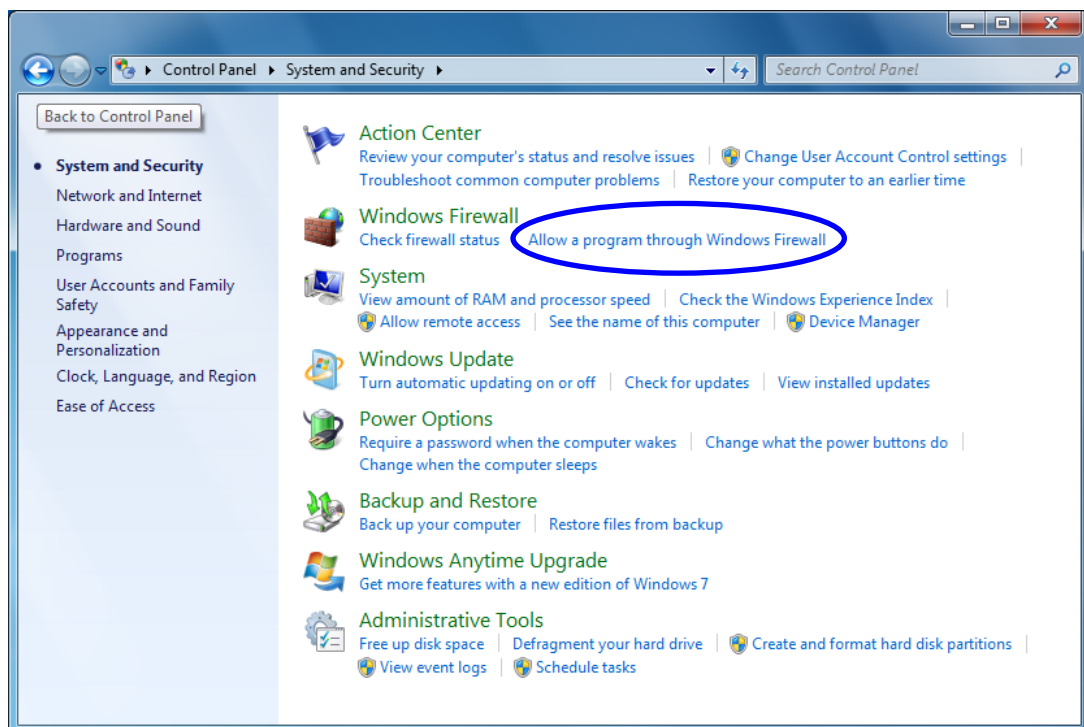
4. Click the [Change settings] button to enable the he [Allow another program] button. Click the [Allow another program] button.
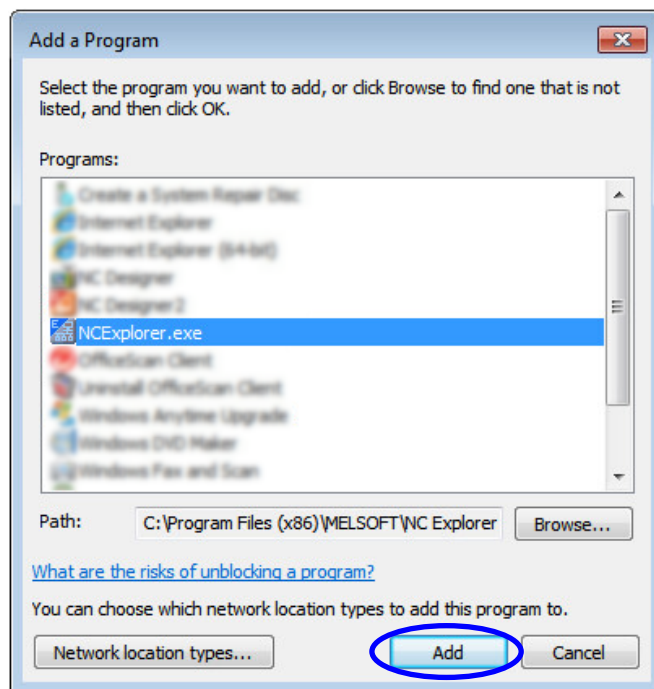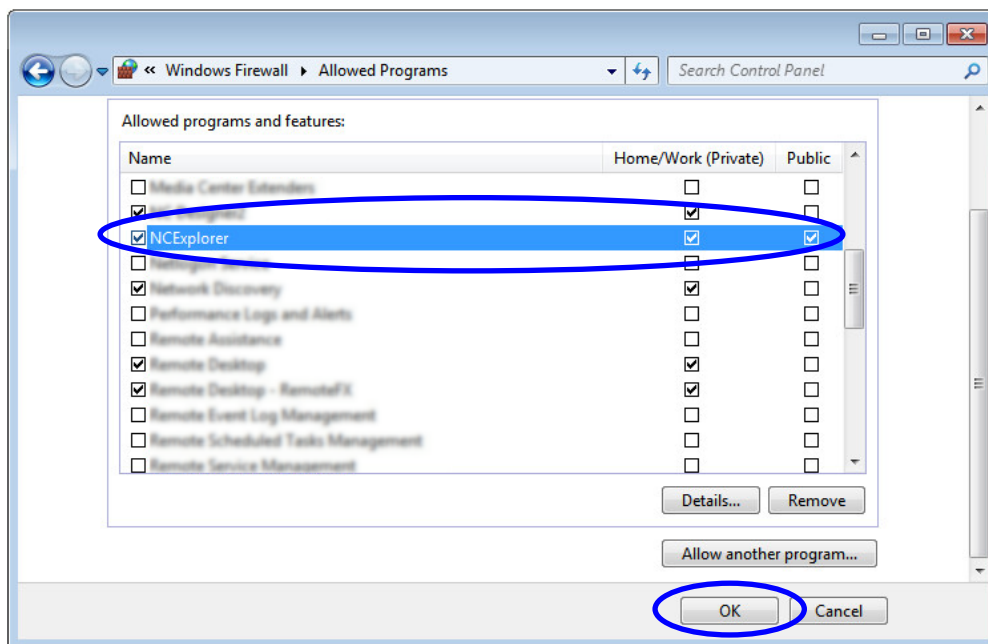

5. Click the [Browse] button.

6. Select the execution file to be registered as the exception for the Firewall function, and then click the [Open] button.

Select " C:\Program Files (x86)\MELSOFT\NC Explorer\NCExplorer.exe" (when the installation destination folder is the default setting).

7. Click the [Add] button.

8. Check [Private] and [Public], and then click the [OK] button.

Appendix 4. Trouble Shooting

Appendix 4.1 When NC Explore Is not Activated after the Installation

If NC Explorer is still remained in the firewall exception setting (Refer to "Appendix 2 Setting Firewall Exceptions") after the uninstallation of NC Explorer, NC Explorer may not be activated after the re-installation. If NC Explorer is already registered as the exception program through Windows Firewall, delete it first, then install it.

Appendix 4.2 If an Error Occurs when Accessing HD of NC Device under Windows 8.1 Environment

If accessing HD of NC device using NC Explorer under Windows 8.1 environment without the latest Windows Update applied, a time error may occur in the first time only.
Apply the latest Windows Update before using NC Explorer.

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Appendix 4.3 Screen Is Displayed Smaller and Buttons Are Difficult to Press or Screen Is Not Displayed Properly Due to the Display Resolution

When the display resolution is high (4K or 3K, etc.), the screen is displayed smaller and the buttons are difficult to press. Also, when the size of text or other items on a screen is set in Windows settings to other than 100% (96DPI, 9pt, etc.) (*1), the screen may not display properly. For example, the characters on a dialog screen are cut off in the middle of a sentence. (Refer to the following.)

| Normal screen | Collapsed screen |
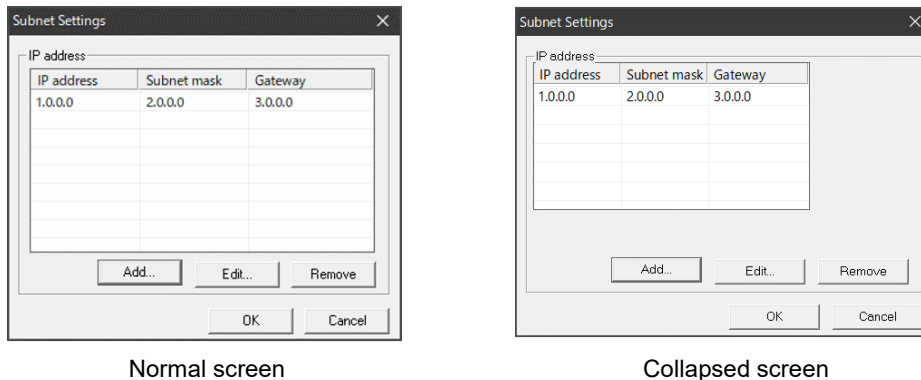
[When the screen is displayed smaller and buttons are difficult to press]
- For Windows 10 (Ver. 1703 or later) (*2), display NC Explorer using high DPI scaling (*4) with the Windows 10 function (*3).

[When the screen collapses]
Perform any of the following procedures to display the screen properly.
- Change the size of text on the screen and the other items (*1) to 100% (96DPI, 9pt)
- For Windows 10 (Ver. 1703 or later) (*2), display NC Explorer using high DPI scaling (*4) with the Windows 10 function (*3).

(*1) The procedures to change the size of text or other items on a screen
   (1) Click "Start" - "Settings (gear icon)" - "System" - "Display" of Windows.
       Alternatively, right-click on the desktop of the windows and click "Display settings" on the popup menu.
   (2) Set "Change the size of text, apps, and other items" under "Scale and layout".

(*2) The procedures to check the Windows version
   (1) Press Windows key + [R], or select [Windows System] -> [Run] from the Start menu of Windows.
   (2) Enter 'winver' in the "Run" dialog.
   (3) Check the version in the displayed dialog.

(*3) The procedures to support high DPI display

The displayed contents of the property may differ depending on version (*2) of Windows.

(1) Select NCEAutoRun.exe (*5), then select [Properties] on the right-click menu.

(2) Select "Change high DPI settings" in the [Compatibility] tab. Select "Override high DPI scaling behavior. Scaling performed by:", then select "System" from the pull-down list.

(3) Click the [OK] button.

(4) Restart or log off the personal computer.

(*4) The procedures to increase magnification

The NC Explorer display will be blurred by enlarging. Change the size of text or other items on a screen by following the procedures (*1). The following lists the setting values for "Change the size of text, apps, and other items" and the recommended display resolution for each setting value.

Setting value	Display resolution
100 %	1024 × 768 dots or more
125 %	1900 × 1200 dots or more
150 %	1900 × 1200 dots or more
175 %	2880 × 1620 dots or more
200 %	2880 × 1620 dots or more
225 %	3840 × 2160 dots or more
250 %	3840 × 2160 dots or more

(*5) NCEAutoRun.exe is stored in the folder in which NC Explorer is installed.

When the installation destination folder is set as the default, it is stored in the following folders.

64 bit OS: C:\Program Files (x86)\MELSOFT\NC Explorer\NCEAutoRun.exe

32 bit OS: C:\Program Files\MELSOFT\NC Explorer\NCEAutoRun.exe

Appendix 4.4 If an Error Dialog Is Displayed and NC Explorer Fails to Start on Windows 8.1

Depending on the status of Windows Udate, when starting NC Explorer of version C6 or later on Windows 8.1, the following error dialog "The program can't start because api-ms-win-crt-stdio-l1-1-0.dll is missing fro your computer. Try reinstalling the program to fix this problem." is displayed and NC Explorer fails to start.
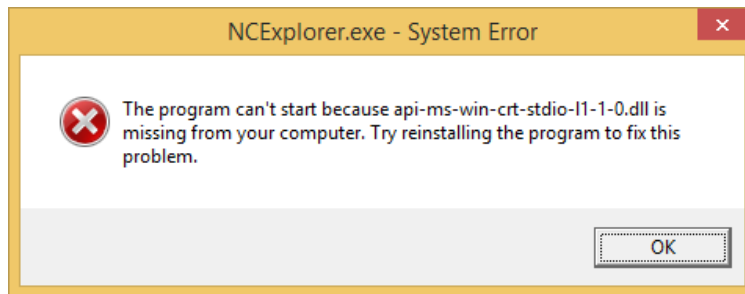
Apply the Windows update programs by following the procedures below to fix this problem.
1. Apply KB2919442 (Servicing stack update program).
2. Apply KB2919355 (Update program of Windows 8.1 Update).
3. Apply KB2999226 (Update program of Windows Universal C Runtime (CRT)).

* Download KB2919442, KB2919355, and KB2999226 from Microsoft official page.

The release date for each Windows update program is as follows.
- KB2919442: 10 Mar. 2014
- KB2919355: 5 May 2014
- KB2999226: 15 Sep. 2015

Revision History

Date of revision	Manual No.	Revision details
Aug. 2008	IB(NA)1500904-*	First edition created. (NC Explorer)
Oct. 2009	IB(NA)1500904-A	Contents were revised to correspond to NC Explorer software version A1. Contents were revised to be compatible with Windows Vista. Contents were revised to correspond to Mitsubishi CNC M700V/70 Series software version F5.
Jan. 2010	IB(NA)1500904-B	Contents were revised to correspond to NC Explorer software version A2. Contents were revised to correspond to Mitsubishi CNC M700/M70 Series software version F6. Contents were revised to correspond to Mitsubishi CNC M700V/M70V Series software version G0.

Jan. 2011	IB(NA)1500904-C	Contents were revised to correspond to Windows 7.
		
		Contents were revised to support writing CNC memory to DAT folder.
		
		- Revised the following chapters.
		  1.2.2 Screen specification of NC Explorer
		  2.1 Operating Environment of NC Explorer
		  3.2.1 Searching NC devices
		  3.3.6 Operating objects
		  Appendix 1 Message List
		  Appendix 3 Restrictions
		
		- Added the following chapter
		  2.5 Exceptions Settings for Firewall

Jun. 2012	IB(NA)1500904-D	Contents were revised to correspond to NC Explorer software version A4.
		
		Contents were revised to correspond to Mitsubishi CNC M700/M70 Series software version FE.
		
		Contents were revised to correspond to Mitsubishi CNC M700V/M70V Series software version H3.
		
		- Revised the following chapters.
		  1.2.1 Device Configuration of NC Explorer
		  2.1 Operating Environment of NC Explorer
		  3. HOW TO USE NC EXPLORER
		  3.2.4 Editing Subnet Information
		  3.2.5 Deleting Registered Subnet
		  3.3.1 Copying a File
		  3.3.2 Deleting a File
		  3.3.5 Deleting a Folder
		  Appendix 1 Message List
		  Appendix 3 Restrictions

Jul. 2013	IB(NA)1500904-E	Contents were fully revised to correspond to NC Explorer software version B0.

Mar. 2015	IB(NA)1500904-F	Contents were revised to correspond to NC Explorer software version C0.
		
		Contents were revised to correspond to CNC M800W Series.
		
		- Added the following chapters.
		  3.4 File Comparison
		  Appendix 2. Setting Firewall Exception

Date of revision	Manual No.	Revision details

Jul. 2015	IB(NA)1500904-G	Contents were revised to correspond to NC Explorer software version C1.
		
		Contents were revised to correspond to CNC M800S/M80 Series.
		
		- Added the following chapter
		  4. Precautions
		
		- Revised the following chapters.
		  1.2.3 Data Operated with NC Explorer
		  2.1 Operating Environment of NC Explorer
		  3.1.1 Usual Start-up
		  3.3 Operating Files
		  3.4 File Comparison
		  Appendix 1. List of Messages

Jul. 2015	IB(NA)1500904-H	Mistakes were corrected.

Feb. 2016	IB(NA)1500904-J	Contents were revised to correspond to NC Explorer software version C2.
		
		- Revised the following chapters.
		  1.2.3 Data Operated with NC Explorer
		  2.1 Operating Environment of NC Explorer
		  2.2 Installation Procedure
		  3.1.1 Usual Start-up
		  4.1 General
		  4.2 Precautions for Copying File or Folder
		  4.3 Precautions for Deleting Folder
		  4.4 Precautions for Changing Folder Name
		  4.6 Precautions for Executing Comparison
		  Appendix 1 List of Messages
		
		- Added the following chapter
		  Appendix 3. Trouble Shooting

Aug. 2016	IB(NA)1500904-K	Contents were revised to correspond to NC Explorer software version C3.
		
		- Revised the following chapters.
		  1.2.3 Data Operated with NC Explorer
		  2.1 Operating Environment of NC Explorer
		  3.2.4 Inputting Password
		  4.1 General
		  4.4 Precautions for Changing Folder Name
		  Appendix 1 List of Messages

Jun. 2017	IB(NA)1500904-L	Contents were revised to correspond to NC Explorer software version C4.
		
		- Revised the following chapters.
		  1.2.3 Data Operated with NC Explorer
		  4.1 General
		  4.2 Precautions for Copying File or Folder
		  4.3 Precautions for Deleting Folder
		  4.4 Precautions for Changing Folder Name
		
		- Added the following chapter
		  Appendix 3.2 If an error occurs when accessing HD of NC device under Windows 8/8.1 environment

Dec. 2018	IB(NA)1500904-M	Contents were revised to correspond to NC Explorer software version C5.
		
		- Revised the following chapters.
		  1.2.3 Data Operated with NC Explorer
		  2.1 Operating Environment of NC Explorer

Date of revision	Manual No.	Revision details
Dec. 2018	IB(NA)1500904-M	4.1 General 4.3 Precautions for Deleting Folder 4.4 Precautions for Changing Folder Name 4.6 Precaution for Executing Comparison Appendix 1. List of Messages

Oct. 2022	IB(NA)1500904-N	Contents were revised to correspond to NC Explorer software version C6.
		
		Contents were revised to correspond to CNC M800V/M80V Series.
		
		- Revised the following chapters.
		  Introduction
		  Precautions for Safety
		  1.1 What is NC Explorer?
		  1.2.2 Screen Specification of NC Explorer
		  1.2.3 Data Operated with NC Explorer
		  2.1 Operating Environment of NC Explorer
		  3.1.2 How to Start when there are Multiple Network Cards
		  3.2.1 Searching NC Devices
		  3.2.2 Registering Various Subnets
		  3.2.4 Inputting Password
		  3.4 File Comparison
		  3.4.1 Comparison Status Display
		  3.5.1 Displaying Menu
		  4.1 General
		  4.2 Precautions for Copying File or Folder
		  4.3 Precautions for Deleting Folder
		  Appendix 2. List of Messages
		  Appendix 3. Setting Firewall Exceptions
		  Appendix 4.2 If an Error Occurs when Accessing HD of NC Device under Windows 8.1 Environment
		
		- Added the following chapters.
		  4.4 Precautions for Deleting File
		  4.6 Precautions for Changing File Name
		  Appendix 1. List of Parameters
		  Appendix 4.3 Screen Is Displayed Smaller and Buttons Are Difficult to Press or Screen Is Not Displayed Properly Due to the Display Resolution
		  Appendix 4.4 If an Error Dialog Is Displayed and NC Explorer Fails to Start on Windows 8.1

Global Service Network

MITSUBISHI ELECTRIC AUTOMATION INC. (AMERICA FA CENTER)
Central Region Service Center (Chicago)
500 CORPORATE WOODS PARKWAY, VERNON HILLS, ILLINOIS 60061, U.S.A.
TEL: +1-847-478-2500 / FAX: +1-847-478-2650
   Minneapolis, MN Service Satellite
   Detroit, MI Service Satellite
   Grand Rapids, MI Service Satellite
   Milwaukee, WI Service Satellite
   Cleveland, OH Service Satellite
   Indianapolis, IN Service Satellite
   St. Louis, MO Service Satellite

South/East Region Service Center (Georgia)
1845 SATELLITE BOULEVARD STE. 450, DULUTH, GEORGIA 30097, U.S.A.
TEL +1-678-258-4529 / FAX +1-678-258-4519
   Charleston, SC Service Satellite
   Charlotte, NC Service Satellite
   Raleigh, NC Service Satellite
   Dallas, TX Service Satellite
   Houston, TX Service Satellite
   Hartford, CT Service Satellite
   Knoxville, TN Service Satellite
   Nashville, TN Service Satellite
   Baltimore, MD Service Satellite
   Pittsburg, PA Service Satellite
   Tampa, FL Service Satellite
   Syracuse, NY Service Satellite
   Orlando, FL Service Satellite
   Lafayette, LA Service Satellite
   Philadelphia, PA Service Satellite

Western Region Service Center (California)
5900-B KATELLA AVE. - 5900-A KATELLA AVE. CYPRESS, CALIFORNIA 90630, U.S.A.
TEL: +1-714-699-2625 / FAX: +1-847-478-2650
   San Jose, CA Service Satellite
   Seattle, WA Service Satellite
   Denver, CO Service Satellite

Canada Region Service Center (Toronto)
4299 14TH AVENUE MARKHAM, ONTARIO L3R OJ2, CANADA
TEL: +1-905-475-7728 / FAX: +1-905-475-7935
   Edmonton, AB Service Satellite
   Montreal, QC Service Satellite

Mexico Region Service Center (Queretaro)
Parque Tecnológico Innovación Querétaro, Lateral Carretera Estatal 431, Km 2+200, Lote 91 Modulos 1 y 2
Hacienda la Machorra, CP 76246, El Marqués, Querétaro, México
TEL: +52-442-153-6050
   Monterrey, NL Service Satellite
   Mexico City, DF Service Satellite

MITSUBISHI ELECTRIC DO BRASIL COMÉRCIO E SERVIÇOS LTDA.
Votorantim Office
AV. GISELE CONSTANTINO,1578, PARQUE BELA VISTA, VOTORANTIM-SP, BRAZIL CEP:18.110-650
TEL: +55-15-3023-9000
   Blumenau, Santa Catarina Office

MITSUBISHI ELECTRIC EUROPE B.V.
European Service Headquarters (Dusseldorf, GERMANY)
Mitsubishi-Electric-Platz 1 40882 RATINGEN, GERMANY
TEL: +49-2102-486-5000 / FAX: +49-2102-486-5910

South Germany Service Center (Stuttgart)
SCHELMENWASENSTRASSE 16-20, 70567 STUTTGART, GERMANY
TEL: + 49-711-770598-0 / FAX: +49-711-770598-141

France Service Center (Paris)
2 RUE DE L'UNION, 92565 RUEIL-MALMAISON CEDEX, FRANCE
TEL: +33-1-41-02-83-13 / FAX: +33-1-49-01-07-25

France Service Satellite (Lyon)
240, ALLEE JACQUES MONOD 69800 SAINT PRIEST FRANCE
TEL: +33-1-41-02-83-13 / FAX: +33-1-49-01-07-25

Italy Service Center (Milan)
VIA ENERGY PARK 14, VIMERCATE 20871 (MB) ITALY
TEL: +39-039-6053-342 / FAX: +39-039-6053-206

Italy Service Satellite (Padova)
VIA G. SAVELLI, 24 - 35129 PADOVA, ITALY
TEL: +39-039-6053-342 / FAX: +39-039-6053-206

U.K. Service Center
TRAVELLERS LANE, HATFIELD, HERTFORDSHIRE, AL10 8XB, U.K.
TEL: +44-1707-288-780 / FAX: +44-1707-278-695

Spain Service Center
CTRA. RUBI, 76-80 8174 SAINT CUGAT DEL VALLES, BARCELONA, SPAIN
TEL: +34-935-65-2236 / FAX: +34-935-89-1579

Poland Service Center
UL.KRAKOWSKA 50, 32-083 BALICE, POLAND
TEL: +48-12-347-6500 / FAX: +48-12-630-4701

Hungary Service Center
BUDAÖRS OFFICE PARK, SZABADSÁG ÚT 117., 2040 BUDAÖRS, HUNGARY
TEL: +48-12-347-6500 / FAX: +48-12-630-4701

Turkey Service Center
MITSUBISHI ELECTRIC TURKEY ELEKTRİK ÜRÜNLERİ A.Ş
SERIFALI MAHALLESI KALE SOKAK. NO.41 34775
UMRANIYE, ISTANBUL, TURKEY
TEL: +90-216-969-2500 / FAX: +90-216-661-44-47

Czech Republic Service Center
AutoCont Control Systems s.r.o (Service Partner)
KAFKOVA 1853/3, 702 00 OSTRAVA 2, CZECH REPUBLIC
TEL: +420-59-5691-185 / FAX: +420-59-5691-199

Russia Service Center
MITSUBISHI ELECTRIC RUSSIA LLC
LETNIKOVSKAYA STREET 2, BLD.1, 5TH 115114 MOSCOW, RUSSIA
TEL: +7-495-721-2070 / FAX: +7-495-721-2071

Sweden Service Center
HAMMARBACKEN 14, P.O.BOX 750 SE-19127, SOLLENTUNA, SWEDEN
TEL: +46-8-6251200 / FAX: +46-8-6251014

Bulgaria Service Center
AKHNATON Ltd. (Service Partner)
4 ANDREJ LJAPCHEV BLVD. POB 21, BG-1756 SOFIA, BULGARIA
TEL: +359-2-8176009 / FAX: +359-2-9744061

Ukraine Service Center (Kiev)
CSC Automation Ltd. (Service Partner)
4 B, YEVHENA SVERSTYUKA STR., 02002 KIEV, UKRAINE
TEL: +380-44-494-3344 / FAX: +380-44-494-3366

Belarus Service Center
TECHNIKON Ltd. (Service Partner)
NEZAVISIMOSTI PR.177, 220125 MINSK, BELARUS
TEL: +375-17-393-1177 / FAX: +375-17-393-0081

South Africa Service Center
Adroit Technologies (Service Partner)
20 WATERFORD OFFICE PARK, WATERFORD DRIVE, CNR OF WITKOPPEN ROAD,
FOURWAYS JOHANNESBURG SOUTH AFRICA
TEL: +27-11-658-8100 / FAX: +27-11-658-8101

ASEAN

MITSUBISHI ELECTRIC ASIA PTE. LTD. (ASEAN FA CENTER)
Singapore Service Center
307 ALEXANDRA ROAD MITSUBISHI ELECTRIC BUILDING SINGAPORE 159943
TEL: +65-6473-2308 / FAX: +65-6476-7439

PHILIPPINES

MELCO FACTORY AUTOMATION PHILIPPINES INC.
Head Office
128 LOPEZ RIZAL STREET, BRGY., HIGHWAY HILLS, MANDALUYONG CITY , MM PHILIPPINES 1550
TEL: +63-2-8256-8042 / FAX: +632-8637-2294

Philippines Service Center
KM.23 WEST SERVICE ROAD SSH, CUPANG ,MUNTINLUPA CITY, PHILIPPINES
TEL: +63-2-8807-0420 / FAX: +63-2-8842-5202

VIETNAM

MITSUBISHI ELECTRIC VIETNAM CO., LTD.
Vietnam Ho Chi Minh Service Center
11TH & 12TH FLOOR, VIETTEL TOWER B, 285 CACH MANG THANG 8 STREET, WARD 12, DISTRICT 10,
HO CHI MINH CITY, VIETNAM
TEL: +84-28-3910-5945 / FAX: +84-28-3910-5947

Vietnam Hanoi Service Center
14TH FLOOR, CAPITAL TOWER, 109 TRAN HUNG DAO STREET, CUA NAM WARD,
HOAN KIEM DISTRICT, HA NOI CITY, VIETNAM
TEL: +84-24-3937-8075 / FAX: +84-24-3937-8076

INDONESIA

PT. MITSUBISHI ELECTRIC INDONESIA
Indonesia Service Center (Cikarang)
JL. KENARI RAYA BLOK G2-07A, DELTA SILICON 5, LIPPO CIKARANG - BEKASI 17550, INDONESIA
TEL: +62-21-2961-7797 / FAX: +62-21-2961-7794

MALAYSIA

MITSUBISHI ELECTRIC SALES MALAYSIA SDN. BHD.
Malaysia Service Center (Kuala Lumpur Service Center)
LOT 11, JALAN 219, P.O BOX 1036, 46860 PETALING JAYA, SELANGOR DARUL EHSAN, MALAYSIA
TEL: +60-3-7626-5032
Johor Bahru Service Satellite
Pulau Pinang Service Satellite

THAILAND

MITSUBISHI ELECTRIC FACTORY AUTOMATION (THAILAND) CO., LTD.
Thailand Service Center (Bangkok)
101, TRUE DIGITAL PARK OFFICE, 5TH FLOOR, SUKHUMVIT ROAD, BANGCHAK, PHRA KHANONG,
BANGKOK, 10260 THAILAND
TEL: +66-2-092-8600 / FAX: +66-2-043-1231-33

INDIA

MITSUBISHI ELECTRIC INDIA PVT., LTD.
CNC Technical Center (Bangalore)
PLOT NO. 56, 4TH MAIN ROAD, PEENYA PHASE 3,
PEENYA INDUSTRIAL AREA, BANGALORE 560058, KARNATAKA, INDIA
TEL : +91-80-4655-2121
Chennai Service Satellite
Coimbatore Service Satellite
Hyderabad Service Satellite

North India Service Center (Gurgaon)
PLOT 517, GROUND FLOOR, UDYOG VIHAR PHASE-III, GURUGRAM 122008, HARYANA, INDIA
TEL : +91-124-463-0300
Ludhiana Service Satellite
Panthnagar Service Satellite
Delhi Service Satellite
Jamshedpur Service Satellite
Manesar Service Satellite

West India Service Center (Pune)
ICC-Devi GAURAV TECHNOLOGY PARK, UNIT NO.402, FOURTH FLOOR, NORTH WING,
SURVEY NUMBER 191-192 (P), NEXT to INDIAN CARD CLOTHING COMPANY Ltd,
OPP. VALLABH NAGAR, PIMPRI, PUNE- 411 018, MAHARASHTRA, INDIA
TEL : +91-20-6819-2274
Kolhapur Service Satellite
Aurangabad Service Satellite
Mumbai Service Satellite

West India Service Center (Ahmedabad)
204-209, 2ND FLOOR, 31FIVE, CORPORATE ROAD PRAHLADNAGAR,
AHMEDABAD -380015, GUJARAT, INDIA
TEL : + 91-79-6777-7888
Rajkot Service Satellite

CHINA

MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD. (CHINA FA CENTER)
CNC Call Center
TEL: +86-400-921-5130

Shanghai Service Center
NO.1386 HONG QIAO ROAD, CHANG NING QU, SHANGHAI 200336, CHINA
TEL: +86-21-2322-3030 / FAX: +86-21-2322-3000*8422
Qingdao Service Center
Suzhou Service Center
Wuhan Service Center
Ningbo Service Center
Hefei Service Center
Beijing Service Center
Tianjin Service Center
Xian Service Center
Dalian Service Center
Chengdu Service Center

Shenzhen Service Center
LEVEL8, GALAXY WORLD TOWER B, 1 YABAO ROAD, LONGGANG DISTRICT,
SHENZHEN 518129, CHINA
TEL: +86-755-2399-8272 / FAX: +86-755-8229-3686
Dongguan Service Center
Xiamen Service Center

KOREA

MITSUBISHI ELECTRIC AUTOMATION KOREA CO., LTD. (KOREA FA CENTER)
Korea Service Center
8F GANGSEO HANGANG XI-TOWER A, 401 YANGCHEON-RO, GANGSEO-GU,
SEOUL 07528 KOREA
TEL: +82-2-3660-9631 / FAX: +82-2-3664-8668
Korea Daegu Service Satellite

TAIWAN

MITSUBISHI ELECTRIC TAIWAN CO., LTD. (TAIWAN FA CENTER)
Taiwan Taichung Service Center
NO. 8-1, GONGYEQU 16th RD., XITUN DIST., TAICHUNG CITY 40768 , TAIWAN
TEL: +886-4-2359-0688 / FAX: +886-4-2359-0689

Taiwan Taipei Service Center
11F, NO.88, SEC.6, ZHONGSHAN N. RD., SHILIN DIST., TAIPEI CITY 11155, TAIWAN
TEL: +886-2-2833-5430 / FAX: +886-2-2833-5433

Taiwan Tainan Service Center
11F.-1, NO.30, ZHONGZHENG S. RD., YONGKANG DIST., TAINAN CITY 71067, TAIWAN
TEL: +886-6-252-5030 / FAX: +886-6-252-5031

OCEANIA

MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD.
Oceania Service Center
348 VICTORIA ROAD, RYDALMERE, N.S.W. 2116 AUSTRALIA
TEL: +61-2-9684-7269/ FAX: +61-2-9684-7245

MITSUBISHI ELECTRIC CORPORATION

MODEL	CNC Remote Operation Software
MODEL CODE	100-236
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