Cat. No. W436-E1-02

SYSMAC
WS02-MNTC1

CX-Motion-NCF Ver. 1.2

OPERATION MANUAL

OMRON

WS02-MNTC1
CX-Motion-NCF Ver. 1.2

Operation Manual

Revised February 2005

Notice:

OMRON products are manufactured for use according to proper procedures by a qualified operator and only for the purposes described in this manual.

The following conventions are used to indicate and classify precautions in this manual. Always heed the information provided with them. Failure to heed precautions can result in injury to people or damage to property.

⚠DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Additionally, there may be severe property damage.

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. Additionally, there may be severe property damage.

⚠Caution Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

OMRON Product References

All OMRON products are capitalized in this manual. The word “Unit” is also capitalized when it refers to an OMRON product, regardless of whether or not it appears in the proper name of the product.

The abbreviation “Ch,” which appears in some displays and on some OMRON products, often means “word” and is abbreviated “Wd” in documentation in this sense.

The abbreviation “PLC” means Programmable Controller.

Visual Aids

The following headings appear in the left column of the manual to help you locate different types of information.

Note Indicates information of particular interest for efficient and convenient operation of the product.

1,2,3... 1. Indicates lists of one sort or another, such as procedures, checklists, etc.

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About this Manual:

This manual describes the installation, and operation of the WS02-MNTC1 CX-Motion-NCF software package and includes the sections described below. The CX-Motion-NCF runs on Windows 98, Me, NT4.0, 2000, and XP and is used to set and transfer data used by CJ1W-NCF71 Position Control Units (also referred to as PCUs or NC Units), save and print the PCU data, and monitor the PCU's operating status.

Please read this manual carefully and be sure you understand the information provided before attempting to install or operate the CX-Motion-NCF. Be sure to read the precautions provided in the following section. Please read the following manuals carefully and be sure you understand the information provided before setting up or using an application for a Position Control Unit.

Name	Contents	Cat. No. (suffixes omitted)
SYSMAC WS02-MNTC1 CX-Motion-NCF Operation Manual	Describes the operating procedures for the CX-Motion-NCF	W436 (this manual)
SYSMAC CJ1W-NCF71 Position Control Units Operation Manual	Describes the basic operation of the Position Control Unit.	W426
SYSMAC CXONE-AL□□-E CX-Integrator Operation Manual	Describes the operating procedures for the CX-integrator.	W445

For details on procedures for installing the CX-Motion-NCF from the CX-One FA Integrated Tool Package, refer to the *CX-One Setup Manual* provided with CX-One.

Cat. No.	Model	Name	Contents
W444	CXONE-AL□□-E	CX-One Setup Manual	Installation and overview of CX-One FA Integrated Tool Package.

Precautions provides general precautions for using the CX-Motion-NCF, Programmable Controller, and related devices.

Section 1 provides an overview of the CX-Motion-NCF, and describes the functions and system configuration required to operate the CX-Motion-NCF.

Section 2 provides information on installing CX-Motion-NCF and CX-Server, and connecting to the PLC.

Section 3 describes each of the screens and basic operations.

Section 4 provides information on creating projects and adding/deleting Position Control Units and Servo Drivers.

Section 5 describes the operations used to edit Unit Parameters and Servo Parameters.

Section 6 describes the operations used to save and read newly created projects. Information is also provided on importing, exporting, and printing procedures.

Section 7 describes the operations used to transfer or compare data between the personal computer and Position Control Unit/Servo Driver, and to write data transferred to the Position Control Unit to the Position Control Unit's flash memory.

Section 8 provides information on the Monitor Windows that are used to display the Position Control Unit's communications status, error status, and axis's present position and status.

Section 9 describes the jogging operations for each axis.

Section 10 provides information on troubleshooting errors that may occur, meanings of error codes, and the procedures required to reset errors in the Unit or axes.

⚠WARNING Failure to read and understand the information provided in this manual may result in personal injury or death, damage to the product, or product failure. Please read each section in its entirety and be sure you understand the information provided in the section and related sections before attempting any of the procedures or operations given.

Read and Understand this Manual

Please read and understand this manual before using the product. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this manual.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this manual is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

Version Upgrade Information

Improvements from Version 1.0 to Version 1.1

Supporting New Models of W-series Servo Driver

Item	Ver. 1.0	Ver. 1.1
Applicable Servo Drivers	W-series Servo Drivers	W-series Servo Drivers W-series Servo Drivers with Built-in MECHATROLINK Communications

Improvements from Version 1.1 to Version 1.2

Installing the CX-Motion-NCF from the CX-One FA Integrated Tool Package

Ver. 1.1	Ver. 1.2
The CX-Motion-NCF could be installed only independently.	The CX-Motion-NCF can be installed as one of the functions of the CX-One Integrated Tool Package.

CX-Motion-NCF Startup Method

Ver. 1.1	Ver. 1.2
The CX-Motion-NCF could be started only from the Windows Start Menu.	The CX-Motion-NCF can also be started by right-clicking the following Position Control Unit in the I/O Table Window opened from the CX-Programmer that was installed from the CX-One and selecting *Start Special Application* from the pop-up menu. • CJ1W-NC71 **Note** When ***Start with Settings Inherited*** is selected, a new project will be created and a Position Control Unit will be automatically added.

PRECAUTIONS

This section provides general precautions for using the CX-Motion-NCF software package.

The information contained in this section is important for the safe and reliable application of the CX-Motion-NCF. You must read this section and understand the information contained before attempting to set up or operate the CX-Motion-NCF.

1 Intended Audience xvi
2 General Precautions xvi
3 Safety Precautions xvi
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5 Application Precautions xvii

1 Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).

- Personnel in charge of installing FA systems.
- Personnel in charge of designing FA systems.
- Personnel in charge of managing FA systems and facilities.

2 General Precautions

The user must operate the product according to the performance specifications described in the operation manuals.

Before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems, machines, and equipment that may have a serious influence on lives and property if used improperly, consult your OMRON representative.

Make sure that the ratings and performance characteristics of the product are sufficient for the systems, machines, and equipment, and be sure to provide the systems, machines, and equipment with double safety mechanisms.

This manual provides information for programming and operating the Unit. Be sure to read this manual before attempting to use the Unit and keep this manual close at hand for reference during operation.

⚠WARNING It is extremely important that the CX-Motion-NCF and related devices be used for the specified purpose and under the specified conditions, especially in applications that can directly or indirectly affect human life. You must consult with your OMRON representative before applying Position Control Units and related devices to the above-mentioned applications.

3 Safety Precautions

⚠WARNING Do not attempt to take any Unit apart while the power is being supplied. Doing so may result in electric shock.

⚠WARNING Never touch any of the terminals while power is being supplied. Doing so may result in serious electric shock.

⚠WARNING Always back up parameter data or other data to the flash memory after it has been transferred to the Position Control Unit. If transferred data is not backed up in flash memory, the previous settings may be used the next time the power is turned ON, resulting in a malfunction.

⚠Caution Confirm safety at the destination node before transferring parameters or other data to another node. Doing either of these without confirming safety may result in injury.

⚠Caution Check that the axis number is correct before operating an axis from the CX-Motion-NCF.

4 Operating Environment Precautions

⚠ **Caution** Do not operate the control system in the following locations:

- Locations subject to direct sunlight.
- Locations subject to temperatures or humidity outside the range specified in the specifications.
- Locations subject to condensation as the result of severe changes in temperature.
- Locations subject to corrosive or flammable gases.
- Locations subject to dust (especially iron dust) or salts.
- Locations subject to exposure to water, oil, or chemicals.
- Locations subject to shock or vibration.

⚠ **Caution** Take appropriate and sufficient countermeasures when installing systems in the following locations:

- Locations subject to static electricity or other forms of noise.
- Locations subject to strong electromagnetic fields.
- Locations subject to possible exposure to radioactivity.
- Locations close to power supplies.

5 Application Precautions

Observe the following precautions when using the CX-Motion-NCF.

- Confirm that the correct unit number is specified for the destination node before transferring parameters or other data to the Position Control Unit.
- Confirm that set parameters and data operate properly before using them in actual applications.
- Always turn ON the power to the Unit again or restart the CPU Bus Unit after transferring changed parameter settings, and writing them to flash memory. Otherwise, the changed parameter settings will not be enabled.
- Do not turn OFF the power to the Unit while writing to flash memory. Doing so may result in damage to the flash memory.
- Confirm that no adverse effect will occur in the system before attempting any of the following. Not doing so may result in an unexpected operation.
  - Changing the operating mode of the PLC (including changing the Startup Mode).
  - Force-setting/force-resetting any bit in memory.
  - Changing the present value of any word or any set value in memory.
- Do not turn OFF the power to the personal computer while installing or uninstalling CX-Motion-NCF. Doing so may result in corrupted data in the personal computer.

SECTION 1
CX-Motion-NCF Overview

This section provides an overview of the CX-Motion-NCF, and describes the functions and system configuration required to operate the CX-Motion-NCF.

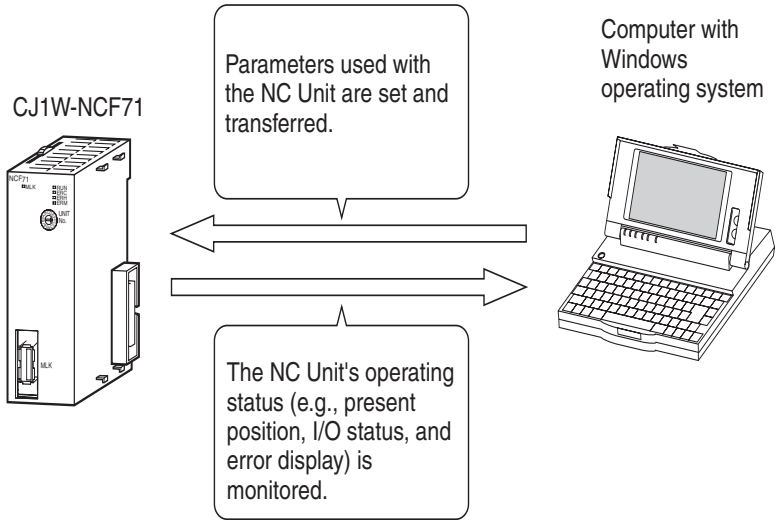
1-1 What is CX-Motion-NCF? 2
1-2 System Configuration 5
1-3 Function List 5
1-4 Operation Procedure 7

1-1 What is CX-Motion-NCF?

What is CX-Motion-NCF?

CX-Motion-NCF is a software package that helps to set, transfer, save, and print various data used for the CJ1W-NCF71 Position Control Unit (also referred to as PCU or NC Unit) and to monitor the operation status of the Position Control Unit.

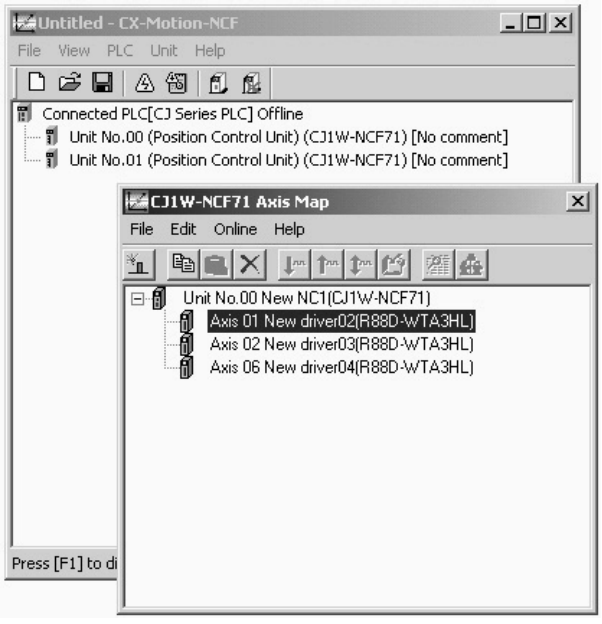
CX-Motion-NCF runs on Windows98, Me, NT 4.0, 2000, or XP.



Features

Data Management and Editing in Project Units

The CX-Motion-NCF manages data for several Position Control Units as one project. Position Control Units are displayed under a PLC and several Servo Drivers (up to 16 axes) are displayed under a Position Control Unit, both in tree format.



Communications with Position Control Units via Networks

CX-Motion-NCF communicates with Position Control Units using CX-Server.

Host Link (SYSMAC WAY) or peripheral bus (Toolbus) can be used to perform online operations (transferring, comparing, and monitoring parameter data) with the Position Control Unit on the PLC.

Editing Servo Parameters

Parameters of Servo Drivers connected to a Position Control Unit can be edited using CX-Motion-NCF.

Displaying Error Information

Information on the error that is currently occurring on a Position Control Unit or the error log can be displayed.

Applicable Computers

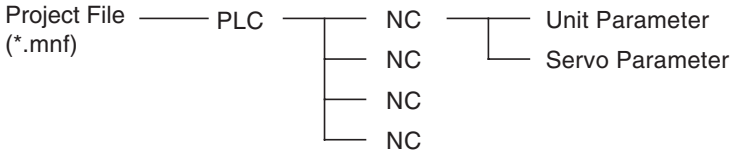
CX-Motion-NCF can be used on computers that satisfy the following conditions.

The following conditions apply when installing the CX-Motion-NCF as an individual application. Different conditions will apply when installing the CX-Motion-NCF as one of the features of the CX-One FA Integrated Tool Package. Refer to the *CX-One Setup Manual* (W444) for the specific conditions.

OS / Item	Windows 98 or Windows NT4.0 Service Pack 6	Windows Me or Windows 2000 Service Pack 3 or higher	Windows XP
Computer	IBM PC/AT or compatible	IBM PC/AT or compatible	IBM PC/AT or compatible
CPU	Pentium Class 133 MHz or higher	Pentium Class 150 MHz or higher	Pentium Class 300 MHz or higher
RAM memory	64 Mb min.	96 Mb min.	128 Mb min.
Hard disk drive	100 Mb min. of free space	100 Mb min. of free space	100 Mb min. of free space
Monitor	800 × 600 SVGA or higher	800 × 600 SVGA or higher	800 × 600 SVGA or higher
CD-ROM drive	1 min.	1 min.	1 min.
Communications port	1 RS-232C port min.	1 RS-232C port min.	1 RS-232C port min.

CX-Motion-NCF Data

CX-Motion-NCF is used to create project files with the configuration shown below. The file extension for project files is .mnf.



Software Structure

CX-Motion-NCF exchanges data (online communications) with Position Control Units via CX-Server. In order to execute functions online, CX-Server must be installed on the same computer that has CX-Motion-NCF installed.

CX-Server is bundled on the setup disk of CX-Motion-NCF.

Either the Toolbus or SYSMAC WAY (Host Link) can be selected for the network type.

Checking the Package

After purchase, confirm that the contents of the package are as described below.

CX-Motion-NCF Model Number

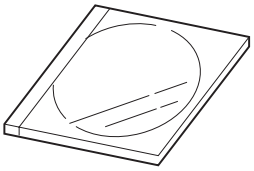
Product name	Model number	Setup disk
CX-Motion-NCF	Model WS02-MNTC1	CD-ROM

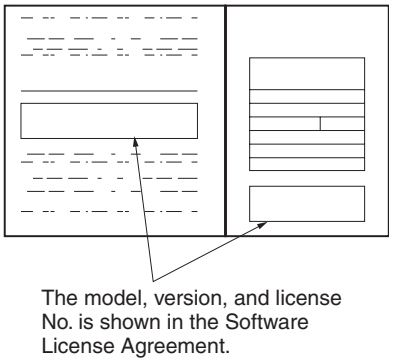
CX-Motion-NCF Package

The CX-Motion-NCF software package consists of the following items. Confirm that accessories are provided.

Item	No. of items
Setup Disk (CD-ROM)	1
CX-Motion-NCF Operation Manual	PDF manual on CD-ROM
Product Guide	1

Item	No. of items
Software Licence Agreement/User Registration Card	2
Address label	1

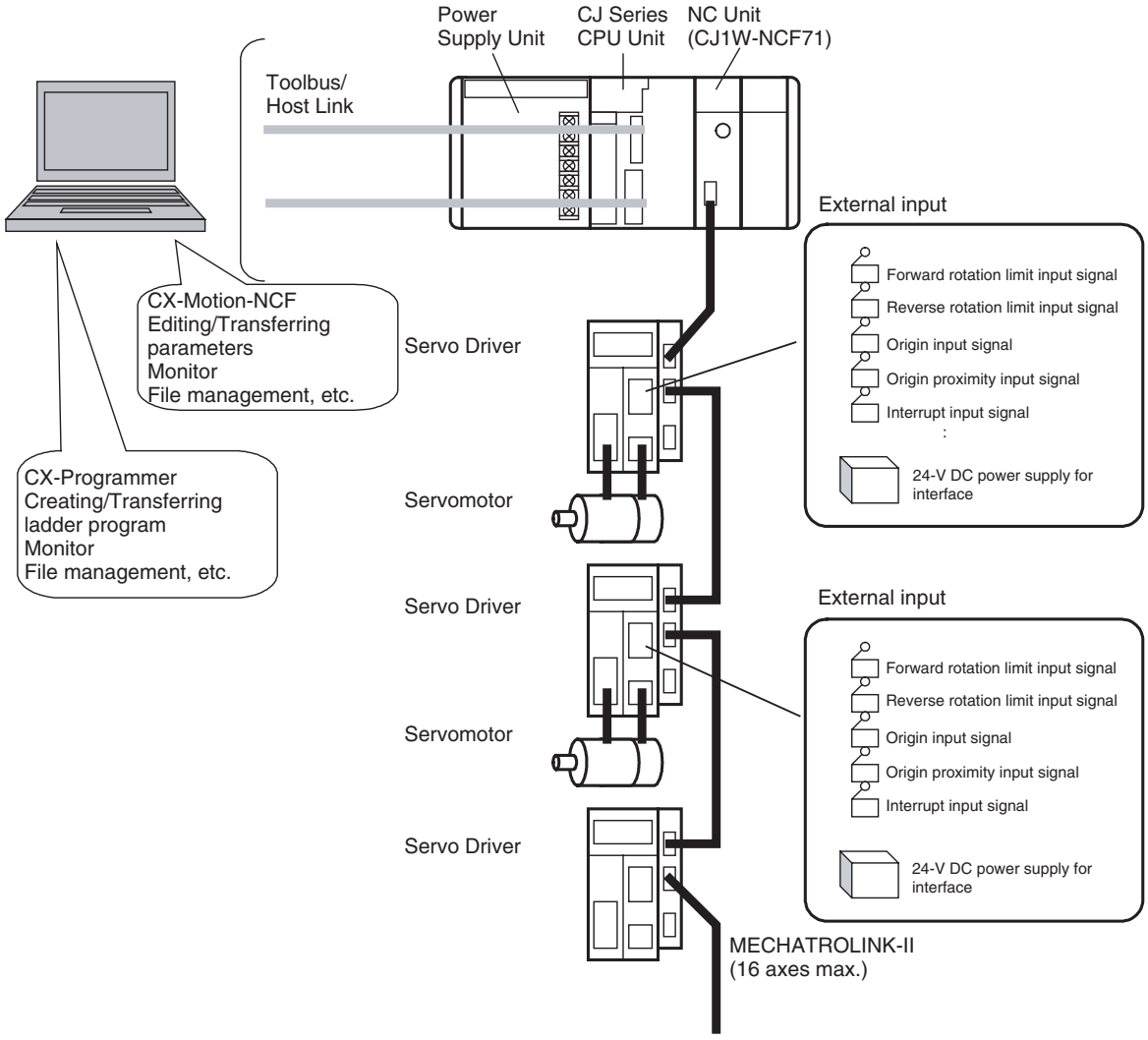




Note Software Licence Agreement/User Registration Card has the licence number that is required to install CX-Motion-NCF. Please keep it in a safe place and do not lose it.

1-2 System Configuration

The system configuration for Position Control Units is shown below.



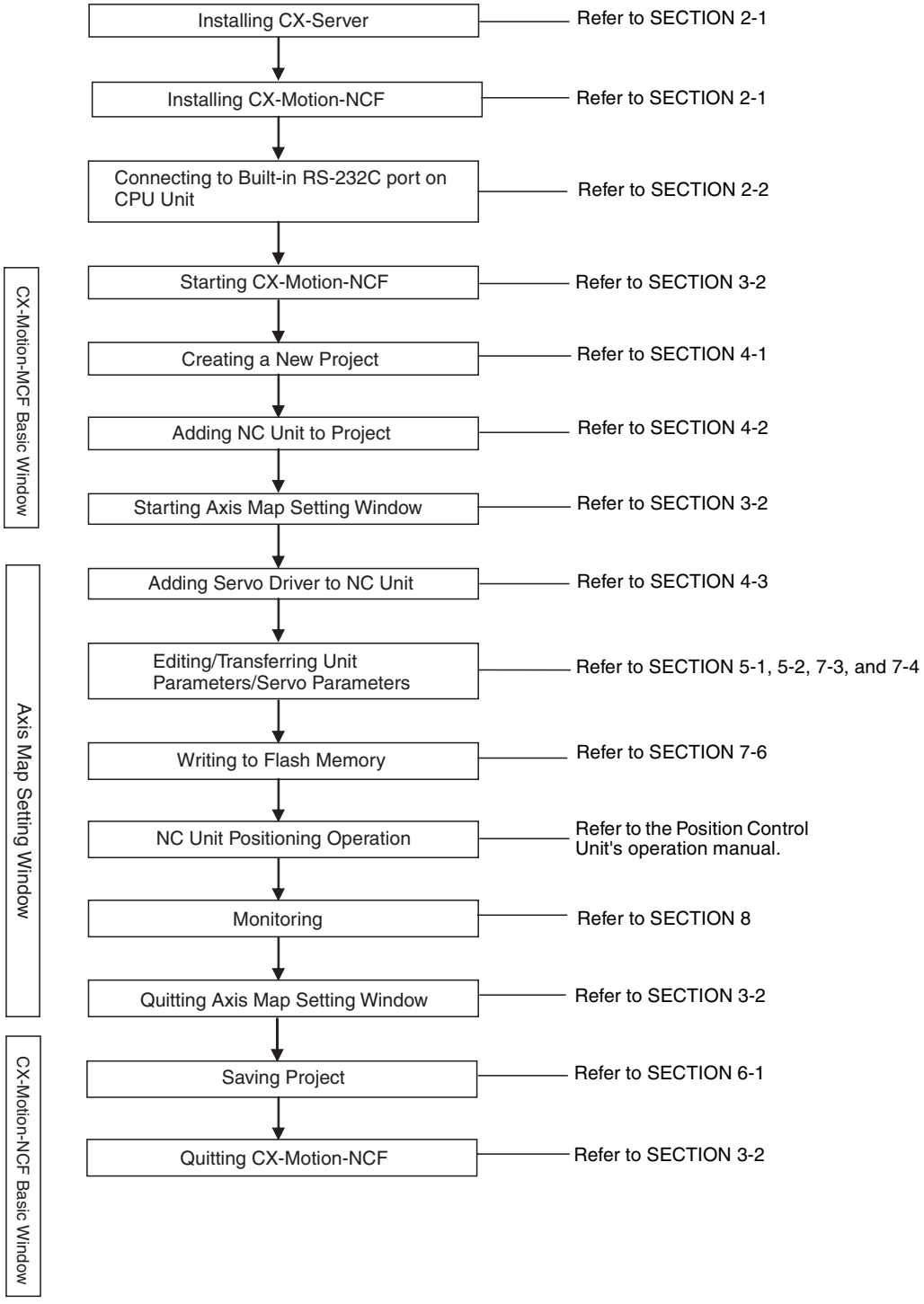
1-3 Function List

Group	Function	Details	Reference
Editing projects	Create project	Used to create project files (*.mnf)	*4-1 Creating a New Project*
	Create Position Control Unit	Used to add Position Control Unit data to a project.	*4-2 Adding and Deleting Position Control Units*
	Create Servo Driver	Used to add Servo Driver data to a project.	*4-3 Adding and Deleting Servo Drivers*
Editing data	Edit Unit Parameters	Used to edit Unit Parameters.	*5-1 Editing Unit Parameters*
	Edit Servo Parameters	Used to edit Servo Parameters.	*5-2 Editing Servo Parameters*
Saving and reading project files	Save project	Used to save data as a project file (*.mnf).	*6-1 Saving Project*
	Read project	Used to read a project file (*.mnf).	*6-2 Reading Project*

Group	Function	Details	Reference
Importing and exporting data	Import	Used to import Unit/Servo Parameters.	*6-3 Import*
	Export	Used to export Unit/Servo Parameters.	*6-4 Export*
Printing	Print	Used to print the data displayed on the screen.	*6-5 Print*
Online	Initial setting	Used to setup CPU Unit or Position Control Unit.	*7-1 Initial Setting for Connecting Online*
	Communications setting	Used to make communications settings.	*7-2 Setting/Changing Communications Specific*
	Download Upload Compare	Used to download, compare, or upload Unit or Servo Parameters.	*7-3 Downloading Data* *7-4 Uploading Data* *7-5 Comparing Data*
	Write to flash memory	Used to save the downloaded Unit Parameters.	*7-6 Writing to Flash Memory*
	Monitor	Used to display the Unit's status, axis present position, axis status, and error information.	*8-1 Unit Monitor* *8-2 Axis Monitor*
	Device information	Used to read the Unit's model, system software version, and attached information.	---
JOG	JOG	Used to execute JOG operation.	*9-1 Test Run*
Error	Error log	Used to display the error log.	*10-1 Error Log*
	Error information	Used to display error code, error name.	*10-2 Error Code*

1-4 Operation Procedure

The outline of the procedures required to install CX-Motion-NCF and CX-Server, create various data, transfer it to Position Control Units, and use in actual operations is shown below.



SECTION 2
Setup

This section provides information on installing CX-Motion-NCF and CX-Server, and connecting to the PLC.

2-1 Installing and Uninstalling the Software 10
2-1-1 Software That Must Be Installed 10
2-1-2 Preparations for Installation 10
2-1-3 Precautions for Installation 11
2-1-4 Installing the CX-Motion-NCF 12
2-1-5 Uninstalling the CX-Motion-NCF 16
2-1-6 Uninstalling the CX-Server 17
2-2 Connecting to PLC 19

2-1 Installing and Uninstalling the Software

2-1-1 Software That Must Be Installed

The following software must be installed on the same computer to use the CX-Motion-NCF.

1,2,3... 1. CX-Motion-NCF

2. CX-Server (the communications driver)

Types of CX-Motion-NCF

The CX-Motion-NCF is available both on an independent CD-ROM and on the CX-One FA Integrated Tool Package. The contents of the CX-Motion-NCF are the same in either case.

The installation procedure for the independent CD-ROM is provided here. Refer to the *CX-One Setup Manual* (W444, provided with the CX-One) for the installation procedure for the CX-One.

Cat. No.	Model	Manual name	Contents
W444	CXONE-AL□□-E	CX-One Setup Manual	An overview of the CX-One FA Integrated Tool Package and the CX-One installation procedure

2-1-2 Preparations for Installation

Note If the CX-Motion-NCF was previously installed from the CX-One and it's necessary to install it from the individual CX-Motion-NCF CD-ROM, always uninstall the CX-Motion-NCF using the following procedure before installing it from its individual CD-ROM. The CX-Motion-NCF will not operate properly if it is installed without first uninstalling it.

a) Insert the CX-One installation disk 1 into the CD-ROM drive.

b) Select the Modify Option to enable modifying the Support Software that is installed.

c) In the Select Features Dialog Box, clear the selection of only the CX-Motion-NCF. Do not change any other selections.

d) Continue by following the instructions in the dialog boxes to modify the installation and uninstall CX-Motion-NCF.

e) Once the CX-Motion-NCF uninstallation process has been completed, place the individual CD-ROM disk for the CX-Motion-NCF into the CD-ROM drive and install the CX-Motion-NCF. (See note.)

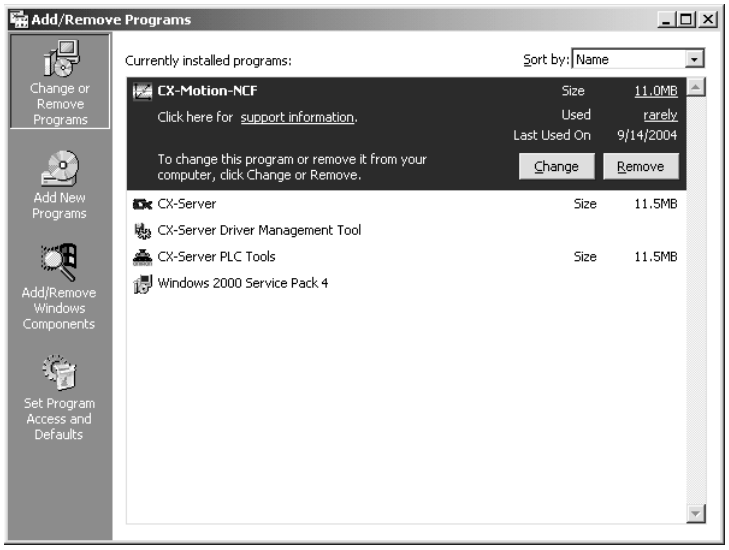
Note If the version of the CX-Server bundled on the individual CX-Motion-NCF CD-ROM is lower than the version of the CX-Server bundled with the CX-One, install only the CX-Motion-NCF and NOT the CX-Server. (A message will be displayed if the version is lower.) If a version of CX-Server that is lower than the version with the CX-One is installed, the CX-One will not operate properly.

Uninstalling the Previous Version of CX-Motion-NCF

Always uninstall the previous version of the CX-Motion-NCF before installing the new version.

1,2,3...

1. Start ***Add/Remove Programs*** from the control panel.
2. Select *CX-Motion-NCF* from the dialog box.
3. Click the ***Change/Remove*** Button. The CX-Motion-NCF will be uninstalled.



Note The Installer manages the version and driver for the CX-Server. If the CX-Server installed on the computer is old, the Installer will automatically update the CX-Server. If the CX-Server Driver Management Tool or the CX-Server is uninstalled from the control panel, it may no longer be possible to use certain Units. Do not uninstall the CX-Server Driver Management Tool or the CX-Server from the control panel.

2-1-3 Precautions for Installation

This section describes the procedures involved in the installation of CX-Motion-NCF on a standard workstation running Microsoft Windows 98, Me, NT4.0, 2000, or XP.

- Close all programs running on Windows before starting the installation procedure.
- Do not stop the setup process in the middle. Copied files may remain in the installation directory.
- Do not turn OFF or reset the computer in the middle of the installation process. Computer data may become corrupted.
- On Windows NT 4.0, 2000, or XP, the administrator or a user with administrator rights must perform the installation. Other users will not have sufficient write permissions and access errors will occur.
- With Windows 2000, always use service pack 3 or later. With Windows NT 4.0, always use service pack 6a. The service pack can be confirmed by selecting ***Start - Settings - Control Panel - System***. The service pack will be displayed under *System* on the *General* Tab Page of the *System Properties* Dialog Box. If a service pack is not displayed, no service pack has been installed. Refer to Microsoft's website for service pack installation methods.

- It may be necessary to restart Windows after finishing the installation. If required, restart Windows according to the messages displayed by the Installer.

Note Internet Explorer version 5.0 or higher must be installed in advance to use the CX-Server Installer. Install Internet Explorer version 5.0 in advance if it is not already installed.

2-1-4 Installing the CX-Motion-NCF

1,2,3...

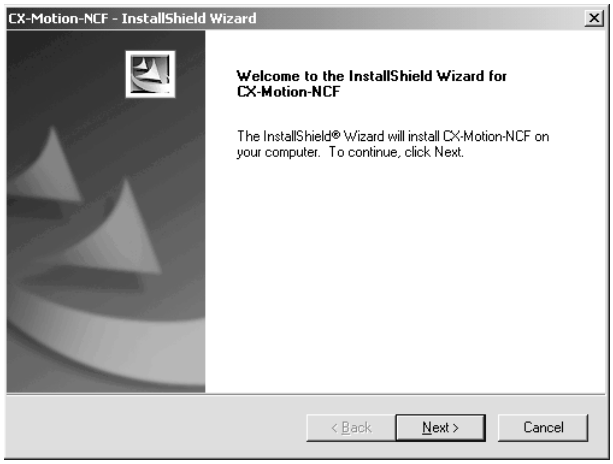
1. Insert the CX-Motion-NCF installation disk (CD-ROM) into the CD-ROM drive.
2. The setup program will start automatically and the *Choose Setup Language* Dialog Box will be displayed.

The language of the operating system running on the computer will be selected automatically.

If the above dialog box is not displayed, double-click the CD-ROM drive from the Explorer to display it.

Select the language to be installed and click the **OK** button.

3. A splash window for the CX-Motion-NCF will be displayed, followed by the Setup Wizard.

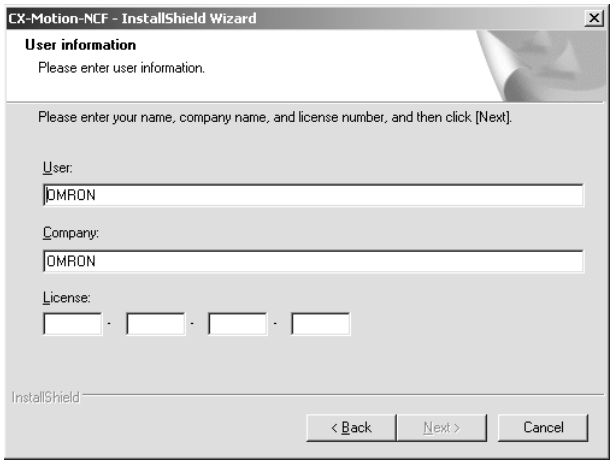


Click the **Next** Button.

4. The *License Agreement* Dialog Box will be displayed.

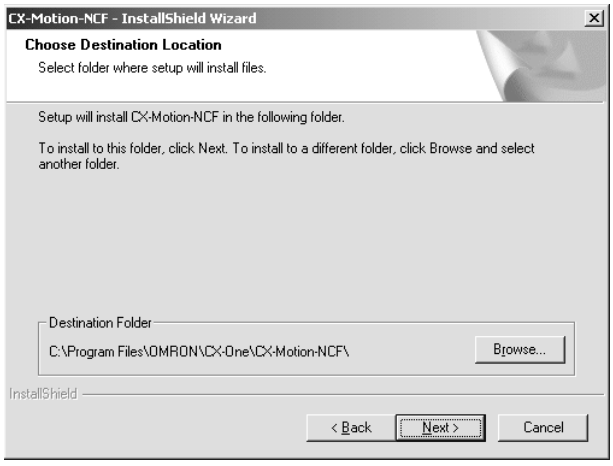
Read the license agreement completely and if you accept all of the terms, select the *I accept the terms of the license agreement* Option and click the **Next** Button.

5. The *User Information* Dialog Box will be displayed.



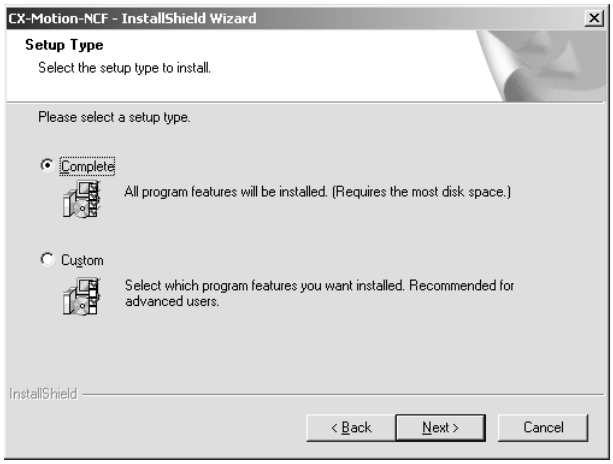
The default names registered in the computer will be entered for the user name and company name. Enter the license number and click the **Next** Button. The license number is given on the Software License/Registration Card provided with the product.

6. The *Choose Destination Location* Dialog Box will be displayed.



Select the destination location and click the **Next** Button. By default, the CX-Motion-NCF will be installed in the following location: C:\Program Files\OMRON\CX-One\CX-Motion-NCF\.

7. The *Setup Type* Dialog Box will be displayed.

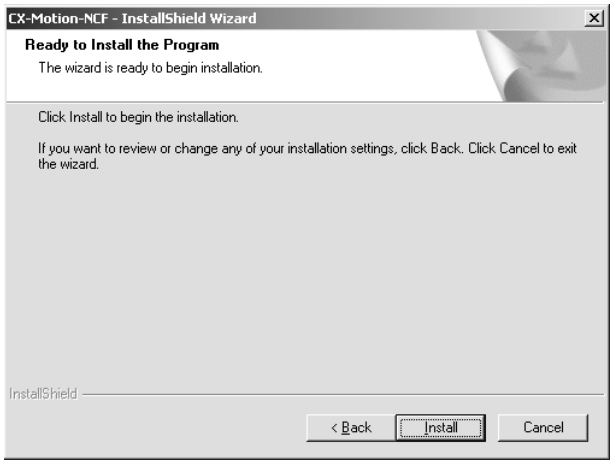


Select the *Complete* option and click the **Next** Button.

8. The *Select Program Folder* Dialog Box will be displayed.

Specify the location to add a shortcut in the program folder of the Windows Start Menu and click the **Next** Button.

9. The *Ready to Install the Program* Dialog Box will be displayed.



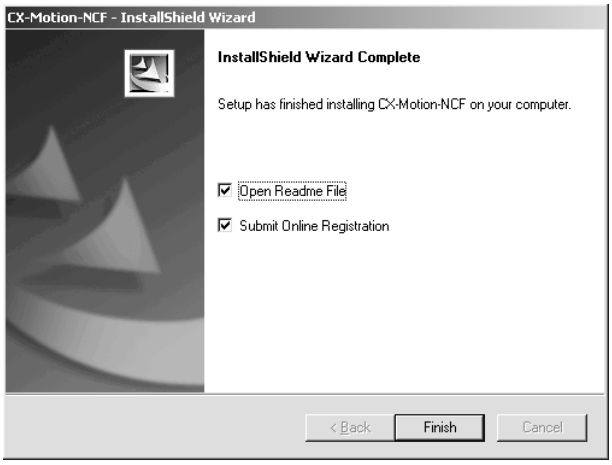
Click the **Install** Button.

The Installer will start the installation.

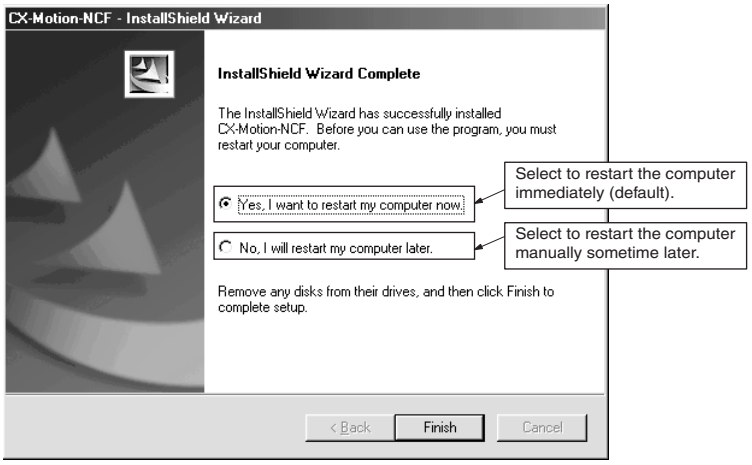
To check the installation settings, click the **Back** Button.

To cancel installation, click the **Cancel** Button.

10. If the CX-Server is already installed on the computer, the Installer will automatically check the CX-Server version and driver and update them as required. Depending on the version of CX-Server that was already installed, a confirmation dialog box may be displayed.
11. The following dialog box will be displayed when the Installer completes the installation. Click the **Finish** Button.



The following dialog box will be displayed if restarting the computer is required.

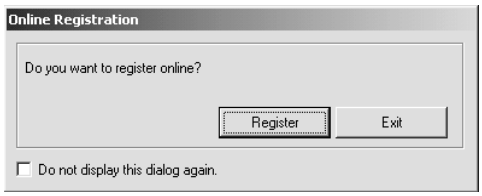


Select the desired option and click the **Finish** Button. If the *Yes, I want to restart my computer now* Option was selected, the computer will be restarted.

12. The Readme.txt file will be displayed after the computer is restarted.

Note Always read the Readme.txt file before using the CX-Motion-NCF.

13. The *Online Registration* Dialog Box will be displayed when the Readme.txt file is closed.



A wizard will be started and will connect to the OMRON CX-One Web if the **Register** Button is clicked. (See notes.)

Note (a) If the **Exit** Button is clicked to cancel registration, the *Online Registration* Dialog Box will be displayed every time the CX-One Configuration Tool is started.

(b) Online installation will not be possible if the computer is not connected to the Internet. Enter the required information on the registration card and mail it in.

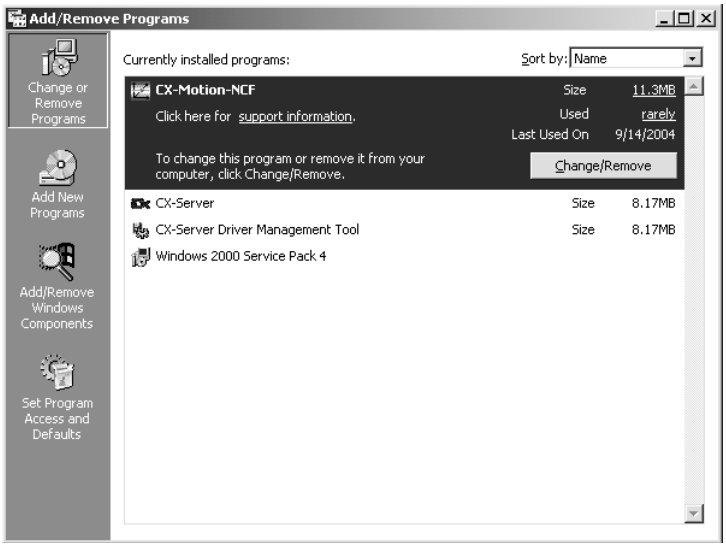
This completes installation of the CX-Motion-NCF.

2-1-5 Uninstalling the CX-Motion-NCF

Use the following procedure to delete the CX-Motion-NCF from the computer.

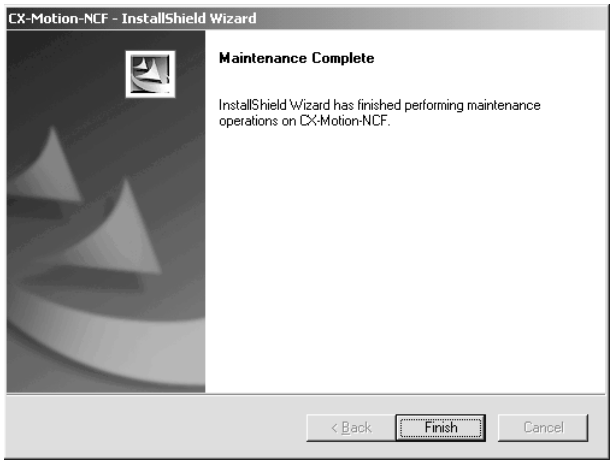
1,2,3...

1. Select ***Start - Settings - Control Panel - Add/Remove Programs***. The *Add/Remove Programs* Dialog box will be displayed.
2. Select *CX-Motion-NCF* from the dialog box.
3. Click the **Change/Remove** Button.



4. If deleting the CX-Motion-NCF completely is selected, the following dialog box will be displayed. Click the **Yes** Button to start the Uninstaller that will delete the CX-Motion-NCF.

5. When the uninstallation has been completed, the following dialog box will be displayed.



2-1-6 Uninstalling the CX-Server

Note

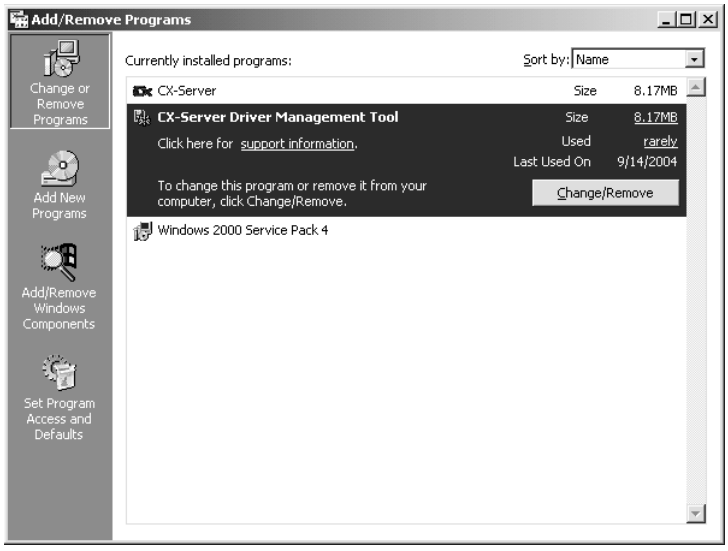
(1) The Installer manages the version and driver for the CX-Server. If the CX-Server installed on the computer is old, the Installer will automatically update the CX-Server. If the CX-Server Driver Management Tool or the CX-Server is uninstalled from the control panel, it may no longer be possible to use certain Units. Do not uninstall the CX-Server Driver Management Tool or the CX-Server from the control panel.

(2) Do not uninstall the CX-Server if there are other programs on the computer that use it as the communications driver, e.g., the CX-Motion. If the CX-Server is uninstalled, it will no longer be possible to use these other programs.

(3) Do not uninstall the CX-Server while other programs that use it as the communications driver are running on the computer, e.g., the CX-Motion. The CX-Server may not uninstall properly if other programs are using it.

(4) Always uninstall the CX-Server Driver Management Tool before uninstalling the CX-Server. If the CX-Server is uninstalled first, it may no longer be possible to uninstall the CX-Server Driver Management Tool properly.

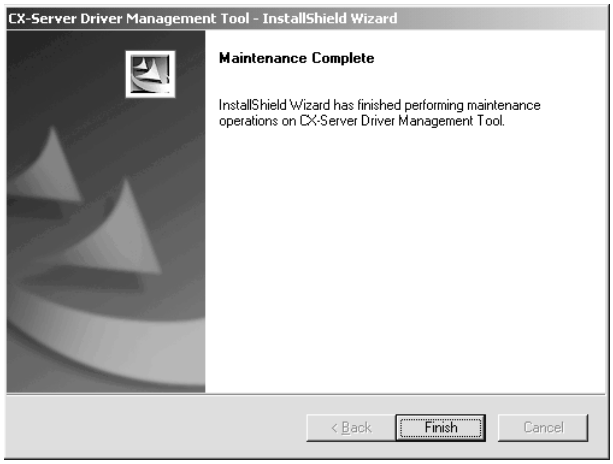
1,2,3... 1. Select ***Start - Settings - Control Panel - Add/Remove Programs***. The *Add/Remove Programs* Dialog box will be displayed.



2. Select *CX-Server Driver Management Tool* from the dialog box.
3. Click the **Change/Remove** Button.
4. A confirmation dialog box will be displayed. Click the **Yes** Button.

The CX-Server Driver Management Tool will be uninstalled.

5. When the uninstallation has been completed, the following dialog box will be displayed. Click the **Finish** Button. The *Add/Remove Programs* Dialog Box will be displayed again.



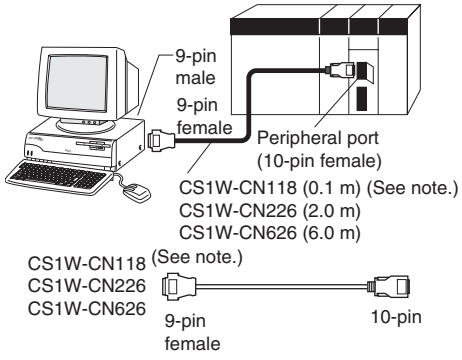
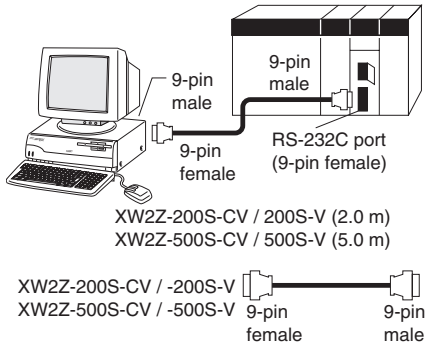
6. In the same way, select *CX-Server* from the *Add/Remove Programs* Dialog Box, click the **Change/Remove** Button, and uninstall the CX-Server following the messages that appear on the screen.
7. Restart the computer when all programs have been uninstalled.

2-2 Connecting to PLC

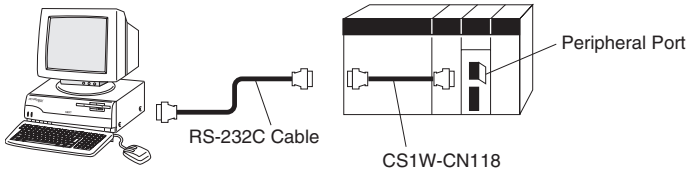
To transfer the project data that was created using CX-Motion-NCF to the Position Control Unit, the personal computer and PLC (CPU Unit) have to be physically connected with a cable and also connected online.

Connection Format

Using either the Host Link (SYSMAC WAY) or Toolbus, connect the personal computer to the peripheral port or RS-232C port on the PLC.

Personal computer	Connecting to Peripheral Port	Connecting to RS-232C Port
IBM PC/AT or compatible		

Note The cable model CS1W-CN118 is used as a relay cable to connect the personal computer to the CPU Unit's peripheral port using the RS-232C cable (model XW2Z-□□□□-□□) as shown below.

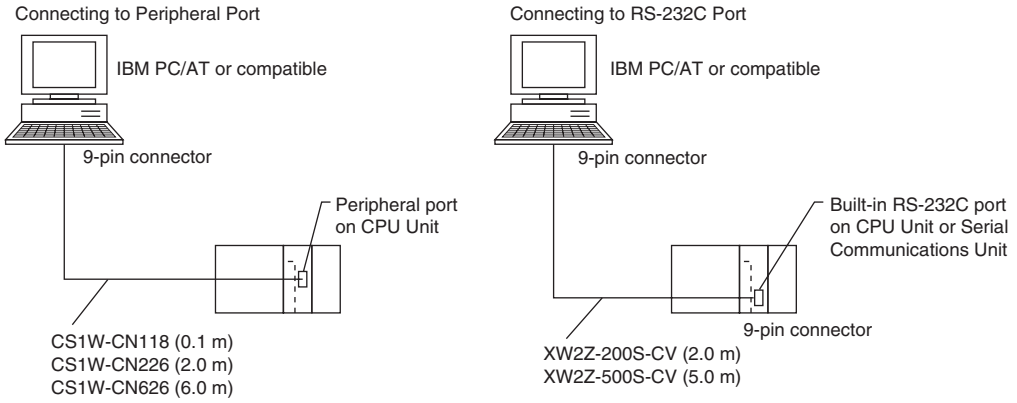


Note Two network types (serial communications mode), SYSMAC WAY and Toolbus, are supported when connecting CX-Motion-NCF to the PLC. The characteristics of the network types are as shown below.

Network type	Characteristics
Toolbus	Faster communications. If possible, use this network type. • For CS/CJ Series, the baud rate on the peripherals can be detected automatically, and be connected. • Only 1 on 1 connection possible. • For CX-Motion-NCF, it can also be connected to a modem.
SYSMAC WAY (Host Link)	Used for communications with general host computers. • Slower than Toolbus. • Not only 1 on 1 connection, but also 1-many connection possible. • Connecting to a modem and optical adaptor possible.

Connection Method

Use one of the following method to connect the personal computer (CX-Motion-NCF) and PLC (CPU Unit). It is also possible to connect the personal computer to the port on the CJ Series Serial Communications Unit. In that case, the only network type that can be used is Host Link.



Connection Cables

Unit	Port on Unit	Computer	Port on computer	Network type (serial communications mode)	Model number	Length	Remarks
CPU Unit	Built-in peripheral port	IBM PC/AT compatible	D-SUB, 9-pin, male	SYSMAC WAY	CS1W-CN226	2 m	---
					CS1W-CN626	6 m	
	Built-in RS-232C port (D-SUB, 9-pin, female)	IBM PC/AT compatible	D-SUB, 9-pin, male	SYSMAC WAY	XW2Z-200S-CV	2 m	Uses anti-static connector
					XW2Z-500S-CV	5 m	
Serial Communications Unit	RS-232C port (D-SUB, 9-pin, female)	IBM PC/AT compatible	D-SUB, 9-pin, male	SYSMAC WAY	XW2Z-200S-CV	2 m	Uses anti-static connector
					XW2Z-500S-CV	5 m	

Note When connecting the connectors of the above cables to the PLC's RS-232C port, discharge any static build-up (e.g., by touching a grounded metal object) before touching the connectors. Although XW2Z-□□□S-CV Cables use the anti-static XM2S-0911-E Connector Hood (thus reducing the possibility of static build-up), be sure to discharge any static as a safety precaution.

SECTION 3
Basic Operation

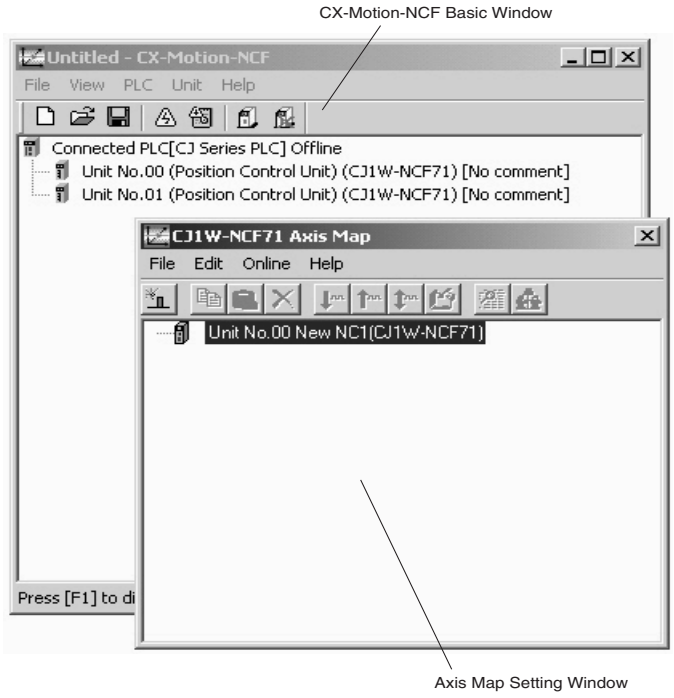
This section describes each of the screens and basic operations.

3-1 Screen Name 22
3-2 Basic Operation 25
3-2-1 CX-Motion-NCF Basic Operation 25
3-2-2 Axis Map Setting Window Basic Operation 29
3-3 Operations Listed by Purpose 32

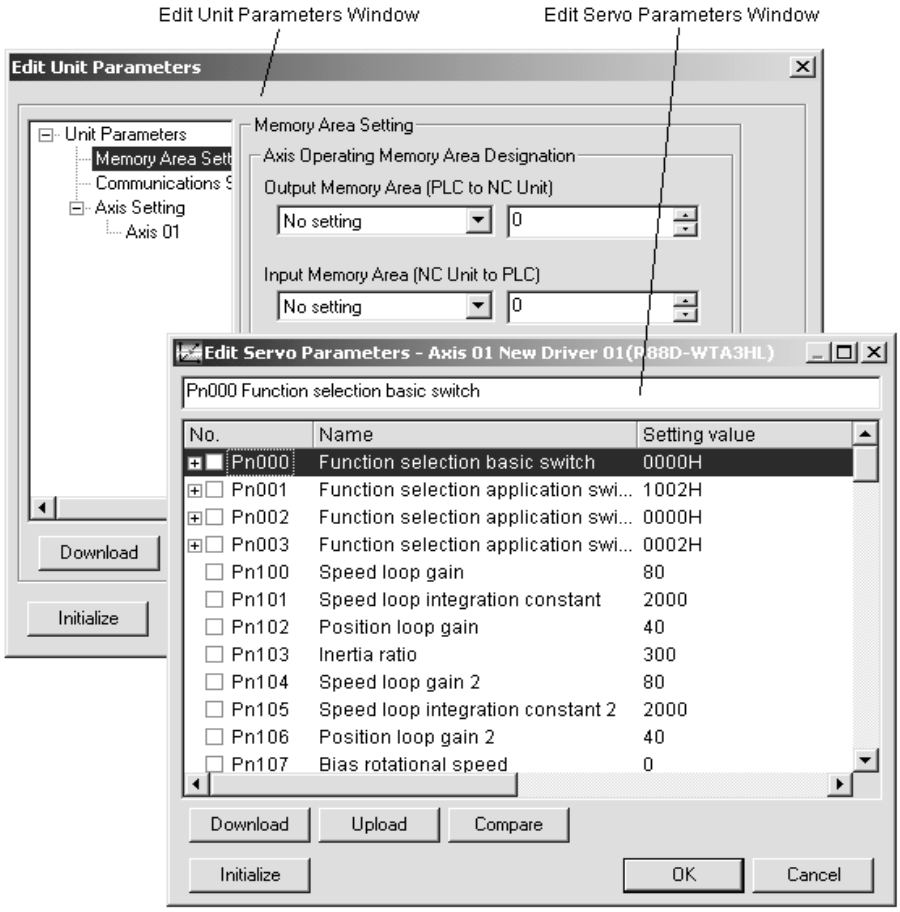
3-1 Screen Name

The window names for CX-Motion-NCF are shown here.

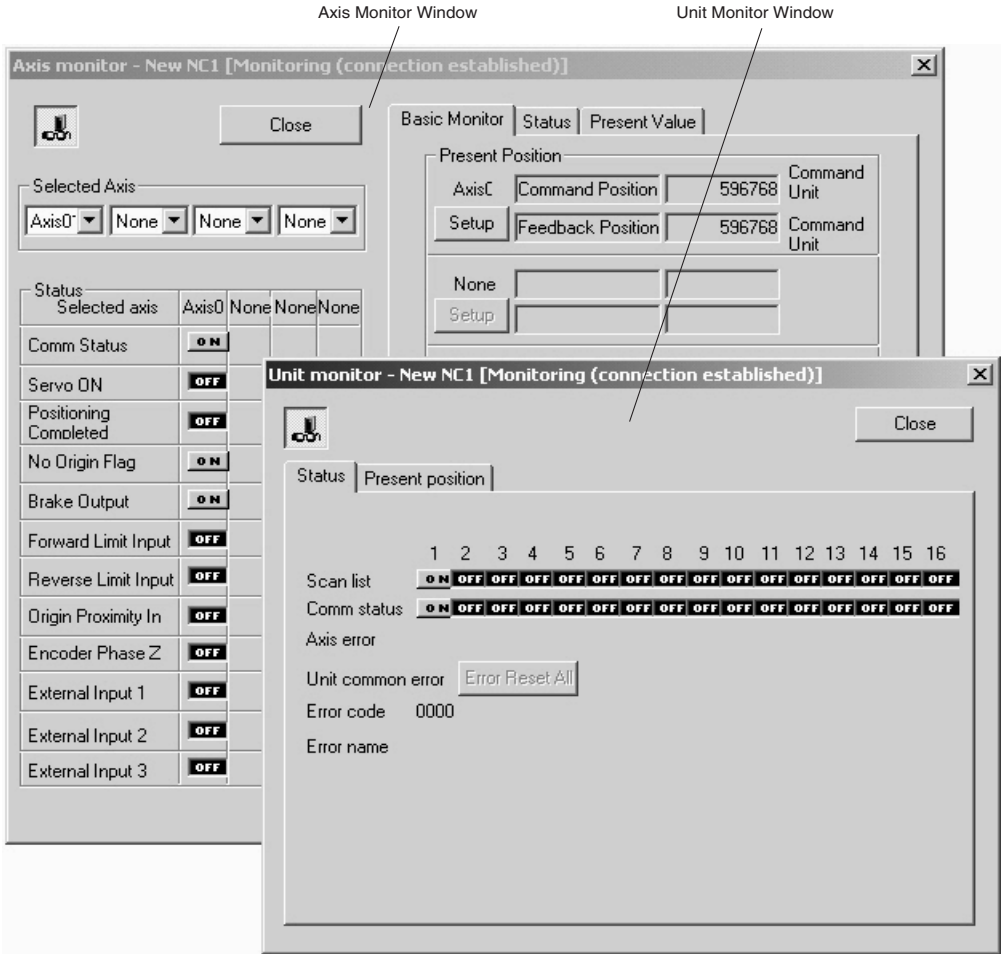
Basic Window



Edit Parameter Window



Monitor Window



3-2 Basic Operation

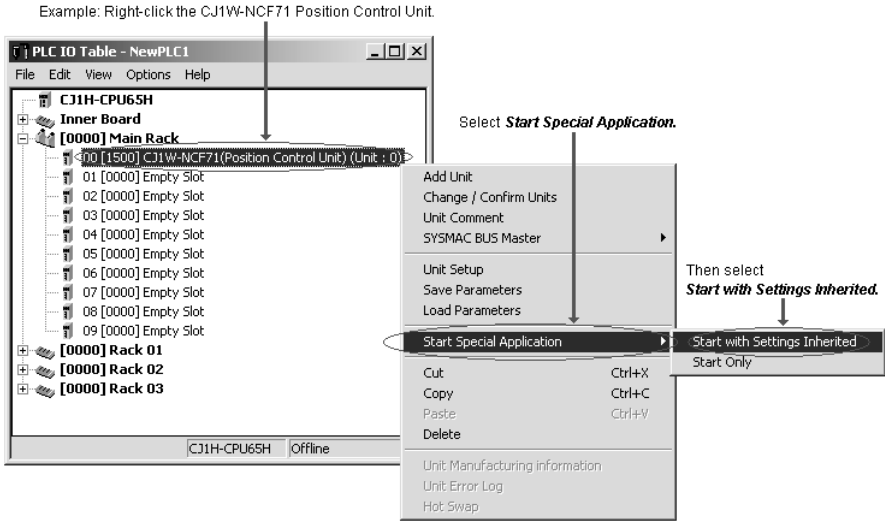
3-2-1 CX-Motion-NCF Basic Operation

The basic operations of CX-Motion-NCF are explained here.

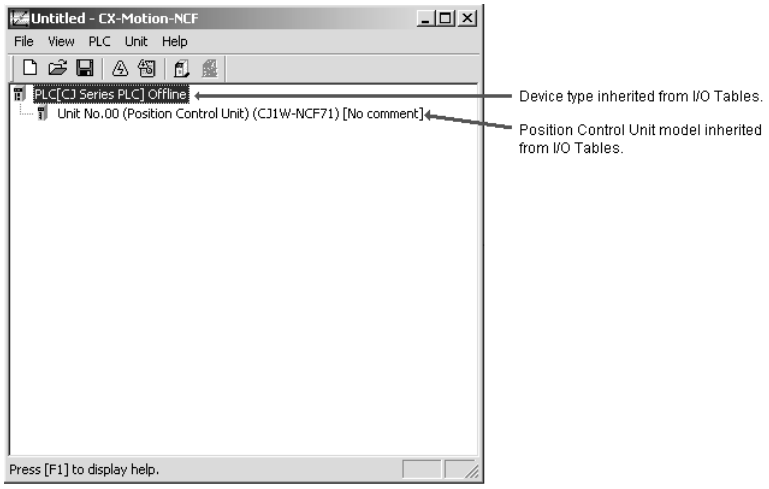
Starting CX-Motion-NCF

Starting CX-Motion-NCF Using *Start Special Application - Start with Settings Inherited* from the I/O Table Window Opened from the CX-Programmer That Was Installed from the CX-One

1,2,3... 1. Right-click a Position Control Unit in the I/O Table Window and select ***Start Special Application - Start with Settings Inherited*** from the pop-up menu.

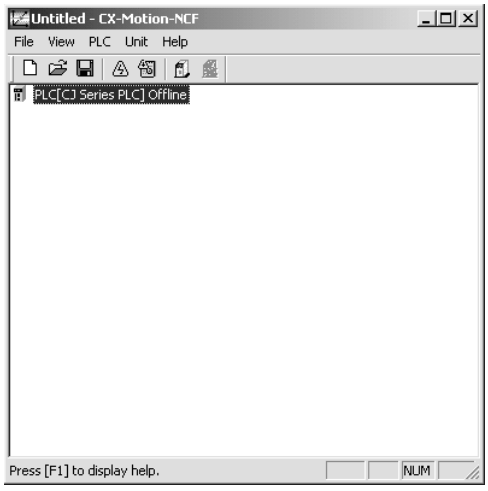


2. The CX-Motion-NCF will be started, a new project will be created, and a Position Control Unit will be added automatically. The Position Control Unit model will be inherited as shown below



Starting CX-Motion-NCF Using *Start Special Application - Start Only* from the I/O Table Window Opened from the CX-Programmer That Was Installed from the CX-One

Right-click a Position Control Unit in the I/O Table Window and select ***Start Special Application - Start Only*** from the pop-up menu. The following window will be displayed with a new project.



Starting CX-Motion-NCF from Windows Start Menu

Select ***Start***. Select ***Programs - OMRON - CX-One - CX-Motion-NCF - CX-Motion-NCF***. The same window as when selecting ***Start Only*** will be displayed with a new project.

Quitting CX-Motion-NCF

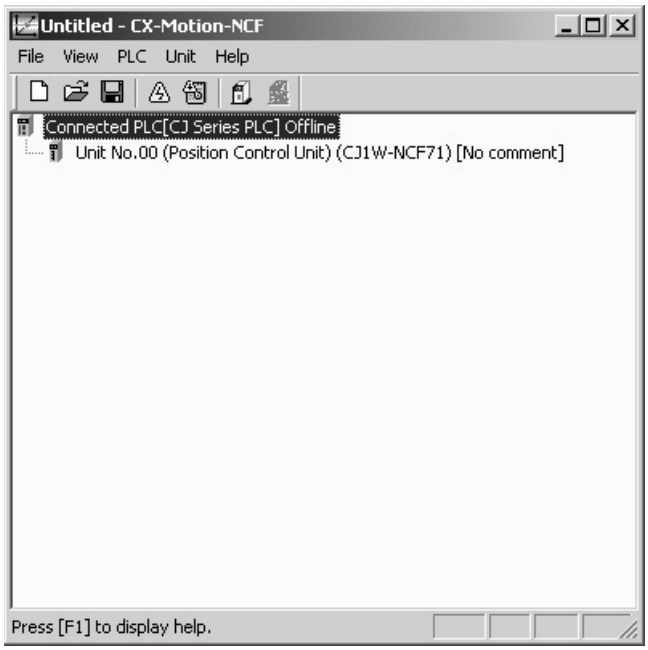
1,2,3...

1. Select ***File/Exit*** or click ✕ at the top right corner of the window. After editing a project, if the project has not been saved, the following dialog box will be displayed.

2. Click the **Yes** Button to save the changes made. Click the **No** Button if it is not necessary to save the changes. Click the **Cancel** Button to return to the Basic Window without quitting CX-Motion-NCF.

CX-Motion-NCF Basic Window

The CX-Motion-NCF Basic Window is shown below.



Main Menus

Main Menu	Contents	Keyboard shortcut
File	Used to create or save projects.	Alt+F
View	Used to display or hide Toolbar or Status Bar.	Alt+V
PLC	Used to connect to PLC.	Alt+P
Unit	Used to add or delete Position Control Unit, or to open Axis Map Setting Window.	Alt+U
Help	Used to display help and version information. Also used to register online.	Alt+H

Main Menu Items

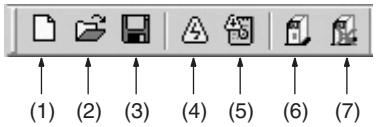
The names and functions for all of the menus are given in the table below. When an item is selected, the dialog box for that function is displayed. follow the instructions in the dialog box.

Main menu	Item	Contents	Keyboard shortcut
File	New	Creates a new project file.	Ctrl+N
	Open...	Opens an existing project file.	Ctrl+O
	Save	Saves the active project (over-writes the previous data).	Ctrl+S
	Save As	Saves the active project with a new name.	---
	Exit	Quits CX-Motion-NCF.	---
View	Toolbar	Displays/hides toolbar.	---
	Status Bar	Displays/hides status bar.	---
PLC	Online	Connects to PLC.	---
	Communication Set-tings	Sets communications for online connection.	---

Main menu	Item	Contents	Keyboard shortcut
Unit	Edit Parameters	Opens Axis Map Setting Window.	---
	Change Unit No.	Changes Unit No. of PCU.	---
	Edit Comment	Edits comment.	---
	Add	Adds PCU to a project.	---
	Delete	Deletes PCU from a project.	---
Help	Help Index	Displays the table of contents for help.	F1
	Online Registration	Connects to the Omron CX-One Website for online user registration.	---
	About CX-Motion NCF...	Displays the version information for CX-Motion-NCF.	---

Toolbar

Functions can be executed directly by clicking on the appropriate icon on the toolbar. The functions that can be executed from the toolbar are given below.



Number	Function
(1)	Creates a new project.
(2)	Opens an existing project.
(3)	Saves the active project.
(4)	Connects online to PLC.
(5)	Displays communications settings window to connect to PLC.
(6)	Adds a new Position Control Unit.
(7)	Deletes a Position Control Unit.

Status Bar

The following information is displayed on the status bar.

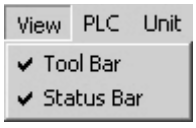
View Settings

The view settings can be used to display or hide the toolbar or status bar.

Display/Hide Settings

1,2,3...

1. Click ***View***.



2. If a check appears next to Toolbar or Status Bar, the corresponding item is displayed. To hide any of these, click ***Toolbar*** or ***Status Bar*** to remove the check.

Help

Displaying the Help Contents

1,2,3...

1. Click ***Help/Help Index***. The table of contents for help will be displayed.
2. Click an item to display information related to that item.

Displaying CX-Motion-NCF and CX-Server Version Information

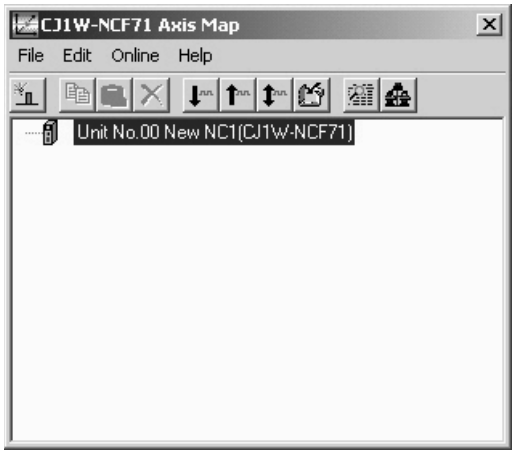
Click ***Help/About CX-Motion-NCF***. The CX-Motion-NCF and CX-Server version information will be displayed.

3-2-2 Axis Map Setting Window Basic Operation

The basic operations of the Axis Map Setting Window used to make the Position Control Unit settings are explained here.

Starting the Axis Map Setting Window

Click ***Unit/Edit Parameters***, or double-click on a Position Control Unit after selecting one on the CX-Motion-NCF Basic Window.

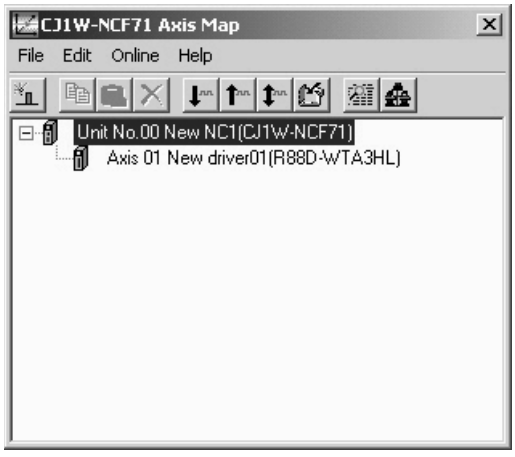


Quitting Axis Map Setting Window

Click ***File/Exit***, or click  at the right top corner of the Axis Map Setting Window.

Axis Map Setting Window

The Axis Map Setting Window is shown below.



Main Menus

Main menu	Contents	Keyboard shortcut
File	Used, for example, to import or export.	Alt+F
Edit	Used, for example, to add Servo Drivers or edit parameters.	Alt+E
Online	Used, for example, to transfer parameters or monitor PCUs or axes.	Alt+L
Help	Used to display help and version information.	Alt+H

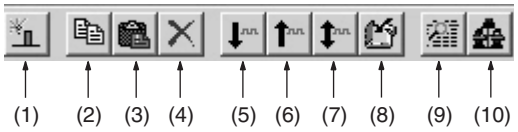
Main Menu Items

The names and functions for all of the menus are given below. When an item is selected, the dialog box for that function is displayed. Follow the instructions in the dialog box.

Main menu	Item		Contents	Keyboard shortcut
File	Import		Imports entire PCU project files or Servo Parameters. The file is to be in CSV format.	---
	Export		Exports entire PCU project files or Servo Parameters. The file is to be in CSV format	---
	Properties		When a Servo Driver item has been selected, displays the Servo Driver Properties Window. Invalid when no Servo Driver item has been selected.	---
	Print		Prints out Unit Parameters or Servo Parameters.	Ctrl+P
	Close		Closes Axis Map Setting Window. Closes all the active Edit Parameters and Monitor Windows.	---
Edit	New Driver		Displays the New Driver Dialog.	---
	Edit Parameters	NC Unit	Edits Unit Parameters.	---
		Axis	Edits Servo Parameters.	---
	Copy		Copies an axis.	Ctrl+C
	Paste		Pastes an axis.	Ctrl+V
	Delete		Deletes the selected Servo Driver.	DEL
Online	Download to NC Unit		Executes batch download. Displays the Batch Download Dialog.	---
	Upload from NC Unit		Executes batch upload. Displays the Batch Upload Dialog.	---
	Compare		Executes batch compare. Displays the Batch Compare Dialog.	---
	Write Flash Memory		Writes data to flash memory.	---
	Unit Monitor		Starts Unit Monitor.	---
	Axis Monitor		Starts Axis Monitor.	---
	Test Run		Displays the Test Run Window. Connection status, Servo Lock/Unlock, JOG, etc. can be controlled.	---
	Error Log		Displays error log.	---
	Device Information		Displays device information.	---
Help	Help		Displays help.	F1
	About		Displays the version information for CX-Motion-NCF and Driver database.	---

Toolbar

Functions can be executed directly by clicking on the appropriate icon on the toolbar. The functions that can be executed from the toolbar are given below.



Number	Function
(1)	Adds a new driver.
(2)	Copy
(3)	Paste
(4)	Remove
(5)	Download to Position Control Unit
(6)	Upload from Position Control Unit
(7)	Compare
(8)	Writes data to flash memory.
(9)	Unit Monitor
(10)	Axis Monitor

Help

Displaying the Help Contents

1,2,3...

1. Click ***Help/Help***. The table of contents for help will be displayed.
2. Click an item to display information related to that item.

Displaying CX-Motion-NCF and Driver Database Version Information

Click ***Help/About***. The CX-Motion-NCF and Driver database version information will be displayed.

3-3 Operations Listed by Purpose

Operations Listed by Purpose

Function (Purpose)		Operation	Keyboard shortcut	Toolbar icon	Page
Project					
	Starting CX-Motion-NCF	Select ***Start/Programs/OMRON/CX-Motion-NCF*** and click ***CX-Motion-NCF***.	---	---	25
	Creating a new project	Select ***File/New*** on CX-Motion-NCF Basic Window.	Ctrl+N		36
	Opening a project	Select ***File/Open*** on CX-Motion-NCF Basic Window.	Ctrl+O		52
	Saving (overwriting)	Select ***File/Save*** on CX-Motion-NCF Basic Window.	Ctrl+S		52
	Saving with a different name	Select ***File/Save As*** on CX-Motion-NCF Basic Window.	---	---	52
	Quitting CX-Motion-NCF	Select ***File/Exit*** on CX-Motion-NCF Basic Window.	---	---	26
	Adding a Position Control Unit	Select ***Unit/Add*** on CX-Motion-NCF Basic Window.	---		36
	Importing Parameters	Select a Position Control Unit on Axis Map Setting Window. Click ***File/Import***, or right-click and click ***Import*** from the pop-up menu.	---	---	53
	Exporting All the Parameters	Select a Position Control Unit on Axis Map Setting Window. Click ***File/Export***, or right-click and click ***Export*** from the pop-up menu.	---	---	53
	Exporting Servo Parameters	Select ***File/Export***, or right-click and select ***Export*** from the pop-up menu after selecting a Servo Driver on the Axis Map Setting Window.	---	---	54
	Displaying Servo Driver Properties	Select ***File/Properties***, or right-click and select ***Properties*** from the pop-up menu after selecting a Servo Driver on the Axis Map Setting Window.	---	---	---
	Opening Axis Map Setting Window	Select a Position Control Unit on CX-Motion-NCF Basic Window. Click ***Unit/Edit Parameters***, or double-click the Position Control Unit.	---	---	29
	Closing Axis Map Setting Window	Select ***File/Close*** on Axis Map Setting Window.	---	---	29
	Adding a Servo Driver	On Axis Map Setting Window, click ***Edit/New Driver***, or right-click and selecting a Position Control Unit and click ***New Driver*** from the pop-up menu.	---		37
	Deleting a Servo Driver	Select a Servo Driver on Axis Map Setting Window. Click ***Edit/Delete***, or right-click and click ***Delete*** from the pop-up menu.	DEL		39
	Printing	Select ***File/Print*** on Axis Map Setting Window.	Ctrl+P	---	54
Editing data					
	Editing Unit Parameters	Select ***Edit/Edit Parameters/NC Unit***, or select and right-click a Position Control Unit and click ***Edit Unit Parameters*** from the pop-up menu on Axis Map Setting Window.	---	---	42
	Editing Servo Parameters	Select ***Edit/Edit Parameters/Axis*****, or select and right-click a Servo Driver and click ***Edit Servo Parameters*** from the pop-up menu on Axis Map Setting Window.	---	---	45
	Jumping between windows	Jumps around over Axis Map Setting Window, Edit Parameter Window, and Monitor Window by clicking the mouse.	Ctrl+Tab or Ctrl+Shift+Tab	---	---

Function (Purpose)		Operation	Keyboard shortcut	Toolbar icon	Page
Online operations					
	Starting communications with PLC	Select ***PLC/Online*** on CX-Motion-NCF Basic Window.	---		59
	Communications setting	Select ***PLC/Communication Settings*** on CX-Motion-NCF Basic Window.	---		58
	Batch download	On Axis Map Setting Window, select ***Online/Download to NC Unit***, or select and right-click a Position Control Unit and click ***Download to NC Unit*** from the pop-up menu.	---		60
	Batch upload	On Axis Map Setting Window, select ***Online/Upload from NC Unit***, or select and right-click a Position Control Unit and click ***Upload from NC Unit*** from the pop-up menu	---		65
	Batch compare	On Axis Map Setting Window, select ***Online/Compare***, or select and right-click a Position Control Unit and click ***Compare*** from the pop-up menu.	---		69
	Writing to flash memory	Select ***Online/Write Flash Memory*** on the Axis Map Setting Window.	---		73
	Monitoring Position Control Unit	On Axis Map Setting Window, click ***Online/Unit Monitor***, or select and right-click a Position Control Unit and click ***Unit Monitor*** from the pop-up menu.	---		76
	Monitoring axis	On Axis Map Setting Window, click ***Online/Axis Monitor***, or select and right-click a Position Control Unit or Servo Driver and click ***Axis Monitor*** from the pop-up menu.	---		79
	Error log	On Axis Map Setting Window, click ***Online/Error Log***, or select and right-click a Position Control Unit and click ***Error Log*** from the pop-up menu.	---	---	94
	JOG	Select ***Online/Test Run*** on the Axis Map Setting Window.	---	---	88
	Displaying device information	Select ***Online/Device Information*** from the Axis Map Setting Window.	---	---	---
Display settings					
	Displaying or hiding Toolbar	Select ***View/Toolbar*** on CX-Motion-NCF Basic Window.	---	---	27
	Displaying or hiding Status Bar	Select ***View/Status Bar*** on CX-Motion-NCF Basic Window.	---	---	27
Displaying help					
	Displaying Position Control Unit model and version	On Axis Map Setting Window, click ***Online/Device Information***, or select and right-click a Position Control Unit and click ***Device Information*** from the pop-up menu.	---	---	27
	Displaying help	Select ***Help/Help Index*** on CX-Motion-NCF Basic Window.	F1	---	27
		Select ***Help/Help*** on Axis Map Setting Window.	F1	---	27
	Online registration	Select ***Help/Online Registration*** in the CX-Motion-NCF Basic Window.	---	---	---
	Displaying version information	Select ***Help/About***.	---	---	27

SECTION 4
Creating Projects

This section provides information on creating projects and adding Position Control Units and Servo Drivers.

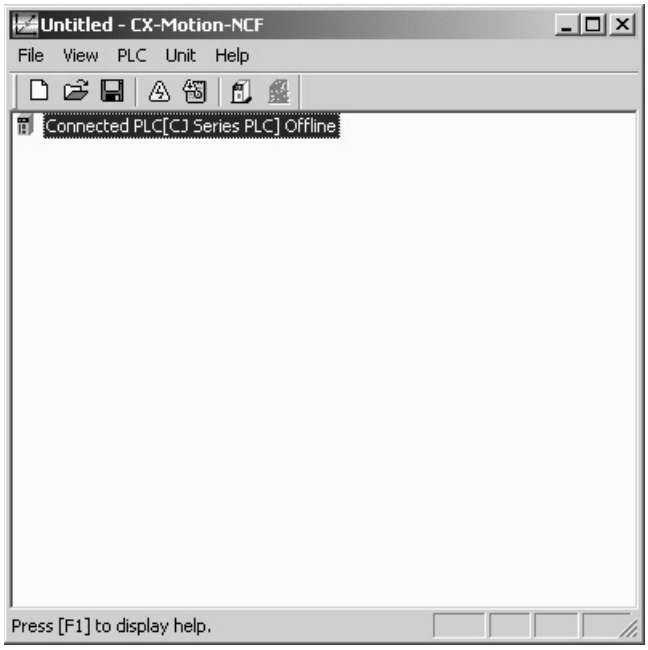
4-1 Creating a New Project 36
4-2 Adding and Deleting Position Control Units 36
4-3 Adding and Deleting Servo Drivers 37

4-1 Creating a New Project

Follow the procedure below to create a new project on the CX-Motion-NCF Basic Window.

On the CX-Motion-NCF Basic Window, click ***File/New***, press the **Ctrl+N** keys, or click  in the toolbar.

No new project has to be created when CX-Motion-NCF has just been started. Operate on the project already being displayed.



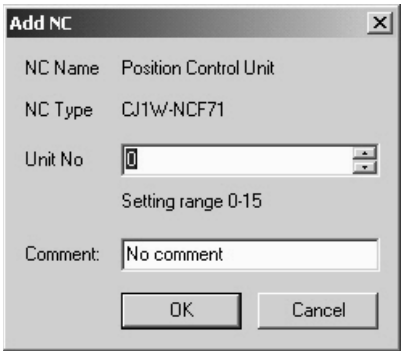
4-2 Adding and Deleting Position Control Units

Adding Position Control Units to Projects

A Position Control Unit is added to the project.

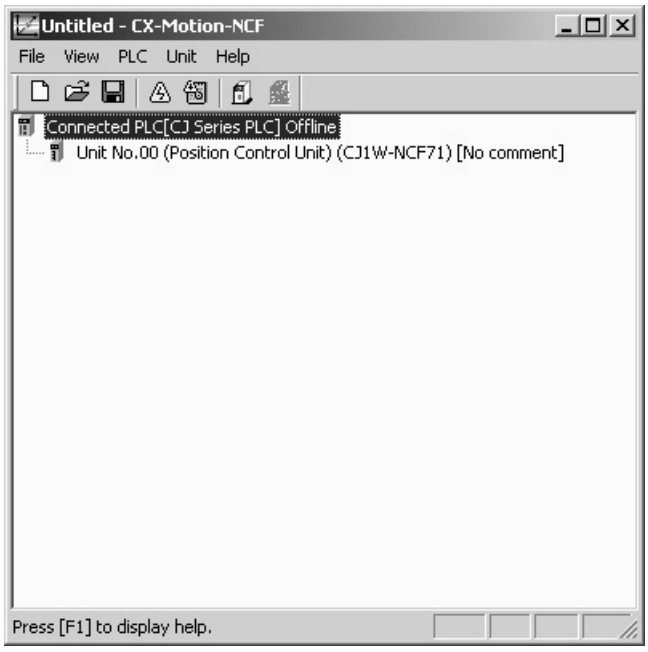
1,2,3...

1. On the CX-Motion-NCF Basic Window, click ***Unit/Add***, click  in the toolbar, or right click and select ***Add NC*** from the pop-up menu.



2. Set the Unit No.
   Select a Unit No. for the Position Control Unit as a CPU Bus Unit.
3. Enter comment.
   This can be skipped.

4. Click the **OK** Button.
   A Position Control Unit is added to the project.



Deleting Position Control Units

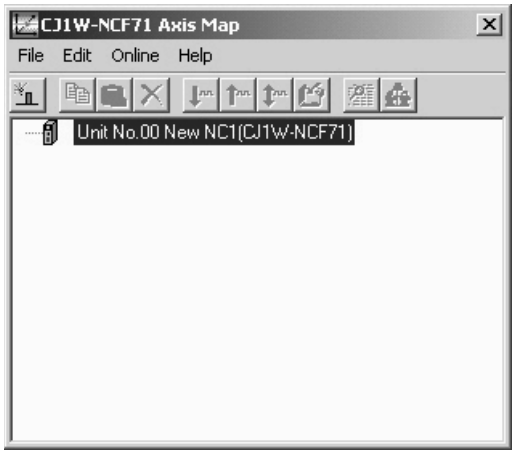
1,2,3...

1. On the CX-Motion-NCF Basic Window, click ***Unit/Delete***, click  , or right-click and select ***Delete*** from the pop-up menu after selecting a Position Control Unit to be deleted.
2. The dialog box saying “Delete the selected Unit. Proceed?” will be displayed. Click the **OK** Button.

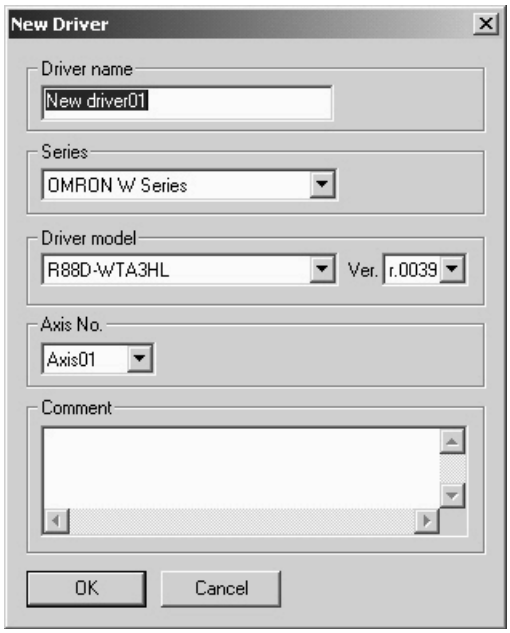
4-3 Adding and Deleting Servo Drivers

Adding Servo Driver to Position Control Unit

On the CX-Motion-NCF Basic Window, click ***Unit/Edit Parameters*** after selecting a registered Position Control Unit, or double-click a Position Control Unit to display the Axis Map Setting Window. On the Axis Map Setting Window, add a new Servo Driver.

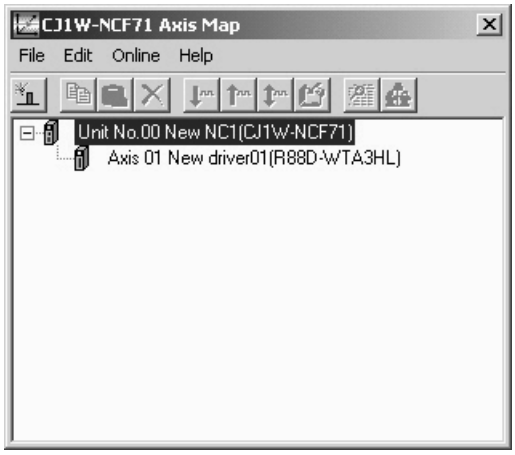


1,2,3... 1. Click ***Edit/New Driver***, Click  in the toolbar, or right-click the Position Control Unit and select ***New Driver*** from the pop-up menu.



2. Enter Driver Name.
   Up to 32 one-byte characters can be entered.
3. Select Series.
   Click on the drop-down list to select an appropriate series.

   Note Select *OMRON W Series* when using an OMRON R88M-WT□ W-series Servo Driver with a Yaskawa JUSP-NS115 MECHATROLINK-II Application Module. Select *OMRON W Series (Built-in Communications)* when using an OMRON R88M-WN□-ML2 W-series Servo Driver with Built-in MECHATROLINK-II Communications.
4. Select Driver Model.
   Click on the drop-down list to select an appropriate driver model. The driver models in the list depends on the selected series.
5. Select Version.
   Click on the drop-down list to select an appropriate version. The driver versions in the list depends on the selected driver model.
6. Set Axis No.
   Click on the drop-down list to select an axis No. The axis Nos. that are already in use will not be displayed.
7. Enter Comment.
   Up to 256 one-byte characters can be entered. This can be skipped.
8. Click the **OK** Button.
   A new Servo Driver will be added to the Position Control Unit.

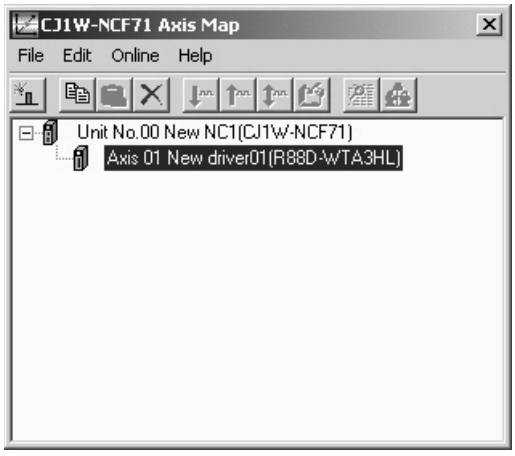


Copying Servo Driver to Position Control Unit

On the Axis Map Setting Window, when a Servo Driver that has been registered under a Position Control Unit is copied and pasted on the same Position Control Unit, a new Servo Driver will be added with the lowest axis number that is not in use. When a Servo Driver that has been registered under a Position Control Unit is copied and pasted on another Servo Driver (that has to be registered in advance), the parameters of the copied Servo Driver will be overwritten to the other Servo Driver.

Deleting Servo Driver from Position Control Unit

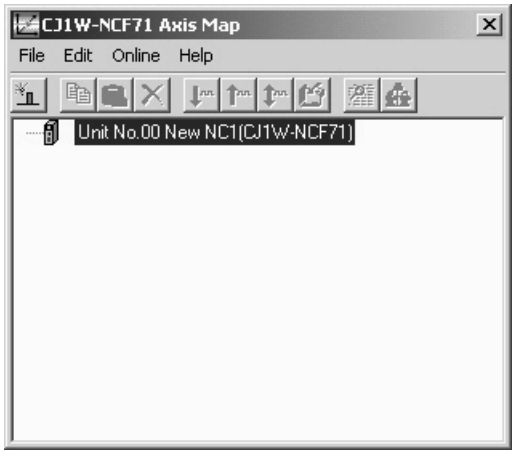
A Servo Driver that has been registered under a Position Control Unit is deleted.



1,2,3...

1. On the Axis Map Setting Window, after selecting a Servo Driver to be deleted, click ***Edit/Delete***, Click  in the toolbar, press the **Delete** key, or right-click the Servo Driver and select ***Delete*** from the pop-up menu.

2. Click the **OK** Button.
   The Servo Driver will be deleted from the Position Control Unit.



SECTION 5
Editing Data

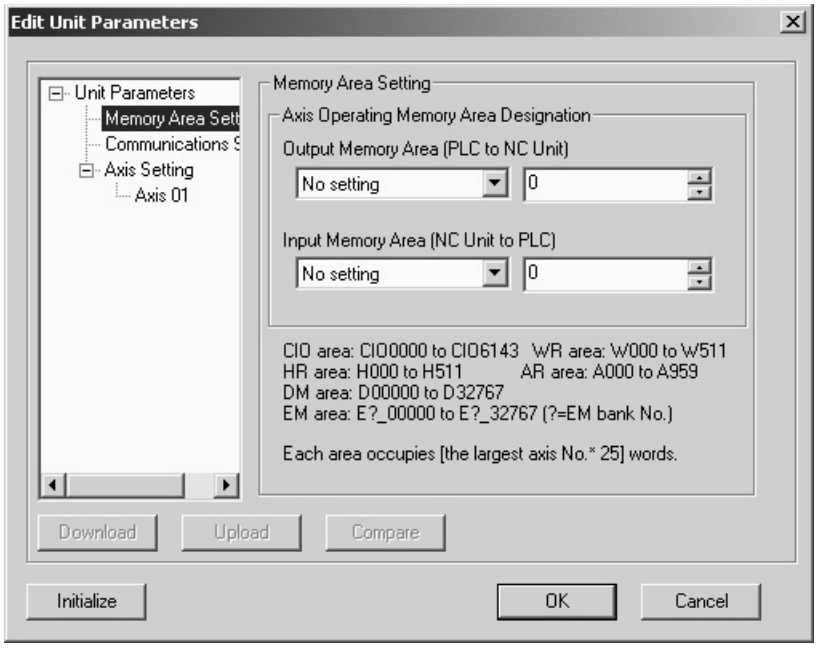
This section describes the operations used to edit data.

5-1 Editing Unit Parameters 42
5-1-1 Editing Memory Area Parameters 43
5-1-2 Editing Communications Parameters 44
5-1-3 Editing Axis Parameters 45
5-2 Editing Servo Parameters 47

5-1 Editing Unit Parameters

The methods used to edit data are described in this section. For details on the setting contents, Unit parameters, and Servo Parameters, refer to the *CJ1W-NCF71 Position Control Units Operation Manual* (W426).

1,2,3... 1. Click ***Edit/Edit Parameters/NC Unit*** on the Axis Map Setting Window, double-click a Position Control Unit, or right-click and select ***Edit Unit Parameters*** from the pop-up menu. The Edit Unit Parameter Window will be displayed.



Item	Explanation
Download	Downloads all the parameters that are set on the Edit Unit Parameter Window to a Position Control Unit. (See notes 1 and 2.)
Upload	Uploads all the parameters that are set on the Edit Unit Parameter Window from a Position Control Unit. (See notes 1 and 2.)
Compare	Compares all the parameters that are set on the Edit Unit Parameter Window with the parameters saved in a Position Control Unit. (See notes 1 and 2.)
Initialize	Initializes all the parameters (see note 2) that are set on the Edit Unit Parameter Window to their default settings.
OK	Determines the parameters that are set on the Edit Unit Parameter Window.
Cancel	Cancels the parameters that are set on the Edit Unit Parameter Window.

Note

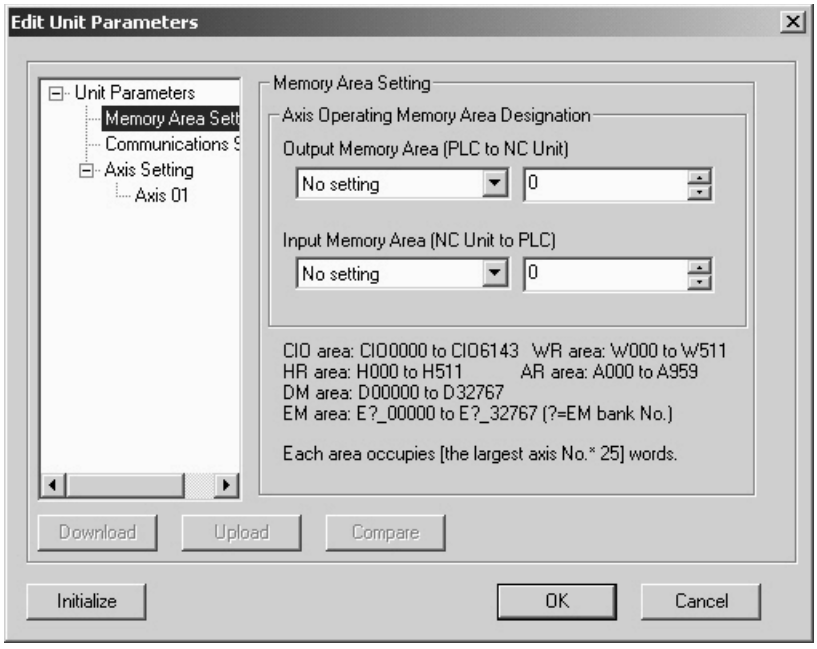
(1) It can be executed only when the connection to the PLC has been established on the CX-Motion-NCF Basic Window.

(2) “All the parameters that are set on the Edit Unit Parameter Window” indicates the parameters that are set in Memory Area Setting, Communications Setting, and Axis Setting.

5-1-1 Editing Memory Area Parameters

Edit Memory Area Parameter Window

Click ***Memory Area Setting*** from the tree.



Editing Memory Area Parameters

1,2,3...

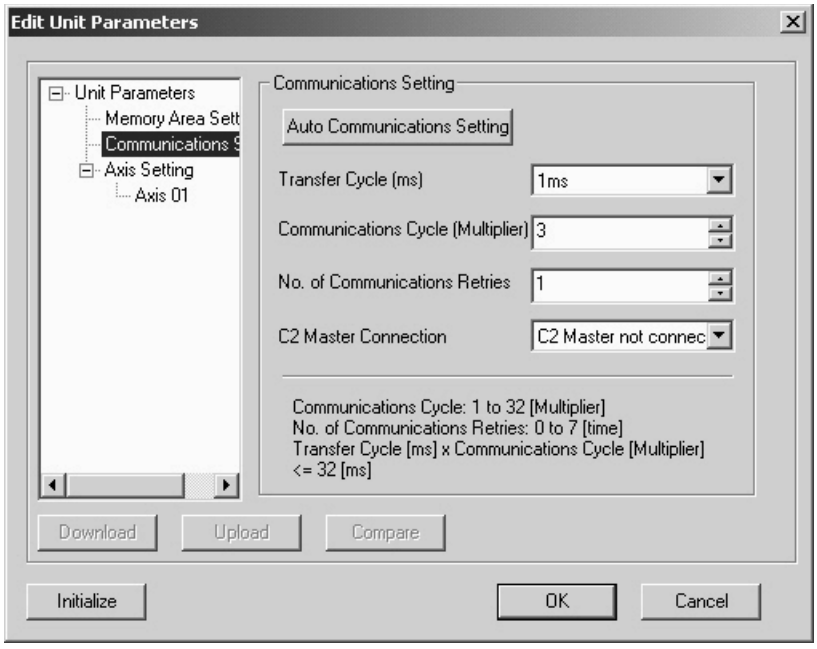
1. Set the Output Memory Area (PLC to Position Control Unit).
   Click on the drop-down list of the Output Memory Area (PLC to Position Control Unit) to select an appropriate area type from the list.
   In the right box, set the beginning address of the specified area type. The setting range varies depending on the selected area type and the largest axis No. of the registered axes. When a value out of the range is entered, the value will be displayed in red. Enter a value within the range.
2. Set the Input Memory Area (Position Control Unit to PLC)
   Click on the drop-down list of the Input Memory Area (Position Control Unit to PLC) to select an appropriate area type from the list.
   In the right box, set the beginning address of the specified area type. The setting range varies depending on the selected area type and the largest axis No. of the registered axes. When a value out of the range is entered, the value will be displayed in red. Enter a value within the range.

Note When selecting the same area type for the Output and Input Memory Areas, make sure to set the appropriate beginning addresses so that the areas do not overlap. Do not set EM banks that do not exist in the PLC being used as the areas used for the Output and Input Memory Areas.

5-1-2 Editing Communications Parameters

Edit Communications Parameters Window

Click ***Communications Setting*** from the tree.



Editing Communications Parameters

For details of the communications settings, refer to SECTION 6 MECHATROLINK in the *CJ1W-NCF71 Position Control Units Operation Manual* (W426).

1,2,3...

1. Set Transfer Cycle.
   Click on the drop-down list of the Transfer Cycle to select an appropriate Transfer Cycle.
2. Set Communications Cycle.
   The setting range is between 1 and 32. The set value is used as the multiplier with which the Transfer Cycle is multiplied. When a value out of the setting range is entered, the value will be displayed in red. Enter a value within the range.
3. Set No. of Communications Retries.
   The setting range is between 0 to 7. When a value out of the setting range is entered, the value will be displayed in red. Enter a value within the range.
4. Set C2 Master Connection.
   Click on the drop-down list of the C2 Master Connection to select whether the C2 Master is connected or not.

Note

(1) Set the Communications and Transfer Cycles so that the following expression is satisfied: Transfer Cycle × Communications Cycle (Multiplier) ≤ 32 ms

(2) When connecting to a combination of a W-series Servo Driver and the JUSP-NS115, set the communications cycle to an integer multiple of 1.0 ms.

(3) When connecting to a W-series Servo Driver with Built-in Communications, set the communications cycle to an integer multiple of 0.5 ms.

(4) When connecting to a combination of a W-series Servo Driver and the JUSP-NS115 or to a W-series Servo Driver with Built-in Communications, set the transfer cycle to 4 ms or less.

Automatic Communications Setting

By clicking the **Auto Communications Setting** Button, the Communications and Transfer Cycles corresponding to the largest axis No. registered in the Position Control Unit are set to their minimum values.

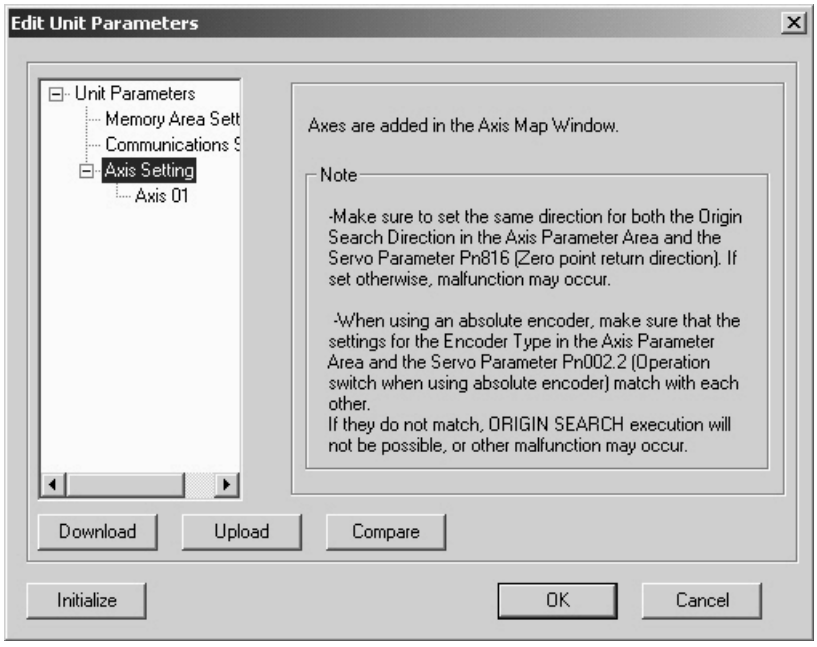
For details on the values of the Communications Parameters set in Automatic Communications Setting, refer to *6-2-3 MECHATROLINK Communications Settings* in the *CJ1W-NCF71 Position Control Units Operation Manual* (W426).

Largest axis No.	Transfer Cycle	Communications Cycle	No. of Communications Retries	C2 Master Connection
1 to 3	0.5 ms	× 2 (1.0 ms)	1	No C2 Master
4	1.0 ms	× 1 (1.0 ms)	1	No C2 Master
5 to 8	1.0 ms	× 2 (2.0 ms)	1	No C2 Master
9	2.0 ms	× 1 (2.0 ms)	1	No C2 Master
11 to 16	2.0 ms	× 2 (4.0 ms)	1	No C2 Master

5-1-3 Editing Axis Parameters

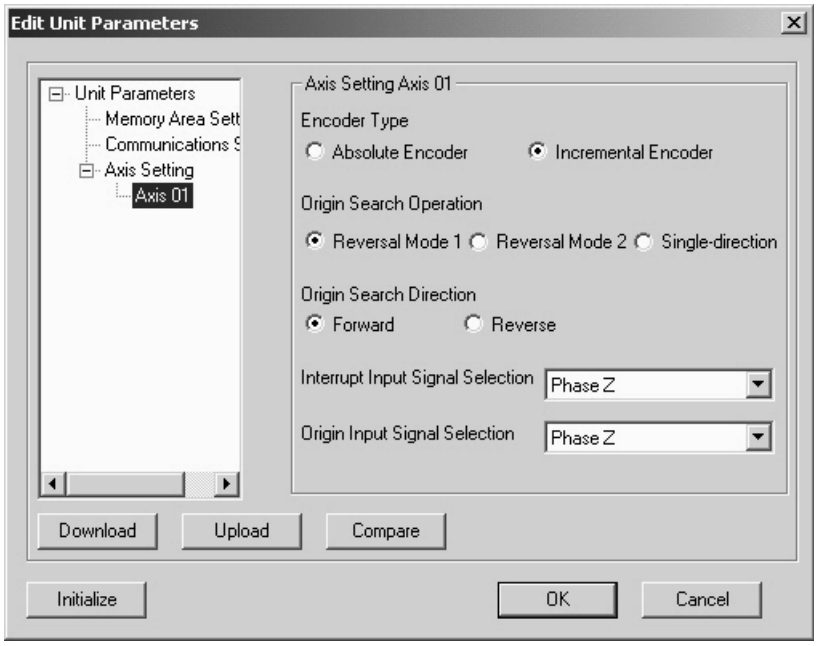
Edit Axis Parameter Window

1,2,3... 1. To edit Axis Parameters, click the **Plus** Icon left of the Axis Setting in the tree on the Edit Unit Parameter Window at first. The registered axes will be displayed.



Note When no axes are registered, the Axis Parameters cannot be edited on the Edit Unit Parameter Window. Register axes on the Axis Map Setting Window first and edit the Axis Parameters. Once axes are registered on the Axis Map Setting Window, they will be automatically displayed on the Edit Unit Parameter Window.

2. Click ***Axis***□□ to be edited. (□□: 01 to 16)



Editing Axis Parameters

1,2,3...

1. Select Encoder Type.
   Select from either *Absolute Encoder* or *Incremental Encoder.*
2. Set Origin Search Operation.
   Select one of the following:
   Reversal Mode 1, Reversal Mode 2, or *Single-direction Mode*
3. Set Origin Search Direction.
   Select either *Forward* or *Reverse*.
4. Select Interrupt Input Signal.
   Click on the drop-down list to select a signal used as the Interrupt Input Signal.
5. Select Origin Input Signal.
   Click on the drop-down list to select a signal used as the Origin Input Signal.

Note

(1) Make sure that the same direction is set for Origin Search Direction in the Axis Parameters and Zero Point Return Direction (Pn816.0) in the Servo Parameters. Setting different directions may result in a malfunction.

(2) When using an absolute encoder, make sure that the settings for the Encoder Type in the Axis Parameters and Operation Switch when Using Absolute Encoder (Pn002.0) in the Servo Parameters match. If the settings do not match, ORIGIN SEARCH execution will not be possible, or another malfunction may occur.

Quitting Editing

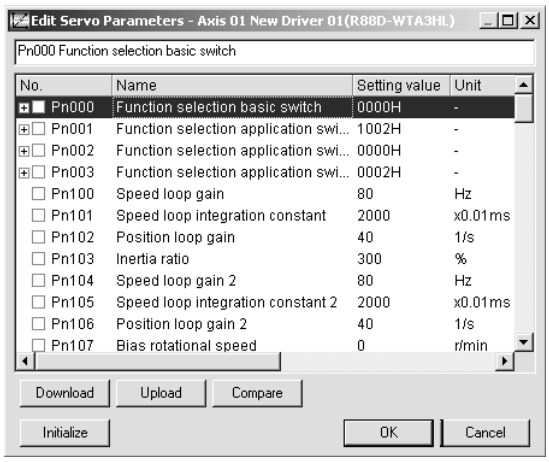
Click the **OK** Button.

Once all the editing is completed, click the **OK** Button to determine the edited data.

To cancel the edited data, click the **Cancel** Button.

5-2 Editing Servo Parameters

On the Axis Map Setting Window, click ***Edit/Edit Parameters/Axis*****□□**, double-click an axis to be edited, or right-click an axis to be edited and select ***Edit Servo Parameters*** from the pop-up menu. (□□: 01 to 16) The Edit Servo Parameter Window will be displayed.



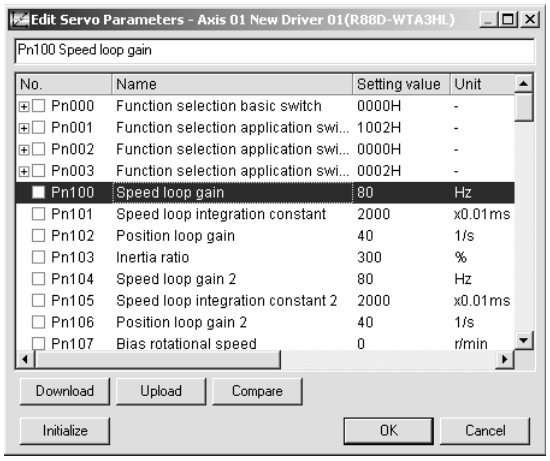
Item	Explanation
Download	Downloads Servo Parameters to a Servo Driver
Upload	Uploads Servo Parameters from a Servo Driver.
Compare	Compares the Servo Parameters on the computer with the ones on the Servo Driver.
Initialize	Initializes the Servo Parameters to their default settings.
OK	Determines the parameters that are set on the Edit Servo Parameter Window.
Cancel	Cancels the parameters that are set on the Edit Servo Parameter Window.

Editing Servo Parameters

1,2,3... 1. Select a parameter to be edited.
Edit a parameter either by entering a value or by selecting a value from the drop-down list for each bit of the parameter.
For parameters whose bits are to be set, click the **Plus** Icon on the left to display the parameters for each bit.

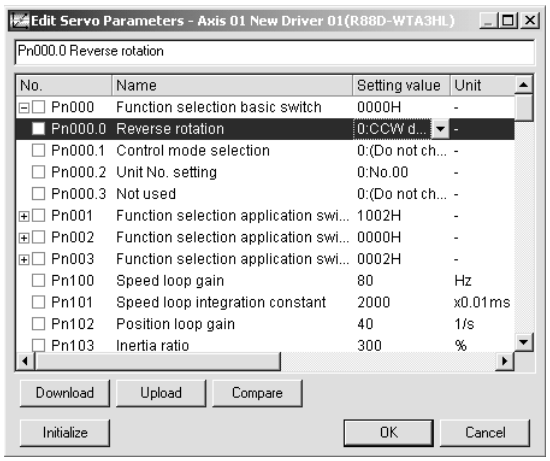
Entering Value Directly for Parameter

Move to the Setting Value Column of the parameter to be edited using the mouse or cursor keys.



Selecting Value from Drop-down List for Each Bit of Parameter

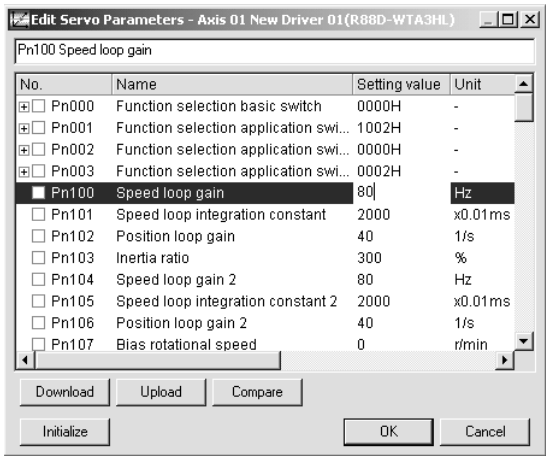
Move to the Setting Value Column of the parameter to be edited using the mouse or cursor keys.



2. Set a Value.
Set a value either by entering a value directly or by selecting a value from the drop-down list.

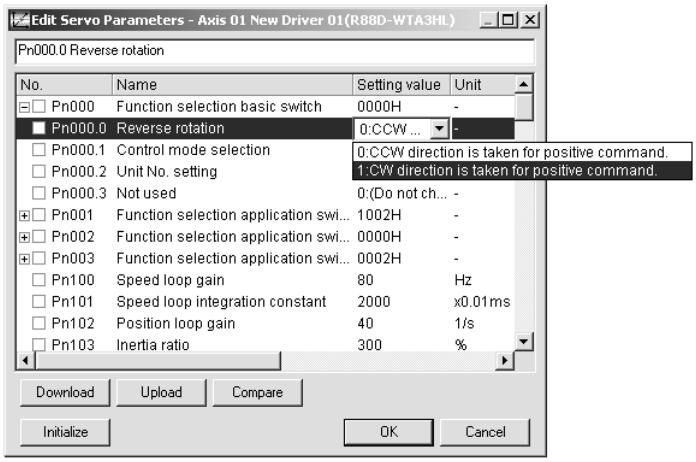
Entering Value Directly for Parameter

Either enter a value after double-clicking the Setting Value Column or enter a value directly. After entering a value, press the **Enter** key to determine the setting. Once the setting value is changed, the Check Box of the parameter will show a check.



Selecting Value from Drop-down List for Each Bit of Parameter

Select a value from the drop-down list. Once the setting value is changed, the Check Box of the parameter and each bit will show a check.



Initializing Servo Parameters

Click the **Initialize** Button. A confirmation dialog box will be displayed.

Click the **OK** Button. All the parameters will be set back to their default settings. Once initialization is completed, checks in the Check Box will be cleared.

Quitting Editing

Click the **OK** Button.

Once all the editing is completed, click the **OK** Button to determine the edited data.

To cancel the edited data, click the **Cancel** Button.

SECTION 6
Saving and Reading Projects

This section describes the operations used to save and read newly created projects.

6-1 Saving Project 52
6-2 Reading Project 52
6-3 Import 53
6-4 Export 53
6-5 Print 54

6-1 Saving Project

Saving Project

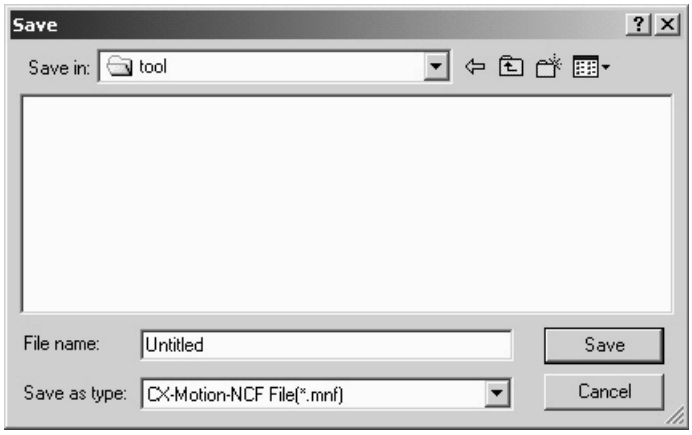
To save a project, Click ***File/Save***, or click ***File/Save As*** on the CX-Motion-NCF Basic Window.

When editing a project that was saved before and saving it again with the same name, click ***File/Save***. The project will be overwritten. When saving a new project or saving a project with a different name, click ***File/Save As***.

Saving Project with Name

1,2,3...

1. Click ***File/Save As***. The following window will be displayed.



2. After entering or selecting the folder to be saved in, the file name, and the file type (use the default file type: *.mnf), click the **Save** Button.

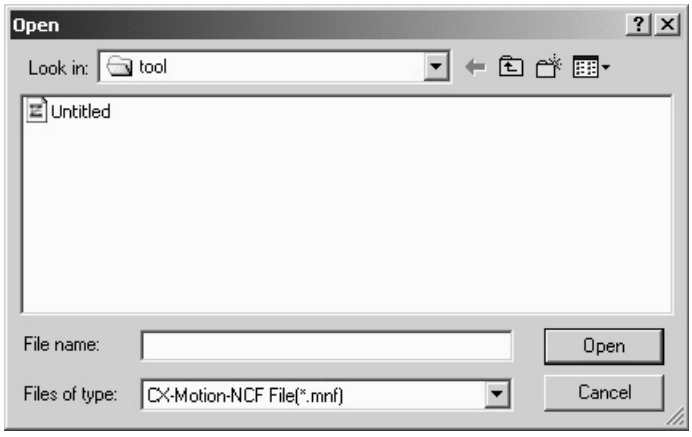
6-2 Reading Project

Reading Project

To read a project that has already been saved, click ***File/Open*** on the CX-Motion-NCF Basic Window.

1,2,3...

1. Click ***File/Open*** on the CX-Motion-NCF Basic Window.



2. From the *Look in* drop-down list, select the drive and folder to which the file was saved.
3. Enter the project name, or select one from the file list. Set the File of type: field to *.mnf.
4. Click the **Open** Button.

6-3 Import

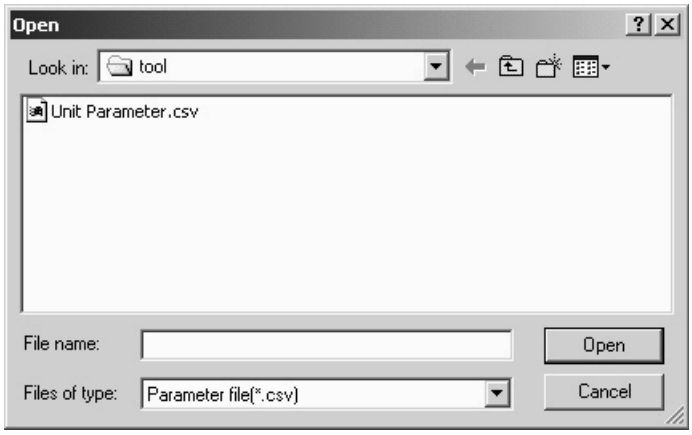
Importing File

Files saved in CSV format can be imported as project data.

If a CSV file contains Unit and Servo Parameters, the axis map in the imported file will be adopted.

If a CSV file contains Servo Parameters only, a new Servo Driver will be added to the axis map. In this case, the lowest axis No. not in use will be allocated to the Servo Driver automatically.

On the Axis Map Setting Window, click ***File/Import***, or select and right-click a Position Control Unit and click ***Import*** from the pop-up menu.

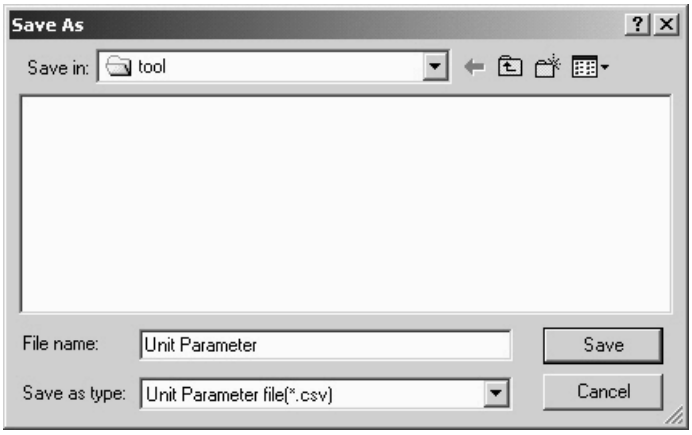


6-4 Export

Exporting All Data

Unit Parameters and registered Servo Parameters can be saved in CSV format.

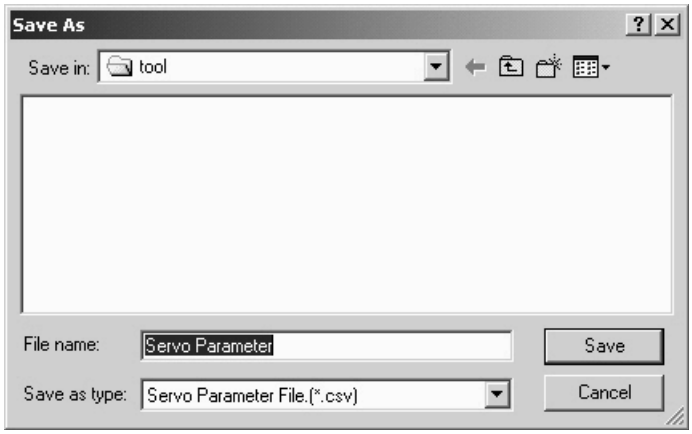
On the Axis Map Setting Window, click ***File/Export***, or select and right-click a Position Control Unit and click ***Export*** from the pop-up menu.



Exporting Servo Parameters Alone

Selected Servo Parameters can be saved in CSV format.

On the Axis Map Setting Window, select and right-click a Servo Driver whose parameters are to be exported, and click ***Export*** from the pop-up menu.

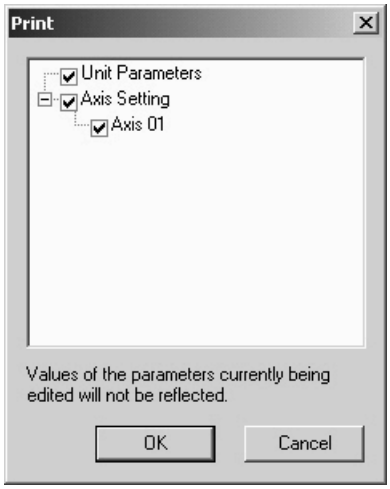


6-5 Print

Printing Procedure

1,2,3...

1. On the Axis Map Setting Window, click ***File/Print***. The following window will be displayed.



2. Select parameters to be printed out and click the **OK** Button.
3. The Print Dialog Box will be displayed. Select a printer, specify the number of copies, and make appropriate page setup. Then click the **OK** Button.

Note Parameters that are being edited will not be reflected in printing. To reflect the parameters in printing, click ***File/Print*** after closing the Edit Parameter Windows.

Print Samples

1,2,3... 1. An example of printed Unit Parameters is shown below.

2004/07/16 (1/ 1)

Unit No. 00: New NC1(CJ1W-NCF71)
Comment No comment

Memory Area Setting

Name		Setting Value
Output Memory Area		CIO 0
Input Memory Area		CIO 1000
Scan List Setting	Axis 01	Servo Driver (R88D-WTA3HL Version 0039H)
	Axis 02	Servo Driver (R88D-WTA3HL Version 0039H)
	Axis 03	Servo Driver (R88D-WTA3HL Version 0039H)
	Axis 04	Not used
	Axis 05	Not used
	Axis 06	Not used
	Axis 07	Not used
	Axis 08	Not used
	Axis 09	Not used
	Axis 10	Not used
	Axis 11	Not used
	Axis 12	Not used
	Axis 13	Not used
	Axis 14	Not used
	Axis 15	Not used
	Axis 16	Not used

Communications Setting

Name	Setting Value
Transfer Cycle	1ms
Communications Cycle	3 [multiplier]
No. of Communications	1
C2 Master Connection	C2 Master not connected

Axis Setting

Name	Axis 1	Axis 2	Axis 3	Axis 4
Interrupt Input Signa	Input 1 External	Input 1 External	Input 1 External	
Origin Input Signal S	Phase Z	Phase Z	Phase Z	
Origin Search Operati	Reversal Mode 1	Reversal Mode 1	Reversal Mode 1	
Origin Search Directi	Forward	Forward	Forward	
Encoder Type	Incremental Encod	Incremental Encod	Incremental Encod	

Name	Axis 5	Axis 6	Axis 7	Axis 8
Interrupt Input Signa				
Origin Input Signal S				
Origin Search Operati				
Origin Search Directi				
Encoder Type				

Name	Axis 9	Axis 10	Axis 11	Axis 12
Interrupt Input Signa				
Origin Input Signal S				
Origin Search Operati				
Origin Search Directi				
Encoder Type				

Name	Axis 13	Axis 14	Axis 15	Axis 16
Interrupt Input Signa				
Origin Input Signal S				
Origin Search Operati				
Origin Search Directi				
Encoder Type				

2. An example of printed Servo Parameters is shown below.
The setting value 0000H is expressed in hexadecimal. Other values are expressed in decimal.

2004/07/15 (2/ 7)

Axis 01

Driver Name	New Driver 01
Model	R88D-WTA3HL
Version	0039H
Comment	

No.	Name	Setting Valu	Unit
Pn000	Function selection basic switch	0010H	
Pn001	Function selection application switch 1	1002H	
Pn002	Function application selection switch 2	0000H	
Pn003	Function selection application switch 3	0002H	
Pn100	Speed loop gain	80	Hz
Pn101	Speed loop integration constant	2000	x0.01ms
Pn102	Position loop gain	40	1/s
Pn103	Inertia ratio	300	%
Pn104	Speed loop gain 2	80	Hz
Pn105	Speed loop integration constant 2	2000	x0.01ms
Pn106	Position loop gain 2	40	1/s
Pn107	Bias rotational speed	0	r/min
Pn108	Bias addition band	7	Command unit
Pn109	Feed forward amount	0	%
Pn10A	Feed forward command filter	0	x0.01ms
Pn10B	Speed control setting	0004H	
Pn10C	P control switching (torque command)	200	%
Pn10D	P control switching (speed command)	0	r/min
Pn10E	P control switching (acceleration command	0	10r/min/s
Pn10F	P control switching (deviation pulse)	10	Command unit
Pn110	Online auto-tuning setting	0012H	
Pn111	Speed feedback compensation gain	100	%
Pn124	Automatic gain switching timer	100	ms
Pn125	Automatic gain switching width (amount of	7	Command unit
Pn200	Position control setting 1	0100H	
Pn201	Encoder divider rate	1000	Pulses/rotation
Pn202	Electronic gear ratio G1 (numerator)	4	
Pn203	Electronic gear ratio G2 (denominator)	1	
Pn205	Absolute encoder multi-turn limit setting	65535	Rotations
Pn206	Number of fully-closed encoder pulses	16384	Pulses/rotation
Pn207	Position Control Setting 2	0010H	
Pn217	Command pulse factor	1	Factor
Pn218	Position control setting 3	0000H	
Pn300	Speed command scale	1000	0.01 V/ No. rated ro
Pn301	No. 1 internal speed setting	100	r/min
Pn302	No. 2 internal speed setting	200	r/min
Pn303	No. 3 internal speed setting	300	r/min
Pn304	Jog speed	500	r/min
Pn305	Soft start acceleration time	0	ms
Pn306	Soft start deceleration time	0	ms
Pn307	Speed command filter time constant	40	x0.01ms
Pn308	Speed feedback filter time constant	0	x0.01ms
Pn400	Torque command scale	30	0.1 V/ rated torque
Pn401	Torque command filter time constant	40	x0.01ms
Pn402	Forward torque limit	350	%
Pn403	Reverse torque limit	350	%
Pn404	Forward rotation external current limit	100	%
Pn405	Reverse rotation external current limit	100	%
Pn406	Emergency stop torque	350	%

SECTION 7
Transferring and Comparing Data

This section describes the operations used to transfer or compare data between the personal computer and Position Control Unit/Servo Driver, and to write data transferred to the Position Control Unit to the Position Control Unit's flash memory.

Note Make sure that the personal computer is connected to the PLC via a connecting cable and that online communications are enabled before transferring, or comparing data, or writing data to flash memory.

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7-1 Initial Setting for Connecting Online

Initial Settings for CPU Unit and Position Control Unit

1,2,3...

1. Set the Unit No. for the Position Control Unit (using the rotary switch on the front panel)
2. Set the DIP switch on the CPU Unit's front panel.
   a. For Communications via Toolbus:
   - When using the peripheral port, set SW4 to OFF, or set SW4 to ON and make appropriate setting of PLC Setup (set the PLC Setup Address 160 on the Programming Console to 0400 Hex).
   - When using the RS-232C port, set SW5 to ON, or set SW5 to OFF and make appropriate setting of PLC Setup (set the PLC Setup Address 160 on the Programming Console to 0400 Hex).

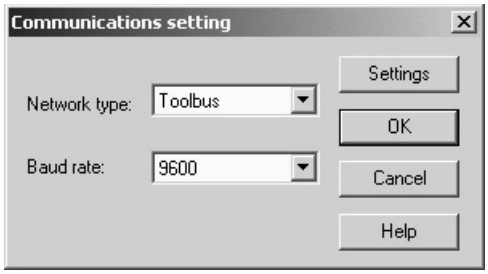
   b. For Communications via SYSMAC WAY (Host Link):
   - When using the peripheral port, set SW4 to ON, or set SW4 to OFF and make appropriate setting of PLC Setup. (Set the PLC Setup Address 144 on the Programming Console to its default, 0000 Hex. If the default setting has not been changed, leave the setting as it is.)
   - When using the RS-232C port, set SW5 to OFF, or set SW5 to ON and make appropriate setting of PLC Setup. (Set the PLC Setup Address 160 on the Programming Console to its default, 0000 Hex. If the default setting has not been changed, leave the setting as it is.)
3. Create the I/O tables (using the CX-Programmer or a Programming Console).

7-2 Setting/Changing Communications Specific

Communications Setting

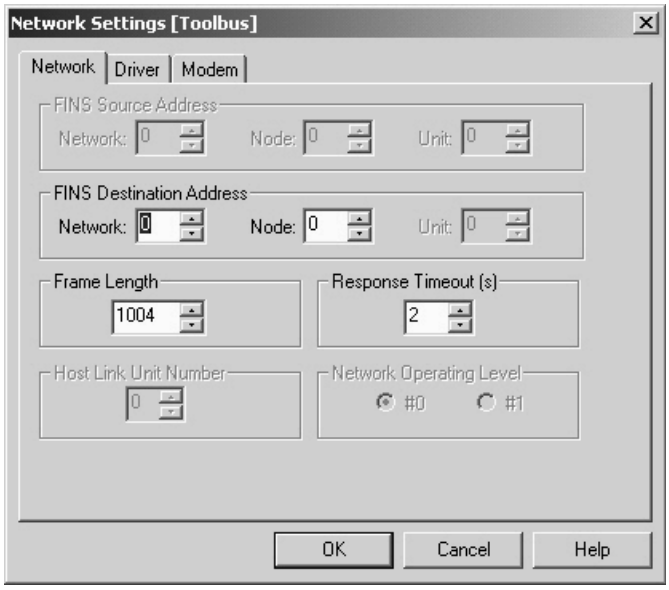
1,2,3...

1. On the CX-Motion-NCF Basic Window, click ***PLC/Communications Setting***, click  in the toolbar, or right-click and select ***Communications Setting*** from the pop-up menu. The following dialog box will be displayed.

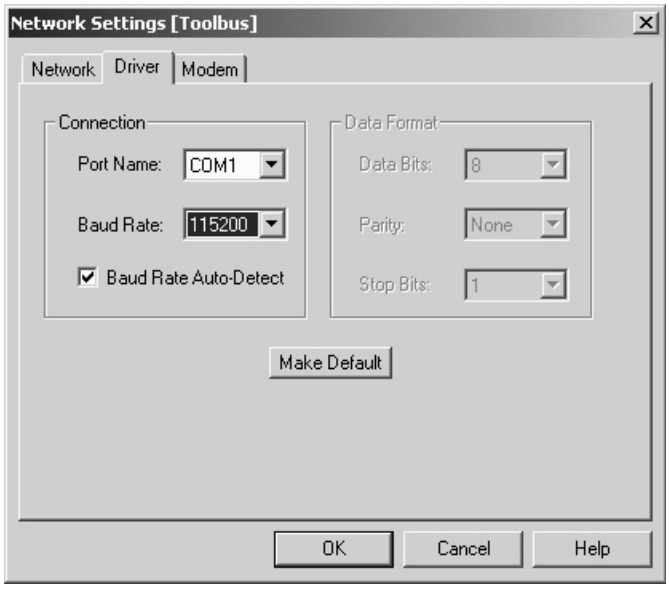


2. Select Network Type.
   Click on the drop-down list of the Network Type to select an appropriate network type.
3. Select Baud Rate.
   Click on the drop-down list of the Baud Rate to select an appropriate baud rate.
4. Detailed Settings
   For more detailed settings, click the **Settings** Button.

Setting the Network Tab Page



Setting the Driver Tab Page



Click the **OK** Button.

Ends the detailed settings and returns to the Communications Setting Window.

5. Click the **OK** Button.
   Ends the communications setting.

Connecting to PLC

On the CX-Motion-NCF Basic Window, click ***PLC/Online***, click  in the toolbar, or select and right-click the PLC and click ***Online*** from the pop-up menu.

7-3 Downloading Data

The object of downloading varies depending on the operation method.

Batch Downloading Downloads Unit Parameters and Servo Parameters of all the Servo Drivers registered in the Axis Map Setting Window.

Downloading Unit Parameters Downloads Unit Parameters.

Downloading Servo Parameters Downloads Servo Parameters.

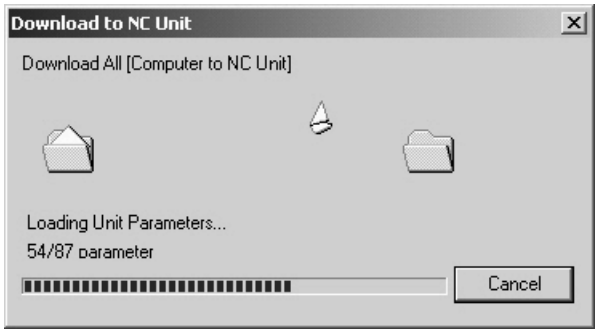
Note Before starting MECHATROLINK communications, make sure that the PLC is in the PROGRAM Mode. Otherwise, the axis may start moving suddenly due to the ladder execution.
Before disconnecting MECHATROLINK communications, make sure that the axis is not operating. Disconnecting MECHATROLINK communications will put the operating axis in the Servo Free state.
Before restarting the Position Control Unit, make sure that the axis is not operating. Restarting the Position Control Unit will put the operating axis in the Servo Free state.

7-3-1 Batch Downloading

1,2,3... 1. On the Axis Map Setting Window, click ***Online/Download to NC Unit***, click  in the toolbar, or right-click a Position Control Unit and select ***Download to NC Unit*** from the pop-up menu.

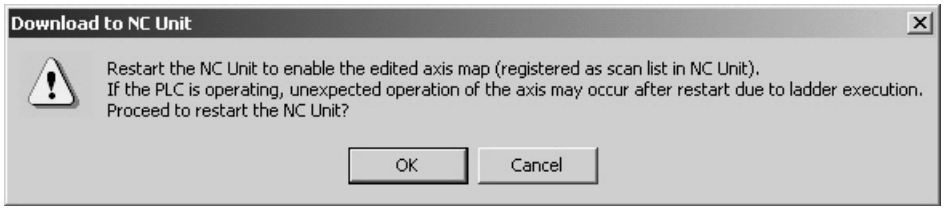
2. Click the **OK** Button.
Cancels all the parameters being edited and closes the Edit Windows.

3. Click the **OK** Button to start downloading Unit Parameters to the Position Control Unit. Clicking the **Cancel** Button during the download will cancel downloading, however, the parameters that were downloaded before the cancellation will already be downloaded to the Position Control unit.

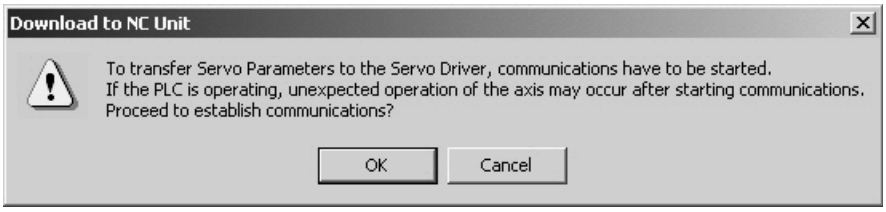


4. If the communications between the Position Control Unit and Servo Driver are established after the download is completed, the following dialog box will be displayed to confirm whether to release the connection.

5. Click the **OK** Button to release the connection. The following dialog box will be displayed to confirm whether to restart the Position Control Unit.

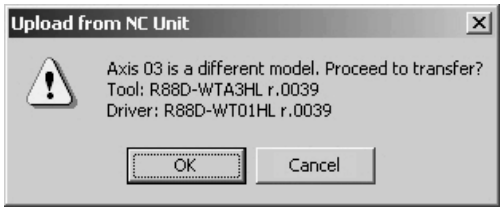


6. Clicking the **OK** Button will restart the Position Control Unit to enable the registered scan list. After being restarted, Servo Parameters will be transferred to the Servo Driver.

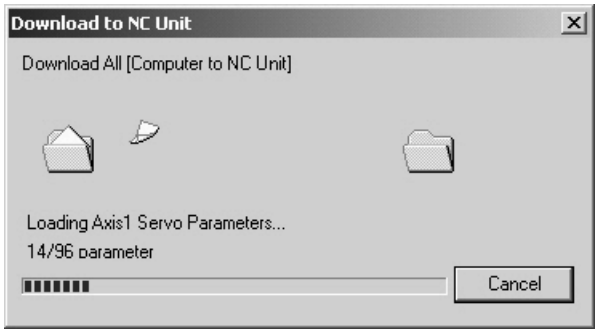


Note Servo Parameters of the axis registered in the Axis Map Setting Window as *Unknown Model* will not be transferred.

7. Click the **OK** Button.
   If the Servo Driver models do not match at this point, the following confirmation message will be displayed.



8. Click the **OK** Button to establish the connection and transfer Servo Parameters to the Servo Driver.
   Clicking the **Cancel** Button will cancel transferring, however, the parameters that were transferred before the cancellation will already be transferred to the Servo Driver.



9. When the Download to NC Unit Dialog Box is closed, the download will be completed.

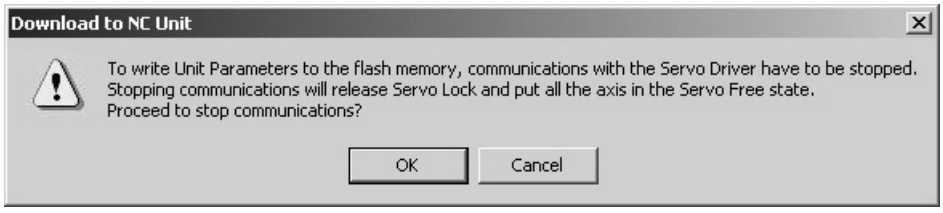
Note When the MECHATROLINK communications cannot be started, only Unit Parameters will be downloaded.

7-3-2 Downloading Unit Parameters

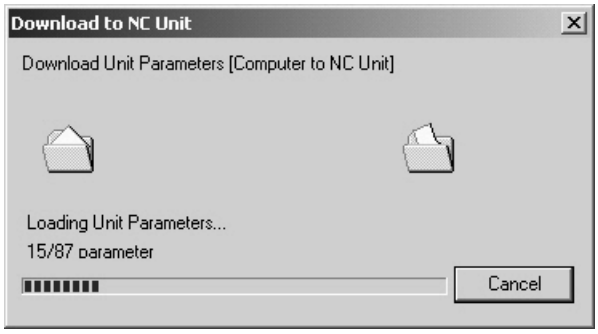
1,2,3... 1. Click the **Download** Button in the Edit Unit Parameter Window. The following dialog box will be displayed.
   To write Unit Parameters to the flash memory after downloading, select the checkbox for writing to flash memory.

⚠ **Caution** After downloading Unit Parameters to the Position Control Unit, always backup the parameters in the flash memory. Otherwise, the parameter settings before the download will be enabled when the power is turned ON next time (i.e. the downloaded parameters will be lost and not be reflected), which may cause the machines to operate in an unexpected way.

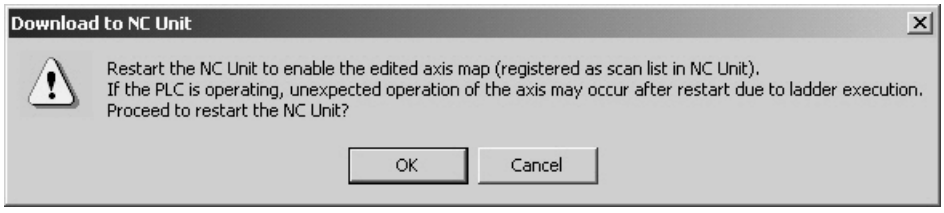
2. Click the **OK** Button.
   If the communications between the Position Control Unit and Servo Driver are established at this point, the following dialog box will be displayed to confirm whether to release the connection or not.



3. Click the **OK** Button to release the connection and start downloading Unit Parameters to the Position Control Unit.
   Clicking the **Cancel** Button will cancel downloading, however, the parameters that were downloaded before the cancellation should be downloaded to the Position Control Unit.



4. If the checkbox for writing to flash memory was selected a few steps before, the following dialog box will be displayed to confirm that the Position Control Unit will be restarted to enable the registered axis map after completion of the download.

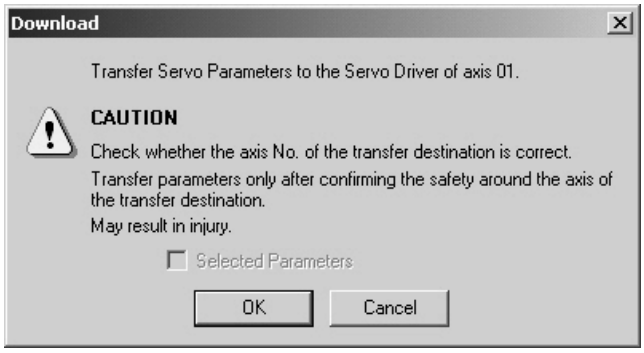


5. Click the **OK** Button to restart the Position Control Unit.
6. If the connection was released on the Step 2., the connection status can be restored (established in this case) here. To establish the connection, click the **OK** Button. Otherwise, click the **Cancel** Button.

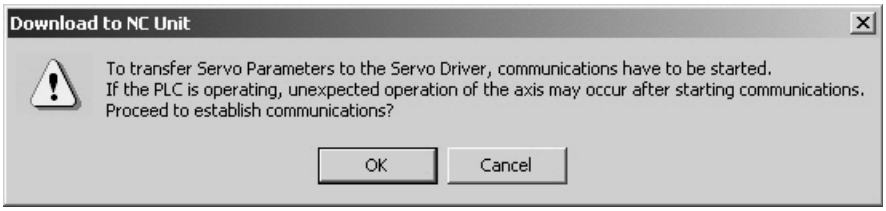
7. When the Download to NC Unit Dialog Box is closed, the download will be completed.

7-3-3 Downloading Servo Parameters

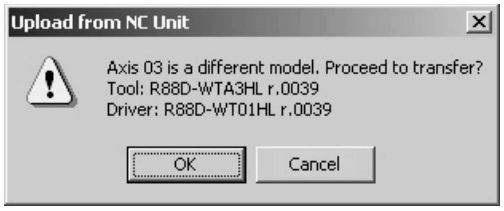
1,2,3... 1. Click the **Download** Button in the Edit Servo Parameter Window.
The checkbox of Selected Parameters will be displayed. To download only the selected parameters, select the checkbox. If the checkbox is not selected here, all the Servo Parameters will be downloaded.



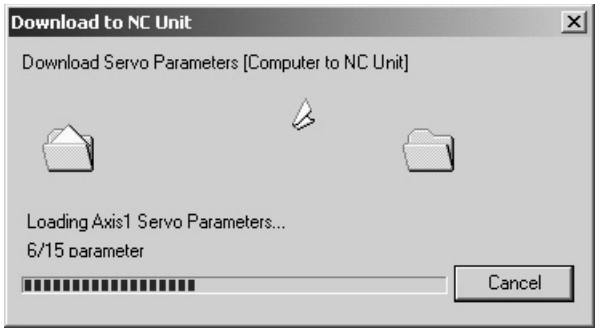
2. Click the **OK** Button.
   If the communications between the Position Control Unit and Servo Driver are not established at this point, the following dialog box will be displayed to confirm whether to establish the connection or not.



3. Click the **OK** Button to establish the connection and start downloading Servo Parameters to the Servo Driver.
4. If the Servo Driver models do not match at this point, the following confirmation message will be displayed. To continue downloading, click the **OK** Button.



5. Clicking the Cancel Button will cancel downloading, however, the parameters that were downloaded before the cancellation should be downloaded to the Servo Driver.



6. If the connection was established at Step 2, the connection status can be restored (released in this case) here. To release the connection, click the **OK** Button. Otherwise, click the **Cancel** Button.

7. When the Download to NC Unit Dialog Box is closed, the download will be completed.

Note When the MECHATROLINK communications cannot be started, Servo Parameters cannot be downloaded. Start the MECHATROLINK communications first and download Servo Parameters.

7-4 Uploading Data

The object of uploading varies depending on the operation method.

Batch Uploading Uploads Unit Parameters and Servo Parameters of all the Servo Drivers registered in the scan list on the Position Control Unit.

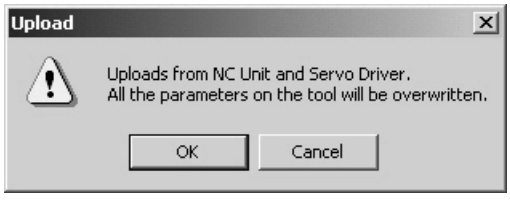
Uploading Unit Parameters Uploads Unit Parameters.

Uploading Servo Parameters Uploads Servo Parameters.

Note Before starting MECHATROLINK communications, make sure that the PLC is in the PROGRAM Mode. Otherwise, the axis may start moving suddenly due to the ladder execution.
Before disconnecting MECHATROLINK communications, make sure that the axis is not operating. Disconnecting MECHATROLINK communications will put the operating axis in the Servo Free state.

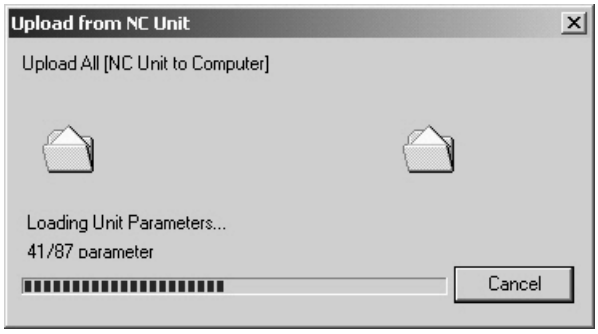
7-4-1 Batch Uploading

1,2,3... 1. On the Axis Map Setting Window, click ***Online/Upload from NC Unit***, click  in the toolbar, or right-click the Position Control Unit and select ***Upload from NC Unit*** from the pop-up menu. The following dialog box will be displayed.

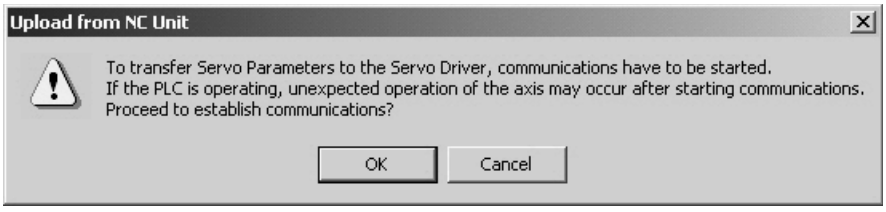


2. Click the **OK** Button.
Cancels all the parameters being edited and close the Edit Windows.

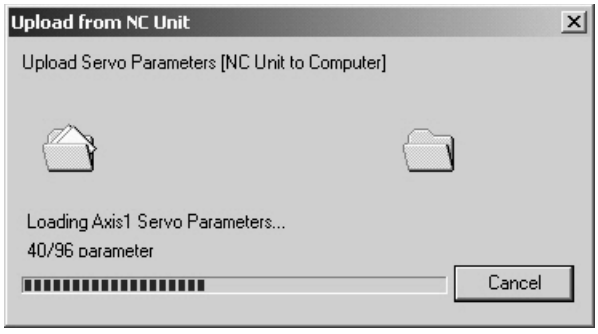
3. Click the **OK** Button. Uploading Unit Parameters from the Position Control Unit will start. Clicking the Cancel Button will cancel the upload.



4. If the connection between the Position Control Unit and Servo Driver is not established at this point, the following dialog box will be displayed.



5. Click the **OK** Button to establish the connection and start uploading Servo Parameters from the Servo Driver.
   Clicking the **Cancel** Button during uploading will cancel the upload.



   If the connection cannot be established at this point, the following dialog box will be displayed. Click the **OK** Button and the axes registered in the Position Control Unit will be displayed as Unknown Model.

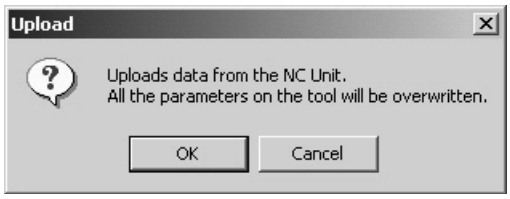
6. If the connection was established at Step 4, the connection status can be restored (released in this case) here. To release the connection, click the **OK** Button. To leave the connection established, click the **Cancel** Button.

7. When the Upload from NC Unit Dialog Box is closed, the upload will be completed.

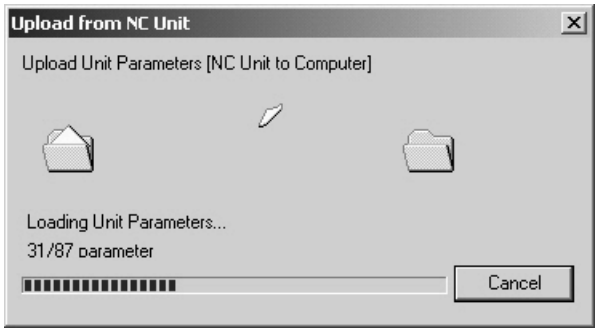
Note Batch uploading will overwrite the parameters on the computer, which means that the parameters being edited will also be erased.
When the MECHATROLINK communications cannot be started, only Unit Parameters can be uploaded.

7-4-2 Uploading Unit Parameters

1,2,3... 1. Click the **Upload** Button in the Edit Unit Parameter Window.



2. Clicking the **OK** Button will start uploading Unit Parameters from the Position Control Unit.
Clicking the **Cancel** Button will cancel uploading.



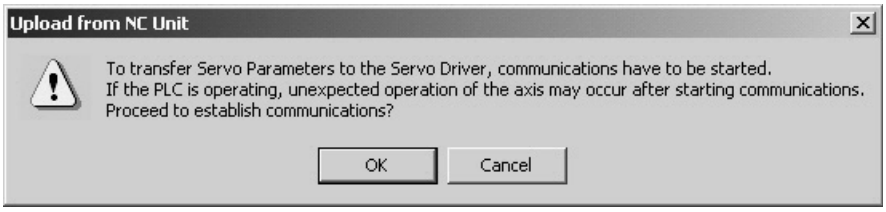
3. When the Upload from NC Unit Dialog Box is closed, the upload will be completed.

Note When the axis map on the computer is different from the scan list in the Position Control Unit, Unit Parameters will not be uploaded. Execute batch upload instead.

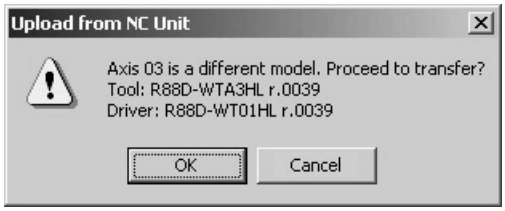
7-4-3 Uploading Servo Parameters

1,2,3... 1. Click the **Upload** Button in the Edit Servo Parameter Window. The following dialog box will be displayed.

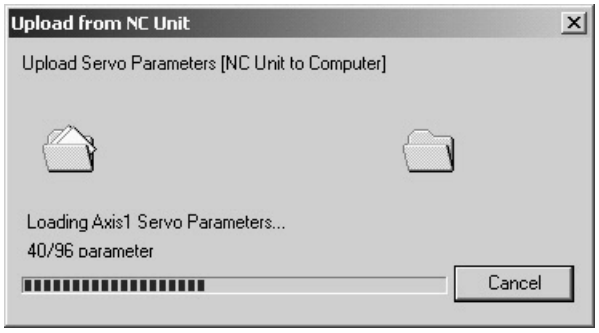
2. Click the **OK** Button.
If the connection between the Position Control Unit and Servo Driver are not established at this point, the following dialog box will be displayed to confirm whether to establish the connection or not.



3. Click the **OK** Button to establish communications and start uploading Servo Parameters from the Servo Driver.
4. If the Servo Driver models do not match, the following confirmation message will be displayed. To continue uploading, click the **OK** Button.



5. Click the **Cancel** Button to cancel uploading.



6. If the connection was established on Step 2, the connection status can be restored (released in this case) here. To release the connection, click the **OK** Button. To leave the connection established, click the **Cancel** Button.

7. When the Upload from NC Unit Dialog Box is closed, the upload will be completed.

Note When the MECHATROLINK communications cannot be started, Servo Parameters cannot be uploaded. Start the MECHATROLINK communications first and upload Servo Parameters.

7-5 Comparing Data

The objects of comparing varies depending on the operation method.

Batch Comparing

Compares the data on CX-Motion-NCF with the Unit Parameters and Servo Parameters of the Servo Drivers registered in the scan list on the Position Control Unit.

Comparing Unit Parameters Compares the data on CX-Motion-NCF with the Unit Parameters on the Position Control Unit.

Comparing Servo Parameters Compares the data on CX-Motion-NCF with the Servo Parameters on the Servo Driver.

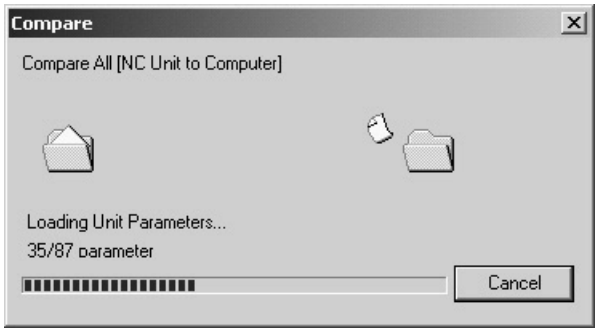
Note Before starting MECHATROLINK communications, make sure that the PLC is in the PROGRAM Mode. Otherwise, the axis may start moving suddenly due to the ladder execution.
Before disconnecting MECHATROLINK communications, make sure that the axis is not operating. Disconnecting MECHATROLINK communications will put the operating axis in the Servo Free state.

7-5-1 Batch Comparing

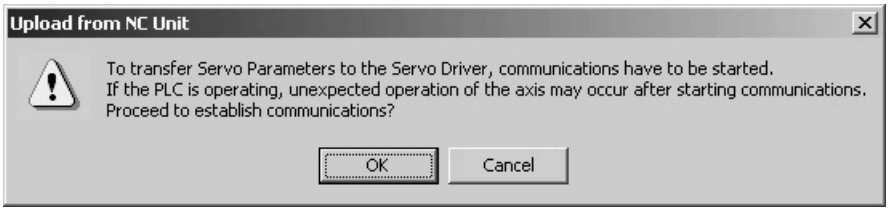
1,2,3... 1. On the Axis Map Setting Window, click ***Online/Compare***, click  in the toolbar, or right-click the Position Control Unit and select ***Compare*** from the pop-up menu. The following dialog box will be displayed.

2. Click the **OK** Button. All the parameters being edited will be discarded and the Edit Windows will be closed.

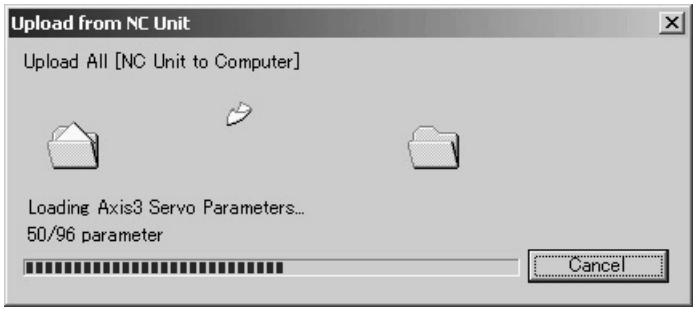
3. Click the **OK** Button. Uploading Unit Parameters from the Position Control Unit will start. Clicking the Cancel Button will cancel the upload.



4. If the communications between the Position Control Unit and Servo Driver are not established at this point, the following dialog box will be displayed to confirm whether to establish the connection or not.



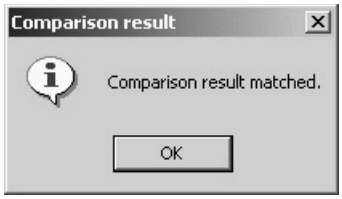
5. Click the **OK** Button to establish the connection and start uploading Servo Parameters from the Servo Driver.
   Clicking the Cancel Button will cancel the upload.



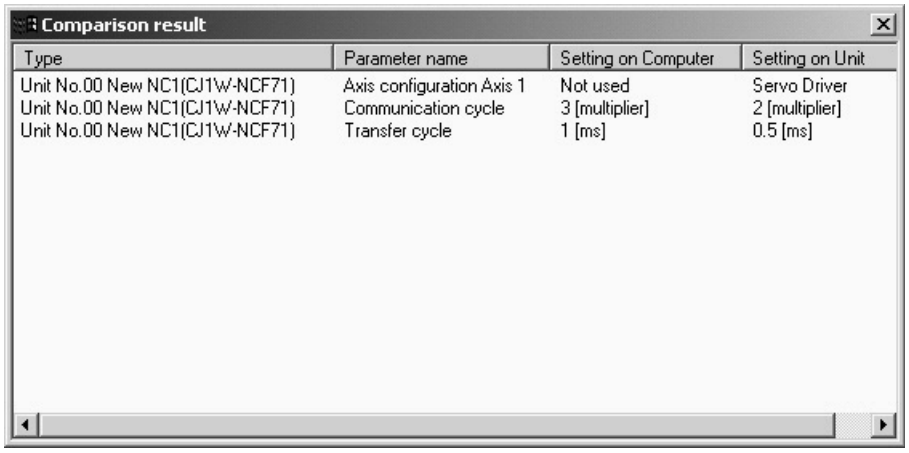
   If the connection cannot be established at this point, the following dialog box will be displayed. Click the **OK** Button and the axes registered in the Position Control Unit will be displayed as Unknown Model on the Axis Map Setting Window.

6. If the connection was established on Step 4, the connection status can be restored (released in this case) here. To release the connection, click the **OK** Button. To leave the connection established, click the **Cancel** Button.

7. After completion of uploading Unit and Servo Parameters, they are compared with the parameters on the personal computer. If they match, the following dialog box will be displayed.



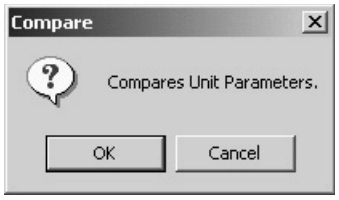
   If there is any mismatch in the comparison, the following window will be displayed to show the parameters that did not match.



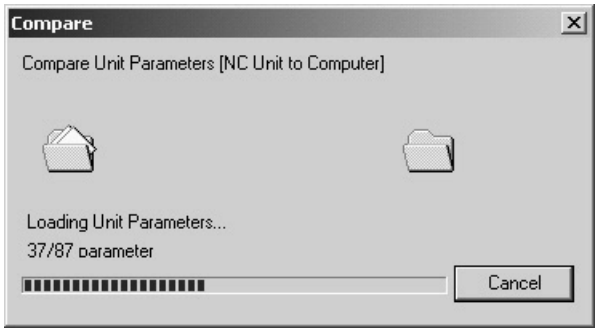
Note When the MECHATROLINK communications cannot be started, batch comparing cannot be executed. Start the MECHATROLINK communications first and execute batch comparing.

7-5-2 Comparing Unit Parameters

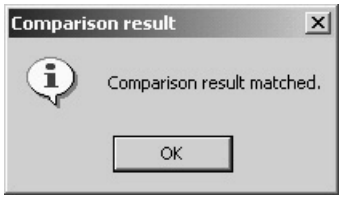
1,2,3... 1. Click the **Compare** Button in the Edit Unit Parameter Window. The following dialog box will be displayed.



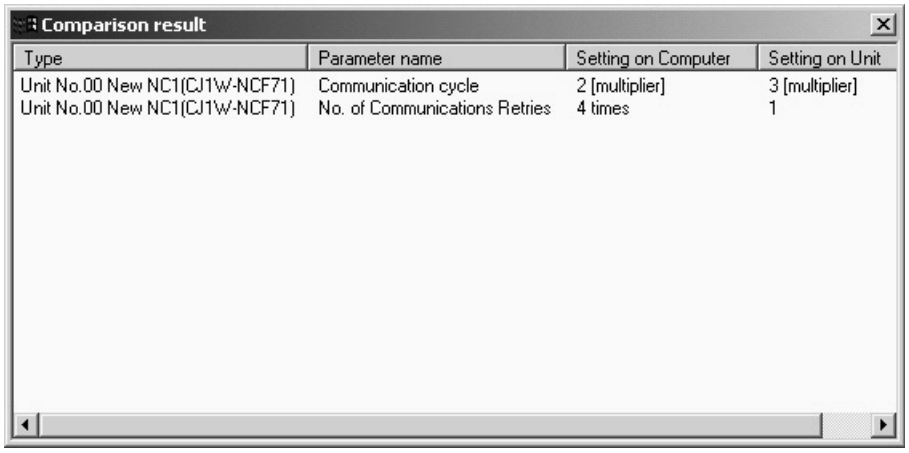
2. Click the **OK** Button to start comparing. Uploading Unit Parameters will start at first.
Clicking the Cancel Button during comparing will cancel comparing.



3. After completion of uploading, the following dialog box will be displayed if Unit Parameters have no mismatch.

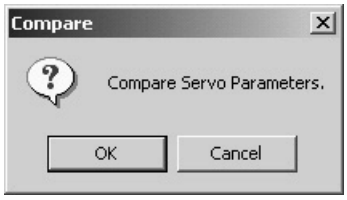


If there is any mismatch in the comparison, the following window will be displayed to show the parameters that did not match.

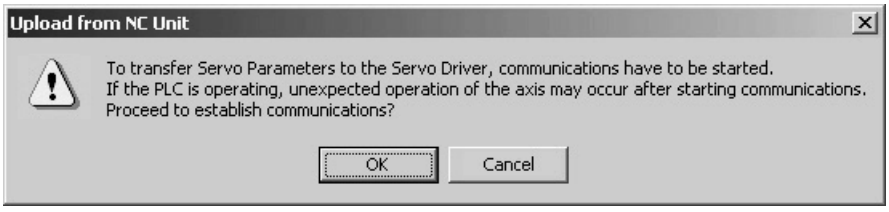


7-5-3 Comparing Servo Parameters

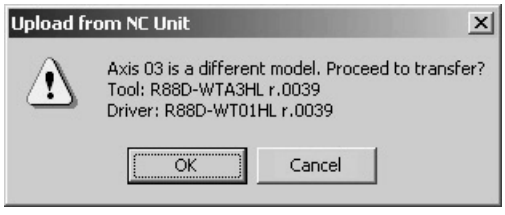
1,2,3... 1. Click the **Compare** Button in the Edit Servo Parameter Window. The following dialog box will be displayed.



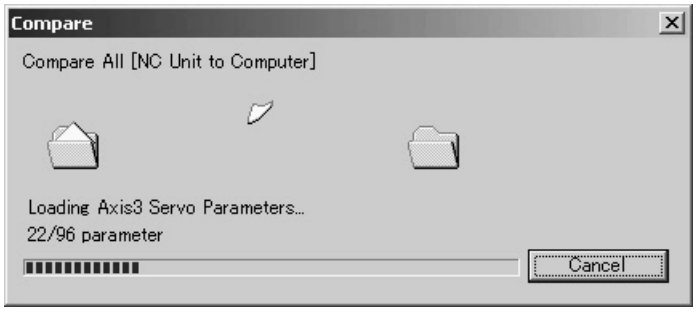
2. Click the **OK** Button.
   If the communications between the Position Control Unit and Servo Driver are not established at this point, the following dialog box will be displayed to confirm whether to establish the connection or not.



3. Click the **OK** Button to establish the communications and start uploading Servo Parameters.
4. If the Servo Driver models do not match, the following confirmation message will be displayed. To continue uploading, click the **OK** Button.

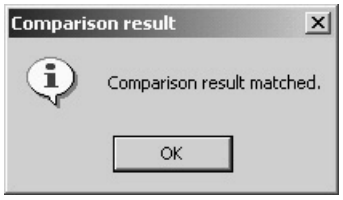


5. Clicking the **Cancel** Button during comparing will cancel comparing.

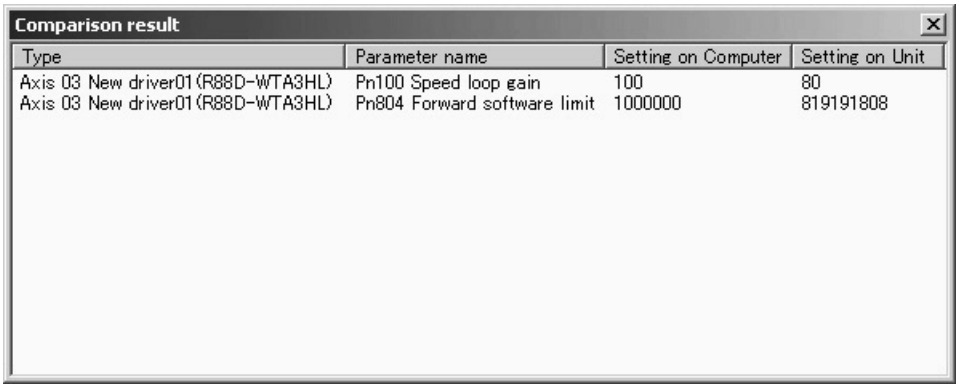


6. If the connection was established on Step 2, the connection status can be restored (released in this case) here. To release the connection, click the **OK** Button. To leave the connection established, click the **Cancel** Button.

7. After completion of comparing, the following dialog box will be displayed if Servo Parameters have no mismatch.



If there is any mismatch in the comparison, the following window will be displayed to show the parameters that did not match.



Note When the MECHATROLINK communications cannot be started, Servo Parameters cannot be compared. Start the communications first and compare Servo Parameters.

7-6 Writing to Flash Memory

Unit Parameters downloaded to the Position Control Unit will be lost when the power is turned OFF. Therefore, they have to be written to the flash memory to keep them after powering OFF.

If Unit Parameters were not written to the flash memory during downloading process, make sure to write them to the flash memory.

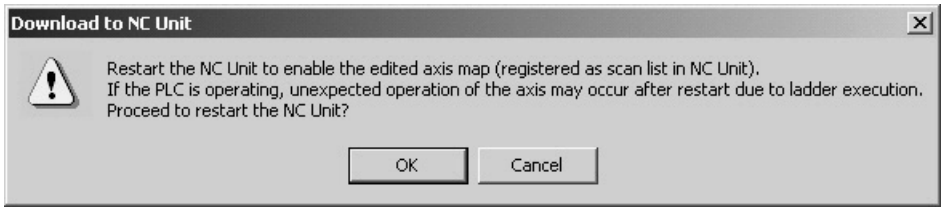
Writing to Flash Memory

⚠ **Caution** After downloading Unit Parameters to the Position Control Unit, always backup the parameters in the flash memory. Otherwise, the parameter settings before the download will be enabled when the power is turned ON next time (i.e. the downloaded parameters will be lost and not be reflected), which may cause the machines to operate in an unexpected way.

1,2,3... 1. Click ***Online/Write Flash Memory***, or click  in the toolbar on the Axis Map Setting Window. The following dialog box will be displayed.

2. Click the **OK** Button.
   If the communications between the Position Control Unit and Servo Driver are established at this point, the following dialog box will be displayed to confirm whether to release the connection or not.

3. Click the **OK** Button.
   The following dialog box will be displayed to confirm whether to restart the Position Control Unit or not. To enable the Unit Parameters written to the flash memory, the Position Control Unit has to be restarted.



4. If the connection was released on Step 2, the connection status can be restored (established in this case) here. To establish the connection, click the **OK** Button. To leave the connection released, click the **Cancel** Button.

5. The writing operation is completed when the Write to flash memory window is no longer displayed.

Note If an error occurs in writing to the flash memory, the Unit Parameters may not be written to the flash memory successfully. In this case, write the Unit Parameters to the flash memory again after resetting the error.

SECTION 8
Monitor

The Position Control Unit's communications status, error status, and axis's present position and status are displayed in the Monitor Windows.

Note Make sure that the computer and PLC are connected with the connection cable and the communications between them are established before starting monitoring operations.

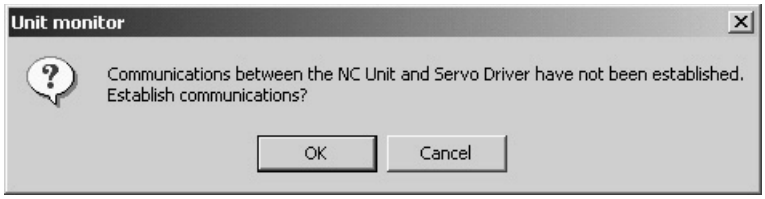
8-1 Unit Monitor 76
8-2 Axis Monitor 79

8-1 Unit Monitor

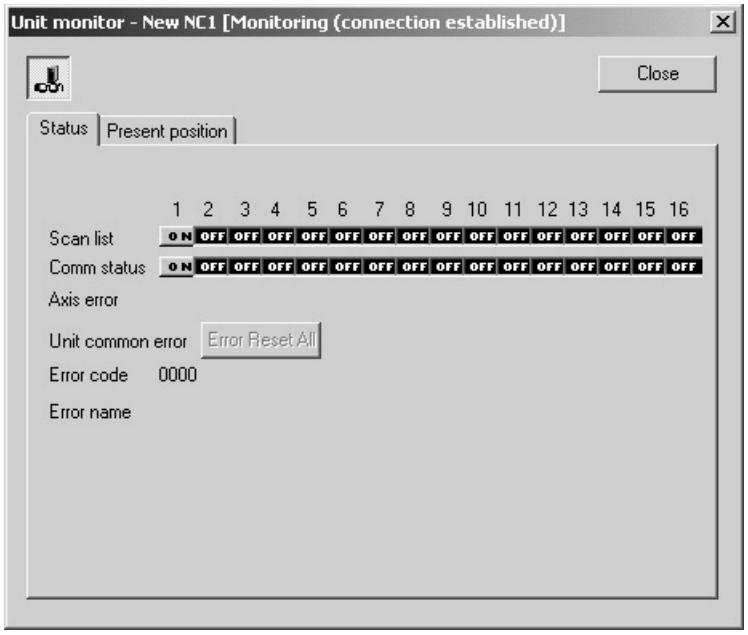
In Unit Monitor, communications status, Position Control Unit errors, and present position of each axis are monitored.

Starting Unit Monitor (Unit Monitor Common Items, Unit Status Monitor, Present Position Monitor)

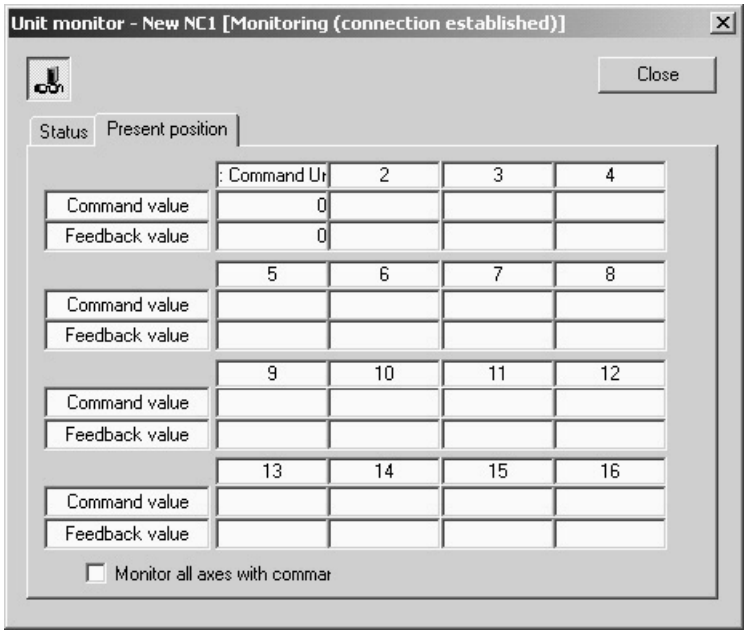
1,2,3... 1. On the Axis Map Setting Window, click ***Online/Unit Monitor***, or click  in the toolbar, or right-click on the Position Control Unit and select ***Unit Monitor*** from the pop-up menu.
If the connection to the Position Control Unit is not established at this point, the following dialog box will be displayed.



2. Click the **OK** Button to establish the connection (i.e., start communications).



3. Click  to stop monitoring. Clicking the same button again will restart monitoring.
4. Click the Present Position Tab to display the Present Position Monitor Tab Page.



5. Click the **Close** Button or ✕ at the right top corner to end monitoring the Position Control Unit.

Unit Monitor Common Items

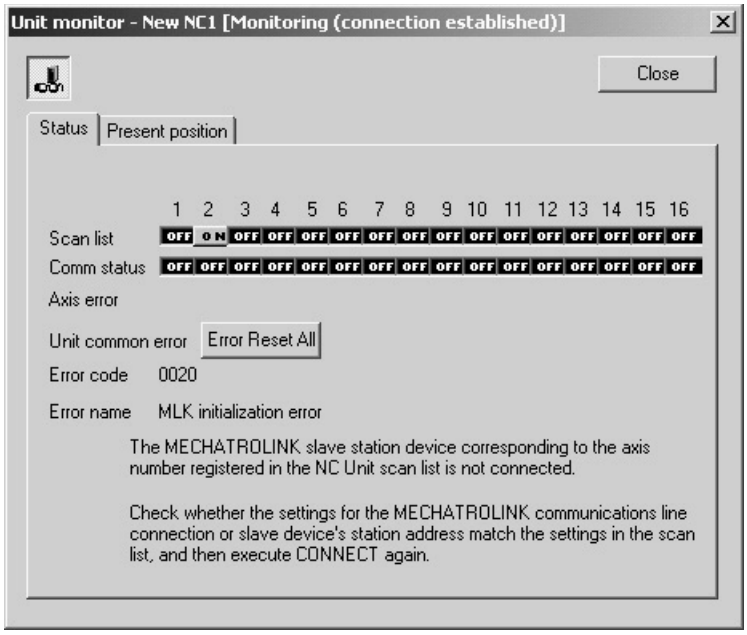
Name	Explanation	
Title Bar	Shows the status of monitoring and communications between Position Control Unit and Servo Driver. • Stop: Monitoring stopped. • Monitoring (Connection Released): Monitoring in progress, however, communications between Position Control Unit and Servo Driver have not been started. Therefore, information about axes is not displayed. • Monitoring (Connection Established): Entire information is displayed.	
Monitor Start/Stop Button		Starts monitoring. If communications between Position Control Unit and Servo Driver have not been started, the connection will be established first.
		Stops monitoring.
Close Button	Closes the monitor window.	

Unit Status Monitor

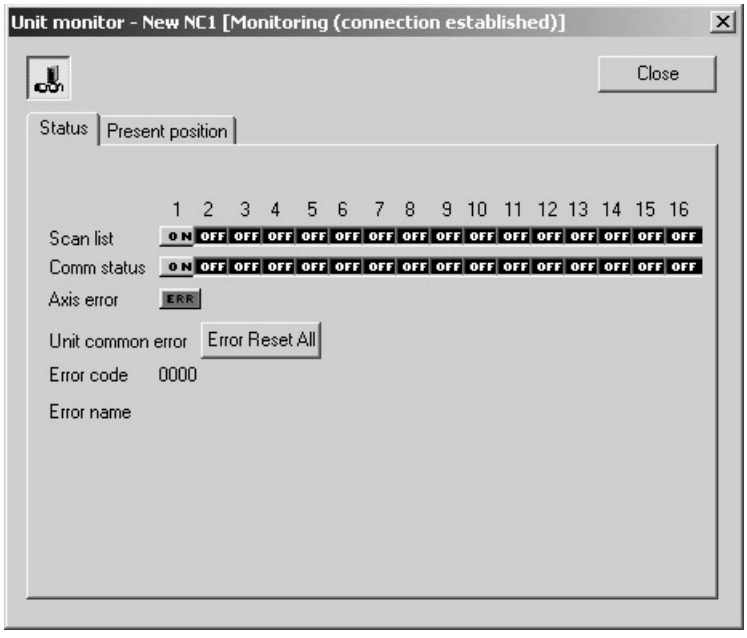
Item	Explanation
Scan list	Indicates whether the axes are registered in the scan list or not.
Comm (Communications) status	Indicates whether the communications with the axis 1 to 16 are established or not.
Axis error	Displays the axis where an error or warning has occurred. With errors: ERR With warnings: WRNG

Item		Explanation
Unit common error	Error reset all	Pressing this button will reset all the error occurring on the Position Control Unit and Servo Drivers.
	Error code	Displays the error code of the error occurring on the Position Control Unit. When there is no error, the code [0000] is displayed.
	Error name	Displays the name of the error occurring on the Position Control Unit.

1,2,3... 1. When an error occurs on the Position Control Unit, the following window will be displayed.



2. When an error or warning occurs on an axis, the following window will be displayed.



Present Position Monitor

Item	Explanation
Command value	Displays the command value of each axis.
Feedback value	Displays the feedback value of each axis.
Monitor all axes with command unit	If selected (i.e., checked), all the axes will be monitored using command unit. Pulse rate and unit are set in Axis Monitor.

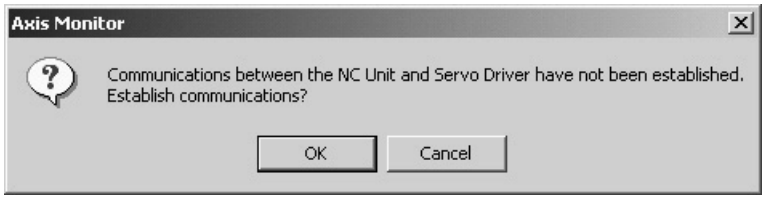
Note When performing Unit Monitor, set the Input Memory Area of the Axis Operating Memory Area Designation on the Edit Unit Parameter Window and transfer the setting to the Position Control Unit. If it is not set, the data in the Unit is monitored directly, which makes the response slower.

8-2 Axis Monitor

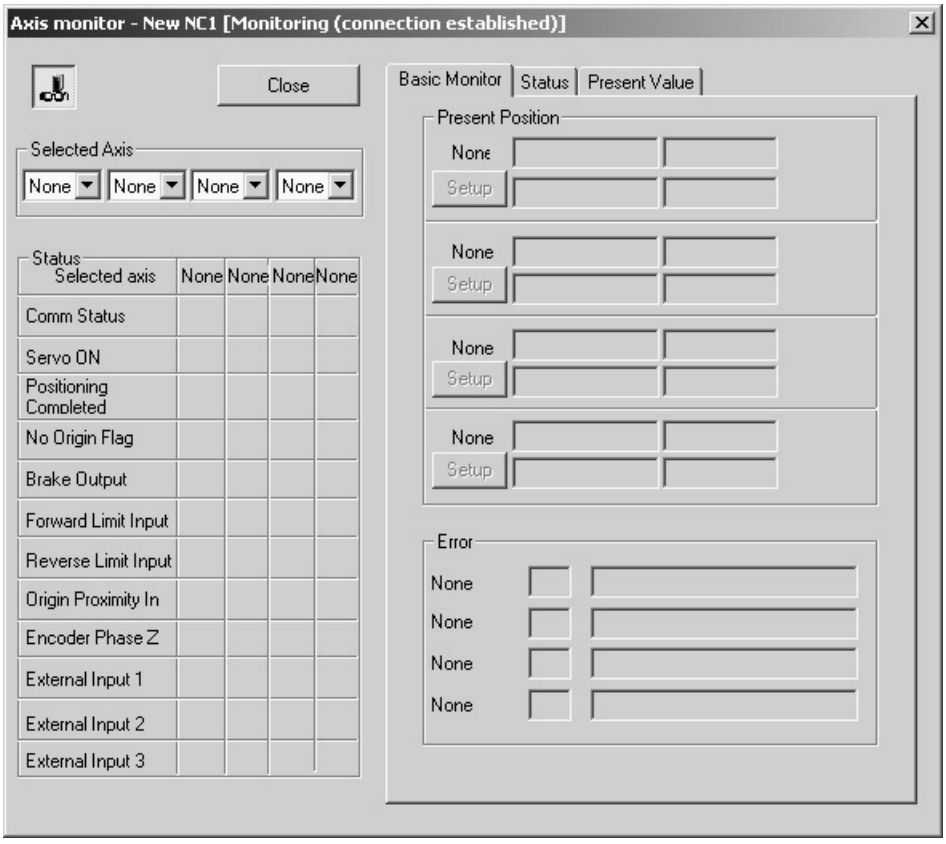
In Axis Monitor, present values, status, external I/O, and error information of axes are monitored.

Starting Axis Monitor (Axis Monitor Common Items, Basic Monitor, Status Monitor, Present Value Monitor)

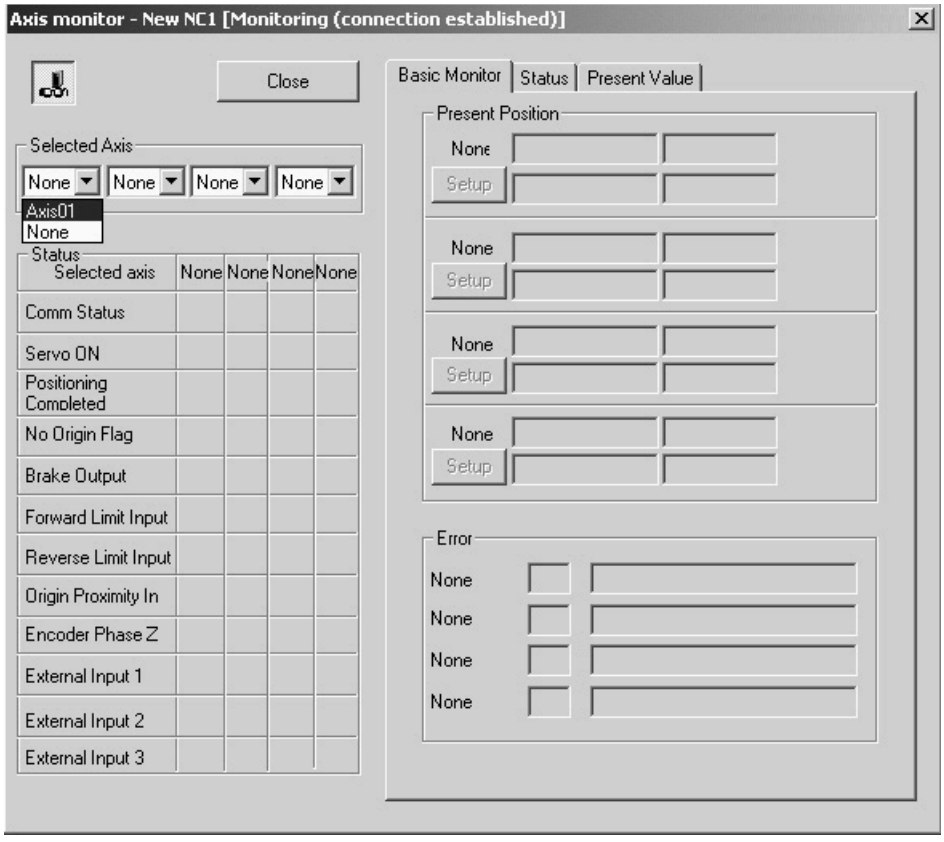
1,2,3... 1. On the Axis Map Setting Window, click ***Online/Axis Monitor***, click  in the toolbar, or right-click the Position Control Unit or Servo Driver and select ***Axis Monitor***. If the communications between the Position Control Unit and Servo Driver have not been established at this point, the following dialog box will be displayed.



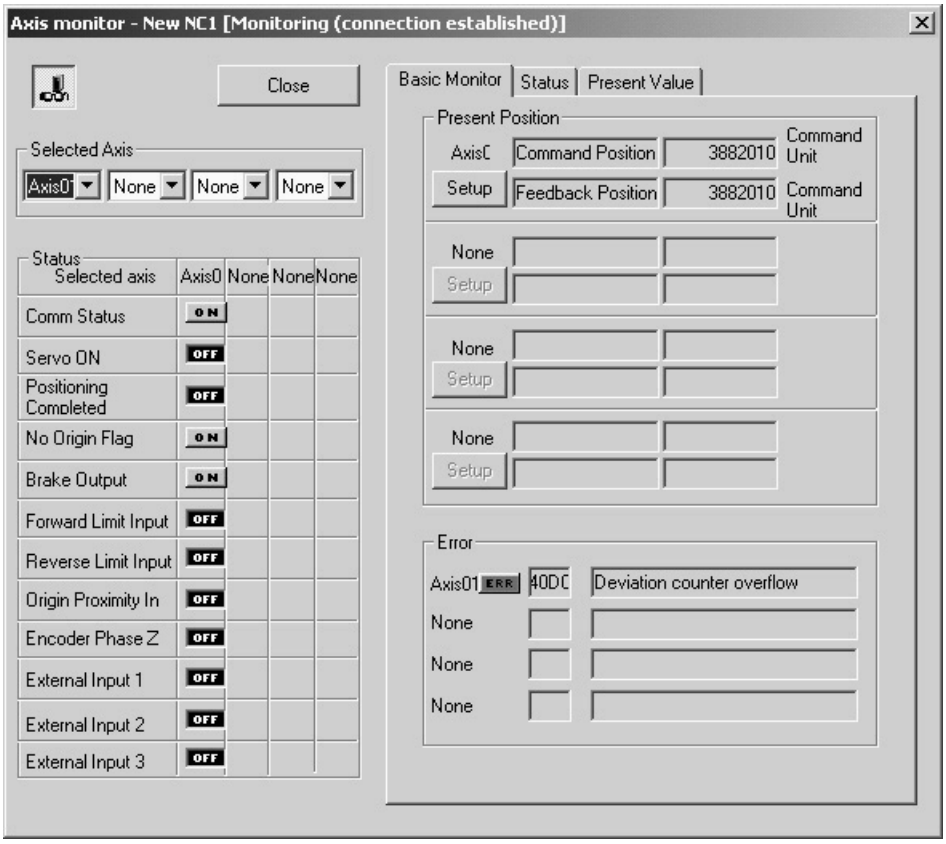
2. Click the **OK** Button to start communications (i.e., establish connection).



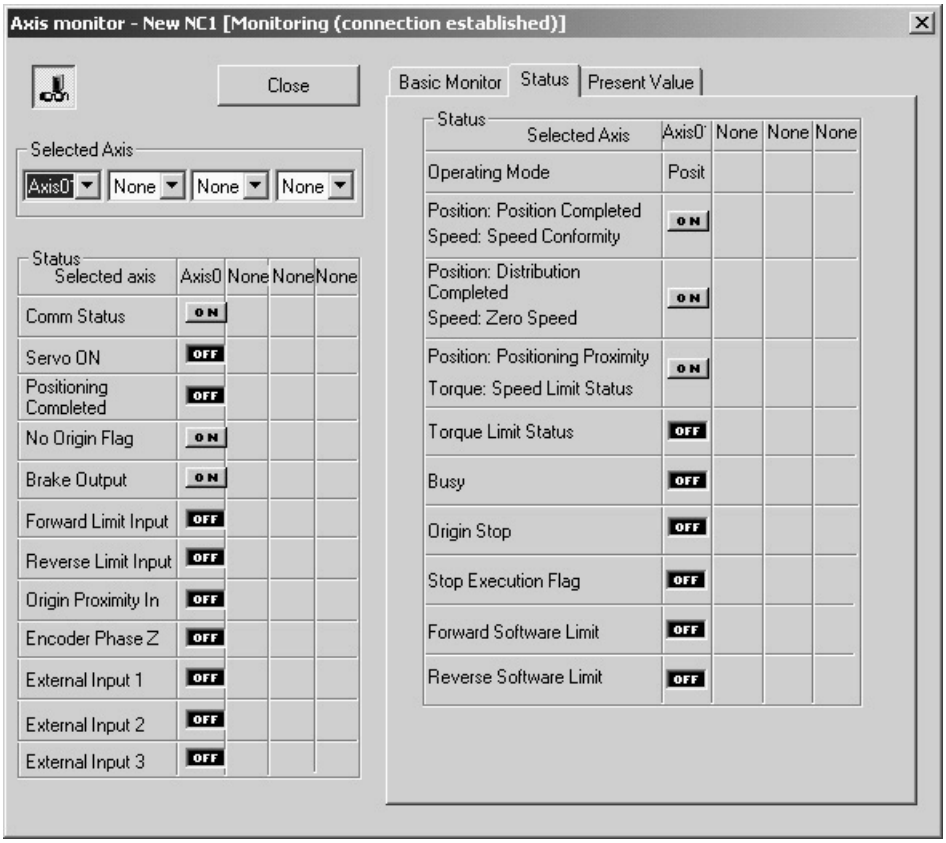
3. In the drop-down list of Monitored Axes, the axes registered in the scan list of the Position Control Unit will be displayed. Select axes to be monitored.



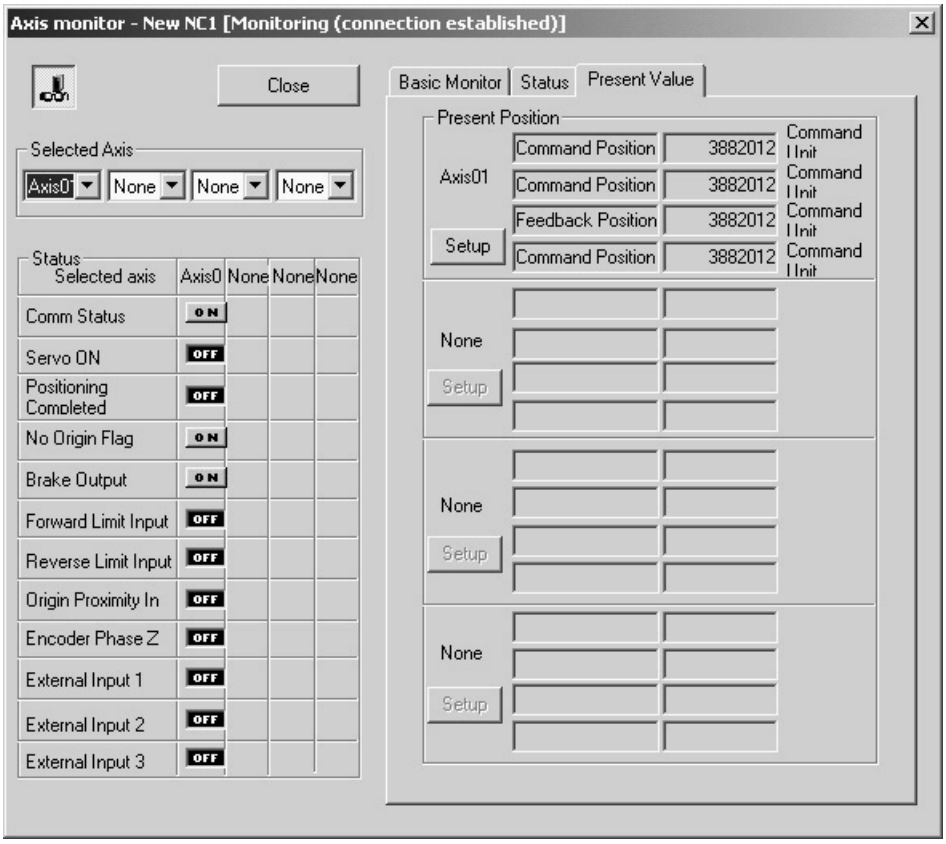
4. Click the Basic Monitor Tab to display present values and errors.



5. Click the Status Tab to display all the statuses.



6. Click the Present Value Tab to display various present values.



7. Click  to stop monitoring. Clicking the same button again will resume monitoring.

8. Click the **Close** Button or  at the right top corner of the window to close the Axis Monitor Window.

Note When performing Unit Monitor, set the Input Memory Area of the Axis Operating Memory Area Designation on the Edit Unit Parameter Window and transfer the setting to the Position Control Unit. If it is not set, the data in the Unit is monitored directly, which makes the response slower.

Axis Monitor Common Items

Name	Explanation
Title Bar	Shows the status of monitoring and communications between Position Control Unit and Servo Driver. • Stop: Monitoring stopped. • Monitoring (Connection Released): Monitoring in progress, however, communications between Position Control Unit and Servo Driver have not been started. Therefore, information about axes is not displayed. • Monitoring (Connection Established): Entire information is displayed.

Name	Explanation	
Monitor Start/Stop Button		Starts monitoring. If communications between Position Control Unit and Servo Driver have not been started, the connection will be established first.
		Stops monitoring.
Close Button	Closes the monitor window.	

Selected Axis

Name	Explanation
Selected Axis	Specifies axes to be monitored. The axes registered in the scan list of the Position Control Unit are displayed in the drop-down list.

Status

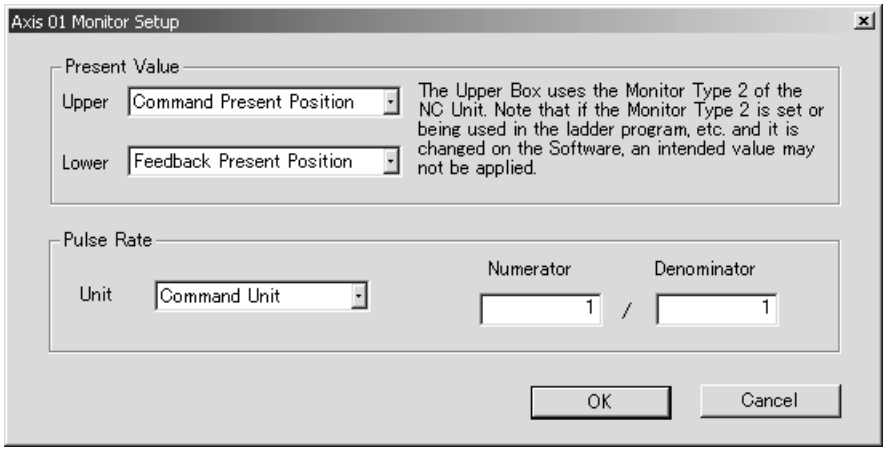
Name		Explanation
Status	Communications Status	Status of each signal is displayed.
	SERVO ON	
	PCU Positioning Completed	
	No Origin Flag	
	Brake Output	
	Forward Rotation Limit Input	
	Reverse Rotation Limit Input	
	Origin Proximity Input	
	Encoder Phase Z Input	
	External Latch Signal 1 Input	
	External Latch Signal 2 Input	
	External Latch Signal 3 Input	

Basic Monitor

Name		Explanation
Present Value	Present Value Display	Present position, speed, etc. are displayed.
	Monitor Setup Button	Press this button to change displayed contents, unit, and pulse rate. Unit and pulse rate can be set only for the axes registered in the Axis Map Setting Window.
Error	Error	Status of errors is displayed. With errors:  With warnings: 
	Error code	When an error occurs, the error code will be displayed. When there is no error, the code [0000] will be displayed. Click the error code to display help.
	Error Name	When an error occurs, the error name will be displayed. Click the error name to display help.

1,2,3...

1. Click the **Setup** Button to display the Monitor Setup Window.
2. Specify the type of monitored present value, unit, and pulse rate
3. Once setup is completed, click the **OK** Button to determine the settings. To discard the settings, click the **Cancel** Button.



Name		Explanation
Present Value	Upper Box	Specify the item to be displayed in the upper box. • Command Present Position • Position Deviation • Feedback Present Position • Latch Position • Target Position • Feedback Speed • Command Speed • Target Speed • Torque Command
	Lower Box	Specify the item to be displayed in the lower box. • Command Present Position • Feedback Present Position
Pulse Rate	Unit	Specify the unit used for displaying values. • command unit • pulse • inch • mm • degree When command unit is set, setting numerator and denominator of the pulse rate is invalid.
	Numerator	Set the numerator of the pulse rate. The setting range is from 1 to 4294967294.
	Denominator	Set the denominator of the pulse rate. The setting range is from 1 to 4294967294.

Note Monitoring the item specified in the upper box uses the Monitor Type 2 of the Position Control Unit's Expanded Monitoring function. If the Monitor Type 2 is set and being used in the ladder program, etc., do not set it on the Support Tool.

Status Monitor

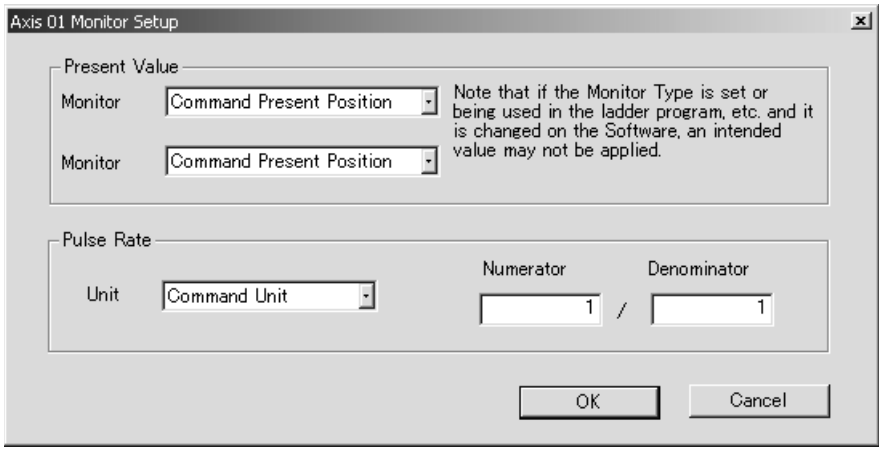
Name		Explanation
Servo Status	Operating Mode	Displays the operating mode (Position, Speed, Torque).
	Position: Positioning Completed Flag Speed: Speed Conformity Flag	Displays the status of each flag. The meanings of the flags change depending on the operating mode.
	Position: Distribution Completed Speed: Zero Speed Flag	
	Position: Positioning Proximity Flag Torque: Speed Limit Status Flag	
	Torque Limit	Displays the status of each flag.
	Busy Flag	
	Origin Stop Flag	
	Stop Execution Flag	
	Forward Software Limit	
	Reverse Software Limit	

Present Value Monitor

Name		Explanation
Present Value	Present Value Display	Displays present positions, speed, etc. The Monitor Type 1 and 2 of the upper 2 boxes can be changed using the Monitor Setup Button. Feedback Present Position and Command Present Position of the lower 2 boxes cannot be changed.
	Monitor Setup Button	Press this button to change displayed contents, unit, and pulse rate. Unit and pulse rate can be set only for the axes registered in the Axis Map Setting Window.

1,2,3...

1. Click the **Setup** Button to display the Monitor Setup Window.
2. Specify the type of monitored present value, unit, and pulse rate.
3. Once setup is completed, click the **OK** Button to determine the settings. To discard the settings, click the **Cancel** Button.



Name		Explanation
Present Value	Monitor Type 1	Specify the item to be displayed in the top box. • Command Present Position • Position Deviation • Feedback Present Position • Latch Position • Target Position • Feedback Speed • Command Speed • Target Speed • Torque Command
	Monitor Type 2	Specify the item to be displayed in the 2nd top box. The items to be selected are the same as for the Monitor Type 1.
Pulse Rate	Unit	Specify the unit used for displaying values. • command unit • pulse • inch • mm • degree When command unit is set, setting numerator and denominator of the pulse rate is invalid.
	Numerator	Set the numerator of the pulse rate. The setting range is from 1 to 4294967294.
	Denominator	Set the denominator of the pulse rate. The setting range is from 1 to 4294967294.

Note If the Monitor Type 1 and 2 of the Position Control Unit's Expanded Monitoring function are used in the ladder program, etc., do not set them on the Support Tool.

SECTION 9
Operation

This section describes the jogging operations for each axis.

9-1 Test Run 88

9-1 Test Run

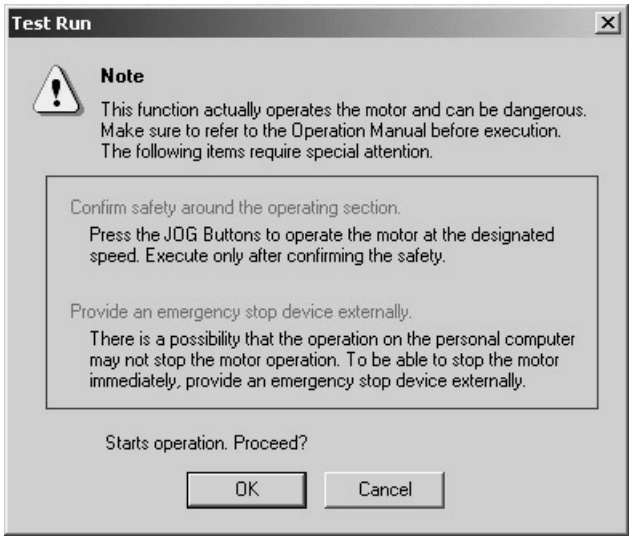
The following operations are possible in Test Run.

- Establishing/releasing connection
- Servo Lock/Unlock of each axis
- JOG execution

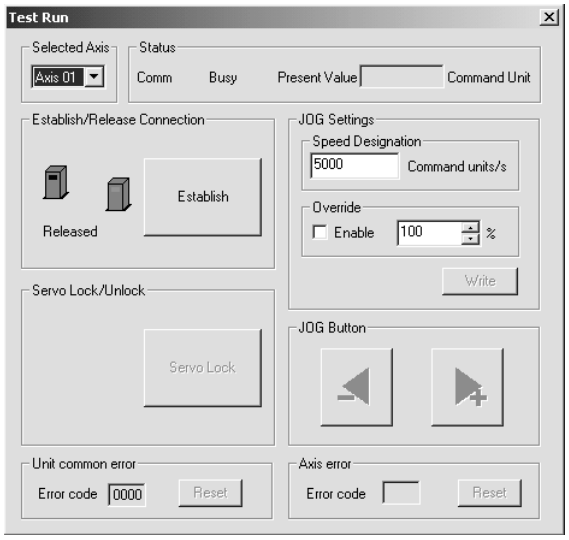
Displaying Test Run Window

Note The Test Run Dialog can be started only when connected online on the CX-Motion-NCF Basic Window. When not connected online yet, connect online on the CX-Motion-NCF Basic Window first and then start Test Run.

1,2,3... 1. Click ***Online/Test Run*** on the Axis Map Setting Window. The warning dialog box shown below will be displayed. Read the contents of the warning carefully. Click the **OK** Button only after confirming safety.



2. The Test Run Window will be displayed.



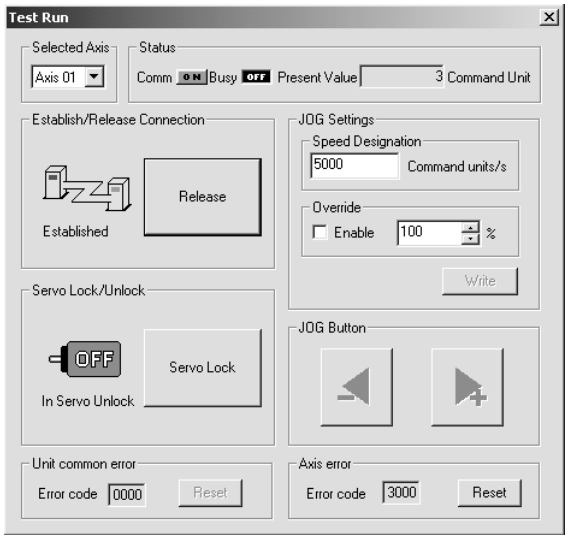
Quitting Test Run

Click ☒ at the right top corner of the Test Run Window. Closing the window will not change either the Servo Lock/Unlock status or Connection established/released status.

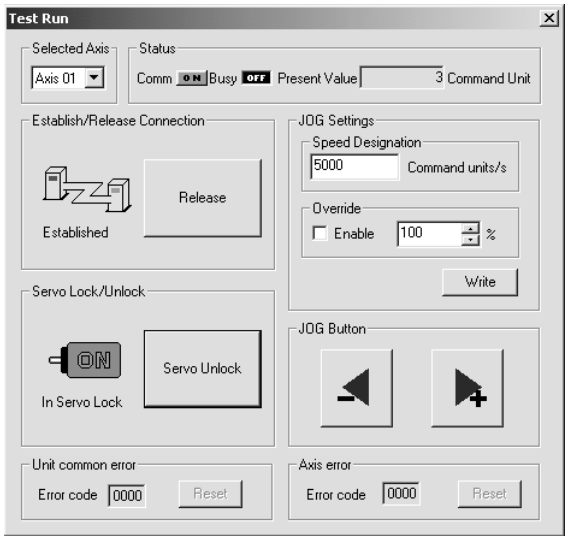
JOG Execution

1,2,3...

1. Select an axis that will perform JOG on the Test Run Window.
2. If the connection has not been established at this point, press the **Establish** Button to establish the connection.



3. Press the **Servo Lock** Button.



4. Enter a desired speed in *JOG Settings*. To use Override, select the ***Enable*** Check Box and enter a desired override value. Click the **Write** Button to write the set values into the Position Control Unit.
5. Press  (or ). JOG operation continues while the button is pressed down. releasing the button stops JOG operation.

Note

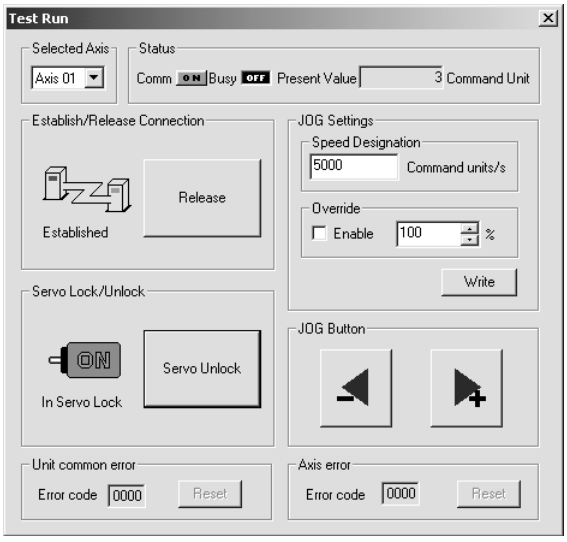
(1) Pressing a **JOG** Button ( or ). will actually operate the motor at the designated speed. Execute JOG only after confirming the safety.

(2) Operation on the personal computer may not be able to stop the motor. To be able to stop the motor immediately as needed, provide an emergency stop device externally.

(3) Before starting MECHATROLINK communications, make sure that the PLC is in the PROGRAM Mode. Otherwise, the axis may start moving suddenly due to the ladder execution. Before disconnecting MECHATROLINK communications, make sure that the axis is not operating. Disconnecting MECHATROLINK communications will put the operating axis in the Servo Free state.

(4) If a communications error occurs while the Test Run Window is being displayed, a FINS Command Time Monitor Error will occur on the Position Control Unit. To clear the error, the power for the Position Control Unit has to be turned OFF once and then turned ON again, the Position Control Unit has to be restarted, or press the **Unit Error Reset** Button to clear the error and close the Test Run Window.

Test Run Window



Item			Explanation
Selected Axis			Selects an axis that performs JOG. The axes that are registered in the Position Control Unit are displayed.
Status		Comm	Shows the MECHATROLINK communications status.
		Busy	Shows the status of the Busy Flag of the selected axis.
		Present Value	Shows the feedback present value of the selected axis.
Establish/Release Connection		Release Button	Releases MECHATROLINK communications when clicked.
		Establish Button	Establishes MECHATROLINK communications when clicked.
Servo Lock/Unlock		Servo Unlock Button	Executes Servo Unlock when clicked.
		Servo Lock Button	Executes Servo Lock when clicked.
JOG Settings	Speed Designation		Specifies the speed at the start of JOG. Setting range: 0 to 2,147,483,647 [command units/s]
	Override	Enable Check Box	Not selected: Disables override. Selected: Enables override.
		Override value	Sets the override value. Setting range: 1 to 327 [%]
	Write Button		Writes the settings in Speed Designation and Override into the Position Control Unit. Make sure to write the settings before executing JOG operation.

Item		Explanation
JOG	 Button	Executes JOG in the forward direction while this button is held down.
	 Button	Executes JOG in the reverse direction while this button is held down.
Unit common error	Error code	Displays the error codes of errors that have occurred in the Position Control Unit. The code "0000" is displayed when there is no error. Clicking the displayed error code will open the Online Help to show the error contents.
	Reset	Resets an error that has occurred in the Position Control Unit.
Axis error	Error code	Displays the error code of an error that has occurred for the selected axis. The code "0000" is displayed when there is no error. Clicking the displayed error code will open the Online Help to show the error contents.
	Reset	Resets an error that has occurred for the selected axis.

SECTION 10
Error Log and Troubleshooting

This section provides information on the error log display and troubleshooting methods for the Position Control Unit.

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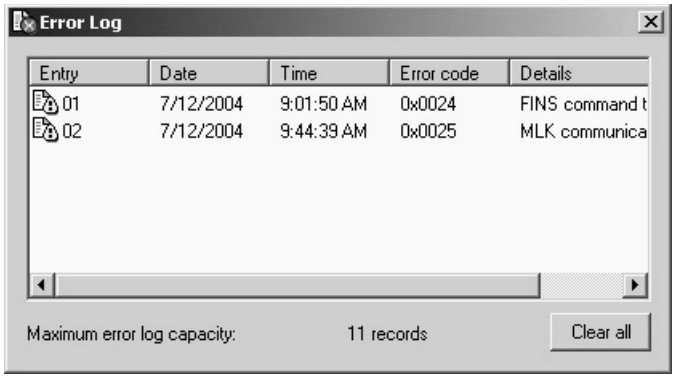
10-1 Error Log

Overview

A maximum of 11 Position Control Unit errors can be recorded and displayed. Errors thereafter will replace previous errors, starting with the least recent error.

Displaying Error Log

On the Axis Map Setting Window, click ***Online/Error Log***, or right-click a Position Control Unit and select ***Error Log*** from the pop-up menu.



Click the **Clear All** Button to clear the error log (all the records will be deleted).

Note

(1) The error log cannot be cleared when communications between the Position Control Unit and Servo Driver have started. Stop communications before attempting to clear the error log.

(2) Axis errors are not included in the error log. Check the Axis Monitor if axis errors occur.

10-2 Error Code

For details on the probable causes of error codes and methods used to clear errors, refer to *Section 12 Troubleshooting in the CJ1W-NCF71 Position Control Units Operation Manual* (W426), or click ***Help/Help*** in the Axis Map Setting Window and refer to the online help.

Position Control Unit Common Errors

	Category	Error name	Error code	Probable cause	Clearing method
CPU Unit error	CPU Unit error	CPU fatal error	000A	An error causing the CPU Unit to stop has occurred.	Remove the cause of the CPU Unit stopping.
		CPU Unit watchdog timer error	000B	The CPU Unit system is not operating correctly.	Make sure that the CPU Unit and PCU are installed correctly, and turn the power OFF and ON again. If the error occurs again, replace the CPU Unit.
		CPU Unit monitor error	000C	The cyclic refresh from the CPU Unit to the PCU has stopped.	Check the error status of the CPU Unit and perform appropriate error processing. After restarting the cyclic refresh with the CPU Unit, execute PCU's ERROR RESET.
		Bus error	000D	PLC bus operation error	Make sure that the CPU Unit and PCU are installed correctly, and turn the power OFF and ON again. If the error occurs again, replace the CPU Unit.

	Category	Error name	Error code	Probable cause	Clearing method
Position Control Unit internal errors	Unit error	MLK device error	0026	An error has occurred in the internal circuits of the PCU.	Replace the PCU.
		MLK device initialization error	0030	An error has been detected in the MECHATROLINK communications part during PCU initialization processing.	Check the MECHATROLINK communications settings in the Common Parameters, and then restart the Unit or turn the power OFF and ON again. If the error occurs again, replace the PCU.
	Data corrupted	Memory error	00F1	The data saved in the PCU is corrupted.	Transfer and save the PCU data again, and then restart the Unit or turn the power OFF and ON again. If the error occurs again, replace the PCU.
MECHATROLINK communications errors	Scan list mismatch	MLK initialization error	0020	The MECHATROLINK slave station device corresponding to the axis number registered in the PCU scan list is not connected.	Check whether the settings for the MECHATROLINK communications line connection or slave device's station address match the settings in the scan list, and then execute CONNECT again.
	Communications error	MLK communications error	0025	MECHATROLINK communications cannot be performed correctly, or two or more MECHATROLINK slave station devices are using the same station number.	Check the connection of the MECHATROLINK communications cable. After removing the noise or other the cause preventing communications, restart the PCU.

	Category	Error name	Error code	Probable cause	Clearing method
Position Control Unit settings and operations errors	Illegal operation	Multistart error	0021	An operation command that cannot be executed has been sent to the PCU.	The operation command that was sent cannot be executed. Check the last command timing and change the operation sequence.
	Illegal data	Write transfer error	0022	An attempt has been made for the PCU to write data to an illegal address, or to write data using an illegal data size.	The data transfer for the command cannot be executed. Check the contents of the last command, and correct the data transfer settings.
		Read transfer error	0023	An attempt has been made for the PCU to read data from an illegal address, or to read data with an illegal data size.	The data transfer for the command cannot be executed. Check the contents of the last command, and correct the data transfer settings.
		FINS command time monitor error	0024	The cables between the personal computer and PLC have been disconnected.	Reconnect the cables, and restart the PCU.
				The personal computer's operation is slow.	Exit all other software and then restart the PCU.
		Transfer cycle setting error	0027	The set value for the transfer cycle set in the PCU's Common Parameters is too small for the number and type of connected MECHATROLINK devices or the maximum axis number.	Set and save a transfer cycle set value in the Common Parameters that is suitable for the number and type of connected MECHATROLINK devices and the maximum axis number, and then restart the PCU.
		Initialization common parameter check error	0028	An illegal set value has been detected in the Common Parameters during PCU initialization.	When this error occurs, the corresponding setting in the Common Parameters is set to the default value (0). After executing ERROR RESET, transfer and save the correct Common Parameter setting and restart the PCU.
		Data transfer common parameter check error	0029	An illegal set value in the Common Parameters was transferred to the PCU using WRITE DATA.	The transferred set value is discarded and the set value in the Common Parameters before the transfer is restored. After executing ERROR RESET, transfer the correct Common Parameters setting.

Axis Errors

	Category	Error name	Error code	Probable cause	Clearing method
MECHATROLINK communications errors	Communications error	Synchronous communications alarm	3010	MECHATROLINK communications cannot be performed correctly with the corresponding axis.	Check the connection of the MECHATROLINK communications cable. After removing the cause preventing communications, such as breaks or noise in the connection, execute CONNECT again.
		Communications alarm	3011	MECHATROLINK communications cannot be performed correctly with the corresponding axis.	Check the connection of the MECHATROLINK communications cable. After removing the cause preventing communications, such as breaks or noise in the connection, execute CONNECT again.
		Command time-out	3012	No MECHATROLINK communications response has been received from the corresponding axis.	After checking that no error has occurred in the MECHATROLINK device connected to the corresponding axis, execute CONNECT again.
Position Control Unit settings and operations errors	Illegal operations	Present position unknown error	3030	ABSOLUTE MOVEMENT or ORIGIN RETURN was executed before the origin was established.	Execute ORIGIN SEARCH or PRESENT POSITION PRESET and after defining the origin, execute the previously unsuccessful command again.
		Servo unlock error	3040	A command to start the axis was executed while in Servo unlock status.	Execute the SERVO LOCK and then execute the previously unsuccessful command again.
		Multistart error	3050	An attempt was made to execute two or more of the following commands at the same time for the same axis. ABSOLUTE MOVEMENT, RELATIVE MOVEMENT, ORIGIN SEARCH, ORIGIN RETURN, PRESENT POSITION PRESET, JOG, SPEED CONTROL, TORQUE CONTROL, DEVICE SETUP, or ERROR RESET	After editing the ladder program so that multiple command bits do not turn ON at the same time for the same axis, execute the previously unsuccessful command again.
				An attempt was made to execute one of the following commands for a busy axis. ORIGIN SEARCH, ORIGIN RETURN, PRESENT POSITION PRESET, JOG, DEVICE SETUP, or ERROR RESET	After editing the ladder program so that command bits do not turn ON for a busy axis, execute the previously unsuccessful command again.

	Category	Error name	Error code	Probable cause	Clearing method
Position Control Unit settings and operations errors	Illegal data	Position designation error	3060	An attempt was made to execute RELATIVE MOVEMENT using a position command value for the target position that is outside the positioning range.	Edit the position command value to be within the positioning range and execute the command again.
		Speed designation error	3061	An attempt was made to execute one of the following commands with a negative value as the speed command value. ABSOLUTE MOVEMENT, RELATIVE MOVEMENT, ORIGIN SEARCH, ORIGIN RETURN, and JOG	Edit the speed command value to be within the setting range and execute the command again.
				An attempt was made to execute ORIGIN SEARCH with a speed command value of 0.	Edit the speed command value to be within the setting range and execute the command again.
		Speed control speed designation error	3062	An attempt was made to execute SPEED CONTROL using a command value that exceeds the speed command range.	Edit the speed command value to be within the setting range and execute the command again.
		Torque command value error	3063	An attempt was made to execute TORQUE CONTROL using a command value that exceeds the torque command range.	Edit the torque command value to be within the setting range and execute the command again.
		Option command value 1 error	3064	An attempt was made to execute SPEED/TORQUE CONTROL using a command value that exceeds the command range in option command value 1.	Edit the option command value to be within the setting range and execute the command again.
		Option command value 2 error	3065	An attempt was made to execute SPEED CONTROL using a command value that exceeds the command range in option command value 2.	Edit the option command value to be within the setting range and execute the command again.
		Override	3070	An attempt was made to execute the override using an override value outside the setting range.	Edit the override value to be within the setting range and execute the command again.

	Category	Error name	Error code	Probable cause	Clearing method
Position Control Unit settings and operations errors	Illegal data	Initialization axis parameter check error	3090	An illegal set value has been detected in the Axis Parameters during PCU initialization.	When this error occurs, the corresponding setting in the Axis Parameters is set to the default value (0). After executing ERROR RESET, transfer the correct Axis Parameter.
		Data transfer axis parameter check error	3091	An illegal set value in the Axis Parameters was transferred to the PCU using WRITE DATA.	The transferred set value is discarded and the set value in the Axis Parameters before the transfer is restored. After executing ERROR RESET, transfer the correct Axis Parameter.
		Data setting error	3099	An attempt was made to transfer data for an illegal parameter number and outside the setting range using SERVO PARAMETER TRANSFER.	The transferred set value is discarded and the set value for the Servo Parameter before the transfer is restored. After executing ERROR RESET, transfer the correct Servo Parameter.
MECHATROLINK slave station device errors	External sensor input	Forward Rotation limit input	3000	A forward rotation limit input signal was detected.	After executing ERROR RESET, perform movement in the reverse rotation direction.
		Reverse Rotation limit input	3001	A reverse rotation limit input signal was detected.	After executing ERROR RESET, perform movement in the forward rotation direction.
		Forward software limit	3002	The forward software limit was reached or exceeded during axis movement.	After checking the position command value and executing ERROR RESET, execute a movement command to move the axis to a correct position within the software limit range.
		Reverse software limit	3003	The reverse software limit was reached or exceeded during axis movement.	After checking the position command value and executing ERROR RESET, execute a movement command to move the axis to a correct position within the software limit range.
	Origin search error	No origin proximity or origin input signal	3020	The origin proximity input signal could not be detected within the range of both limit input signals during an origin search.	Check the origin proximity input signal wiring and the signal's allocation setting in the Servo Parameters. Check that the dog width of the origin proximity input signal is no shorter than the communications cycle.
				After detecting the origin proximity input signal during an origin search operation, a limit input signal was detected before detecting the origin input signal.	Check that the origin input signal selection in the PCU's Axis Parameters is correct. When the external latch signal is selected as the origin input signal, check the external latch signal wiring and the allocation setting in the Servo Parameters.
		Limit input already ON	3021	The limit input signal in the origin search direction has already been input during a single-direction origin search.	Check the limit input signal wiring for the corresponding direction and check the limit input signal's allocation setting in the Servo Parameters.
		Limit input signal ON in both directions	3022	Origin search cannot be executed due to limit input signals being input in both directions.	Check the limit input signal wiring in both directions and check the limit input signal allocation settings in the Servo Parameters.

	Category	Error name	Error code	Probable cause	Clearing method
MECHATROLINK slave station device errors	Servo driver error	Driver main circuit OFF error	3080	The main circuit power of the Servo Driver has been turned OFF.	Check the power supply voltage being supplied to the Servo Driver's main circuit power supply and make sure the correct power is being supplied.
	MECHATROLINK device alarm	---	4000 + Alarm code for each device	The error processing depends on the device.	

Axis Warnings

	Category	Error name	Error code	Probable cause	Clearing method
MECHATROLINK slave station device	MECHATROLINK device warning	---	4000 + Warning code for each device	The error processing depends on the device.	

W-Series Alarm Display

The following table lists the alarm displays for W-Series Servo Drivers.

The alarms that occur in the Servo Driver correspond to error codes that are detected by the Position Control Unit when the MECHATROLINK communications have been established, as shown in the following table.

Refer to the Servo Driver's operation manual for details on alarms and troubleshooting.

Alarm Display

Servo Driver display		Position Control Unit error code	Error detection function	Detected error or cause of error
W Series	W Series with Built-in Communications			
A.02	A.02□	4002	Parameter corrupted	Parameter checksum read from EEPROM does not match.
A.03	A.03□	4003	Main circuit detection error	Error in detection data for power supply circuit
A.04	A.04□	4004	Parameter setting error	The parameter setting is incorrect.
A.05	A.05□	4005	Servomotor mismatch	The Servomotor and Servo Driver combination is incorrect.
---	a.0b□	400B	Servo ON command invalid alarm	An attempt was made to turn ON the servo with a host command after using a function that enables turning ON the servo with a Computer Monitor Software operation.
A.10	A.10□	4010	Overcurrent	An overcurrent has occurred or the radiation shield has overheated (1.5- to 3-kW models only).
A.30	A.30□	4030	Regeneration error	The regenerative circuit is damaged due to large regenerative energy.
A.32	A.32□	4032	Regeneration overload	The regenerative energy has exceeded the regeneration resistor capacity.
A.33	A.33□	4033	Main-circuit power supply setting error	The setting of Pn001.2 (AC/DC input selection) and the AC/DC wiring method used for the main circuit power supply are not the same.
A.40	A.40□	4040	Overvoltage	The main circuit DC voltage has exceeded the specified values.
A.41	A.41□	4041	Undervoltage	The main circuit DC voltage is under the specified values.
A.51	A.51□	4051	Overspeed	The Servomotor rotation speed has exceeded the maximum rotation speed.

Servo Driver display		Position Control Unit error code	Error detection function	Detected error or cause of error
W Series	W Series with Built-in Communications			
---	A.52□	4052	Oscillation alarm	Abnormal oscillation was detected was detected in the motor speed, or an inertia ratio calculation error occurred during autotuning.
A.71	A.71□	4071	Overload	Operating with output torque exceeding 245% of the rated torque.
A.72	A.72□	4072	Overload	Operation continuing with output torque at 120% to 245% of the rated torque.
A.73	A.73□	4073	Dynamic brake overload	The rotary energy has exceeded the dynamic brake resistor capacity during dynamic brake operation.
A.74	A.74□	4074	Inrush resistance overload	The inrush current when power was turned ON exceeded the inrush resistor capacity.
A.7A	A.7A□	407A	Overheat	Overheating in the radiation shield was detected.
A.81	A.81□	4081	Backup error (Absolute encoders only)	The encoder's backup power supply has fallen.
A.82	A.82□	4082	Checksum error (Absolute encoders only)	An encoder memory checksum error has occurred.
A.83	A.83□	4083	Battery error (Absolute encoders only)	The encoder's battery voltage has fallen (to 2.7 V or lower).
A.84	A.84□	4084	Absolute error (Absolute encoders only)	An internal encoder data error has occurred.
A.85	A.85□	4085	Overspeed error (Absolute encoders only)	The Servomotor is rotating at 200 r/min. or more when the encoder power supply is turned ON.
A.86	A.86□	4086	Encoder overheating (Absolute encoders only)	Overheating in the encoder was detected.
A.b1	---	40B1	Speed command input reading error	The A/D completion signal from the A/D converter is not being output within the fixed interval.
A.b2	---	40B2	Torque command input reading error	The A/D completion signal from the A/D converter is not being output within the fixed interval.
---	A.b3□	40B3	Current detection error	An error occurred in the Servo Driver's current detector.
A.b6	A.b6□	40B6	LSI for communications corrupted	The LSI used for MECHATROLINK communications is corrupted.
A.bF	A.bF□	40BF	System error	A system error in the control circuit was detected.
A.C1	A.C1□	40C1	Runaway detected	The Servomotor rotated in the opposite direction to the command.
A.C8	A.C8□	40C8	Multi-turn data error (Absolute encoders only)	The absolute encoder setup is incorrect.
A.C9	A.C9□	40C9	Encoder communications error	Communications between the encoder and Servo Driver are not possible.
A.CA	A.CA□	40CA	Encoder parameter error	The parameter settings in the encoder are corrupted.
A.Cb	A.Cb□	40CB	Encoder data error	Data from the encoder is corrupted.
A.CC	A.CC□	40CC	Multi-turn limit discrepancy (Absolute encoders only)	The absolute encoder multi-turn limit for the encoder and Servo Driver do not match.
A.d0	---	40D0	Deviation counter overflow	The number of pulses in the deviation counter has exceeded the deviation counter overflow level set in Pn505.
---	A.d0□			The number of pulses in the deviation counter has exceeded the deviation counter overflow level set in Pn520.

Servo Driver display		Position Control Unit error code	Error detection function	Detected error or cause of error
W Series	W Series with Built-in Communications			
A.d1	---	40D1	Motor-load deviation over	The deviation between the fully-closed encoder and semi-closed encoder has reached or exceeded the command unit set in Pn51A.
A.E0	---	No code (See note.)	No option	The MECHATROLINK-II Application Module is not installed.
---	A.E0□		COM alarm	An error occurred in the Servo Driver.
A.E1	---	No code (See note.)	Option timeout	There is no response from the MECHATROLINK-II Application Module.
A.E2	---	No code (See note.)	Option WDC error	An error has occurred in the MECHATROLINK-II Application Module. (MECHATROLINK-II Application Module's watchdog timer count)
---	A.E4□	40E4	Transfer cycle setting error	The MECHATROLINK-II transfer cycle setting is incorrect.
A.E5	A.E5□	40E5	Synchronization error	MECHATROLINK-II synchronization error
A.E6	A.E6□	40E6	Communications error	MECHATROLINK-II communications error (Continuous communications errors have occurred.)
A.E7	---	40E7	Option detection error	The MECHATROLINK-II Application Module has been removed.
A.EA	A.EA□	40EA	Servo Driver malfunction	The Servo Driver has malfunctioned.
A.EB	---	40EB	Servo Driver initial access error	The Servo Driver initial processing cannot be executed from the MECHATROLINK-II Application Module.
A.EC	---	40EC	Servo Driver error	An error has occurred in the Servo Driver. (Servo Driver's watchdog timer count)
A.ED	A.ED□	40ED	Command execution incomplete	MECHATROLINK communications command aborted during execution.
A.F1	A.F1□	40F1	Missing phase detected	Main circuit power supply phase is missing, or the wire is burnt out.
A.F5	---	40F5	Motor current error	The current to the Servomotor is too small for the torque command from the servo Driver.
A.F6	---	40F6	Motor conduction error	The Servo is ON, but the Servomotor is not conducting current regardless of the Servo Driver settings and external input.

Note Errors that occur in the MECHATROLINK-II Application Module cannot be detected by the Position Control Unit because the connection is not established. The Position Control Unit is not able to detect the corresponding axis during execution of CONNECT, so an MLK Initialization Error (Unit error code: 0020 Hex) will occur.

Warning Display

Servo Driver display		Position Control Unit error code	Warning detection function	Warning details
W Series	W Series with Built-in Communications			
A.90	---	4090	Deviation counter overflow	The number of pulses in the deviation counter has exceeded the deviation counter overflow level set in Pn505 multiplied by the rate (%) set in Pn51E.
---	A.90□			The number of pulses in the deviation counter has exceeded the deviation counter overflow level set in Pn520 multiplied by the rate (%) set in Pn51E.

Servo Driver display		Position Control Unit error code	Warning detection function	Warning details
W Series	W Series with Built-in Communications			
A.91	A.91□	4091	Overload	This warning occurs before the Overload Alarm (A.71, A.72) occurs. If operation is continued in this state, an alarm may occur.
A.92	A.92□	4092	Regeneration overload	This warning occurs before the Regeneration Overload Alarm (A.32) occurs. If operation is continued in this state, an alarm may occur.
A.93	A.93□	4093	Battery warning (Absolute encoders only)	This warning occurs before the Battery Error (A.83) occurs. If the power is turned OFF, an alarm may occur the next time the power is turned ON. (Replace the battery while the control circuit power supply is ON.)
A.94	A.94□	See note 1.	Parameter setting warning	A value outside the setting range has been set for the MECHATROLINK slave station device.
A.95	A.95□	See note 1.	MECHATROLINK-II command warning	An illegal communications command or unsupported communications command has been sent to the MECHATROLINK slave station device.
A.96	A.96□	4096	Communications warning	A single MECHATROLINK-II communications error has occurred. (See note 2.)

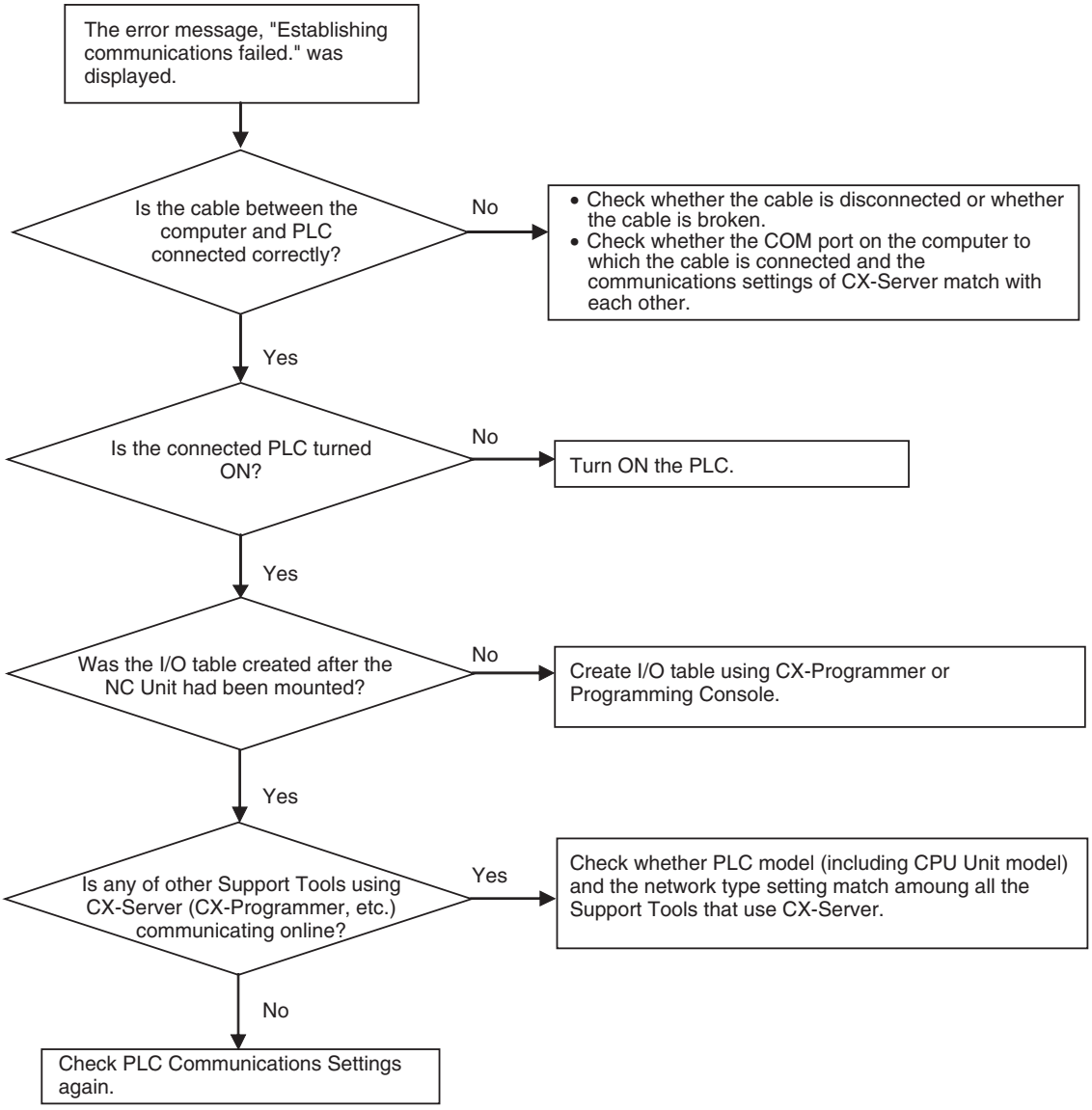
Note (1) If a Parameter Setting Warning or MECHATROLINK-II Command Warning occurs in the Servo Driver, a data setting error (axis error code: 3099) will occur at the Position Control Unit, and the active axis in which the error occurred will decelerate to a stop.

(2) If a MECHATROLINK-II communications error occurs once independently, a communications warning occurs, and the Position Control Unit will perform a communications retry. If the communications warning occurs continually, a communications error will occur.

10-3 Troubleshooting

Error Messages When Connecting Online and Their Remedies

When attempting to connect online on the CX-Motion-NCF Basic Window, the following dialog box may be displayed. The flow chart below shows the causes and remedies.



Error Messages and Remedies

The causes and remedies of the error messages that are displayed through online operations are explained here.

Message	Probable cause	Remedy
The connected unit is not an NC Unit.	The connected unit is not CJ1W-NCF71.	Check whether the connected unit is CJ1W-NCF71.
	The Unit No. is not correct.	Change the Unit No. either on the Unit or on the CX-Motion-NCF.
The MECHATROLINK slave station device corresponding to the axis number registered in the NC Unit scan list is not connected. Check whether the settings for the MECHATROLINK communications line connection or slave device's station address match the settings in the scan list, and then execute CONNECT again.	The axis map (scan list) does not match with the actual configuration of the Servo Drivers.	Add or delete axes appropriately on the Axis Map Setting Window, set appropriate axis Nos., and transfer the axis map to the Unit. Otherwise, change the axis Nos. on the Servo Drivers appropriately.

Message	Probable cause	Remedy
Cannot start communications with the NC Unit. Check the Unit No. of the NC Unit.	The Unit No. is not correct, or the Unit corresponding to the Unit No. does not exist.	Check the Unit No. of the Position Control Unit.
	Communications with the Position Control Unit could not be established because the I/O table has not been created.	Create the I/O table.
Stop communications. The NC Unit is busy.	Data could not be transferred from CX-Motion-NCF because parameters were being transferred from the ladder program.	Stop parameter transfer from the ladder program first, and then transfer data from CX-Motion-NCF.
Stop communications. The axis □□ is busy.	Data could not be transferred from CX-Motion-NCF because parameters were being transferred from the ladder program.	Stop parameter transfer from the ladder program first, and then transfer data from CX-Motion-NCF.
An error has occurred on the Servo Driver of axis □□. Check the error of the Servo Driver and remove the cause. Check if the parameters not supported by the Servo Driver or out of setting range are transferred.	• Transferring data caused an error on the Servo Driver. • An error occurred on the Servo Driver during transfer.	Check the error code and provide appropriate remedy to clear the error.
Clearing the error log failed. Connection has been established.	MECHATROLINK communications have been established.	Stop the communications (i.e., release the connection).
Transferring Servo Parameters failed. An error has occurred on the axis □□.	An error has occurred on the Servo Driver.	Check the error code and provide appropriate remedy to clear the error.
Could not acquire access right. Another user is currently occupying the Unit.	The Position Control Unit is being operated from another personal computer.	Stop any online operations from another personal computer.
Cannot connect to the NC Unit. Check the following items. • Whether the PLC has been turned ON. • Whether the connection cable has not been disconnected.	The PLC has not been turned ON.	Turn ON the PLC.
	The cable between the PLC and personal computer has been disconnected.	Check the connection of the cable.
	Communications failed midway due to noise, etc.	Execute the online operation again.
Could not establish communications with the Servo Driver. Check for unit and axis errors.	MECHATROLINK communications settings are not correct.	Change the communications settings in the Unit Parameters and transfer them to the Position Control Unit.
	The axis map (scan list) does not match with the actual configuration of the Servo Drivers.	Add or delete axes appropriately on the Axis Map Setting Window, set appropriate axis Nos., and transfer the axis map to the Unit. Otherwise, change the axis Nos. on the Servo Drivers appropriately.
	An error that cannot be cleared from CX-Motion-NCF has occurred on the Servo Driver.	Clear the error on the Servo Driver.
	Wiring for the MECHATROLINK communications is not correct.	Check whether the MECHATROLINK cable has been disconnected or wired correctly.
	The Servo Driver has not been turned ON.	Turn ON the Servo Driver.
There are mismatches between the parameters in the NC Unit and transferred parameters. Transfer default values of the Unit Parameters to the NC Unit and write them to the flash memory. After restarting the NC Unit, transfer the parameters again.	Unit Parameters could not be transferred because the scan list in the Position Control Unit did not match with the axis map of the Unit Parameters on CX-Motion-NCF.	Transfer the default values of the Unit Parameters from CX-Motion-NCF. Write them to the flash memory. After restarting the Position Control Unit, transfer the parameters again.

Behavior on Windows 2000 Service Pack 2 or Earlier and Remedy

On Windows 2000 Service Pack 2 or earlier, repeating the operations (repeating the same operation or combining 2 or more operations) described in the following table may cause the CX-Motion-NCF to stop operating normally. If it should occur, save the project file and quit the CX-Motion-NCF. After that, Windows 2000 Service Pack 3 or higher must be installed. Download and install an appropriate Service Pack from the web site of Microsoft Corporation below:

http://www.microsoft.com/windows2000/downloads/servicepacks/

To check the version of the Service Pack on the personal computer, click ***Start/Settings/Control Panel*** and double-click the **System** Icon from the Control Panel Window. The Service Pack version should be given in the "System:" column of the General Tab Page on the System Properties Dialog Box. If the Service Pack version is not given, no Service Pack has been installed on the personal computer.

Operation	Behavior
Adding a new driver	The message "Processing aborted. An error has occurred while referencing data base" is displayed and the New Driver Window does not appear.
Displaying Edit Servo Parameter Window	The Edit Servo Parameter Window is displayed, however, the parameters are not displayed.
	The message "Processing aborted. An error has occurred while referencing data base" is displayed and the Edit Servo Parameter Window does not appear.
Editing Servo Parameters	The pull-down menu for the parameters does not appear.
Uploading Servo Parameters on the Axis Map Setting Window or Edit Servo Parameter Window	When W Series Servo Driver is connected, the message "... is not a supported model..." is displayed.
	The message "Data access error occurred" is displayed during upload and uploading is aborted.
Comparing Servo Parameters on the Axis Map Setting Window or Edit Servo Parameter Window	The message "Data access error occurred" is displayed during upload and uploading is aborted.
Initializing Servo Parameters	The message "Reading Servo Parameters failed" is displayed and initializing Servo Parameters fails.
Copying Servo Driver	Copying Servo Parameters is disabled.
Displaying Servo Driver Properties Window	The message "Processing aborted. An error has occurred while referencing data base" is displayed and the Properties Window does not appear.
Exporting	The message "Reading Servo Parameter name failed. The Servo Driver model or version is invalid" is displayed and exporting fails.
Importing	The message "Reading Servo Parameter name failed. The Servo Driver model or version is invalid" is displayed and importing fails.
Printing	Printing fails.
	The message "Processing aborted. An error has occurred while referencing data base" is displayed and the Print Window does not appear.

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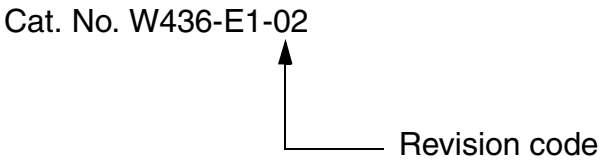
Revision History

A manual revision code appears as a suffix to the catalog number on the front cover of the manual.



The following table outlines the changes made to the manual during each revision. Page numbers refer to the previous version.

Revision code	Date	Revised content
01	August 2004	Original production
02	February 2005	**Page v:** Signal word definitions changed. **Page ix:** Paragraph and sentence on the CX-One added. **Page x:** Three pages added and version upgrade information added. **Page xiii:** Information on changing Startup Mode added. **Page 3:** Information added at top of page. **Pages 5 and 30:** Information on device information added. **Page 6:** Section references added. **Pages 8 to 15:** Installation information replaced. **Page 16:** “CS” changed to “CS/CJ.” **Page 23:** Paragraph added in middle of page. **Page 29:** “Properties” changed to “Displaying Servo Driver Properties.” **Page 32:** Heading added at top of page and procedure added in middle of page. **Page 33:** “Registered” added. **Pages 34, 40, and 57:** Notes added. **Page 35:** “A new Servo Driver will be added” changed and “Servo Driver” added. **Pages 41 and 86:** Notes deleted. **Page 42:** “Pn816” changed to “Pn816.0” in note. **Page 45:** First sentence in “Initializing Servo Parameters” changed. **Page 59:** Sentence removed from bottom of page. **Pages 61 and 65:** “Position Control Unit” added. **Pages 67, 68, and 84 to 86:** Graphic replaced. **Page 75:** “Position Control Unit or Servo Driver” added. **Pages 80 and 82:** Units changed in table. **Page 81:** “Servo ON Flag” removed from table. **Pages 96 to 98:** Columns added and rows added or changed (400B, 4052, 40B3, 40D0, 40D1 to 40E4, AND 4090. **Page 100:** Cells joined in right column. **Page 102:** Bottom half of table deleted.

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Cat. No. W436-E1-02 Note: Specifications subject to change without notice Printed in Japan