

MOTION CONTROLLER



MT Developer2
Version 1

Setup Guidance

● SAFETY PRECAUTIONS ●

(Please read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

These precautions apply only to this product. Refer to the Q173D(S)CPU/Q172D(S)CPU Users manual for a description of the Motion controller safety precautions.


In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

 **DANGER**

Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

 **CAUTION**

Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Depending on circumstances, procedures indicated by  CAUTION may also be linked to serious results.

In any case, it is important to follow the directions for usage.

Please save this manual to make it accessible when required and always forward it to the end user.

For Safe Operations

1. Prevention of electric shocks

DANGER

- Never open the front case or terminal covers while the power is ON or the unit is running, as this may lead to electric shocks.
- Never run the unit with the front case or terminal cover removed. The high voltage terminal and charged sections will be exposed and may lead to electric shocks.
- Never open the front case or terminal cover at times other than wiring work or periodic inspections even if the power is OFF. The insides of the Motion controller and servo amplifier are charged and may lead to electric shocks.
- Completely turn off the externally supplied power used in the system before mounting or removing the module, performing wiring work, or inspections. Failing to do so may lead to electric shocks.
- When performing wiring work or inspections, turn the power OFF, wait at least ten minutes, and then check the voltage with a tester, etc. Failing to do so may lead to electric shocks.
- Be sure to ground the Motion controller, servo amplifier and servomotor. (Ground resistance : 100 Ω or less) Do not ground commonly with other devices.
- The wiring work and inspections must be done by a qualified technician.
- Wire the units after installing the Motion controller, servo amplifier and servomotor. Failing to do so may lead to electric shocks or damage.
- Never operate the switches with wet hands, as this may lead to electric shocks.
- Do not damage, apply excessive stress, place heavy things on or sandwich the cables, as this may lead to electric shocks.
- Do not touch the Motion controller, servo amplifier or servomotor terminal blocks while the power is ON, as this may lead to electric shocks.
- Do not touch the built-in power supply, built-in grounding or signal wires of the Motion controller and servo amplifier, as this may lead to electric shocks.

2. For fire prevention

CAUTION

- Install the Motion controller, servo amplifier, servomotor and regenerative resistor on incombustible. Installing them directly or close to combustibles will lead to fire.
- If a fault occurs in the Motion controller or servo amplifier, shut the power OFF at the servo amplifier's power source. If a large current continues to flow, fire may occur.
- When using a regenerative resistor, shut the power OFF with an error signal. The regenerative resistor may abnormally overheat due to a fault in the regenerative transistor, etc., and may lead to fire.
- Always take heat measures such as flame proofing for the inside of the control panel where the servo amplifier or regenerative resistor is installed and for the wires used. Failing to do so may lead to fire.
- Do not damage, apply excessive stress, place heavy things on or sandwich the cables, as this may lead to fire.

3. For injury prevention

CAUTION

- Do not apply a voltage other than that specified in the instruction manual on any terminal. Doing so may lead to destruction or damage.
- Do not mistake the terminal connections, as this may lead to destruction or damage.
- Do not mistake the polarity (+ / -), as this may lead to destruction or damage.
- Do not touch the heat radiating fins of controller or servo amplifier, regenerative resistor and servomotor, etc., while the power is ON and for a short time after the power is turned OFF. In this timing, these parts become very hot and may lead to burns.
- Always turn the power OFF before touching the servomotor shaft or coupled machines, as these parts may lead to injuries.
- Do not go near the machine during test operations or during operations such as teaching. Doing so may lead to injuries.

4. Various precautions

Strictly observe the following precautions.

Mistaken handling of the unit may lead to faults, injuries or electric shocks.

(1) System structure

CAUTION

- Always install a leakage breaker on the Motion controller and servo amplifier power source.
- If installation of an electromagnetic contactor for power shut off during an error, etc., is specified in the instruction manual for the servo amplifier, etc., always install the electromagnetic contactor.
- Install the emergency stop circuit externally so that the operation can be stopped immediately and the power shut off.
- Use the Motion controller, servo amplifier, servomotor and regenerative resistor with the correct combinations listed in the instruction manual. Other combinations may lead to fire or faults.
- Use the Motion controller, base unit and motion module with the correct combinations listed in the instruction manual. Other combinations may lead to faults.
- If safety standards (ex., robot safety rules, etc.,) apply to the system using the Motion controller, servo amplifier and servomotor, make sure that the safety standards are satisfied.
- Construct a safety circuit externally of the Motion controller or servo amplifier if the abnormal operation of the Motion controller or servo amplifier differ from the safety directive operation in the system.
- In systems where coasting of the servomotor will be a problem during the forced stop, emergency stop, servo OFF or power supply OFF, use dynamic brakes.
- Make sure that the system considers the coasting amount even when using dynamic brakes.
- In systems where perpendicular shaft dropping may be a problem during the forced stop, emergency stop, servo OFF or power supply OFF, use both dynamic brakes and electromagnetic brakes.

CAUTION

- The dynamic brakes must be used only on errors that cause the forced stop, emergency stop, or servo OFF. These brakes must not be used for normal braking.
- The brakes (electromagnetic brakes) assembled into the servomotor are for holding applications, and must not be used for normal braking.
- The system must have a mechanical allowance so that the machine itself can stop even if the stroke limits switch is passed through at the max. speed.
- Use wires and cables that have a wire diameter, heat resistance and bending resistance compatible with the system.
- Use wires and cables within the length of the range described in the instruction manual.
- The ratings and characteristics of the parts (other than Motion controller, servo amplifier and servomotor) used in a system must be compatible with the Motion controller, servo amplifier and servomotor.
- Install a cover on the shaft so that the rotary parts of the servomotor are not touched during operation.
- There may be some cases where holding by the electromagnetic brakes is not possible due to the life or mechanical structure (when the ball screw and servomotor are connected with a timing belt, etc.). Install a stopping device to ensure safety on the machine side.

(2) Parameter settings and programming

CAUTION

- Set the parameter values to those that are compatible with the Motion controller, servo amplifier, servomotor and regenerative resistor model and the system application. The protective functions may not function if the settings are incorrect.
- The regenerative resistor model and capacity parameters must be set to values that conform to the operation mode, servo amplifier and servo power supply module. The protective functions may not function if the settings are incorrect.
- Set the mechanical brake output and dynamic brake output validity parameters to values that are compatible with the system application. The protective functions may not function if the settings are incorrect.
- Set the stroke limit input validity parameter to a value that is compatible with the system application. The protective functions may not function if the setting is incorrect.
- Set the servomotor encoder type (increment, absolute position type, etc.) parameter to a value that is compatible with the system application. The protective functions may not function if the setting is incorrect.
- Set the servomotor capacity and type (standard, low-inertia, flat, etc.) parameter to values that are compatible with the system application. The protective functions may not function if the settings are incorrect.
- Set the servo amplifier capacity and type parameters to values that are compatible with the system application. The protective functions may not function if the settings are incorrect.
- Use the program commands for the program with the conditions specified in the instruction manual.

⚠ CAUTION

- Set the sequence function program capacity setting, device capacity, latch validity range, I/O assignment setting, and validity of continuous operation during error detection to values that are compatible with the system application. The protective functions may not function if the settings are incorrect.
- Some devices used in the program have fixed applications, so use these with the conditions specified in the instruction manual.
- The input devices and data registers assigned to the link will hold the data previous to when communication is terminated by an error, etc. Thus, an error correspondence interlock program specified in the instruction manual must be used.
- Use the interlock program specified in the intelligent function module's instruction manual for the program corresponding to the intelligent function module.

(3) Transportation and installation

⚠ CAUTION

- Transport the product with the correct method according to the mass.
- Use the servomotor suspension bolts only for the transportation of the servomotor. Do not transport the servomotor with machine installed on it.
- Do not stack products past the limit.
- When transporting the Motion controller or servo amplifier, never hold the connected wires or cables.
- When transporting the servomotor, never hold the cables, shaft or detector.
- When transporting the Motion controller or servo amplifier, never hold the front case as it may fall off.
- When transporting, installing or removing the Motion controller or servo amplifier, never hold the edges.
- Install the unit according to the instruction manual in a place where the mass can be withstood.
- Do not get on or place heavy objects on the product.
- Always observe the installation direction.
- Keep the designated clearance between the Motion controller or servo amplifier and control panel inner surface or the Motion controller and servo amplifier, Motion controller or servo amplifier and other devices.
- Do not install or operate Motion controller, servo amplifiers or servomotors that are damaged or that have missing parts.
- Do not block the intake/outtake ports of the Motion controller, servo amplifier and servomotor with cooling fan.
- Do not allow conductive matter such as screw or cutting chips or combustible matter such as oil enter the Motion controller, servo amplifier or servomotor.
- The Motion controller, servo amplifier and servomotor are precision machines, so do not drop or apply strong impacts on them.
- Securely fix the Motion controller, servo amplifier and servomotor to the machine according to the instruction manual. If the fixing is insufficient, these may come off during operation.

⚠ CAUTION

- Always install the servomotor with reduction gears in the designated direction. Failing to do so may lead to oil leaks.
- Store and use the unit in the following environmental conditions.

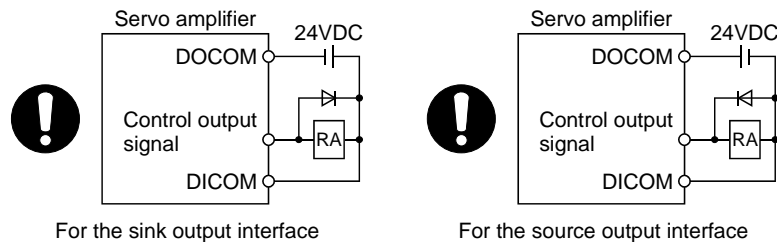
Environment	Conditions	
	Motion controller/Servo amplifier	Servomotor
Ambient temperature	According to each instruction manual.	0°C to +40°C (With no freezing) (32°F to +104°F)
Ambient humidity	According to each instruction manual.	80% RH or less (With no dew condensation)
Storage temperature	According to each instruction manual.	-20°C to +65°C (-4°F to +149°F)
Atmosphere	Indoors (where not subject to direct sunlight). No corrosive gases, flammable gases, oil mist or dust must exist	
Altitude	1000m (3280.84ft.) or less above sea level	
Vibration	According to each instruction manual	

- When coupling with the synchronous encoder or servomotor shaft end, do not apply impact such as by hitting with a hammer. Doing so may lead to detector damage.
- Do not apply a load larger than the tolerable load onto the synchronous encoder and servomotor shaft. Doing so may lead to shaft breakage.
- When not using the module for a long time, disconnect the power line from the Motion controller or servo amplifier.
- Place the Motion controller and servo amplifier in static electricity preventing vinyl bags and store.
- When storing for a long time, please contact with our sales representative.
Also, execute a trial operation.

(4) Wiring

⚠ CAUTION

- Correctly and securely wire the wires. Reconfirm the connections for mistakes and the terminal screws for tightness after wiring. Failing to do so may lead to run away of the servomotor.
- After wiring, install the protective covers such as the terminal covers to the original positions.
- Do not install a phase advancing capacitor, surge absorber or radio noise filter (option FR-BIF) on the output side of the servo amplifier.
- Correctly connect the output side (terminal U, V, W) and ground. Incorrect connections will lead the servomotor to operate abnormally.
- Do not connect a commercial power supply to the servomotor, as this may lead to trouble.
- Do not mistake the direction of the surge absorbing diode installed on the DC relay for the control signal output of brake signals, etc. Incorrect installation may lead to signals not being output when trouble occurs or the protective functions not functioning.



- Do not connect or disconnect the connection cables between each unit, the encoder cable or PLC expansion cable while the power is ON.
- Securely tighten the cable connector fixing screws and fixing mechanisms. Insufficient fixing may lead to the cables coming off during operation.
- Do not bundle the power line or cables.

(5) Trial operation and adjustment

⚠ CAUTION

- Confirm and adjust the program and each parameter before operation. Unpredictable movements may occur depending on the machine.
- Extreme adjustments and changes may lead to unstable operation, so never make them.
- When using the absolute position system function, on starting up, and when the Motion controller or absolute value motor has been replaced, always perform a home position return.
- Before starting test operation, set the parameter speed limit value to the slowest value, and make sure that operation can be stopped immediately by the forced stop, etc. if a hazardous state occurs.

(6) Usage methods

⚠ CAUTION

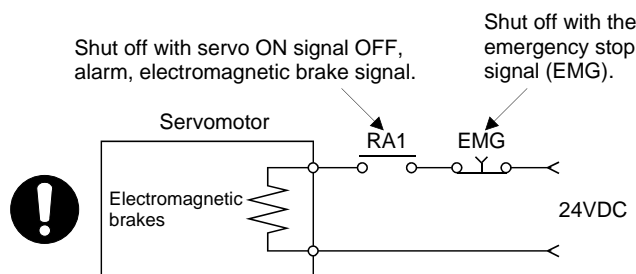
- Immediately turn OFF the power if smoke, abnormal sounds or odors are emitted from the Motion controller, servo amplifier or servomotor.
- Always execute a test operation before starting actual operations after the program or parameters have been changed or after maintenance and inspection.
- Do not attempt to disassemble and repair the units excluding a qualified technician whom our company recognized.
- Do not make any modifications to the unit.
- Keep the effect or electromagnetic obstacles to a minimum by installing a noise filter or by using wire shields, etc. Electromagnetic obstacles may affect the electronic devices used near the Motion controller or servo amplifier.
- When using the CE Mark-compliant equipment, refer to the User's manual for the Motion controllers and refer to the corresponding EMC guideline information for the servo amplifiers, inverters and other equipment.
- Use the units with the following conditions.

Item	Conditions
Input power	According to each instruction manual.
Input frequency	According to each instruction manual.
Tolerable momentary power failure	According to each instruction manual.

(7) Corrective actions for errors

⚠ CAUTION

- If an error occurs in the self diagnosis of the Motion controller or servo amplifier, confirm the check details according to the instruction manual, and restore the operation.
- If a dangerous state is predicted in case of a power failure or product failure, use a servomotor with electromagnetic brakes or install a brake mechanism externally.
- Use a double circuit construction so that the electromagnetic brake operation circuit can be operated by emergency stop signals set externally.



- If an error occurs, remove the cause, secure the safety and then resume operation after alarm release.
- The unit may suddenly resume operation after a power failure is restored, so do not go near the machine. (Design the machine so that personal safety can be ensured even if the machine restarts suddenly.)

(8) Maintenance, inspection and part replacement

CAUTION

- Perform the daily and periodic inspections according to the instruction manual.
- Perform maintenance and inspection after backing up the program and parameters for the Motion controller and servo amplifier.
- Do not place fingers or hands in the clearance when opening or closing any opening.
- Periodically replace consumable parts such as batteries according to the instruction manual.
- Do not touch the lead sections such as ICs or the connector contacts.
- Before touching the module, always touch grounded metal, etc. to discharge static electricity from human body. Failure to do so may cause the module to fail or malfunction.
- Do not directly touch the module's conductive parts and electronic components.
Touching them could cause an operation failure or give damage to the module.
- Do not place the Motion controller or servo amplifier on metal that may cause a power leakage or wood, plastic or vinyl that may cause static electricity buildup.
- Do not perform a megger test (insulation resistance measurement) during inspection.
- When replacing the Motion controller or servo amplifier, always set the new module settings correctly.
- When the Motion controller or absolute value motor has been replaced, carry out a home position return operation using one of the following methods, otherwise position displacement could occur.
 - 1) After writing the servo data to the Motion controller using programming software, switch on the power again, then perform a home position return operation.
 - 2) Using the backup function of the programming software, load the data backed up before replacement.
- After maintenance and inspections are completed, confirm that the position detection of the absolute position detector function is correct.
- Do not drop or impact the battery installed to the module.
Doing so may damage the battery, causing battery liquid to leak in the battery. Do not use the dropped or impacted battery, but dispose of it.
- Do not short circuit, charge, overheat, incinerate or disassemble the batteries.
- The electrolytic capacitor will generate gas during a fault, so do not place your face near the Motion controller or servo amplifier.
- The electrolytic capacitor and fan will deteriorate. Periodically replace these to prevent secondary damage from faults. Replacements can be made by our sales representative.
- Lock the control panel and prevent access to those who are not certified to handle or install electric equipment.
- Do not burn or break a module and servo amplifier. Doing so may cause a toxic gas.

(9) About processing of waste

When you discard Motion controller, servo amplifier, a battery (primary battery) and other option articles, please follow the law of each country (area).

 CAUTION

- This product is not designed or manufactured to be used in equipment or systems in situations that can affect or endanger human life.
- When considering this product for operation in special applications such as machinery or systems used in passenger transportation, medical, aerospace, atomic power, electric power, or submarine repeating applications, please contact your nearest Mitsubishi sales representative.
- Although this product was manufactured under conditions of strict quality control, you are strongly advised to install safety devices to forestall serious accidents when it is used in facilities where a breakdown in the product is likely to cause a serious accident.

(10) General cautions

- All drawings provided in the instruction manual show the state with the covers and safety partitions removed to explain detailed sections. When operating the product, always return the covers and partitions to the designated positions, and operate according to the instruction manual.

REVISIONS

The manual number is given on the bottom left of the back cover.

Print Date	Manual Number	Revision
Jan.,2008	IB(NA)-0300142-A	First edition
Jul.,2008	IB(NA)-0300142-B	[Correction] SAFETY PRECAUTIONS, ABOUT MANUALS, OVERVIEW, OPERATING ENVIRONMENT, SYSTEM CONFIGURATION, SETTING THE SSC INTERFACE BOARD, COMMUNICATION DRIVER INSTALLATION PROCEDURE, TROUBLESHOOTING, WARRANTY
Jan.,2009	IB(NA)-0300142-C	[Correction] SAFETY PRECAUTIONS, ABOUT MANUALS, OVERVIEW, OPERATING ENVIRONMENT, SYSTEM CONFIGURATION, PRECAUTIONS, TROUBLESHOOTING, APPENDICES, WARRANTY
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Apr.,2012	IB(NA)-0300142-H	[Correction] ABOUT MANUALS, OVERVIEW, OPERATING ENVIRONMENT, SYSTEM CONFIGURATION, APPENDICES
May.,2012	IB(NA)-0300142-J	[Correction] SAFETY PRECAUTIONS, APPENDICES, WARRANTY

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ABOUT MANUALS

The following manuals are related to this product.

Referring to this list, please request the necessary manuals.

Related Manuals

Motion controller

Manual Name	Manual Number (Model Code)
MELSOFT MT Works2 Installation Instructions This document explains how to install and uninstall MT Developer2.	—
Q173D(S)CPU/Q172D(S)CPU Motion controller User's Manual This manual explains specifications of the Motion CPU modules, Q172DLX Servo external signal interface module, Q172DEX Synchronous encoder interface module, Q173DPX Manual pulse generator interface module, Power supply modules, Servo amplifiers, SSCNET cables and Synchronous encoder, and the maintenance/inspection for the system, trouble shooting and others.	IB-0300133 (1XB927)
Q170MCP Motion controller User's Manual This manual explains specifications of the Q170MCP Motion controller, Q172DLX Servo external signal interface module, Q173DPX Manual pulse generator interface module, Servo amplifiers, SSCNETIII cables, and the maintenance/inspection for the system, trouble shooting and others.	IB-0300156 (1XB941)
Q173D(S)CPU/Q172D(S)CPU Motion controller Programming Manual (COMMON) This manual explains the Multiple CPU system configuration, performance specifications, common parameters, auxiliary/applied functions, error lists and others.	IB-0300134 (1XB928)
Q173D(S)CPU/Q172D(S)CPU Motion controller (SV13/SV22) Programming Manual (Motion SFC) This manual explains the functions, programming, debugging, error lists for Motion SFC and others.	IB-0300135 (1XB929)
Q173D(S)CPU/Q172D(S)CPU Motion controller (SV13/SV22) Programming Manual (REAL MODE) This manual explains the servo parameters, positioning instructions, device lists, error lists and others.	IB-0300136 (1XB930)
Q173D(S)CPU/Q172D(S)CPU Motion controller (SV22) Programming Manual (VIRTUAL MODE) This manual explains the dedicated instructions to use the synchronous control by virtual main shaft, mechanical system program create mechanical module, servo parameters, positioning instructions, device lists, error lists and others.	IB-0300137 (1XB931)
Q173D(S)CPU/Q172D(S)CPU Motion controller Programming Manual (Safety Observation) This manual explains the details, safety parameters, safety sequence program instructions, device lists and error lists and others for safety observation function by Motion controller.	IB-0300183 (1XB945)
Motion controller Setup Guidance (MT Developer2 Version1) This manual explains the items related to the setup of the Motion controller programming software MT Developer2.	IB-0300142 (—)

Manual Name	Manual Number (Model Code)
<p>Q173HCPU/Q172HCPU Motion controller User's Manual</p> <p>This manual explains specifications of the Motion CPU modules, Q172LX Servo external signal interface module, Q172EX Serial absolute synchronous encoder interface module, Q173PX Manual pulse generator interface module, Teaching units, Power supply modules, Servo amplifiers, SSCNETIII cables, synchronous encoder cables and others.</p>	<p>IB-0300110 (1XB910)</p>
<p>Q173HCPU/Q172HCPU Motion controller Programming Manual (COMMON)</p> <p>This manual explains the Multiple CPU system configuration, performance specifications, common parameters, auxiliary/applied functions and others.</p>	<p>IB-0300111 (1XB911)</p>
<p>Q173HCPU/Q172HCPU Motion controller (SV13/SV22) Programming Manual (Motion SFC)</p> <p>This manual explains the functions, programming, debugging, error codes and others of the Motion SFC.</p>	<p>IB-0300112 (1XB912)</p>
<p>Q173HCPU/Q172HCPU Motion controller (SV13/SV22) Programming Manual (REAL MODE)</p> <p>This manual explains the servo parameters, positioning instructions, device list, error list and others.</p>	<p>IB-0300113 (1XB913)</p>
<p>Q173HCPU/Q172HCPU Motion controller (SV22) Programming Manual (VIRTUAL MODE)</p> <p>This manual explains the dedicated instructions use to the synchronous control by virtual main shaft, mechanical system program create mechanical module.</p> <p>This manual explains the servo parameters, positioning instructions, device list, error list and others.</p>	<p>IB-0300114 (1XB914)</p>
<p>Q173HCPU/Q172HCPU Motion controller (SV43) Programming Manual</p> <p>This manual explains the dedicated instructions to execute the positioning control by Motion program of EIA language (G-code), the servo parameters, positioning instructions, device list, error list and others.</p>	<p>IB-0300115 (1XB915)</p>
<p>Q173CPU(N)/Q172CPU(N) Motion controller User's Manual</p> <p>This manual explains specifications of the Motion CPU modules, Q172LX Servo external signal interface module, Q172EX Serial absolute synchronous encoder interface module, Q173PX Manual pulse generator interface module, Teaching units, Power supply modules, Servo amplifiers, SSCNET cables, synchronous encoder cables and others.</p>	<p>IB-0300040 (1XB780)</p>
<p>Q173CPU(N)/Q172CPU(N) Motion controller (SV13/SV22) Programming Manual (Motion SFC)</p> <p>This manual explains the Multiple CPU system configuration, performance specifications, functions, programming, error codes and others of the Motion SFC.</p>	<p>IB-0300042 (1XB781)</p>
<p>Q173CPU(N)/Q172CPU(N) Motion controller (SV13/SV22) Programming Manual (REAL MODE)</p> <p>This manual explains the servo parameters, positioning instructions, device list, error list and others.</p>	<p>IB-0300043 (1XB782)</p>

Manual Name	Manual Number (Model Code)
<p>Q173CPU(N)/Q172CPU(N) Motion controller (SV22) Programming Manual (VIRTUAL MODE)</p> <p>This manual explains the dedicated instructions use to the synchronous control by virtual main shaft, mechanical system program create mechanical module.</p> <p>This manual explains the servo parameters, positioning instructions, device list, error list and others.</p>	<p>IB-0300044 (1XB783)</p>
<p>Q173CPU(N)/Q172CPU(N) Motion controller (SV43) Programming Manual</p> <p>This manual explains the dedicated instructions to execute the positioning control by Motion program of EIA language (G-code).</p> <p>This manual explains the Multiple CPU system configuration, performance specifications, functions, programming, debugging, servo parameters, positioning instructions device list and error list and others.</p>	<p>IB-0300070 (1XB784)</p>

1. OVERVIEW

1. OVERVIEW

1.1 Overview

This manual describes those items related to the setup of the Motion controller programming software MT Works2.

In this manual, the following abbreviations are used.

Generic term/Abbreviation	Description
MELSOFT MT Works2	Package product of the Motion controller engineering environment
MT Developer2	Programming software included in MELSOFT MT Works2
MR Configurator2	Servo support software included in MELSOFT MT Works2
MT Developer	Integrated start-up support software package for the Q series Motion controller SW6RNC-GSVE
SW6RNC-GSVE	Integrated start-up support software package for the Q series Motion controller MT Developer
SW3RNC-GSVE	Integrated start-up support software package for the A series Motion controller
SW6RN-SNETP	Communication system software package included in SW6RNC-GSVE
SW3RN-SNETP	Communication system software package included in SW3RNC-GSVE
MR Configurator	Servo support software package MRZJW3-SETUP221E
Motion CPU or Motion controller	Q173DSCPU/Q172DSCPU/ Q173DCPU/Q172DCPU/Q173DCPU-S1/Q172DCPU-S1/Q170MCP Q173HCPU/Q172HCPU/Q173HCPU-T/Q172HCPU-T/ Q173CPU/Q172CPU/Q173CPUN/Q172CPUN/Q173CPUN-T/Q172CPUN-T Motion CPU module
Q173D(S)CPU/Q172D(S)CPU/ Q170MCP	Q173DSCPU/Q172DSCPU/ Q173DCPU/Q172DCPU/Q173DCPU-S1/Q172DCPU-S1/Q170MCP Motion CPU module
Q173HCPU/Q172HCPU	Q173HCPU/Q172HCPU/Q173HCPU-T/Q172HCPU-T Motion CPU module
Q173CPU(N)/Q172CPU(N)	Q173CPU/Q172CPU/Q173CPUN/Q172CPUN/Q173CPUN-T/Q172CPUN-T Motion CPU module
Operating System software	General name for "SW□DNC-SV□□□, SW□RN-SV□□□"
SV13	Operating system software for conveyor assembly use: SW8DNC-SV13□□ /SW6RN-SV13□□
SV22	Operating system software for automatic machinery use: SW8DNC-SV22□□ /SW6RN-SV22□□
SV43	Operating system software for the peripheral of machine tools: SW7DNC-SV43□□ /SW5RN-SV43□□
SV54	Operating system software for the dedicated robot: SW5RN-SV54□□
SSCNET	High speed serial communication between the Motion CPU and servo amplifier
A10BD-PCF	A10BD-PCF SSC I/F board
A30CD-PCF	A30CD-PCF SSC I/F card

1. OVERVIEW

1.2 Features

MT Works2 is programming software for configuring and maintaining a system using the Motion controllers.

Offering the program design environment and maintenance environment, the software can be used for various applications in all the phases of configuring a Motion controller system (system design → program development → debugging → startup → operation and maintenance).

In addition, work efficiency is increased, by the expanded functions and improved operability, in all the system configuration phases.

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Ethernet is a trademark of Xerox Corporation.

Other company and product names herein are trademarks or registered trademarks of their respective owners.

2. OPERATING ENVIRONMENT

2. OPERATING ENVIRONMENT

2.1 Operating Environment

Item	Contents	
Personal computer main body	Personal computer	Windows [®] supported personal computer
	OS	Microsoft [®] Windows [®] 7 English version (64-bit /32-bit) Service Pack: Up to 1 (Enterprise, Ultimate, Professional, Home Premium, Starter) Microsoft [®] Windows Vista [®] English version (32-bit) Service Pack: Up to 2 (Enterprise, Ultimate, Business, Home Premium, Home Basic) Microsoft [®] Windows [®] XP English version (32-bit) Service Pack: 2, 3 (Professional, Home Edition) Microsoft [®] Windows [®] 2000 English version Service Pack:4 (Professional)
	CPU	Desktop PC: Intel [®] Celeron [®] Processor 2.8GHz or higher Laptop PC: Intel [®] Pentium [®] M Processor 1.7GHz or higher
	Required memory	1GB or more recommended (For 32-bit edition) 2GB or more recommended (For 64-bit edition)
	Video card	Video card supporting Microsoft [®] DirectX [®] 9.0c or higher
Available hard disk space	When installing: Available hard disk space 1GB or more When operating: Available virtual memory space 512MB or more	
Disk drive	3.5 inch (1.44MB) floppy disk drive ^(Note-1) CD-ROM supported disk drive	
Monitor	Resolution 1024 x 768 pixels or higher	
Communication interfaces	RS-232 port USB port Ethernet port SSC I/F card (A30CD-PCF) ^(Note-2) SSC I/F board (A10BD-PCF) ^(Note-2)	

(Note-1): Required when installing the operating system software from a floppy disk.

(Note-2): A30CD-PCF and A10BD-PCF do not support the 64-bit edition.

POINT

MR Configurator2 is also installed simultaneously.

For the details of the MR Configurator2, refer to the "MR Configurator2 SW1DNC-MRC2 INSTALLATION GUIDE".

CAUTION

- (1) The following functions cannot be used when the computer is running under Microsoft[®] Windows[®] XP, Microsoft[®] Windows Vista[®], Microsoft[®] Windows[®] 7. This product may not perform properly when these functions are used.
 - Activating the application with Windows[®] compatible mode.
 - Simplified user switch-over
 - Remote desktop
 - Large fonts (Detail settings of screen property)
 - DPI setting other than that of the normal size (Detail settings of screen property)
- (2) In Windows Vista[®] and Windows[®] 7, log in as a user having User authority or higher.
- (3) The following functions cannot be used when the computer is running under Windows[®] 7.
 - Windows XP Mode
 - Windows Touch

2. OPERATING ENVIRONMENT

2.2 Use Conditions

(1) Supported Motion CPU/Motion controller OS list

Motion CPU module	Operating system software			
	SV13	SV22	SV43	SV54
Q173DSCPU/ Q172DSCPU	○	○	×	
Q173DCPU(-S1)/ Q172DCPU(-S1)	○	○	○ 1.03D or later	
Q170MCPUCPU	○ 1.05F or later	○ 1.05F or later	×	
Q173HCPU(-T)/ Q172HCPU(-T)	○	○	○ 1.03D or later	○ 1.09K or later
Q173CPUN-T/ Q173CPU(N)/ Q172CPUN-T/ Q172CPU(N)	○	○	○ 1.03D or later	○ 1.09K or later

○ : Supported × : Unsupported

(Note): The A series Motion CPUs are not supported by MT Developer2.

(2) Coexistence with SW6RNC-GSVE and SW3RNC-GSVE

The Operation availability when MT Developer2 is used (coexisted) with other applications is shown in the table below. For the "Cannot be operated" start and use either application. Do not start and use both applications.

Application	Operation	MT Developer2		
		Edit	Communication (RS-232 and USB)	Communication (SSCNET)
SW6RNC-GSVE	Edit	○	○	○
	Communication (RS-232 and USB)	○	○ ^(Note-2)	× ^(Note-1)
	Communication (SSCNET)	○	○ ^(Note-2)	× ^(Note-1)
SW3RNC-GSVE	Edit	○	○	○
	Communication (RS-232)	○	× ^(Note-1)	× ^(Note-1)
	Communication (SSCNET)	○	× ^(Note-1)	× ^(Note-1)

○ : Can be operated × : Cannot be operated

(Note-1): Both one-way communication and two-way simultaneous communication cannot be operated.

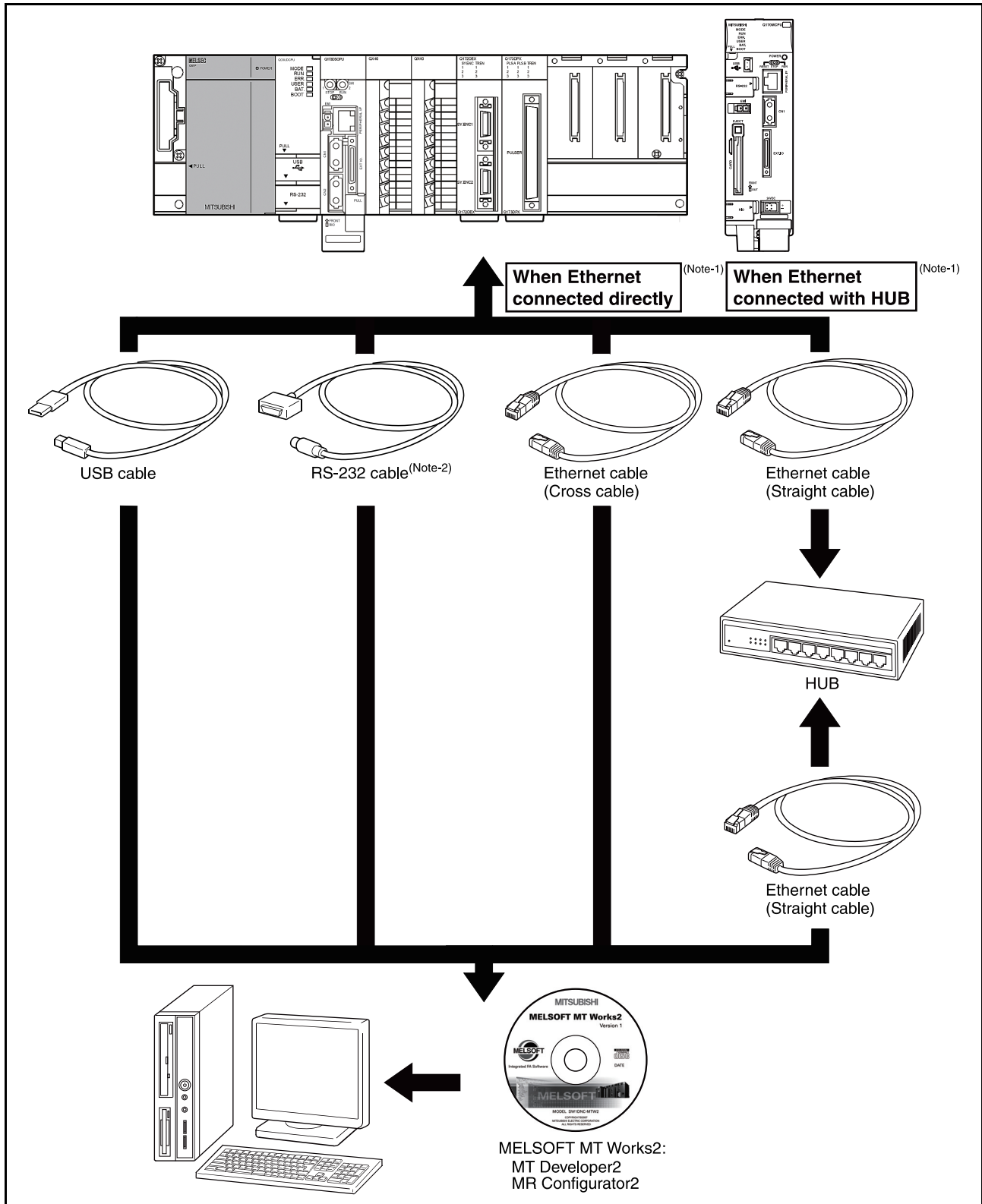
(Note-2): Simultaneous communication can be operated.

3. SYSTEM CONFIGURATION

3. SYSTEM CONFIGURATION

3.1 System Configuration

3.1.1 When using Q173D(S)CPU/Q172D(S)CPU/Q170MCP



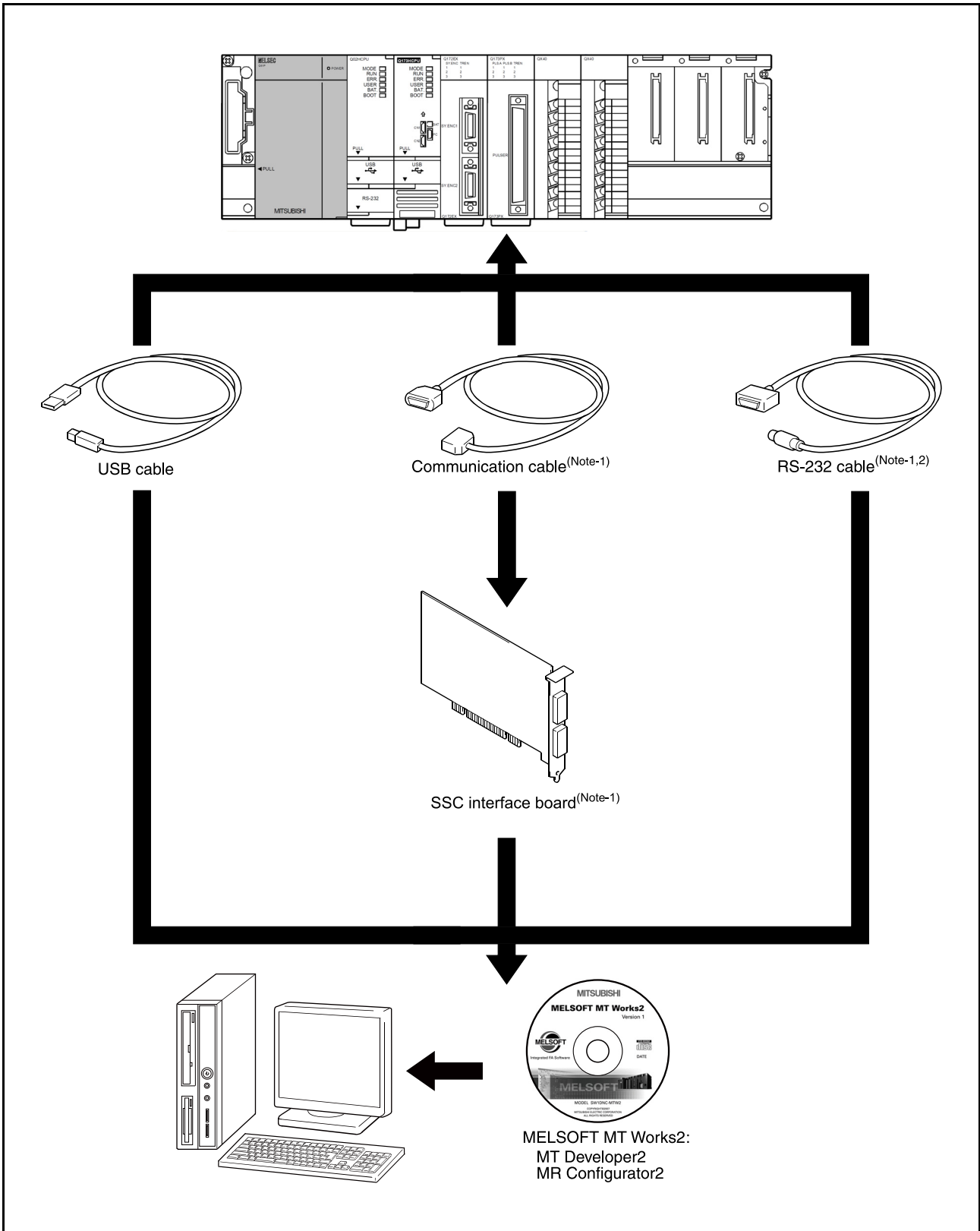
(Note-1): Q173DCPU/Q172DCPU is not available.

(Note-2): For details, refer to "3.2 Component List".

3. SYSTEM CONFIGURATION

3.1.2 When using Q173HCPU/Q172HCPU/Q173CPU(N)/Q172CPU(N)

(1) Precautions for using a desktop personal computer

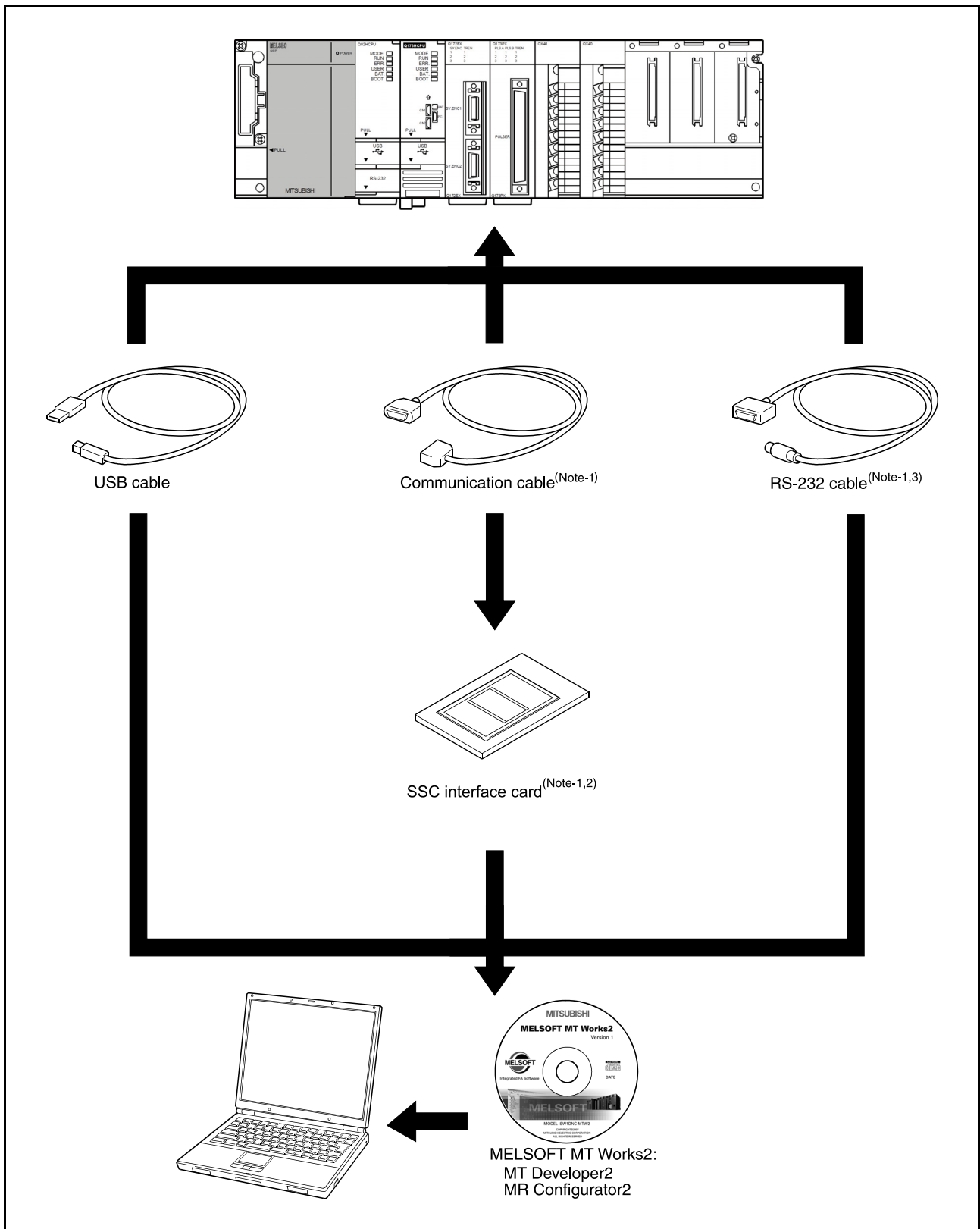


(Note-1): For details, refer to "3.2 Component List".

(Note-2): Q173HCPU/Q172HCPU is not available.

3. SYSTEM CONFIGURATION

(2) Precautions for using a laptop computer



(Note-1): For details, refer to "3.2 Component List".

(Note-2): We do not guarantee the proper operation of A30CD-PCF on all types of laptop personal computers.

(Note-3): Q173HCPU/Q172HCPU is not available.

3. SYSTEM CONFIGURATION

POINT	
	<p data-bbox="491 309 906 336"><When used in the USB/RS-232></p> <p data-bbox="491 338 1390 510">(1) If the USB cable is connected or disconnected or the multiple CPU system is reset (or turned off and on) frequently during communication of the Motion CPU, an unrecoverable communication error may occur. Disconnect MT Works2 from the line^(Note-1) whenever possible when disconnecting or connecting the USB cable or resetting or turning on or off the multiple CPU system. If a communication error is not removed, disconnect the USB cable completely and, after five seconds, connect it again. (Though an error may occur during the first communication session after this operation, the correct function is recovered at and after the second session.) However, a communication error may not be removed even after the above operation with some personal computer models. In this case, reset the personal computer.</p> <p data-bbox="491 728 1398 853">(2) A communication error may occur according to some combination of the model of the personal computers and the USB cable and so on. If this happens, repeat operation while referring to the displayed message.</p> <p data-bbox="491 855 1385 1010">(3) If the baud rate of the serial port of the personal computer (interface on the personal computer side) is changed for high speed communication, communication may be unsuccessful or communication retries may occur to result in slow communication, according to certain PC performance. If high speed communication is unsuccessful, decrease the baud rate.</p> <p data-bbox="491 1048 1347 1137">(4) USB cable</p> <ul data-bbox="544 1077 1347 1137" style="list-style-type: none">• The USB cable can be used with a USB driver.• If the USB cable is used, only one Motion CPU can be connected. <p data-bbox="544 1189 1382 1314">(Note-1): Disconnection from line (Offline state) State where there is no communication with the Motion CPU (Program or parameter reading/writing, monitoring and testing are made in the online state.)</p>

3. SYSTEM CONFIGURATION

POINT	
	<p data-bbox="486 309 858 336"><When used in the Ethernet></p> <p data-bbox="486 340 1300 367">(1) We do not guarantee the operation in the following connections.</p> <ul data-bbox="539 371 1093 499" style="list-style-type: none"><li data-bbox="539 371 1093 398">• Connection via the Internet (general public line)<li data-bbox="539 403 917 430">• Connection via a firewall device<li data-bbox="539 434 976 461">• Connection via the broadband router<li data-bbox="539 465 949 492">• Connection via the wireless LAN <p data-bbox="486 504 1385 593">(2) If the resume function, suspension setting, power-saving function or stand-by mode is set in the personal computer used for communication with the CPU, a communication error may occur.</p> <p data-bbox="539 598 1268 656">Do not use these functions at the personal computer used for communication with the CPU.</p> <p data-bbox="486 694 917 721">When used in the direct connection</p> <p data-bbox="486 725 1353 784">(1) Communication can be made only by selecting the direct connection (default) on the Transfer Setup screen of MT Works2.</p> <p data-bbox="539 788 1345 846">It is not necessary to set the IP address, IP address input format, or protocol.</p> <p data-bbox="486 884 965 911">When used in the connection with HUB</p> <p data-bbox="486 916 1273 974">(1) It is necessary to set the parameters using MT Works2 for the connection with HUB.</p> <ul data-bbox="539 978 1380 1106" style="list-style-type: none"><li data-bbox="539 978 1098 1005">• IP address: Set the IP address at the CPU side.<li data-bbox="539 1010 1380 1106">• Protocol: Select from TCP and UDP in accordance with the other device. Resetting or turning on again the CPU after writing the parameters to the CPU makes the set parameters valid. <p data-bbox="539 1111 1388 1169">If parameters are written with no IP address set, they must be written in the direct connection first.</p> <p data-bbox="486 1173 1369 1263">(2) Communication with the CPU with the IP address set can be made by setting the IP address/host name and protocol on the Transfer Setup screen of MT Works2 after performing the operations described in (1).</p> <ul data-bbox="539 1267 1385 1420" style="list-style-type: none"><li data-bbox="539 1267 1385 1357">• IP address/host name: Set the IP address or host name. (For the host name, use the name set with the hosts file of Windows.)<li data-bbox="539 1361 1332 1420">• Protocol: Select from TCP and UDP in accordance with the other device.

3. SYSTEM CONFIGURATION

POINT	
	<p><When used in the SSC I/F board and SSC I/F card ></p> <ol style="list-style-type: none">(1) The SSC I/F board and SSC I/F card cannot be used together.(2) Insert the SSC I/F card into the personal computer after installing MT Works2 and setting up the SSCNET communication drivers. (MT Works2 can be reinstalled with the SSC I/F card loaded.)(3) If the resume function, suspension setting, power-saving function or stand-by mode is set in the personal computer used for communication with the Motion CPU, a communication error may occur. Do not use these functions at the personal computer used for communication with the Motion CPU.(4) If the USB cable is connected or disconnected or the multiple CPU system is reset (or turned off and on) frequently during communication of the Motion CPU, an unrecoverable communication error may occur. Disconnect MT Works2 from the line^(Note-1) whenever possible when disconnecting or connecting the USB cable or resetting or turning on or off the multiple CPU system. If a communication error is not removed, disconnect the USB cable completely and, after five seconds, connect it again. (Though an error may occur during the first communication session after this operation, the correct function is recovered at and after the second session.) However, a communication error may not be removed even after the above operation with some personal computer models. In this case, reset the personal computer.(5) A communication error may occur according to some combination of the model of the personal computers and the USB cable and so on. If this happens, repeat operation while referring to the displayed message.(6) If the baud rate of the serial port of the personal computer (interface on the personal computer side) is changed for high speed communication, communication may be unsuccessful or communication retries may occur to result in slow communication, according to certain personal computer performance. If high speed communication is unsuccessful, decrease the baud rate.(7) USB cable<ul style="list-style-type: none">• The USB cable can be used with a USB driver.• If the USB cable is used, only one Motion CPU can be connected. <p>(Note-1): Disconnection from line (Offline state) State where there is no communication with the Motion CPU (Program or parameter reading/writing, monitoring and testing are made in the online state.)</p>

3. SYSTEM CONFIGURATION

3.2 Component List

The operations of the following devices have been checked by Mitsubishi.

Name	Type	Remarks
SSC interface board	A10BD-PCF	PCI bus loading type, 2 channels/board • The 64-bit edition of Windows® 7 is not supported. • PCI bus built-in type. • Up to 4 boards on one Windows® 7/Vista/XP/2000 operating PC (Can be connected to up to 8 motion controllers)
SSC interface card	A30CD-PCF	PCMCIA type II, 1 channel/card • The 64-bit edition of Windows® 7 is not supported. • Up to 1 card on one personal computer.
Communication cable (Note-1)	Q170BDCBL3M	For A10BD-PCF 3m (9.84ft.)
	Q170BDCBL5M	For A10BD-PCF 5m (16.40ft.)
	Q170BDCBL10M	For A10BD-PCF 10m (32.81ft.)
	Q170CDCBL3M	For A30CD-PCF 3m (9.84ft.)
	Q170CDCBL5M	For A30CD-PCF 5m (16.40ft.)
Q170CDCBL10M	For A30CD-PCF 10m (32.81ft.)	
RS-232 cable	QC30R2	Mitsubishi Electric Corporation

(Note-1):Max. overall communication cable extension distance 30m.

The following shows the specifications of Ethernet cable.

Part name	Connection type	Cable type	Ethernet standard	Model name
Ethernet cable (Note-1)	Connection with HUB	Straight cable	10BASE-T	Compliant with Ethernet standards, category 5 or higher. • Shielded twisted pair cable (STP cable)
			100BASE-TX	
	Direct connection	Crossover cable	10BASE-T	
			100BASE-TX	

(Note-1): The following shows the selection criterion of cable.

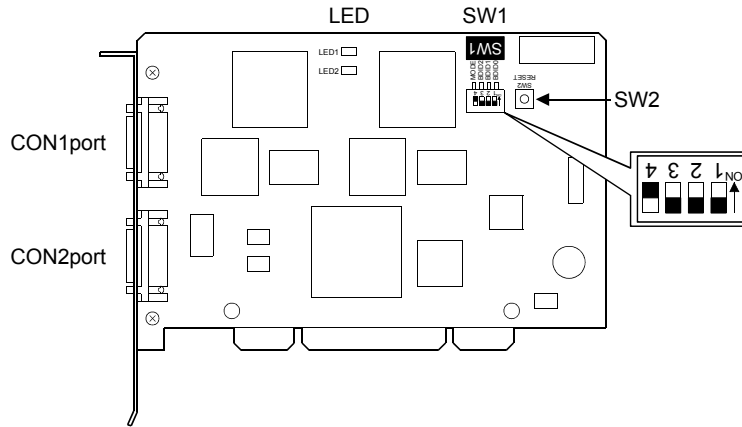
- Category: 5 or higher.
- Diameter of lead: AWG26 or higher.
- Shield: Copper braid shield and drain wire.
Copper braid shield and aluminium layered type shield.

4. SETTING THE SSC INTERFACE BOARD

4. SETTING THE SSC INTERFACE BOARD

4.1 Setting the A10BD-PCF Interface Board

This section explains the switch setting of the A10BD-PCF interface board.
(A10BD-PCF does not support the 64-bit edition of Windows® 7.)



(1) Board ID setting switch (SW1)

When there are two or more PCI type A10BD-PCF's, set the ID numbers to identify the respective A10BD-PCF's.

SW1	Definition	Default	Remarks
	1 Board ID bit 0 (BDID0)	OFF	Set the ID number. For details, refer to the following Table 4.1.
	2 Board ID bit 1 (BDID1)	OFF	
	3 Board ID bit 2 (BDID2)	OFF	
	4 Controller setting (MODE)	ON	Always set to ON.

1) Board ID bit choices 0 to 2 (SW1-1 to 3) and ID numbers

Table 4.1 ID Numbers

Switch Numbers			Board ID
1 BDID0	2 BDID1	3 BDID2	
OFF	OFF	OFF	0
ON	OFF	OFF	1
OFF	ON	OFF	2
ON	ON	OFF	3

(2) Reset switch (SW2)

Turn on the reset switch (SW2) to reset the A10BD-PCF.

Do not press the reset switch during communication since doing so will shut off communication.

If normal communication cannot be made, press the reset switch to reset the A10BD-PCF and then start communication.

4. SETTING THE SSC INTERFACE BOARD

(3) LED display

Indicates the status of the A10BD-PCF.

- When the A10BD-PCF is normal: LED Flickers
- When the A10BD-PCF is abnormal: LED remains constant On or Off

LED1 For CON1 port

LED2 For CON2 port

(4) Allotment between Board IDs and SSCNET CH No.

Board ID	CON1 port	CON2 port
0	CH.0	CH.1
1	CH.2	CH.3
2	CH.4	CH.5
3	CH.6	CH.7

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

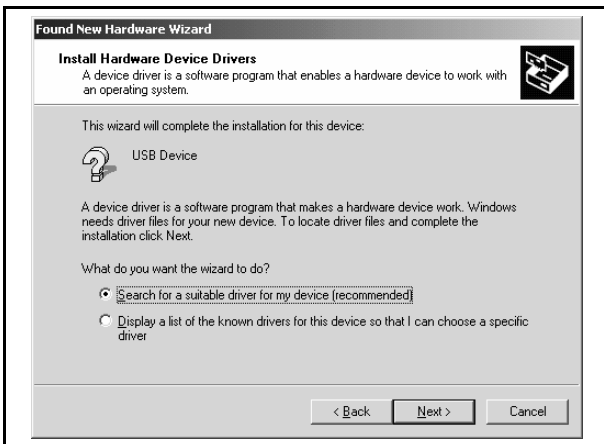
5.1 USB Driver Installation Procedure

5.1.1 Precautions for using USB communication in Windows® 2000

When Windows® 2000 is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.
The following indicates a USB driver installation procedure.



- 1) The screen shown on the left appears when you connect the personal computer and Motion CPU with a USB cable.
Click [Next >].



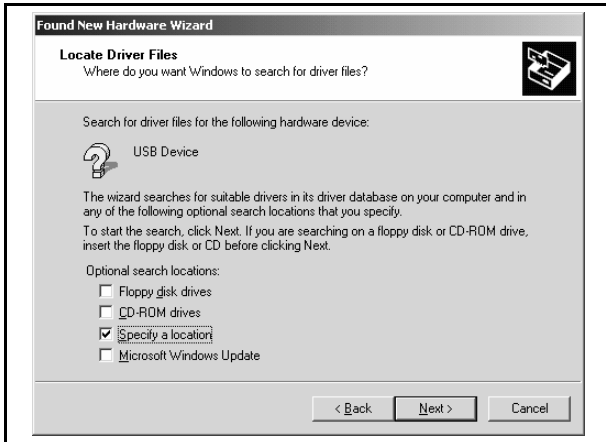
- 2) Choose Search for a suitable driver for my device [recommended]" and click [Next >].



To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

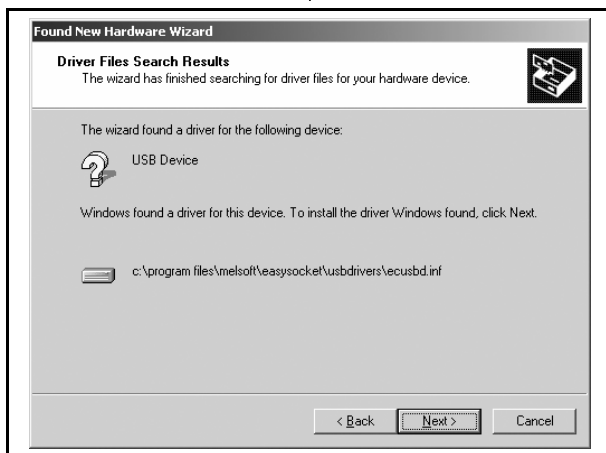
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3) Check "Specify a location" and click [Next >].



4) When the left screen appears, set the product installation destination "Easysocket\USBdrivers" and click [OK].
The screen shown on the left shows an example of setting C:\Program Files\MELSOFT\Easysocket\USBDrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product. ("Program Files\MELSOFT\Easysocket\" or "[Folder where this product is installed]\Easysocket\USBDrivers")



5) The screen on the left appears. Click [Next >].



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5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



- 6) The screen on the left appears to indicate completion of installation. Click [Finish] to terminate installation.

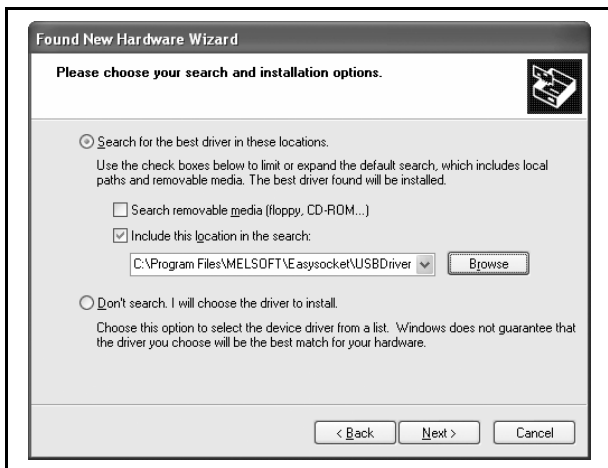
5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.1.2 Precautions for using USB communication in Windows® XP

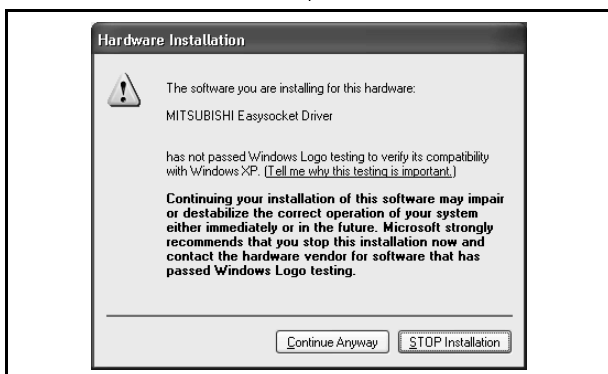
When Windows® XP is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.
The following indicates a USB driver installation procedure.



- 1) The screen shown on the left appears when you connect the personal computer and Motion CPU with a USB cable.
Choose "Install from a list or specific location [Advanced]" and click [Next >].



- 2) When the screen on the left appears, choose "Include this location in the search".
Check "Include this location in the search" and set "Easysocket\USBdrivers" of the folder where MT Developer2 was installed.
After setting, click [Next >].
The screen shown on the left shows an example of setting C:\Program Files\MELSOFT\Easysocket\USBdrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product. ("Program Files\MELSOFT\Easysocket\USBDrivers" or "[Folder where this product is installed]\Easysocket\USBDrivers")



- 3) When the screen on the left appears, click [Continue Anyway].

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5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

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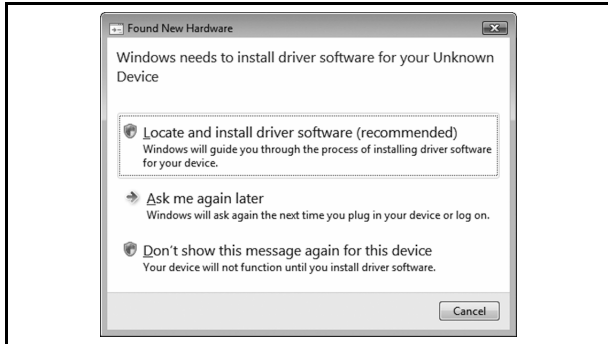


- 4) The screen on the left appears to indicate completion of installation. Click [Finish] to terminate installation.

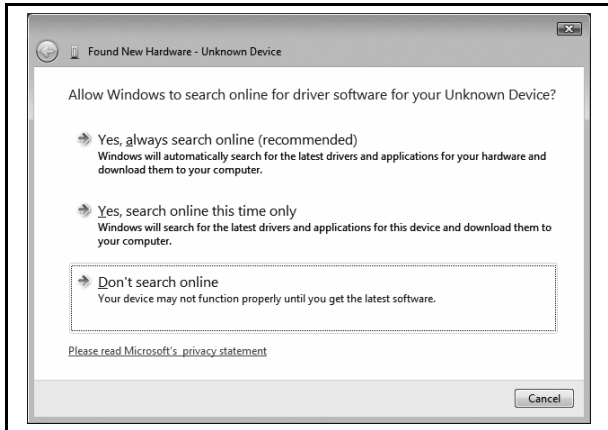
5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.1.3 Precautions for using USB communication in Windows Vista®

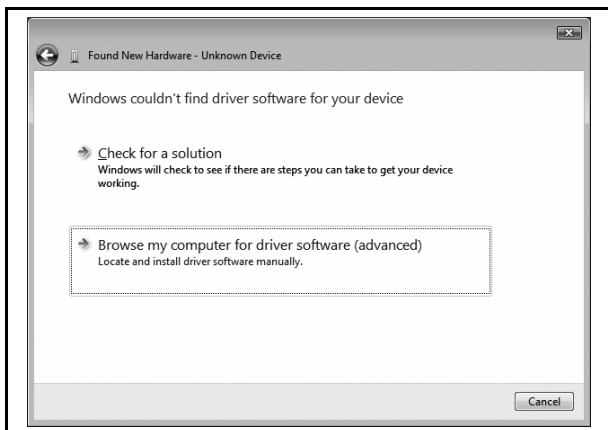
When Windows Vista® is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.
The following indicates a USB driver installation procedure.



- 1) The screen shown on the left appears when you connect the personal computer and Motion CPU with a USB cable.
Click [Locate and install driver software (recommended)].



- 2) The screen on the left appears.
Click [Don't search online].



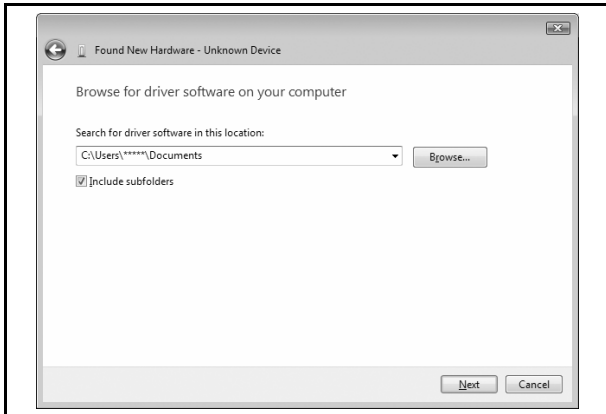
- 3) The screen on the left appears.
Click [Browse my computer for driver software (advanced)].



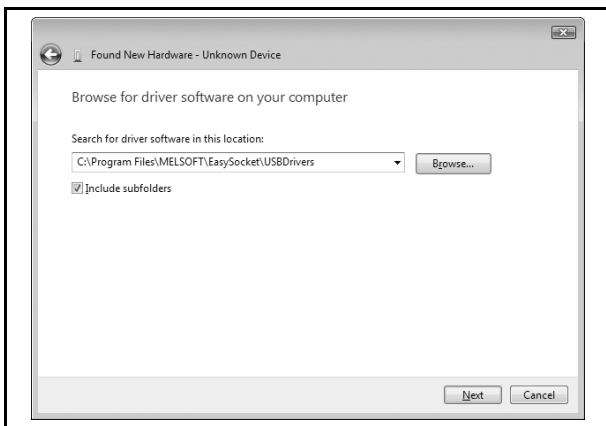
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5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



- 4) The screen on the left appears. Click [Browse...].



- 5) When the screen on the left appears, set "Easysocket\USBdrivers" of the folder where MT Developer2 was installed. After setting, click [Next].
The screen shown on the left shows an example of setting C:\Program Files\MELSOFT\Easysocket\USBdrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product. ("Program Files\MELSOFT\Easysocket\USBdrivers " or "[Folder where this product is installed]\Easysocket\USBdrivers")



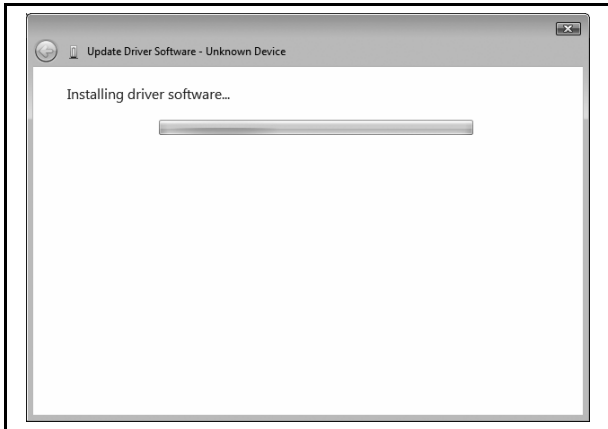
- 6) The screen on the left appears. Click [Install this driver software anyway].



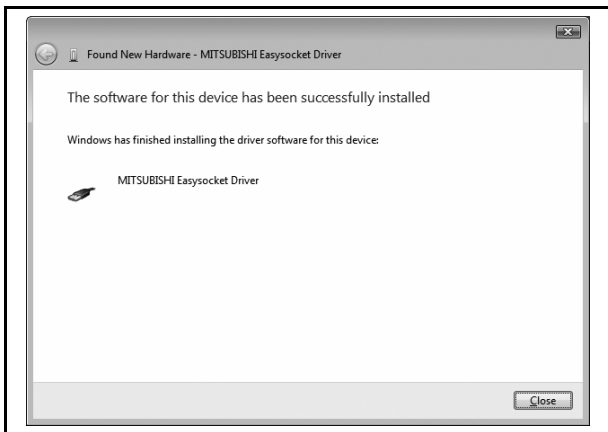
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5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



7) The screen on the left appears and the driver installation starts.



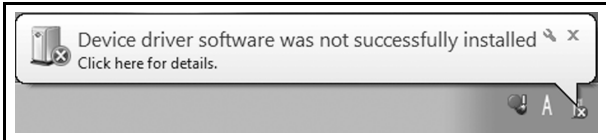
8) The screen on the left appears to indicate completion of installation. Click [Close] to terminate installation.

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

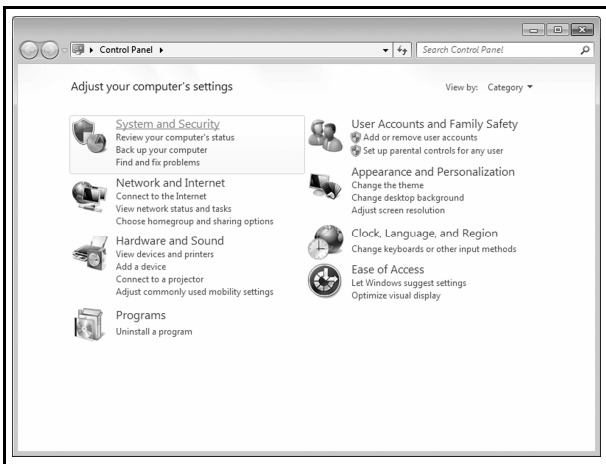
5.1.4 Precautions for using USB communication in Windows® 7

When Windows® 7 is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.

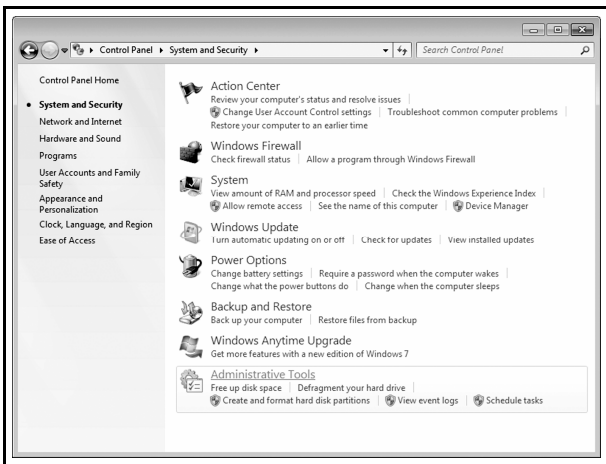
The following indicates a USB driver installation procedure.



- 1) The screen shown on the left appears when you connect the personal computer and Motion CPU with a USB cable.



- 2) Select "System and Security" from the Control Panel.
To display the Control Panel, select [Start] - [Control Panel].

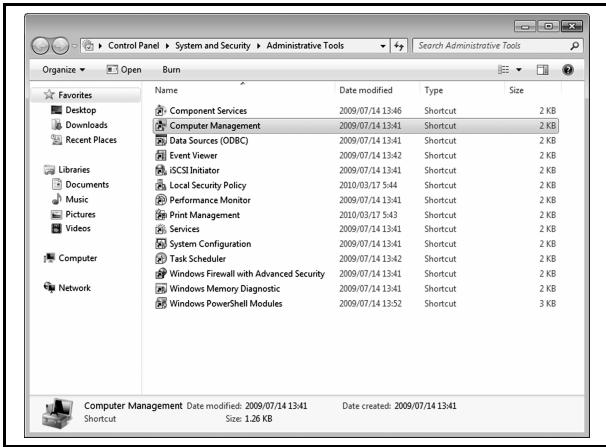


- 3) The screen on the left appears.
Select "Administrative Tools".

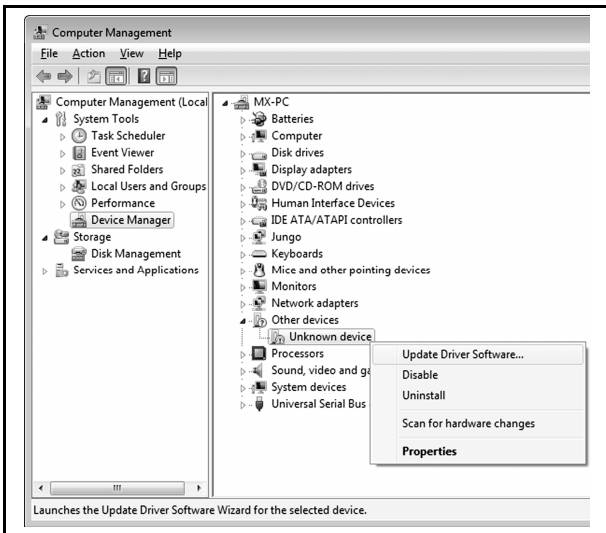
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



- 4) The screen on the left appears. Select "Computer Management" and double-click it.



- 5) The screen on the left appears when selecting Device Manager in System Tools and right-clicking "Unknown device". Select "Update Driver Software...".

Remarks

If multiple "Unknown devices" exist therefore cannot be specified, right-click "Unknown device" and select "Properties".

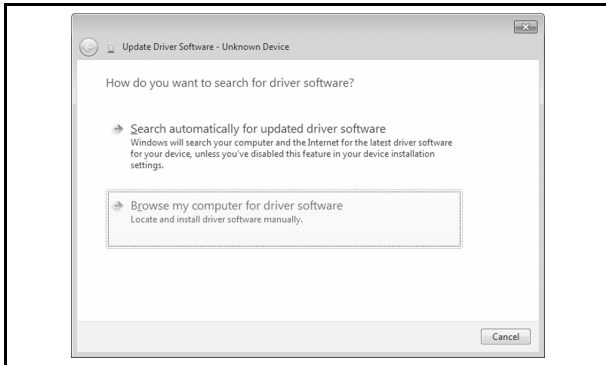
The "Unknown device", whose "Hardware ID" is "USB\VID_06D3&PID_1800" on the "Details" tab of the properties screen, is the update target.



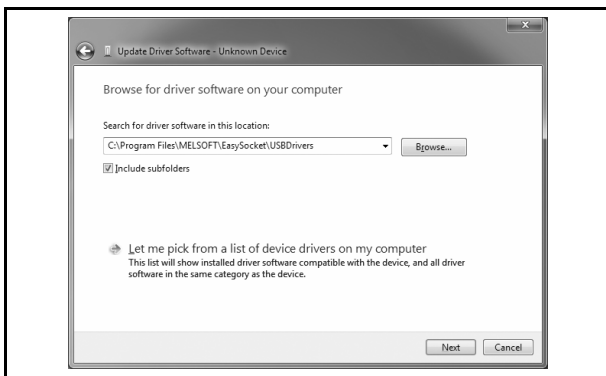
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



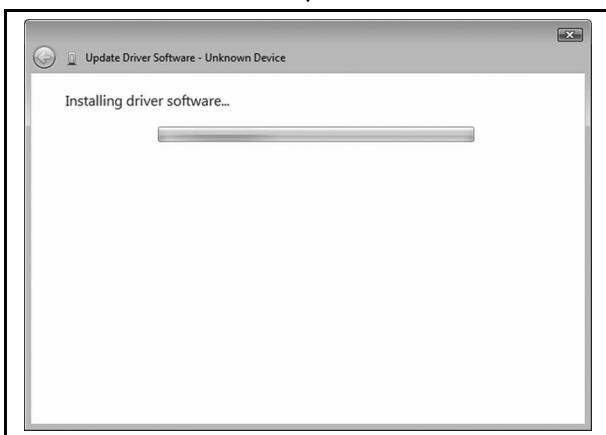
- 6) The screen on the left appears.
Click [Browse my computer for driver software].



- 7) The screen on the left appears.
Set "Easysocket\USBDrivers" of the folder where MT Developer2 was installed and then click [Next].
The left screen is an example when C:\Program Files\MELSOFT\Easysocket\USBDrivers is specified.
If multiple MELSOFT products have been installed, specify the installation location of the first installed product.
For 64-bit edition: C:\Program Files (x86)\MELSOFT\Easysocket\USBDrivers



- 8) The screen on the left appears.
Click [Install].



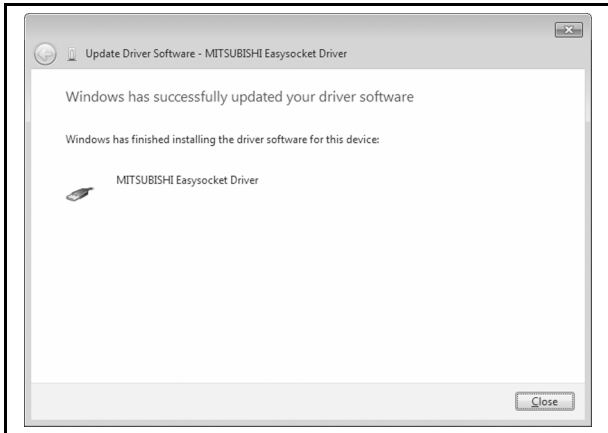
- 9) The screen on the left appears and the driver installation starts.



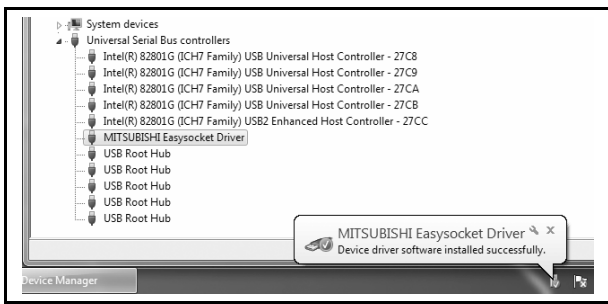
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



10) The screen on the left appears. Click [Close].



11) "MITSUBISHI Easysocket Driver" is registered under "Universal Serial Bus controllers". This completes driver installation.

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.2 Updating the USB Driver

In Windows Vista® or Windows® 7, if updating MELSOFT to be compatible after installing an incompatible MELSOFT, updating the USB driver is required.

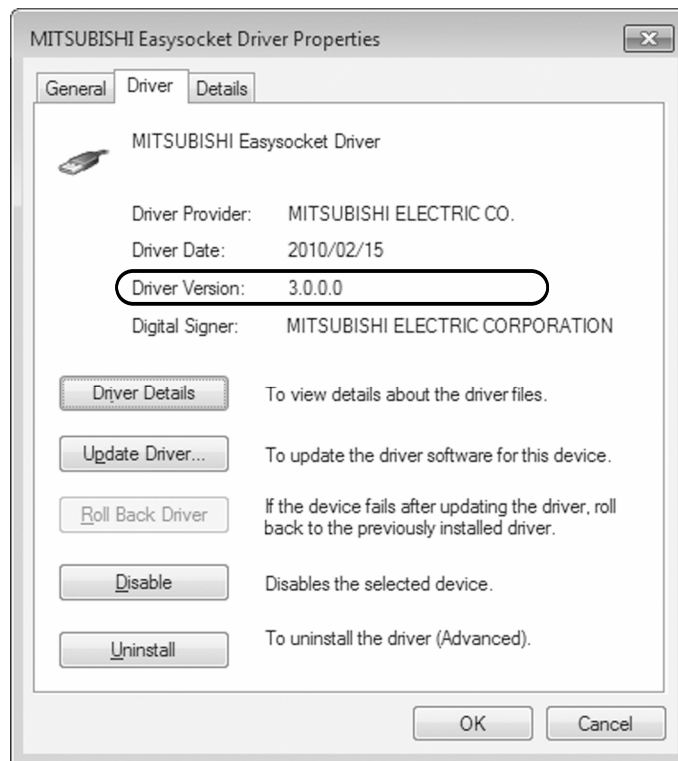
(1) Procedure for updating the USB driver for programmable controller connection

(a) Checking method

Start the Device Manager while the personal computer is connected to the motion CPU with USB, right-click "MITSUBISHI Easysocket Driver", and select "Properties".

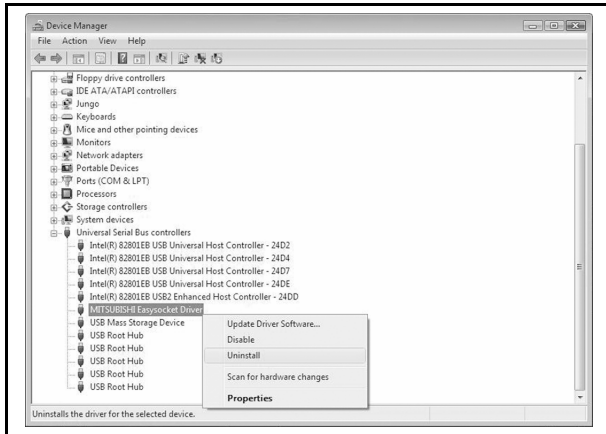
Update is necessary if the version shown in the "Driver" tab of the properties screen is the following.

- Windows Vista® is used : "2.0.0.0" or earlier
- Windows® 7 is used : "3.0.0.0" or earlier



5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

(b) Procedure for update



- 1) The screen on the left appears when the personal computer and the motion CPU are connected with a USB cable.
- 2) Start the Windows Device Manager, right-click "MITSUBISHI Easysocket Driver" as shown on the left, and select "Uninstall".



- 3) The warning dialog box as shown on the left appears. Check the "Delete the driver software for this device" check box, and click [OK]



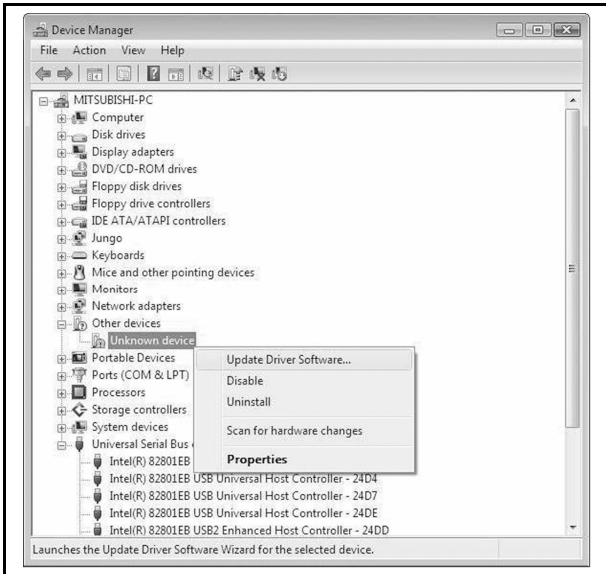
- 4) Disconnect the USB cable and reconnect it to the same USB port after 5 seconds.
<Windows Vista® is used>
The screen on the left appears for a while. Click [Ask me again later].

<Windows® 7 is used>
The screen on the left appears for a while.

To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

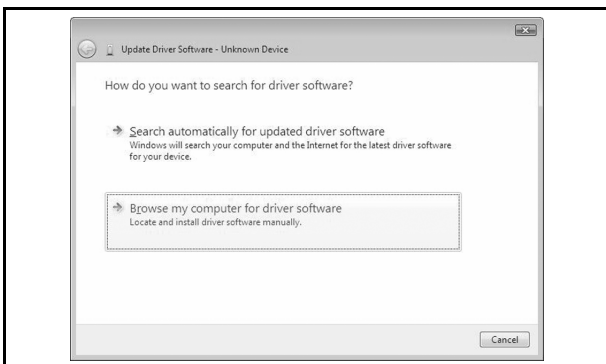
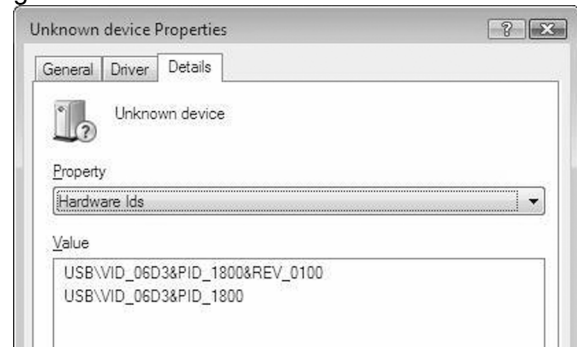
From preceding page



- 5) The screen on the left appears when selecting Device Manager in System Tools and right-clicking "Unknown device". Select "Update Driver Software...".

Remarks

If multiple "Unknown devices" exist therefore cannot be specified, right-click "Unknown device" and select "Properties". The "Unknown device", whose "Hardware ID" is "USB\VID_06D3&PID_1800" on the "Details" tab of the properties screen, is the update target.



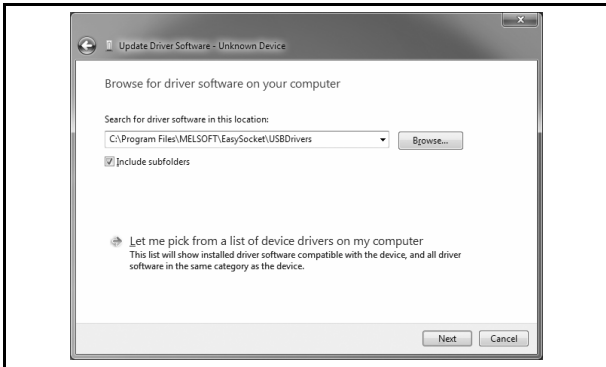
- 6) The screen on the left appears. Select "Browse my computer for driver software".



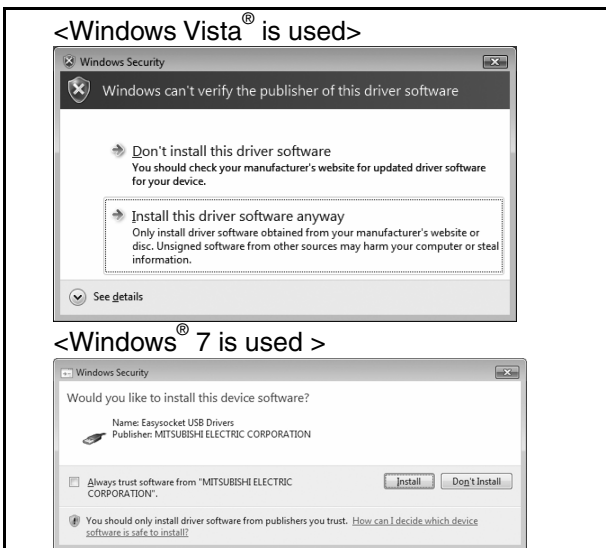
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page

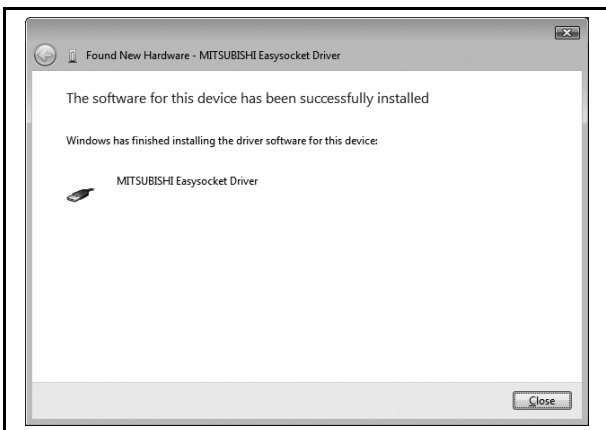


- 7) The screen on the left appears. Set "Easysocket\USBDrivers" of the folder where MT Developer2 was installed and then click [Next]. The left screen is an example when C:\Program Files\MELSOFT\Easysocket\USBDrivers is set. If multiple MELSOFT products have been installed, refer to the installation location of the first installed product.



- 8) The screen on the left appears. <Windows Vista® is used> Click [Install this driver software anyway].

<Windows® 7 is used>
Click [Install].



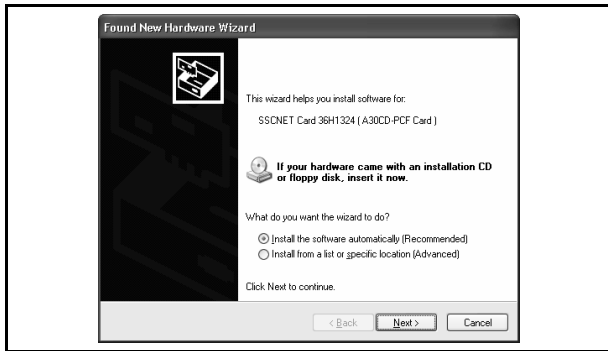
- 9) The screen on the left appears. Click [Close]. The update is complete.

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

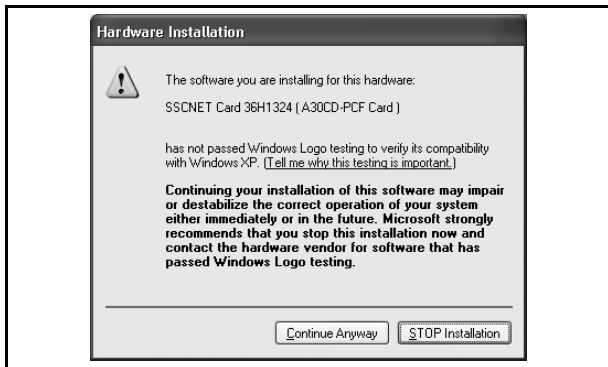
5.3 SSCNET Driver Installation Procedure

5.3.1 Precautions for using SSCNET communication in Windows® XP

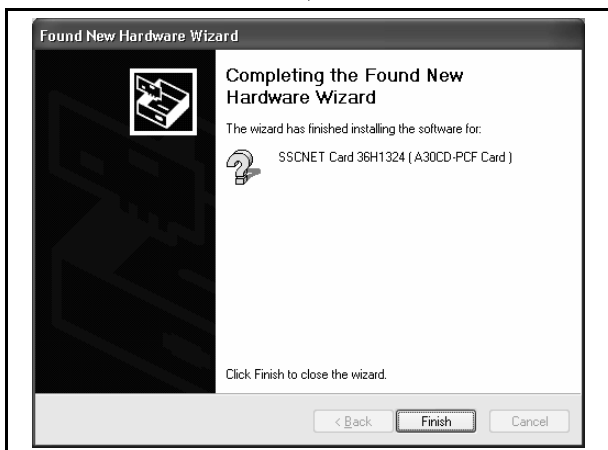
When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows® XP, the SSCNET communication driver must be installed. The following indicates the operation procedure to install the A30CD-PCF driver. (For the A10BD-PCF, also perform similar operation to install the driver.)



- 1) Insert the A30CD-PCF card into the personal computer.
The screen on the left will soon appear. Choose "Install the software automatically [Recommended]" and click [Next >].



- 2) The screen on the left appears. Click [Continue Anyway].



- 3) The screen on the left appears. Click [Finish].
This completes driver installation.

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.3.2 Precautions for using SSCNET communication in Windows Vista®

When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows Vista®, the SSCNET communication driver must be installed. The following indicates the operation procedure to install the A10BD-PCF driver. (For the A30CD-PCF, also perform similar operation to install the driver.)



- 1) Insert the A10BD-PCF board into the personal computer.
The screen on the left appears.
Click "Locate and install driver software (recommended)".



- 2) The screen on the left appears.
Click "Install this driver software anyway".

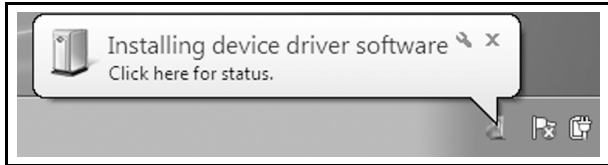


- 3) The screen on the left appears.
The "SSCNET PCI Board (A10BD-PCF)" name window appears on the indicator.
This completes driver installation.

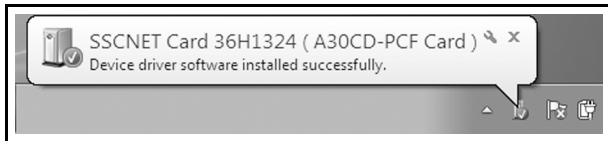
5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.3.3 Precautions for using SSCNET communication in Windows® 7

When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows® 7, the SSCNET communication driver must be installed. The following indicates the operation procedure to install the A30BD-PCF driver. (For the A10CD-PCF, also perform similar operation to install the driver.)



- 1) Insert the A30BD-PCF board into the personal computer.
The screen on the left appears.



- 2) The screen on the left appears.
This completes driver installation.

(Note-1): A30CD-PCF and A10BD-PCF does not support the 64-bit edition.

6. PRECAUTION

6. PRECAUTION

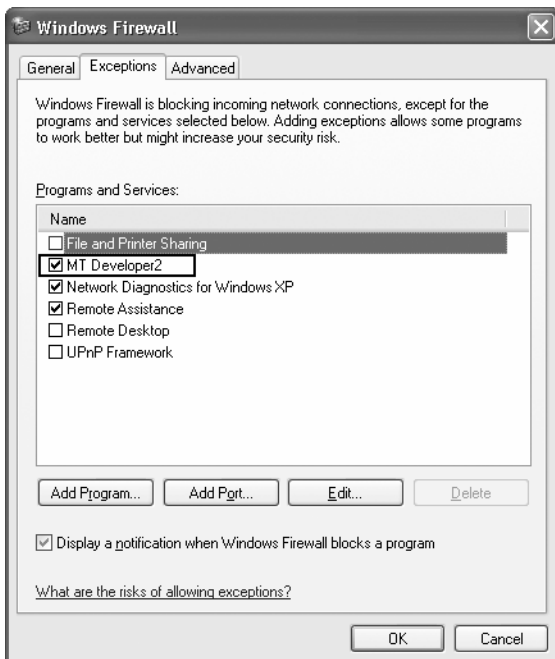
6.1 Uninstallation of SW6RN-SNETP or SW3RN-SNETP

Do not uninstall "SSCNET Communication Driver" when uninstalling the SW6RN-SNETP (Ver.00B or later) or SW3RN-SNETP (Ver.00G or later) in a personal computer where multiple MT Developer2 and SW6RNC-GSVE (MT Developer) or SW3RNC-GSVE are installed.
If the SSCNET communication driver is uninstalled, reinstall MT Developer2.

6.2 Finding Ethernet Built-in Type CPU on the Network



When "Find Ethernet Built-in Type CPU on the Network" is executed at the CPU side I/F CPU module detail setting in the transfer setup, the "Windows Security Alert" dialog box may appear.
If this dialog box appears, select "Unblock".



When selecting "Block", operate as follows.
Mark the checkbox of "MT Developer2" in the "Programs and Services" list on the "exceptions" tag of Windows Firewall.

The image of the dialog box differs depending on Windows you use.
For details of the Windows Firewall settings, refer to Windows Help.


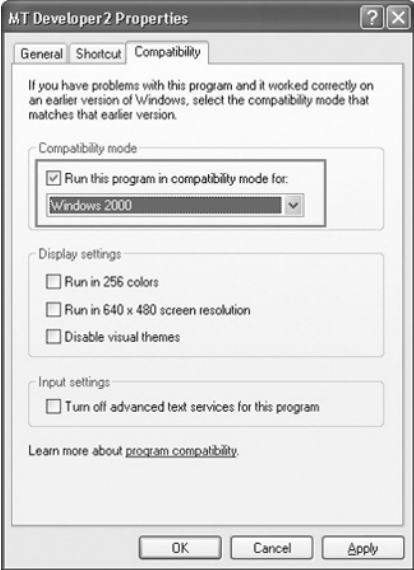
7. TROUBLESHOOTING

7. TROUBLESHOOTING

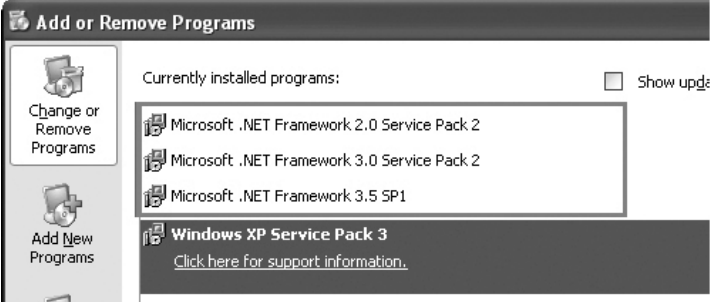
7.1 During USB Communication, Communication Error Occurred and Communication Is Not Recovered from Error

No.	Phenomenon	Cause and remedy
1	<p>A communication error occurred during USB communication with the Motion CPU, and communication is not recovered from the error.</p>	<p>Any of operations 1) to 3) was performed during USB communication with the Motion CPU.</p> <ol style="list-style-type: none"> 1) The USB cable was disconnected and connected during communication with the Motion CPU or connected after communication started. 2) The Motion CPU was reset. 3) The Motion CPU was cycled on/off. <p>Do not perform any of operations 1) to 3) during USB communication. Doing so may cause a communication error, from which communication cannot be recovered.</p> <p>If any of operations of 1) to 3) is to be performed, it is recommended to put MT Works2 in an offline status^(Note-1).</p> <p>If communication is not recovered from the error, disconnect the USB cable once, and after 5 or more seconds have elapsed, reconnect it. (The communication error may occur at the first time after the above operation is performed, but communication will return to normal at the second time and later.)</p> <p>Depending on the personal computer model, however, communication may not be recovered from the error if the above operation is performed. In that case, reset the personal computer.</p> <p>(Note-1): Offline status: Status in which communication is not made with the Motion CPU (In an online status, program/parameter read/write, monitoring, test or like is in execution.)</p>

7.2 Project Cannot Be Saved or Read

No.	Phenomenon	Cause and remedy
1	<p>A project cannot be saved or read. (Example) The following message may appear.</p>  <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>	<p><Cause 1)> The item "Execute this program in compatibility mode" is selected in the application properties.</p> <p><Remedy 1)> Remove the check mark from "Execute this program in compatibility mode".</p> 

7. TROUBLESHOOTING

No.	Phenomenon	Cause and remedy
	<p>From preceding page</p> <p style="text-align: center;">↓</p>	<p><Cause 2> A part of the Microsoft .NET Framework may be corrupted.</p> <p><Remedy 2> Uninstall the Microsoft .NET Framework from the personal computer, download the latest Microsoft .NET Framework from the web site of Microsoft and install it. Uninstall all the programs displayed with the name "Microsoft .NET Framework". When multiple programs are required to uninstall, uninstall them in descending order.</p> <p>(Example) The following shows the order of uninstalling of the figure below.</p>  <p>1) Microsoft .NET Framework 3.5 SP1 2) Microsoft .NET Framework 3.0 Service Pack 2 3) Microsoft .NET Framework 2.0 Service Pack 2</p>

(Note-1): For Windows[®] 7 and Windows Vista[®], .Net Framework may not be displayed in "Uninstall or change a program" since it is installed by default.

(Windows[®] 7: .Net Framework 3.51, Windows Vista[®]: .Net Framework 3.0)

(Note-2): The following shows the latest version in November, 2009.


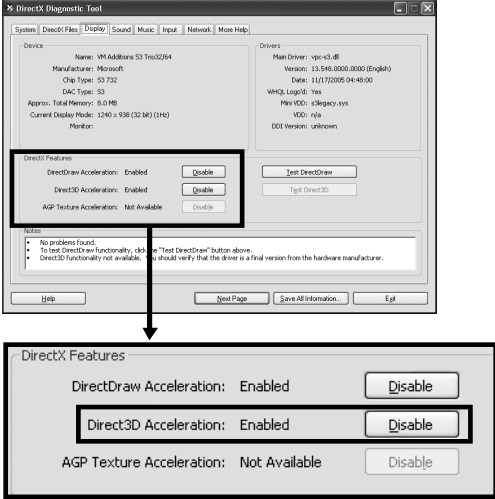
Microsoft .NET Framework 3.5 SP1

7.3 Sampling Omission May Occur on the Digital Oscilloscope

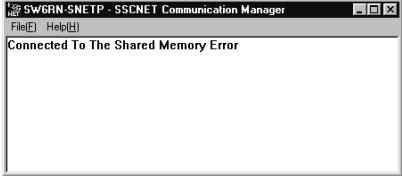

No.	Phenomenon	Cause and remedy
1	On the digital oscilloscope, a sampling omission may occur during sampling of data by SSCNET communication (PC real-time read method).	If other operation is performed during sampling, a sampling failure may occur.

7. TROUBLESHOOTING

7.4 Digital Oscilloscope Cannot Be Started


No.	Phenomenon	Cause and remedy
1	<p>When the digital oscilloscope is started, the following message appears and the digital oscilloscope cannot be started.</p>  <p>The screenshot shows a dialog box titled "Digital Oscilloscope" with a warning icon. The text inside reads: "Digital Oscilloscope start err. [DSRP.]: DirectX initialization failed. Exit Digital Oscilloscope. [RMDV.]: Check Whether the function of DirectX is enabled in the using PC by DirectX diagnosis tool. Refer to [Starting and Exiting the Digital Oscilloscope] in MT Developer2 help for details." There is an "OK" button at the bottom.</p>	<p>Check whether DirectX[®] can be operated by the DirectX Diagnostic Tool. Choose the [Display] tab in the DirectX[®] Diagnostic Tool. Check whether "DirectDraw Acceleration" of the "DirectX Features" is "Enabled".</p>  <p>The top screenshot shows the "DirectX Diagnostic Tool" window with the "Display" tab selected. The "DirectX Features" section is highlighted, showing "DirectDraw Acceleration: Enabled", "Direct3D Acceleration: Enabled", and "AGP Texture Acceleration: Not Available". The "Direct3D Acceleration" setting is specifically highlighted with a box. Below it, a "Test DirectX" button is visible. The bottom screenshot shows a close-up of the "DirectX Features" settings, with "Direct3D Acceleration: Enabled" highlighted by a box.</p>

7.5 The SSCNET Communication Manager of SW6RN-SNETP Displays "Shared Memory Connection Error"


No.	Phenomenon	Cause and remedy
1	<p>The SSCNET communication manager of SW6RN-SNETP displays "Connected To The Shared Memory Error" and SW6RN-SNETP is not started properly.</p>  <p>The screenshot shows a window titled "SW6RN-SNETP - SSCNET Communication Manager" with a message box that says "Connected To The Shared Memory Error".</p> <p>If SSCNET communication is started in this status, communication error "51" occurs.</p>  <p>The screenshot shows an "Install" dialog box with a warning icon. The text reads: "A communication error occurred.[Err. Code=51] [DSRP.]: The SSCNET communication task is not yet started. [RMDV.]: Execute again after making \"SSCNET communication task.start\" on the SSCNET communication system software (SW6RN-SNETP)." There is an "OK" button at the bottom.</p>	<p>With MT Developer2 and SW6RN-SNETP started simultaneously, operation to start SW6RN-SNETP or to execute communication may cause a phenomenon shown on the left.</p> <p>To start SSCNET communication by SW6RN-SNETP, exit from MT Developer2 and SW6RN-SNETP once and restart only SW6RN-SNETP.</p> <p>To execute SSCNET communication, make communication with only either one of MT Developer2 or SW6RN-SNETP started.</p>

7. TROUBLESHOOTING

7.6 During Communication, "Can not allocate Share memory" Error Occurs


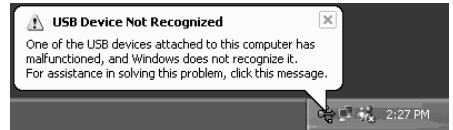
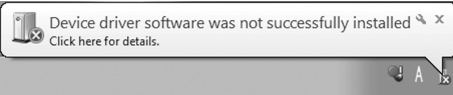

No.	Phenomenon	Cause and remedy
1	During communication, "Can not allocate Share memory" error occurs. 	The following operations may cause the phenomenon given on the left. <ul style="list-style-type: none"> • When the communication is forcibly shut down, during communication, by the CPU power turning off or an unplugged communication cable. • The communication is made at MT Developer2 side while SW3RN-SNETP is started (including the online status). When this error occurs, exit from all MELSOFT applications once, and start MT Developer2 again.

7.7 When SW3RN-SNETP Is Started, "Not enough memory" Error Occurs

No.	Phenomenon	Cause and remedy
1	When SW3RN-SNETP is started, "Not enough memory" error occurs. 	With MT Developer2 and SW3RN-SNETP started simultaneously, operation to start SW3RN-SNETP or to execute communication may cause a phenomenon shown on the left. To start SSCNET communication by SW3RN-SNETP, exit from MT Developer2 and SW6RN-SNETP once and restart only SW3RN-SNETP. To execute SSCNET communication, make communication with only either one of MT Developer2 or SW3RN-SNETP started.

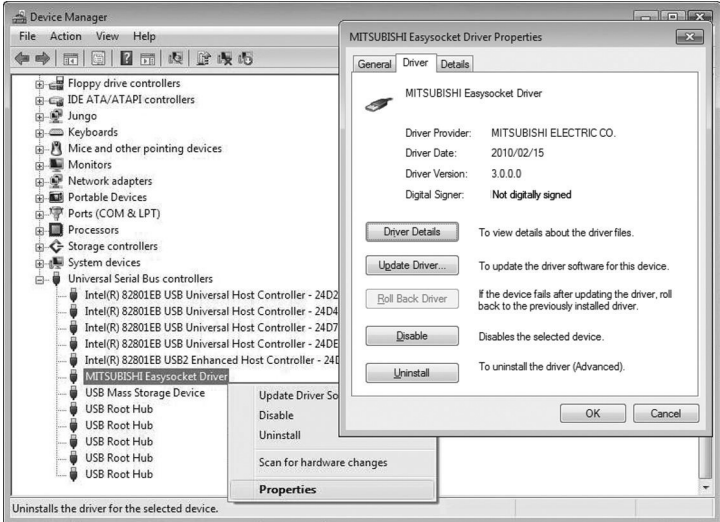
7. TROUBLESHOOTING

7.8 During USB Communication, the USB Driver Cannot Be Installed or Communication Error Occurs

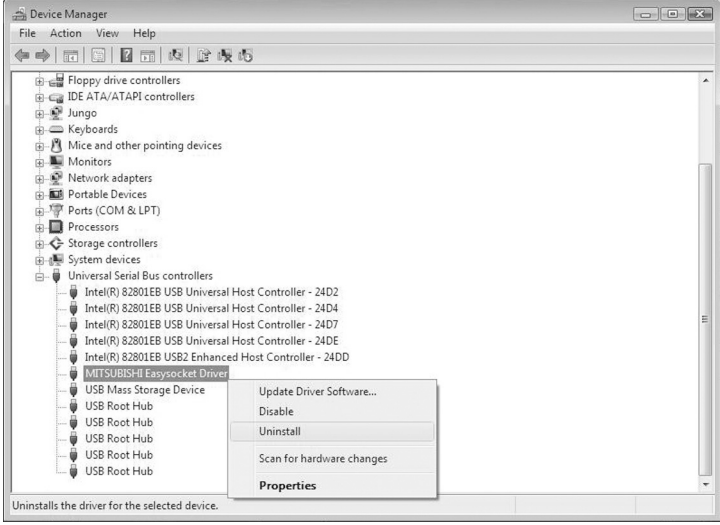

No.	Phenomenon	Cause and remedy
1	<p>The following error occurs and the USB driver cannot be installed when USB communication is performed with the Motion CPU.</p> <p><Windows® 2000 is used></p>  <p><Windows® XP/Windows Vista® is used></p>  <p><Windows® 7 is used></p> 	<p>When USB communication is performed in normal mode with a Motion CPU on which the Operating system software has not been installed, the USB driver cannot be installed, and the phenomenon given on the left occurs.</p> <p>If the Operating system software has not been installed, change the Motion CPU to installation mode, and perform USB communication again. The USB driver will be installed.</p> <p>However, when USB communication is performed for the first time on Windows® 2000, Windows® XP, Windows Vista®, or Windows® 7, it is necessary to perform settings and install the USB driver. Refer to the following for the setting procedure.</p> <ul style="list-style-type: none"> • For Windows® 2000: "5.1.1 Precautions for using USB communication in Windows® 2000" • For Windows® XP : "5.1.2 Precautions for using USB communication in Windows® XP" • For Windows Vista® : "5.1.3 Precautions for using USB communication in Windows Vista®" • For Windows® 7 : "5.1.4 Precautions for using USB communication in Windows® 7" <p>(Note-1): Refer to the user manual of each Motion CPU regarding how to deal with the Motion CPU.</p>
2	<p>The following communication error occurs and communication with the CPU cannot be done when USB communication is performed with the Motion CPU. (Error Code = 0x1808502)</p> 	

7. TROUBLESHOOTING


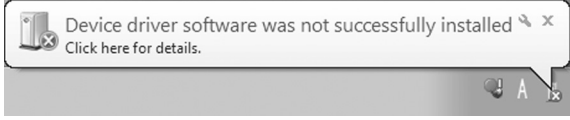
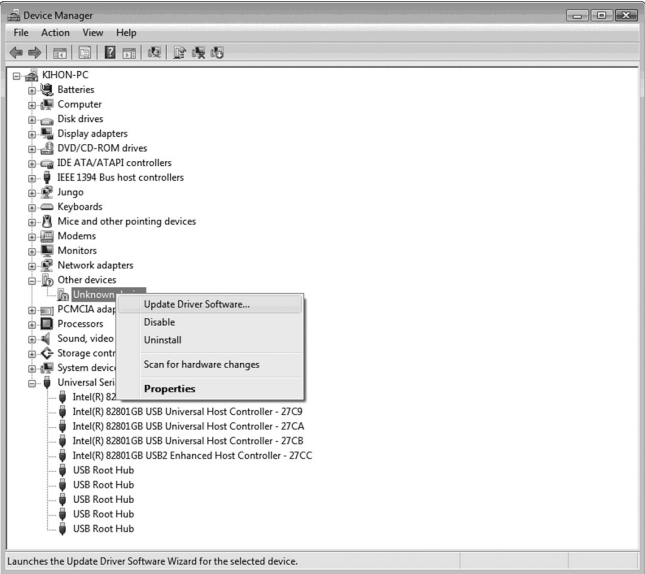
7.9 USB communication fails with Windows Vista®/Windows® 7

No.	Phenomenon	Cause and remedy
1	<p>USB communication fails with Windows Vista® / Windows® 7</p>	<p>Check the version of the installed USB communication driver.</p> <p><Occurrence cause 1> The occurs when installing Windows Vista®/Windows® 7 incompatible MELSOFT and connecting to the Motion CPU with USB before installing Windows Vista®/Windows® 7 compatible MELSOFT.</p> <p><Occurrence cause 2> The situation may occur when installing MELSOFT and connecting the personal computer to the Motion CPU with USB on the personal computer where multiple Windows are installed.</p> <p>(Example) Drive C: Windows® XP (MELSOFT installed) Drive D: Windows Vista®/Windows® 7</p> <p>The communication error occurs when MELSOFT is installed on the Windows Vista®/Windows® 7 environment of drive D and the USB communication is tried.</p> <p>In this case, the driver for Windows® XP of drive C may have been used.</p> <p><Checking method> Start the Windows Device Manager while the personal computer is connected to the Motion CPU with USB, right-click "MITSUBISHI Easysocket Driver", and select [Properties]. If "Driver Version" is "2.0.0.0 or earlier when Windows Vista® is used", or "3.0.0.0 or earlier when Windows® 7 is used" on the "Driver" tab of the properties screen, the setting applies to the occurrence cause and a communication failure occurs.</p>  <p>Update the USB driver with Windows Vista® / Windows® 7-compatible MELSOFT installed following the recovery method shown below.</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>

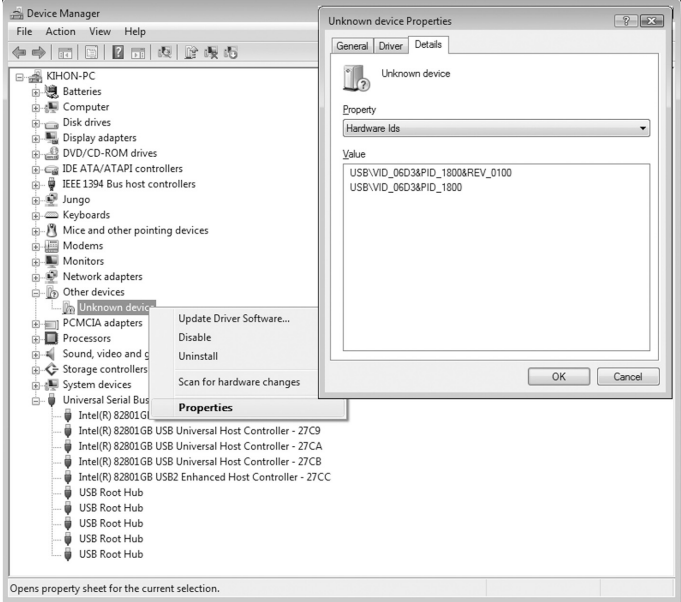
7. TROUBLESHOOTING

No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <p>(1) Connect the Motion CPU and the personal computer with a USB cable.</p> <p>(2) Start the Device Manager of the OS, right-click "MITSUBISHI Easysocket Driver" as shown below, and choose "Uninstall". Update the USB driver referring to the following items.</p>  <p>(3) The following warning dialog box appears. Check the "Delete the driver software for this device" check box, and select [OK].</p>  <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>

7. TROUBLESHOOTING

No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <p>(4) Disconnect the USB cable and reconnect it to the same USB port after 5 seconds.</p> <p>(5) The following OS confirmation dialog box appears. <Windows Vista® is used> Click [Ask me again later].</p>  <p><Windows® 7 is used> The following balloon appears for a little while.</p>  <p>(6) The following screen appears when right-clicking "Unknown device" in the Device Manager of System Tools. Select "Update Driver Software...". < Example: Windows® 7 is used ></p>  <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>

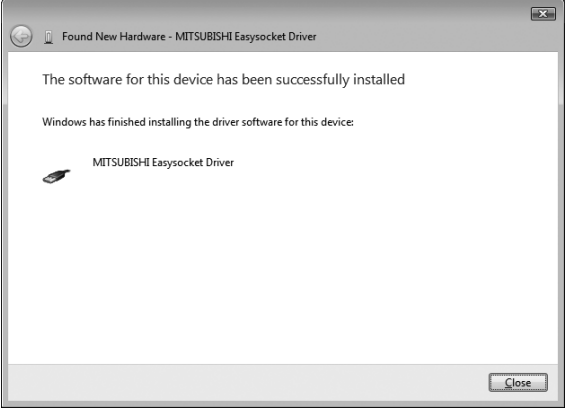
7. TROUBLESHOOTING

No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <div data-bbox="707 353 1422 1205" style="border: 1px solid black; padding: 5px;"> <p>Remarks</p> <p>If multiple "unknown devices" exist therefore cannot be specified, right-click "Unknown device" as shown below and select [Properties].</p> <p>The "Unknown device", whose "Hardware Ids" is "USB\VID_06D3&PID_1800" on the "Details" tab of the properties screen, is the update target.</p>  </div> <p>(7) The following OS confirmation dialog box appears.</p> <p>Click [Browse my computer for driver software].</p> <div data-bbox="759 1312 1370 1753" style="border: 1px solid gray; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">Update Driver Software - Unknown Device</p> <p style="text-align: center;">How do you want to search for driver software?</p> <p style="text-align: center;"> <input checked="" type="radio"/> Search automatically for updated driver software <small>Windows will search your computer and the Internet for the latest driver software for your device.</small> </p> <p style="text-align: center;"> <input type="radio"/> Browse my computer for driver software <small>Locate and install driver software manually.</small> </p> <p style="text-align: right;">Cancel</p> </div> <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>

7. TROUBLESHOOTING


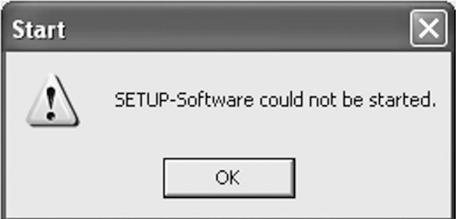
No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <p>(8) The following Windows confirmation dialog box appears. Set the installed location "Easysocket\USBDrivers" and click [Next]. Default is set as " C:\Program Files\MELSOFT\Easysocket\USBDrivers".</p> <div data-bbox="780 465 1350 882" style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> </div> <p>(9) The following Windows confirmation dialog box appears. <Windows Vista® is used> Click [Install this driver software anyway].</p> <div data-bbox="831 1025 1299 1303" style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> </div> <p><Windows® 7 is used> Click [Install].</p> <div data-bbox="780 1397 1350 1630" style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> </div> <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>

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No.	Phenomenon	Cause and remedy
		<p data-bbox="963 271 1166 297">From preceding page</p> <p data-bbox="1046 304 1082 353">↓</p> <p data-bbox="699 365 1222 392">(10) The following OS confirmation dialog box appears.</p> <p data-bbox="743 398 868 425">Click [Close].</p> <p data-bbox="743 432 970 459">The update is complete.</p> 

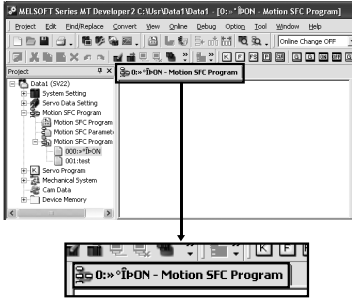
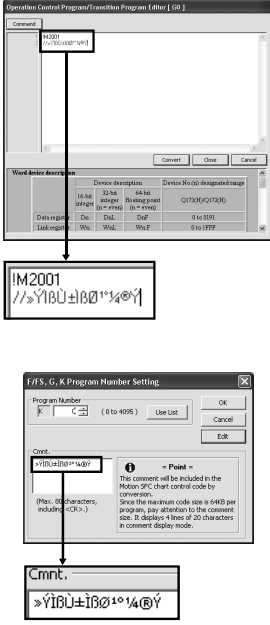
7. TROUBLESHOOTING

7.10 MR Configurator Fails to Be Started from MT Developer2 (Linkage Function)

No.	Phenomenon	Cause and remedy
1	<p>When MR Configurator is started from MT Developer2, the following error occurs and the starting fails. (linkage function)</p> 	<p>An MR Configuration version which does not support MT Developer2 is installed. Update the version of MR Configurator to Ver.C1 or later.</p>
2	<p>When MR Configurator is started from MT Developer2, the following error occurs and the starting fails. (linkage function)</p> 	<p>MR Configurator version which does not support Q170M is installed. Update the version of MR Configurator to Ver.C2 or later.</p>

7. TROUBLESHOOTING

7.11 Operation when Using a Program Data, Created with the Japanese Edition^(Note-1) in the English Edition^(Note-2)




No.	Phenomenon	Cause and remedy
1	<p>The Motion SFC Program Name Is Not Displayed Correctly.</p> 	<p>This situation occurs when Japanese characters are used. Change the Japanese characters to the ASCII characters with the Japanese edition before opening the project with the English edition. The project may also be opened by deleting the garbled characters and entering characters in the English edition.</p>
2	<p>The motion SFC chart (symbols) comments, or comments in the F/G program are not displayed correctly.</p> 	

(Note-1): MT Developer (SW6RNC-GSVE), MT Developer2

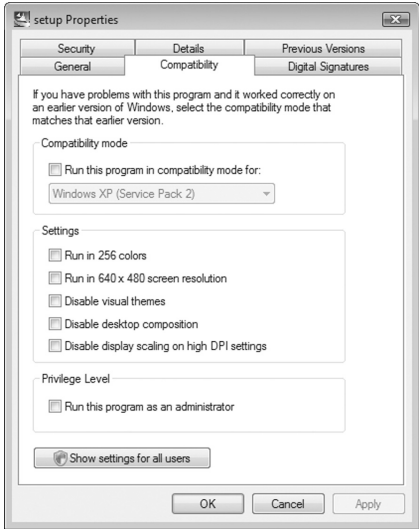
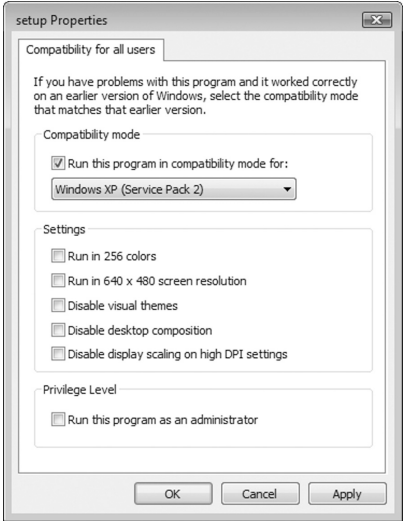
(Note-2): MT Developer2

7. TROUBLESHOOTING

7.12 When Installation does not Complete or Warning Dialog Boxes are Displayed.

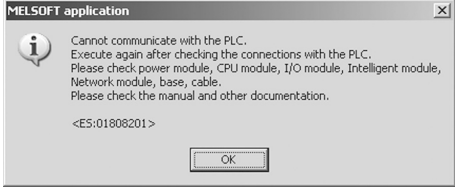

No.	Phenomenon	Cause and remedy
1	<p>The following warning dialog boxes may appear on a Windows Vista®/Windows® 7-based personal computer.</p>  <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>CAUTION</p> <p>The warning dialog boxes shown above may be hidden behind the screen of MELSOFT installer. Press Alt + Tab to bring them to front.</p> </div>	<p>The warning dialog boxes appear when Windows Vista®/Windows® 7 incompatible driver software is installed to a Windows Vista®/Windows® 7 compatible personal computer in the either of the following conditions.</p> <p><Occurrence condition 1> When installing Windows Vista®/Windows® 7 incompatible MELSOFT.</p> <p><Occurrence condition 2> When "Reinstall using recommended settings" is selected on the "Program Compatibility Assistant" screen by mistake after installing MELSOFT.</p>  <p><Corrective action> Press [OK] on each warning dialog box and complete the installation. Perform either of the following corrective actions corresponding to the occurrence condition.</p> <p>Corrective action for occurrence condition 1): Install Windows Vista®/Windows® 7-compatible software updated version following the procedures below.</p> <ul style="list-style-type: none"> • Windows Vista® : "5.1.3 Precautions for using USB communication in Windows Vista®" • Windows® 7 : "5.1.4 Precautions for using USB communication in Windows® 7" <p>Corrective action for occurrence condition 2): Reinstall the MELSOFT product. Ensure to select "This program installed correctly" on the "Program Compatibility Assistant" screen. Corrective action is described below.</p> <div style="text-align: center;">  To next page </div>

7. TROUBLESHOOTING

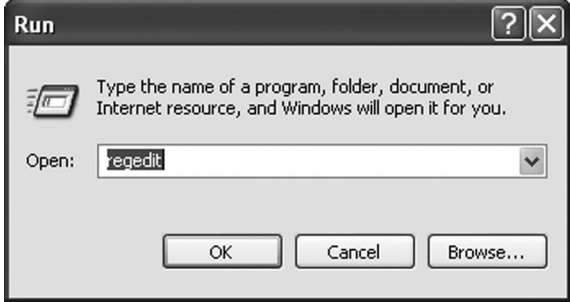
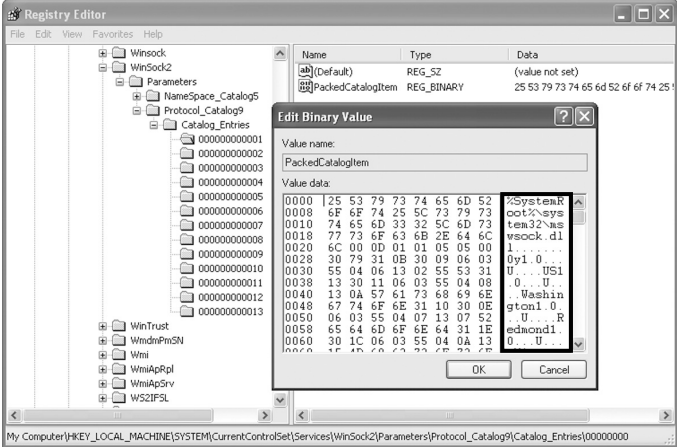
No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>CAUTION</p> <p>Note the following when the installer is started from the internal hard disk drive.</p> <p>If "Reinstall using recommended settings" on the "Program Compatibility Assistant" screen is selected by mistake, 'Windows XP compatibility mode' is set automatically. Disable "Windows XP compatibility mode" by the following procedure, and perform the reinstallation.</p> </div> <ol style="list-style-type: none"> 1). Right-click on the setup.exe icon of the installation target in the Windows explorer, and open the "setup Properties" screen. 2). Select the "Compatibility" tab and click "Change settings for all users". 3). Uncheck the "Run this program in compatibility mode for: 'check box of compatibility mode in the "Compatibility for all users" tab and click [OK]. 4). Click [OK] on the "setup Properties" screen. <div style="text-align: center; margin-bottom: 10px;">  </div> <p style="text-align: center;">↓</p> <div style="text-align: center;">  </div>

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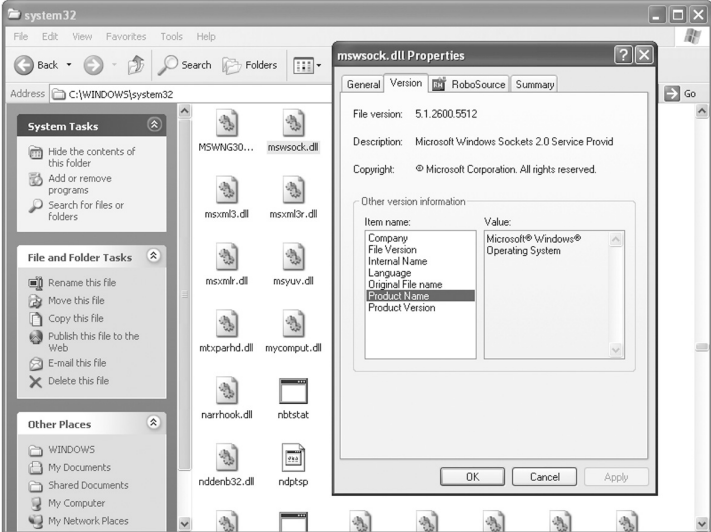
7.13 When the TCP/IP Communication cannot be Established or the Simulation Function cannot be Started.

No.	Phenomenon	Cause and remedy																				
1	<p>As the TCP/IP communication with the Motion CPU is established or the simulation function is started on MT Works2, the following dialog box may be displayed and the operation may not be able to be performed even if corrective actions against the message are taken. (Error Code <ES:01808201>)</p> 	<p>The TCP/IP communication function and simulation function of MT Works2 are based on the standard TCP/IP communication provided by Microsoft Corporation. In cases where these functions cannot be started, a communication function of a software product made by another company may adversely affect the standard TCP/IP communication.</p> <p><Corrective action></p> <p>This problem can be workarounded by upgrading another company's software product to the latest version or uninstalling it. For the corresponding software products, refer to the following "Corresponding other companies' software products".</p> <p><Corresponding other companies' software products></p> <p>(1) Other companies' software products that have been confirmed as causes of this problem</p> <table border="1" data-bbox="699 922 1423 1149"> <thead> <tr> <th>Manufacturer</th> <th>Product name</th> <th>Confirmed by (version)</th> <th>Corrective action</th> </tr> </thead> <tbody> <tr> <td>WILLCOM, Inc.</td> <td>Venturi Client for AIR-EDGE</td> <td>3.1.2</td> <td>Upgrade</td> </tr> <tr> <td>Digital Arts Inc.</td> <td>i-FILTER</td> <td>4.01.08</td> <td>Upgrade</td> </tr> <tr> <td>SOURCENEXT CORPORATION</td> <td>Virus Security ZERO</td> <td>9.5.0072</td> <td>Uninstall</td> </tr> <tr> <td>Sprint Inc.</td> <td>Sprint SmartView</td> <td>2.25.0046</td> <td>Uninstall</td> </tr> </tbody> </table> <p>(2) Other companies' software products other than above</p> <p>In cases where this problem occurs on a personal computer on which any of these software products mentioned above is not installed, follow the following procedure to identify which software product adversely affects the standard TCP/IP communication, and perform upgrade or uninstallation of the software product.</p> <div data-bbox="707 1424 1430 1597" style="border: 1px solid black; padding: 5px;"> <p>POINT</p> <p>Registry values are referred in <Checking method> described below. <u>Be sure not to edit registry values</u> when referring them. The registry is an important component for the operating system. If registry values are erroneously changed, the computer may not work properly.</p> </div> <p style="text-align: center;">  To next page </p>	Manufacturer	Product name	Confirmed by (version)	Corrective action	WILLCOM, Inc.	Venturi Client for AIR-EDGE	3.1.2	Upgrade	Digital Arts Inc.	i-FILTER	4.01.08	Upgrade	SOURCENEXT CORPORATION	Virus Security ZERO	9.5.0072	Uninstall	Sprint Inc.	Sprint SmartView	2.25.0046	Uninstall
Manufacturer	Product name	Confirmed by (version)	Corrective action																			
WILLCOM, Inc.	Venturi Client for AIR-EDGE	3.1.2	Upgrade																			
Digital Arts Inc.	i-FILTER	4.01.08	Upgrade																			
SOURCENEXT CORPORATION	Virus Security ZERO	9.5.0072	Uninstall																			
Sprint Inc.	Sprint SmartView	2.25.0046	Uninstall																			

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No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <p><Checking method></p> <p>1) Start the Registry Editor on Windows. Click [Run] via [Start], type "REGEDIT" on the displayed dialog box, and click [OK].</p>  <p>2) In the Registry Editor, perform the following operation. Under "HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WinSock2\Parameters\Protocol_Catalog9\Catalog_Entries", double-click "PackedCatalogItem" in sequentially-numbered registry keys starting from "000000000001", such as "000000000001", "000000000002", "000000000003", and so on.</p>  <p>If a displayed dll file name is other than "mswsock.dll" and "rsvpsp.dll", the dll file likely affects the standard TCP/IP communication. When more than one sequentially-numbered registry key exists, check a dll file name in every registry key.</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">To next page</p>

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No.	Phenomenon	Cause and remedy
		<p style="text-align: center;">From preceding page</p> <p style="text-align: center;">↓</p> <p>3) Identify a software product made by another company. Identify the product name by opening the properties of the dll file checked in the above step 2 and confirming its "Product Name" and "Description" etc. or by searching for the dll file name on the web.</p> 

APPENDICES

APPENDIX 1 Added Functions

The following table shows the functions that are added to MT Developer2.

No.	Description	SV13	SV22	SV43	SV54	Supported version
1	The help jump function by the F1 key is added.	○	○	○	○	1.03D
2	The import multiple CPU parameter function is added.	○	○	○	○	
3	The operability of the monitor function is improved.	○	○	○	○	
4	The operability of the mechanical system program function is improved.	-	○	-	-	
5	The safety observation function is supported. (iQ Platform compatible motion controller with the safety observation function)	○	○	-	-	
6	Q173DCPU/Q172DCPU /Q173HCPU/Q172HCPU/Q173CPU/Q172CPU is supported.	-	-	○	-	
7	The expression and input of decimal comma is supported. (Note-1): Except for motion program of SV43/SV54.	○	○	○	○	
8	Windows Vista® Service Pack 1 and Windows® XP Service Pack 3 are supported.	○	○	○	○	
9	The save function of current value history monitor is added.	○	○	○	○	
10	The operability of the system setting function is improved.	○	○	○	○	
11	The operability of the motion SFC program function is improved.	○	○	-	-	
12	Q170MCPUs are supported.	○	○	-	-	1.06G
13	The servo programs CHGA-E/CHGA-C instructions and motion dedicated PLC instruction D(P).CHGA can be displayed on the scroll monitor screen for the Q173DCPU/Q172DCPU. (Note-1): Q170MCPUs are supported by Ver.1.05F.	○	○	-	-	
14	The 0.4ms event task is supported for the Q173DCPU/Q172DCPU.	○	○	-	-	
15	The MR-J3-B DD motor is supported for the Q173DCPU/Q172DCPU. (Note-1): Q170MCPUs are supported by Ver.1.05F.	○	○	○	-	
16	The CPU built-in I/F (I/O signal (DI/DO)) function is supported for the Q170MCPUs.	○	○	-	-	
17	The CPU built-in I/F (manual pulse generator/INC synchronous encoder) function is supported for the Q170MCPUs.	○	○	-	-	
18	The mark detected function is supported for the Q170MCPUs.	○	○	-	-	
19	The MC protocol communication is supported for the Q170MCPUs.	○	○	-	-	
20	The advanced S-curve acceleration/deceleration function is supported for the Q173DCPU/Q172DCPU/Q170MCPUs. (Note-1): Except for constant speed control of the servo program (CPSTART instruction).	○	○	-	-	
21	The message displayed when rewriting the data processing processor OS of Q173HCPU/Q172HCPU/Q173CPU/Q172CPU, which supports the data processing processor OS, is improved.	○	○	○	○	
22	The CPU information screen is added. When connecting CPU, you can start from the menu [Help] → [CPU Information].	○	○	○	○	
23	The label input assist function is added for the Q173DCPU/Q172DCPU/Q170MCPUs projects. Target: Motion SFC Program, Servo Program, Mechanical System Program	○	○	-	-	
24	The cross reference function is added for the Q173DCPU/Q172DCPU/Q170MCPUs projects. Target: Label Editor, Motion SFC Program, Servo Program, Mechanical System Program	○	○	-	-	
25	The find device function is added for the mechanical system program.	-	○	-	-	
26	The label specification is enabled for the mechanical system program of the Q173DCPU/Q172DCPU/Q170MCPUs projects.	-	○	-	-	
27	Copying between projects is enabled for the limit switch data.	○	○	○	○	
28	Changing CPU type and diverting are enabled from Q173DCPU/Q172DCPU/Q170MCPUs projects to Q173HCPU/Q172HCPU/Q173CPU/Q172CPU projects.	○	○	-	-	

○: Supported -: Not supported

APPENDICES

No.	Description	SV13	SV22	SV43	SV54	Supported version	
29	The simulation function is added for the Q173DCPU/Q172DCPU.	○	○	-	-	1.09K	
30	Q173HCPU/Q172HCPU/Q173CPU/Q172CPU is supported.	-	-	-	○		
31	The GOT transparent function via Ethernet module is supported for Q170MCPUs. (Note-1): PERIPHERAL I/F connector of Q170MCPUs is not supported.	○	○	-	-		
32	The GOT transparent function via Ethernet is supported for Q173DCPU/Q172DCPU.	○	○	○	-		
33	The advanced S-curve acceleration/deceleration function in the servo program (constant speed control: CPSTART instruction) is supported for Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	-	-		
34	The Division setting function is added for the digital oscilloscope.	○	○	○	○		
35	The writing to/reading from CPU function of the cam edit data is added for Q173DCPU/Q172DCPU/Q170MCPUs projects, and editing cam data in MT Developer2 by the cam data read from the motion CPU is enabled.	-	○	-	-		
36	The system label function in MELSOFT iQ Works is supported for the Q173DCPU/Q172DCPU projects.	○	○	-	-		
37	The parameter interaction function of MELSOFT iQ Works is supported.	○	○	○	-		
38	MELSOFT iQ Works (Ver.1.05F) is supported.	○	○	○	-		
39	The compress/unpack function of the project data is added.	○	○	○	○		
40	The screen style and toolbar icon are changed.	○	○	○	○		
41	The backup and load of the motion error history with the CPU backup function are enabled for the Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	-	-		
42	The motion controller dedicated device help is added for the Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	-	-		
43	Unpacking by dragging and dropping project compressed files is supported.	○	○	○	○		
44	The interaction function with MR Configurator2 is supported.	○	○	○	○		
45	Windows Vista® Service Pack 2 is supported.	○	○	○	○		1.15R
46	The organization of HELP contents was modified as to improve its visualization.	○	○	○	○		
47	The setup guidance is added to the start menu.	○	○	○	○		
48	Data for GX Works2 is added as a sample data of Q170MCPUs.	○	○	-	-		
49	The movement average is added to the operation setting of the device dump for the digital oscilloscope.	○	○	○	○		
50	The assistant function is added for the digital oscilloscope.	○	○	○	○		
51	The motion controller dedicated device help is added for the Q173HCPU/Q172HCPU/Q173CPU/Q172CPU.	○	○	○	○		
52	The motion controller dedicated device help is added for the Q173DCPU/Q172DCPU. (Note-1): This is added in Ver.1.09K for Q173DCPU/Q172DCPU/Q170MCPUs SV13/SV22.	○	○	○	-		
53	The changing of the system setting (except automatic refresh setting) and servo data setting is supported for changing CPU type and diverting from Q173DCPU/Q172DCPU/Q170MCPUs projects to Q173HCPU/Q172HCPU projects.	○	○	○	-		
54	The backup and load of the motion error history with the CPU backup function are enabled for the Q173DCPU/Q172DCPU. (Note-1): This is added in Ver.1.09K for the Q173DCPU/Q172DCPU/Q170MCPUs SV13/SV22.	○	○	○	-		
55	The DFLT instruction and SFLT instruction are added to the operation control program and transition program of the motion SFC program for the Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	-	-		
56	Labels can be used at the motion SFC parameter execution flag for the Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	-	-		
57	The count type home position return method using the external signals of amplifier is enabled for the Q173DCPU/Q172DCPU.	○	○	-	-		
58	The scale home position signal detection type is added to the home position return method for the Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	-	-		
59	The operability of the servo data setting function is improved.	○	○	○	○		
60	Connection with the AC servo driver (VC II Series) for DD motor made by Nikki Denso Co., Ltd. is supported for the Q173DCPU/Q172DCPU/Q170MCPUs.	○	○	○	-		

○: Supported -: Not supported

APPENDICES

No.	Description	SV13	SV22	SV43	SV54	Supported version
61	FR-A700 is supported for the Q173DCPU/Q172DCPU/Q170MCP.	○	○	–	–	1.15R
62	The GOT transparent function via CPU built-in PERIPHERAL I/F is supported for the Q173DCPU-S1/Q172DCPU-S1/Q170MCP.	○	○	–	–	
63	The Ethernet transfer setting and MC protocol in the CPU built-in PERIPHERAL I/F is supported for the Q173DCPU-S1/Q172DCPU-S1.	○	○	–	–	
64	Connection with the vision system made by Cognex Corporation is supported.	○	○	–	–	
65	Microsoft® Windows® 7 is supported.	○	○	○	○	1.17T
66	The real-time display function of Digital Oscilloscope is added for the Q173DCPU/Q172DCPU/Q170MCP.	○	○	–	–	
67	Capacity calculation function of labels/structure data to be written in the memory card is added for the Q173DCPU/Q172DCPU/Q170MCP.	○	○	–	–	
68	Device Comment function is added. (Note-1): Device comment data cannot be written to the Motion CPU. It is available only on project data.	○	○	–	–	
69	Option to display all folders is added in the "Open Project" dialog box, which enables to open projects not controlled in the workspace.	○	○	○	○	1.19V
70	Microsoft® Windows® 7 (For 64-bit edition) is supported. Microsoft® Windows® 7 Service Pack 1 is supported.	○	○	○	–	
71	The GOT transparent function for connecting GOT and a personal computer by the Ethernet is supported.	○	○	○	○	
72	The multiple CPU high speed main base unit with 5 slot (Q35DB) is supported for the Q173DCPU/Q172DCPU.	○	○	○	–	1.39R
73	A project of the motion controller A series created in SW3RNC-GSVE can be diverted to a project of the motion controller Q series.	○	○	–	–	
74	Q170MCP is supported. (Note-1): SV13 and SV22 are already supported by Ver.1.05F.	○	○	○	–	
75	Q173DSCPU and Q172DSCPU are supported.	○	○	–	–	
76	The simulation function is added for the Q173DSCPU/Q172DSCPU.	○	○	–	–	
77	The axis label function is added for the Q173DSCPU/Q172DSCPU.	○	○	–	–	
78	The software security key function is added for the Q173DSCPU/Q172DSCPU.	○	○	–	–	
79	The electronic gear setting function is added for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCP/Q173HCP/Q172HCP.	○	○	○	–	
80	The project verification function is added.	○	○	○	○	
81	The verification function with the motion CPU is improved.	○	○	○	○	
82	The operability of the servo program editing is improved.	○	○	–	–	
83	The operability of the project tree is improved.	○	○	–	–	
84	The cross reference function can be used for all CPU projects.	○	○	○	–	
85	The program control instructions (IF to ELSE to IEND, SELECT to CASE to SEND, FOR to NEXT, BREAK) are added to the operation control program and transition program of the motion SFC program for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCP.	○	○	–	–	
86	The vision system dedicated function, MVOUT instruction, is added to the operation control program and transition program of the motion SFC program for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCP.	○	○	–	–	
87	The operability of the device batch monitor is improved.	○	○	○	○	
88	The operability of the device test is improved.	○	○	○	○	
89	The watch function is added.	○	○	○	○	
90	The operability of the execute step monitor and specified step monitor is improved.	○	○	–	–	
91	The single file format project is supported in addition to the conventional workspace format project in the project opening/saving function.	○	○	○	○	
92	The revision function is added.	○	○	○	○	
93	The project batch conversion function is added.	○	○	○	–	

○: Supported –: Not supported

APPENDICES

No.	Description	SV13	SV22	SV43	SV54	Supported version
94	The operability of label editor in the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPUCPU was improved. <ul style="list-style-type: none"> • Added sort function. • Added undo/redo function. • Added CSV file import/export function. • Hold the structure member status when changing the label name which used structure. 	○	○	-	-	1.39R
95	Added the function which batch-replaces program device No. to label name in the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPUCPU.	○	○	-	-	
96	The operability of optional data monitor in the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPUCPU/ Q173HCPUCPU/Q172HCPUCPU was improved.	○	○	○	○	
97	The target parameter converting function below is added when executing the following operation for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPUCPU/Q173HCPUCPU/Q172HCPUCPU. <ul style="list-style-type: none"> • File diversion, CPU/OS type changing and basic setting (SSCNET setting) changing [Target parameter] • Electronic gear (Number of pulses per revolution, travel value per revolution) • Servo parameter (from MR-J2S-B to MR-J3-B, from MR-J2S-B to MR-J4-B, or from MR-J3-B to MR-J4-B) 	○	○	○	-	1.42U

○: Supported -: Not supported

WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

We will repair any failure or defect hereinafter referred to as "failure" in our FA equipment hereinafter referred to as the "Product" arisen during warranty period at no charge due to causes for which we are responsible through the distributor from which you purchased the Product or our service provider. However, we will charge the actual cost of dispatching our engineer for an on-site repair work on request by customer in Japan or overseas countries. We are not responsible for any on-site readjustment and/or trial run that may be required after a defective unit is repaired or replaced.

[Gratis Warranty Term]

The term of warranty for Product is thirty six (36) months after your purchase or delivery of the Product to a place designated by you or forty two (42) months from the date of manufacture whichever comes first "Warranty Period". Warranty period for repaired Product cannot exceed beyond the original warranty period before any repair work.

[Gratis Warranty Range]

- (1) You are requested to conduct an initial failure diagnosis by yourself, as a general rule.
It can also be carried out by us or our service company upon your request and the actual cost will be charged. However, it will not be charged if we are responsible for the cause of the failure.
- (2) This limited warranty applies only when the condition, method, environment, etc. of use are in compliance with the terms and conditions and instructions that are set forth in the instruction manual and user manual for the Product and the caution label affixed to the Product.
- (3) Even during the term of warranty, the repair cost will be charged on you in the following cases;
 - 1) A failure caused by your improper storing or handling, carelessness or negligence, etc., and a failure caused by your hardware or software problem
 - 2) A failure caused by any alteration, etc. to the Product made on your side without our approval
 - 3) A failure which may be regarded as avoidable, if your equipment in which the Product is incorporated is equipped with a safety device required by applicable laws and has any function or structure considered to be indispensable according to a common sense in the industry
 - 4) A failure which may be regarded as avoidable if consumable parts designated in the instruction manual, etc. are duly maintained and replaced
 - 5) Any replacement of consumable parts (battery, fan, etc.)
 - 6) A failure caused by external factors such as inevitable accidents, including without limitation fire and abnormal fluctuation of voltage, and acts of God, including without limitation earthquake, lightning and natural disasters
 - 7) A failure generated by an unforeseeable cause with a scientific technology that was not available at the time of the shipment of the Product from our company
 - 8) Any other failures which we are not responsible for or which you acknowledge we are not responsible for

2. Onerous Repair Term after Discontinuation of Production

- (1) We may accept the repair at charge for another seven (7) years after the production of the product is discontinued.
The announcement of the stop of production for each model can be seen in our Sales and Service, etc.
- (2) Please note that the Product (including its spare parts) cannot be ordered after its stop of production.

3. Service in overseas countries

Our regional FA Center in overseas countries will accept the repair work of the Product; However, the terms and conditions of the repair work may differ depending on each FA Center. Please ask your local FA center for details.

4. Exclusion of Loss in Opportunity and Secondary Loss from Warranty Liability

Whether under or after the term of warranty, we assume no responsibility for any damages arisen from causes for which we are not responsible, any losses of opportunity and/or profit incurred by you due to a failure of the Product, any damages, secondary damages or compensation for accidents arisen under a specific circumstance that are foreseen or unforeseen by our company, any damages to products other than the Product, and also compensation for any replacement work, readjustment, start-up test run of local machines and the Product and any other operations conducted by you.

5. Change of Product specifications

Specifications listed in our catalogs, manuals or technical documents may be changed without notice.

6. Precautions for Choosing the Products

- (1) For the use of our Motion controller, its applications should be those that may not result in a serious damage even if any failure or malfunction occurs in Motion controller, and a backup or fail-safe function should operate on an external system to Motion controller when any failure or malfunction occurs.
- (2) Our Motion controller is designed and manufactured as a general purpose product for use at general industries. Therefore, applications substantially influential on the public interest for such as atomic power plants and other power plants of electric power companies, and also which require a special quality assurance system, including applications for railway companies and government or public offices are not recommended, and we assume no responsibility for any failure caused by these applications when used.

In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatments, railway service, incineration and fuel systems, man-operated material handling equipment, entertainment machines, safety machines, etc. are not recommended, and we assume no responsibility for any failure caused by these applications when used.

We will review the acceptability of the abovementioned applications, if you agree not to require a specific quality for a specific application. Please contact us for consultation.

MOTION CONTROLLER Setup Guidance (MT Developer2 Version 1)



HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS : 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA, JAPAN