EH2 Series

MANAGEMENT SOFTWARE OPERATION MANUAL

Version 6.4

2013/5/28

—CONTENTS—

1. BEFORE USE

Thank you for purchasing the “ASG Precision Fastening X-PAQ”. Before use, please read this Operation Manual thoroughly in order to make the best use of the software and to get a long-lasting product performance. Please keep this manual in a proper place for future reference.

1.1. Precautions

1. Both the Operation Manual and the Software are protected by copyrights. Be aware that it is prohibited to copy any part or whole of the Operation Manual or the Software without our permission.
2. The contents of both the Operation Manual and the Software have been prepared with utmost care, but should there be any questions, errors or omissions found, please inform us of them.
3. Both the Operation Manual and the Software are subject to change without advance notice.
4. As for the consequent influences produced by operating this product, we shall not bear any responsibilities thereof regardless of Item 2 of PRECAUTIONS. We appreciate your understanding and favor in advance concerning this point.
5. The various product names mentioned in this Operation Manual are the trademarks or registered trademarks of their respective companies.

1.2. Precautions for Safety

In order to prevent the occurrences of harm or damage to the users and other persons or their property, be sure to thoroughly read this Operation Manual and all other detached documents before the installation, operation, maintenance and inspection of the product.
In this manual, the levels of risks or damages maybe caused by improper use due to ignorance of the related indications are classified into “CAUTION”, “PROHIBITED”. However, even a matter of “Caution” level may lead to a serious result if not observed in some cases. Therefore, all the following indicated warning marks are very important and should be strictly observed.

Warning Marks and Their Meaning

If not observed, body injury may occur or material damage may occur.

Indicates the related operations are strictly prohibited.

2. OVERVIEW

2.1. Operation Environment

The operation environment below is necessary and recommended in order to run this software smoothly.

Specification

Item	Recommend SYSTEM
Computer	Windows ® personal computer to operate CPU : 2GHz or more Memory : 1GByte or more
Hard Disk Drive Capacity	100M bytes or more
Monitor	Resolution 1024 × 768 or higher
Disk Drive	CD-ROM disk drive
OS (English Ver.)	Microsoft® Windows®7 Home Premium Operating System, Service Pack 1 Microsoft® Windows®7 Professional Premium Operating System, Service Pack 1 Microsoft® Windows®7 Ultimate Premium Operating System, Service Pack 1 Microsoft® Windows Vista® Home Basic Operating System, Service Pack 1,2 Microsoft® Windows Vista® Home Premium Operating System, Service Pack 1,2 Microsoft® Windows Vista® Business Operating System, Service Pack 1,2 Microsoft® Windows Vista® Ultimate Operating System, Service Pack 1,2 Microsoft® Windows ® XP Professional Service Pack3 Microsoft® Windows ® XP Home Edition Service Pack3 Microsoft® Windows ® 2000 Professional Service Pack4
Communication interface	RS-232C port LAN port USB port
Required software environment	IE 6.0SP1 or above required Windows Installer 3.1 (included) .NET Framework 2.0 (included)

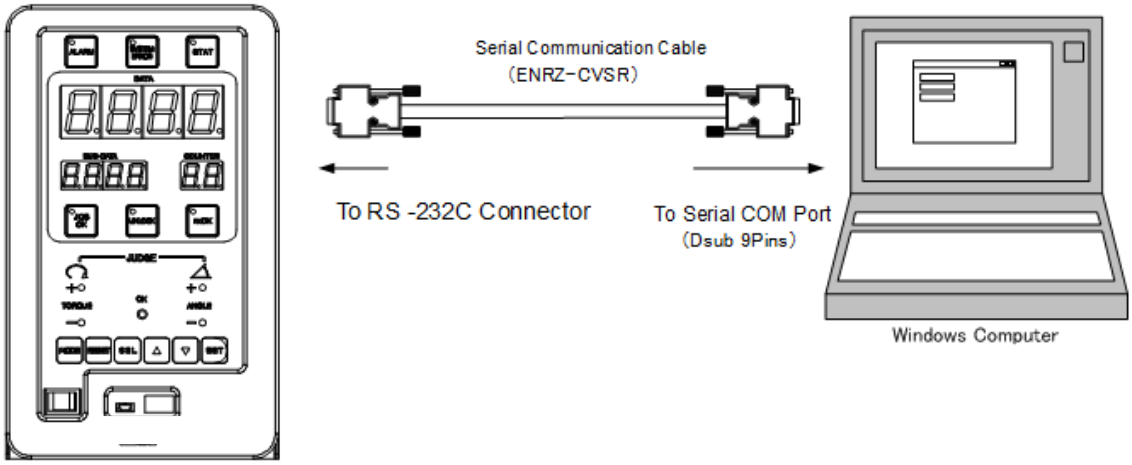
⚠ Caution

1) If you do not meet the above operating environment, this product may not work correctly.
2) This product does not run on Windows 95/98/Me/NT4.
   OS, please use the 32-bit version.
3) If Windows® 7 or Windows Vista® or Windows® XP, the operation will be required administrative privileges.

2.2. Connection with Controller (Serial Port Connection)

Please follow the steps below to connect controller and computer by RS-232C serial communication.

Use the serial cable (ENRZ-CVSR) to connect the RS-232C port of the software-installed computer and COM1 port of X-PAQ controller.



Caution

1) The longer the cable is, the more likely for noise to occur - the shorter the cable the better.
2) While connecting the cable line, please turn off the controller. Malfunctions are likely to occur if the power is on.

2.3. Connection with Controller (LAN Port)

Please follow the steps below to connect controller and PC by using LAN port.

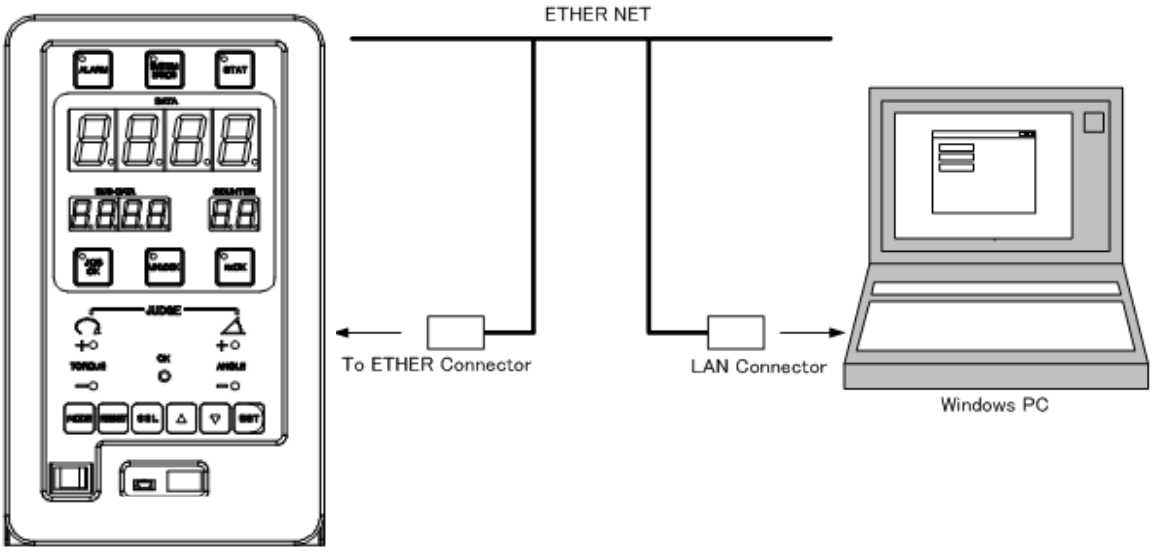
Direct Connection

Use LAN cable (cross) to connect the LAN port and The ETHER port of the Controller.

Connection via Hub

Use LAN cable (straight) to connect computer (LAN port) and the hub. Similarly, connect the controller (ETHER port) to the hub by LAN cable (straight).

In order to obtain an active connection, TCP/IP setting of controller must match the setting of customer's network.



Please set up TCP/IP. This setting varies with user's network environment. For more information, please contact I network manager.

Master Control Communication Setup

Item	Param No.	Setting
IP Address	S11 TCP/IP SETUP => 1. IP ADDRESS	User's network setting
Sub net masks	S11 TCP/IP SETUP => 2. SUBNET MASK	↑
Default gateway	S11 TCP/IP SETUP => 3. DFAULT GATEWAY	↑

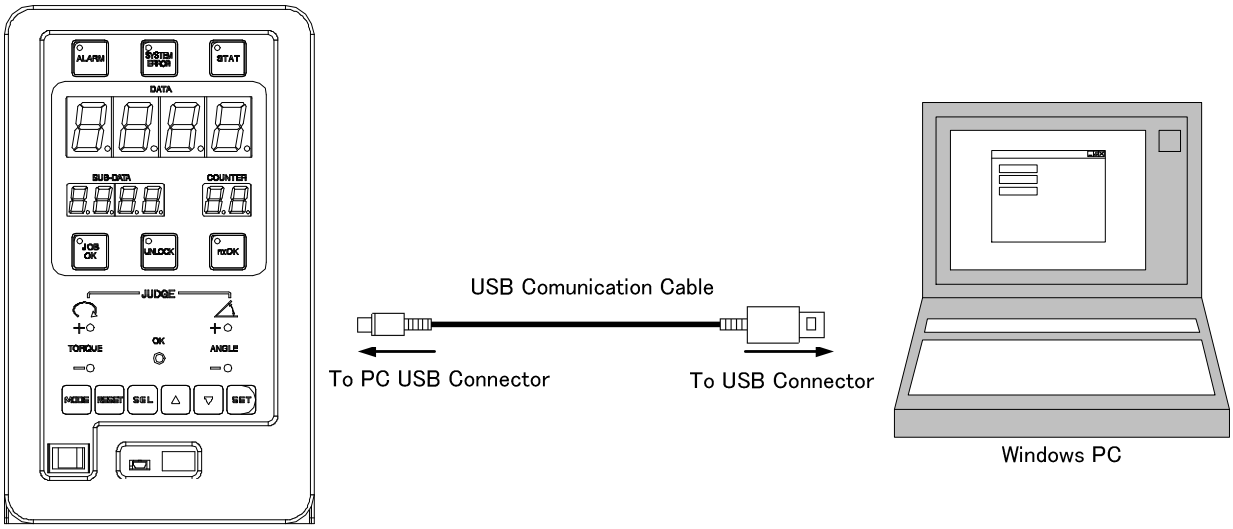
2.4. Connection with Controller (USB Port Connection)

Connect the X-PAQ Controller via USB for PC communication. Based on the following steps, please connect your PC to the controller.

Use the serial cable to connect the USB port of the software-installed computer and PC-USB port (mini type B) of the controller. (Note: The USB type A port of the controller cannot be used for connection.)

The USB driver's installation is necessary to communicate after connection.

Please refer to "13.4 USB driver installation" for details.



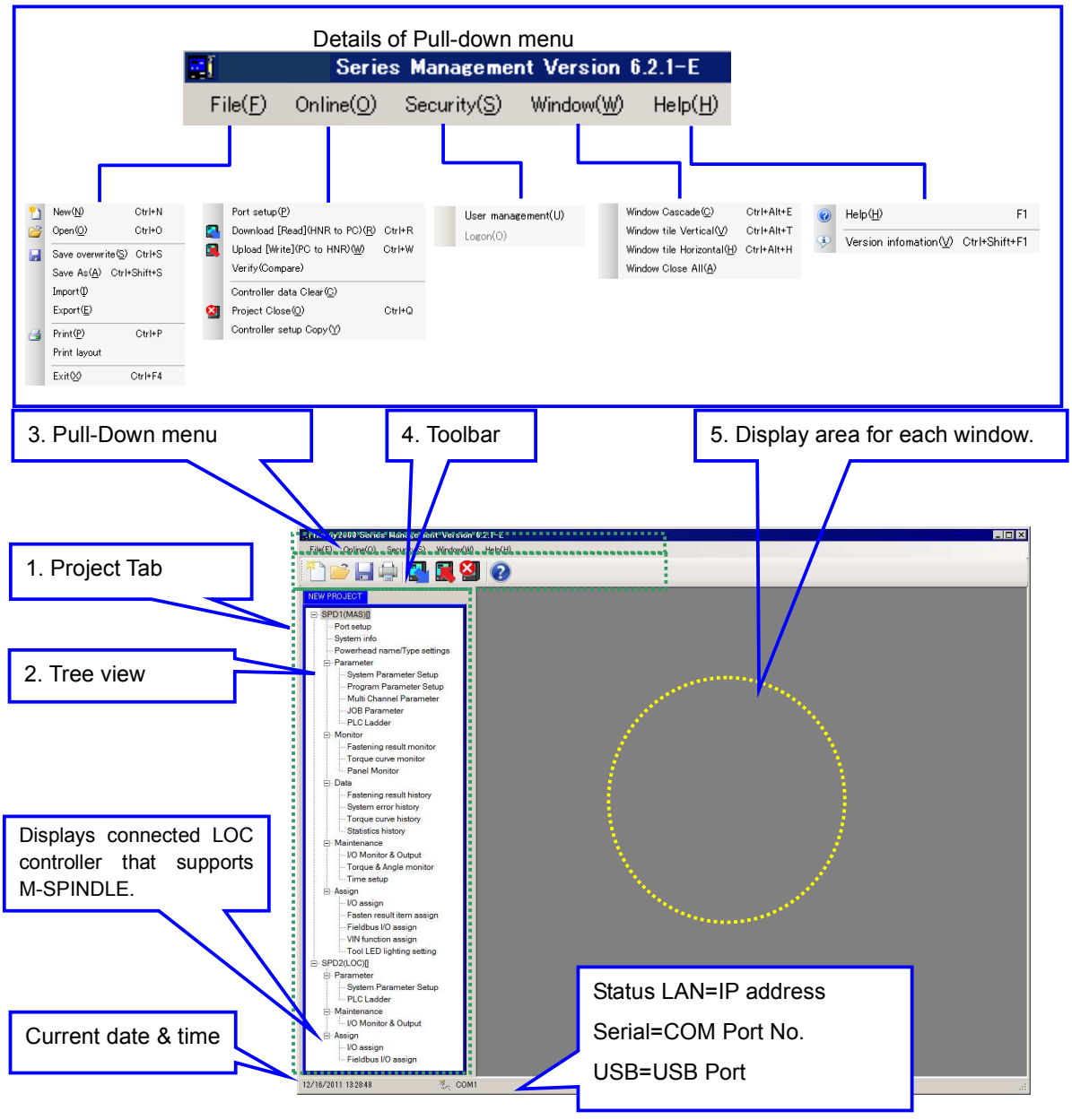
Caution 1) When using long cables, it is possible for signal noise to occur. Use shorter cables as much as possible.

2.5. Main Window

The main window appears when you start the software.
Various commands can be opened within this main screen.

< Menu Structure >

This software is composed of Pull-Down menu, toolbar, tab, and tree view. When one of the five main menu entries is clicked, it opens sub-menus of its genre and executes commands of this software.



1	Project Tab	This software can manage 10 controllers at the same time. Please choose one of them by tab. When the tab is double-clicked, the project name and controller name are changeable.
2	Tree view	Controller Setting Values & Data
3	Pull-down menu	Executes operations other than setting values and data.
4	Toolbar	A list of frequently used functions.
5	Display area for each window	When menu 1 to 4 is clicked, its sub-menu window opens here.

< Pull-Down Menu >

File

Item	Content
NEW	To create a new project. The command can also be performed by clicking the icon  on the toolbar.
OPEN	To open the saved project file. The command can also be performed by clicking the icon  on the toolbar.
Save Overwrite	To save the current project on the screen. The command can also be performed by clicking the icon  on the toolbar.
Save As	To save the current project file to other location with a new name.
Import	To import the data directly from the controller *Please see 3.5. Import, for the details
Export	To export the data to the controller directly *Please see 3.6. Export, for the details The project file that can be read by the management of the previous version is made.
Print	To print out System Info, System parameter, Program Parameter, JOB Parameter, I/O Assign, Fastening Result Item Assign、VIN(Work Number) Assign The command can also be performed by clicking the icon  on the toolbar
Print layout	To set up the paper size and layout
Exit	To close this software Also, it can be performed by clicking the icon  on the right side of title bar

Online

Item	Content
Port setup	Computer Communication Configuration Setup
Download [Read] (HNR to PC)	Open / Read out the files of System Info., System Parameter, Program Parameter, JOB Parameter, I/O Allocation, and Fastening Result Item assign from Controller. The command can also be performed by clicking the icon  on the toolbar
Upload [Write] (PC to HNR)	Upload the current project setting values of System Parameter, Program Parameter, Job Parameter, Multi channel parameter, PLC Ladder, I/O Assign, Field bus I/O Assign ,VIN function Assign and Fastening Result Item Assign. The command can also be performed by clicking the icon  on the toolbar. *Upload PLC Ladder only when [Compile] button is pressed.
Verify (Compare)	Verify the Controller setting value by the management software's and show the result.
Controller data Clear	Delete the file, System Parameter, Program Parameter, Fastening Result History, Torque Curve History, JOB Parameter, Multi channel parameter, PLC Ladder, VIN function Assign that save in the controller.
Close	Close the selected tab The command can also be performed by clicking the icon  on the toolbar.
Controller Setup Copy	Copy the whole setting value by the Controller.

Security

Item	Content
User management	User registration management.
Logon	Change user level (it's active only when security function is also active)

Window

Item	Content
Window Cascade	Windows except project list are modified and arranged.
Window tile Vertical	
Window tile Horizontal	
Window Close All	

* HNR = Hand nutrunner

Help

Item	Content
Help	To open the on-line menu
Version information	Display Version Information

3. BASIC FUNCTION

3.1. Run Software

(1) Double click the icon on Windows Desktop.
Or, follow the route [Start] → [Program] → [ASG Precision Fastening] → [X-PAQ] → [X-PAQ MANAGEMENT]  to start the program.

(2) Main Window will be displayed after the opening demo.

(3) To load or create a new file, please select “New”, ”Open” ,”Download [Read] (HNR to PC)” which can be found in pull-down menu or toolbar at one’s convenience.

NEW

This is used for the situation where only computer is used from tool unit construction to program creation. (It is an effective way to set up system / program parameter in advance before the operation)

OPEN

This command is to open the existing project files (.hnr2a), that are created from executing ”New” or ”Download [Read](HNR to PC)” by a PC, and confirm, edit their parameters.
(This function is especially useful during maintenance)

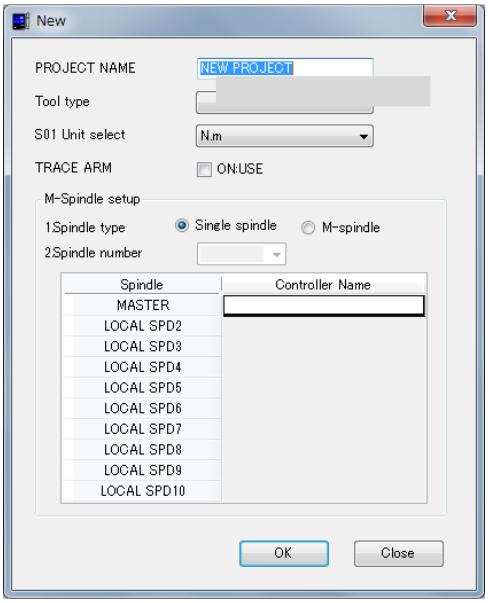
Download [Read] (HNR to PC)

It loads the setup information of the controller to the computer and allows editing/confirmation of the information.
(To execute the command “Read”, the Handy Nut Runner system needs to be connected and the power must be on.)

3.2. New

This function enables users to create a new project file of Handy Nut Runner system by using PC.

< ”NEW” Operating Procedures >



(1) Click [New] in [File] of the pull-down menu or  on the toolbar.

(2) Then, a window ”New” pops up.

“PROJECT NAME”

Enter equipment and project names.
Double-byte character can be entered.

“CONTROLLER NAME”

Enter a controller name. (Part name to be fastened etc.)
Only alphabetic characters can be entered.

< Command Switch >

Name	Content
CONTROLLER TYPE	Select a unit to X-PAQ.
TOOL MODEL	Select a tool to be used.
S01 UNIT SELECT	Select a unit to be used.
TRACE ARM	Choose whether to use the TRACE ARM. On check box, and displays information about the tracer arm.
1. SPINDLE TYPE	Select a single spindle or M-SPINDLE system.
2. SPINDLE NUMBER	Select the number of spindles of M-SPINDLE.
OK	Apply changed settings and close window.
Close	Cancel changed settings and close window.

3.3. Project “File Open” users to load a file saved in

This function enables a computer, floppy disk, USB memory stick or Server.

< ”File Open” Operating Procedures >

(1) Click [Open] located in the [File]. Or, click  on the toolbar.

(2) Then,” File open” window comes out. Select the file and click “Open”

 Caution about file read out afterward

1) After clicking “Open” to open the file, make sure that the software setting information and System info have the same values. If the values do not match, the values cannot be saved and “Communication error” occurs.

2) When the trace arm is in use, a dialog might ask whether to convert the offset value. Refer to “10.14. Conversions of offsets and positions for trace arm”

3.4. Project File “Save Overwrite” / “Save As”

This function enables users to save the current parameter(System info / System parameter / Program parameter / JOB parameter / Multi channel parameter / PLC Ladder / I/O assign / Fasten result item assign / Field bus I/O assign / VIN function assign) to the project file.

< ”Save Overwrite” or “Save As” Operating Procedures >

(1) From pull-down menu, click [File] → [Save overwrite]. Or [Save As], or click toolbar  .

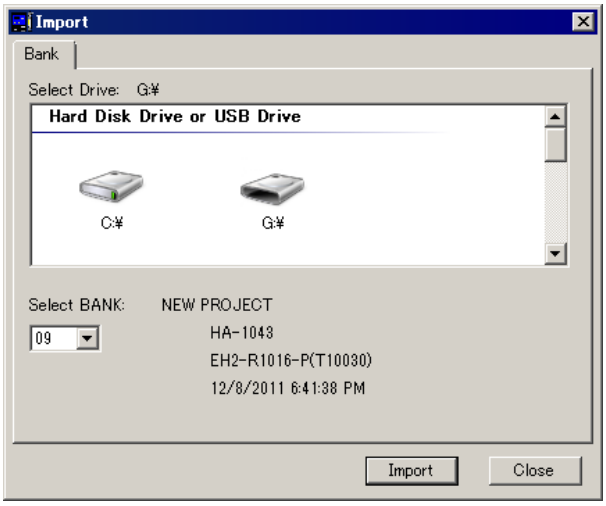
(2) [File save] window pops up. Name the file and click “Save”. Alternatively, save the file with previous name.

3.5. Import

This is a function to import the PROJECT DATA to Management Software, which is obtained from a USB port (type A) on X-PAQ Controller.

< ”Import” Operating Procedures >

(1) Click [Import] located in the [File].



Each file is stored in BANK folder, and you may import a PROJECT DATA by selecting a BANK folder.

Maximum of 100 Banks can be stored in one drive.

Structure in the drive is as shown below;

Removable Disc (G:) EH2L BANK00 BANK01 BANK02	BANK folders are generated under the folder [EH2L] if you use a removable disc such as USB Flash Drive.
EH2L BANK00 BANK01 BANK02	BANK folders are generated under the folder [EH2L] if you use a Windows based hard disk drive.

< Command Switch >

Name	Content
Select Drive	Select a drive by clicking icon. Search if PROJECT DATA exist in the drive you selected. Exist: BANK number is displayed in [Select BANK] pull down box. Not exist: No BANK number is displayed in [Select BANK] pull down box.
Select BANK	Select a BANK number which has a PROJECT DATA you want to import
File information In a BANK	Display information of a file in the BANK selected NEW PROJECT HA-1042 EH2-R1016-P(T10030) 2011/12/07 14:51:48 Project Name Controller version Tool model (Serial number) Date the file was generated
Import	Import a PROJECT DATA from the BANK selected
Close	Close a window

⚠ Caution Do not make any change on the file stored in the BANK.
It may cause the damage of the file.

3.6. Export

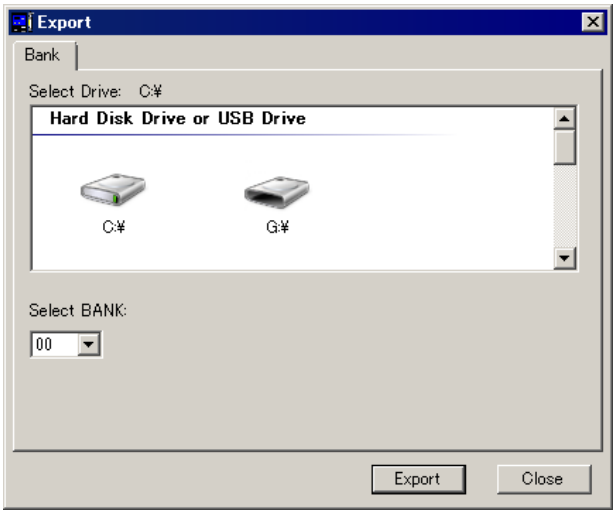
There are 2 options for exporting a file. One is to generate PROJECT DATA, and one is to export an old version of the project file.

< ”Export” Operating Procedures >

(1) Click [Export] located in the [File].

3.6.1. BANK Export

This is a function to export the PROJECT DATA to a storage device which will be used when you upload the PROJECT DATA from a USB port (type A) on X-PAQ controller.



< Command Switch >

Name	Content
Select Drive	Select a drive.
Select BANK	Select a BANK you want to export Pull down box shows all selectable BANKs.
File information In a BANK	NEW PROJECT HA-1042 EH2-R1016-P(T10030) 2011/12/07 14:51:48 Display information of a file in the BANK selected, if there is a file existing Project Name Controller version Tool model (Serial number) Date the file was generated
Export	Export the PROJECT DATA to the BANK selected.
Close	Close a window.

Caution In order to export the PLC ladder, you must have finished the treatment in the “Convert” button on the screen in advance PLC ladder. In order to export the PLC ladder, you must have finished the treatment in the “Convert” button on the screen in advance PLC ladder.

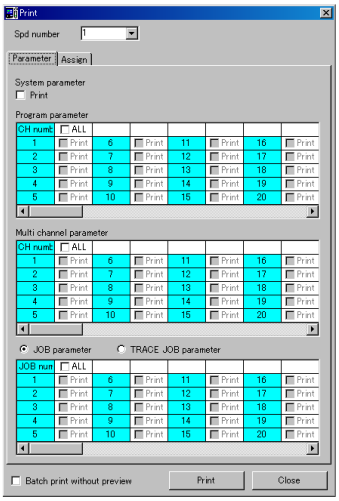
3.7. Project Parameter “Print” Out

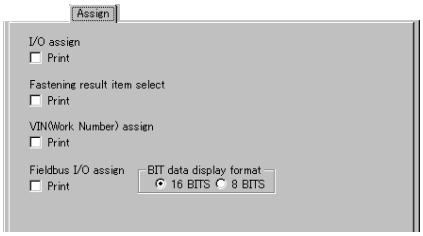
This function enables users to print out selected project parameter (System info / System parameter / Program parameter / JOB parameter / Multi channel parameter / I/O assign / Fasten result item assign / Field bus I/O assign / VIN function assign).

< ”Print Out” Operating Procedures >

(1) From pull-down menu, click [File] → [Print]. Or, click on the toolbar

(2) The option items are displayed below. Set up the printer values, and click the [OK].





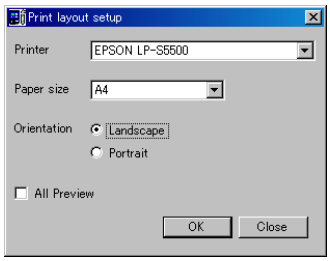
< Command Switch >

Name	Content
Spd Number	Select HNR spindle that needs to be printed out by its number.
Batch print without preview	Batch print without preview by checking boxes before numbers.
Print	Start printing
Close	Close the window

3.7.1. Print layout setup

This function enables users to set up paper layout, size, and preview.

From pull-down menu, click [File] → [Print layout].



< Command Switch >

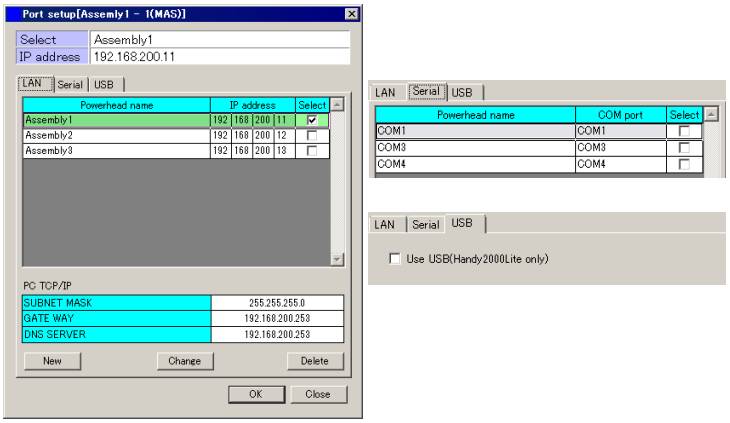
Name	Content
Printer	Select the printer to print to
Paper size	Select paper size to print
Orientation	Select paper orientation to print
All Preview	Print preview for all JOB and channel settings.
OK	To confirm the setup values.
Close	To cancel the setup and close the window

3.8. Port Setup

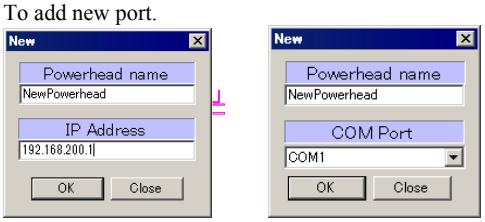
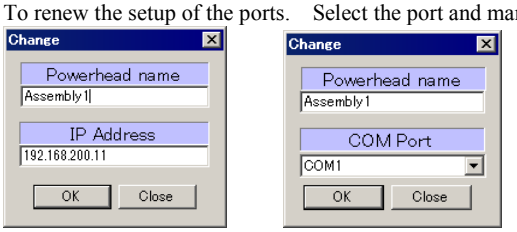
This function enables users to set up the COM. Port when adding new controllers or renewing the setting values.

< "Port setup" Operating Procedure >

(1) From pull-down menu, click [Online] → [Port setup].



< Command Switch >

Name	Content
LAN / Serial	Select the setting port
New	To add new port.  In LAN situation In serial situation
Change	To renew the setup of the ports. Select the port and mark it. Then, click [Change].  In LAN situation In serial situation
Delete	Delete the registered port
OK	Confirm the port setting
Close	Cancel the setting and close the window.

MEMO

Note: Port setting from the tree map

Change the setup value on the current selected project file. Please do not transfer the setup value to another project file.

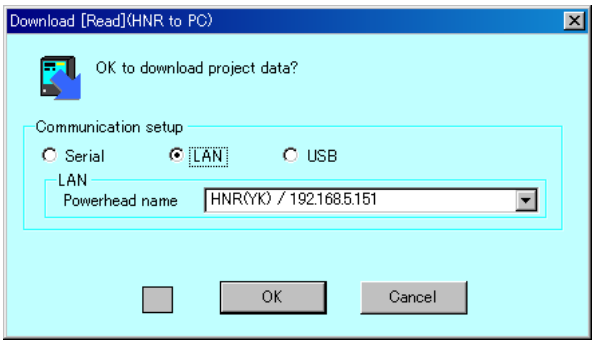
Caution Before "Download [Read] (HNR to PC)" / "Upload [Write] (PC to HNR)", please make sure that the communication with controller is normal.
Please refer to chapter 2.2 and 2.3 "Connection with Controller".

3.9. Download [Read] (HNR to PC)

This function enables users to load and display the connected controller setting data (System info / System parameter / Program parameter / JOB parameter / Multi channel parameter / PLC Ladder / I/O assign / Fasten result item assign / Field bus I/O assign / VIN function assign).
Note that files can be loaded regardless of whether HNR is operating or not.

< “Download [Read] (HNR to PC)” operating procedure >

(1) From pull-down menu, click [Online] → [Download [read] (HNR to PC)]. Or, click  on the toolbar.



< Command Switch >

Name	Content
Serial / LAN / USB	Select serial port or LAN port.
Serial – Powerhead name	Possible for those who choose to use serial port. Please choose a powerhead name
LAN – Powerhead name	Possible for those who choose to use LAN port. Please choose a powerhead name
OK	Start to Download the project data.
Cancel	Close the window

(2) Once communication starts, the process bar of “Download [Read] (HNR to PC)” will be displayed on the screen.
(3) The window will close automatically once it completely downloads the project file.
Project tabs and Tree view appear after the communication with the controller is completed.

MEMO Multi-controllers Connection

Follow the steps to complete the Multi-controllers connection

(1) Leave the currently connected project as it is and execute download.

(2) Display the following download screen for connection. Press [OK] button, and the download starts. When the download is completed, add another equipment name in the project tab.

MEMO Using tracer arm

When the trace arm is in use, a dialog might ask whether to convert the offset value. Refer to "10.14. Conversions of offsets and positions for trace arm"

Caution 1) Do not attempt to connect multiple controllers via USB at once this may cause malfunctions.

3.10. Upload [write] (PC to HNR)

This function enables users to upload the setup data from the computer to the connected controller (System info / System parameter / Program parameter / JOB parameter / Multi channel parameter / PLC Ladder / I/O assign / Fasten result item assign / Field bus I/O assign / VIN function assign).

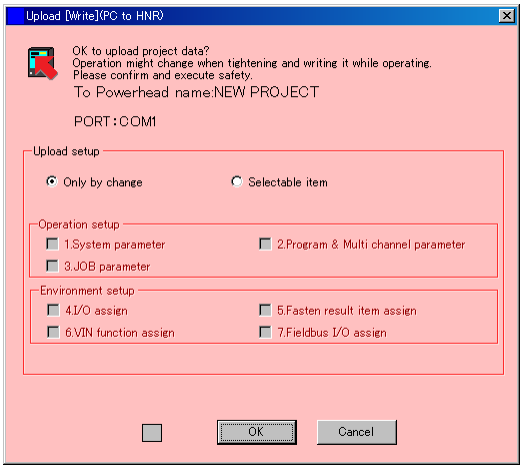
Note that Upload is irrelevant to HNR operating status.

Caution: Upload of ladder circuit can not be conducted on the upload screen (PC to HNR).

Upload of ladder circuit should be started from the PLC ladder screen because any change of the ladder circuit should be conducted while checking the performance of the equipment with PLC monitor.

< “Upload (PC to HNR)” operating procedure >

2. . From Pull-down menu, click [Online] → [Upload [read] (HNR to PC)]. Or, click  on the toolbar.



< Command Switch >

Name	Content
Only by change	Upload changed setup data only (default)
Selectable item	Possible to select upload data Overwrite the selected data regardless of whether it is changed or not.
OK	Start to Upload the project data
Cancel	Close the window

(2) Once command starts, the process bar of “Upload [write] (HNR to PC)” will be displayed on the screen.

(3) The window will close automatically once it completes Uploading.

Note: Upload

Before uploading **I/O assign** ,**Field bus I/O assign** ,**VIN function assign** and **Fasten result item assign** parameter, please fully understand the influence of its equipment. Please pay attention that there is a potential risk that the equipment will stop operation with careless Uploading of parameters.

3.11. Verify (Compare)

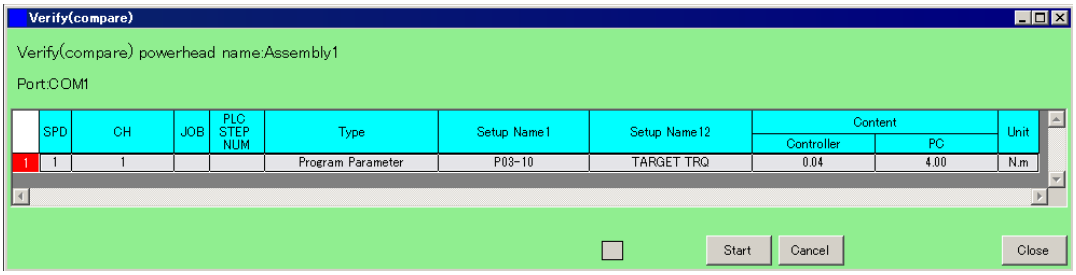
Compare the setting values between the connected controller and the management software and show the results.

<Verify Operation Procedure>

2. . Select the compare source project by Project tab.

(2) Click Pull-Down menu [Online] → [Verify(Compare)] in the Main Window.

2. . Verify the project.

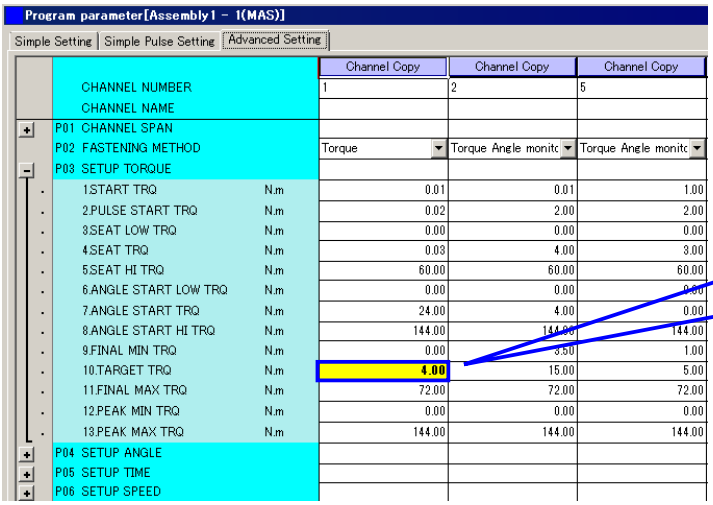


<Command Switch>

Name	Content
Start	Start Verify.
Cancel	Cancel Verify communication.
Close	Close the window.

2. . When the verification process ends, the window displays a list of conflicting settings.

2. . Conflicting settings are also highlighted in yellow on the Program Parameter screen.



Conflicting settings are highlighted in yellow.

3.12. Close (Disconnect)

This function enables users to close connected project.

< “Disconnect” operating procedure >

(1) From the Pull-down menu, click [Online] → [Close]. Or, click  on the toolbar.

(2) Then, the Project is closed.

3.13. Controller setup copy

Copy the setting value of the connected online controller to another controller.

Cautions

The source controllers and a target must be connected to the same type of tools with the same external gear ratio.

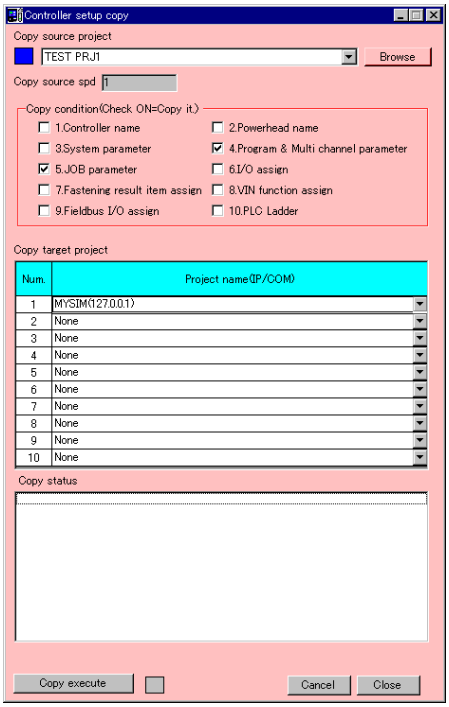
<Controller setup copy Operation Procedure>

(1) Click the Pull-Down menu [Online] → [Controller copy] in the main window.

(2) Check setting(s) to be copied in Copy Condition.

(3) Select Copy destination project.

(4) Press [Copy execute].



<Command Switch>

Name	Content
Reference	Select a file for setting values as a copy source to read. The setting values after reading can be selected in the copy source project.
Copy execute	Start to copy the controller setting values.
Cancel	Cancel the communication to copy the controller setting values.
Close	Close the window.

3.14. Exit Software

Follow the steps below to close and exit this program.

(1) From Pull-down menu, click [File] → [Exit]. Or, click ✕ at right side of the title bar

(2) If the project file was changed during the operation, the screen will display ”Save changes to the project?“. Click [YES(Y)] to save the project while [NO (N)] to reject.

(3) The window called ”File Save” will be displayed to save the file with a new name or the original file name.

(4) If several project files are opened, (2) and (3) will repeat until all the projects are closed.

3.15. Multi-Project Management.

(1) This software can manage up to 10 project’s data at one time.

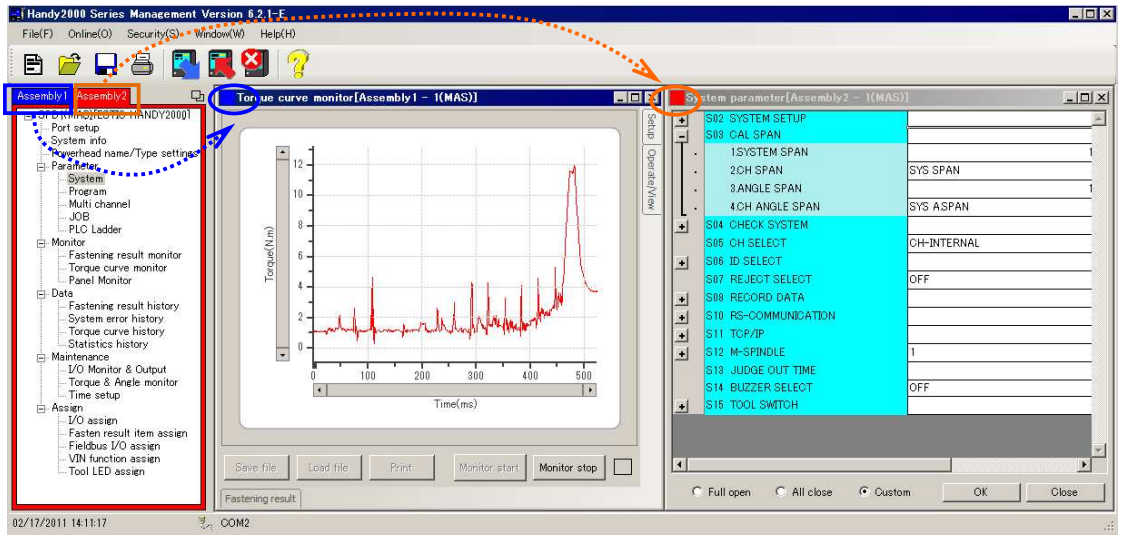
(2) Each project is independent and multiple controller monitors can be displayed at one time. (The number of controllers that can work at the same time can not be guaranteed since it differs with computer’s ability.

(3) To download data from multiple controllers requires numerous communication ports.

Ex1) COM1 = the left side controller COM2 = the right side controller

Ex2) 192.168.200.100= Process 1 controller 192.168.200.101= Process 2 controller

2. . The following is an example of monitoring multiple controllers with Management Software. It can be easily recognized since the color of each project tab matches with its own window.

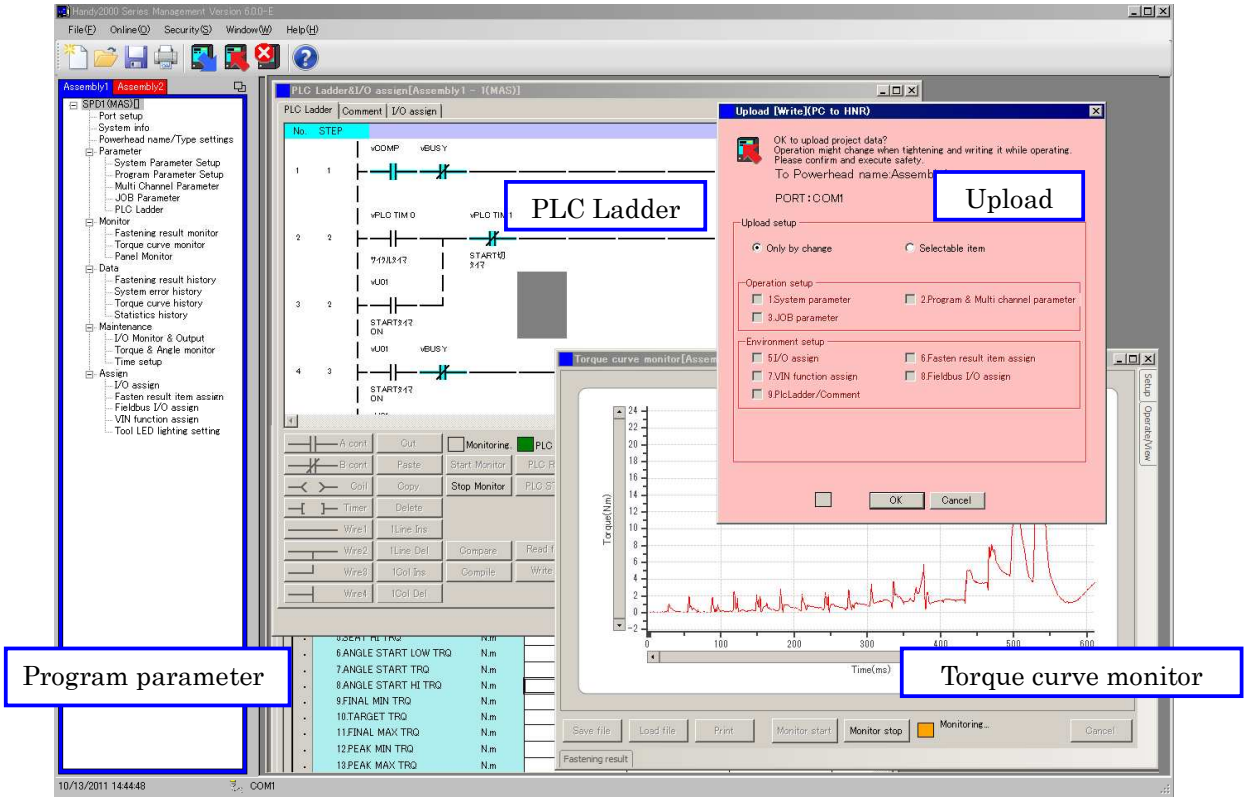


3.16. Multi communication (Multi-Communication Function)

This function enables users to open more than one (1) monitor or communication window and communicate simultaneously. For example, the fastening setting and control can be efficiently adjusted by using a visual screen during a fastening cycle.

Example

1) While monitoring the PLC Ladder logic and
2) Watching the fastening torque curve in the Torque curve monitor,
3) This function edits program parameters and uploads setting values to the controller.



MEMO

Cautions to Use MULTI COMMUNICATION

There is no limit on the windows available in MULTI communication. The maximum number of windows available at practical level depends on CPU capability and free memory capacity of PC.

Guideline for Windows Simultaneously Available in MULTI Communication

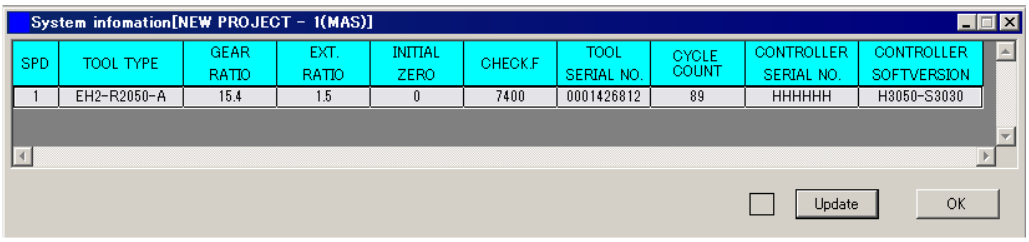
Up to four (4) windows in case of a commonly used laptop (CPU 1.6GHz/RAM512MB)
Up to seven (7) windows in case of a high-end laptop (Dual Core CPU 2GHz/ RAM 1GB)

MULTI communication may not be available in case of a PC with a low CPU capability / RAM capacity.
It is recommended to use a PC of sufficient capabilities.

4. CONTROLLER MANAGEMENT

4.1. System Information

This function enables users to display the system information of the tool unit and controller. Tool model and tool serial number can be confirmed.

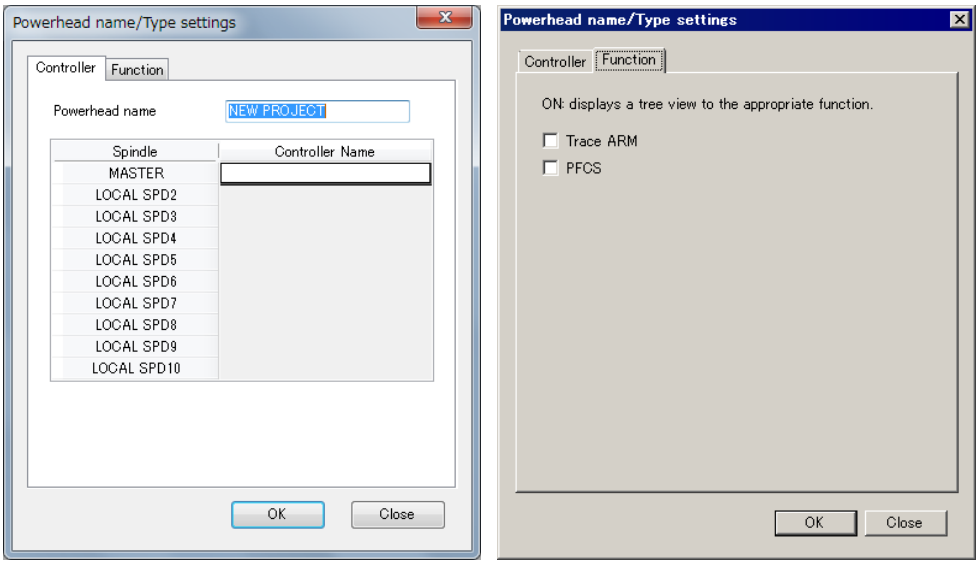


< Command Switch >

Name	Content
Update	Update the system information from the controller.
OK	Close the windows

4.2. Powerhead name/Type settings

Sets a device name in a controller.
The device having been set is reflected in the tab at the left side of the Management.
The settings show deals with current Type can be switched.
Please refer to the next page for the switching method.



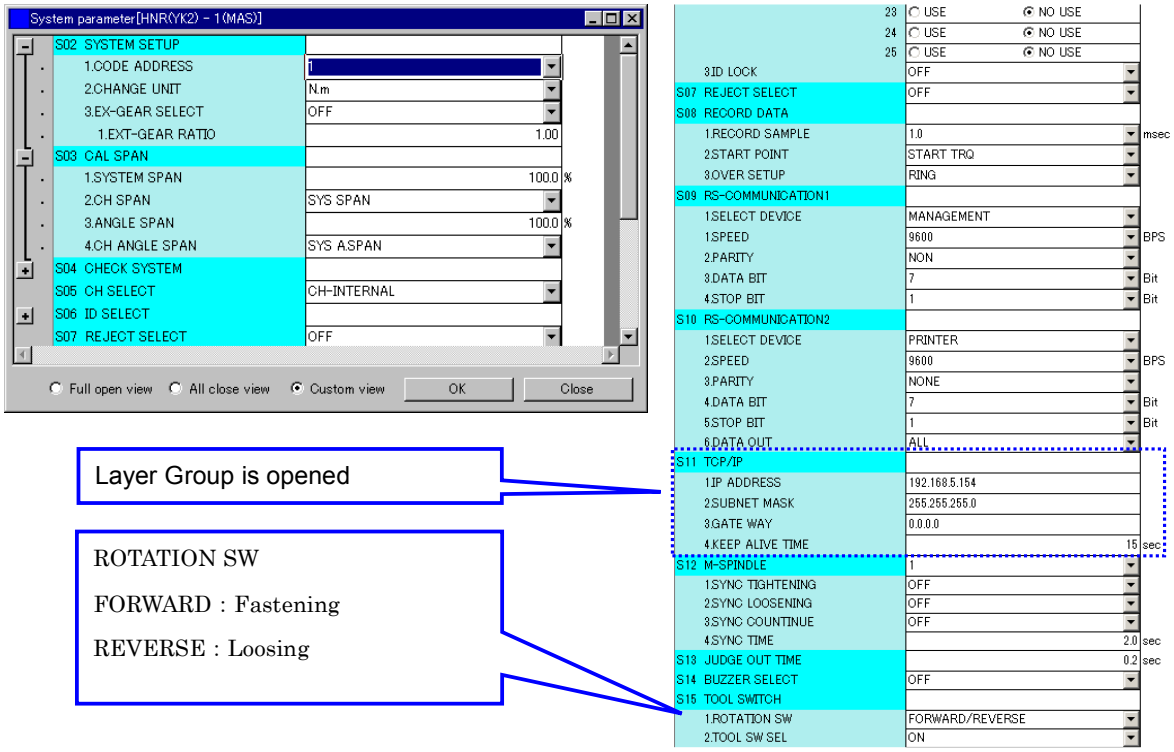
< Command Switch >

Name	Content
OK	Confirm the changed values.
Close	Cancel the changed values and close the window

5. PARAMETER

5.1. System Parameter

This function enables users to display the system parameters of the controller.
It can verify or change setup values such as measurement unit, communication setup, etc.

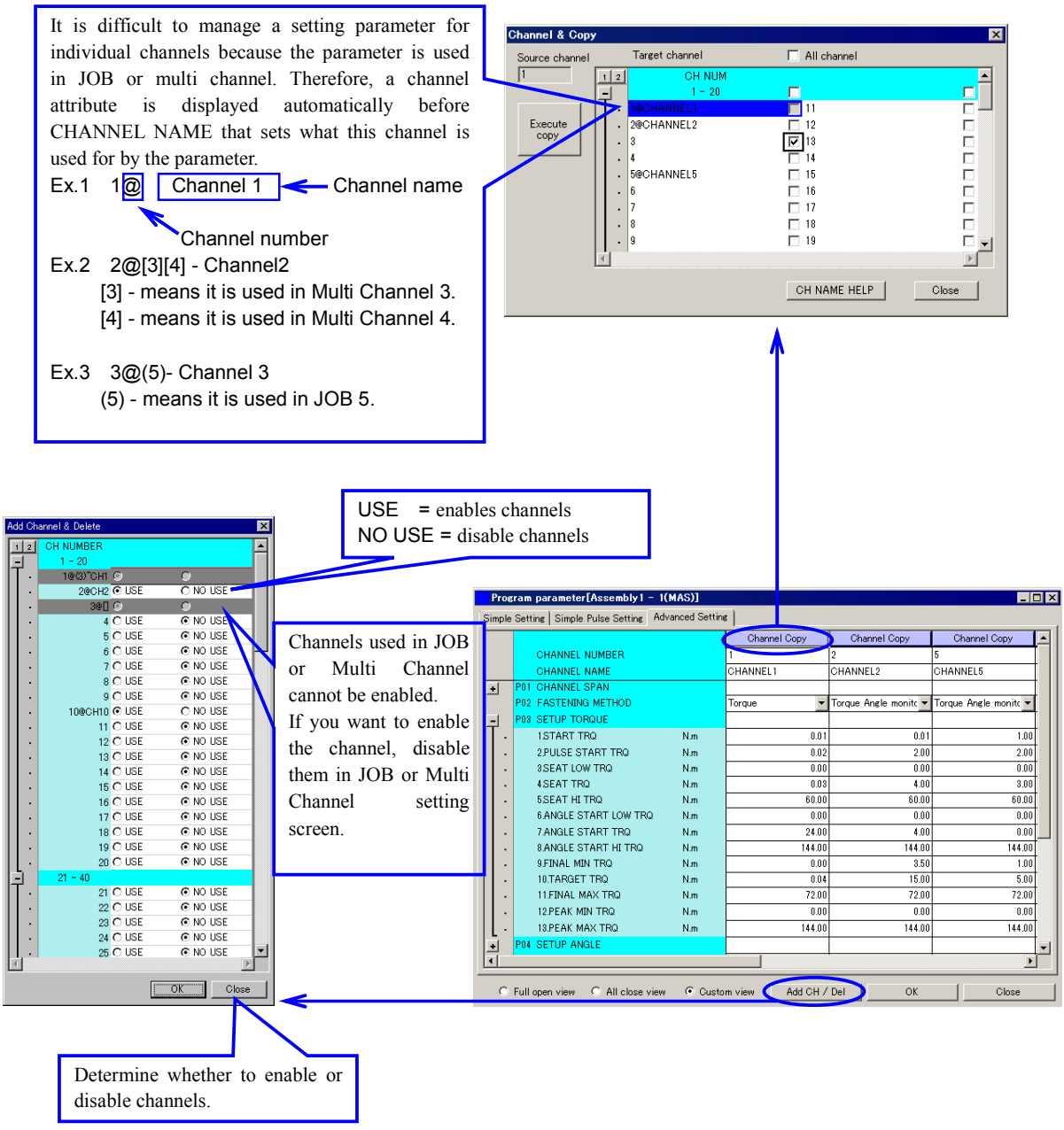


< Command Switch >

Name	Content
Full open view	Open all the group layers
All close view	Close all the group layers
Custom view	Open the customized group layers only.
OK	Confirm the changed values.
Close	Cancel the changed values and close the window

5.2. Program Parameter

Fastening settings of program parameters and its display entries are set up here.

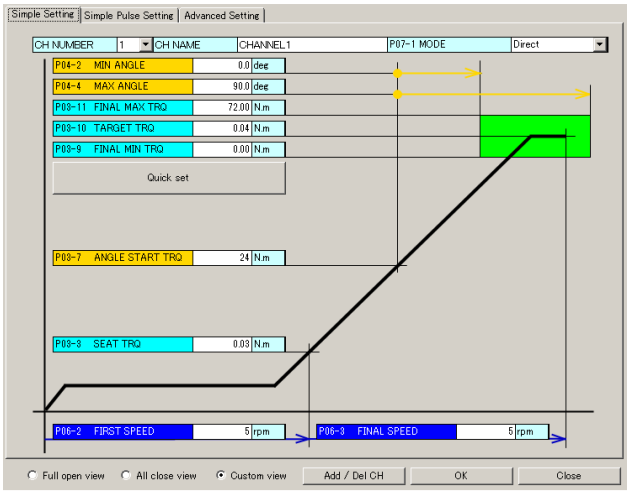


< Command Switch >

Name	Content
Add CH / Del	Select the channel number
Full open view	Open all the group layers
All close view	Close all the group layers
Custom view	Open the customized group layers only. (Custom view is from the last file save)
Channel copy	Copy the Program parameter values.
OK	Confirm the changed Program parameter values.
Close	Cancel the changed Program parameter values.

・Simple Setting

This screen isolates key setting values for quick and easy set up of a fastening strategy. The following screen shows a “Torque method angle monitor” tightening method.



The following values are set automatically by pressing “Quick set”.

Tightening method:”Torque method angle monitor”

FINAL MAX TRQ : TARGET TRQ 110%

FINAL MIN TRQ : TARGET TRQ 90%

SEAT TRQ : TARGET TRQ 8%

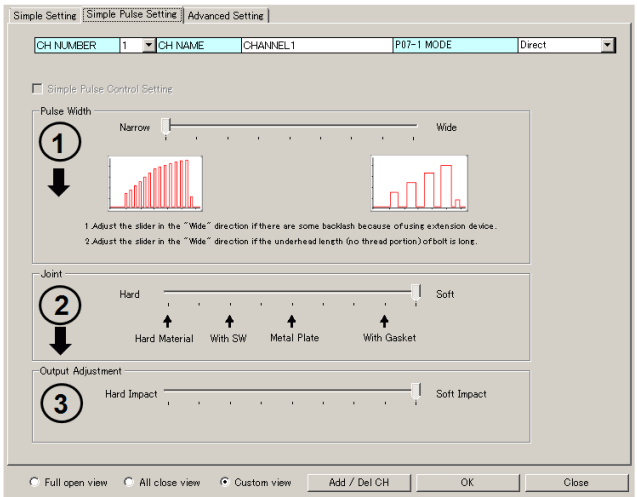
ANGLE START TRQ : TARGET TRQ 20%

・Simple Pulse Setting

This screen allows simplified pulse setting adjustments with a slide bar.

The Simple Pulse Control Setting becomes usable when P07-1 MODE is set to Pulse.

If P07-1 MODE is set to Direct, then the slide bars will be reset and the check box is disabled.



When P07-1 MODE is Pulse, this tab will be active.

Simple Pulse Control Setting

ON : Enable OFF : Disable

Pulse Width

This changes the RUN TIME and STOP TIME.

Joint

This changes the DRIVE SLOPE. Adjusting how quickly the final torque will try to attain its target.

Output Adjustment

This changes the PULSE LEVEL. Modifying how hard or soft it will pulse.

MEMO

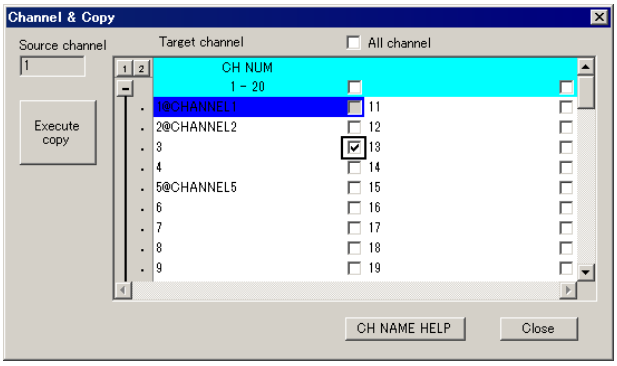
Available Value

The value, which is input or calculated, is able to set within available range in advanced setting screen.

When the value is Out of range or less, available maximum or minimum value will be set.

5.2.1. Channel copy

This function enables users to copy the fastening program parameters from one channel to the other.
Select ”Target channel” and click [Execute copy] to copy the setting.



< Command Switch >

Name	Content
Source channel	Copy the setting values from the source channel.
Target channel	Paste the setting values to the Target channel.
All channel	“All channel” is to copy all the used channels with the same setting at one time
Execute copy	Copy the Program parameter values.
CH NAME HELP	Display details of the channel name.
Close	Close the channel copy window

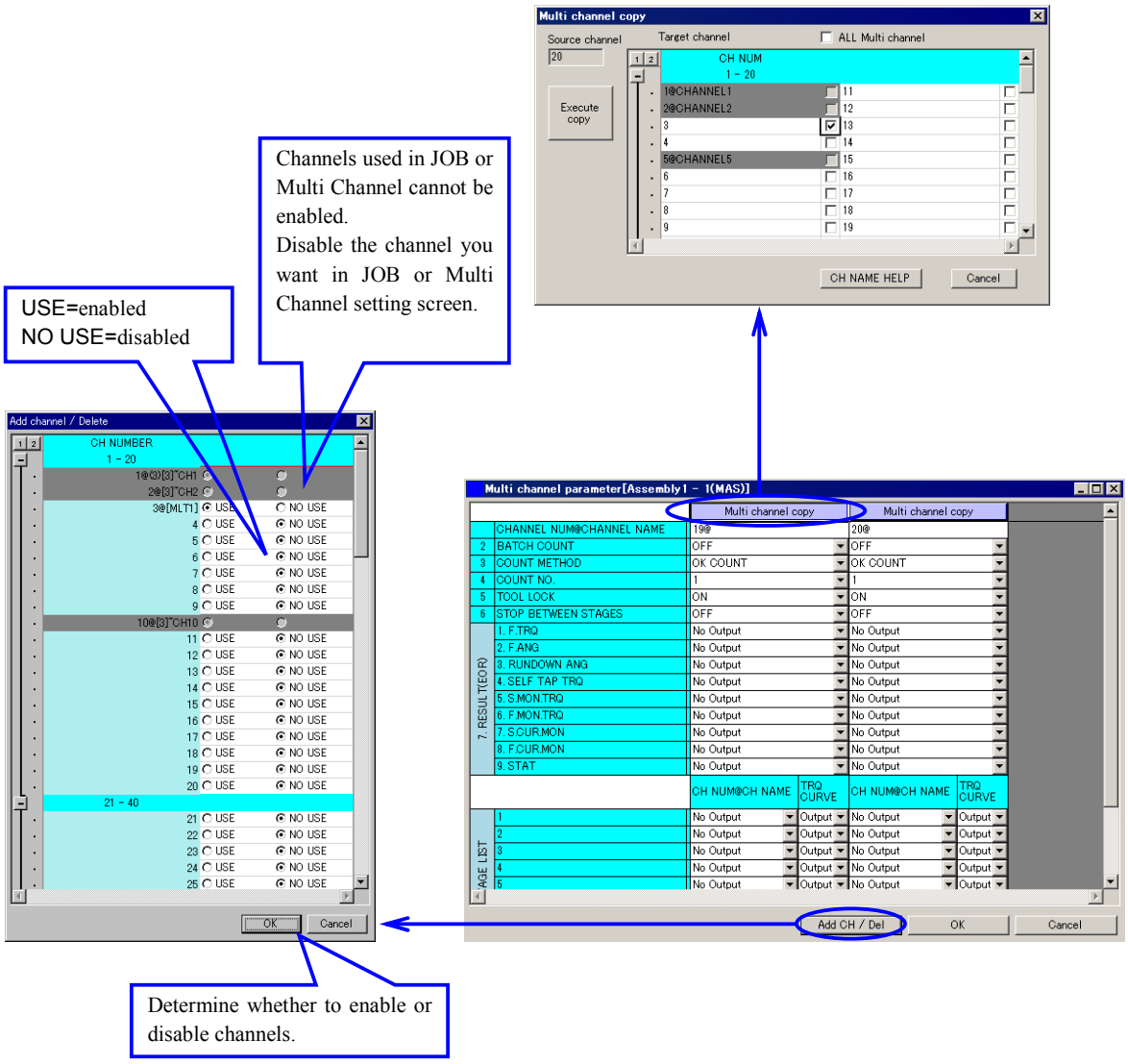
MEMO

Precautions for using Channel Copy

Channels used in JOB or Multi Channel cannot be specified as “Target channels.”
If a user wants to specify such channels, they should be set in JOB or Multi Channel setting screen as not used.

5.3. Multi channel parameter

This function displays and sets multi channel parameters necessary for fastening.
(Please refer to the controller manual for details of multi channel parameters.)

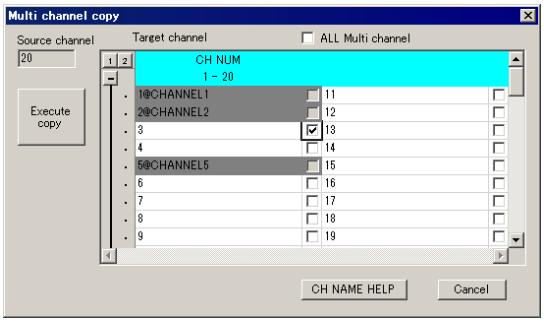


<Command Switch>

Name	Content
Add CH / Del	Select a channel number of a parameter to be displayed.
Multi channel copy	Copy a multi channel parameter.
OK	Confirm the details of changed parameter.
Close	Cancel changes of the parameter.

5.3.1. Multi channel copy

This function copies multi channel parameters used for fastening between channels.
Select the “Target channel” and press Execute copy button, and the setting value will be copied.



< Command Switch >

Name	Content
Source channel	Copy the setting values from the source Multi channel.
Target channel	Paste the setting values to the Target Multi channel.
All Multi channel	“All Multi channel” is to copy all the used Multi channels with the same setting at one time
Execute copy	Copy the Program parameter values.
CH NAME HELP	Display details of channel names.
Close	Close the channel copy window

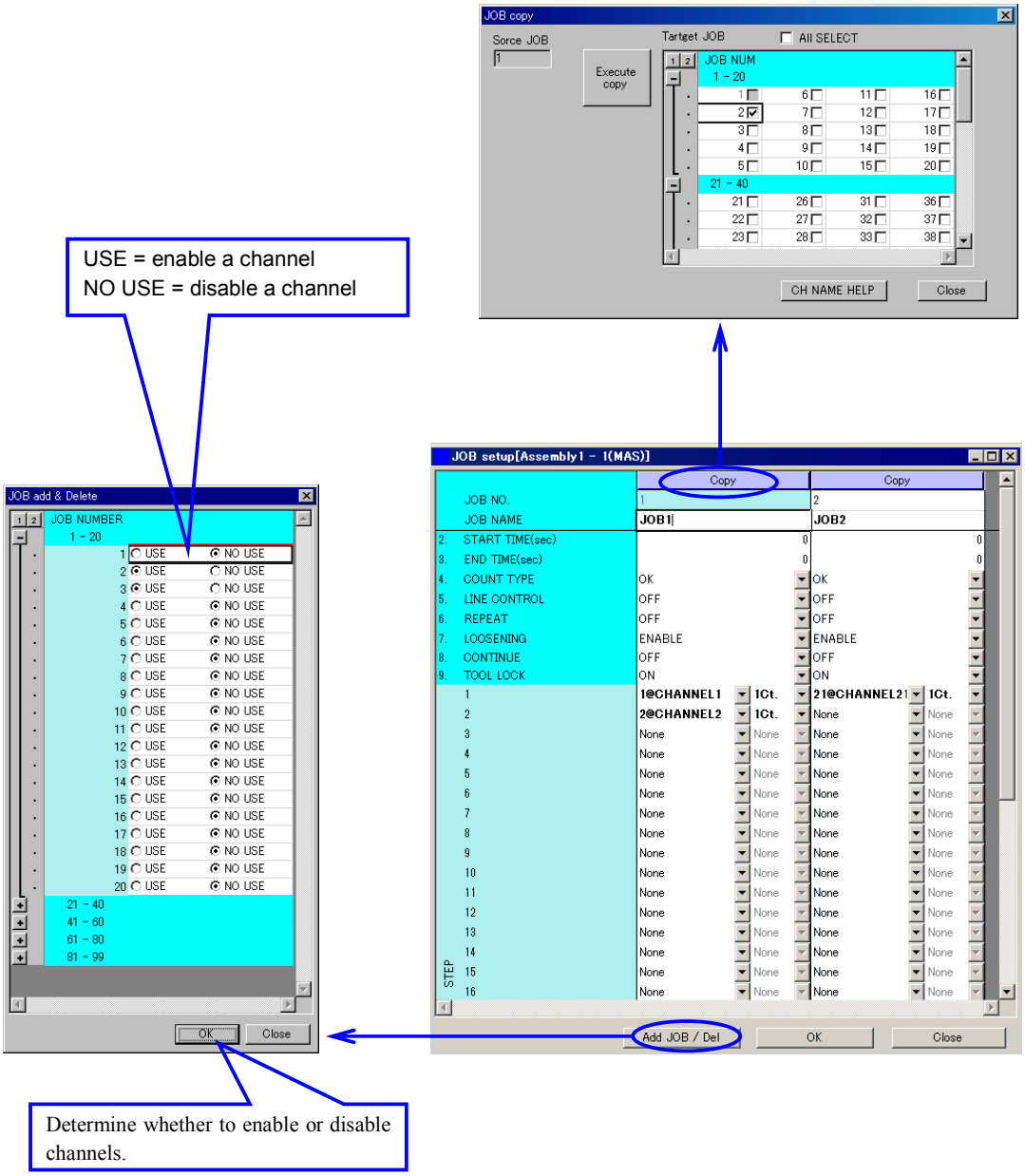
MEMO

Precautions for using Multi Channel Copy

Channels used in Program Parameter cannot be specified as ”Target channels.”
If a user wants to specify such channels, they should be set in Program Parameter setting screen as not used.

5.4 JOB Parameter Setup

This function enables users to display and set up the fastening Job parameters.
(For Job parameter setup, please refer to the controller manual.)

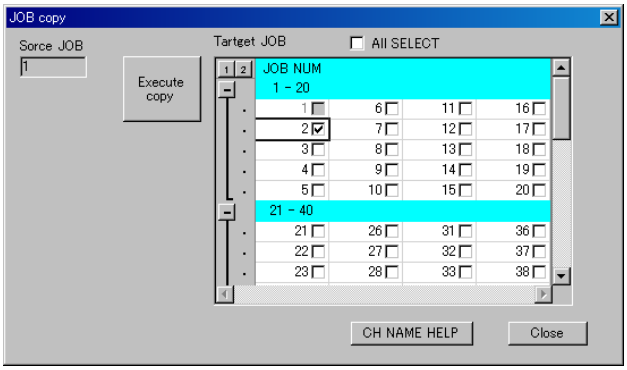


< Command Switch >

Name	Content
Add JOB / Delete	Select the Job number
Copy	Copy the JOB parameter
OK	Confirm the changed JOB parameter values.
Close	Cancel the changed JOB parameter values.

5.4.1. JOB copy

This function enables users to copy the fastening program parameters from one channel to the other. Select “Target JOB” and click [Execute copy] to copy the setting.



< Command Switch >

Name	Content
Source JOB	Copy the setting values from the source JOB.
Target JOB	Paste the setting values to the Target JOB.
All Select	“All Select” is to copy same setup onto all valid JOB
Execute copy	Copy the JOB parameter values.
CH NAME HELP	Display details of channel names.
Close	Close the JOB copy window

5.5. PLC Ladder parameter

This function displays and sets the PLC Ladder logic and I/O assign necessary for fastening control.
(Please refer to the controller manual for details of PLC ladder.)

5.5.1. PLC Ladder

This function creates, monitors, saves, loads, compares, and writes Ladder logic to the controller, as well as, starts / stops PLC functions.

Writing PLC Ladder Logic to the controller

2. . Click “Compile” after Creating / modifying the ladder.

If there is a problem in the ladder, an error will be displayed. Try again after fixing the error.

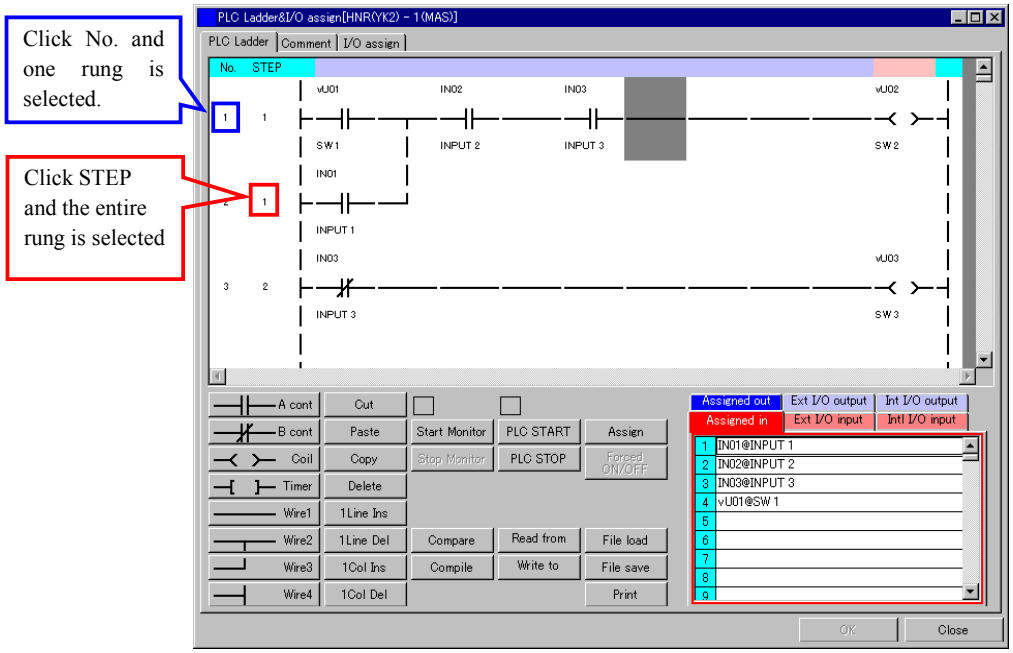
2. . Click “Write to” and the ladder will be written to the controller.

How to Assign I/O

1) Left click the I/O to be assigned on the Ladder Logic.
2) For example: If a user wants to assign IN01, left click the external I/O input tab and left double click 1 of PIO(IN).
3) “IN01” will be displayed in I/O on the Ladder Logic and I/O assign is determined.

Set the Timer

1) Right click the timer to be set on the Ladder Logic.
2) The cell turns yellow. Timer settings are in the unit of 0.1 sec. Example: 5 sec. should be set as 50.
3) Press ENTER, and the timer setting will be determined.



<Command Switch>

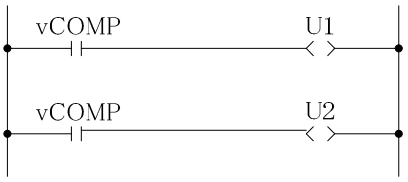
Name	Content
A cont	Create a normally open contact of the Ladder Logic.
B cont	Create a normally closed contact of the Ladder Logic.
Coil	Create a coil of the Ladder Logic.

Name	Content
Timer	Create a timer of the Ladder Logic.
Wire1	Create wiring of the Ladder Logic.
Wire2	Create vertical wiring connection of the Ladder Logic.
Wire3	Create the Ladder Logic corner.
Wire4	Create horizontal wiring connection of the Ladder Logic.
Cut	Cut a specified range of the Ladder Logic.
Paste	Paste a specified range of the Ladder Logic.
Copy	Copy a specified range of the Ladder Logic.
Delete	Delete a specified range of the Ladder Logic.
1Line Ins	Insert one line space.
1Line Del	Delete one line of the Ladder Logic.
1Col Ins	Insert one free column.
1Col Del	Delete one column.
Name	Content
Start Monitor	Start to monitor the Ladder Logic. Be sure to verify before monitoring.
Stop Monitor	Stop monitoring the Ladder Logic.
Compare	Compare the Ladder Logic between the management software and the controller.
Compile	Compile the ladder logic displayed on the screen into controller data. Be sure to compile the data when the logic has changed.
PLC START	Remotely turn on the PLC function of the controller from the management software. This starts the PLC function of the controller.
PLC STOP	Remotely turn off PLC function of the controller from the management software. This stops the PLC function of the controller. (Fastening by using the ladder will not be available.)
Read from	Read the ladder logic from the controller.
Write to	Write the ladder logic that is currently being displayed to the controller. Be sure to compile the data in advance.
Assign	Assign I/O from the selected I/O list on the right.
Forced ON/OFF	It is valid only during the monitoring. Click the coil and use this command, and the forced ON/OFF of the coil is available.
File load	Read the ladder logic saved in the file and I/O assign on the screen. Write the data to the controller after compilation.
File save	Save the ladder logic to a file. I/O assign is saved, too.
Print	Print the ladder logic and the comment list displayed on the screen.
OK	If I/O assign is changed, the change is applied by executing this command.
Close	Close the PLC ladder window.

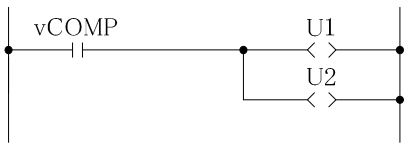
MEMO **You cannot develop plural coils one the same step.**

Example of Possible Circuit to Develop and Impossible One

Possible Circuit to Develop



Impossible Circuit to Develop



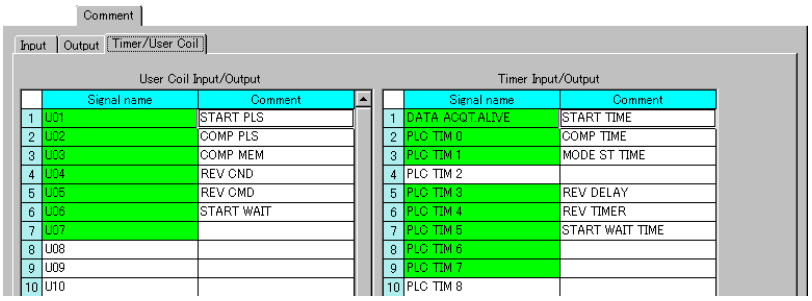
5.5.2. Comment

This function creates and modifies a comment about the ladder logic.

How to Enter Comment

(1) As for I/O assigned to the ladder logic, “Assigned signal name” cell turns green. Enter any comment character string in “Comment” cell. (Both two and one-byte characters are available.)

(2) Press [OK], and the set comment is determined and displayed on the ladder logic.



5.5.3. I/O Assign

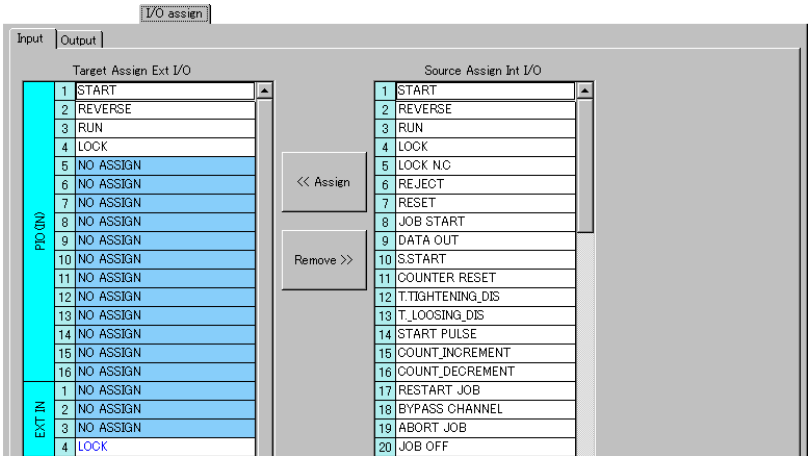
This function creates and modifies I/O assign. This setting is the same as the I/O assign from the tree view on the left side of the screen. (Only the necessary I/O signals are displayed on each screen.)

How to Assign I/O

(1) Select and drag an I/O from the list displayed in “Source Int. I/O” on the right.

(2) Press [<<Assign]. The internal I/O assigned to “Target Assign Ext. I/O” on the left is displayed. Select I/O from the “Target Assign Ext. I/O”. Press [Remove >>]. The assignment is cancelled.

(3) Press [OK], and the I/O assign is set.



5.5.4. Forced ON/OFF

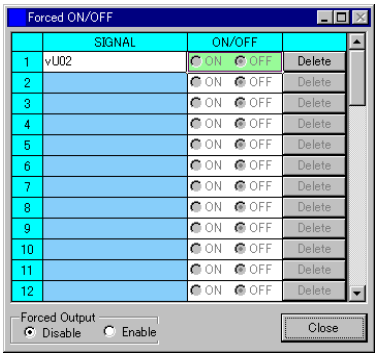
This function forcibly turns ON/OFF the coil that is being monitored. Please pay careful attention to execute this as I/O status directly influences the control of the controller.

How to Execute Forced ON/OFF

(1) Left click the I/O to be assigned on the Ladder Logic. Press [Forced ON/OFF].

(2) Select the forced output. “ON/OFF” becomes operable.

(3) Forcibly turn on and off the desired I/O. To remove a signal press [Delete].



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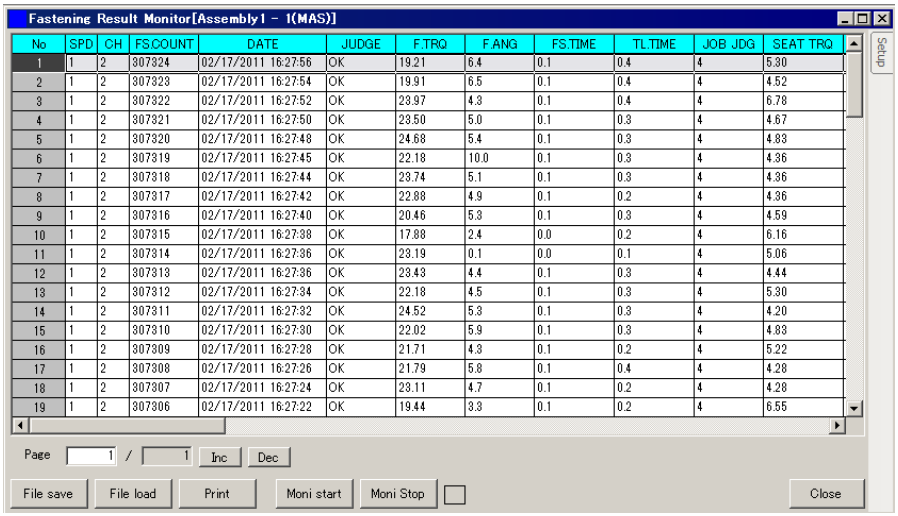
6. MONITOR

6.1. Fastening result monitor

This function enables users to display or print out the most recent fastening result data that is stored in controller memory. Fastening result data is saved in CSV format and may be loaded automatically or manually.



No	SPD	CH	FS.COUNT	DATE	JUDGE	F.TRQ	F.ANG	FS.TIME	TL.TIME	JOB JDG	SEAT TRQ
1	1	2	307324	02/17/2011 16:27:56	OK	19.21	6.4	0.1	0.4	4	5.30
2	1	2	307323	02/17/2011 16:27:54	OK	19.91	6.5	0.1	0.4	4	4.52
3	1	2	307322	02/17/2011 16:27:52	OK	23.97	4.3	0.1	0.4	4	6.78
4	1	2	307321	02/17/2011 16:27:50	OK	23.50	5.0	0.1	0.3	4	4.67
5	1	2	307320	02/17/2011 16:27:48	OK	24.68	5.4	0.1	0.3	4	4.83
6	1	2	307319	02/17/2011 16:27:45	OK	22.18	10.0	0.1	0.3	4	4.36
7	1	2	307318	02/17/2011 16:27:44	OK	23.74	5.1	0.1	0.3	4	4.36
8	1	2	307317	02/17/2011 16:27:42	OK	22.88	4.9	0.1	0.2	4	4.36
9	1	2	307316	02/17/2011 16:27:40	OK	20.46	5.3	0.1	0.3	4	4.59
10	1	2	307315	02/17/2011 16:27:38	OK	17.88	2.4	0.0	0.2	4	6.16
11	1	2	307314	02/17/2011 16:27:36	OK	23.19	0.1	0.0	0.1	4	5.06
12	1	2	307313	02/17/2011 16:27:36	OK	23.43	4.4	0.1	0.3	4	4.44
13	1	2	307312	02/17/2011 16:27:34	OK	22.18	4.5	0.1	0.3	4	5.30
14	1	2	307311	02/17/2011 16:27:32	OK	24.52	5.3	0.1	0.3	4	4.20
15	1	2	307310	02/17/2011 16:27:30	OK	22.02	5.9	0.1	0.3	4	4.83
16	1	2	307309	02/17/2011 16:27:28	OK	21.71	4.3	0.1	0.2	4	5.22
17	1	2	307308	02/17/2011 16:27:26	OK	21.79	5.8	0.1	0.4	4	4.28
18	1	2	307307	02/17/2011 16:27:24	OK	23.11	4.7	0.1	0.2	4	4.28
19	1	2	307306	02/17/2011 16:27:22	OK	19.44	3.3	0.1	0.2	4	6.55

< Command Switch >

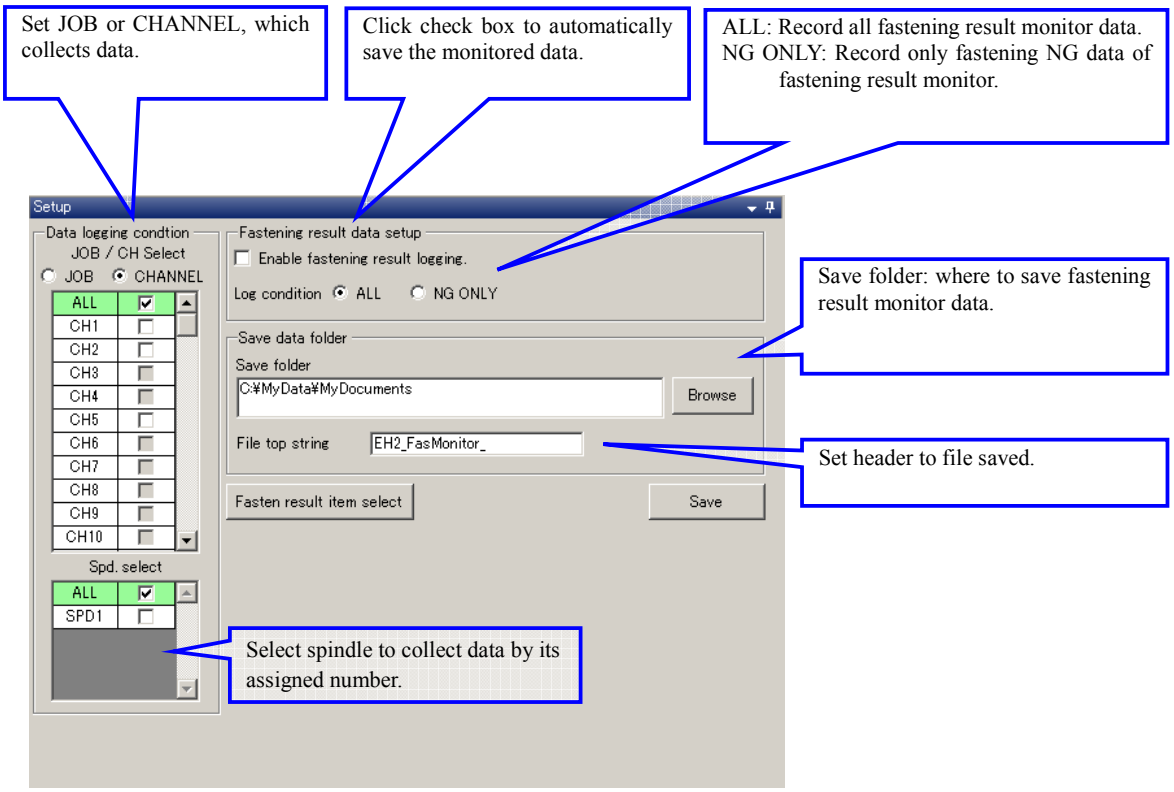
Name	Content
Inc	Increase one page.
Dec	Decrease one page.
File save	Save fastening result data in CSV format. (file cannot be saved when monitoring)
File load	Load CSV formatted fastening result data and display on screen. (file cannot be loaded when monitoring)
Print	Print out displayed fastening result data. Print preview will be shown when print button is pushed.
Moni start	Start monitoring fastening result data. After connection is established, data will be displayed automatically.
Moni stop	Stop monitoring fastening result data.
Close	Close fastening result monitor window.
Setup	Change the monitor display settings Fastening result.

MEMO

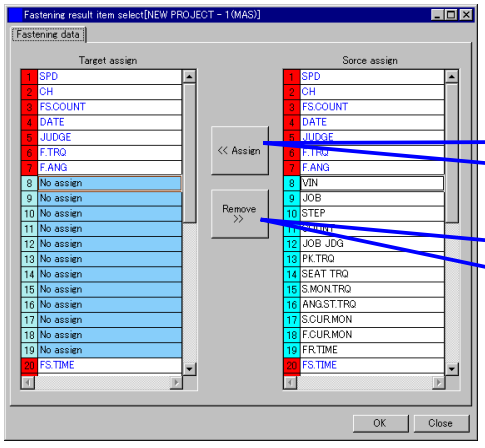
If the fastening cycle is too short, there is a possibility to mix up the order of FS.COUNT.

6.1.1. Setup Fastening result monitor

Set the data save conditions of the Fastening Result Monitor.

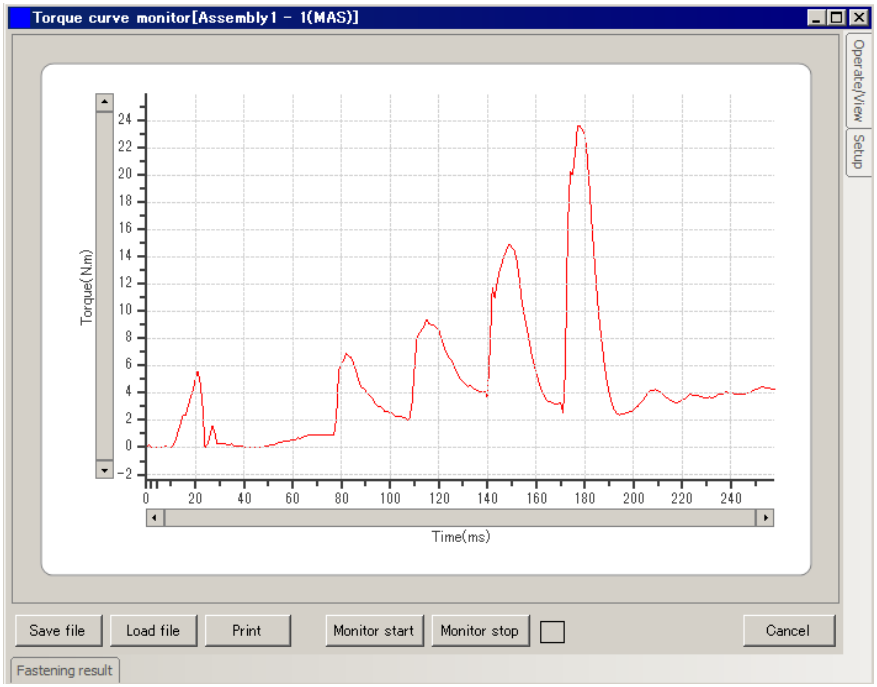


< Command Switch >

Name	Content
Browse	Displays a dialog to select the destination folder references.
Fastening result item select	 The following screen is displayed. Fastening result items can be assigned freely. Click on the item to be added and click [Assign] button to allocate it. Click on the item to be removed from display and click [Remove] button to remove it [OK] apply new allocation setting. [Close] cancel allocation setting and close window.
Save	Save new settings by clicking this button.

6.2. Torque curve monitor

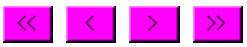
This function enables users to display or print out the most recent torque curve that is stored in controller memory. Monitoring data is saved in CSV format and may be loaded automatically or manually.



< Command Switch >

Name	Content
Save file	Save torque curve data in CSV format. (file cannot be saved when monitoring)
Load file	Load CSV formatted torque curve data and display on screen. (file can not be loaded when monitoring)
Print	Print out displayed torque curve. Print preview will be shown when print button is pushed.
Monitor start	Start monitoring torque curve data. After connection is established, torque curves will be displayed automatically.
Monitor stop	Stop monitoring torque curve data.
Cancel	Close torque curve monitor window.
Fastening result	Displays numerical data were Fastening result.
Oparation/View	AB cursor changes and a graph.
Setup	Change the display settings Torque curve monitor.

< A-B Data >

A target point can be selected by clicking it and will be crossed by horizontal x-axis and vertical y-axis. Select a range of data to be read from fastening result data display by using **A-B data**. Data color turns grey if being selected. Torque curve color turns black if being selected.
Data range displayed on screen could be adjusted by pushing  movement switches on right side of screen or use mouse cursor to click on lines.
The target data is displayed in the upper right box.

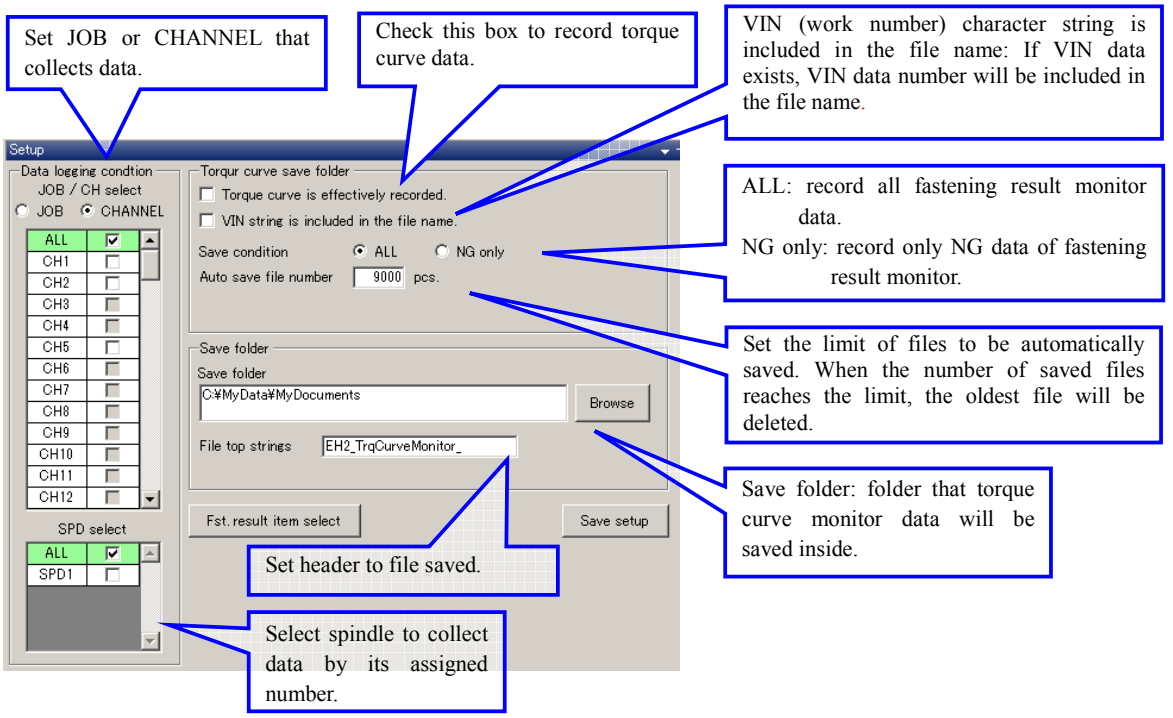
MEMO

In the case that the number of connection spindles of project is fewer than that of spindles of data to be loaded, the number of spindles of torque curve records displayed is adapted to the number of connection spindles of project

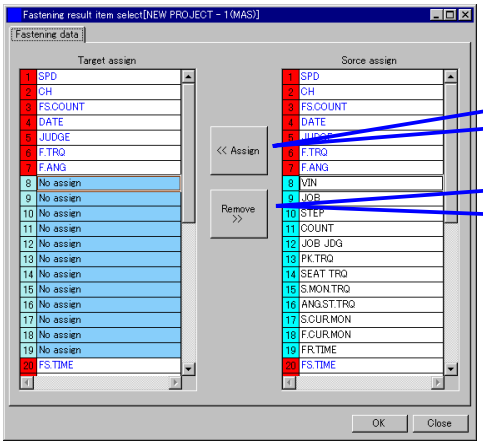
(Example) The number of project spindle＝ 1. In this case, if torque curve records data recorded on two spindles' system is loaded, the displayed number of spindle is 1.

6.2.1. Setup Torque curve monitor

Set data saving format conditions for fastening result monitor or torque curve monitor.



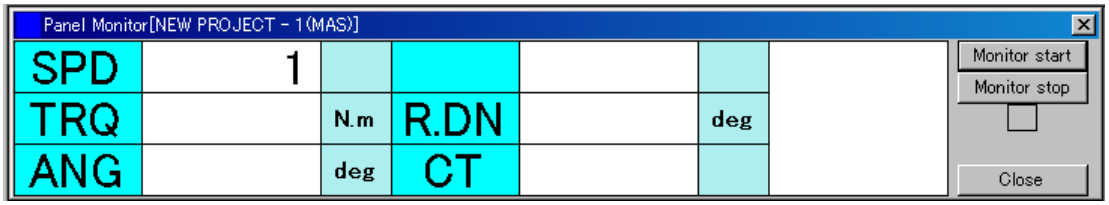
< Command Switch >

Name	Content
Browse	Displays a dialog to select the destination folder references.
Fastening result item assign	 The following screen is displayed. Fastening result items can be assigned freely. Click on the item to be added and click [Assign] button to allocate it. Click on the item to be removed from display and click [Remove] button to remove it. [OK] apply new allocation setting. [Close] cancel allocation setting and close window.
Setup	Save new settings by clicking this button.

MEMO If the fastening cycle is too short, display of torque curve has to be influenced.

6.3. Panel monitor

This function enables to display controller status by panel.
After starting this monitor function, it always displays the latest fastening status.



Name	Content
SPD	Displays controller station number data.
TRQ	Displays final torque data.
ANG	Displays final angle data. (Only displays other than torque method is selected)
R.DN	Displays measurement data of pre-fastening angle.
CT	Displays fastening count data when error proofing function is in use. When Job function is in use, it displays the total fastening count number.

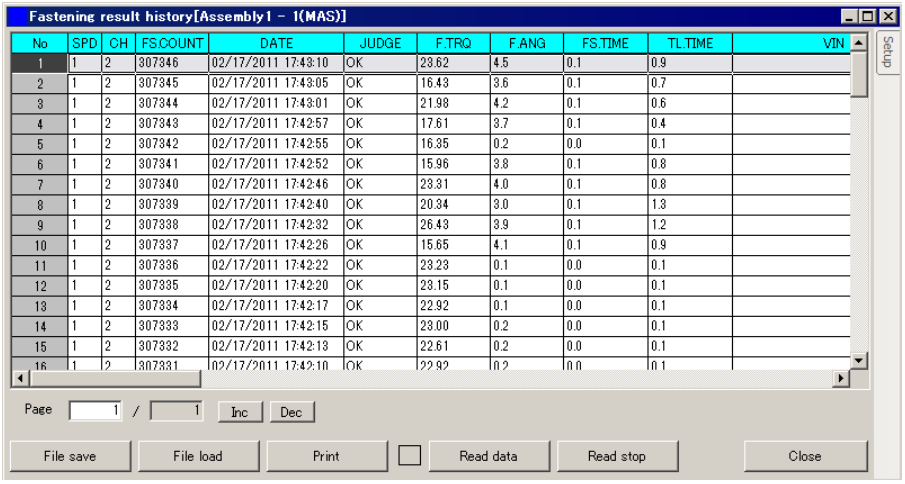
< Command Switch >

Name	Content
Monitor start	Starts monitoring for controller status and the latest fastening result. After completing the read, it displays the data on the panel monitor window.
Monitor stop	Stops monitoring for controller status and the latest fastening result.
Close	Close panel monitor window.

7. DATA

7.1. Fastening Result History

This function enables users to read out, display and print out fastening result history data that is stored in controller memory. Files saved in CSV format and the data can be loaded from file. The data displayed in this function can be modified in Fasten Result Item Assign.



< Display color / content >

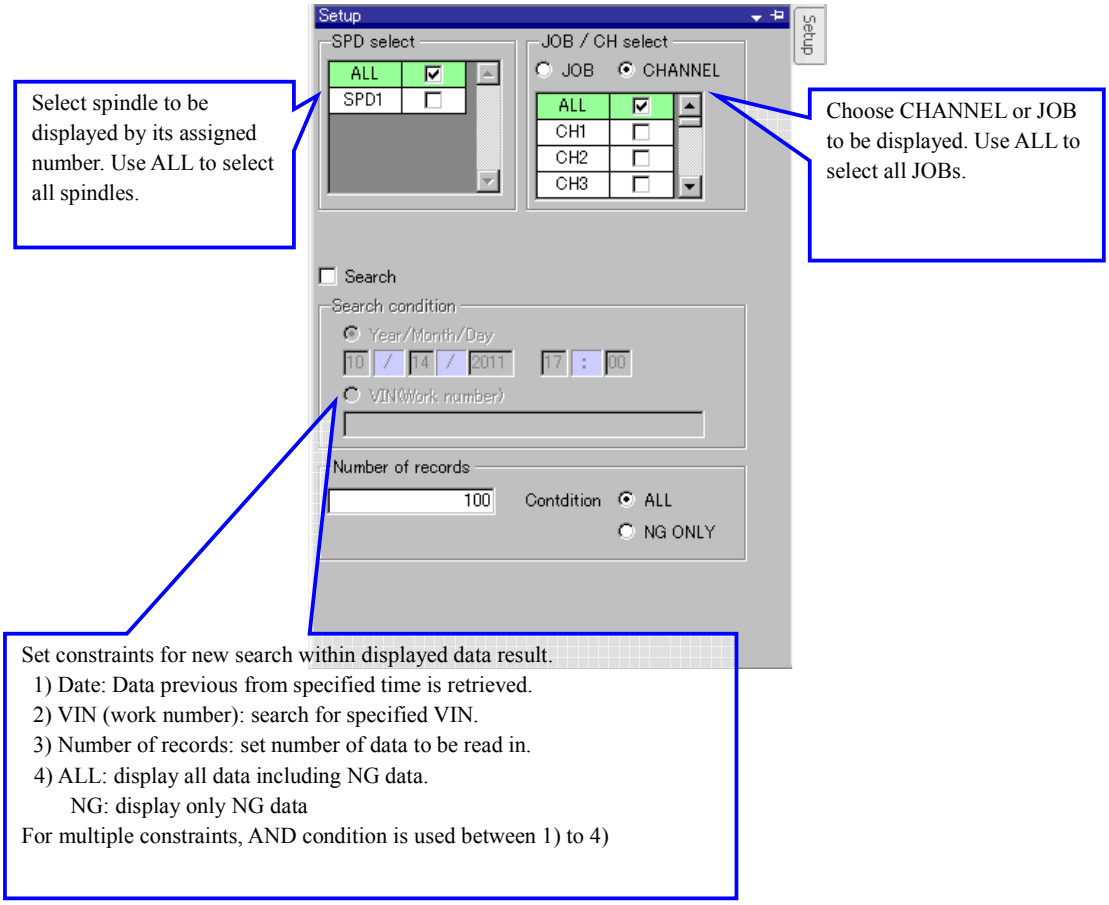
Background color	Meaning
white	Fastening OK
Red	High NG
Blue	Low NG
Yellow	Fastening NG

< Command Switch >

Name	Content
File save	Save Fastening result history data file in CSV format.
File load	Load Fastening result history data file and display it.
Print	Print out displayed Fastening result history data. Print preview will be shown if this button is clicked.
Read data	Read Fastening result history data of specified channel from controller.
Read stop	Stop Fastening result history data transmission from controller. Data that was partially transmitted will be displayed.
Close	Close Fastening result history window.
Setup	Change the monitor display settings Fastening result.

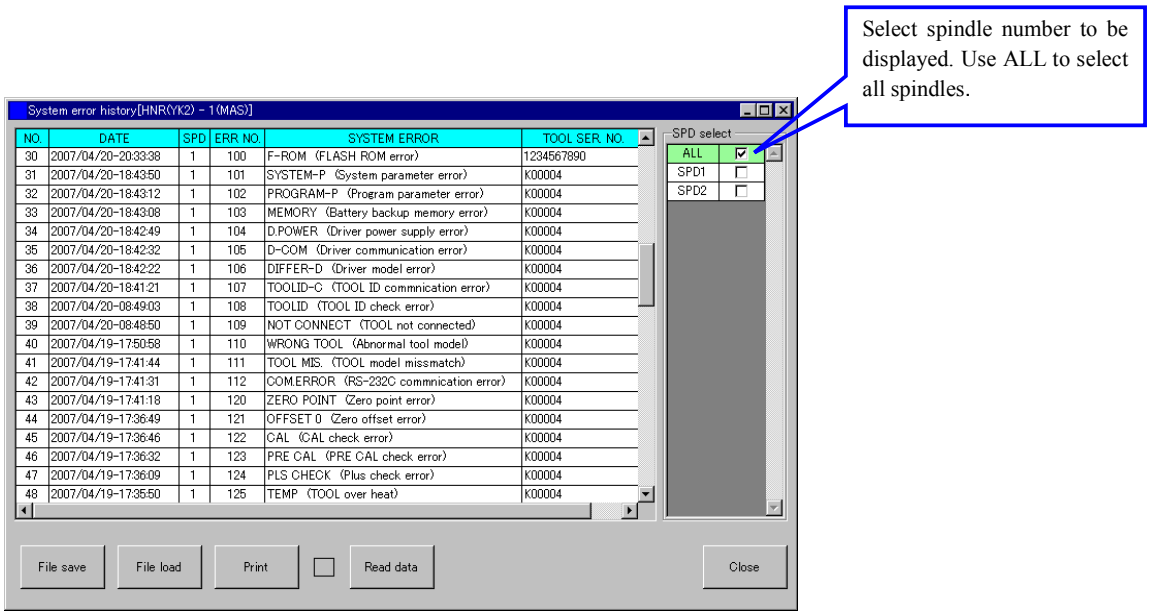
7.1.1. Setup Fastening Result History

Narrow or Fastening Result of the display data, set the search criteria.



7.2. System Error History

This function enables users to read out, display and print out the fastening error history stored in controller memory. File is saved in CSV format and can be read from file.

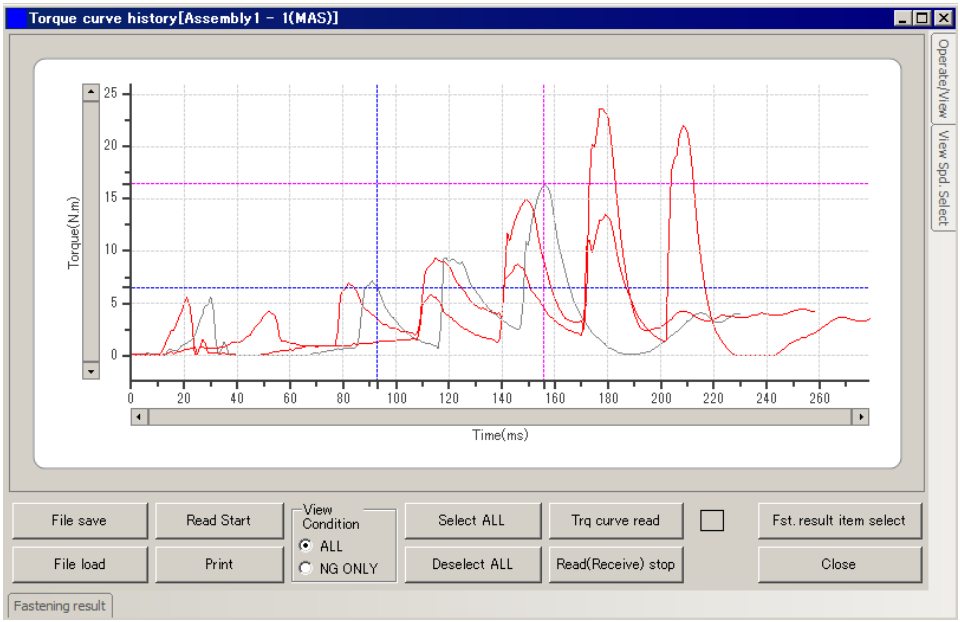


< Command Switch >

Name	Content
File save	Save System error history data in CSV format.
File load	Load System error history data file and display.
Print	Print out displayed System error history data. Print preview will be shown if this button is clicked.
Read data	Read System error history data of specified channel from controller.
Close	Close System error history window.

7.3. Torque Curve History

This function enables users to read out, display and print out the torque curve history data stored in controller memory. Maximum number of 20 OK torque curve and 10 NG torque curve histories are saved. All curves can be overlapped and displayed within their range. File is saved in CSV.



< Command Switch >

Name	Content
File save	Save Torque curve history data in CSV format.
File load	Load Torque curve history data and display.
Read start	Load Torque curve history data from controller memory. After loading is completed, fastening data result will be displayed. If checkbox ☑ on the left side of data is checked, Torque curve history data is loaded and displayed on screen.
Print	Print out displayed Torque curve history. Print preview will be shown if this button is clicked.
View Condition	ALL: Load all the data stored in controller. NG ONLY: Load only NG data stored in controller.
Select ALL	Select all the loaded Torque curve history data.
Deselect ALL	Release “Select ALL”.
Trq curve read	Load the curve form data for Torque curve history data with checks in “Display” cell.
Read(Receive) stop	Stop loading of Torque curve history data or curve form data.
Fst. Result item select	Select fastening result item to narrow down the data to be displayed.
Read stop	Stop transmission Torque curve history data from controller. Data that was partiality transmitted will be displayed.
Close	Close Torque curve history window.

< Slide Tab >

Name	Content
Operate/View	AB cursor changes and a graph.
View Spd. Select	Push spindle button to select curve form display by each spindle unit.
Fastening result	Displays numerical data were Fastening result. Display: Select (check the box for) curve form data to be displayed. Select: Select (check the box for) curve form data to conduct detailed measurement.

< A-B Data >

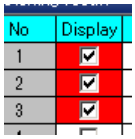
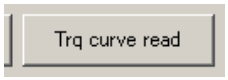
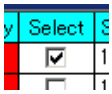
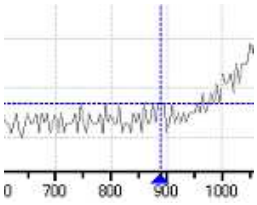
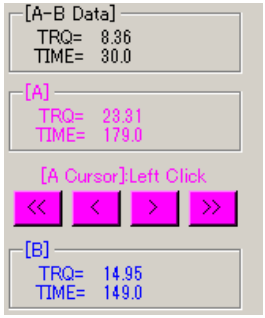
It is possible to trace a curve using the cursor. The point is indicated by crossing X and Y axes.
Select a range of data to be read from fastening result data display by using **A-B data**. The data color turns grey if being selected. Torque curve color turns black if selected.
Data range displayed on screen can be adjusted by pushing << < > >> movement switches on right side of screen or by using mouse cursor to click on lines.
The target data is displayed in the upper right box.

MEMO

In the case that the number of connection spindles of project is fewer than that of spindles of data to be loaded, the number of spindles of torque curve records displayed is adapted to the number of connection spindles of project

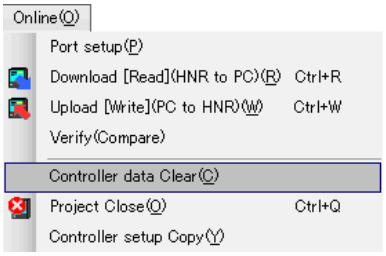
(Example) The number of project spindle = 1. In this case, if torque curve records data recorded on two spindles' system is loaded, the displayed number of spindle is 1.

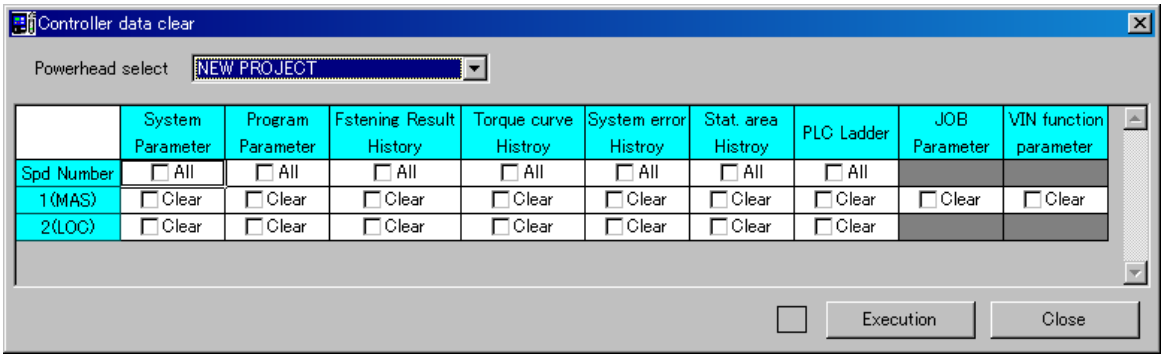
7.3.1. Procedure Torque Curve History

1		Press this button "Read Start".
2		Select curve form data to be displayed. Check ON =Selected
3		Press this button to read out Torque curve form data from controller and display the curve form.
4		Select (check the box for) curve form data to conduct detailed measurement. Check ON =Selected
5		The selected curve form changes its color into gray. Right-click or left-click the observation point.
6		Data is displayed in this area. After completing the observation of the curve form, it is recommended to save the observation status by printing out.

7.4. Clear Controller Data

This function clears all the data stored in the controller.
(Management software settings will not be cleared.)
Data may be cleared at once or cleared by each controller.



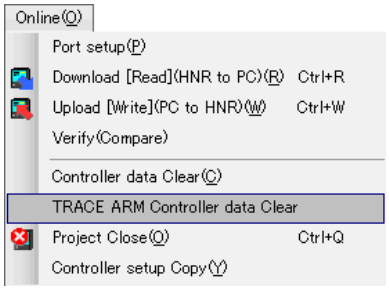


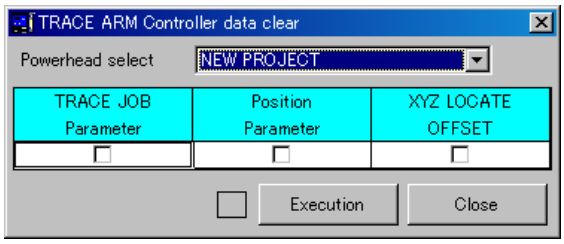
< Command Switch >

Name	Content
Execution	Clear selected data.
Close	Close Controller data clear window without clearing any data.

7.5. Clearing Trace Arm controller data

This function enables to clear setting value data of trace arm in the controller. (setting value in management software is not cleared.
Data can be cleared by each project data which is connected.





< Command Switch >

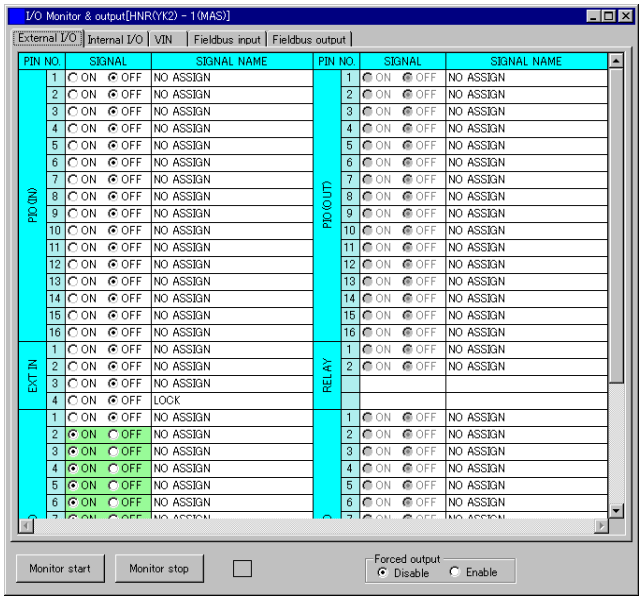
Name	Content
Execution	Clear selected data.
Close	Close Controller data clear window without clearing any data.

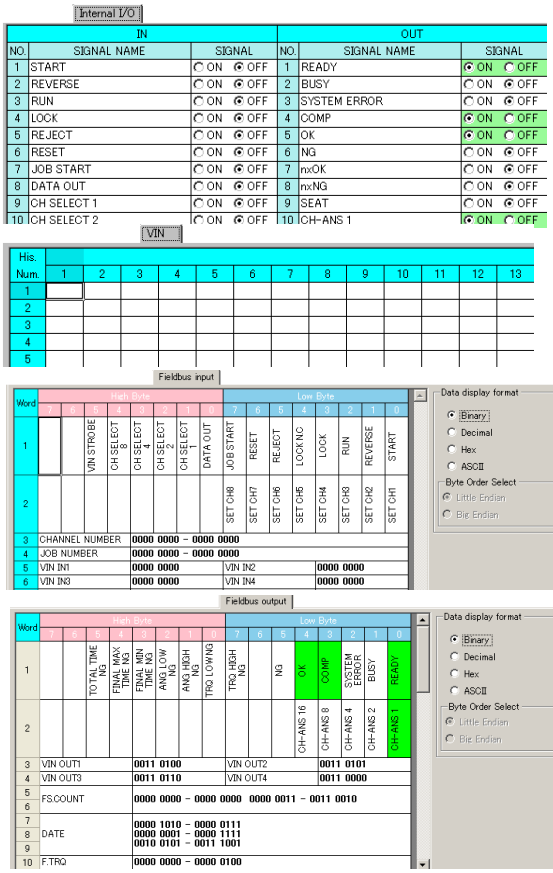
Caution Please disconnect communication such as monitoring with controller when data clearing is executed. Otherwise, it causes malfunction.

8. MAINTENANCE

8.1. I/O Monitor & Output

This function monitors the status of PIO (IN), PIO (OUT), RELAY/EXT IN, REMOTE I/O, Internal I/O, VIN function, fieldbus input, fieldbus output and forcibly outputs them. Contents of each signal vary according to its I/O Assign setup.





< Command Switch >

Name	Content
Monitor start	Start I/O monitoring and enable forced output.
Monitor stop	Stop I/O monitoring.
Forced output	Disable: forced output. Enable : forced output
Close	Close I/O Monitor & Output window
Data display format (Only field bus I/O monitor)	Switch binary, decimal, hexadecimal forms and ASCII format.

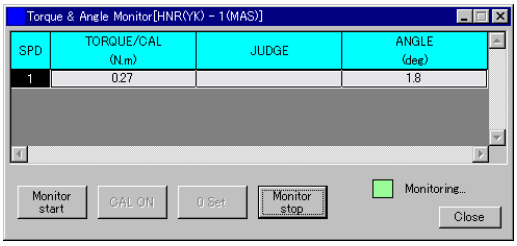
MEMO

- When the forced output is on and the monitoring is started, input of external I/O will be invalid.
- Only the little endian corresponds to fieldbus IO monitor.
- Internal IO is in force is usually not possible, if you hold down the CTRL + SHIFT launched during the launch window will forced output is available.

Caution ·Forced internal IO output is disabled external input.

8.2. Torque & Angle Monitor

This function can monitor torque and angle. Furthermore, it monitors CAL.



< Command Switch >

Name	Content
Monitor start	Start monitoring Torque and angle.
CAL ON	Display CAL(not functional during fastening)
0 Set	Reset displaying Torque and angle to 0.
Monitor stop	Stop monitoring Torque and angle
close	Close Torque and angle monitor window.

8.3. Time Setup

Adjust controller date and time by receiving time data from PC.

By clicking [Execute Time Adjust], time from PC will be sent to controller and set.

When Multi-SPINDLE function is in use, time of LOC station will be automatically adjusted by MAS station.

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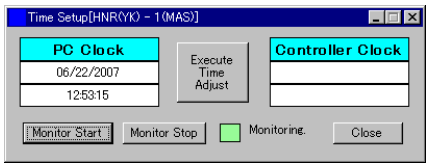


< Command Switch >

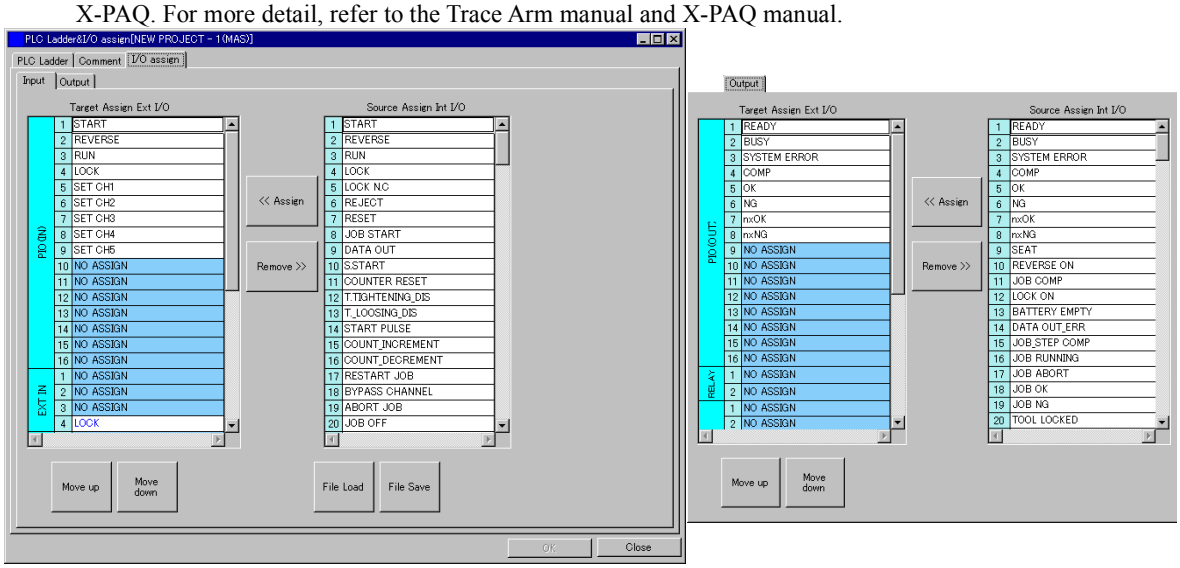
Name	Content
Monitor Start	Start time monitoring
Monitor Stop	Stop time monitoring.
Execute time Adjust	Send time from PC to controller and set.
Close	Close Time Setup window.

9. ASSIGN

9.1. I/O Assign

Internal I/O entries can be freely allocated to PIO(IN), PIO(OUT), RELAY/EXT IN, and REMOTE I/O of the controller. (Please refer to Controller manual for further details about Internal I/O)

1) EXT IN の LOCK in EXT IN is dedicated and cannot be removed. (Shown in blue text)
2) SET CH1～SET CH32 or CH SELECT 1 ～ CH SELECT 64, only one channel group can be used. (Unselected channel group is highlighted in green.
3) The same signal can be allocated to multiple locations.
4) I/O・TCU I/O・EXT I/O・TCU SW・TCU LED for Trace Arm is only available when trace arm is connected to X-PAQ. For more detail, refer to the Trace Arm manual and X-PAQ manual.



< Command Switch >

Name	Content
<< Assign	Entry of “Source Assign Internal I/O” is selected by clicking it, and using the [Assign] button to allocate signal. Multiple signals can be selected by clicking one of them and dragging cursor down or up.
Remove >>	Entry of “Source Assign Internal I/O” is selected by clicking it, and using the [Remove] button to remove allocation. Multiple signals can be selected by clicking one of them and dragging cursor down or up.
Move up	Switch the selected signal allocation with the one above it.
Move down	Switch the selected signal allocation with the one below it.
File Load	The setup of the I/O allocation saved in the file is load.
File Save	The setup of the I/O allocation is saved in the file.
OK	Apply allocation setting.
Close	Close I/O Assign windows.

MEMO

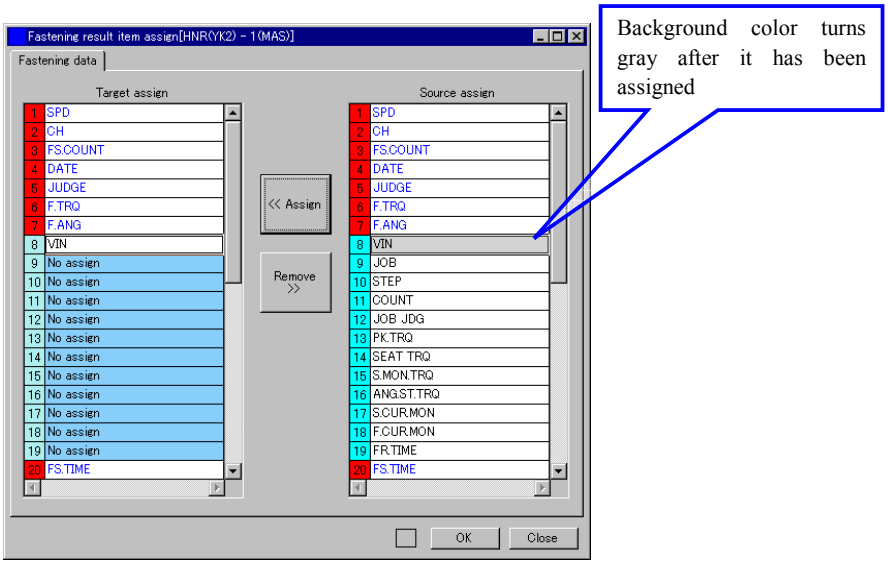
ATTENTION

1) Please execute ”Upload[Write] (PC to HNR)” after I/O allocation settings have been changed.
2) Please DO NOT change I/O allocation while machine is operating. Error may occur.

9.2. Fastening Result Item Assign

Under this section, fastening result display entries of controller can be allocated freely.
(Please refer to controller operation manual for details about fastening result display items.)

1) Fastening result history data can be assigned or removed by modifying this allocation setting.
   NOTE: Previous data will be erased after any change in setting is applied.
2) SPD, CH, FS.COUNT, DATE, JUDGE, F.TRQ, F.ANG, FS.TIME, TL.TIME, JUDGE2, JUDGE3 are standard settings which cannot be modified.



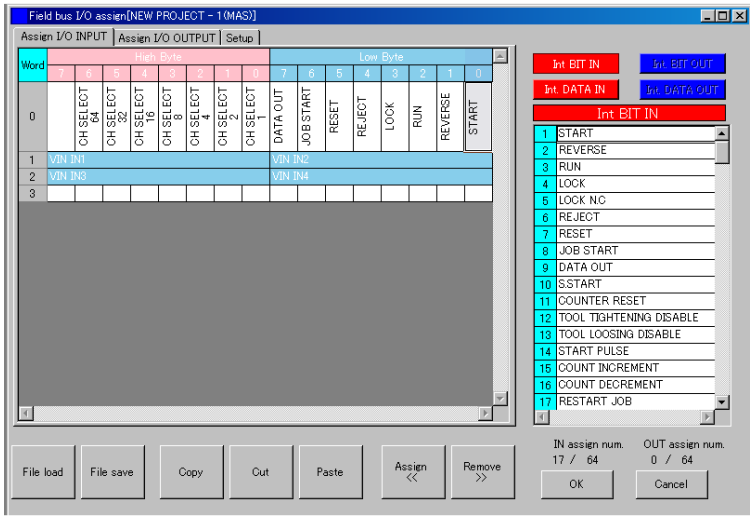
Æ

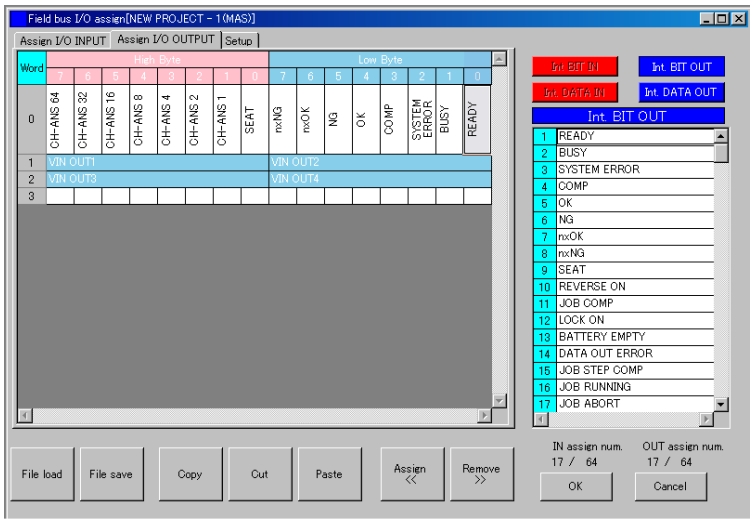
< Command Switch >

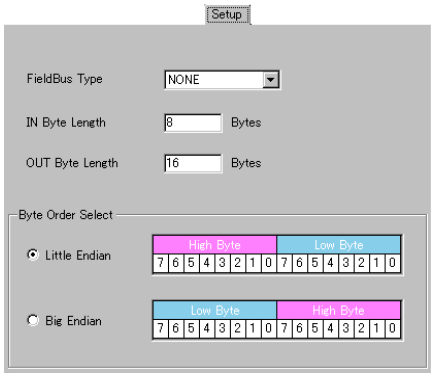
Name	Content
<< Assign	Entry of “Source Assign” is selected by clicking it, and using the [Assign] button to allocate the signal. Multiple signals can be selected by clicking one of them and dragging cursor down or up.
Remove >>	Entry of “Target Assign” is selected by clicking on it, and using the [Remove] button to remove allocation. Multiple signals can be selected by clicking one of them and dragging cursor down or up.
OK	Apply allocation setting
Close	Close “Fastening result Item Assign” window.

9.3. Field bus I/O assign

I/O entries including data can be assigned to the controller field bus I/O.
(Please refer to Controller Manual for details of I/O assign items.)







<Command Switch>

[File load] Reads assign contents stored in a file.

[File save] Saves I//O assign contents in a file.

[Copy] Copy the selected range of I/O assign.

[Cut] Cut the selected range of I/O assign.

[Paste] Paste the copied or cut I/O assign.

[Assign]
Assign I/O from the cursor place. Assign BIT I/O from left to right, Char, Word, and Long from right to left.

[Remove] Remove the selected range of I/O.

[OK] Execute I/O assign.

[Cancel] Close the window.

[Int. BIT IN]
This is the BIT input list of assignable internal I/O.

[Int. BIT IN]
This is the BIT output list of assignable internal I/O.

[Int. DATA IN]
This is the DATA input list of assignable internal data.

[Int. DATA OUT]
This is the DATA output list of assignable internal data.

Cautions

1) The maximum points of input or output BIT I/O is 64 points respectively.

2) The maximum input or output data length is 126 bytes.

3) If Byte Order Select is changed, the assigned content is cleared. Make the setting before assignment.

MEMO

Cautions in Operation

In changing **I/O assign**, **Fastening results item assign**, or **Field Bus I/O assign parameter**, understand well how changed results influence the equipment and then execute the change. If these parameters are changed without careful consideration, the equipment stops running in the worst case. Please exercise due cautions.

About “VIN ANS” and allocation destination “VIN OUT” of the I/O output

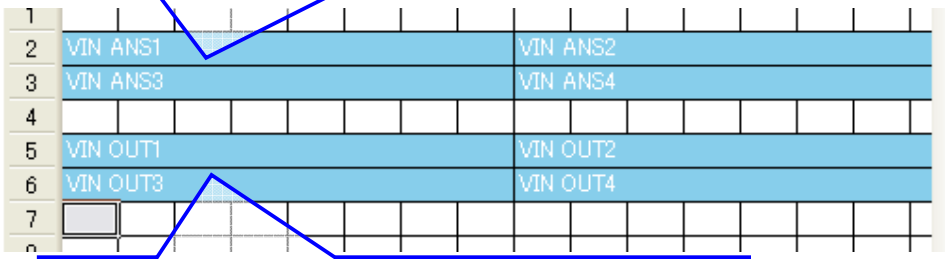
The I/O output includes internal BIT output and internal DATA output at the allocation destination.

“VIN ANS” and “VIN OUT” exist in internal DATA output in that.

It is necessary to note it because the display timing is different though it is an item that outputs either and VIN.

・VIN　ANS

VIN being set by the controller is displayed now.

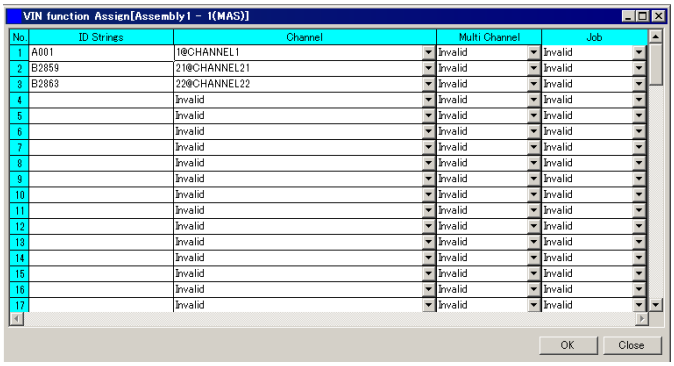


・VIN　OUT

VIN when having tightened at the end is displayed.

9.4. VIN function assign

CHANNEL, MULTI CHANNEL, or JOB is assigned to the VIN in the controller.
(Please refer to Controller Manual for details of VIN.)



<Command Switch>

Name	Content
OK	Determine assign setting.
CLOSE	Close VIN function assign window.

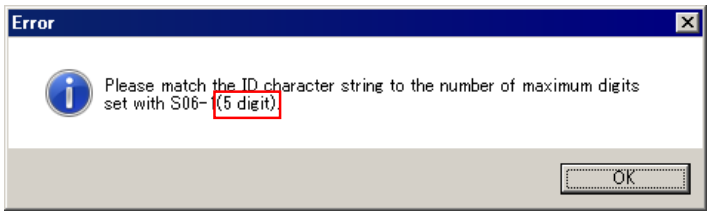
MEMO

How to enter ID Strings information

Digits of ID Strings you need to enter in [VIN assign function] menu is defined by the settings you made on [S06-1 ID POSITION] on [System] menu.

No	System Parameter	ID Strings	Content
1	1 USE / NO USE 2 USE / NO USE 3 USE / NO USE 4 USE / NO USE 5 USE / NO USE 6 USE / NO USE	1 A11 2 A12 3 B21	Since ID POSITION is selected 1, 2 and 3. This is defined as 3 digits. Digits on 4th and after must be blank.
2	1 USE / NO USE 2 USE / NO USE 3 USE / NO USE 4 USE / NO USE 5 USE / NO USE 6 USE / NO USE	1 F11 2 F12 3 G21	Since the last ID POSITION is on the 5th, this is recognized as 5 digits. When you enter ID Strings, 1st and 2nd digit must be blank since ID POSITION on 1st and 2nd is [NO USE]. Digits on the 6th and after must be blank.

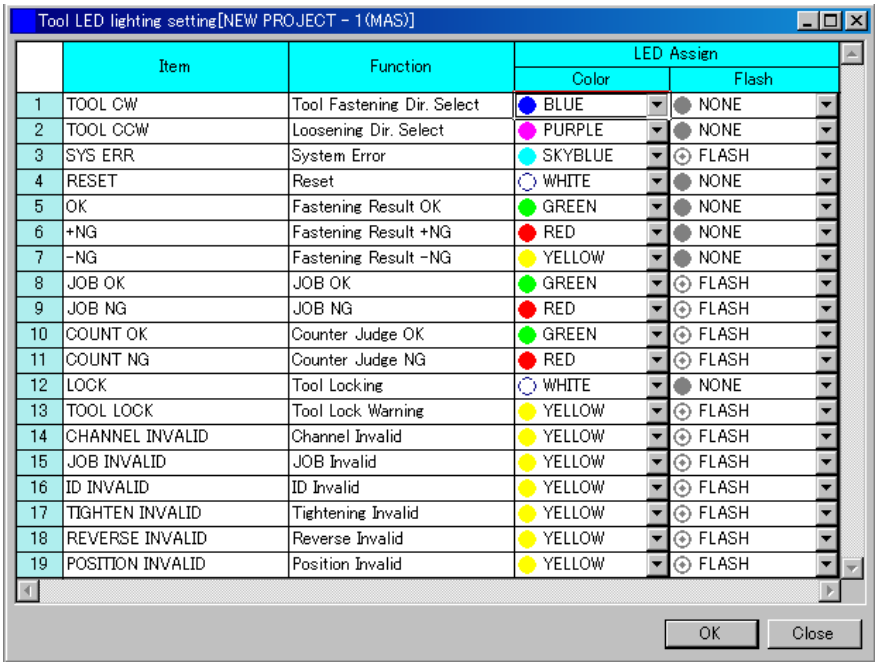
You will see correct digits on the error message window as below, if you made wrong digits entered in ID Strings.



9.5. Tool LED lighting setting

This setting enables to set LED color and flushing.

(Please refer to Controller Manual for details of Tool LED.)



<Command Switch>

Name	Content
OK	Apply allocation setting.
CLOSE	Close LED Display Assign window. The changed value is canceled if allocation setting is not applied.

10. Trace Arm

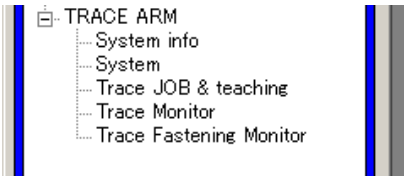
Editing parameter for Trace Arm

To edit the parameter for Trace Arm from management software, Trace Arm function is valid and Trace arm has to be connected to X-PAQ. Refer “6.System Configuration and Wiring” in Trace Control Unit ・ Trace Arm Manual.

To enable Trace Arm, next setting is required.
＜Controller Setting＞

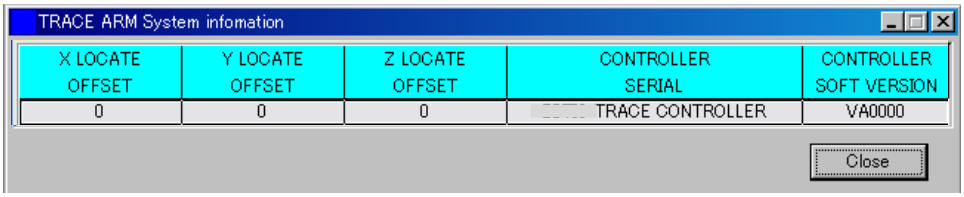
Setting Area	Condition
S05 CH SELECT	JOB-INT（Internal JOB ） or JOB-EXT（External JOB） is set
S18 Trace CONT	1． TABLE SELECT is NOT “NONE”.

When the above conditions are satisfied and parameters are downloaded from the controller; “Trace Arm” item is added in the tree view.



10.1. System Information

This window displays system information of trace arm unit.

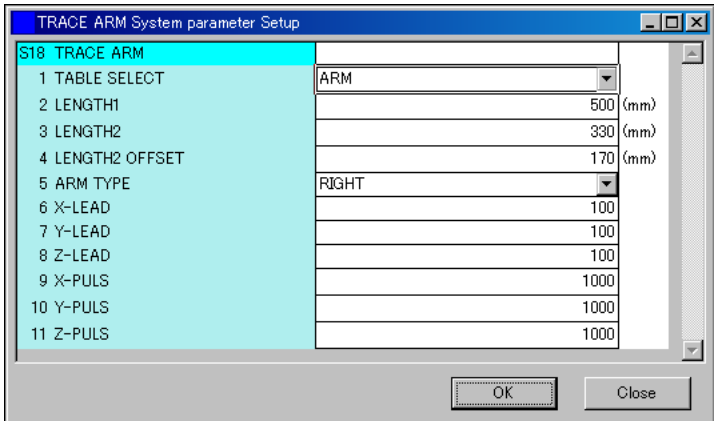


＜Command Switch＞

Name	Content
Close	Close System Information window.

10.2. System Parameter

This function enables to users to display and set system parameter of trace arm unit.



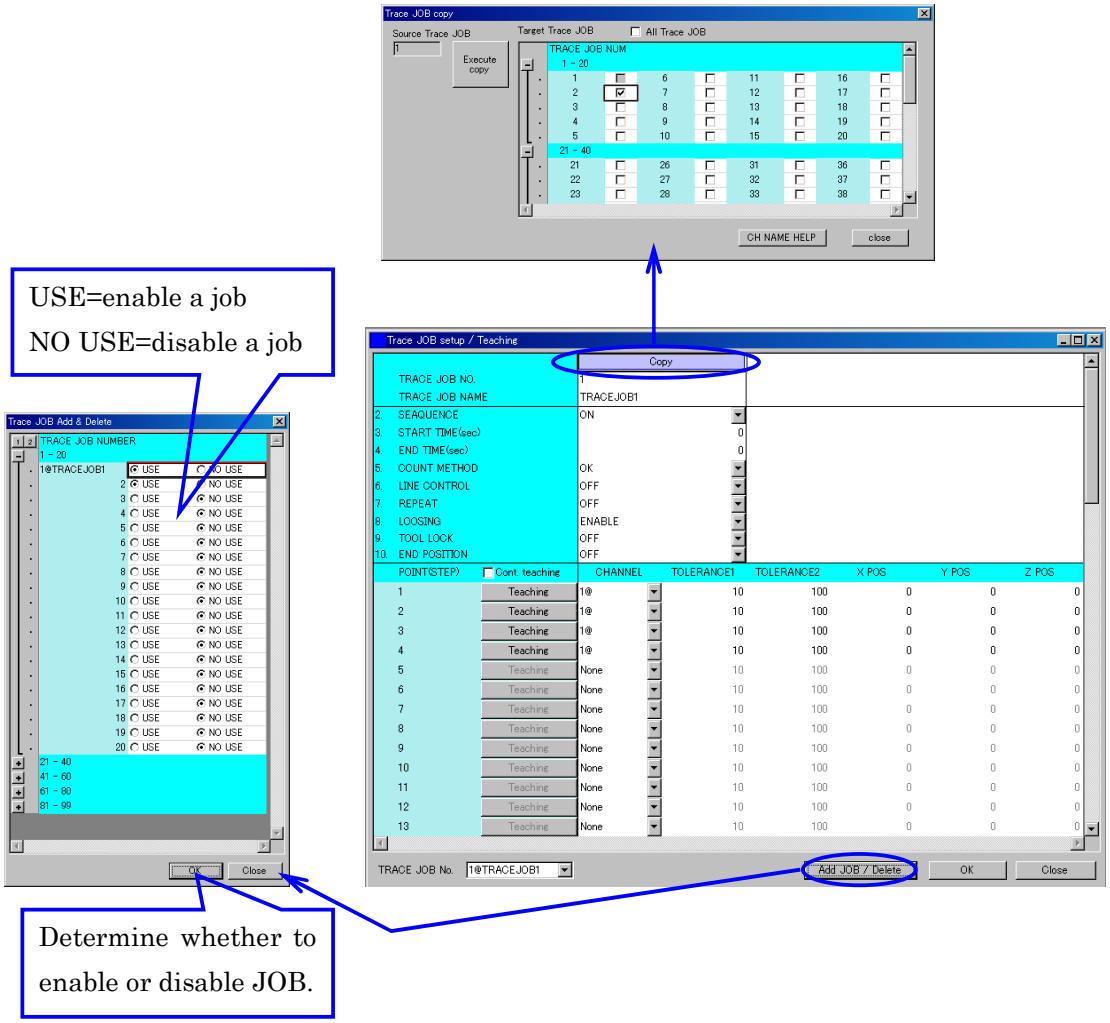
＜Command Switch＞

Name	Content
OK	Apply allocation setting.
CLOSE	Close System window.

10.3. Trace Job & Teaching

This function displays and sets JOB parameter for the trace arm unit.

(Please, refer to Trace Arm Operation Manual for details of trace job parameter.)

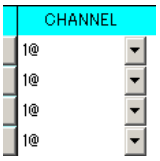
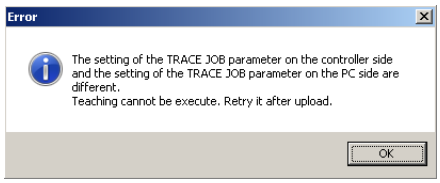
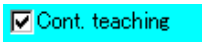
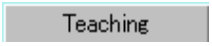
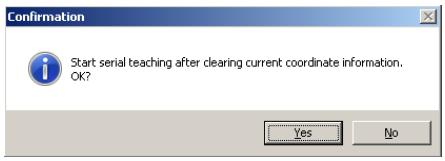


<Command Switch>

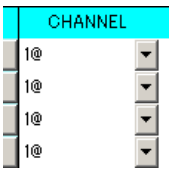
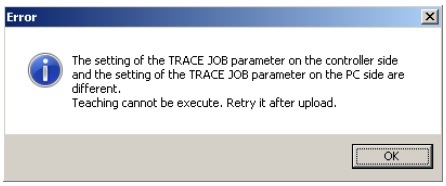
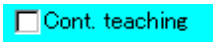
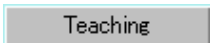
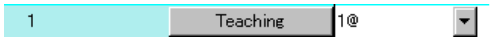
Name	Content
Add Trace JOB / Delete	Select the job number.
Serial Teaching	ON : Serial Teaching Mode OFF : Specified Position Teaching Mode
Teaching	Start teaching for specified position. Start serial teaching from STEP1 if serial teaching box check.
Trace JOB No	Select the Trace JOB No.
Serial Teaching Complete	This command switch is displayed during serial teaching. Press this switch to complete serial teaching. This command switch is only available while start trigger is keeping ON during serial teaching.
Copy	Copy the Trace JOB parameter.
OK	Confirm the changed Trace JOB parameter values.
CLOSE	Close the window. The changed Trace JOB parameter value is canceled if it is not confirmed.

MEMO Add JOB from management software or CH from controller to valid JOB.

10.3.1. Teaching Procedure “All position continuous teaching”

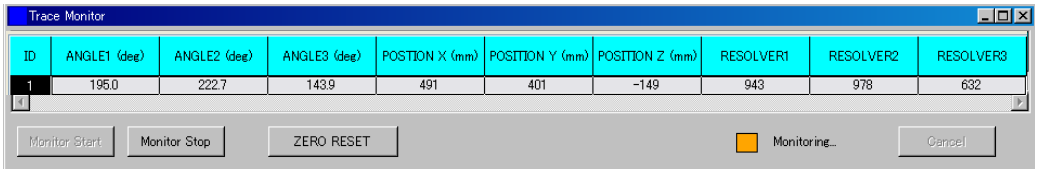
1		Create channels at program parameter before the teaching. After that, set the channel numbers at “CHANNEL” parameter.
2		When trace job is added or set, upload the project file first. Otherwise, an error occurs when teaching is executed.
3		Check “Count. Teaching” check box.
4		Click “Teaching” button of “STEP1” under the “Count. Teaching” check box.
5		When continuous teaching is execute, cleat position information for all STEP.
6		When teaching is started, “On teaching” is black highlighted.
7		After all teaching is competed, Click “Teaching Complete” button and the data is stored in controller.

10.3.2. Teaching Procedure “Select position teaching”

1		Create channels at program parameter before the teaching. After that, set the channel numbers at “CHANNEL” parameter.
2		When trace job is added or set, upload the project file first. Otherwise, an error occurs when teaching is executed.
3		Remove the check from “Count. Teaching” check box.
4		Click “Teaching button” which required to set.
5		When teaching is started, “On teaching” is black highlighted.
6		When teaching is completed, the color is returned same as before.

10.4. Trace Monitor

This function monitors current values of the Trace Arm.



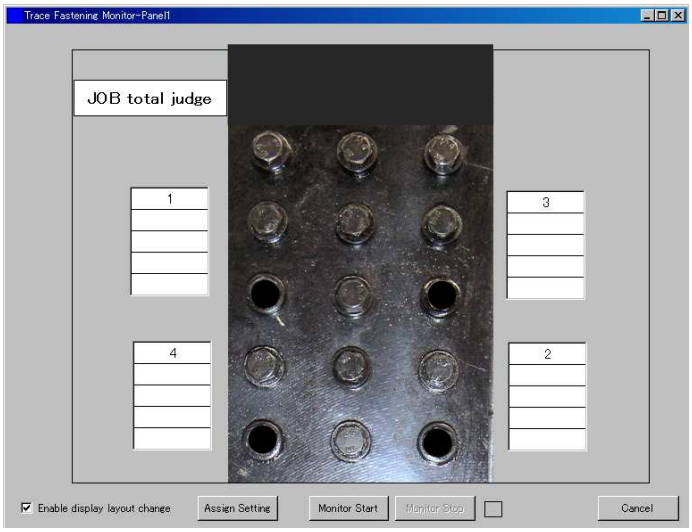
＜Command Switch＞

Name	Content
Monitor Start	Start Trace Arm monitoring.
Monitor Stop	Stop Trace Arm monitoring.
ZERO RESET	Set current position to OFFSET.
Close	Close Trace Monitor window.

10.5. Trace Fastening Monitor

This function allows display of specific fastening position and graphically displays fastening condition. Maximum number of 3 pictures are able to be saved.

10.5.1. Trace Fastening Monitor Panel



<Command Switch>

Name	Content
Layout Edit	Check this box to edit positions of fastening point (●), fastening result display, total JOB judgment, and etc by mouse.
Allocation Setting	Display allocation setting window.
Start Monitoring	Start Trace Fastening monitoring.
Stop Monitoring	Stop Trace Fastening monitoring.
Close	Close Trace Fastening Monitor Panel window.

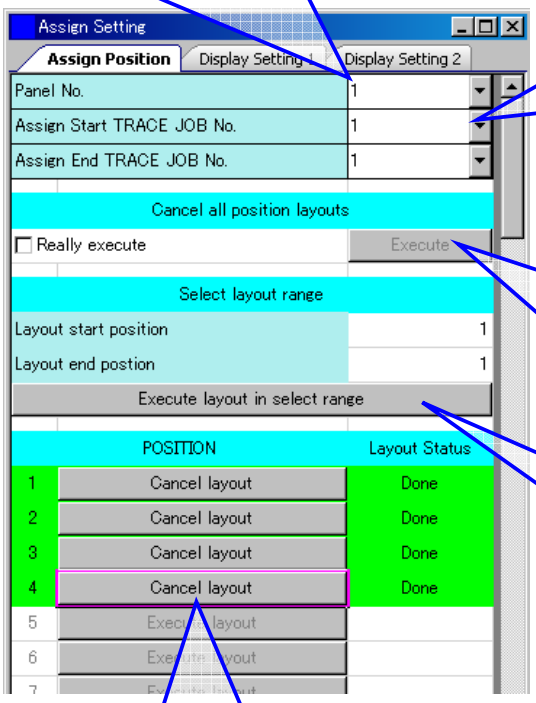
10.5.2. Panel Edit Window

This function allows setting and editing of pictures displayed to Trace Fastening Monitor Panel.

Assign Position

Panel No :

Select the Assign Position panel in Panel Edit 1.



Start / Stop assigning TRACE JOB NO :

Select JOB No, which set parameters in Trace Job & Teaching.

Cancel all position layouts :

Cancels all positions, which currently assigned.

When all assigned positions are required to cancel, check "Really execute" in the check box and click "Execute" button.

Execute layout in select range :

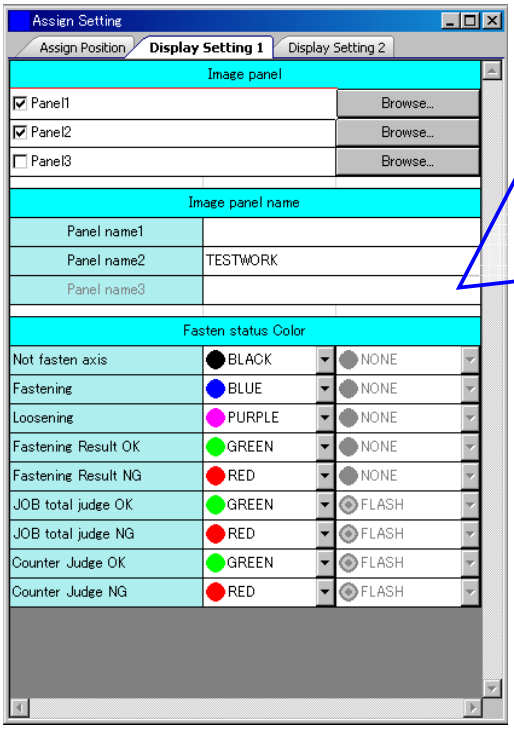
Selects range of assigned positions and execute assign.

When this function is executed, click "Execute layout in select range" button.

POSITON assign :

Choose displaying positions and click "Execute layout" button. Already assigned position turns to green color. To cancel the assign, click "Cancel layout" button. Cancelled or unassigned positions turns to white.

Panel Edit 1



Panel Select :

Check in the box to display panel, and it is possible to display pictures.

Panel Name :

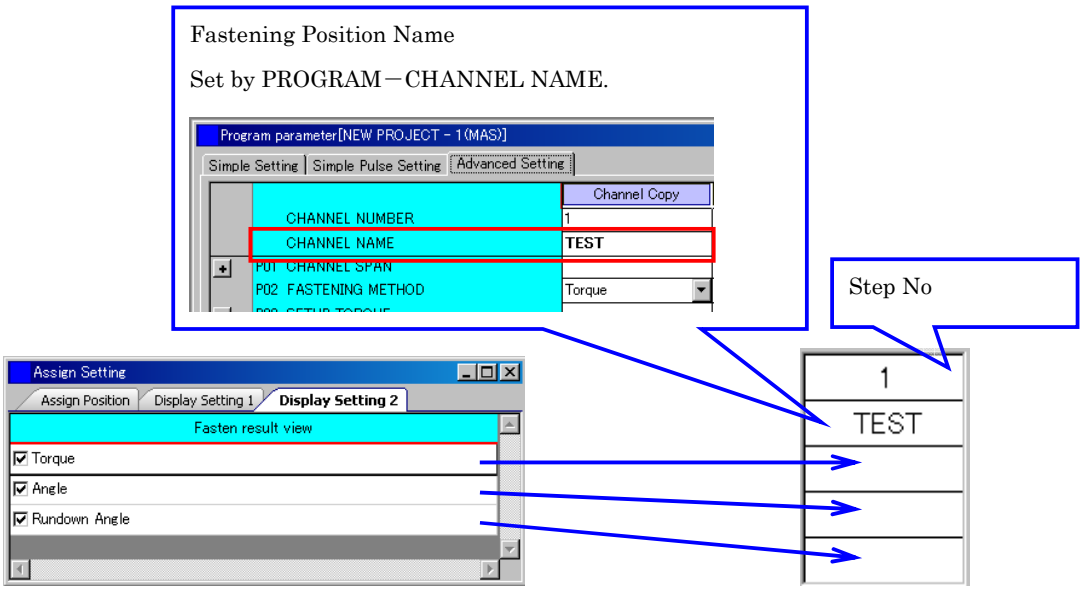
Put the panel name that is displayed on Trace Fastening Monitor Panel.

Indication Color :

Select colors which indicate tool condition, Fastening OK / NG, and etc.

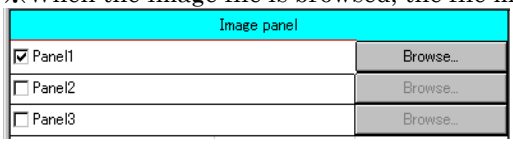
Panel Edit 2

Select whether displaying each fastening results or not on Trace Arm Fastening Monitor Panel.

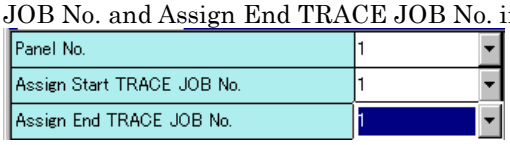


10.5.3. Trace Fastening Monitor Setting

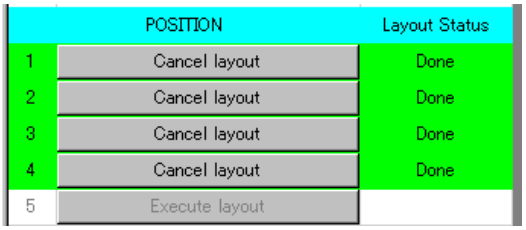
1. Select panel number in Display Setting 1.
   Browse image file when it is required.
   ※When the image file is browsed, the file must be kept in PC.



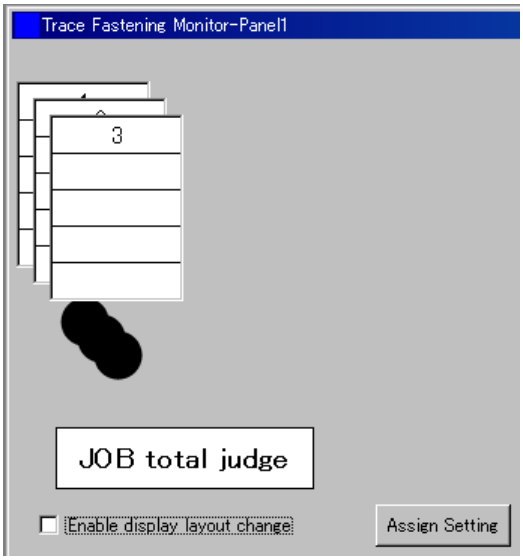
2. Select same Panel No. selected in Display Setting 1 , and also choose Number of Assign Start TRACE JOB No. and Assign End TRACE JOB No. in Assign Position.



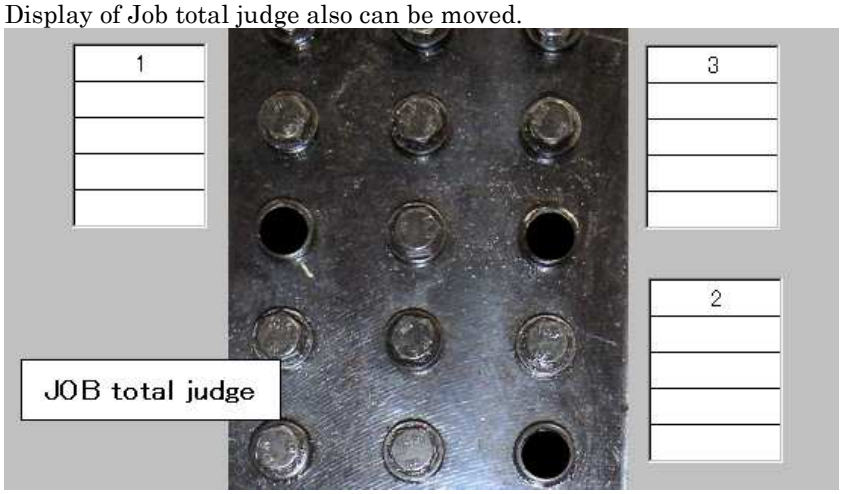
3. Select position which is required to display in Trace Fastening Monitor and Click “Execute Layout” When Layout Status becomes “Done”, the position will be displayed on Trace Fastening Monitor.



4. After executing the layout, the Trace Fastening Monitor window becomes like below.
   Select Enable display layout change and layout the window.
   When image is in use, the size of image is same size of display range and it will be difficult to see the fastening data. Drag the corner of image and resize it.



5 . ● in the picture shows the condition of tool.
During modification of layout, when ● is moved, it's torque and angle display area also move.
It is possible to move only torque and angle display area.
Display of Job total judge also can be moved.



Enlarge the image or allocate again, when POSITION image is hidden and disable to shift, during enlarging / reducing the image.

6 . When the work piece name is required to show on the display, input the name in panel name.

Image panel name	
Panel name1	
Panel name2	TESTWORK|
Panel name3	

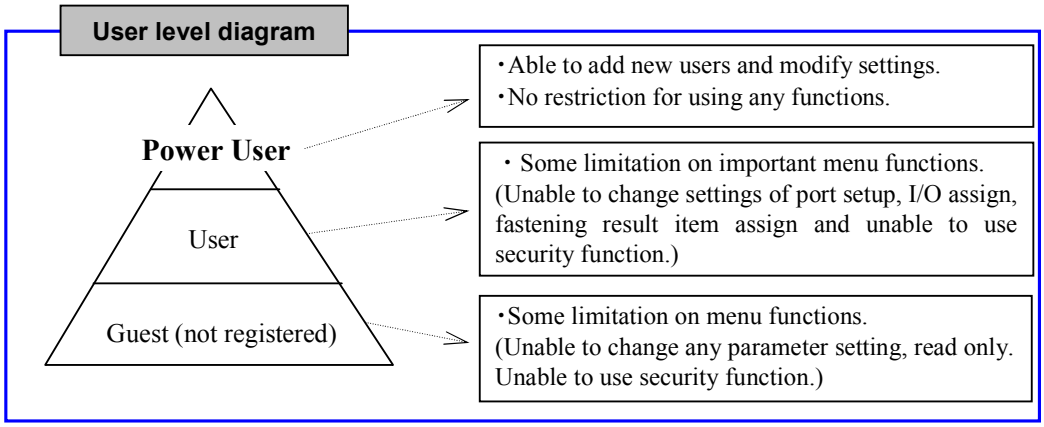
7 . Upload and save after editing is completed.

11. PASSWORD MANAGEMENT

This software is also programmed with user level management function that limits certain functions a user can use according to its user level.

1) This function enable to prevent any unregistered user / operator from changing the related setting.
2) This password function is also selectable by “Effective/Ineffective”. When it unnecessary to limit user rights, it is possible to use the software without this password function.

This software enable to classify and manage users into 3 levels.



11.1. Log On

If password function is activated, Logon window pops up after program initiated. Please enter registered ”User name” and “Password” to start this management software.

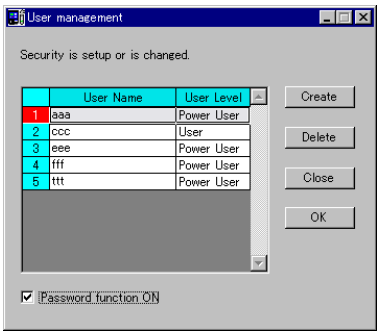
< Command Switch >

Name	Content
User Name	Please enter user name here.
Password	Please enter password here.
OK	Log into software by using user name and password entered above.
GUEST	For unregistered users to use this software in restricted mode.
Close	Close this Logon window.

1) Default user name = “**administrator**” and default password = “**poweruser**”, and its user level is power user. (This user cannot be deleted)
2) Password function is not activated right after software installation completed.

11.2. User Management

The screenshot below is a window that manages “User name” and ”Password” of password function. Use this window to manage user levels.
This window is only operative to registered Power Users and only when password function is deactivated.

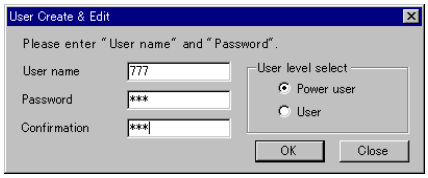


< Command Switch >

Name	Content
Create	Create a new user.
Delete	Delete a registered user.
Password Function ON	Enable/Disable user management function. Password management function is activated if this box checked.
Cancel	Cancel any changes and close this window.
OK	Save any changes and close this window.

11.3. User Create & Edit

Register a new user by entering its user name and password.
Set user level to either “Power user” or “User”



< Command Switch >

Name	Content
User Name	Enter user name here.
Password	Enter password here.
Confirmation	Please enter password here again to confirm the password typed above.
User Level select	Set user level (Power User / User).
OK	Create this new user by using user name and password entered above.
Close	Close this window.

12. TROUBLESHOOTING

12.1. General Errors for All Functions

No.	Situation / Error Message	Cause and Countermeasure
1	Error occurs during execution of "Download", "Upload", "Monitor". ("It failed in the get of the project data")	Power might not be supplied to controller. Controller might not be correctly connected.
2	Command switch is not selectable.	During monitoring function (Fastening result monitor, Torque curve monitor, I/O monitor & Output, Torque & Angle monitor, Time setup) is in use, the command switch is not selectable except canceling function. →Cancel the monitoring function and select the switch when these commands are required.
3	Transmission cannot be maintained even after settings are changed.	Please double check again controller and management software communication contents in detail.
4	"Connection port cannot open." Message shows up and cannot acquire any transmission.	1) The selected port under communication setting is being used by other program or it does not exist. Close programs that using selected port or execute "Online"→ "Port setup" to change to another usable port. 2) Please correct LAN connection setting referring to "12.10. LAN connection". 3) When a local bureau is set by setting "1.CODE ADR." In controller's system construction "S02.SYS SETUP" (2 or more), it is not possible to read. Please read from the mastering bureau.
5	"The number of LOC spindles connected to MAS machine in M-SPINDLE is insufficient" message shows up, and download cannot be executed.	1) LOC machine is powered off. 2) NET cable is disconnected. 3) LOC machine is out of order.
6	"Cable connection error" message shows up, and the download cannot be executed.	1) The serial communication cable might not be connected to COM1 or COM2 connector. 2)A non-genuine cable might not be used and the signal is not communicated to the controller.
7	"Communication error SPDXX" (XX is spindle number) message is displayed, and the data reception stops. "Execution error" occurs during MULTI Communication and the management soft is forcibly closed.	During MULTI Communication, PC might become overloaded and a communication timeout occurs. Decrease the number of windows executing NAGARA Communication, remove the cause of loads, or replace the pc with a higher-end machine.
8	The error occurs when executing it when "Print" is done and the management software cancels.	Please reactivate the personal computer, uninstall this software, and install it again.
9	High torque adaption tool is not recognized.	High torque adaption tool is compatible with management software version "Ver.4.3.0" or later.
10	When downloading it from the controller, the message is displayed , saying that "This tool model is not supported".	There is a possibility that the version of management is old. Please prepare management corresponding to controller's model, and download it again.
11	EH2-PC Series Management Software Operation Manual cannot be read.	This manual is PDF file. To read this manual, browsing software "Adobe Reader" is required.
12	USB connection is not possible.	1)USB connection, Handy2000Lite We support the controller. Handy2000 controller is not supported. 2)USB connection to make, you'll need to install drivers for it beforehand. " 13.4 the USB driver installation " Please reference.
13	The message is displayed, saying that "Version type of controller and management software is different".	1)Please confirm appropriate controller for this management software is in use.

No.	Situation / Error Message	Cause and Countermeasure
14	Following message is displayed. “Version type of project file and controller is different. It might cause incorrect actions. Are really you sure to upload ?”	This message is displayed when the project file, which currently edited, recognizes different X-PAQ type from actual controller type. Please refer “4.2. Powerhead name/Type settings” to exchange the file type.
15	Project file is exchanged and uploaded, but display of management software has not been changed.	Current editing data is taken precedence. Therefore, display which currently opened window is not reflected the change. It will be reflected after closing the window and then open again.
16	“Controller Soft Version” is empty in System Information	This management software is not able to read later project file than the management software because of data protection. To create usable project file for the management software, convert controller type or use export function. Refer “3.5 Export” and “4.2. Powerhead name/Type settings”
17	“Controller Soft Version” is empty in System Information	When Export function or controller type in “4.2. Powerhead name/Type settings” window is changed, the controller software version is cleared because the version of actual controller type becomes unclear. Please use update function in “4.1. System information” to get controller software version after change.
18	Upload is not reflected.	Please confirm the following respect. ・Connection destination of RS232C and USB cable Please confirm the connection destination when there are two or more controllers. ・Writing X-PAQ panel controller and management. You may have to write at the same time. In this case, the panel will prevail.
19	When opening a file may be slow.	When you open a file on a network, it may take a minute to open the time. Opening a file from a network operation, but it is supported, please download and run on the local machine performs.

12.2. Parameter Errors

No.	Situation / Error Message	Cause and Countermeasure
1	Error occurs when entering parameters. “Mistake is found in the setup.”	Please follow the error message and enter setting values.
2	Error occurs when loading parameters.	Please refer to section “**12.1 General Errors For All Functions” No.1**
3	Error occurs when saving parameters	Please refer to section “**12.1 General Errors For All Functions” No.1**
4	When loading parameters, a message “Equipment names set by PC and by Controller are different. (The rest is omitted)” is displayed.	If the equipment setting value set by PC is different from that by controller, this message is displayed. Check if HNR setting value to be loaded to the controller matches the specification of the equipment that the value is loaded to. (For example, L is confused with R.)
5	S09 is not selectable at system parameter.	There is a possibility that type of project file is a different X-PAQ series. Since this Lite series has only 1 COM port, S09 cannot be used. Please refer other difference points at “5.1 System Parameter”. When the type does not have required parameter, type exchange is necessary. Please refer “4.2. Powerhead name/Type settings”

12.3. Multi channel – Job Errors

No.	Situation / Error Message	Cause and Countermeasure
1	Channels cannot be registered when the channel is added/deleted.	Since channel field is shared with program parameter and multi channel, channels, which have already selected at program parameter, is not selectable at multi channel. Please choose different channel or change channel setting at program parameter and then retry the setting.
2	“Set 1@” is displayed when saving the data.	“CH number + @” have to be input the top of channel name.
3	The message “This function cannot be used when trace arm function is invalid at S18-1” is displayed.	JOB function is invalid when trace arm function is valid.

12.4. Fastening Result Monitor – Torque Curve Monitor – Panel Monitor Errors

No.	Situation / Error Message	Cause and Countermeasure
1	"File load" Error occurs when executing "File load". "The file type is different."	Please follow the error message to select torque curve data. (Note: Data that is not saved by this software cannot be loaded)
2	Error occurs when executing "Moni start"	Please refer to section "**12.1 General Errors For All Functions" No.1**
3	Cannot select "Save file" "Load file" "Print" and "Cancel" button	Please refer to section "**12.1 General Errors For All Functions" No.2**
4	Very few / too many fastening result items are displayed.	There is a "Fastening result item select" button in setting tub. This function enables to add/delete items.

12.5. Fastening Result History – System Error History – Torque Curve History Errors

No.	Situation / Error Message	Cause and Countermeasure
1	"File load" Error occurs when executing "File load". "The file type is different."	Please follow the error message to select torque curve history data. (Note: Data that is not saved by this software cannot be loaded)
2	Error occurs when executing "Read data"	Please refer to section **"12.1 General Errors For All Functions" No.1**
3	Cannot select "Trq curve read" button	Please refer to section **"12.1 General Errors For All Functions" No.2**
4	Only specific CH/JOB or spindles are displayed after executing "File load".	Please confirm that number of spindles and JOB/CH select in setting field is correctly set up.
5	Very few / too many fastening result items are displayed in torque curve history.	There is a "Fastening result item select" button in setting tub. This function enables to add/delete items.
6	The message "No torque data. Save OK ?" is displayed at torque curve history.	Only executing "Read start" and selecting "Display" cannot complete acquiring torque data. After these procedure, please also click "Torque curve read" button
7	Torque curve is not displayed after click "Trq curve read" button.	1) Please confirm button of displaying spindle number is ON. When ON is selected, same color button of torque curve is displayed.

12.6. I/O Monitor & Output – Torque & Angle Monitor – Time Setup Errors

No.	Situation / Error Message	Cause and Countermeasure
1	Error occurs when executing "Monitor start"	Please refer to section "**12.1 General Errors For All Functions" No.1**
2	Cannot select "Monitor start" button	Please refer to section "**12.1 General Errors For All Functions" No.2**
3	Cannot select "CAL ON" button	"CAL ON" button cannot be clicked during fastening operation.

12.7. I/O Assign – Field bus I/O assign – Tool LED assign errors

No.	Situation / Error Message	Cause and Countermeasure
1	Window is not open when I/O assign items are selected.	When PLC rudder window is open, I/O assign window cannot be open. There is a same function in I/O assign tub. Please use the function when PLC rudder window is open.
2	Detail setting is not displayed after selecting Field bus type at Field bus I/O assign window. "	X-PAQ controller enables to select only Field bus type. X-PAQ controller is required to set detail setting and also Field bus type. Please refer to section "**9.3 Field bus I/O assign** If there are unintentional setting display, the controller type might be different. Please refer "**4.2 Powerhead name/Type settings**

12.8. Errors in PLC Ladder

No.	Situation/ Error Message	Cause and Countermeasure
1	Error occurs in executing "Start monitor."	Please refer to **"12.1 General Errors for All Functions" No.1**
2	"Start monitor" switch cannot be selected.	Please refer to **"12.1 General Errors for All Functions" No. 2**
3	An error message is displayed: "The monitor stops because the Ladder Circuit of the controller does not start."	Start PLC functions of the controller by pressing [PLC START].
4	In monitoring, I/O, which should be ON, is not turned ON.	By using [Compare], check if the ladder circuits of the controller and PC are matched. In case of verify error, execute [Compile] and [Write to].

12.9. Trace Arm Errors

No.	Situation/ Error Message	Cause and Countermeasure
1	Trace Arm items are not displayed.	Previous revision controller connected, function not supported.
2	When trace job & teaching, trace monitor or trace fastening monitor display is selected ", the message "This function cannot be used when trace arm function is set as "Valid" at S18-1".	This function will be valid after opening system window and resister 1 TABLE SELECT except selecting NONE. Please be careful when this function is modified, VIN information function assign will be cleared.

12.10. Other errors

No.	Situation / Error Message	Cause and Countermeasure
1	Software cannot be installed	Please install windows version later than windows2000 SP4 and internet explorer 6.0 SP1. (Please refer to section "**2.1 Operation Environment**" as well as section "**13.1 software installation**" for further details.
2	Error occurs when identifier such as VIN is obtained, and fastening is started.	The digit number selected to ON at S6-2 IDENTIFIER may be different from ID character digit number in VIN function assign. Make sure both digit numbers are same, and the error does not occur after pressing [OK] at VIN function assign screen, and execute Upload.
3	No USB port on the controller.	Previous revision controller connected, function not supported.
4	The error occurs when executing it when software is executed. Or, the character is not displayed on the screen.	To make this software work, the manager authority is needed. Please log in as a manager and execute it.

12.11. LAN Connection

LAN connection can be built between PC and X-PAQ controller in the following connection method if the communication settings of PC are modified as follows:

(1) PC is directly connected to the controller by cross LAN cable (or reverse LAN cable), or

(2) Independently connect as LAN exclusive for HAND NUTRUNNER system: PC → straight LAN cable → hub → straight LAN cable →controller.

In case of Windows 2000

(1) [My Network] → right click → [Property]

(2) [Local area connect] → right click → [Property]

(3) Select [Internet protocol TCP/IP] → [Property]

(4) Keep a copy of contents of Default gateway, Primary DNS server, and Secondary DNS server.

(5) Then, delete the contents. (Delete them with [BS]key.)

(6) [OK]→ [OK]. Then, the communication setting is completed.

In case of Windows XP

(1) [Start] → [Control panel]

(2) [Network and Internet connection] → [My network]

(3) [Local area connection] → right click → [Property]

(4) Select [Internet protocol TCP/IP] → [Property]

(5) Keep a copy of contents of Default gateway, Primary DNS server, and Secondary DNS server.

(6) Then, delete the contents. (Delete them with [BS]key.)

(7) [OK]→ [OK]. Then, the communication setting is completed.

In case of Windows Vista

(1) [Start] → [Control panel]

(2) [Network and Internet connection] → [Network status and task display] in [Network Sharing Center]

(3) [Network connection control → [Local area connection] → right click → [Property]

(4) [User Account Control] → [Continue]

(5) Select [Internet protocol version 4 TCP/IP] → [Property]

(6) Keep a copy of contents of Default gateway, Primary DNS server, and Secondary DNS server.

(7) Then, delete the contents. (Delete them with [BS] key.)

(8) [OK]→[OK]. Then, the communication setting is completed.

In case of Windows 7

(1) [Start] → [Control panel]

(2) [Network and Internet connection] → [Network Sharing Center]

(3) [Network connection control → [Local area connection] → [Property]

(4) Select [Internet protocol version 4 TCP/IP] → [Property]

(5) Keep a copy of contents of Default gateway, Primary DNS server, and Secondary DNS server.

(6) Then, delete the contents. (Delete them with [BS] key.)

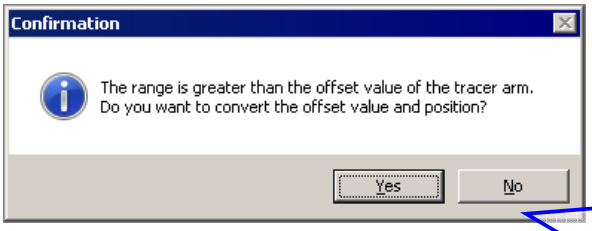
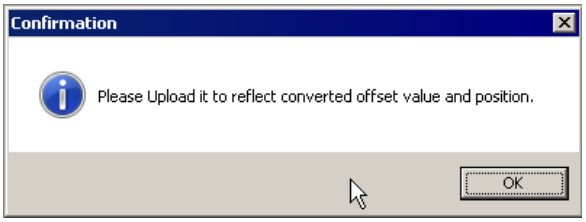
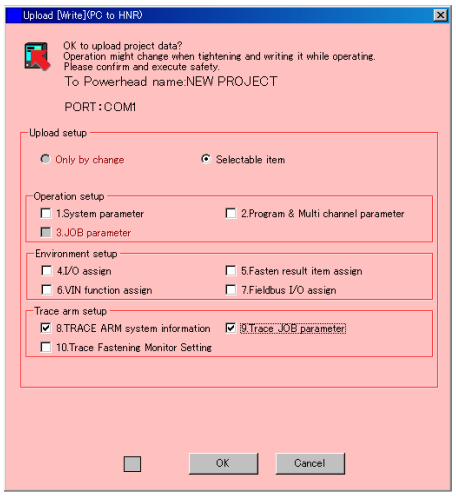
(7) [OK]→[OK]. Then, the communication setting is completed.

12.12. Offset and position conversion for the tracer arm

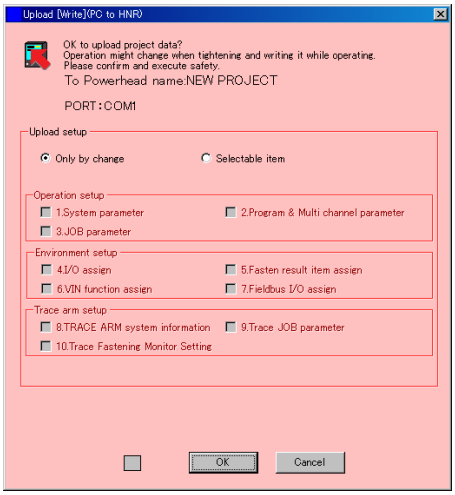
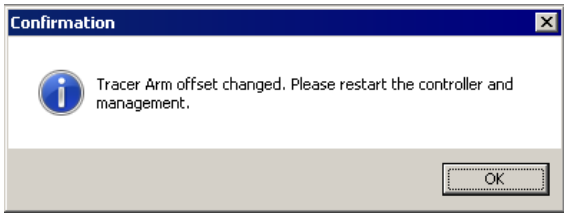
When the tracer arm is connected with the controller for the first time, sometime a value for the offset is out of range where the tracer arm can be operated. In this case, problems might occur in displaying of fastening result monitor or history and also the teaching function of the tracer arm in management software might not function.

To solve these problems, there are offset and the position conversion function of the tracer arm. When project file is downloaded from controller connected the trace arm or open the project file which trace arm function is set as “enable”, the offset value is checked by the automatically..

This function converts the offset value as zero. And also, positions, which was acquired by teaching, is also calculated automatically. As a result, stored position data is not required to change the position information and enable to operate as usual.
To reflect the converted value, it is required to uploading or save project file.

<table>
<tr>
<td>1</td>
<td> 
</td>
<td>When project file is downloaded from controller connected the trace arm or open the project file which trace arm function is set as “enable”, the following screen is displayed.
The following action will be operated.
<table>
<tr><td>Yes</td><td>Information is converted by using the offset value from position information on the trace job. Afterwards, the offset value is adjusted to 0.</td></tr>
<tr><td>No</td><td>No conversion will be done</td></tr>
</table></td>
</tr>
<tr>
<td>2</td>
<td> 
</td>
<td>When “Yes” is selected, and conversion is completed, the following screen is displayed. At this point, it has not been applied to the controller yet.</td>
</tr>
<tr>
<td>3-1</td>
<td> 
</td>
<td>Upload [Write] data from the file.

Check in to the box “8. TRACE ARM system information” and “9. TRACE JOB parameter” and click OK button.</td>
</tr>
</table>

3-2		Upload [Write] the download data. Because “Only by change” has been selected, upload as it is.
4		After Upload is completed, the following dialog is displayed. After closing the management software and restarting the controller, download the project file to the management software again. The conversion processes is completed.

13. APPENDIX

13.1. Software Installation

Software installation from CD-ROM to PC harddisk.

(1) Please insert CD-ROM into CD/DVD drive on the computer you wish to install and double click ”My Computer “ icon on desktop.

(2) After ”My Computer” window is opened, double click ”CD-ROM(DVD) drive “ .

(3) Double click ”Setup.exe “
(It may display Setup instead of Setup.exe depends on operating system settings)

(4) When the following message shows up ”For the Following Component .NET Framework 2.0”, please click [Accept] button.
(This message may not show up depending on operating system)

(5) When the following message shows up ”For the Following Component Windows Installer 3.1”, please click [Accept] button.
(This message may not show up depending on operating system settings)

(6) If message of (4) or (5) has been displayed, further installation time is required. (About 5 to 20 minutes)

(7) When the following message ”Setup must reboot before proceeding.” Shows up, please click [Yes] button.

(8) When the following message ”Welcome to the X-PAQ EH2 Series MANAGEMENT US setup wizard” shows up, please click [Next] button.

(9) When message ”Select Installation Folder” shows up、please click [Next] button.
(Please use default directory folder if no special change required.)

(10) When ”Confirm Installation” message appears, please click [Next] button.

(11) If ”Installation Complete” message appears, please click [Close] button and take out CD-ROM(DVD) from CD-ROM(DVD) drive. Software installation is completed.

(12) If Acrobat Reader is not installed onto system, please insert CD-ROM(DVD) and click into Acrobat Reader folder and perform installation.

MEMO

How to check Internet Explorer version?
1) Start Internet Explorer.
2) Click［Help］→［Version information］
3) Then version information appears to be like 6.0.XXXX.XXXX_sp1 where XXXX are number. If this series of number is displayed, Internet Explorer 6.00 SP1 has already been installed.

13.2. Software Uninstall (Delete Software)

This software could be uninstalled by performing the following procedures.

(1) Please double click icon ”My Computer  “ on desktop.

(2) After window of ”My Computer” is opened, please double click ”Control Panel  “ icon.

(3) Please double click ”Add or Remove Programs  “.

(4) Files under ”Add or Remove Programs” folder is now listed, please click the item named ”X-PAQ EH2 Series MANAGEMENT US” and click ”Remove” button.

(5) When ”Are you sure want to remove “X-PAQ EH2 Series MANAGEMENT US” from your computer?” appears, please click [Yes] button.

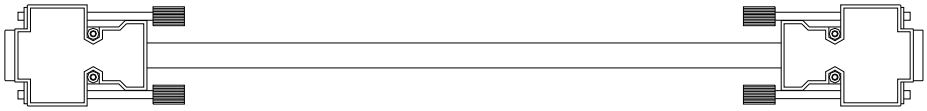
(6) When ”Add or Remove Programs” folder appears again, please click [OK] button. Software is now uninstalled.

Files, that are created by this software such as project file (hnr2a file), each monitoring data (csv file) etc, will not be deleted even after software uninstallation. Please go to each file or folder directory to delete these files if it is necessary.

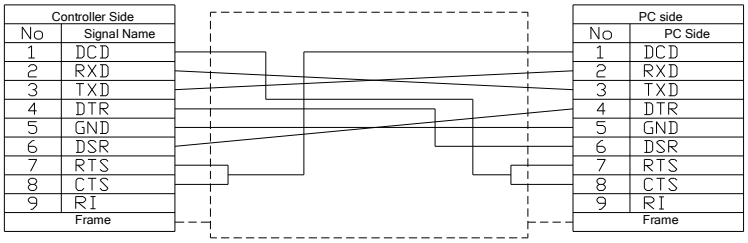
Caution If “Illegal operation…” dialog box appears and program is forcibly terminated, please reboot Windows before uninstalling again.

13.3. Serial Communication Cable

The communication cable connects PC RS-232C port and RS-232C connector (D-sub 9-pin) of controller. (Optional)



D-sub 9-pin (female) D-sub 9-pin (male)



Cable Length	Part Number
1.5 m	ENRZ－CVSR－015
5 m	ENRZ－CVSR－050
10 m	ENRZ－CVSR－100

MEMO

There are two types of serial cables; straight link and cross (reverse) link cables. Please use cross-linked cable for this software.

13.4. USB driver installation

When the X-PAQ controller is connected with the personal computer with USB for the first time, USB driver's installation screen "Retrieval wizard beginning of new hardware" is displayed. (*X-PAQ controller is not able to use USB connection)

Two kinds of installations are done about USB Serial Converter and USB Serial Port.

As for two above-mentioned kinds of installations, USB Serial Port is installed USB Serial Converter's being previously installed, and continuously.

Installation procedure of USB Serial Converter

1. "No, do not connect it this time" is selected, and "Following" button is pressed because it is displayed when "Begin of the retrieval wizard of new hardware" starts, "Do you connect it with Windows Update for the software retrieval?".
2. "For this wizard, software necessary for the following hardware is installed. " "Install it from a list or a specific place (details)" is selected, and "Following" button is pressed if displayed as "USB <-> Serial".
3. When the message "Please select options for search and installation" appears, select "Find removable media (floppy, CD-ROM, etc)" and click "Next" button.
4. "Completion" button is pressed because it is displayed, "Completion of the retrieval wizard of new hardware" and is displayed under that when the installation is normally completed as "USB Serial Converter".

Installation procedure of USB Serial Port.

1. “No, do not connect it this time” is selected, and “Following” button is pressed because it is displayed when “Begin of the retrieval wizard of new hardware” starts, “Do you connect it with Windows Update for the software retrieval?”.
2. “For this wizard, software necessary for the following hardware is installed. “ “Install it from a list or a specific place (details)” is selected, and “Following” button is pressed if displayed as “USB Serial Port”.
3. When the message “Please select options for search and installation” appears, select “Find removable media (floppy, CD-ROM, etc)” and click “Next” button.
4. “Completion” button is pressed because it is displayed, “Completion of the retrieval wizard of new hardware” and is displayed under that when the installation is normally completed as “USB Serial Port”.

This driver’s installation is completed by the above-mentioned operation.
After the installation is completed, it is necessary to reactivate OS to make the driver effective.

In addition, when installation folder is not found in “Find removable media (floppy, CD-ROM, etc.) “, select “Search for the best driver in next locations”, and check the box “ Including following locations” ON, and then select installation CD-ROM,”CDM2.06.00” to complete the installation.

Operation Manual Revision History

Revision number of this operation manual is printed on lower right of cover.

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6.4	May 28, 2013	1st Edition

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Notes