

JANOME ELECTRO PRESS

JP-104	JP-204	JP-504	JP-1004
JP-1504	JP-3004	JP-5004	
JPH-104	JPH-204	JPH-504	JPH-1004
JPH-1504	JPH-3004	JPH-5004	
JPU-104	JPU-204	JPU-504	JPU-1004
JPU-1504	JPU-3004	JPU-5004	JPU-8004

Operation Manual

<PC Operation>

Thank you for purchasing the Electro Press.

*Read this manual thoroughly in order to properly use this machine.

Be sure to read "For Your Safety" before you use the machine. It will protect you from possible danger during operation.

*Having read this manual, keep it in a handy place so that you or the operator can refer to it whenever necessary.

JANOME

ABOUT THIS SOFTWARE

The “JP Designer” software retrieves teaching data stored in the Electro Press and saves it to PC. You can read, send or print the data from your PC.

The “JP Sampler” software retrieves quality and time series data from the Janome Electro Press and saves it onto your PC.

The “JP Reporter” software displays data retrieved using JP Sampler, analyzes the result data and prepares reports.

It can list quality control data retrieved using JP Sampler, calculate and display statistical values such as averages and standard deviations and also display sensor values, end load values and end positions in a histogram.

Reports can be prepared in a HTML format with “JP Reporter.”

The “JP Multi-Sampler” software controls “JP Sampler”. Using “JP Sampler”, the Electro Press can be connected to multiple COM ports COM1 – COM15 and controlled via Ethernet by PC.

This manual explains how to operate “JP Designer”, “JP Sampler”, “JP Reporter” and “JP Multi-Sampler.” Please also refer to other manuals on the Operation Manual CD-ROM as necessary.

Operating methods such as mouse clicking and the use of dialog boxes for “JP Sampler”, “JP Multi-Sampler” and “JP Designer” are the same as in Microsoft Windows® 2000/XP applications.

For details of the Windows® 2000/XP operating methods, refer to the instruction manual supplied with Windows® 2000/XP.

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The contents of this manual may be modified without prior notice in order to accommodate version upgrades.



CAUTION

Before transmitting data the PC and the press, be sure to make a back-up copy and save it onto PC in case of error.

JP Designer J5.00, JP Sampler J5.00, JP Reporter J5.00, JP Multi-Sampler J5.00

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HARDWARE REQUIREMENTS

The following system requirements are necessary to run “JP Designer”, “JP Sampler”, “JP Reporter” and “JP Multi-Sampler.”

- Operating System
Microsoft Windows® NT4.0/2000/XP

- Personal Computer
Should be configured for use with Windows® NT4.0/2000/XP.

- Memory Capacity
Minimum of **16MB of memory** is required for normal operation of “JP Designer”, “JP Sampler”, “JP Reporter” and “JP Multi-Sampler.”

- Hard Disk Capacity
Minimum of **20 MB of hard disk space** is required after installing Windows® NT4.0/2000/XP.

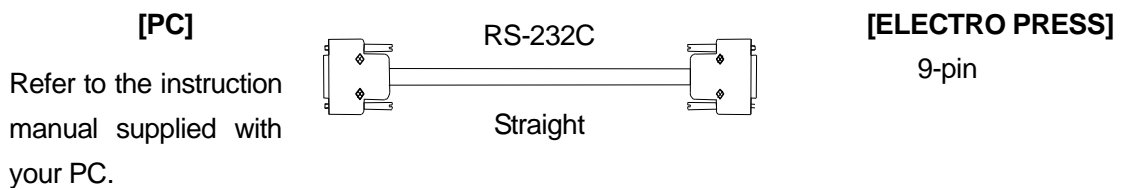
- COM Port
One vacant COM port is required to connect the Electro Press to the PC.

The required memory capacity or hard disk space may vary depending on the system environment. Using software with inadequate hard disk space may cause trouble including insufficient operation memory.

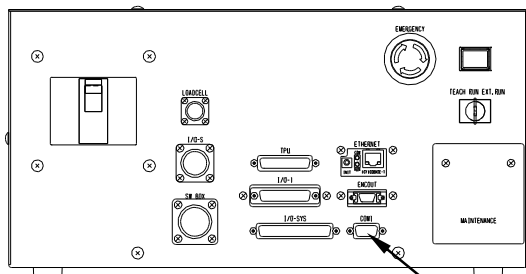
CONNECTION

To transmit teaching data to the Electro Press from the PC, connect the two with an RS-232C straight cable (illustrated below.)

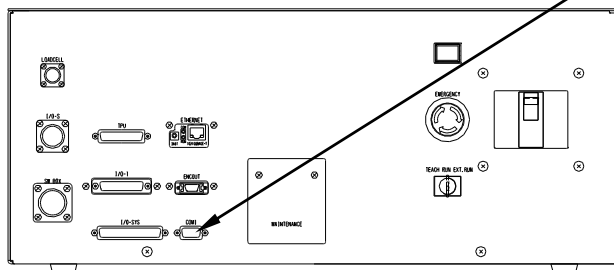
For details of communication cable wiring, refer to page 11.



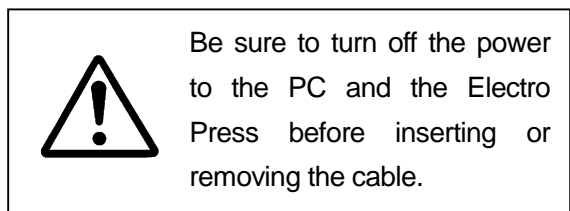
Connect one end of the RS-232C cable to the RS-232C connector on the Electro Press (or control box) and the other end to the COM port (serial connector/RS-232C) on the PC. The Electro Press uses a female 9-pin connector.



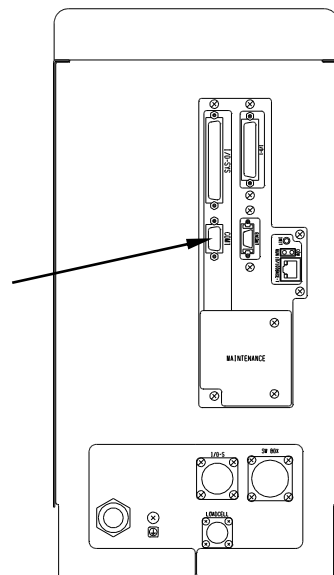
[Unit Type: Control Box (Rear)]



[Unit Type (3004 to 8004): Control Box (Front)]



COM
(RS-232C)



[Stand-Alone/Head Type: Body (Rear)]

INSTALLATION AND UNINSTALLATION

Install “JP Designer”, “JP Sampler”, “JP Reporter” and “JP Multi-Sampler” onto PC. All four applications, “JP Designer”, “JP Sampler”, “JP Reporter” and “JP Multi-Sampler” will be installed at once.

[JP Designer]

Retrieves teaching data from the Janome Electro Press to be saved, printed or modified. Also allows you to send teaching data modified by PC to the Electro Press.

[JP Sampler]

Retrieves quality and time series data from the Janome Electro Press and saves it onto PC.

[JP Reporter]

Analyzes and reports on quality and time series data and teaching data retrieved from the Electro Press using “JP Sampler” and “JP Designer.”

Can also create reports in html format.

[JP Multi-Sampler]

Controls “JP Sampler.” Using “JP Multi-Sampler”, the Electro Press can be connected to multiple COM ports COM1 – COM15 and can be controlled via Ethernet by PC.

■ INSTALLATION

1. Start Windows[®] and check that it is functioning correctly. Before installation, close all applications.
2. Insert the “JPTaS System” CD-ROM into the CD-ROM drive.
3. The installer automatically starts up. Follow the onscreen instructions.

InstallShield Wizard

Customer Information
Please enter your information.

Please enter your name, the name of the company for which you work and the product serial number.

User Name:
John Smith

Company Name:
JANOME

Serial Number:

InstallShield

< Back Next > Cancel

Enter the serial number on the back of the CD-ROM case in one-byte characters.

If the Installer Doesn't Start up Automatically,

1. Click on Windows[®] [Explorer] or the [CD-ROM] drive under [My Computer.]
2. Double-click “¥SETUP.EXE” in the CD-ROM drive.
3. Follow the onscreen instructions.

■ UNINSTALLATION

1. Open Windows[®] and check that it is working properly. Exit any applications that are open.
 2. Put the “JPTaS System” CD-ROM into the CD-ROM drive.
 3. The installer starts up automatically. If it does not start, click on Windows[®] [Explorer] or the [CD-ROM] drive under [My Computer.]
 4. Follow the onscreen instructions. Uninstallation is carried out for all installed applications.
 5. Uninstallation of “JP Sampler”, “JP Designer”, “JP Multi-Sampler” and “JP Reporter” will be started.
-
- To upgrade software, start up the installer to uninstall the existing applications. Then, start up the installer again and install new applications.

COMMUNICATION SETTINGS

■ Communication settings on the Electro Press

This section explains how to set up and confirm communication parameters on the Electro Press.

Start up the Electro Press in teaching mode and press the **MENU** key.

From the Teaching Mode menu, select [COM1 Communication Setting] under [System Settings]. The screen to the right will appear.

COM1 Communication Setting	
Baud Rate	9600
Character Length	8 bit
Stop Bit	1 bit
Parity	None

Check the value for each setting on the Electro Press.

Change any values which differ from those on the PC so that all settings are in agreement between PC and Press.

- 1) Baud Rate-----> 9600/19200/38400 [bit/s.] can be selected
- 2) Character Length--> Select 8 bit or 7 bit.
- 3) Stop Bit-----> Select 1 bit or 2 bit.
- 4) Parity-----> Select None, Even Parity or Odd Parity.

The underlined settings are recommended for JANOME PC software (compatible with WindowsNT4.0/2000/XP.)

- Be sure to set [Character Length] to [8 bit.] (This can only be done from the press and is not possible under communication settings on the PC)

■ Communication settings on PC

This section explains how to set communication parameters. It is necessary to set communication parameters on the PC for both “JP Designer” and “JP Sampler.”

To transmit and receive data between the PC and the Electro Press, select a COM port (serial port) and set the communication parameters between the PC and the Electro Press so that they match. You cannot confirm or set the communication parameters for the Electro Press via the PC.

Start up “JP Designer” or “JP Sampler” and click “COM Status” from the “Press” pull-down menu on the menu bar.

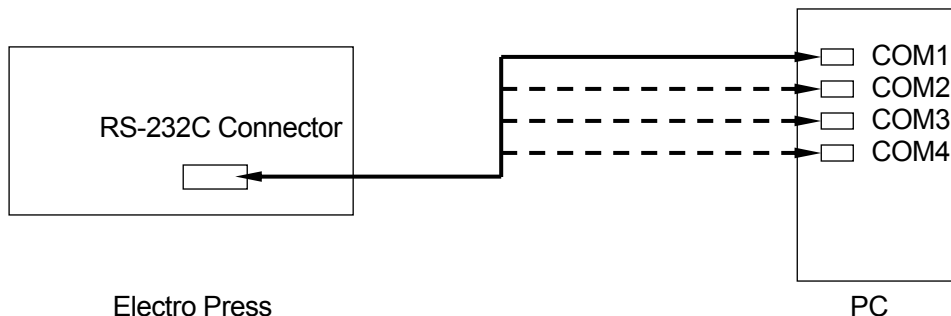
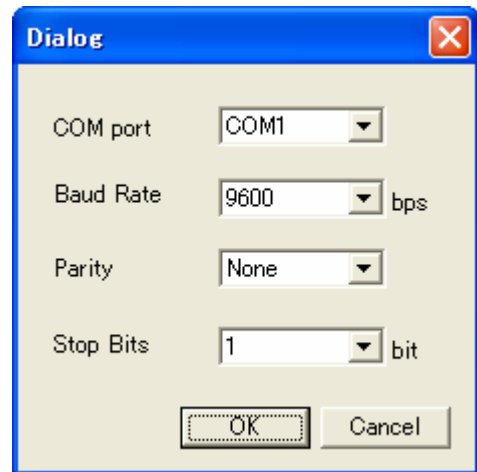
Set up or confirm the communication settings for the PC.

Select the same COM port number as that of the connector on the PC connected to the Electro Press.

For the PC COM Port number, refer to the instruction of your PC.

Set or confirm each parameter setting other than the [COM Port] number to match that of the Electro Press.

- This setting is valid only for communication with this application.

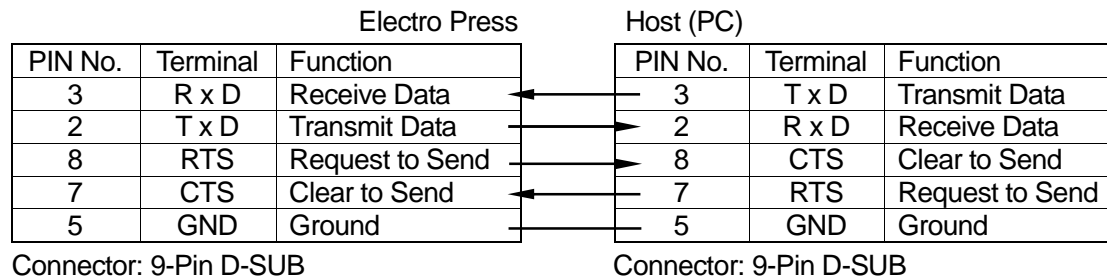


COMMUNICATION CABLE (RS-232C) WIRING DIAGRAM

Use an RS-232C straight cable. A reverse type or cross type cable cannot be used.

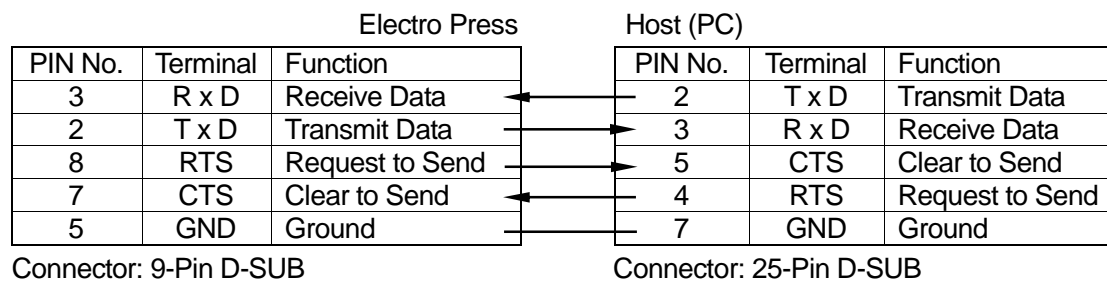
Host Side: 9-Pin D-SUB

COM (RS232C Port)



Host Side: 25-Pin D-SUB

COM (RS232C Port)



For the host (PC) side, use a cable compatible with your PC.

The D-sub 9-pin is normally connected to the Serial Port marked [I O I O] on the back of the PC.



JP Designer

START AND EXIT

The JP Designer software retrieves the teaching data stored in the Electro Press from the press and saves it onto PC. You can read, send and print out the data via PC. You can also create new files with JP Designer.

■ Start

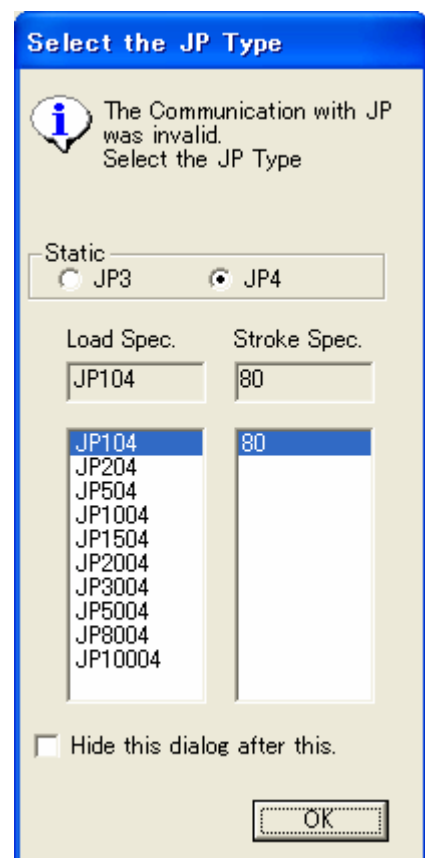
- Select [Program] from the [Start] menu of Windows® and click [JP Designer],
or
- Click the [JP Designer] shortcut icon on the desktop.



If “JP Designer” is started while the PC can communicate with the Electro Press, information such as the maximum pressing capacity (load spec) and the ram length is read from the Electro Press in advance.

“JP Designer” can be started even if the power to the Electro Press is OFF or the Electro Press is not connected to the PC. However, in these cases, it will not be able to read any information from the Electro Press.

Select the load and stroke specifications of your Electro Press and click the [OK] button.




If the Electro Press specification differs from the spec set on the PC, a warning message will appear when teaching data is sent from the PC to the Electro Press. When you click [OK] at this point, the teaching data is converted so that it is compatible with the Electro Press specs. It is then sent to the Electro Press.

However, we do not guarantee the sending of teaching data to the JP Series 3. If you want to send teaching data to the JP Series 3, please use PC software “JPTDMS” for the JP Series 3.

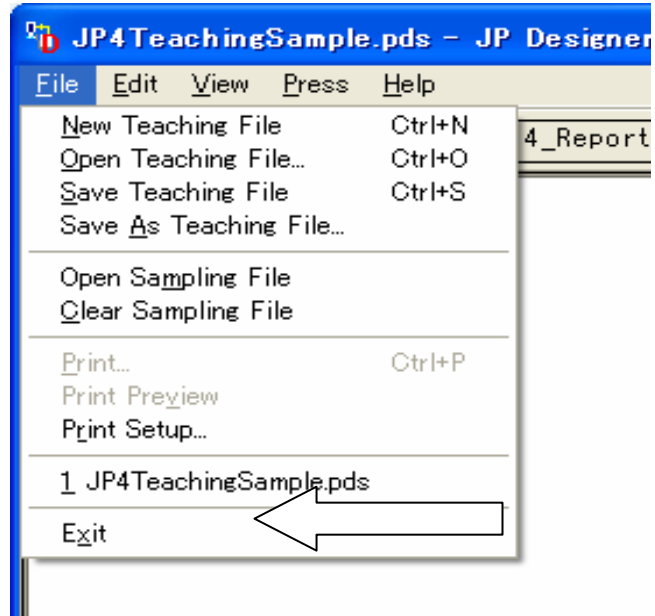
- When starting the application, new teaching data will be opened and displayed on the screen.

■ Exit

Use one of the following two methods to exit the “JP Designer” application.

- Click the  button on the upper right corner of the screen.
- Click [File] on the menu bar and select [Exit] from the pull-down menu.

If added or deleted teaching data is still open, the Exit confirmation dialog box will appear on the screen.



ONSCREEN DISPLAY

















The screenshot displays the JP Designer software interface. At the top, the title bar shows 'JP4 TeachingSample.pds - JP Designer'. Below it is a menu bar with 'File', 'Edit', 'View', 'Press', and 'Help'. A toolbar contains various icons for file operations and data management. The main window is divided into three sections:

- Teaching Data Description:** A tree view on the left showing the file structure. The selected item is '1 APDII-056', which includes sub-items like 'S1 Const Speed/Set Stop Pos'n', 'J1 Sensor Load/Position Range', 'J2 Sensor Load/Position Range', 'S2 Const Speed/Set Stop Load', '2 DTEE', and '3 NO_J'.
- Data Graph Display:** A graph showing 'Load[N]' on the y-axis (0 to 3000) and 'Pos.[mm]' on the x-axis (52 to 64). The graph displays a blue line representing the load profile, with red vertical markers indicating specific data points. A table to the right of the graph lists 'CPK' values corresponding to these points.
- Value Setting Section:** A table at the bottom right listing various parameters and their values.

At the bottom of the window, a status bar shows 'Ready' on the left and 'JP504 100 mm N NUM' on the right.

Item	Data	Unit
Program Name	APDII-056	
Work Home Pos'n	0	mm
Approach Speed	166	mm/s
Max. Pressure AP	100	N
Probe Speed	5	mm/s
Touching Load	100	N
Probe Limit Position	100	mm
Approach Y/N	Enable	
Work Home Pos'n Y/N	Enable	
Return Speed	166	mm/s

■ Icon Functions

Creates a new teaching file.		Edit – Add Program	
Opens a teaching file.		Edit – Delete Program	
Save		Edit –Program Copy	
File - Print		Edit – Add Section	
Help – Version Information		Edit – Delete Section	
Opens a sampling file.		Edit – Copy Section	
Clears a sampling file.		Edit – Add Sensor Setting	
		Edit – Delete Sensor Setting	
		Edit – Copy Sensor Setting	

■ Display Mode Switching

Display modes can be switched under the [View] menu in the menu bar.

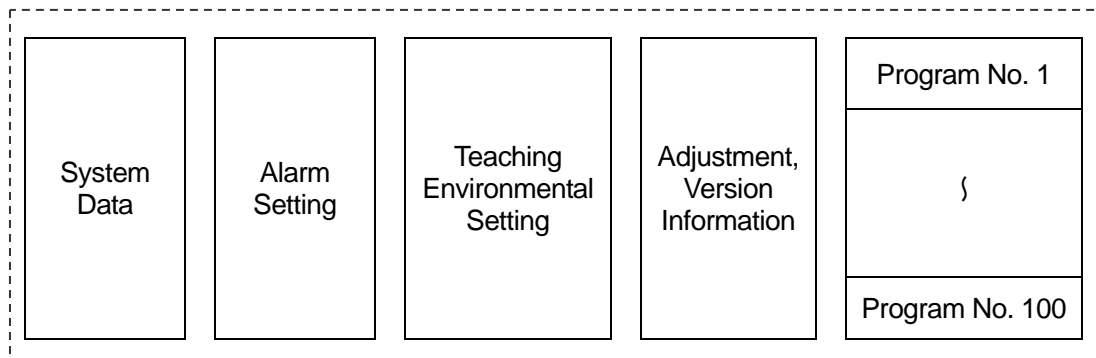
- Tool Bar: Displays/hides Tool Bar.
- Status Bar: Displays/hides Status Bar.
- Length Unit: Switches the unit of measurement for length. (mm/inch)
- Weight Unit: Switches the unit of measurement for weight. (N/kg/pound)
- Model Selection Dialog box: When “Display” has been set, the model setting dialog box will appear if the PC is not connected to the Electro Press or if “JP Designer is activated when the Electro Press is OFF.
- Time Series Data Graph: Switches graph display.

UNIT OF DATA

This section explains the units of data used for this application.

The following illustration shows all the teaching data stored in the Electro Press. When using this application, all data is handled (e.g. File Open, Save, Send to Press or Read from Press) as one unit of teaching data.

The program cannot be handled individually. When transferring data between JP Designer and the Electro Press all programs are treated as one unit of data.



When adding a program to a saved teaching data file, be sure to open the teaching data file first.

If you open new teaching data and add a program to it, the program is inserted and the teaching data is saved as shown in the illustration above.

- **Up to 100 programs** can be included in one unit of teaching data. However in some cases, you will not be able to add programs even if the total program number is less than 100.

If the total of the following is **more than 400**, you cannot add any more pressing sections, sensor setting or programs.

(Number of Programs) + (Number of Programs with Name) + (Number of Pressing Sections) + (Number of Sensor Settings)

For example, if the teaching data contains 50 programs with names and the total number of pressing sections or sensor sections in each program is more than 300, no more pressing sections, sensor settings or programs can be added.

<System Settings Table>

Items	Electro Press Categories		PC Categories		Write into EP
	JP Series 3	JP Series 4	JP Series 3	JP Series 4	
Unit of Measure	System Setting	T.ENV	Adjustment, Version Information	—	×
Unit of Load	System Setting	T.ENV	Adjustment, Version Information	—	×
Display Language	System Setting	T.ENV	Adjustment, Version Information	—	×
Brightness Adjustment	System Setting	T.ENV	Adjustment, Version Information	—	×
Data Transmission Settings	System Setting	System Setting	—	—	×
Absolute Position Adjust Y/N	System Setting	System Setting	System Setting	System Setting	
Jog Mode Max. Pressure	System Setting	T.ENV	System Setting	T.ENV	
Change Operation Mode	System Setting	—	System Setting	—	
Reference No. Y/N	System Setting	—	System Setting	—	
Load Auto Reset Y/N	System Setting	System Setting	System Setting	System Setting	
Buttons Simultaneity	System Setting	System Setting	System Setting	System Setting	
Reducing Work Time Y/N	System Setting	System Setting	System Setting	System Setting	
Back Light Auto OFF	System Setting	System Setting	System Setting	System Setting	
Change The Alarm Sound	System Setting	System Setting	System Setting	System Setting	
Move To Work Pos. At Start Y/N	System Setting	System Setting	System Setting	System Setting	
When Out Of Sensor Range	System Setting	System Setting	System Setting	System Setting	
Prohibit Operation at Standby	System Setting	System Setting	System Setting	System Setting	
Wait after Probe Y/N	System Setting	System Setting	System Setting	System Setting	
IO Soft Filter	—	System Setting	—	System Setting	
Save on Changing Mode	—	T.ENV	—	T.ENV	×
Key Click	—	T.ENV	—	T.ENV	×
Back Light on Teaching	—	T.ENV	—	T.ENV	×
Alarm Setting	Alarm Setting	Alarm Setting	Adjustment, Version Information	Alarm Setting	×
Adjustable Value	Adjustment	Adjustment	Adjustment, Version Information	Adjustment, Version Information	×
OK Counter	Run Result	Run Result	Adjustment, Version Information	Adjustment, Version Information	×
Fault Counter	Run Result	Run Result	Adjustment, Version Information	Adjustment, Version Information	×
Sum Counter	Run Result	Run Result	Adjustment, Version Information	Adjustment, Version Information	×
Play Back Time	Version Information	Version Information	Adjustment, Version Information	Adjustment, Version Information	×
Running Time	Version Information	Version Information	Adjustment, Version Information	Adjustment, Version Information	×

● How to Read the System Settings Table

The System Settings Table shows which category each item belongs to in the JP Series 3 or JP Series 4. For example, “Unit of Measure” belongs to “System Setting” in the JP Series 3, however, it belongs to “T.ENV” in the JP Series 4. PC software, “JPTDMS (for the JP Series3)” has the category “Adjustment, Version Information” while “JP Designer (for the JP Series 4)” does not.

If there is an “X” mark in a “Write into EP” column, it means that data will not be written in the Electro Press even if it is sent from the PC. Items with a “X” mark cannot be changed from the PC.

CREATING AND EDITING TEACHING DATA

Using JP Designer, you can create a new program, modify the existing program settings and more.

■ Modification

• System Data

Select [System Data] from the tree view (on the left of the screen) to display the system data contents in the data table (in the lower right of the screen.)

Select the item you want to change in the data table in the lower right of the screen and click the “▼” symbol on the value setting section to display the pull-down menu. Select the desired item from the menu.

Item	Data	Unit
Absolute Position Adjust Y/N	Enable Position Adj	
JOG Mode Max. Pressure	5500	
Load Auto Reset Y/N	Enable Load Auto F	
Buttons Simultaneity	Warning Buzzer	
Reducing Work Time Y/N	Not Reducing Work	
Back Light Auto OFF	Auto OFF invalid	
Change the Alarm Sound	Change the Alarm E	
Move To Work Home Pos At Start Y/N	Start(Without Homir	
When Out of the Sensor Range	OK When Out of Sei	
Start on Error	Permitted	
Call Program	Permitted	
Counter Clear	Permitted	
Alarm Setting	Permitted	
JOG Mode	Permitted	
Wait after Probe Y/N	Wait after Probe ▼	
Switch Box Y/N	Wait after Probe No Wait after Probe	

• Adjustment, Version Information (cannot be changed on PC)

Select “Adjustment, Version Information” to display the description in the data table (in the lower right of the screen.)

“Adjustment, Version Information” in each Electro Press is unique and includes work counting. After data is retrieved from the Electro Press, you can confirm the current values.

When new teaching data is opened without retrieving data from the Electro Press, all items are displayed as “0.”

The contents of “Adjustment, Version Information” cannot be changed by PC. “Adjustment, Version Information” is included in the teaching data, however, this information cannot be replaced even if teaching data is sent to the Electro Press from PC. If teaching data retrieved from an Electro Press is sent to other Electro Presses, “Adjustment, Version Information” including work counting will not be replaced.

- [Program Data]

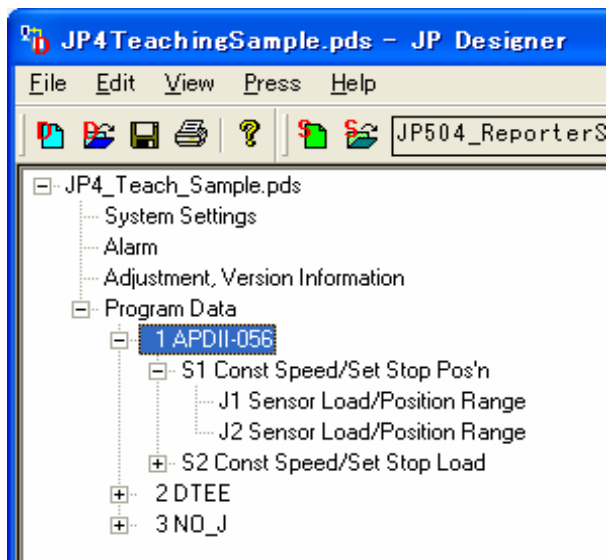
Select a program name from the tree view (on the left of the screen) to display approach conditions in the data table.

On the left side of the screen, click the mark on the top of [Program Data] to expand the list of teaching programs included in the folder.

Click the mark next to a program name to expand the list of pressing sections.

Click the mark next to a section to expand the list of sensor settings.

When in an expanded state, the mark becomes a mark. Click the mark to hide the expanded list.



- Select a section to display it's section data contents in the data table.
- Select a sensor setting to display it's sensor data contents in the data table.

Select the item you want to change from the tree view (on the left of the screen) to display data contents on the lower right of the screen. Select the item you want to change from the data contents and click the “▼” symbol on the value setting section to display the pull-down menu. Select the desired item from the menu.

If you want to change a numeric value, click the item you want to change and enter the desired numeric value.

■ Add Program

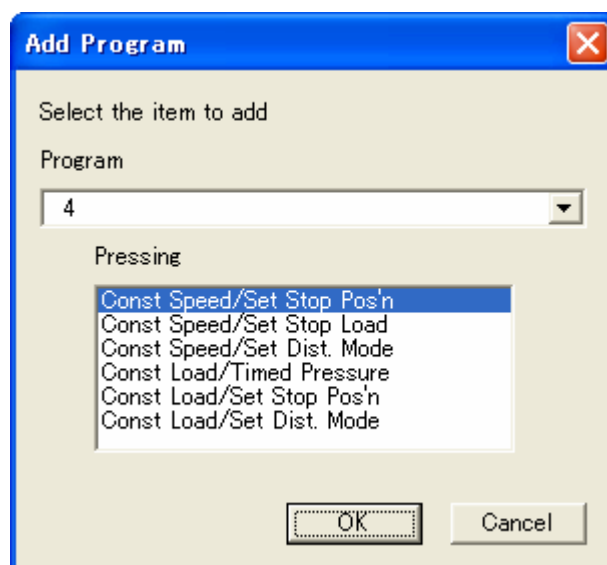
To add a new program, click [Add Program] in the “Edit” pull-down menu on the menu bar.

The dialog box to the right will appear. Select a new program number to be added and the mode of pressing sections to be included in the program.

Program numbers which already have data registered under them cannot be selected.

A new program has one pressing section when it is added and the default values are set to all the items included in the new program.

After adding a new program, change its contents.



You can also add a program by clicking on the icon below.

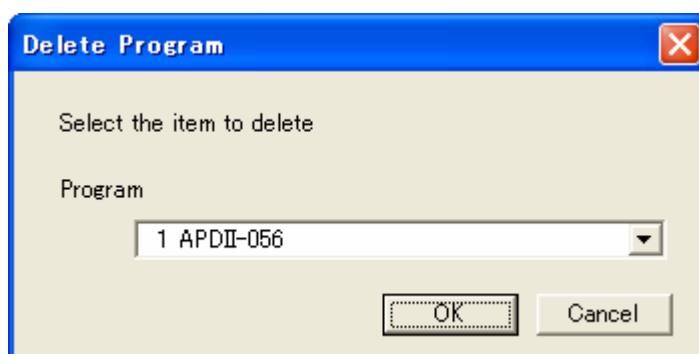
Add Program: 

■ Delete Program

To delete a program, click “Delete Program” in the “Edit” pull-down menu on the menu bar.

The dialog box to the right will appear. Select the program to be deleted.

You also can delete a program by clicking on the icon below.



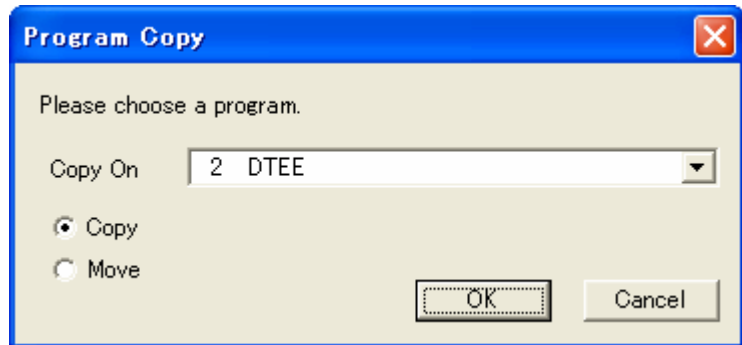
Delete Program: 

■ Copy Program

To copy or move a program, select a program as the copy source from the tree view on the left side of the screen.

Click “Copy Program” in the “Edit” pull-down menu on the menu bar.

The dialog box to the right will appear. Select a program number to be the copy destination.



If there is already a program in the destination location, a confirmation message will be displayed.

You also can copy a program by clicking the icon below.

Program Copy:



■ Add Section

To add a new pressing section, select the item you would like to add from the “Edit” pull-down menu. Select a program to add the pressing section to and the pressing mode.

If the selected program already contains pressing sections, the new section will be added at the end of the program. The default values are set to all items included in the new program. After adding a new section, change its contents.

You also can add a pressing section by clicking on the icon below.

Add Section:



■ Delete Section

To delete a pressing section, click “Delete Section” in the “Edit” pull-down menu on the menu bar. Select the pressing section to be deleted and the program that includes the pressing section.

You also can delete a pressing section by clicking on the icon below.

Delete Section:



■ Copy Section

To copy a pressing section in a program, select a pressing section to be a copy source from the tree view on the left side of the screen. Click “Copy Section” from the “Edit” pull-down menu on the menu bar.

The copy source pressing section is added at the end of the program.

You also can copy a pressing section by clicking on the icon below.

Copy Section:

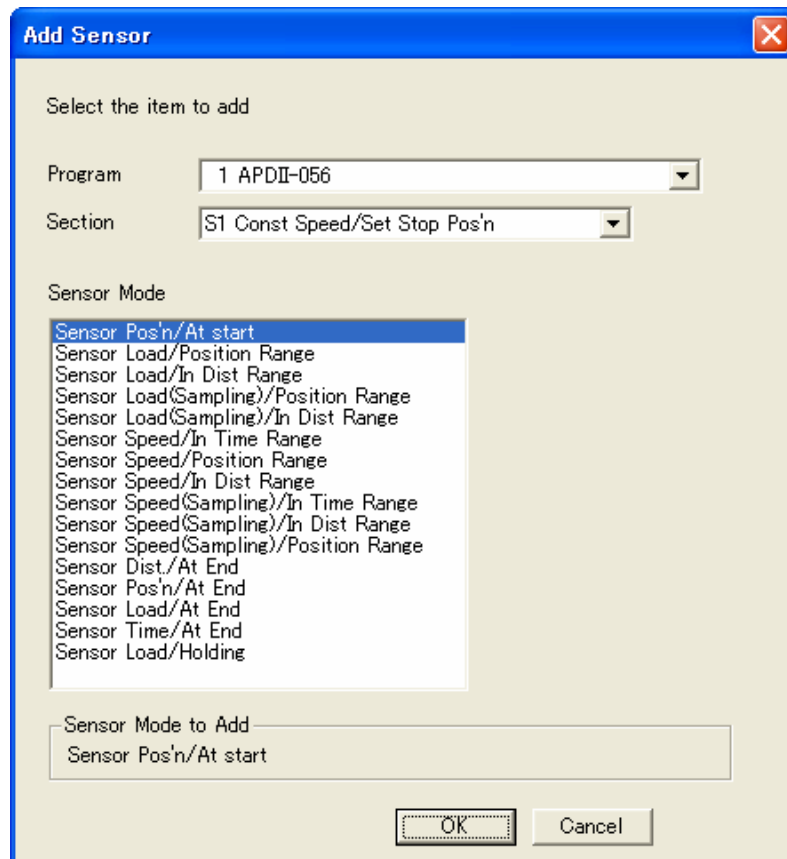


■ Add Sensor Setting

To add a sensor setting, click “Add Sensor Setting” in the “Edit” pull-down menu on the menu bar.

The dialog box to the right will appear. Select the program and pressing section to add the sensor setting to and select a sensor mode.

A new sensor setting is added to the end of the selected pressing section. In the new sensor setting, the default values have been set to all the items, except for the sensor mode. After adding a new sensor setting, change its contents.



You also can add a sensor setting by clicking on the icon below.

Add Sensor Setting: 

■ Delete Sensor Setting

To delete a sensor setting, click “Delete Sensor Setting” in the “Edit” pull-down menu on the menu bar. Select the sensor setting to be deleted and the pressing section and program that include the sensor setting.

You also can delete a sensor setting by clicking on the icon below.


Delete Sensor Setting: 

■ Copy Sensor Setting

To copy a sensor setting in a pressing section, select a sensor setting to be the copy source from the tree view on the left side of the screen. Click “Copy Sensor Setting” in the “Edit” pull-down menu on the menu bar.

The same sensor setting is added at the end of the section that includes the copy source.

You also can copy a sensor setting by clicking on the icon below.

Copy Sensor setting: 

- Also, right-clicking on the tree view, to display the operation menu.
The menu displayed differs depending on where you right-click.

Click above “Program Data”: To add a program.

Click on “Pressing Section”: To add a section, delete a program or copy a program.

Click on “Sensor Setting”: To add a sensor setting, delete or copy a pressing section.

GRAPH DISPLAY

It is possible to display a sampling file that includes time-series data (operation result data retrieved using “JP Sampler”) as a graph. This graph can be used as a reference when creating programs or entering sensor conditions.

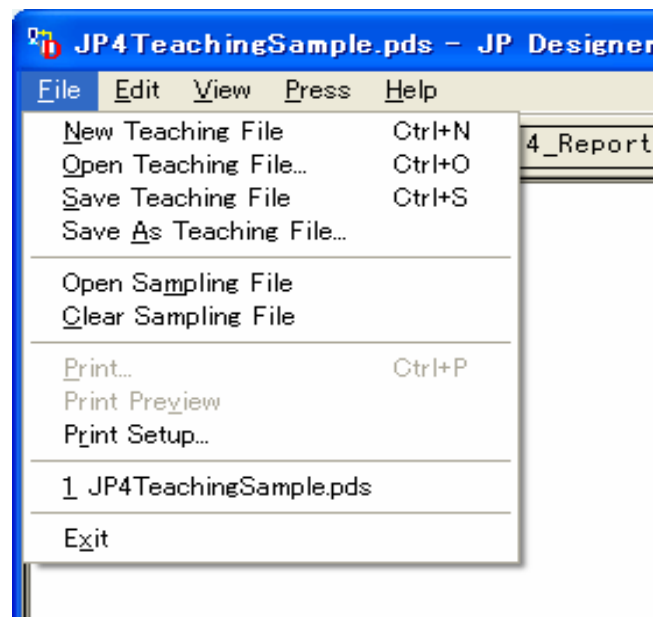
- Sampling files cannot be modified.

■ Open Sampling File

Click “Open Sampling File” in the [File] pull-down menu on the menu bar.

When the sampling file opens, it is displayed as a graph in the upper right of the screen.

The name of the sampling file currently being displayed is shown in the tool bar.



■ Clear Sampling File

Click “Clear Sampling File” in the [File] pull-down menu on the menu bar to close the current sampling file. The graph display will be cleared at this time.

No more than one sampling file can be opened at one time. If you want to a sampling file, it is necessary to close any other open sampling files first.

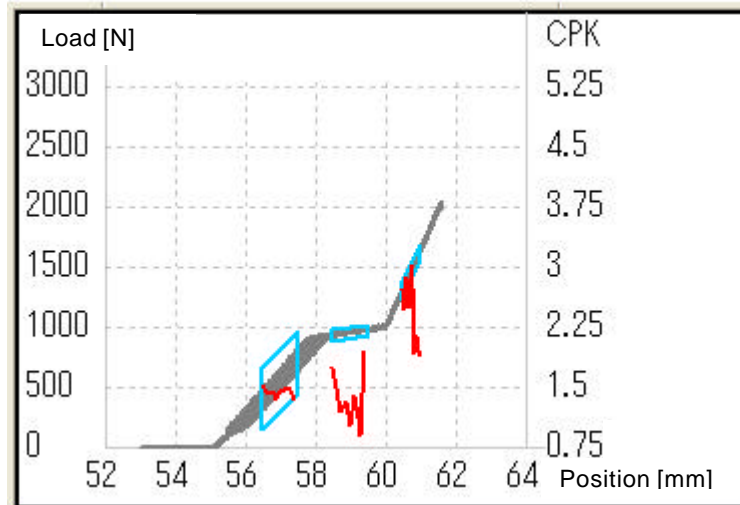
Graph Display

When a sampling file that includes time-series data is opened, operation result data will be displayed on a graph.

Gray: Time-Series Data

Blue: Sensor Mode

Red: CPK



To change sensor mode display, select from the items below in the tree view on the left of the screen.

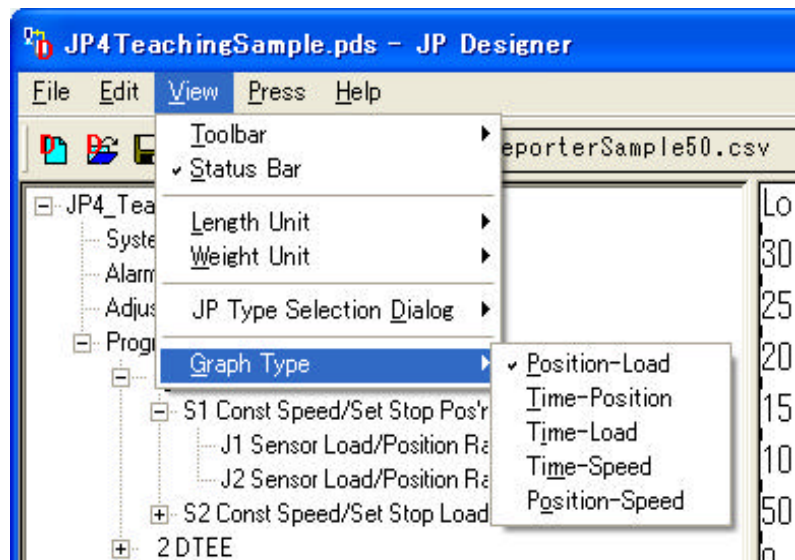
- ? System Data, Adjustment/Version Information, Program Data: Sensor mode/CPK will not be displayed.
- ? Program: All sensor modes/CPKs included in the selected program will be displayed.
- ? Pressing Section: All sensor modes/CPKs included in the selected pressing section will be displayed.
- ? Sensor Section: The one selected sensor mode/CPK will be displayed.

Note: CPK is displayed only if the sampling file includes data from 3 shots or more.

Changing Graph Type

Select a graph type from [Graph Type] in the "View" pull-down menu on the menu bar.

The graph type selection menu can also be displayed by right-clicking on a graph.



PRINT

This section explains how to print out teaching data.

Click [File] on the menu bar and select [Print] from the pull-down menu.

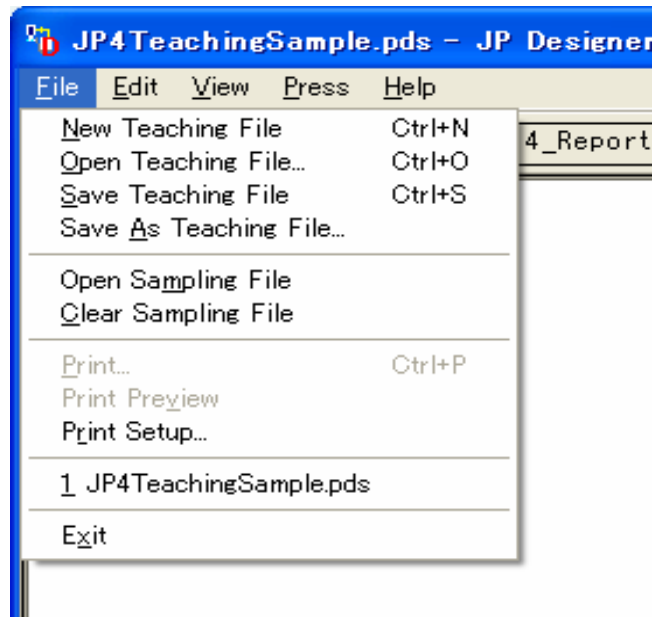
The Print setting dialog box will appear.

Select the desired item to be printed and click the [OK] button.

Set the print range to [All] to select all the teaching data (in the unit described on page JP Designer_6.)

The Print confirmation dialog box will appear.

Click the [OK] button to start printing.



Click [Print Preview] check the print image. If you want to print out a particular program or point job, you can confirm and set the page count using print preview.

Click [Print Setup] to change the print setting.

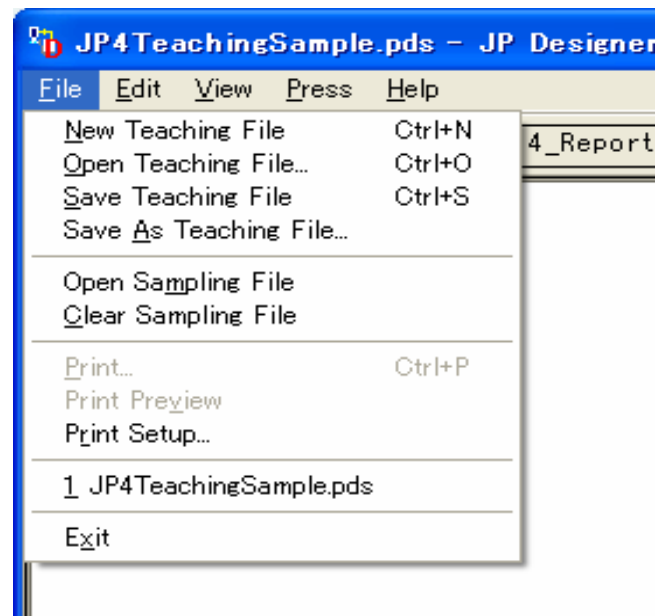
OPEN AND SAVE

This section explains how to open a data file and save data to a file on the PC. To send teaching data to the Electro Press, refer to the next page.

Before sending teaching data to the Electro Press, save the data in a file, this becomes your backup copy.

■ Save to File

Click [File] on the menu bar and select [Save] or [Save As] from the pull-down menu.



■ Open File

1. Click [File] on the menu bar and select [Open Teaching File] from the pull-down menu. You cannot open multiple files at one time. Close any open teaching files before opening the file you want.
2. Select the teaching file to be opened.

PRESS

■ Receiving Teaching Data

This section explains how to retrieve the teaching data currently being used in the Electro Press.

The retrieved teaching data can be checked, printed out or saved as a backup file via PC. You can change settings in the retrieved teaching data and send it back to the Electro Press.

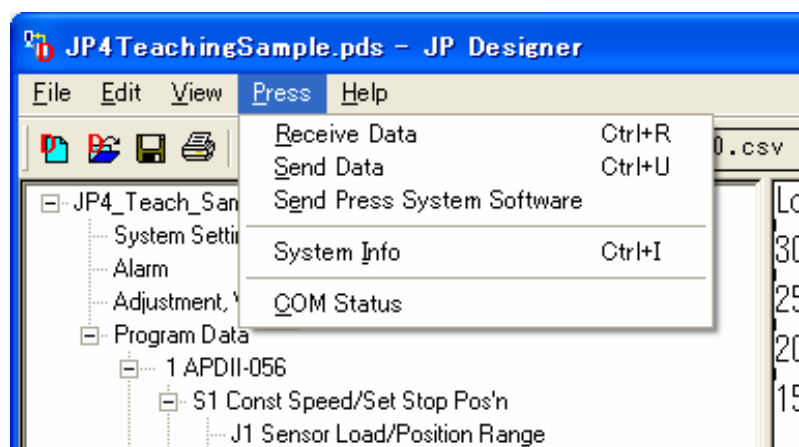
When using this application, all data is handled in the unit described in the previous section (see JP Designer_6.) You cannot select a specific program to be sent or retrieved when transmitting data between the PC and the Electro Press.

- When sending, receiving, or reading data and information, confirm that the Electro Press is in one of the following states.
 - The pressing setting list is displayed on the screen in teaching mode.
 - The Electro Press is standing by for start at the work home position in the run mode or external run mode.

Click [Press] on the menu bar and select [Receive Data] from the pull-down menu.

Teaching data is sent from the Electro Press to the PC.

When the transmission is complete, the received teaching data will open.



- You cannot open multiple teaching files at one time. Close any open teaching files before receiving a new one from the Press.

Sending Teaching Data

Teaching data created or modified using “JP Designer” can be activated only after having been sent to the Electro Press. You can retrieve the teaching data currently being used in the Electro Press.

When using this application, all data is handled (e. g. File Open, Save, Send to Press, or Read from Press) in the unit described on Designer 6. You cannot select a specific program to be sent or retrieved when transmitting data between the PC and the Electro Press.

Note that **only one unit of data (described earlier in this section) can be stored in the Electro Press. When teaching data is sent from the PC to the Electro Press, the data stored in the Press is deleted and replaced by the newly received data.**

If you want to save the teaching data stored in the Electro Press, save the data in a file on your PC before sending new data.

- When sending, receiving, or reading data and information, confirm that the Electro Press is in one of the following states.
 - The pressing setting list is displayed on the screen in teaching mode.
 - The Electro Press is standing by for start at the work home position in run mode or external run mode.

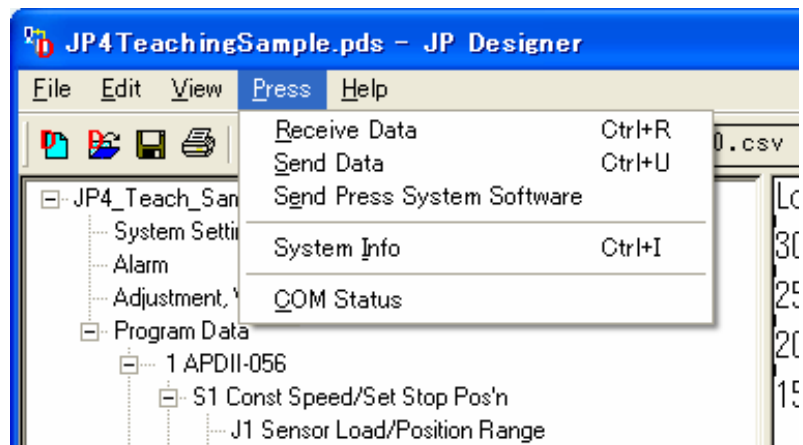


Warning

If teaching data has been sent from the PC to the Electro Press, be sure to remove the mounting jig from the Press and execute a test run before actual operation to ensure that the ram will not hit the jig.

Click [Press] on the menu bar and select [Send Data] from the pull-down menu.

The PC will start sending the teaching data to the Electro Press.



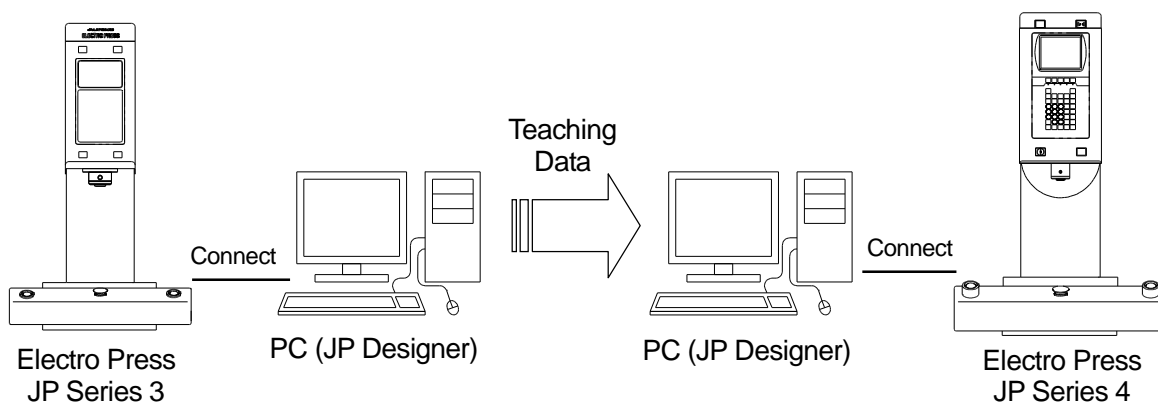
CONVERTING DATA FROM JP SERIES 3 INTO JP SERIES 4

If you are using “JP Series 3” teaching data as “JP Series 4” teaching data, it is necessary to convert the data. To convert data, use “JP Designer Limited Edition” and follow the steps below.

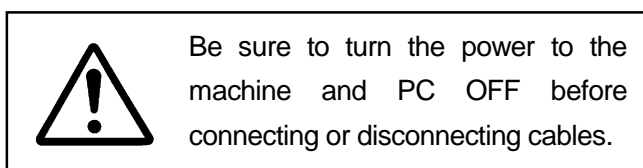
The last number in the model name indicates the series number.

e.g.) JP-1003: Series 3, JP-1004: Series 4

1. Using “JP Designer Limited Edition”, load data onto the PC from “JP Series 3”.
2. Save the “JP Series 3” data into a file on PC.
3. Using “JP Designer Limited Edition”, send the data from your PC to the “JP Series 4.”



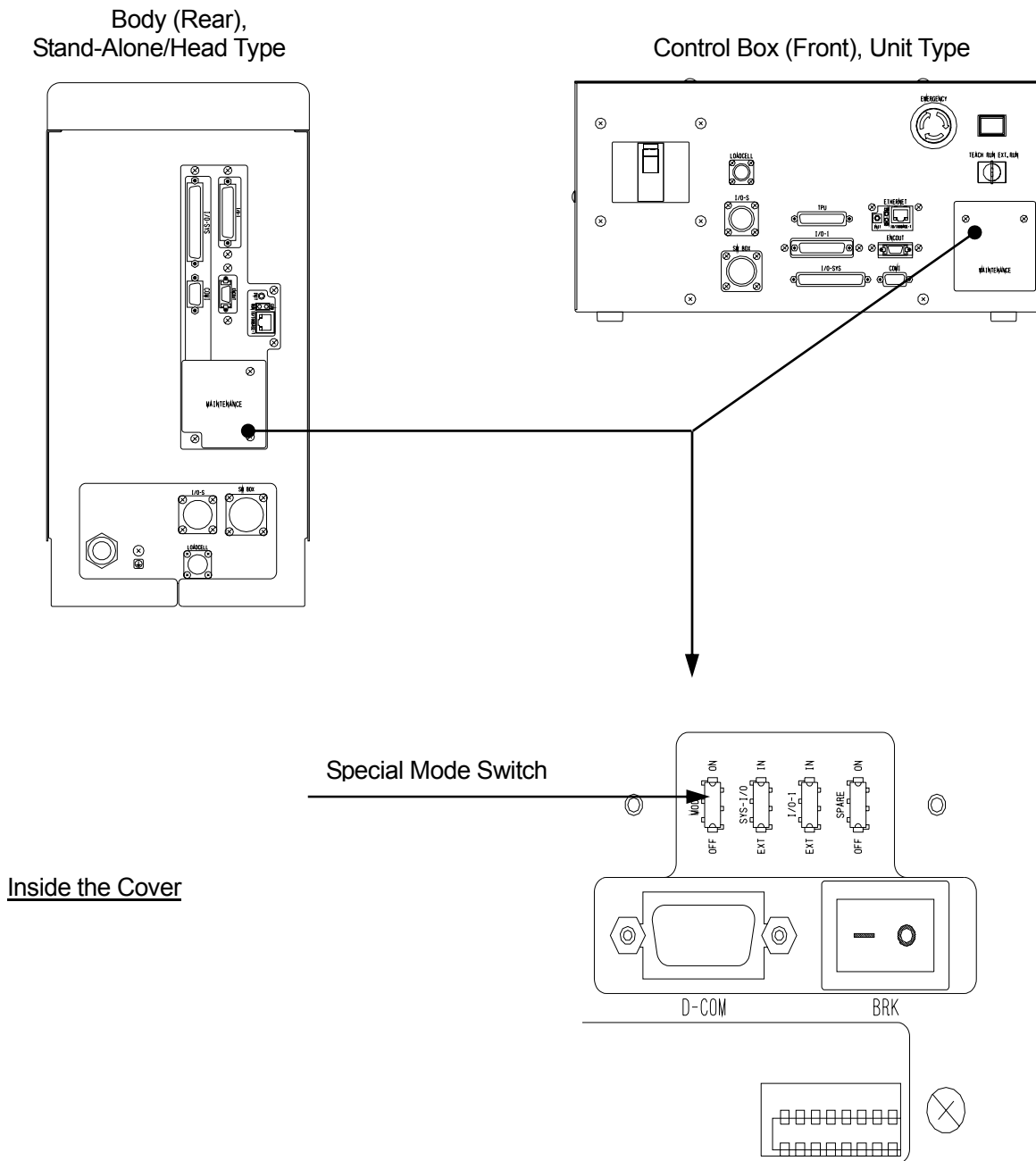
- In addition to “JP Designer”, “JP Designer Limited Edition (included in the Operation Manual CD-ROM)” can also be used to convert data.
- Teaching data cannot be sent to the JP Series 3.
- You can connect the one PC to both the JP Series 3 and the JP Series 4 Electro Presses at the same time. It is also possible to connect the PC only to the JP Series 3 to retrieve teaching data, disconnect the JP Series 3 and then connect the JP Series 4 to send the teaching data to.



■ Sending Press System Software

The Electro Press is controlled by built-in “Press system software.” To upgrade the press system software, follow the instructions below. (For this operation, the machine must be connected to a PC.)

“Press system software” is included in the Operation Manual CD-ROM under the file name, JpSyp_XXX.jsy. (“XXX” indicates the version number.)



Inside the Cover

1. Turn OFF the machine, remove the cover on the rear body (Stand-alone/Head type) or the cover on the control box (front) (Unit type) and turn the **special mode switch** ON.
2. Click "Press" on the menu bar and select "Send Press System Software" from the pull-down menu.
The message "Welcome" is displayed on the Electro Press LCD (or on the teaching pendant for the unit type.)
3. Select [Open File] in the dialog box displayed, designate system software to download and click [Send.]
4. After transmission is complete, turn the power to the Electro Press OFF, switch the **special mode switch** to OFF and replace the switch cover.



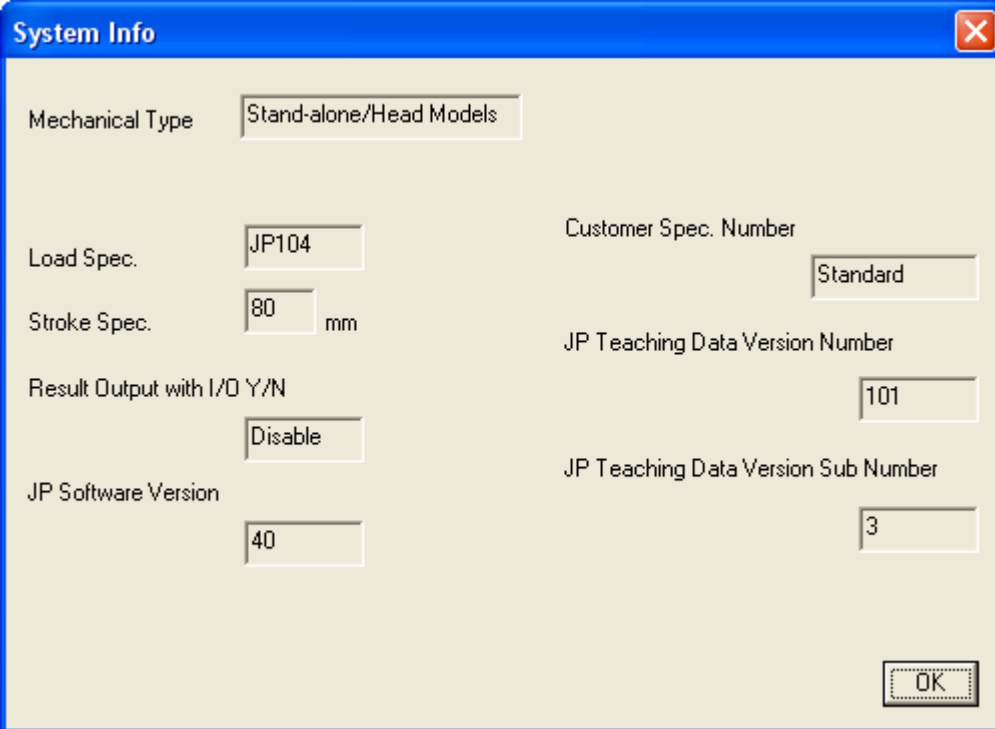
Caution

While sending Press system software, be sure not to turn the power to the Electro Press or PC OFF.

It takes a few minutes to complete sending Press system software.

■ System Information

Click [Press] on the menu bar and select [System Info] from the pull-down menu to read the system information from the connected Electro Press.



The screenshot shows a dialog box titled "System Info" with a blue header and a red close button in the top right corner. The dialog contains several input fields and labels:

- Mechanical Type: Stand-alone/Head Models
- Load Spec.: JP104
- Stroke Spec.: 80 mm
- Result Output with I/O Y/N: Disable
- JP Software Version: 40
- Customer Spec. Number: Standard
- JP Teaching Data Version Number: 101
- JP Teaching Data Version Sub Number: 3

An "OK" button is located at the bottom right of the dialog.

- [JP Software Version Number] is the system version number built in the Electro Press, not the version number of the “JP Designer.”



JP Sampler

START AND EXIT

This software retrieves operation results data on a per shot basis from the Janome Electro Press and saves it in a sampling file (CSV file.)

You can choose which operation results to retrieve. Select quality data, time series data or both.

■ Start

Use one of the following three methods to start up the “JP Sampler” software.

1. Select [Program] from the [Start] menu of Windows® and click [JP Sampler.]
2. Click the shortcut icon on the desktop.




3. Starting up from “JP Multi-Sampler”

<NOTE> When using JP Multi-Sampler, check the [Start] check box for the desired COM port No. and click the [Start] button. To start up JP Sampler using JP Multi-Sampler, both JP Sampler and JP Multi-Sampler must be in the same folder.

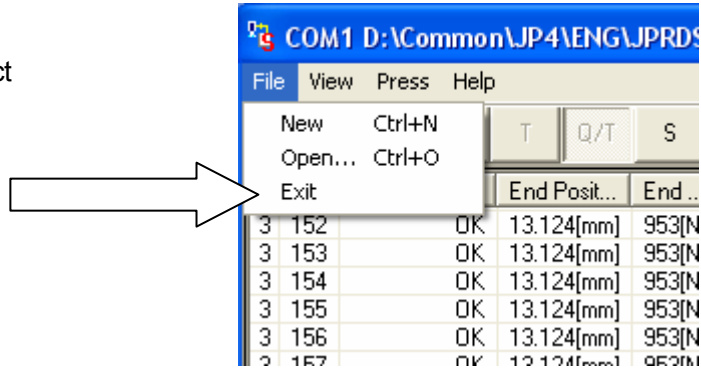
If JP Sampler is activated independently after it has been activated from JP Multi-Sampler, settings including file name and COM port are carried over from JP Multi-Sampler. In this case, it may be necessary to change the settings.

■ Exit

Use one of the following two methods to exit the “JP Sampler” software.

1. Click the  (Exit) button in the upper right of the screen.

2. Click [File] on the menu bar and select [Exit] from the pull-down menu.



- Before you exit this application, be sure to click “S (Stop)” on the tool bar to exit the standby to receive state.

ONSCREEN DISPLAY

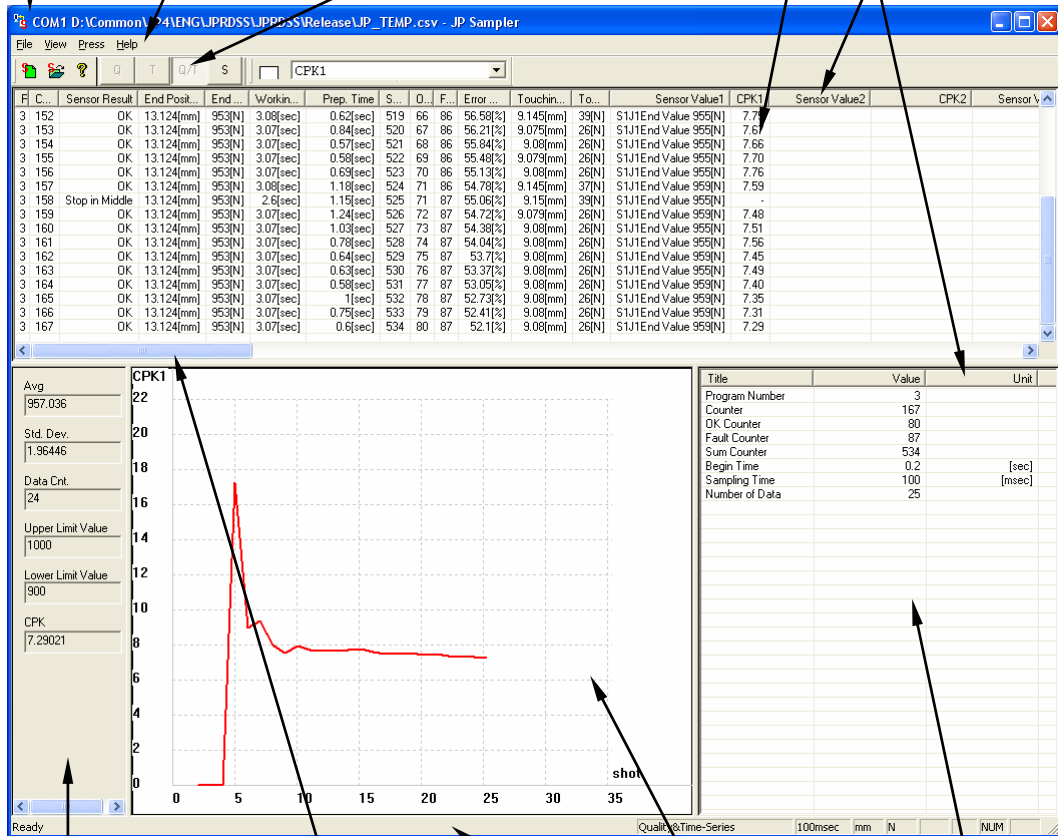
Com Port No. to be used and Output File Name

Menu Bar

Tool Bar

Quality Data

Header



Valid only for CPK display









Scroll Bar

Status Bar

Graph

Time Series Data (Header)

■ Icon Functions

	File – New	Writes to a newly created file.
	Open	Overwrites an existing file.
	Press – Receive Quality Data	Stands by to receive quality data.
	Press – Receive Time Series Data	Stands by to receive time series data.
	Press – Receive Quality Data/ Time Series Data	Stands by to receive quality data or time series data.
	Press – Stop	Stops receiving data.
	Display – Graph Clear	Clears the graph display.
	Help – Version Information	Displays the version number.

FILE DESIGNATION

This section explains how to retrieve quality data and time series data stored in the Electro Press. Using this application, you can retrieve pressing results data from the Electro Press, confirm its contents, and save it into a sampling file.

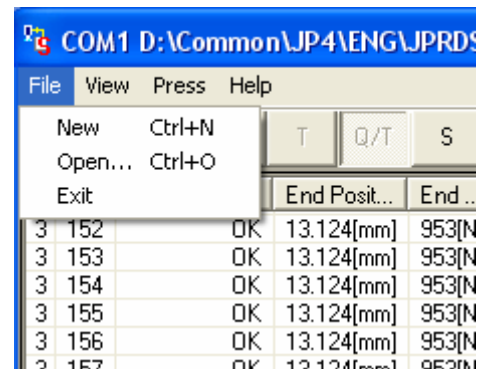
■ How to Designate a File

Designate a file to save the received data into.

Data retrieved from the Electro Press is automatically saved into the file designated here. (in CSV format)

The file is in a text format. If no extension is designated, it will be “CSV.”

Click [New] or [Open] from the “File” menu in the menu bar.



[New] saves the retrieved data into a new file.

[Open] adds the received data to the end of the selected sampling file

- If you designate an existing file after selecting [New], the existing file will be cleared and overwritten.
- If you don't designate a file, data will be saved at the end of the previously designated file. If the previous file has been deleted, a new file will be created with the same name as the previous file and the data will be written into that file. If a file has never been designated, a file with the file name “JP_TEMP.CSV” will be created.

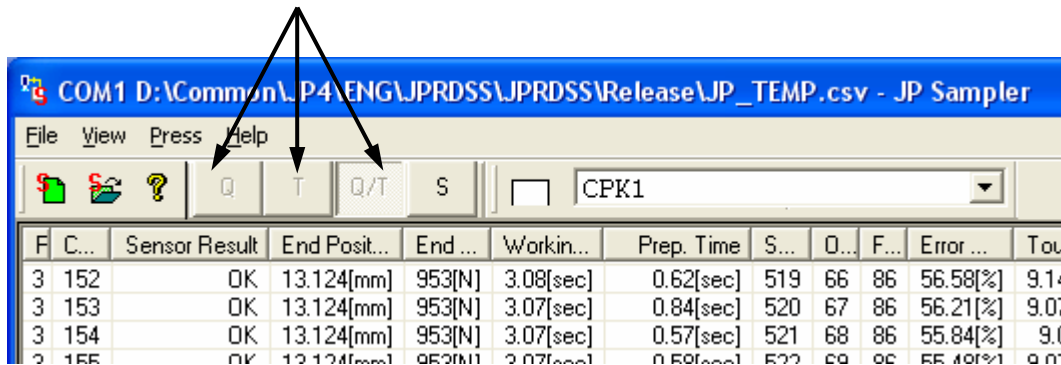
DATA SELECTION

This section explains how to select the type of data to be retrieved.

Click [Press] on the menu bar and select either [Quality Data], [Time Series Data], or [Quality/Time Series.]

Alternatively, it is easier to click on one of the data-type icons ([Q], [T], or [Q/T]) in the tool bar. A shaded icon indicates that that data type has been selected.

Select [Q/T] to receive both the quality data and time series data.



After retrieved data type is selected, **the Electro Press enters data receive wait mode.**

To exit the wait mode, click [S] (Stop) while the Electro Press is standing by for running.

- If the PC and the Press are not connected or if the power to the Press is OFF, the PC will enter the [S] (Stop) mode and data type cannot be selected.
- **To start up another application while this application is in use, be sure to click [S] to exit wait mode.** The file may be damaged if another application is started-up while in wait mode.
- Before you exit this application, be sure to click "S (Stop)" on the tool bar to exit wait mode. The sampling file may be damaged if you exit the application while in wait mode.
- If "S (Stop)" is clicked when the Electro Press does not stand by for running, the Electro Press cannot receive a "Stop" instruction and repeats sending operation results. In this case, press any button of "Q", "T" or "Q/T" while the Electro Press is standing by for running and then press "S (Stop.)"

■ Unit Setting

Select the data unit.

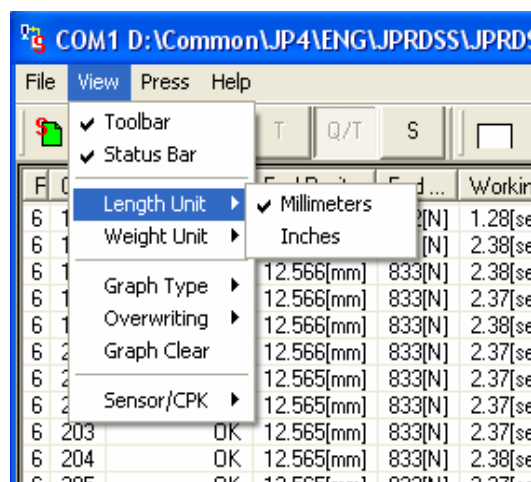
Click [View] on the menu bar and select [Length Unit] or [Weight Unit] from the pull-down menu.

The following units can be selected:

Length Unit	Weight Unit
Millimeter	Newton
Inch	Kilogram
	Pound

Check the desired unit of measurement.

(The currently selected unit is checked.)



- The new unit of measurement is enabled from the next data retrieval. Data already retrieved is not affected.

■ Sampling Time

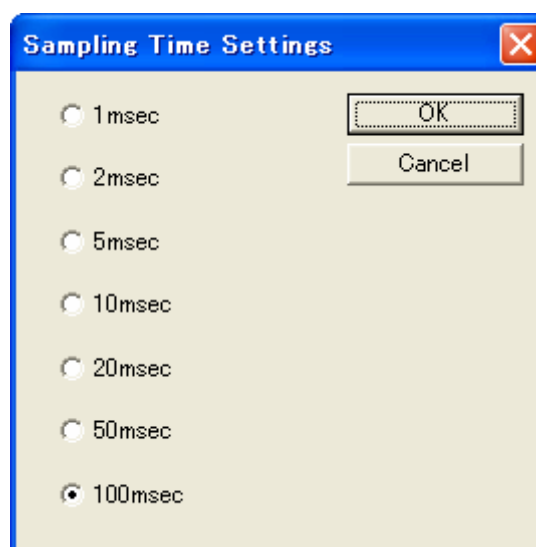
Designate the time series data sampling time.

Select a longer sampling time for a long pressing operation and a shorter sampling time for a short pressing operation.

Click [Press] on the menu bar and select [Sampling Time Settings] from the pull-down menu.

The Sampling Time Setting dialog box will appear.

Select the desired time setting.



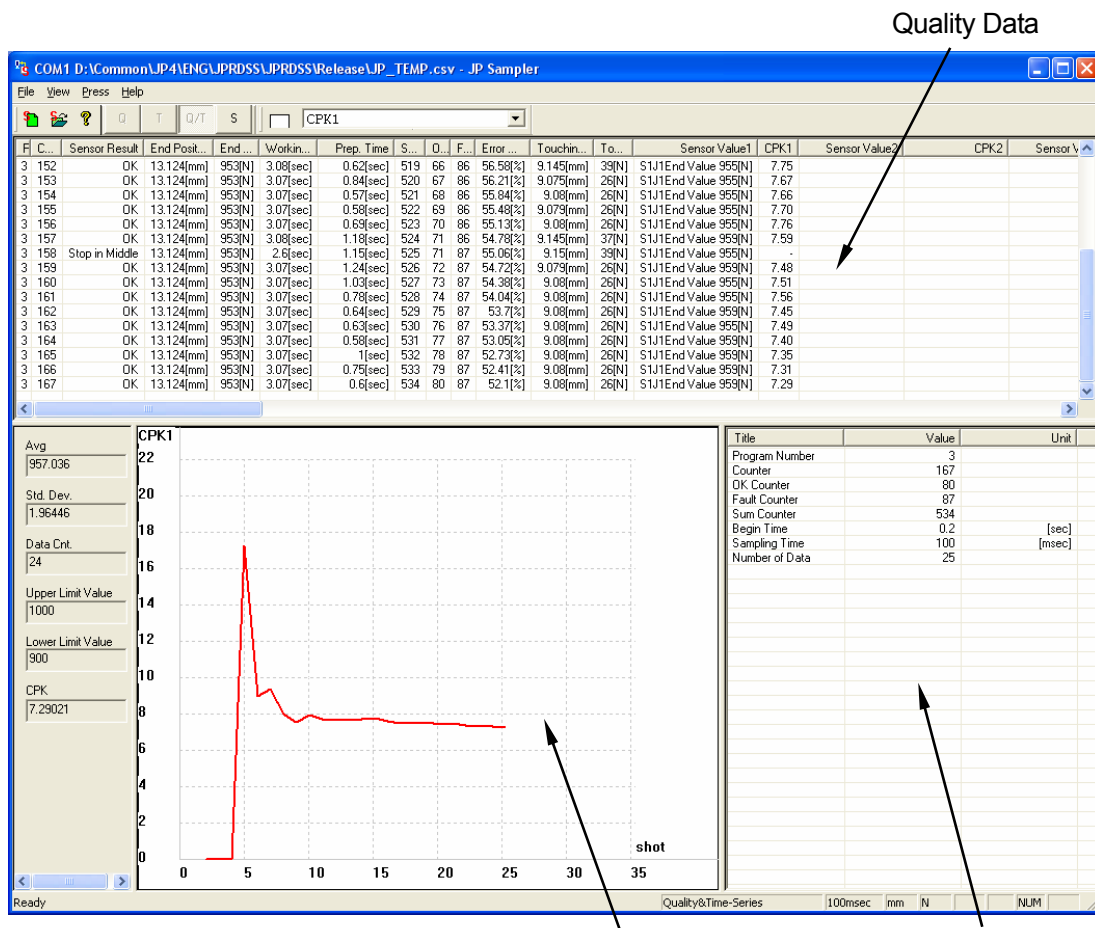
- The new sampling time is valid from the next data retrieval. Data already received is not affected.
- The sampling time cannot be changed in receive wait mode. Exit receive wait mode to change the sampling time.
- If the sampling time is set shorter, it takes more time to receive sampling data since the number of data is increased. Set the sampling time in consideration of operation time.

RETRIEVING DATA

Start the Electro Press.

The Electro Press sends the result data after a pressing operation (at the end of the program) The transmitted data is received by the PC on a per-shot basis, displayed on the screen, and written to a designated sampling file.

<Screen Display>



Each time the time series data is received, the onscreen data is cleared and replaced by the new data.

■ Operation Result Items

Quality Data	
Program Number	Number of the program being used.
Pressing Mode (if applicable)	Pressing and sensor modes of all pressing sections and sensor sections included in a program are sent to the PC. However, these items will not be displayed in the list on the PC screen.
Sensor Mode (if applicable)	
Counter	OK Count + NG Count (OK Count and NG Count can be cleared. If it has never been cleared, the counter will show a sum count.)
Sensor Result	If a value is within the sensor mode, OK is displayed. If not, NG is displayed.
End Position	Pressing end position
End Load	Load at pressing end position
Working Time	Time between running start and running end
Prep. Time	Time between the end of one running and the start of the next.
Sum Count	Total count between shipment and present time
OK Count	The number of operations with an "OK" sensor result.
NG Count	The number of operations with an "NG" sensor result.
Error Rate	$NG\ Count / (OK\ Count + NG\ Count) \times 100\%$
Touching Load	Load value at the point where the ram speed changes from probe speed to pressing speed.
Touching Position	Ram position at the point where the ram speed changes from probe speed to pressing speed.
Sensor Value 1 to n (n= the number of sensor sections) *	There is one sensor value for each sensor section. If a sensor section is just one point (End Point), the sensor value will be the value of the point. If a sensor section is a range, it will be the value at the end. If sampling (peak, etc.) is specified, it will be the sampling value.
CPK 1 to n *1 (n= the number of sensor sections)	For details, see "CPK" on page JP Sampler-13.
Sampling Position 1 to 5	Samples position, load, speed and time using the I/O-SYS on the Electro Press. *2
Sampling Load 1 to 5	
Sampling Speed 1 to 5	
Sampling Time 1 to 5	

*1 There are as many sensor values as there are sensor sections in a program.

For example, if a program has 2 pressing sections, one with 3 sensor sections and the other with 2 sensor sections, there will be 5 sensor sections.

Data for CPK 11 or over will not be displayed on the screen, however it will be written in the sampling file.

*2 When the sysIn16 (I/O-SYS) signal comes ON, the Electro Press sends the position, load, speed and time (between the ram starting to descend and receiving the signal) at that time to the PC.

There are as many sets of data as the number of times the sysIn16 signal comes ON (maximum 5.) For details of the I/O-SYS, refer to the Electro Press Operation Manual <Specifications.>

- Use the scroll bar to view the quality data items not visible on your screen.
 Drag the left edge of the data item header to expand the cell width.
 There are many quality data items so when you view the table, widen and narrow the items as necessary in order to more easily view the screen.

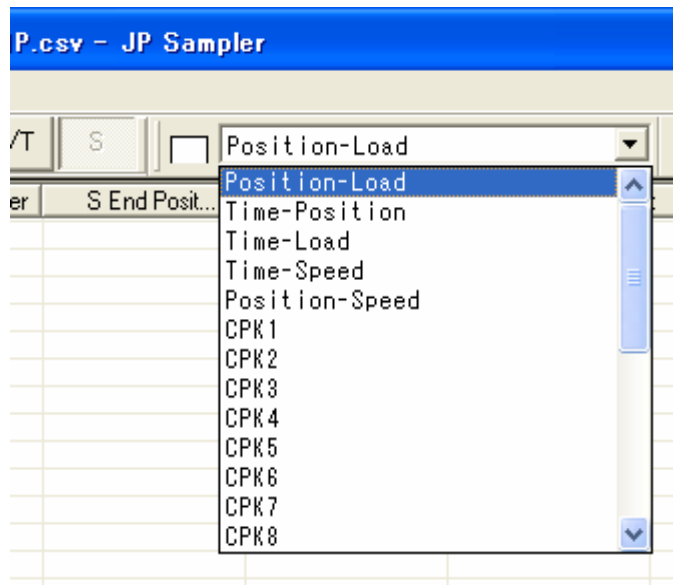
Time Series Data	
Program Number	Number of the program being used.
OK Count	The number of operations with an "OK" sensor result.
NG Count	The number of operations with an "NG" sensor result.
Sum Count	Total count between shipment and the present
Start Time	Time between running start and the 1 st sampling
Sampling Time	At the specified sampling time interval (somewhere between the ram start position and end position) the current position and load are sent to the PC. Up to 8000 sampling data sets can be sent. (The maximum number of data: 8000) If the sampling time is 1 msec, it will be 8 sec of data. If it is 10 msec, it will be 80 sec of data.
Number of Data	
Position 1	
Load 1	
Position 2	
Load 2	
~	

*3 Sampled "Position" and "Load" will not be displayed as numeric values but in graphs on the screen.

GRAPH DISPLAY

The retrieved time series data can be displayed on a graph.
 Select the graph type using either of the following two methods.

Click [View] on the menu bar and select [Graph Type] from the pull-down menu.
 The graph type list will appear.
 Select the desired graph type from the list.



Click the button on the right side of [Graph Type] on the upper right of the screen. The graph type list will appear.
 Select the desired graph type from the list.

Right-click on a graph to display the graph type list.
 Select the desired graph type from the list.

Graph Type List		
Position-Load	CPK1	End Position
Time-Position	CPK2	End Position
Time-Load	CPK3	EndValue1
Time-Speed	CPK4	EndValue2
Position-Speed	CPK5	EndValue3
	CPK6	EndValue4
	CPK7	EndValue5
	CPK8	EndValue6
	CPK9	EndValue7
	CPK10	EndValue8
		EndValue9
		EndValue10

■ Time Series Data

Position – Load: Plots position data/load data retrieved from the Electro Press onto a graph.

Time – Position: Calculates time data from position data and sampling time retrieved from the Electro Press and plots it on a graph.

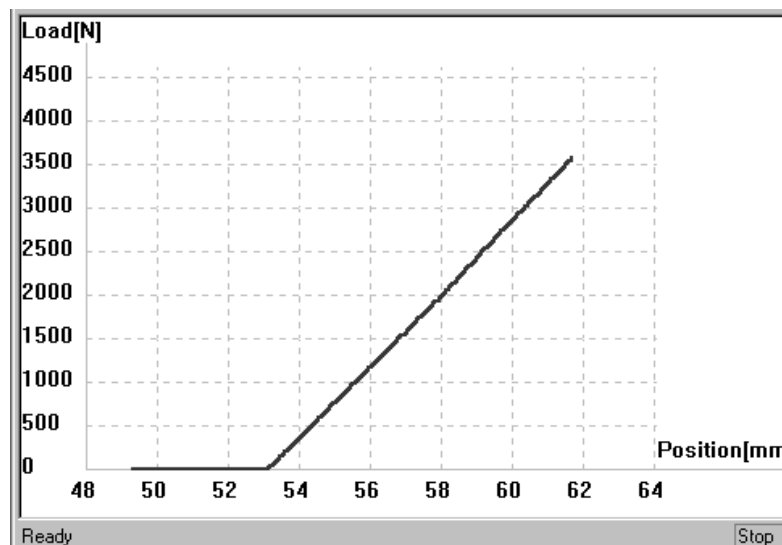
Time – Load: Calculates time data from load data and sampling time retrieved from the Electro Press and plots it on a graph.

Time – Speed: Calculates time data and speed data from position data and sampling time retrieved from the Electro Press and plots it on a graphs.

Position – Speed: Calculates speed data from position data and sampling time retrieved from the Electro Press and plots it on a graph.

Position data/load data between start position and end position is retrieved from the Electro Press and values calculated from the retrieved data are displayed on the graph.

e.g. Graph Type “Position – Load”



Each time the time series data is received, the onscreen data is cleared and replaced by the new data. However, it is possible to compare the old data with the new data. Click [View] on the menu bar and select [Overwriting], [Valid] from the pull-down menu. The red line represents new data and the gray line represents old data in the same graph. This function is invalid if the graph type is [CPK] or [HG] (histogram.)

To clear the onscreen graph, click [Graph Clear] on the tool bar.

■ CPK Graph

CPK stands for “process capability index”; product evaluation under the registered sensor conditions. The CPK value is calculated by using the upper and lower limits of sensor condition in the teaching data and the sensor value for quality data.

Use the following formulas to calculate the CPK value.

$$CPU = (\text{upper limit of sensor condition} - \text{average of sensor value})/3\sigma$$

$$CPL = (\text{average of sensor value} - \text{lower limit of sensor condition})/3\sigma$$

CPK is whichever of the values (CPU or CPL) that is smaller.

σ indicates standard deviation.

Use the following formula to calculate the standard deviation.

$$\sigma = \sqrt{\frac{1}{n} \sum_{i=1}^n (X_i - Av)^2}$$

n : number of data, X_i : sensor value, Av : average

- If the sensor value is constant, this formula cannot be used to calculate the CPK since σ becomes 0.
In this case, the result is displayed as “###” on the list and “0” on the graph.
- σ also becomes 0 if the number of data is 1.
In this case, the CPK value is not calculated and the result is displayed as “-” on the list (this does not affect the graph display).

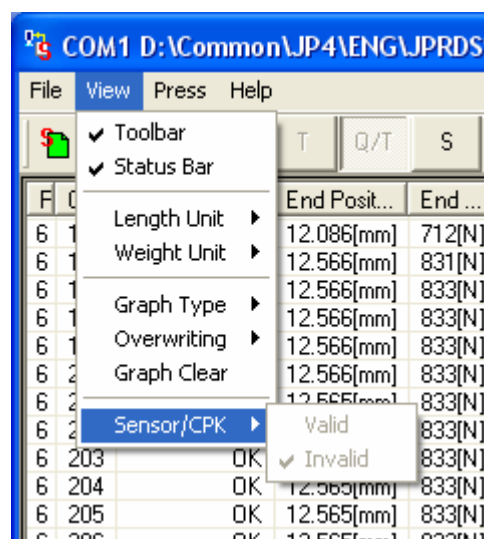
Follow the steps below to display the CPK.

Retrieve Teaching Data

To display the CPK, the values from the Electro Press are required for calculation.

Click [View] on the menu bar and select [Sensor/CPK] [Valid] from the pull-down menu to retrieve the teaching data.

The PC can retrieve the teaching data only when the data type is set to [S] (Stop.)



If [Sensor/CPK] is set to [Valid], the Press sends the teaching data to the PC. The teaching data can only be transmitted once. If the teaching data is altered after it is received, the correct CPK value cannot be calculated.

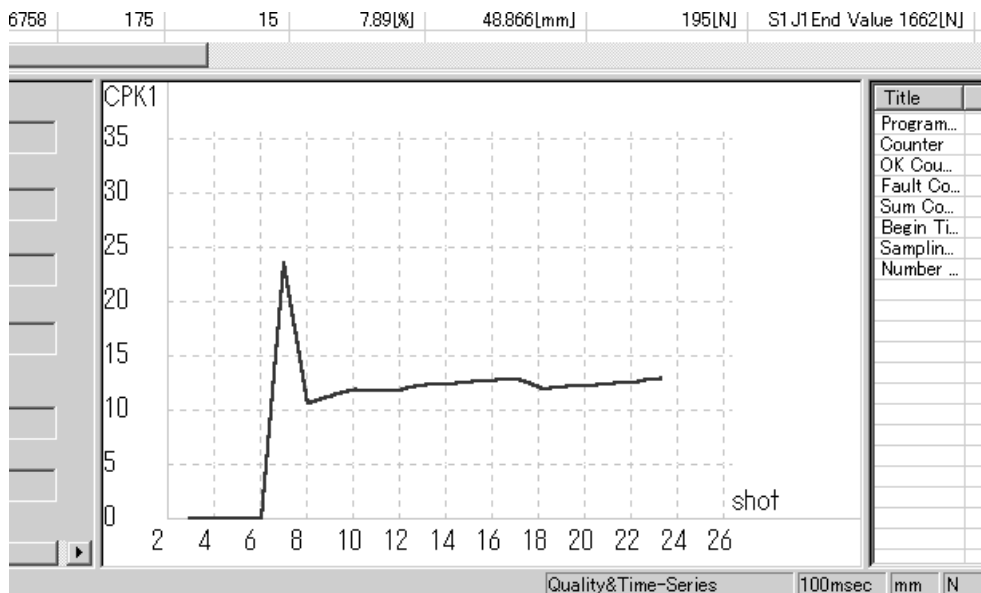
- To retrieve the same teaching data a second time, briefly exit “JP Sampler” and restart it.

Graph Type Selection

The CPK values CPK1 – CPK 10 displayed on the screen correspond to the sensor values 1 – 10.

Touching Pos.	Touching Load	Sensor Value1	CPK1	Sens ▲
48.854[mm]	195[N]	S1 J1End Value 1662[N]	12.12	
48.86[mm]	195[N]	S1 J1End Value 1649[N]	12.15	
48.881[mm]	208[N]	S1 J1End Value 1662[N]	12.51	
48.889[mm]	208[N]	S1 J1End Value 1649[N]	12.55	
48.889[mm]	208[N]	S1 J1End Value 1649[N]	12.62	
48.884[mm]	195[N]	S1 J1End Value 1675[N]	11.70	
48.882[mm]	208[N]	S1 J1End Value 1662[N]	11.98	
48.889[mm]	208[N]	S1 J1End Value 1649[N]	12.02	
48.893[mm]	208[N]	S1 J1End Value 1662[N]	12.27	
48.861[mm]	208[N]	S1 J1End Value 1662[N]	12.51	
48.866[mm]	195[N]	S1 J1End Value 1662[N]	12.75	

Select the desired CPK number from the [Graph Type] on the tool bar. The selected CPK value will be displayed in the graph.



The horizontal scale represents the shot count (data count) and the vertical scale represents the calculated CPK value.

The main screen displays the following values.

Average: Average sensor value for quality data

Std Dev: Standard deviation of sensor value for quality data

If the sensor value is centered (the difference between the sensor value and average is small), the standard deviation is small. If the sensor value is spread (the difference between the data and average is large), the standard deviation is large.

Data Cnt: Received quality data count

Upper Limit Value: Value of upper limit of the sensor in the retrieved teaching data

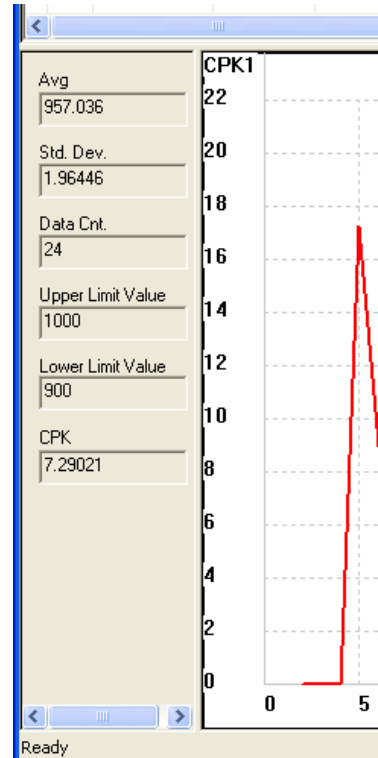
(The end value if there are two points)

Lower Limit Value: Value of lower limit of the sensor in the retrieved teaching data

(The end value if there are two points)

CPK: Process Capability Index

If data is insufficient it is not possible to attain a reliable CPK value.



Retrieve Data

Quality data is required to display the CPK. Set the data type either to [Q] (Quality Data) or [Q/T] (Quality/Time Series.)

The CPK value is calculated and displayed each time the Press executes a one-shot operation.

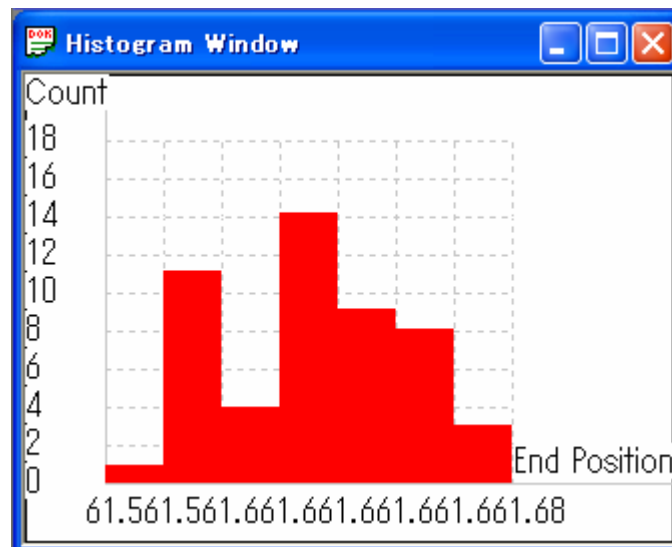
- After receiving the teaching data, the CPK value is not calculated when the Press executes the first one-shot operation.
- "Graph Clear" and "Graph Overwriting" of CPK Graph are invalid.

■ Histogram

In a histogram, the received data is represented by bars that show data variation.

Twelve types of data; end position, end load, and sensor values 1 – 10 from the quality data, are displayed in the histogram.

Select the desired histogram (HG) type from the [Graph Type] on the tool bar.



The horizontal scale indicates the data and the vertical scale indicates the retrieve count.

- Quality data is required to display a histogram. Set the data type either to [Q] (Quality Data) or [Q/T] (Quality/Time Series.)
- “Graph Clear” and “Graph Overwriting” of Histogram are invalid.



JP Reporter

START AND EXIT

The “JP Reporter” software displays data retrieved by “JP Sampler”, analyzes data results and prepares reports.

It enables you to list quality data retrieved by JP Sampler, calculate statistical values such as the average and standard deviation and display them on your PC.

Also, frequency distribution of sensor values, end load values, end positions can be shown in histograms so that you can monitor trends, for example, how end loads vary, and whether it is lopsided or evenly-distributed. Reports in a HTML format can also be prepared from the JP Reporter window.

■ Start


Use one of the following two methods to start up the “JP Multi-Sampler” software.

1. Select [Program] from the [Start] menu of Windows® and click [JP Reporter.]
2. Click the [JP Reporter] shortcut icon on the desktop.

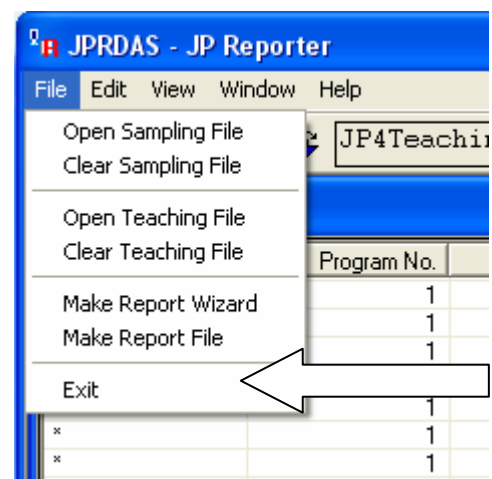


■ Exit

Use one of the following two methods to exit the “JP Reporter” application.

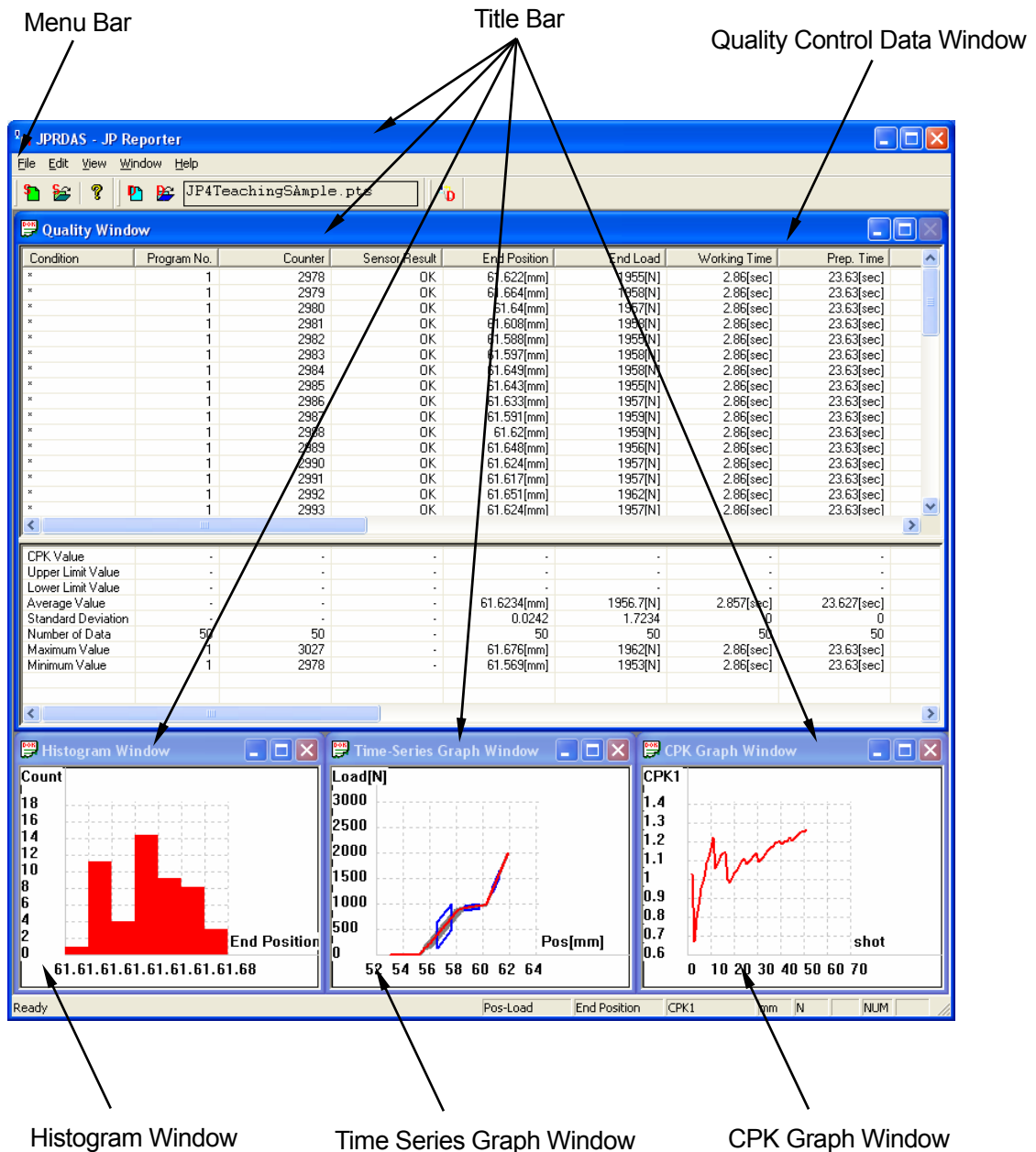
- Click the  button on the upper right corner of the screen.
- Click [File] on the menu bar and select [Exit] from the pull-down menu.

If added or deleted teaching data is still open, the Exit confirmation dialog box will appear on the screen.



ONSCREEN DISPLAY

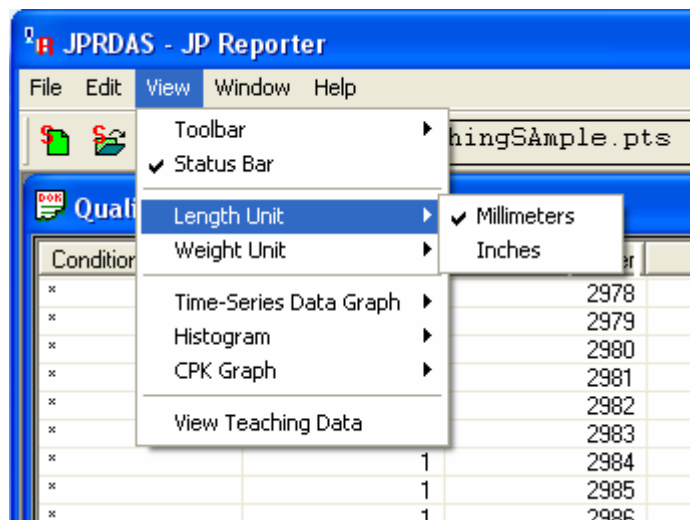
- The following screen example is displayed as "Standard View Pattern."



■ Display Mode Switching

“Length Unit” and “Weight Unit” (unit of measurement) can be changed.

Click “Length Unit” or “Weight Unit” under the [View] menu on the menu bar and select the desired unit.



■ Icon Functions

Opens a sampling file.



Clears a sampling file.



Help – Version Information



Creates a new teaching file.



Opens a teaching file.



Activates JP Designer.



READING DATA FILE

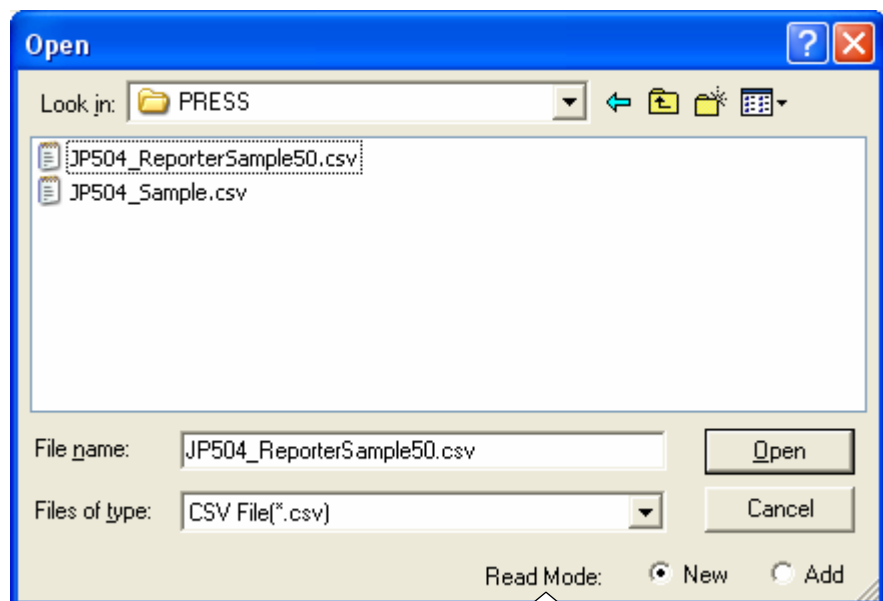
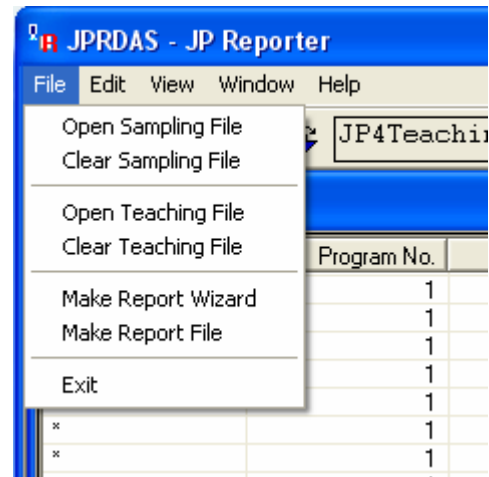
■ Reading a sampling file

A sampling file is the Electro Press operation result data file created by “JP Sampler.”

Click “File” on the menu bar and click “Open Sampling File” from the pull-down menu.

If Read Mode is set to “Add” and another sampling file is opened, the sampling file will be read and added at the end of the open sampling file.

If it is set to “New” and another sampling file is opened, it will replace the open sampling file.



■ Reading a teaching file

A teaching file is the Electro Press teaching data saved in a file in “JP Designer” (or JP Designer Limited Edition.)

Click “File” on the menu bar and select “Open Teaching File” from the pull-down menu.

WINDOW ARRANGEMENT


■ Display

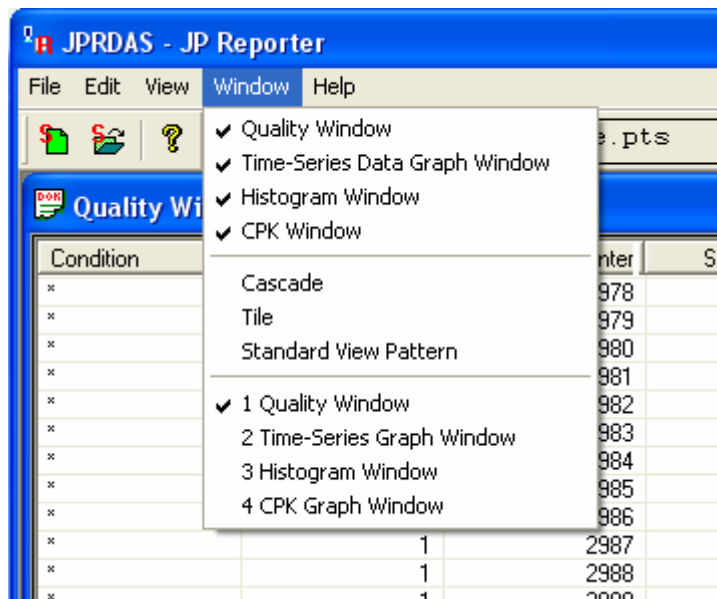
The data to be opened on your screen can be selected.

Click “Window” on the menu bar to display the pull-down menu. Items being displayed on the screen are checked. In this case:

- Quality Window
- Time-Series Graph Window
- Histogram Window
- CPK Window

To display other items on the screen, click the desired items in the “Window” pull-down menu as above.

To close the window of an item being displayed, click the  button at the upper right corner of the window. (With the exception of the Quality Window which cannot be closed in this manner.)



■ Window Arrangement

Windows can be resized or moved around on the screen by dragging the title bar or edge of the window.

If you select one of the following items, all windows will be rearranged at once.

- Cascade: Displays multiple windows in cascade.
- Tile: Displays each window so that they don't overlap.
- Standard View Pattern: Displays Quality Data on the upper half screen and 3 other windows on the lower half of the screen.

DATA DISPLAY

The following 4 windows can be displayed at the same time.

- Quality Window
- Time-Series Graph Window
- Histogram Window
- CPK Window

■ Quality Window

Quality Window

Condition	Program No.	Counter	Sensor Result	End Position	End Load	Working Time	Prep. Time
*	1	2978	OK	61.622[mm]	1955[N]	2.86[sec]	23.63[sec]
*	1	2979	OK	61.664[mm]	1958[N]	2.86[sec]	23.63[sec]
*	1	2980	OK	61.64[mm]	1957[N]	2.86[sec]	23.63[sec]
*	1	2981	OK	61.608[mm]	1958[N]	2.86[sec]	23.63[sec]
*	1	2982	OK	61.588[mm]	1955[N]	2.86[sec]	23.63[sec]
*	1	2983	OK	61.597[mm]	1958[N]	2.86[sec]	23.63[sec]
*	1	2984	OK	61.649[mm]	1958[N]	2.86[sec]	23.63[sec]
*	1	2985	OK	61.643[mm]	1955[N]	2.86[sec]	23.63[sec]
*	1	2986	OK	61.633[mm]	1957[N]	2.86[sec]	23.63[sec]
*	1	2987	OK	61.591[mm]	1959[N]	2.86[sec]	23.63[sec]
*	1	2988	OK	61.62[mm]	1959[N]	2.86[sec]	23.63[sec]
*	1	2989	OK	61.648[mm]	1956[N]	2.86[sec]	23.63[sec]
*	1	2990	OK	61.624[mm]	1957[N]	2.86[sec]	23.63[sec]
*	1	2991	OK	61.617[mm]	1957[N]	2.86[sec]	23.63[sec]
*	1	2992	OK	61.651[mm]	1962[N]	2.86[sec]	23.63[sec]
*	1	2993	OK	61.624[mm]	1957[N]	2.86[sec]	23.63[sec]

CPK Value	-	-	-	-	-	-	-
Upper Limit Value	-	-	-	-	-	-	-
Lower Limit Value	-	-	-	-	-	-	-
Average Value	-	-	-	61.6234[mm]	1956.7[N]	2.857[sec]	23.627[sec]
Standard Deviation	-	-	-	0.0242	1.7234	0	0
Number of Data	50	50	-	50	50	50	50
Maximum Value	1	3027	-	61.676[mm]	1962[N]	2.86[sec]	23.63[sec]
Minimum Value	1	2978	-	61.569[mm]	1953[N]	2.86[sec]	23.63[sec]

Quality data is shown in the upper part of the Quality Data window and Quality statistics data is shown in the lower part.

<Quality Data>

- Quality data contains many items. To refer to data which is not shown on the screen, scroll up and down.
- Quality data contains many items. The cell width of items can be widened or narrowed as necessary so that it is easier to see the table. To change cell width, put the cursor on the right edge of the cell and drag it left to narrow or right to widen.
- The following items belong to (Q) Quality Data, (T) Time Series Data or (Q/T) Quality and Time Series Data.

Condition

Program No. (Q/T)

Counter (Q/T)

Sensor Result (Q)

End Position (Q)

End Load (Q)

Working Time (Q)

Preparation Time (Q)

Sum Counter (Q/T)

OK Counter (Q/T)

NG Counter (Q/T)

Error Rate (Q)

Touching Load (Q)

Touching Position (Q)

Begin Time (T)

Sampling Time (T)

Number of Data (T)

CPK 1 to 100 (Q)

Position 1 to 5 (Q)

Load 1 to 5 (Q)

Time 1 to 5 (Q)

Speed 1 to 5 (Q)

Path

Note: Only displays existing sensor values and sampling values.

- Select an item on the quality data list and the item is shown on the time series graph in red. (It is not displayed if there is no time series data)

If no quality data is selected, the top item of the quality data list is recognized as being selected. If multiple items are selected, the top one of the selected items is recognized as being selected.
- Drag the cursor over the cells in the [Condition] column to select multiple quality data items. To clear multiple items at one time, click “Clear Line” on the pop-up window with multiple items selected.

To select items that are not adjacent, hold down the CTRL key and click on the desired items.
- Click the header to switch data between ascending and descending sequence for the selected item. It switches between ascending and descending sequence each time it is clicked.

e.g. To evaluate OK data only, sort sensor results according to whether they are OK or NG, select all the NG items and click [Clear Line] to delete them from the list.
- If the right mouse button is clicked on a quality data cell, a pop-up menu will appear and the following operations will be enabled.

ProgNo Extraction: Clears data other than the specified program.

OK Extraction: Clears NG data.

NG Extraction: Clears OK data.

Clear Line: Clears selected lines (data.)

Save: Saves quality data in a sampling file.
- This list is generally for quality data. However, if a sampling file contains only time series data, only a line is displayed. In this case, there are no items for load and position on the screen as load and position values do not exist.

<Quality Statistics Data>

Position and load data including Data Count, Maximum Value, Minimum Value, Average Value and Standard Deviation is calculated and displayed. These values are calculated from data which has the same program number as an item selected on the quality data list.

If no quality data is selected, the top item of the quality data list is recognized as being selected. If multiple items are selected, the top one of the selected items is recognized as being selected.

For sensor values, an Upper Limit Value and Lower Limit Value can be read from a teaching data file. CPK is calculated and displayed based on Upper Limit Value, Lower Limit Value and Sensor Value.

<How to calculate CPK>

$$Cpu = (\text{Upper Limit Value} - \text{Data Average}) / (3 * \text{Standard Deviation}) \text{————— 1)}$$

$$Cpl = (\text{Data Average} - \text{Lower Limit Value}) / (3 * \text{Standard Deviation}) \text{————— 2)}$$

The smaller of the two (Cpu and Cpl) will be taken as CPK.

The bigger the standard deviation is in comparison to the sensor range, the greater the number of defects (outside the sensor range) and the smaller the CPK value become.

Large deviation → More defects → Small CPK

Small deviation → Less defects → Large CPK

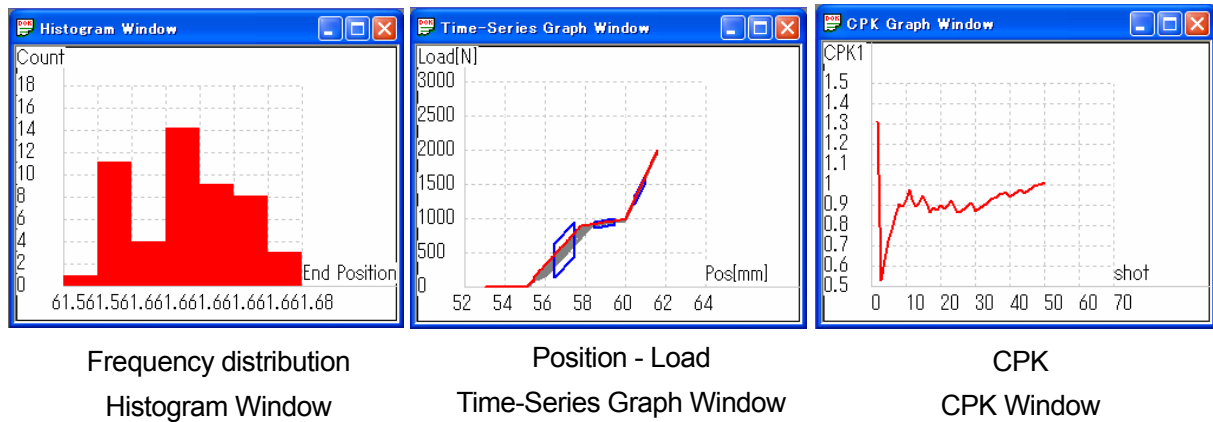
In this way CPK can be used as a measure of defect occurrence.

CPK/ Upper Limit Value/ Lower Limit Value is calculated using data that matches the program number and sensor mode data of the line selected in the quality control data

If no quality data is selected, the top quality data list item is recognized as being selected. If multiple items are selected, the top selected item is recognized as being selected.

- Right click on a quality statistics data cell to display a pop-up menu containing the following operations.
 - Save: Saves quality statistics data in a sampling file.

■ Time-Series Graph Window, Histogram Window and CPK Window



<Histogram>

Breaks down the retrieved data and displays it on a histogram so that you can monitor and analyze deviation.

In a histogram, 12 items including position, end load and sensor values 1 to 10 are displayed.

The horizontal axis represents the data and the vertical axis shows amounts.

Quality data is necessary to display data in a histogram.

<Time-Series Graph Window>

Time series data that is retrieved by JP Sampler can be displayed in a time series graph. You can see how much load is applied to the ram at different stages of its descent.

If a teaching data file is opened, a sensor frame in blue is shown overlapping this position-load graph.

<CPK Window>

Sorts data using the Counter. Monitors how CPK has changed over time in a CPK graph.

CPK varies at the beginning when there is not much data. However, it should gradually become stable at one value. If CPK has been stable and then starts to decline, there is a possibility that a defect has occurred. Even if no defect can be found in at this time it should be regarded as a warning that a defect may occur.

To calculate CPK, upper and lower limit values are necessary. CPK cannot be shown in a graph unless teaching data file is retrieved.

Also, if a sensor mode selected on the quality data list does not match that of the teaching data, CPK will not be shown in a graph.

The graph data can be changed.

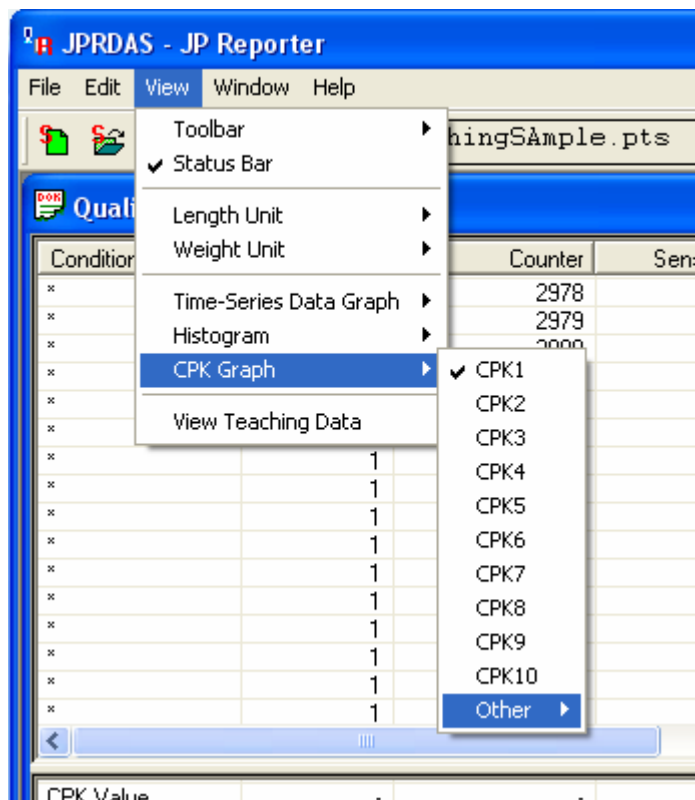
Click "View" on the menu bar and place the cursor over the graph type you want to change so that data groups appear in a pull-down menu.

The data group with the check mark is the one currently selected.

Click the desired data group to show it in the graph.

To select End Value11 or later for the histogram, place the cursor over [Other.] Items following End Value 10 will appear.

To select CPK11 or later for the CPK graph, place the cursor over [Other.] Items following CPK 10 will appear.



- Graph data can also be changed in the following way.

Right-click the mouse on the graph display. Select [Change Graph Type] from the pop-up menu.

■ Preparing CSV and BMP Files

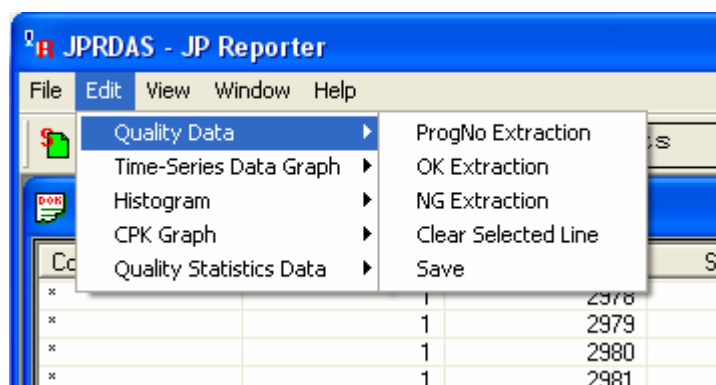
A CSV file is a file in text format. It can be opened by spreadsheet software such as Microsoft Excel®. BMP files can be pasted into Microsoft Word® files.

Create separate windows for CSV and BMP files.

The graphs being displayed are saved as BMP files.

The quality data is saved as a CSV file.

Select the data to be saved from the “Edit” Pull-down menu on the menu bar and choose [Copy] or [Save.]



The Quality data is divided into Quality data and Quality Statistics data. Data displayed in the upper part of the Quality Data window is Quality Data and data displayed in the lower part is Quality Statistics Data.

If quality data is saved, quality statistics data will not be saved. To save quality statistics data, go to [Quality Statistics Data] in the “Edit” Pull-down menu on the menu bar and select [Save.]

It is possible to edit quality data; extract NG data only, clear selected lines and so on.

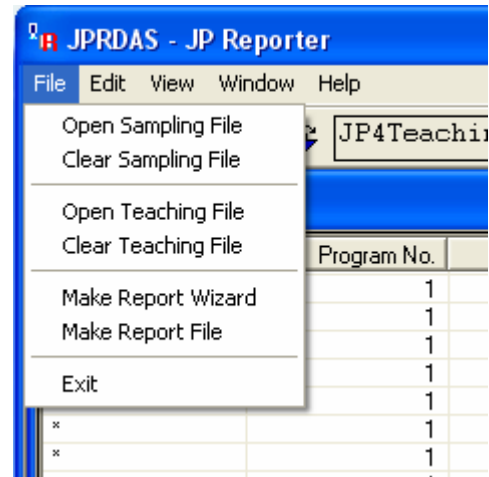
Data	File	File Type
Quality Data	CSV File	Table File
Quality Statistics Data	CSV File	Table File
Time-Series Data Graph	BMP File	Graphics File
Histogram	BMP File	Graphics File
CPK Graph	BMP File	Graphics File

- When you [Save] or [Copy], a JHD is created at the same time as the CSV and BMP files. A JHD file is a header file for CSV and BMP files. If there is no JHD file in the same folder, the CSV and BMP files cannot be opened when you create a report using JP reporter. Be sure to store the JHD file in the same folder as the CSV and BMP files.
- Sampling files are also CSV files. However, they are different from the files saved here. CSV files saved here cannot be opened as sampling files.

MAKING REPORT FILE

This section explains how to prepare reports in html format.

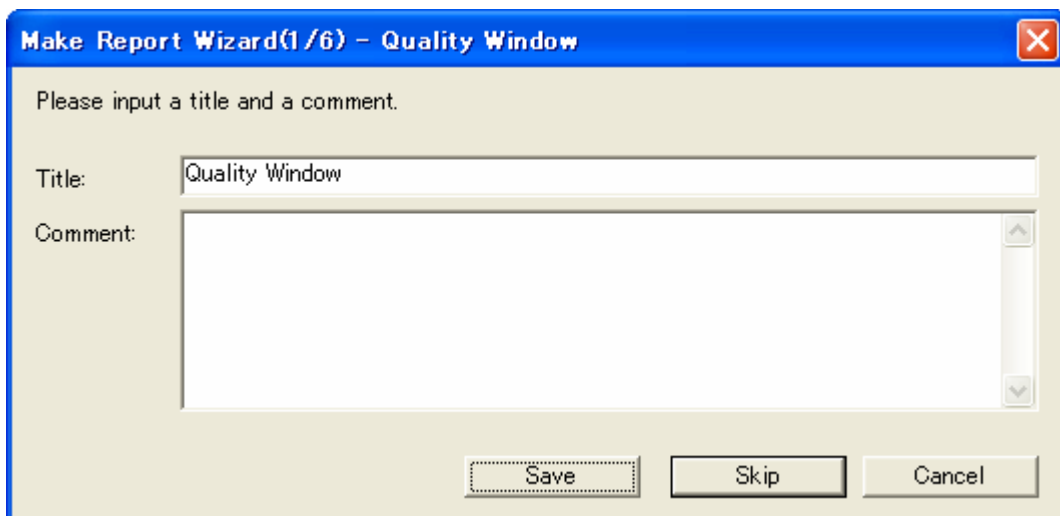
Click “File” on the menu bar and select “Make Report Wizard” from the pull-down menu.



1. Enter a file name to save the report file (html format) as and a location to save it into.
2. Quality Data

If it is necessary to include quality data in the report, enter the title and comment and click on [Save] in the Quality Window.

If quality data is not necessary, click [Skip.]



3. Quality Statistics Data

If it is necessary to include quality statistics data in the report, enter the title and comment and click [Save] in the Quality Window.

If Quality Statistics Data is not necessary, click on [Skip.]

4. Time-Series File

If it is necessary to include a time-series file in the report, enter the title and comment and click on [Save] in the Quality Window.

If a time series file is unnecessary, click on [Skip.]

5. Histogram

If it is necessary to include a histogram in the report, enter the title and comment and click on [Save] in the Quality Window.

If a histogram is not necessary, click on [Skip.]

6. CPK Graph

If it is necessary to include a CPK graph in the report, enter the title and comment and click on [Save] in the Quality Window.

If it is not unnecessary to include a CPK graph, click [Skip.]

7. Enter a title and comment for the report file and click [Make.]

- If you click on [Cancel], the Make Report Wizard is terminated without creating a report (in an html file.) However, data that has already been saved before receiving the cancel command will be stored in the location designated in process 1 under the following file names and settings.

	File Name	Extension
Report File	Name entered in process 1 (A)	.html
Quality File	Name (A) with <u>Q</u> at the end	.csv
Quality File Header	Name (A) with <u>Q</u> at the end	.jhd
Quality Statistics File	Name (A) with <u>S</u> at the end	.csv
Quality Statistics File Header	Name (A) with <u>S</u> at the end	.jhd
Time-Series Graph	Name (A) with <u>G</u> at the end	.bmp
Time-Series Graph Header	Name (A) with <u>G</u> at the end	.jhd
Histogram	Name (A) with <u>H</u> at the end	.bmp
Histogram Header	Name (A) with <u>H</u> at the end	.jhd
CPK Graph	Name (A) with <u>C</u> at the end	.bmp
CPK Graph Header	Name (A) with <u>C</u> at the end	.jhd

- You can make a report without using the wizard by selecting "Make Report File" from the "File" pull-down menu on the menu bar. However if you do this, BMP files and CSV files must be prepared in advance.

The following is a report created using Make Report Wizard without skipping any sections.

Electro Press Report

The comment of the report is displayed.

Quality Data

The comment of the Quality Data is displayed.

. . .

Quality Statistics Data

The comment of the Quality Statistics Data is displayed.

. . .

Histogram

The comment of the histogram is displayed.

. . .

Time-Series Data

The comment of the Time-Series Data is displayed.

. . .

CPK Data

The comment of the CPK data is displayed.

. . .



JP Multi-Sampler

START AND EXIT

The JP Multi-Sampler software controls “JP Sampler”. Using JP Multi-Sampler, the Electro Press can be connected to multiple COM ports COM1 – COM15 and controlled via Ethernet with your PC. (When starting the JP Sampler, designate the default data file name and the default COM port. Mode setting can also be selected at this time.)

■ Start


Use one of the following two methods to start up the “JP Multi-Sampler” software.

1. Select [Program] from the [Start] menu of Windows[®] and click [JP Multi-Sampler.]
2. Click the [JP Multi-Sampler] shortcut icon on the desktop.

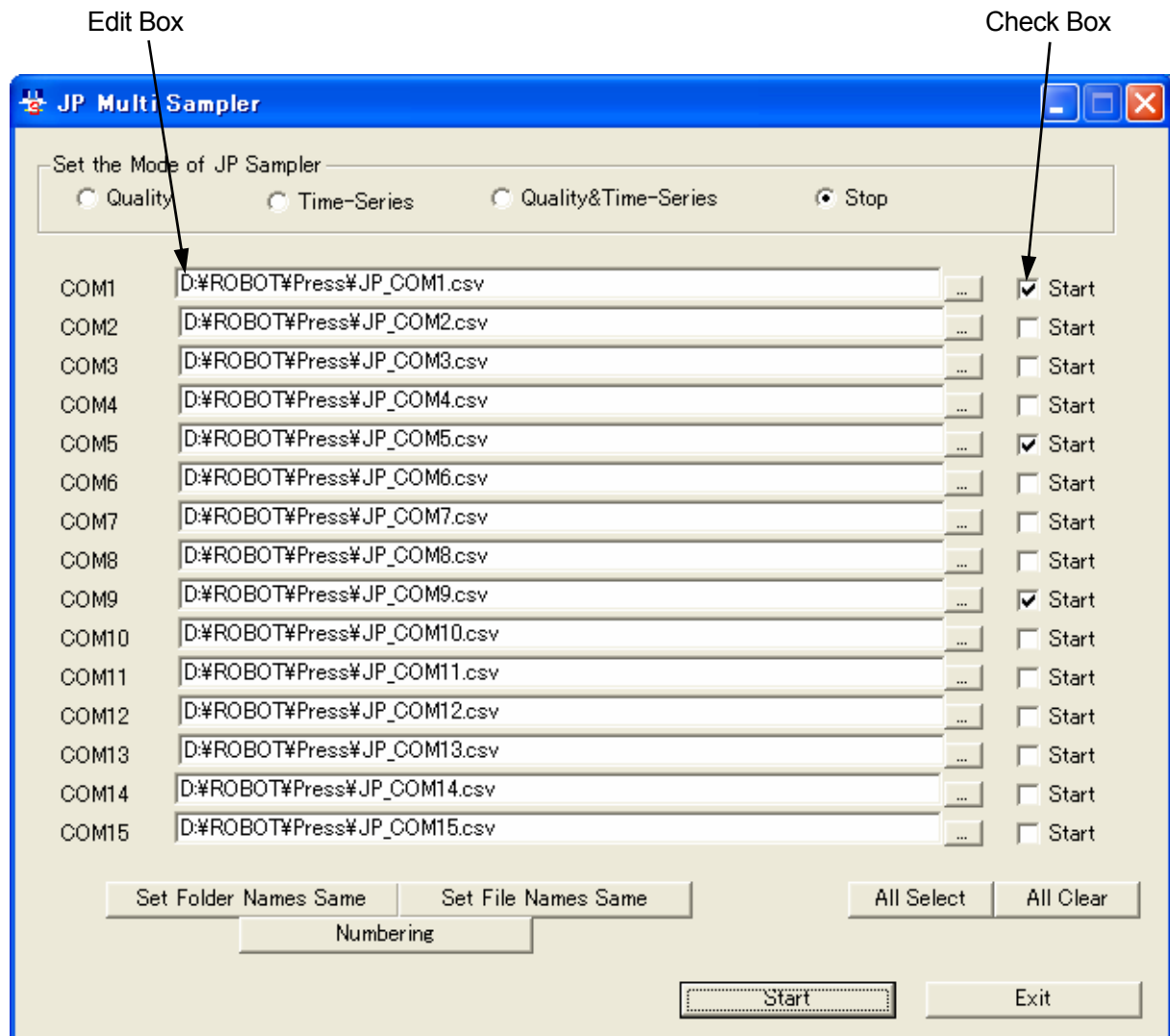


■ Exit

Use one of the following three methods to exit the “JP Multi-Sampler” application. The edit box and check boxes are saved as the default settings.

1. Click the  (Exit) button on the upper right corner of the screen.
2. Click the [Exit] button on the lower right corner of the screen.
3. Click the [Start] button at the bottom of the screen. (JP Multi-Sampler will be closed and JP Sampler will be started.)

ONSCREEN DISPLAY



1. Check the [Start] check box for the desired COM port number.
2. In the edit box, enter the path and file name of the file you want to receive the data from the Electro Press into.
3. Click the [Start] button, and JP Sampler will be started using the following settings unless the same edit box already exists.
 - Default file names are shown in each edit box.
 - COM ports with check marks in the [Start] check boxes are used. (If there are multiple checks, the JP Sampler windows will open as many as the number of checks.)

■ Set the Mode of JPRDSS

Select the receive mode when the JP Sampler is started.

■ Data File Name Designation (Edit Box)

File names set here will be the default data file names when JP Sampler is started.

To change the path or file names, use one of the following methods.

Select the existing file name or enter a new file name, and then start JP Sampler. The [Open File] dialog box will be displayed and the received data will be added to the existing file. The existing file will not be overwritten.

- Place the cursor in the edit box and enter a new file name using the keyboard.
- Click the [...] button on the right side of the edit box to bring up the [Open File] dialog box. Select an existing file or enter a new file name.

[Set Folder Names Same]

Click this button to display the folder reference dialog box. If you select a folder, all the path names in the edit boxes will be replaced with its name. File names will not be changed.

[Set File Names Same]

Click this button to display the [Set File Names Same] dialog box. If you enter a new file name, all the file names in the edit boxes will be replaced with it. Path names will not be changed.

[Numbering]

Click this button to copy the path and file names in the COM1 edit box to all the edit boxes. Numbers 01 – 15 will be assigned sequentially to the end of the file names.

- JP Sampler settings including the file name and COM port which have been set using JP Multi-Sampler are carried over the next time JP Sampler is independently activated without using JP Multi-Sampler. For the JP Sampler settings, those which were last set in JP Multi Sampler will be valid.

Therefore, if JP Sampler is activated independently after use with JP Multi-Sampler, it may be necessary to change the settings.

■ **[Start] Check Box**

JP Sampler is started using the COM port Nos. with check marks in the [Start] check boxes. If there are multiple checks, the JP Sampler windows will start as many as ports as there are checks.

[All Select]

Click this button to select all the check boxes.

[All Clear]

Click this button to clear all the check boxes.

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