OPERATOR'S MANUAL

JobExchanger for network

Upon receipt of this product and prior to initial operation, read these instructions thoroughly, and retain for future reference.

Document No: MRS6515GB.0.U

Reference list

This manual is valid for software:
High Speed JobExchanger, version 4.2.1

Revision

050708
First release of this document.

JobExchanger for network

Valid for “High Speed JobExchanger” (JobExchanger for network), version 4.2.1
Motoman part No. 441112-99

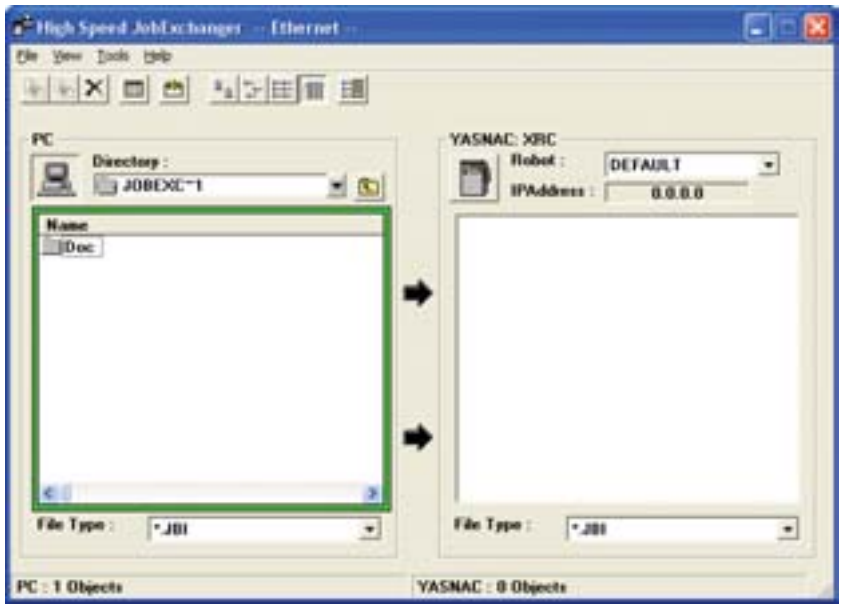


Fig.1 Main window

1. General

High Speed JobExchanger is 32-bit PC-software for Windows environment.
The purpose of this product is....

- One way communication from one PC to several Motoman robot controllers
- Communicate with NX100, XRC MRC and/or ERC controllers via ethernet or serial interface
- Upload/download of JOB files from/to the robot controller
- Removing/deleting JOB files from the robot controller or the PC
- Expanded storage area for robot jobs in the PC
- Editing the robot job is not possible by this program
- This is a multi language version of the software which gives you the facility to switch between different menu languages and even create new language files

For more basic information about installation and handling of the software, icons, menu bars, etc. refer to the operator’s manual for Windows.

When in doubt, this manual should always be referred to.
This Operator’s Manual comprises information about:
Installation / Setup / Handling / operation
Text written in **BOLD** letters means command, icon or button.
Text written in *ITALIC* means text shown on display.

1.1 Copyright

The CD for High Speed JobExchanger-software may not be copied or imparted to a third party nor be used for an unauthorized purpose. Copies may be done only for own backup.

This manual may not be copied or imparted to a third party nor be used for an unauthorized purpose.

1.2 High Speed JobExchanger-kit

■ ***High Speed JobExchanger-kit comprises***

- CD including software and drivers
- One hardware key (parallel port or USB-port)
- One user's manual (this document)
- One registration card
- In standard version, license for two clients (two controllers) are included. As option, extra clients can be added.
- One extra client, Motoman Part No: 441121

■ ***High Speed JobExchanger-kit does not comprise***

- Ethernet boards for PC
- Ethernet board for robot controller
- Serial interface cables
- Cables, Transceivers, Terminators, etc.

■ ***Further, you may have need for:***

- Manuals for your robot controller.
- Ethernet function manual (incl. in the delivery of the board/function)
- Operator's manual for Windows.

1.3 System requirements

■ ***Hardware***

- Personal computer type 486MHz or better including
- 64Mb RAM, 10Mb disk space.
- CD-drive.
- Ethernet I/F board
- Microsoft Windows 98, NT, 2000, XP or newer
- Protective hood, if the PC is installed in the workshop.

■ ***Robot controller***

- MOTOMAN ERC robot controller, or
- MOTOMAN MRC robot controller, or
- MOTOMAN XRC robot controller, or
- MOTOMAN NX100 robot controller

■ ***Network***

- Ethernet cable, Connection cables, Transceiver, etc.
- Serial interface cable

2. Software installation

Note!
This chapter shows a general installation phase of any software. In this example the software FDDWIN32 is installed. Select the correct software by choosing the appropriate software name. All software on the CD can be installed but the hardware key is only valid for one of them (order based).

2.1 Installation

There are three ways to start installation of this software, all will give the same result. The most common way is described below.

1. Put the CD in the CD-drive.
2. Click on the **Start** button on the menu-bar.
3. Choose **Run** from the menu.
4. Browse to your CD drive e.g. **D:**
5. Choose the file named **SETUP.EXE**
6. Click **OK**.

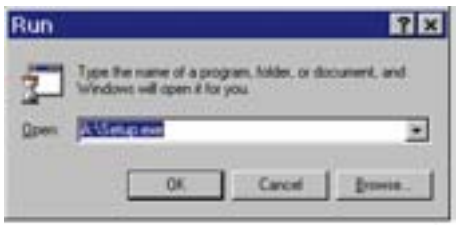


Fig.2 Choose installation file

7. Choose **OK** and the installation guide will start.
8. You can quit the installation att any time by clicking the **Cancel**-button and then confirm by **Yes**-button.

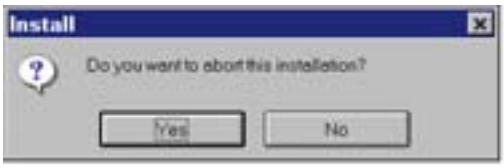


Fig.3 You can cancel installation at any time

9. Mark the language you want to use during installation. ***Note!*** This will not influence the language you use in the software later.

10. Click on the **OK**-button.

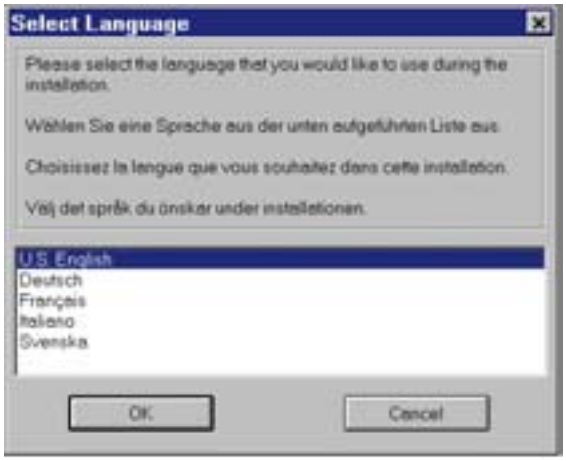


Fig.4 Language selection during installation

11. Pass this information screen by clicking the **Next**-button.

Fig.5 Information screen

12. Read through the license agreement and accept by clicking on the Next-button.

Fig.6 License agreement. Accept by clicking Next.

13. Set directory for FDDWIN32. It's advisable to install the software in the directory which is set as default by the installation guide.

14. Accept by clicking **Next**-button.

Fig.7 Choose directory

15. Accept installation process by clicking **Next**-button.

Fig.8 Start installation

16. Installation starts.

Fig.9 Installation progress counter

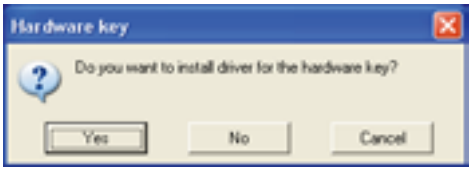
17. The installation is finished and the last screen appears.

18. Accept installation by clicking the **Finish**-button.

Fig.10 Installation complete

19. Before it is possible to run the software, the hardware key must be installed on the parallel port.

20. If you are running the JobExchanger on Windows NT, 2000 or XP you are requested to install a virtual parallel port driver. This port is needed to access the physical hardware key (attached to the parallel port).



2.2 After installation

After installation, fill in and return the enclosed registration card to Motoman Robotics Europe AB.

During installation the main directory is automatically created and all necessary files are installed in the specified drive.
In the end of the setup a program group (MOTOMAN) and a icon is created. To start the software, just double-click on the **Start Menu**.
If you want to create a shortcut to the software, see Windows manual for further information.

2.3 Uninstall

As in all WIN95/NT/XP software there are an uninstall facility if you want to remove the software from the hard disk.

1. Start the **Control panel** from the start menu. Select **Add/Remove** button from the menu.
2. Mark the line showing the software to remove in the menu.
3. Click **Add/Remove** button.

Fig.11 Mark the software

4. Activate uninstall guide by **Next**-button.

Fig.12 Automatic uninstall

5. End the operation by clicking the **Finish**-button.

Fig.13 Uninstall

3. Communication setup

3.1 Hardware setup

Communication can be performed either via ethernet or serial interface or via a mixed environment.

3.1.1 Personal computer

Add the network adapter to the personal computer. When you add the adapter, read its manual and confirm that it works correctly in advance of using High Speed JobExchanger.

3.1.2 Ethernet hardware

To communicate with robot controller using High Speed JobExchanger, network hardware must be set up correctly.

Details about how to set up the network is described in the following manual.

- NX100: Ethernet function manual Motoman No. **MRS6104GB**.
- XRC: Ethernet board (JANCD-XIF02) setup manual Motoman No. **MRS50110**.
- MRC: Ethernet board (JANCD-MIF06) setup manual Motoman No. **JANCD-MIF06**.

3.1.3 Windows network setting

To be able to communicate with Ethernet in Windows system, settings related to the network must be entered.

Contact your network administrator to set up the communication and entering the correct IP-address.

Note!
IP address and subnet mask must be correct. Ask your network administrator for the correct datas. The wrong setting of these parameters may cause the incorrect communicaton, for example, the same IP address is assigned to other PCs.

3.1.4 Hardware key

To be able to run the program it is necessary to apply the hardware key. Insert the hardware key into the parallel port of the PC, or if using a USB hardware key, insert it in a suitable USB-connector.

3.1.5 Cables for serial interface

Communication between PC and robot controller via RS232C-serial interface.

Cable length are max 15 m to each robot-controller. It is possible to use short-distance-modem if the distance is longer.

Com1 and **Com3** are normally 9-pin plugs.

Com2 and **Com4** are normally 25-pin plugs.

■ ***Cable layout 341779 (ERC/MRC)***

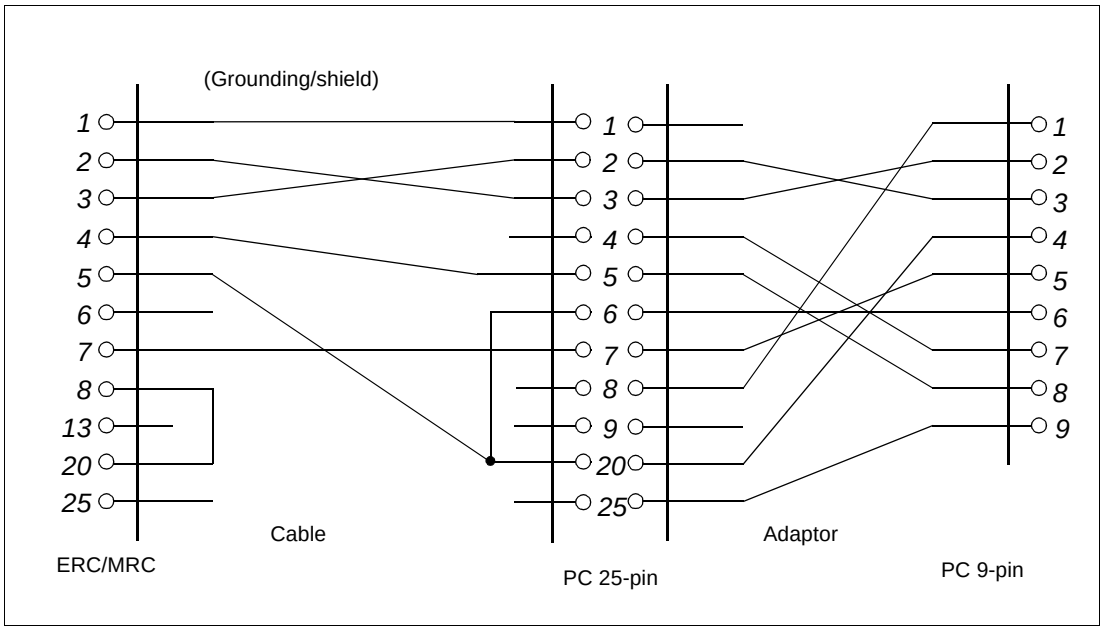


Fig.14 Cables and adaptor

■ ***Cable layout 347377 (XRC/NX100)***

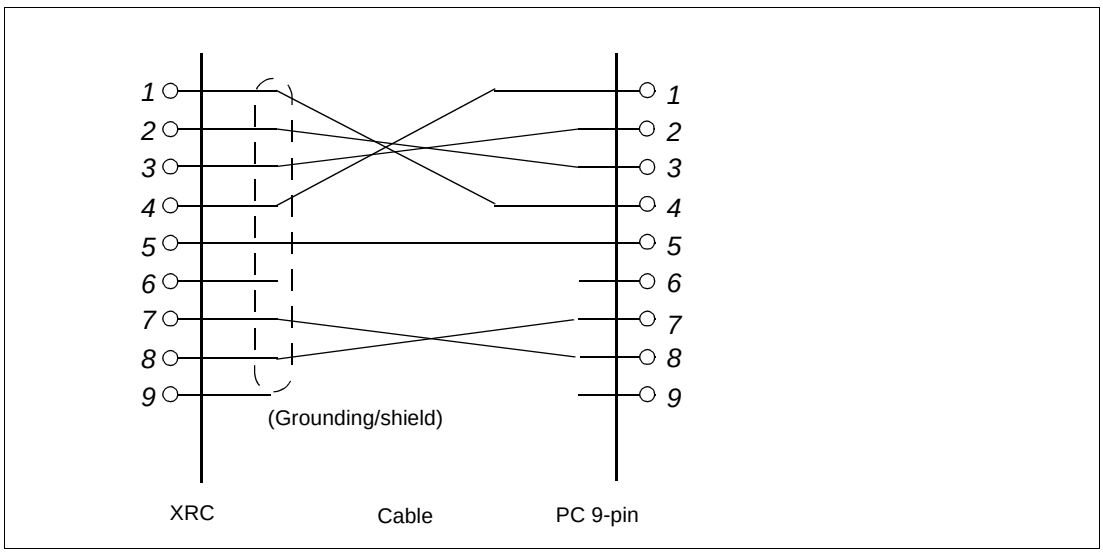


Fig.15 Cable

3.2 PC setup

3.2.1 Target directory

Together with this manual one CD is included. This CD contains the High Speed JobExchanger software in compressed form. High Speed JobExchanger software files are installed to the **Jobexchanger32** directory as shown in the following figure.
It is advisable to create separate directories for the robot jobs; name them, for example, *robot-1*, *robot-2*, etc, as in the figure.
For more information, see Windows user's manual.

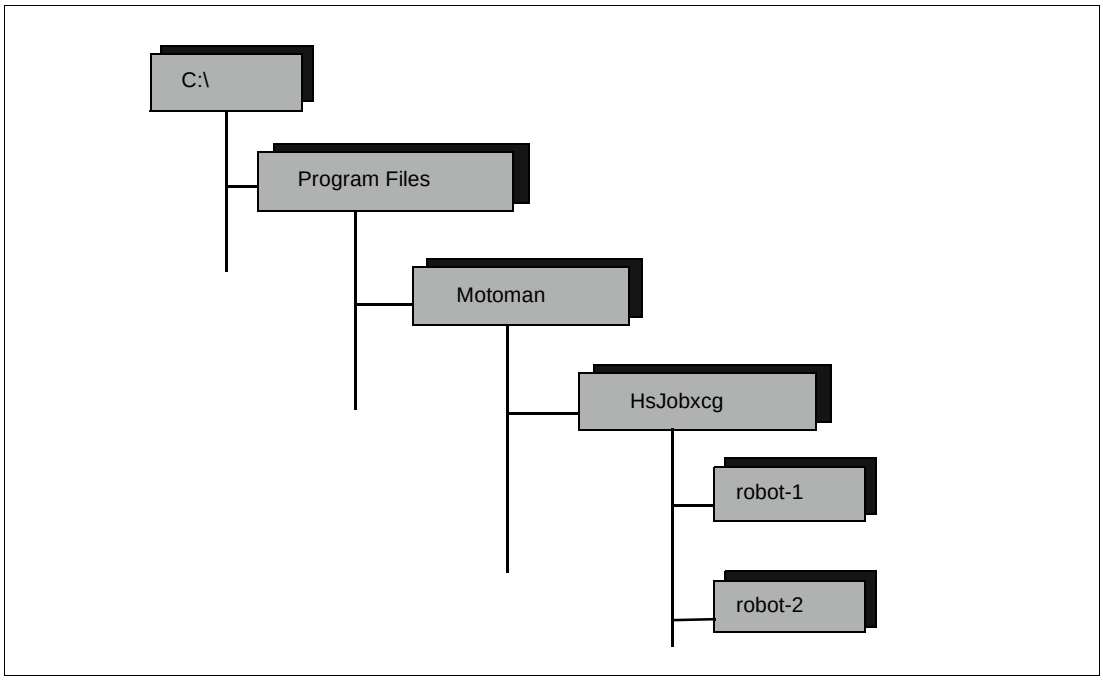


Fig.16 Directory layout

3.2.2 Target program group

When the installation is finished completely, “High Speed JobExchanger 4.2.1” program group and icons are created under the “MOTOMAN” group. To start program click the program icon in the start menu.

3.2.3 Communication setup

The connection protocol is very special, for more information see YASNAC ERC, YASNAC MRC, MOTOMAN XRC, MOTMAN NX100 computer communication User’s manual.

1. Choose **Setup** from the Tools menu.

■ ***Adding a new robot to the list***

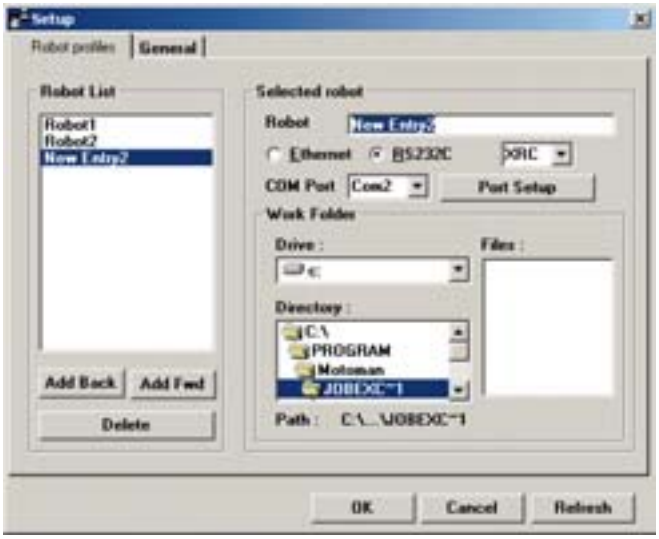


Fig.17 Adding a new robot

1. Change the name of the robot (DEFAULT).

2. Press either “Add Back” or “Add Fwd” in order to add a robot to the list.

3. Choose a robot from the list and make the necessary setup. See items “Serial connection and Ethernet connection.

■ ***Serial connection***

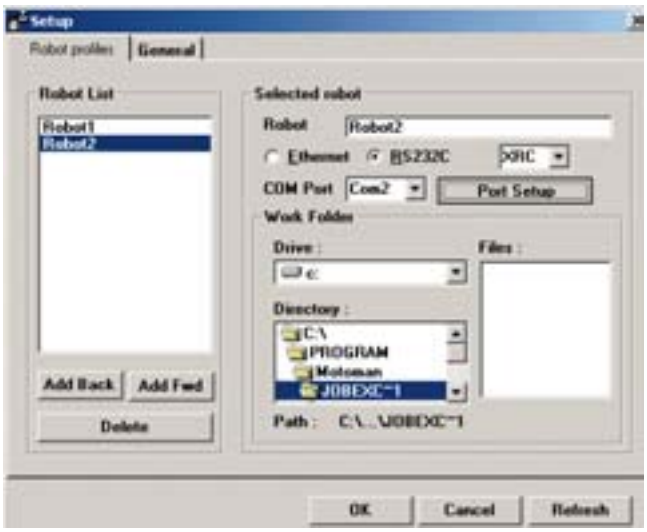


Fig.18 Serial connectin dialogue

1. Choose **RS232C** connection.

2. Select the controller type (ERC, MRC or XRC) from the drop list.
For NX100 select XRC.

3. Choose the right com port and then press **Port Setup**.

	Recom. values
Baude rate	9600
Data length	8
Parity	EVEN
Stop bit	1

Fig.19 Com port setup

4. Enter the data according to table.

5. Choose a Work folder for this particular robot. This is the folder from which all files are moved to and from the robot controller.

■ *Ethernet connection*

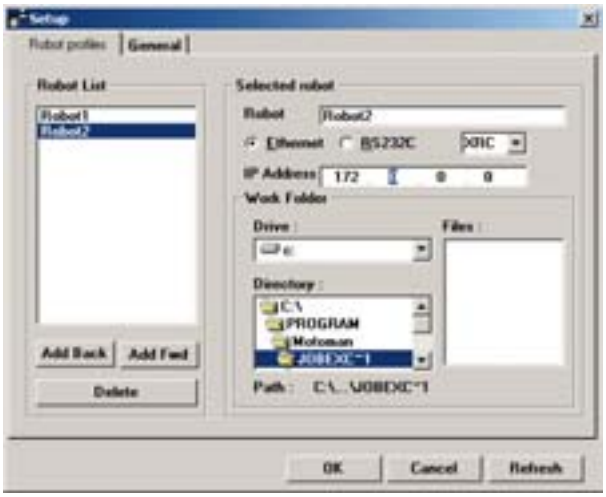


Fig.20 Ethernet connection setup

1. Choose Ethernet connection.

2. Select the controller type (ERC, MRC or XRC) from the drop list.
For NX100 select XRC.

3. Enter the robot's IP-Address.

4. Choose a Work folder for this particular robot. This is the folder from which all files are moved to and from the robot controller.

3.3 Robot controller setup

3.3.1 Parameters

To communicate with the robot controller, IP address needs to be set as a communication parameter. High Speed JobExchanger can save a multiple number of robots' information (IP address of robot controller, robot name, and directory). Robot name is specified by user.
Details of how to setup the communication parameters are described in a separate chapter.
See "Tools menu" on page 25.

3.3.2 MOTOMAN NX100

To communicate with MOTOMAN NX100 using TCP/IP protocol, the built-in Ethernet function must be set up (IP address and subnet mask for NX100).
To setup the Ethernet function for MOTOMAN NX100, see the following manual.

- Ethernet function manual (MRS6104GB).

■ *Parameters*

To establish communication between robot controller and PC some parameters have to be set in the NX100.
Contact your MOTOMAN-representative if in doubt.

RS000= (*)	Protocol description #1
	(*) Settings for parameter RS000:
0 =	Not used
1 =	Printer
2 =	BSC LIKE protocol (used for Data Transmission)
3 =	FC1 protocol

This parameters is used to describe the transmission protocol for Std port #1 or Ethernet function for NX100. If the Ethernet communication function is not to be used, RS000 and RS001 correspond to the Std port #1 and port #2 respectively. When the Ethernet communication function plus Std port #1 is used, the parameter according to this port number must be set, and the other parameter is used for Ethernet communication.

To run High Speed JobExchanger you must set RS000 to value "2".

■ *Controller setup*

Parameter FD3 must be set to "1" (initial setting is "0").
Command Remote must be "Valid" (Pseudo Input Display).

- For controller setup see "Data Transmission Function" manual.

3.3.3 MOTOMAN XRC

To communicate with MOTOMAN XRC using TCP/IP protocol, an Ethernet board is required. Add the XIF02 board to MOTOMAN XRC, and describe the IP address and subnet mask for XRC.
To setup the Ethernet I/F board for MOTOMAN XRC, see the following manual.

- Ethernet board (JANCD-XIF02) setup manual MRS50110.

■ *Parameters*

To establish communication between robot controller and PC some parameters have to be set in the NX100.
Contact your MOTOMAN-representative if in doubt.

RS000= (*)	Protocol description #1
	(*) Settings for parameter RS000:
0 =	Not used
1 =	Printer
2 =	BSC LIKE protocol (used for Data Transmission)
3 =	FC1 protocol

This parameters is used to describe the transmission protocol for Std port #1 or Ethernet board for XRC. If the Ethernet communication function is not to be used, RS000 and RS001 correspond to the Std port #1 and port #2 respectively. When the Ethernet communication function plus Std port #1 is used, the parameter according to this port number must be set, and the other parameter is used for Ethernet communication.

To run High Speed JobExchanger you must set RS000 to value "2".

■ ***Controller setup***

Parameter FD3 must be set to "1" (initial setting is "0").

Command Remote must be "Valid" (Pseudo Input Display).

♦ For controller setup see "Data Transmission Function" manual.

3.3.4 YASNAC MRC

To communicate with YASNAC MRC using TCP/IP protocol, an Ethernet board is required. Add the MIF06 board to YASNAC MRC, and describe the IP address and subnet mask for MRC.

To setup the Ethernet I/F board for YASNAC MRC, see the following manual.

♦ Ethernet board (JANCD-MIF06) setup manual.

■ ***Parameters***

To establish communication between robot controller and PC some parameters have to be set in the MRC.

Contact your MOTOMAN-representative if in doubt.

RS000= (*)	Protocol description #1
RS001= (*)	Protocol description #2
	(*) Settings for parameter RS000 / RS001:
0 =	Not used
1 =	Printer
2 =	BSC LIKE protocol (used for Data Transmission)
3 =	FC1 protocol

These parameters are used to describe the transmission protocol for Std port #1, port #2 or Ethenet board for MRC. If the Ethernet communication function is not to be used, RS000 and RS001 correspond to the Std port #1 and port #2 respectively. When the Ethernet communication function plus either Std port #1 or port #2 is used, the parameter according to this port number must be set, and the other parameter is used for Ethernet communication.

To run High Speed JobExchanger you must set RS000 or RS001 to value "2".

For example, If port #1 is already used for FC1 or FC2 and its parameter RS000 is set to value "3", RS001 is required to be set to value "2" to use High Speed JobExchanger.

NOTE!

The RS000/001 parameters can not have the same setting!
Ethernet communication function only supports the BSC LIKE protocol!

4. High Speed JobExchanger functions

Menu structure of High Speed JobExchanger is shown below.

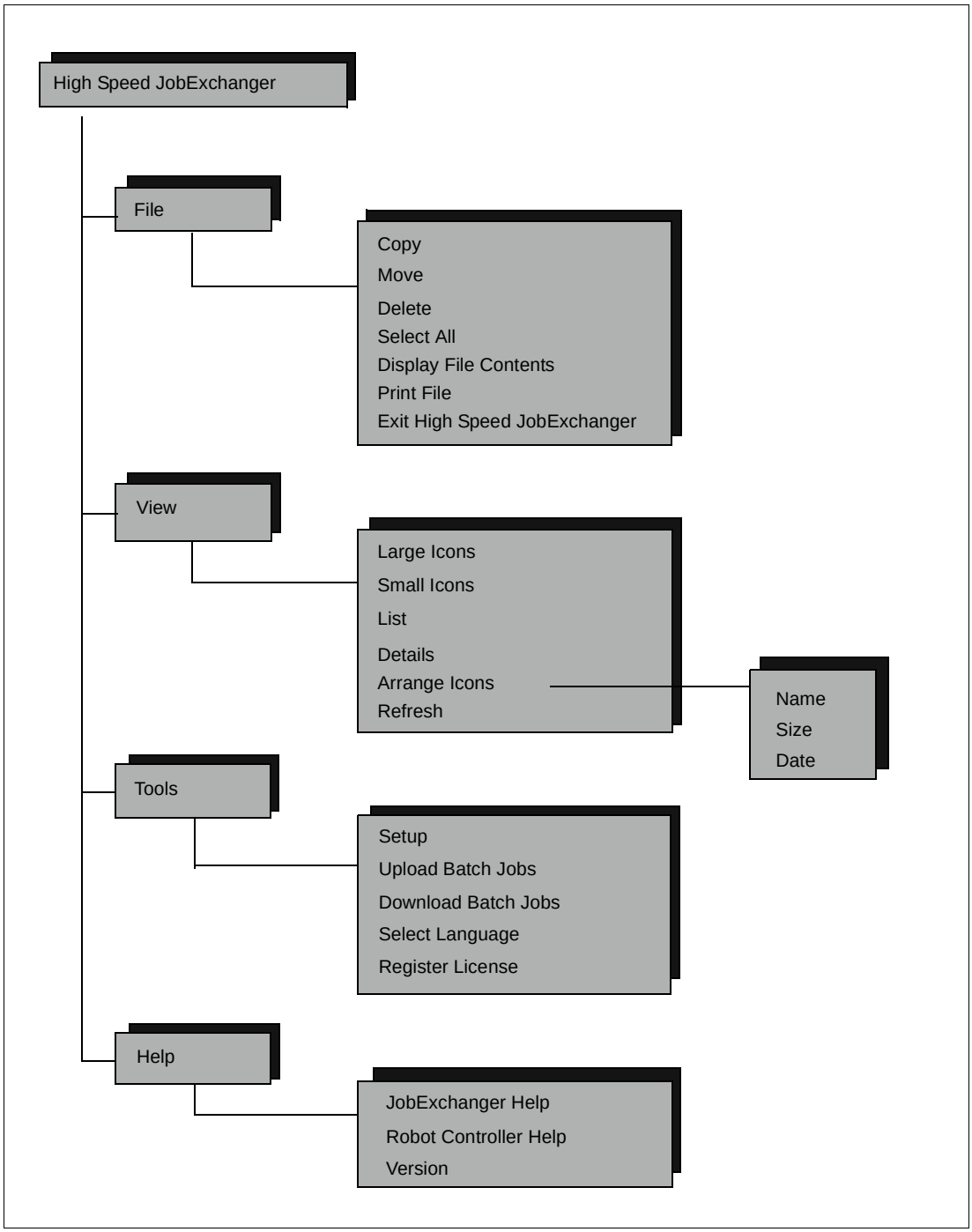


Fig.21 High speed JobExchanger menu

Some of the operations are also available from the button on the toolbar.

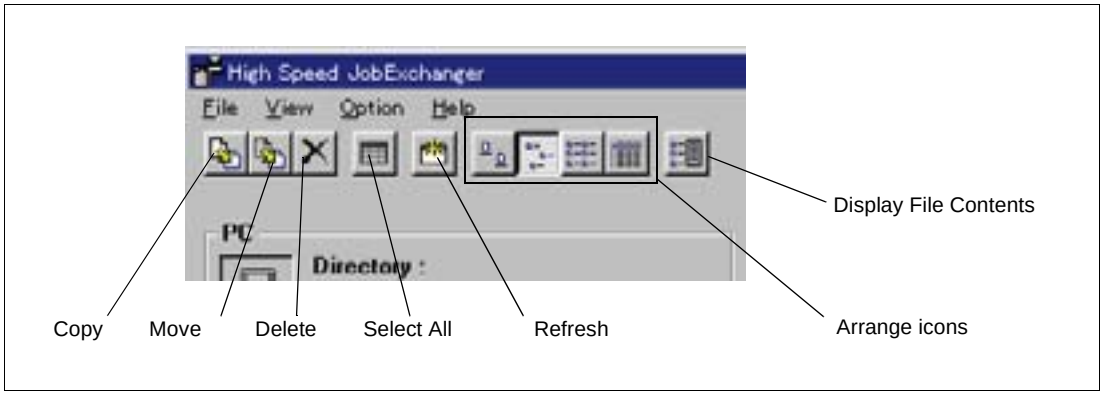


Fig.22 File operation button on toolbar

4.1 File menu

Copy
Copy marked file from controller to the PC or vice versa.

Move
Moves marked file from controller to the PC or vice versa.

Delete
Deletes marked file in PC or in controller.

Select All
Selects all files in the active window.

Display File Contents
Opens the marked file in the right window.

Print File
To print out the contents in a job file you must first mark and open the file in the right window.

Exit High Speed JobExchanger
Terminates the software.

4.2 View menu

Arrange icons
Icons can be arranged according to **Name / Data / file Size**.
Icons in the list can also be displayed as **Small Icons / Large Icons / List / Details** for the file list in PC, and displayed as **Small Icons / Large Icons / List** for the file list in robot controller.

Refresh
If files have been deleted from the controller via a mechanism other than the High Speed JobExhcanger (for example FC1, FC2 or other communication program), file lists are out of date and therefore must be refreshed BEFORE any further operations (copy, etc.).

4.3 Tools menu

4.3.1 Setup

Information corresponding to robot is stored in the file (**robot.ini**), and it is used to communicate with the robot controller. Robot name, IP address of robot controller and initial directory is described for each robot to be registered.

- ***Robot profiles tab***

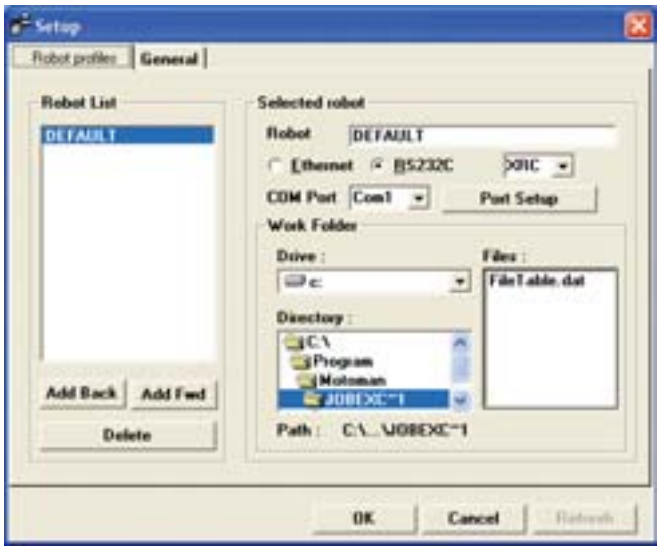


Fig.23 Robot registration

Robot List
The name of registered robots are shown. Clicking the robot name from the list, corresponding parameters (robot name, IP address of MRC, Initial directory in PC) are shown.

Add Back
A new robot can be added BEFORE the currently highlighted robot, and its details entered on the right side of the dialogue.

Add Fwd
A new robot can be added AFTER the currently highlighted robot, and its details entered on the right side of the dialogue.

Delete
Remove the robot from the list.

NOTE!
The robot currently being used cannot be removed!

Robot
Robot name to identify the robots.

IP address

IP address assigned to the robot controller.

Work Folder

The target directory in the PC is defined and related to the selected robot.

Ethernet/RS232C

Descide wether Ethernet or RS232C protocol is to be used.

- ♦ When Ethernet is selected, IP-address must be entered.
- ♦ When RS232C is selected, COM-port must be set up.

Robot type

Independently of the protocol, the controller type must be selected.

Controller type	Select in menu	Ethernet	RS232C
YASNAC ERC	ERC	Not available	Available
MOTOMAN MRC	MRC	Available	Available
MOTOMAN XRC	XRC	Available	Available
MOTOMAN NX100	XRC	Available	Available

Port setup

When using the RS232C protocol, the COM-port has to be set See “Serial connection” on page 18..

Fig.24 Port setup

■ ***General tab***

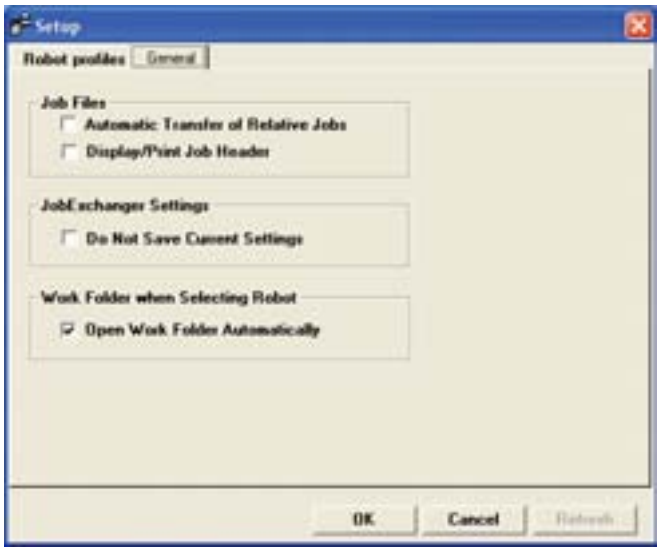


Fig.25 General setting

Automatic Transfer of Relative Jobs
If the marked job is a Related job (*.jbr) all related jobs (*.jbi) are transferred between PC and controller.

Display/Print Job Header
When you open or print out a job, header information is included.

Do Not Save Current Settings
If this checkbox is marked, the current settings are reset to last settings when High Speed JobExchanger is terminated.

Open Work Folder Automatically
If this checkbox is marked, the target directory in the PC is automatically selected when communication is opened with a robot in the main window.
This function is recommended as it minimise the risk to mix files from different robots in the same directory.
If it is not marked, target directory must be selected manually.

4.3.2 Upload Batch Jobs

By selecting this from the Option menu and inputting the name of the file containing the names of files to be uploaded, a multiple number of files can be uploaded. See 5.5 Batch Process for further information.

4.3.3 Download Batch Jobs

By selecting this from the Option menu and inputting the name of the file containing the names of files to be downloaded, a multiple number of files can be downloaded. See “Batch process” on page 36. for further information.

4.3.4 Select language

Each time JobExchanger is started it is possible to choose the appropriate language for menus and buttons:

Fig.26 Choosing language for the menues etc.

1. Choose a language from the list.
2. Click **OK**.

JobExchanger is currently available in three languages: Swedish, English and German.

■ ***More languages***

It is possible to translate the menu texts in other languages files. See “Editing a language file” on page 43. Even single words in an existing translation can be changed in this way.

■ ***Ignoring language selection***

Choose “Ignore language selection at program start” if you do not wish to make a language selection each time the program starts.

■ ***Change fonts in menus etc***

The default font used on buttons and menus are MS Sans Serif, but it is possible to change to other fonts installed on your computor:

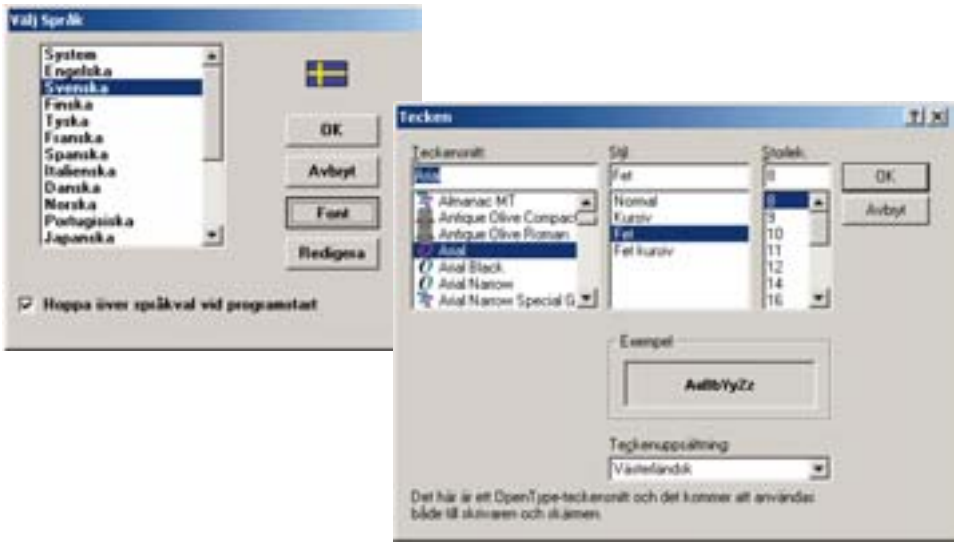


Fig.27 Changing the font

1. Choose **Font**.
2. Use the dialogue to change fonts and/or font size.
3. Press **OK**.

4.3.5 Register License

As standard, High Speed JobExchanger allows communication with 2 different controllers (clients). As option, extra clients can be added. Extra clients are added from Motoman Robotics Europe AB . In this menu the new serial No and check No. is entered. Restart the software and fill in the setup for the new controllers.

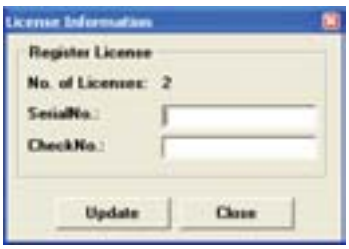


Fig.28 Register license

1. Enter the serial number for JobExchanger. The serial number is obtained separately with the original software CD-disk.
2. Enter the check number.
3. Press **Update** and close the window.

4.4 Help menu

4.4.1 High Speed JobExchanger Help

From the help menu you'll get short information about commands, functions, etc. which can be helpful when you run the software.

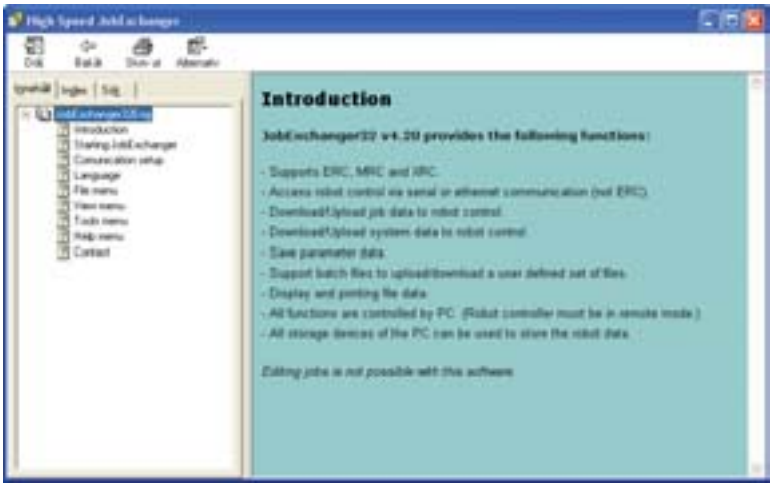


Fig.29 Help topics

4.4.2 Robot Controller Help

From the help menu you'll get short information about **robot commands**, functions, etc. which can be helpful when you run the software.

Fig.30 Help topics

4.4.3 Version

Product version is shown. Quit by clicking on **OK**.

Fig.31 Version information

5. Program running

Robot controller has to be set in **REMOTE**-mode.
(For XRC and MRC: **TEACH**-mode must be selected as well).

5.1 Start

1. Start the software by clicking the program icon in the program menu.
2. Choose if you want to connect to robot controller or run separately.
   Click on the **YES** or **NO**-button. If you choose ”NO” you won’t be connected to a controller.

Fig.32 Connect to robot

3. Now you will see the main window of High Speed JobExchanger .
   The left side of the screen displays the PC side.
   The right side of the screen displays the controller side.

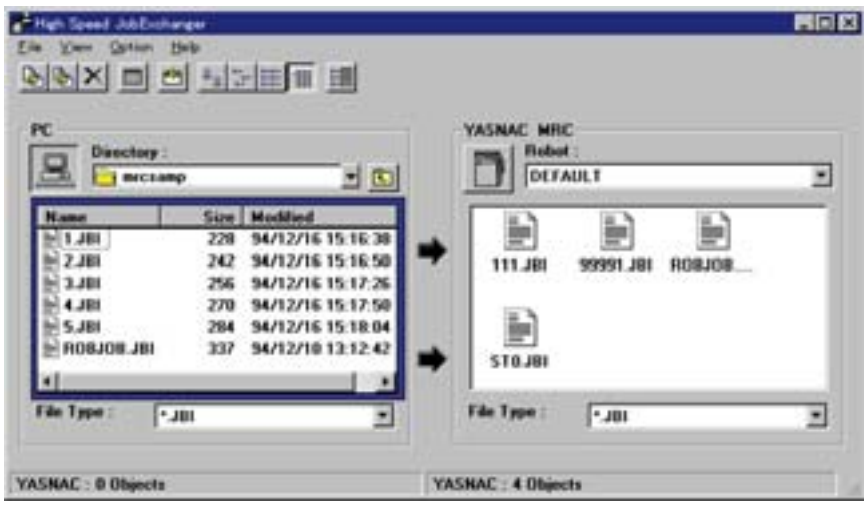


Fig.33 Main window when connected to robot controller

5.2 File operation

5.2.1 What to do

The following file operations are available:

Copy

Copies selected files from controller to the PC or vice versa.

Move

Moves selected files from controller to the PC or vice versa.

Delete
Deletes selected files in PC or in controller.

View
Views a selected file in PC.
To view the files in the controller, those files must be uploaded to the PC in advance.

Refresh
If files have been deleted from the controller via a mechanism other than the High Speed JobExhcanger (for example FC1, FC2 or other communication program), file lists are out of date and therefore must be refreshed BEFORE any further operations (copy, etc.).

5.2.2 How to do it

To move, delete or use other functions, just select the file and then use the commands in the File menu or the button in the tool bar.

Pull down menu

Fig.34 Pull down menu (File menu)

Toolbar

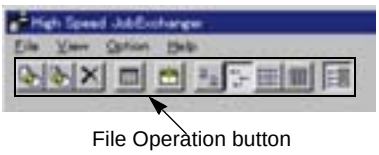


Fig.35 Toolbar

Drag and drop
To copy files from controller to PC or vice versa, just mark the file in the window and drag over to the other window.

NOTE!
Make sure to access correct directory in the PC.

Popup menu

By clicking the right button of the mouse in the file list window, a popup menu appears and the file operations are available.

Fig.36 Popup menu

5.3 Confirm the file contents

If you want to display the header of the file, you have to mark the checkbox "**Display / Print Job Header**" in the **Setup** menu under the **View** command.

5.3.1 Display file content

This can be done in two ways:

Double-click on the file you want to open. The file will be opened in Windows Notepad.

Mark the file in the left window and then click on the **Display File Contents**-button. The file will be opened in the right window.

5.3.2 Print out

Mark the file in the left window and then click on the **Display File Contents**-button. The file will be opened in the right window.

And then, Printing out can be done in two ways:

1. Select **Print File** from the **File** menu.
2. Click the print button located in the right window.

Fig.37 Print out the file contents

5.3.3 Cut and paste

If you want to study the file on a print-out or use parts of the program in your documentation, use the “cut & paste” method.

1. Mark the text you want to copy by holding down the mousebutton and pull the cursor over the wanted text. The text is now marked with inverted color.
2. Press Ctrl-key and C-key at the same time (**Ctrl+C**).
3. Start up a word processing program like WORD, Write or Windows/Notepad.
4. Paste the text in the document by pressing Ctrl-key and V-key at the same time (**Ctrl+V**).

5. It's also possible to cut the text from the window by pressing Ctrl-key and X-key at the same time (Ctrl+X).

Note! It is only the text as shown in the window which is affected, the original files are left undamaged.

5.4 File type

To switch the file type to load or save, choose the file list from **File Type** combo box located under the file window

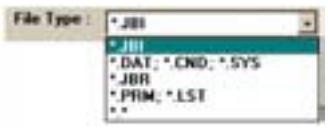


Fig.38 List of file type in PC

The lists are different for the PC and the robot controller.

5.5 Batch process

Using a 'job-list file' created by an editor such as Notepad, a multiple number of files can be uploaded from or downloaded to the robot controller. File name extension is "lst" (e.g. BatchA.lst). The required format of the list file is shown below:

(Job List Format)
1. One file name must be described per line.
2. Both capital or lower-case characters can be used.
3. Files with no extension are regarded as .jbi

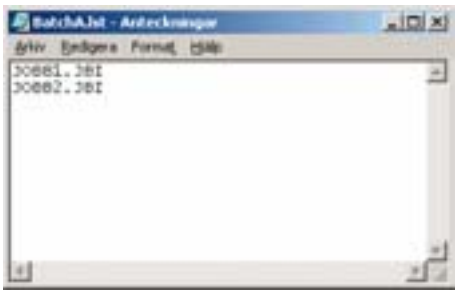


Fig.39 A list of jobs

5.5.1 Upload batch jobs

Select **Upload Batch Jobs** from the **Option** menu and input the name of the list file in which the file names to be uploaded are described.

Fig.40 Input dialogue for uploading

Click **OK** to start uploading from the robot controller.

5.5.2 Download batch jobs

Select **Download Batch Jobs** from the **Option** menu and input the name of the file in which the file names to be downloaded are described.

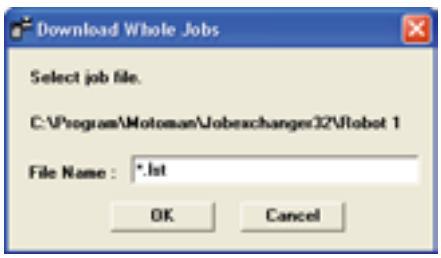


Fig.41 Input dialogue for downloading

Click **OK** to start downloading to the robot controller.

5.6 Switch the target robot

Click the **Robot** combo box in the main window and choose the robot name, the target robot controller with which to communicate is switched. Registered IP address of robot controller and initial directory corresponding to the robot name are used for communication.

Fig.42 Dialogue for switching robot

NOTE!
When the robot is switched, the file list of robots in the window is not updated automatically. Click Refresh in the robot window before performing file operations!

6. Program structure

High Speed JobExchanger is a Windows based communication program for connection between a PC and MOTOMAN industrial robots, controller type NX100 (as well as ERC, MRC and XRC).

6.1 Initial files

High Speed JobExchanger stores the environmental information in 2 files:

- HsJobx.ini

Information about environment such as Font, Start-Language, Window-size, etc..

- robot.ini

Information about registration of robots. Contents of the file are described in the Setup dialogue.

6.2 Language files

High Speed JobExchanger is prepared for 11 languages. Highlighted languages are included at delivery.

(**English**, **Swdish**, French, **German**, Italian, Norwegian, Finnish, Spanish, etc. plus Japanese).

The language file can be edited, and created for new languages.

Details about how to modify it are described in a separate chapter. See “Advanced functions” on page 43.

6.3 High Speed Link Server

6.3.1 About the server

To communicate with the robot controller via Ethernet, the server program **HSLSRV32.EXE** is required. The server recieves the request from High Speed JobExchanger and sends/recieves the data.

The server program is started up from **VRP32.dll** when the High Speed JobExchanger starts to communicate with the robot controller. When the communication is finished, click the **High Speed Link server** from the task bar with the right button of mouse, and select Exit from the menu to quit the server program.

Fig.43 High speed link server on taskbar

To transmit files between PC and robot controller, server program and related DLL files have to be located in the same directory as the High Speed JobExchanger.

6.3.2 Status Monitor

Communication status monitor is displayed when High Speed JobExchanger is started up.

Fig.44 Monitor dialogue

To hide the communication status monitor for some reason (for example, interrupting another operation), select **High Speed Link server** from the task bar and click right button of the mouse. The monitoring dialogue can then be toggled on or off, as shown below:

6.3.3 Delete the communication information

If a communication error occurs for any of the following reasons during communication, the communication information may sometimes remain in the robot controller and/or PC.

Two possible causes of communication breakdown

1. Ethernet cable is removed during communication.
2. **REMOTE**-button on the playback panel of the robot controller is turned off during communication.

If communication cannot be continued, reset the communication information by the following procedures.

(Controller side)

1. Select **RESET** key if any error message is shown in the display of the programming pendant.
2. Turn OFF the **REMOTE** button on the playback box once and then turn it ON.

(PC-side)

1. Press **Delete** button in the communication status monitor.
2. To reset information, input the IP address of the robot controller where the error occured, and click **OK**.

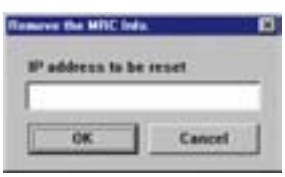


Fig.45 Dialogue of deleting the information

6.3.4 Version

Click the **High Speed Link server** from the task bar with the right button of the mouse and choose **About HSL server** menu, the version information of the server is displayed.
Quit by clicking **OK**

Fig.46 Version display

7. Advanced functions

7.1 Editing a language file

The dialogue box for language selection includes an **Edit**-button which makes it possible to edit the language files directly.

Do not attempt to edit these files unless you are an experienced PC operator. It is very easy to damage the syntax so that the software does not function correctly.

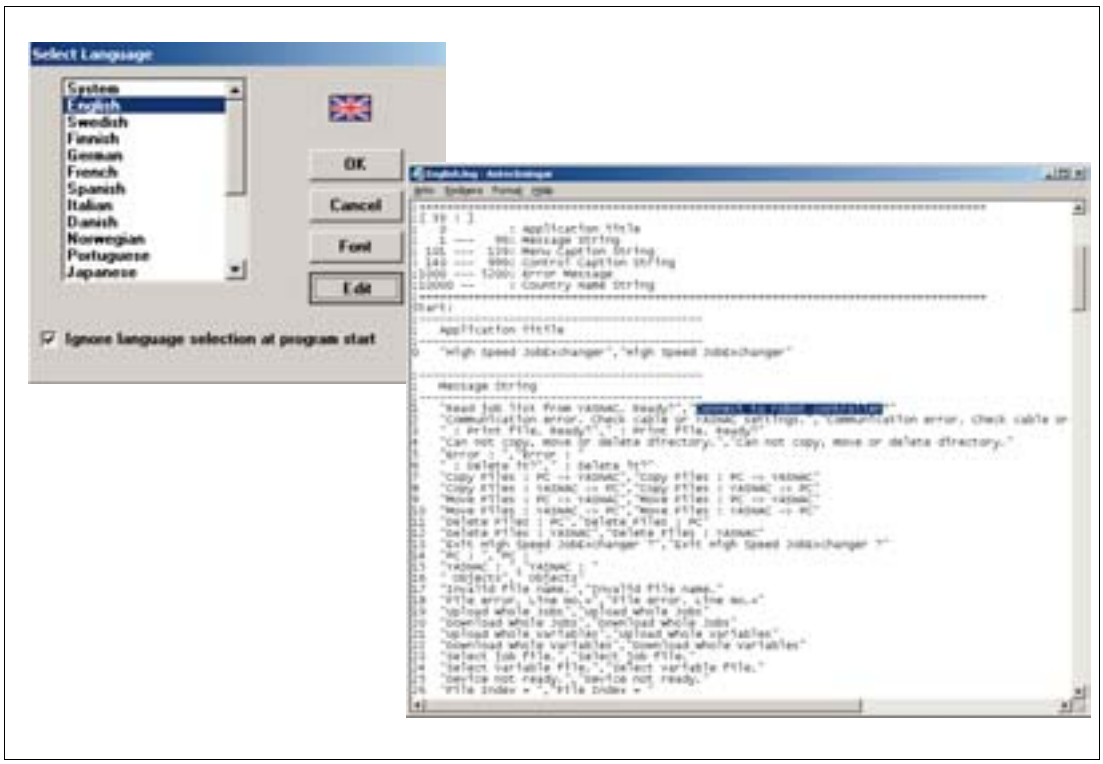


Fig.47 Editing a language file

1. Choose **Edit**.
2. The language file is shown in plain text where the translated text found within quotation marks is to the right on each line.

Make sure you do not accidentaly change or delete any other characters!

7.2 Creating a new language file

7.2.1 Language from the list

1. Highlight the language to start from.
2. Press **Edit**.
3. Save the file with its correct name. The file ending should be *.lng.
   Danish = Danish.lng
   Norwegian = Norwegian.lng
   French = French.lng etc.
   Save the new file in the folder “JobExchanger32”.
4. Choose the new language from the list and edit it as desribed above.

7.2.2 New languages

The language list contains an additional seven language choises called “User14” to “User20”.

If you want to add a language not found in the list do as follows:

1. Choose language to start from.
2. Press **Edit**.
3. Save the new file under the name you would like to see in the list. The file ending should be *.lng and it should be saved in the folder “JobExchanger32”.

In order to be able to choose the new language from the list it is necessary to add its name to all the other (active) language files:

4. First choose the System language file from the list and press **Edit**.
5. Scroll down to the heading *Country Name String* and change the name from “User14” to the name you would like to have in the list.

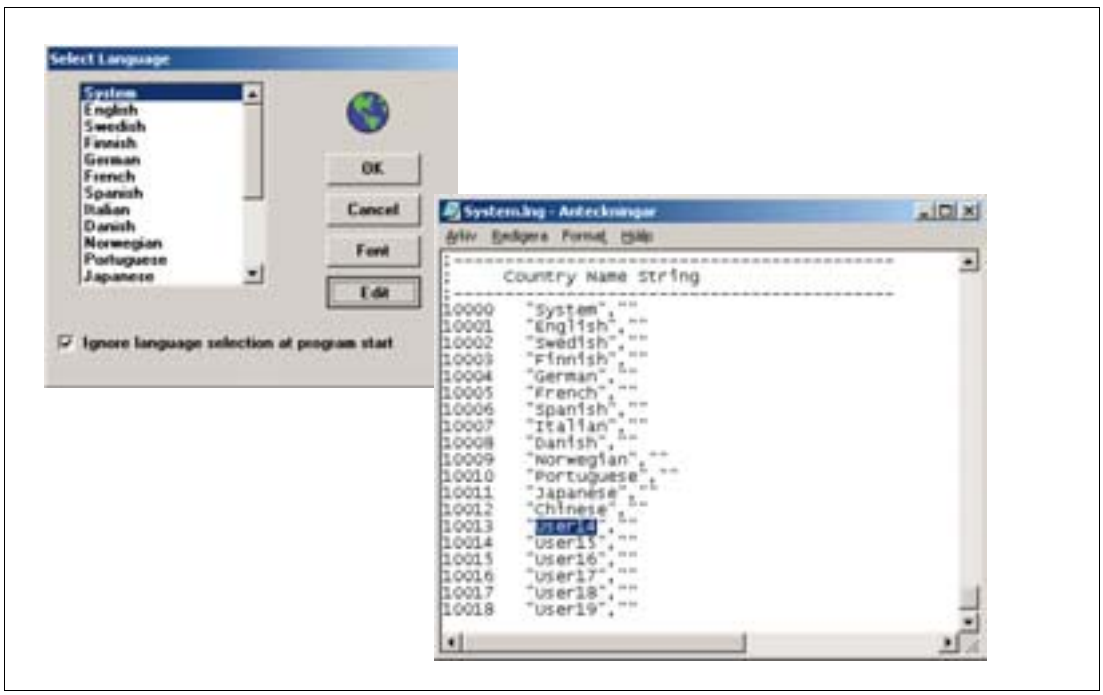


Fig.48 Adding a new language

6. Make the same change in all the active language files. The text “User14” should be changed on two places on the same line.
7. Choose the new language from the list and press **Edit**.
8. Make changes to the text according to item above.

7.2.3 Creating an icon

A new icon, e.g. a country flag, can easily be created in a picture editing program.

1. Make a 16-coulour bitmap which is 32x32 pixels.
2. Give it the same name as its language file with a file ending *.ico and save it in the JobExchanger32 folder.

8. Name of files

No	Group	Contents	File name	A	B
1	Job	Single job	job name.JBI	O	O
		Related job (job + conditions)	job name.JBR	O	O
2	Condition data	Weaving data	WEAV.CND	O	O
		Tool data	TOOL.CND	O	O
		User coordinate data	UFRAME.CND	O	O
		Arc start condition data	ARCSRT.CND	O	O
		Arc end condition data	ARCEND.CND	O	O
		COM-ARC3 condition data	COMSRT.CND	O	O
		COM-ARC3 data	COMARC3.CND	O	O
		Path correction condition data	SENSCOR.CND	O	O
		CO2 laser processing condition data	LASER.CND	O	O
		Piercing condition data	PIERCE.CND	O	O
		Ultra Piercing condition data	UPIERCE.CND	O	O
		Laser cutting condition data	CUT.CND	O	O
3	Universal data	Variable data	VAR.DAT	O	O
		Arc condition auxiliary data	ARCSUP.DAT	O	O
		Phase offset value data	PC1PC2.DAT	O	O
4	I/O data	Concurrent I/O program	CIOPRG.LST	O	X
		I/O name data	IONAME.DAT	O	X
5	Customer data	Welder characteristics data	WELDER.DAT	O	X
		Welder condition data	WELDUDEF.DAT	O	X
		Reserved job name	RJNAME.DAT	O	X
		SV monitor signal	SVMON.DAT	O	X
		Variable name	VARNAME.DAT	O	X
		Robot calibration data	RBCALIB.DAT	O	X
		Specified point data	HOME2.DAT	O	X
		Absolute data	ABSO.DAT	O	X
		Arc condition guide data	ARCGUIDE.DAT	O	X
		Operation origin position data	OPEORG.DAT	O	X
		Conveyor data	CV.DAT	O	X
		Conveyor characteristics aux. data	CVSUB.DAT	O	X
		Paint characteristics data	PGUN.DAT	O	X
		Press characteristics data	PS.DAT	O	X
		Spot gun characteristics data	SGUN.DAT	O	X
		Spot welding characteristics data	SWELDER.DAT	O	X
		Anticipation output data	ANT.DAT	O	X
		COM-ARC3 sensing output 1	COMSENS1.DAT	O	X
		COM-ARC3 sensing output 2	COMSENS2.DAT	O	X
		Alarm history data	ALMHIST.DAT	O	X
		System information	SYSTEM.SYS	O	X
6	Parameter	All	ALL.PRM	O	X
		Manipulator matching	RC.PRM	O	X
		System definition	SD.PRM	O	X
		Coordinate origin	RO.PRM	O	X
		System construction	SC.PRM	O	X
		concurrent I/O	CIO.PRM	O	X
		Function definition	FD.PRM	O	X
		Application	AP.PRM	O	X
		Data communication	RS.PRM	O	X
		Data link	CM.PRM	O	X
		Printer	SP.PRM	O	X
		Sensor	SE.PRM	O	X
		Vision	VC.PRM	O	X
		Servo	SV.PRM	O	X
		Servo motor constant	SVM.PRM	O	X
		Observer	OBS.PRM	O	X

Files loaded into the PC file system will get an extension of **.jbi .jbr .dat .cnd .prm .lst** or **.sys** dependinng on type of file.

Allowed functions:

A= Possible to copy into PC.

B= Possible to copy into robot controller (reload) or to delete from robot controller.

(O : Possible, X : Impossible)

Note!

"Loading" of system parameters are by safety reason not permitted (use FC1, FC2 or FDDWIN software for RS232C).

9. Limitations

9.1 Port numbers used for TCP/IP

High Speed JobExchanger uses TCP/IP as a communication protocol. For communication with TCP/IP, service identification numbers called “port numbers” are used internally. With High Speed JobExchanger, only port numbers from 10000 to 10008 are used for data transmission. When these numbers overlap with those of any other network device, normal communication becomes disabled. For use of this product, verify in advance that there is no network device using the port numbers in the above range on the same network.

9.2 Access to the same file in a PC

Simultaneous access from different robot controllers to the same file in a PC is not possible.

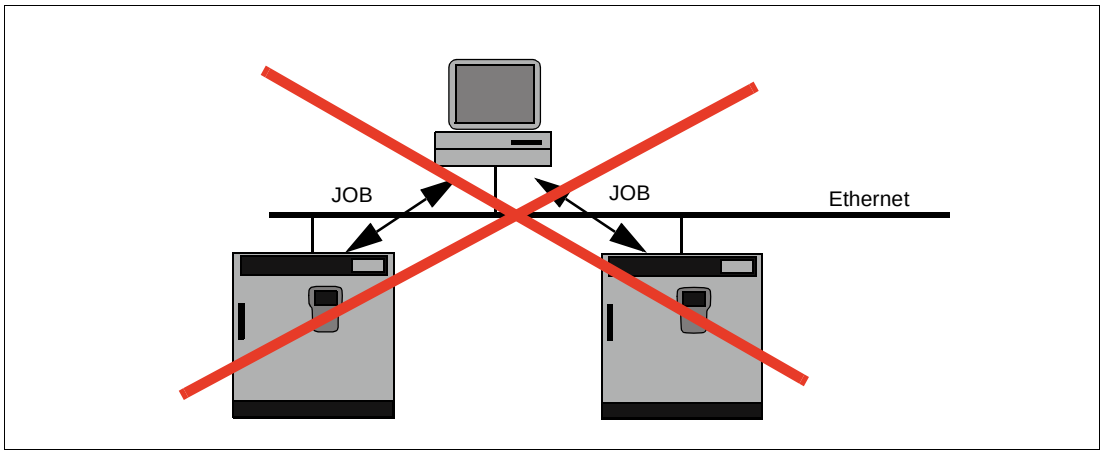


Fig.49 Access from controllers to a PC

9.3 Access from several PCs

When High Speed JobExchanger is used, only one PC can transmit data per robot controller. Transmission with more than one PC is not possible. (Simultaneous transmission between one PC and more than one robot controller is possible.)

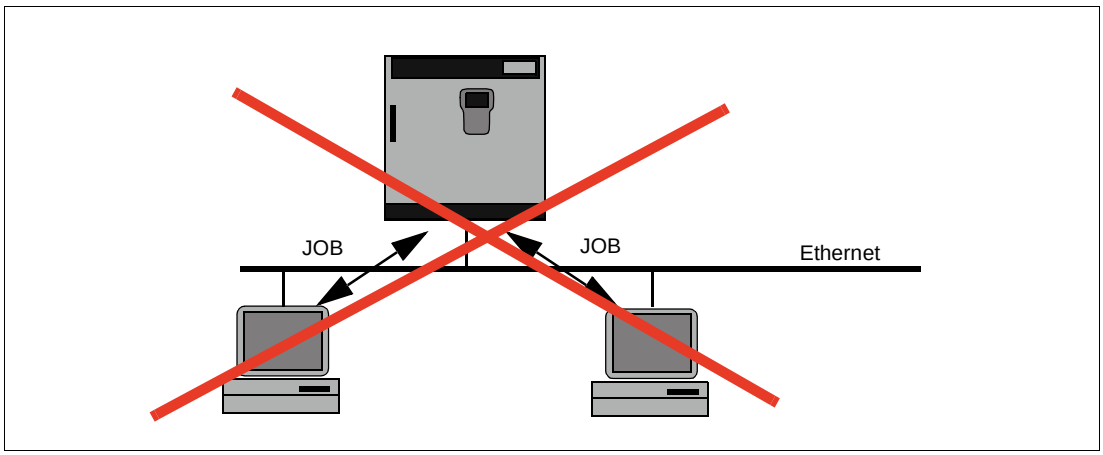


Fig.50 Access from PCs to a controller

9.4 Storage of CMOS file, etc.

Robot controller employs protocol conforming to BSC LIKE and FC1 protocol for transmission with external devices. High Speed JobExchanger performs transmission using BSC LIKE protocol. Since FC1 protocol is used for storage, etc. of CMOS files, it cannot be executed with High Speed JobExchanger. For storage, etc. of CMOS files, etc., use FC1 or FC2.

10. Trouble shooting

■ ***Hardware key problems***

Check if the hardware key is mounted in right place, if there are several parallel ports try another one. Mount a printer cable in the hardware key socket (does not need to be connected to a printer).

Fig.51 Missing hardware key

■ ***The control system in the wrong mode***

This error appear if you try to delete or copy in the robot controller if it is not in **REMOTE**, or if it is in **PLAY**-mode.

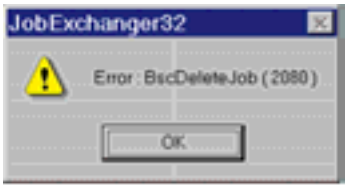


Fig.52 Error message

■ ***Connect to the robot controller***

This error appear if you start JobExchanger without being connected to the robot controller. Exit JobExchanger, connect the cable and restart JobExchanger.

Fig.53 Robot controller not connected

■ ***Delete devided resources***

A warning may occure when you are removing a software in Motoman group. A file in Windows systems is no longer used by any software. Accept to remove this file by clicking **OK**.

Fig.54 Warning message

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