RW-470

PLOTBASE Printer/Scanner Reference

Final Version

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The proper names of the Windows operating systems are as follows:

Microsoft® Windows® 95 operating system

Microsoft® Windows® 98 operating system

Microsoft® Windows® Millennium Edition

Microsoft® Windows® 2000 Professional

Microsoft® Windows® 2000 Server

Microsoft® Windows NT® Server operating system Version 4.0

Microsoft® Windows NT® Workstation operating system Version 4.0

Note:

"RW-470 PS" stands for RW-470 Postscript Level 3 Compatible Option

Contents

Preface

This manual contains detailed instructions on the operation and maintenance of this machine. To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.
Please read the Safety Information in the "Copy Reference" manual before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Note: Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operation the machine.

Attention: Use of controls or adjustment or performance of procedures other than those specified in this manual might result in hazardous radiation exposure.

RW-470 PLOTBASE

This manual describes the programs RW-470 PLOTBASE and RW-470 SCANTOOL, which are parts of the RW-470 plot management system.

The client-server architecture of the RW-470 system allows each user connected to define their own print jobs and sets of drawings and to send them to RW-470 PLOTBASE for plotting. RW-470 PLOTBASE can process whole sets from documents or drawings, with a high degree of automation.

RW-470 PLOTBASE accepts print jobs from CAD systems, from archived data stock, from scanning systems such as RW-470 SCANTOOL or from other clients. The standard data formats supported are HPGL, HPGL/2, HP-RTL, Calcomp 906/907, TIFF, BMP, PCX, T6X, RLC, CIT, WMF and CALS. CGM, PDF and RW-470PS are optional formats. You can use the DWG format only, if you have installed an AutoCAD program on your PC.

The user can sort the print jobs in RW-470 PLOTBASE to their own criteria. The output parameters can be freely altered depending on the requirements. Individual requirements and repeat prints are possible when plotting the sets of drawings.

RW-470 SCANTOOL is the second program that is described in this manual. This program provides you with operating functions for the scanner and for processing the scanned-in drawings.

You can set numerous default values for scanning drawings: format size, resolution, mirror, invert, density etc.. You can also edit the scanned drawings using an integrated image-editing program. If you wish, the scanned drawings are automatically assigned to a job order. You can adjust the print parameters beforehand. Finally, the job order is sent to the RW-470 PLOTBASE program for processing.

Please use it as a dedicated server.

Another manual is available:

RW-470 CLIENTS
This manual describes the installation and operation of RW-470 CLIENTS as well as two network protocols. It explains how you can use the Client to produce print jobs and send them from the workstations to RW-470 PLOTBASE. It also contains information about solving applications problems.

We wish you every success when working with RW-470 PLOTBASE and RW-470 SCANTOOL.

Guide to the manual

This manual contains all the information that you will need for the correct use of RW-470 PLOTBASE and RW-470 SCANTOOL, from a functional description to instructions for installation through to an overview of the shortcut keys. In detail, these are the following chapters:

RW-470 PLOTBASE and RW-470 SCANTOOL:
This chapter contains an outline description of the possible applications and functions of RW-470 PLOTBASE and RW-470 SCANTOOL.

Part I - Installation and Principles

Installation and operation:
Here you can read about what system requirements have to be created for RW-470 PLOTBASE and how to prepare for the installation. In addition, you are also explained how to set the necessary default values in the operating system. The folder structure of the installed program and the processing of jobs in RW-470 PLOTBASE are explained in the appendix.

Part II - RW-470 PLOTBASE

Start and quit program:
How to start and quit program.

Program window:
This page includes a figure that shows all the work areas of the program.

Program flow:
This section answers the question "How does the drawing pass into the job list of RW-470 PLOTBASE?" It describes the path of a drawing from being drawn to its preparation in the plot folder and editing in RW-470 PLOTBASE through to the printout.

Tools:
This section gives an overview of the large number of buttons available and which functions they can be used to carry out. These include the toolbars for Job, Entry and View as well as the status bar. The so-called "signal lights" is also explained.

Configuration:
Here you can read which default values are possible and what you must look out for. You can also read how to activate the Autoplot mode or start manual print jobs.

Job list:
The job list displays an overview of which jobs have been printed and which are queued for plotting and what their status is. This chapter describes what significance the individual fields have and how you can prioritize the display of a selection of certain jobs.

Status display:
This chapter describes the status window in which the current status displays appear and how the current plotter can be stopped and restarted.

Job editor:
In the job editor you can alter the original plot settings for a job or an individual drawing or an individual entry. These include, e.g. the output format, the medium source (paper type) etc. or the number of copies to be printed.

Print job:
This chapter explains the two print modes "Automatic Print" and "Manual Print". Furthermore, it also explains how a plot can be interrupted and jobs can be deleted after they have been printed.

Part III – RW-470 SCANTOOL
This part of the manual contains all the information you require for correct use of RW-470 SCANTOOL, from a functional description through to an overview of the shortcut keys. These include the following chapters:

Introduction:
This chapter gives an overview of the possible applications and functions of RW-470 SCANTOOL.

Start and quit program:
As the title says...

Program window:
This page includes a figure that shows all the work areas of the program.

Default values:
Before beginning to use the program, you can set all the basic settings, which remain valid until they are explicitly changed again. In this chapter you can read about which individual settings are meant and what you must pay particular attention to.

Tools:
This section gives an overview of the large number of buttons available and which functions they can be used to carry out. These include the toolbar, the control bar and the status bar.

Key combinations:
An overview of all key combinations.

File management:
This section describes how you can load, and save drawings and what file formats the drawings can have.

Archiv Management:
With RW-470 SCANTOOL it is possible to generate index data for external archive systems, which it then imports.

Scan:
This chapter describes the operating functions for the scanner. What is more, the default settings for the scan parameters and the scan process itself are also described.

Prepare print jobs:
This chapter describes how individual drawings can be automatically or manually compiled to form print jobs.

Drawing editor:
This chapter describes the RW-470 SCANTOOL drawing editor which, apart from a large number of functions, you can use to edit drawings using pixels and over large areas as well as to filter and align the drawings and insert your own text.

Conventions used in the manual

Two terms are used in the text to point out special circumstances or advantages or even to warn you against certain steps:

Note: You are free to decide whether you wish to follow the recommendation given in a note or not. Tips are usually used to draw your attention to special circumstances or even to point out useful commands or ones that are easily forgotten and overseen.

Attention: It is advisable to take particular notice of any possible problems marked with "Attention" to e.g. avoid problems with your data stocks, etc.

Part I - Installation

Installations and settings on the Server-PC

This chapter explains,

- What system requirements must be fulfilled for the server,
- How to install the drivers and the program
- What adjustments you have to make to the operating system settings.

Furthermore, a separate section lists all the new [sub-] directories and file types that you will find on your hard disc following installation.

Attention: Adjustment of the settings in the operating system and installation of the program should only be carried out by a user with administrator rights.

System requirements

Please read through the following recommendations carefully. They can be very helpful in finding the optimum hardware for your needs.

- **Operating system**:
  Microsoft Windows 2000 Professional with ServicePack 1 or higher
- **Processor**:
  Pentium III, at least 800 Mhz
- **Front Side Bus:**
  133 Mhz
- **PCI Bus:** The PCI bus system must meet up-to-date standards (PCI 2.0 or higher – 3.3 V or 5 V autoadaptive, maximum load 5 A). If your computer does not fulfill this standard, it is possible that the plotter controller will not be identified.

- **System memory**:
  Use a system memory with at least 256 MB RAM. With this system memory, you can plot or scan the maximum drawing size. However, a system memory of 512 MB RAM is recommended if you wish to simultaneously plot and scan drawings with maximum drawing size. Simultaneous scanning and plotting of smaller formats also enables the use of smaller system memory. Please ask your dealer or the support technician for further information.
- **Hard drive**:
  The hard drive should have at least 10 GB memory. We recommend not to install the program on that drive where you have already installed your operating system.
- **Network interface/Configuration**:
  10/100 Base T Ethernet, the TCP/IP configuration is necessary
- **RW-470 Controller:**
  Physical dimension: 190 mm x 128 mm
  PCB dimension: 174,63 mm x 106,8 mm
- **Monitor:**
  At least 1024 x 768 pixels resolution

RW-470 Kernel Driver installation

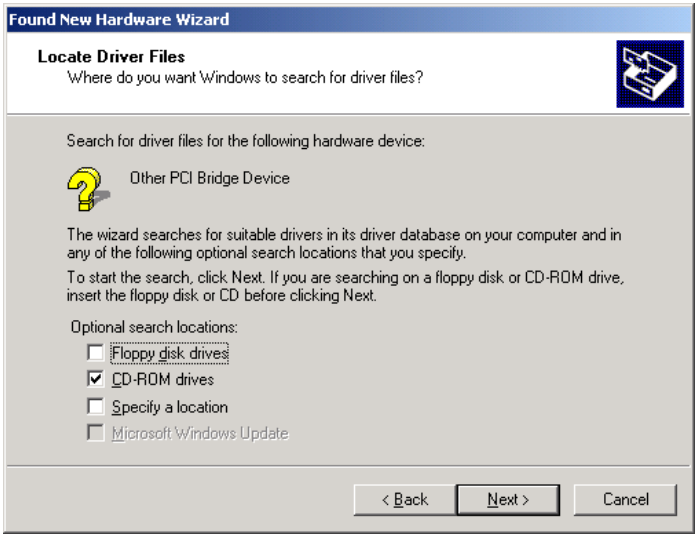
Start your PC. After installing the Controller Board Type 470, the operating system automatically reports that new hardware has been found and that assistant has been started for installation of the kernel-driver:

Proceed as follows to install the driver:

1. Click on the "Next" button to start the installation program.
2. In the next window the assistant asks where it can obtain the Driver files required.

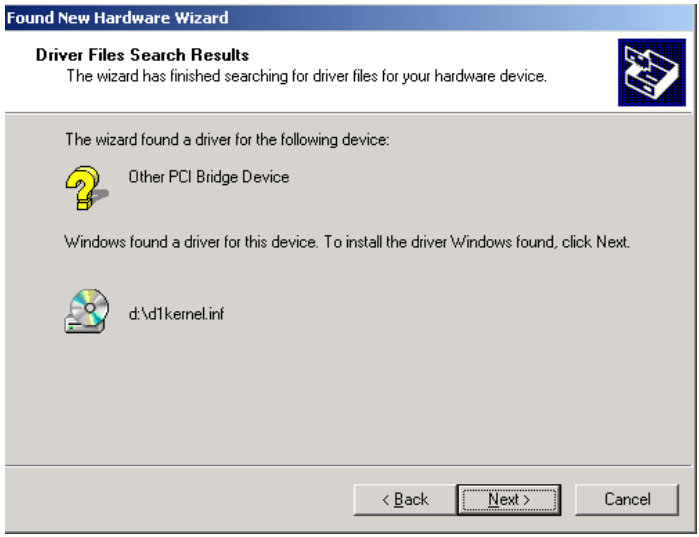
Select the topmost option “Search for a suitable driver for my device (recommended)“ and the click on “Next“, to continue with the installation.

3. Insert the installation CD in your CD drive. If the installation program of RW-470 PLOTBASE is starting automatically, close it with „Cancel“.
4. The assistant now asks where it should look for the driver files:



Select “CD-ROM drives“ and then click on “Next“.

5. In the next window you are now informed that the driver file (d1kernel.inf) have been found:



Click on "Next" to continue with the installation.

6. You are now informed that the driver files have been installed. Click on "Finish" to quit the installation program.
7. You can check the working of the kernel driver as follows: Select on your desktop „My computer" and open the context menu by using the right mouse button. Select „Properties – Hardware – Device Manager – Multifunction Adapters – RW-470 Controller (D1) V1.3". Open the context menu and select „Properties". Here you can find information about the status of the Controller Board Type 470. If problems appear, please use the Windows help.

Operating system adjustments

Several adjustments still have to be made to the operating system for the cooperation between the server and clients as well as the configuration of the scanner. These adjustments, as well as the whole installation should only be carried out by an administrator.

The procedures described in the following refer to the set up of an individual computer. Should you wish to set up a network computer, the configuration can differ slightly.

After you have finished making the adjustments you must reboot the computer.

Installing user accounts and groups

If you have to manage a big number of users we recommend to install user accounts and groups. Especially if you use the FTP protocol the installing of user accounts and groups is necessary. Proceed as follows:

1. Open the "Control Panel" via "Start – Settings – Control Panel". Open "Users and Passwords" in the control panel. Click on "Add".
2. Enter the relevant information in the "User name", "Full name", and "Description" fields. Then click on "Next".
3. You are then asked for the password. Enter a password and confirm it by entering it again in the "Confirm password" field below. Click on "Next".
4. Select the "Standard user" option in the next window. Click on "Finish".

Close any windows still open by clicking on "OK".

You can find further explanations for that in Windows Help.

Activating Windows components

The adjustments listed in the following are necessary for correct functioning of the RW-470 PLOTBASE and RW-470 SCANTOOL programs as well as for the connecting the clients.

- **SNMP:** The settings for this protocol must be activated. Proceed as follows:
  1. Open the settings window with "Start – Settings – Control Panel – Add/Remove Programs - Add/Remove Windows Components".
  2. Activate the "Management and Monitoring Tools" (SNMP) option by clicking on the check box.
  3. Click on "Next" and follow the instructions given in the further windows.
- **FTP protocol:** To be able to use the FTP protocol, you must adjust the settings in "Internet Information Services (IIS)".

1. Open the settings window with “Start – Settings – Control Panel – Add/Remove Programs - Add/Remove Windows Components“.
2. Click on “Internet Information Services (IIS)“. The check box is still non-active. Click on the “Details“ button.
3. Activate the “File Transfer Protocol (FTP) Server“ option by clicking on the check box. The other options “Common files“ and “Internet Information Services Snap-In“ are also activated automatically. If all three services are actually activated, click on “OK“ to confirm the information.
4. Click on ”Next“ and follow the instructions given in the further windows.

Note: If you want to use the FTP protocol, you must also set up user groups. The procedures are described in the chapter “Installing user accounts and groups” on Page 22. Also you have to install a FTP folder with some presettings. But this should be done after the installation of RW-470 PLOTBASE. It is explained in chapter „Setting up the FTP default folder“, page 36.

- **For LPR:** This settings are also required for MAC/OS. Proceed as follows:
  1. Open the settings window with “Start – Settings – Control Panel – Add/Remove Programs - Add/Remove Windows Components“.
  2. Activate the „Other Network Files and Print Services “ option by clicking on the check box.
  3. Click on “Next“ and follow the instructions given in the following windows.

- **For RW-470 PLOTCLIENT MAC:**
  To use RW-470 PLOTCLIENT MAC you have to install RW-470 WINPRINT on the server PC at first: This is described in chapter “Installation of RW-470 WINPRINT” page 37”.

After you have activated all the services required, adjust the settings so that the "TCP/IP Print Server" and the "FTP Publishing Service" are automatically started when the computer is started up.

To do this, proceed as follows:

1. Click once on the "My computer" desktop.
2. Open the context menu using the right hand mouse button and select "Manage". The "Computer Management" window opens.
3. Double click "Services and Applications" so that the secondary directories are shown. Now double click on "Services".
4. Double click on "TCP/IP Print Server". Set the "Automatic" option in the window under "Startup Type". Repeat the procedure for the "FTP Publishing Service".
5. Close all windows.

RW-470 SCANTOOL settings

The following settings are absolutely necessary for RW-470 SCANTOOL. In the RW-470 SCANTOOL program it is possible to reserve a part of the user memory for the scanning process. However, to do this, special user rights have to be set up. Proceed as follows:

1. Open the system control using "Start – Settings – Control Panel". Open "Administrative Tools".
2. Open the following directories one after the other: "Local Security Policy", "Local Policies", and „User Rights Assignment".
3. In the list of guidelines select the "Lock pages in memory" option with a double click. The "Local Security Policy Setting" window opens.
4. Click on "Add". Now determine the users, who are to have the right to adjust the size of the user memory. Select one or more of the following users by double clicking on them: "Administrator", "Administrators",<user name>.
5. Confirm the entries with "OK". Close the still open window also with "OK".

6. The window "Local Security Settings" is still open. Click with the right mouse button on "Security Settings". Select "reload".
7. Close the remaining windows still open.

Settings for the Response function

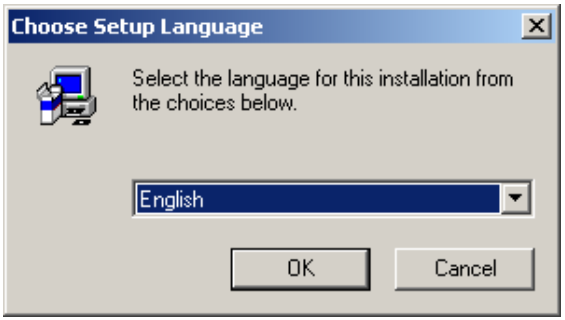
Users can be informed of successful completion of their jobs by an in-house or external mail system. For using the E-Mail option, Microsoft Outlook Express or Microsoft Outlook have to be installed on the server. Another prerequisite is that you have installed "Internet Mail" using the Windows setup.
Further informations about installing your e-mail program you can get in the Windows Help or your mail program manual.

Installation of RW-470 PLOTBASE and RW-470 SCANTOOL

This section describes the installation of the program. We recommend not to install the program on the drive where you have already installed your operating system.

To install the program, please proceed as follows:

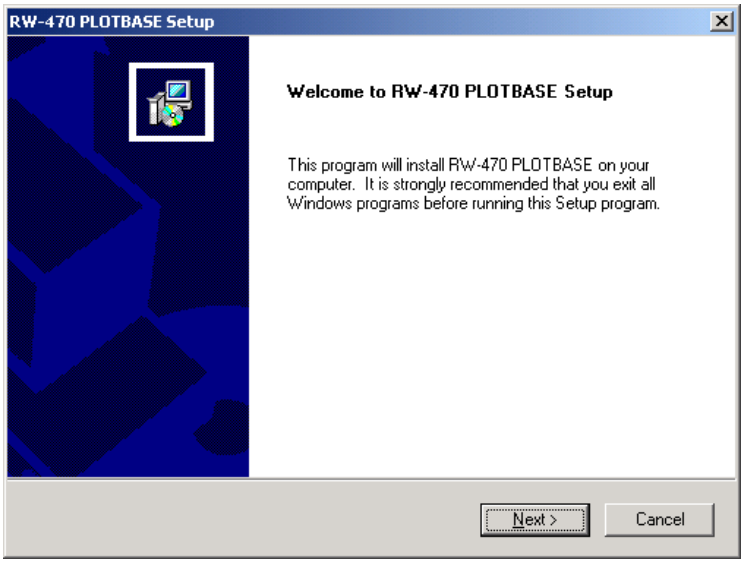
1. Start for Windows 2000 installation as a user with administrator rights.
2. If Windows 2000 has already been started [with administrator rights], close all programs that are running and secure all the data.
3. Place the installation CD in your drive. The installation program is now started automatically. If not, open the Windows Explorer window and double click on the "Setup.exe" file in the "Install" CD-folder.
4. Firstly you can select a language for the installation from the list box of the next window.



Confirm with "OK".

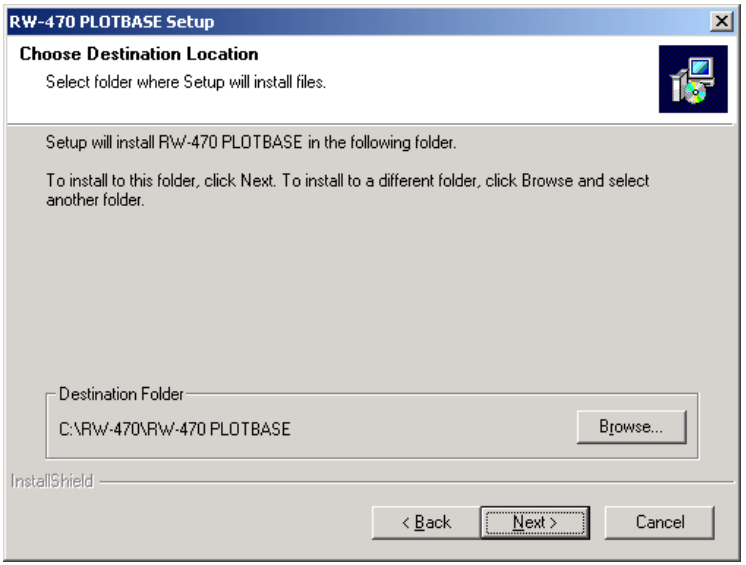
Attention: It is imperative that the SNMP protocol has been installed on your computer so that the data exchange between the server and clients functions. An error message appears is you have not installed an SNMP protocol. Read the chapter on "Operating system adjustments", on Page 22, to find out how to set up the SNMP protocol. Start again with step 3.

5. A new window opens:



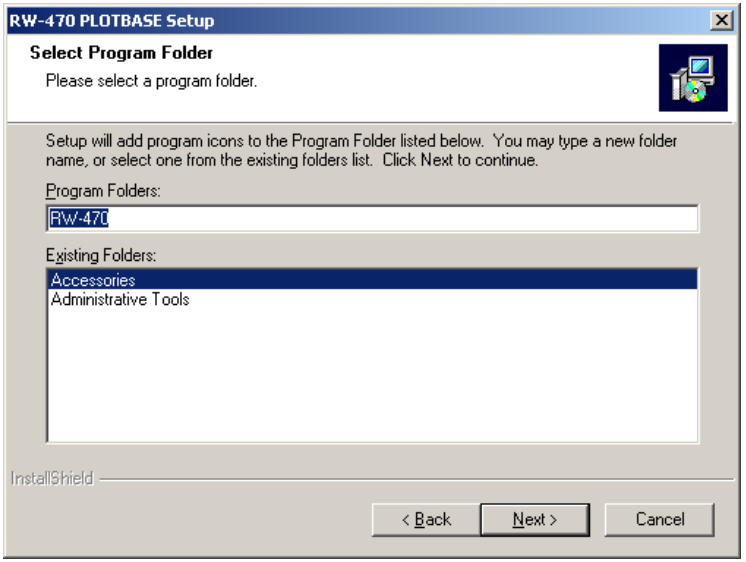
Follow the instructions given in the window: Close any Windows programs, which are still open. Then click on „Next".

6. Click on „Yes" in the next window if you agree to the license agreement terms. Click on „No", if you do not agree to them and wish to cancel the installation.
7. In the next window you are suggest a target path for the program.



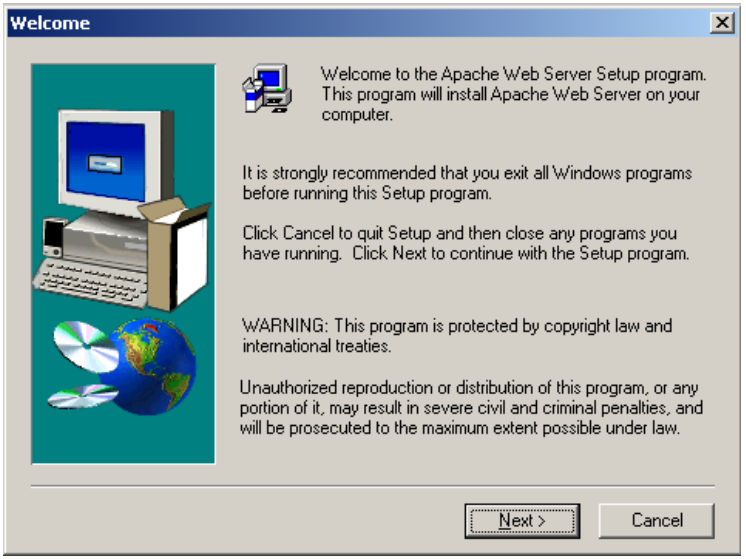
Confirm the suggestion with "Next" or select another target folder.

8. A program folder is now suggested.



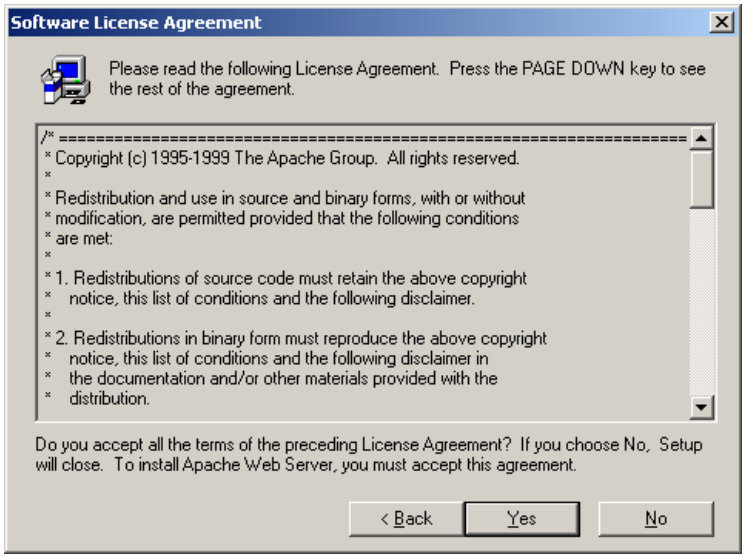
Enter another folder name or confirm the suggested name by clicking on "Next".

9. The Apache Web Server is required for operation of the RW-470 PLOTCLIENT WEB. If you install the version 1.3.9 or a higher version, it will be sufficient. The Apache Web Server is a so called „freeware". That is why we can't guarantee a perfect function. Especially for older versions we can't guarantee, that they comply with the requirements without problems. We recommend to remove older versions. If the Apache isn't installed yet, the installation program will be started automatically and the supplied Apache version will be installed.



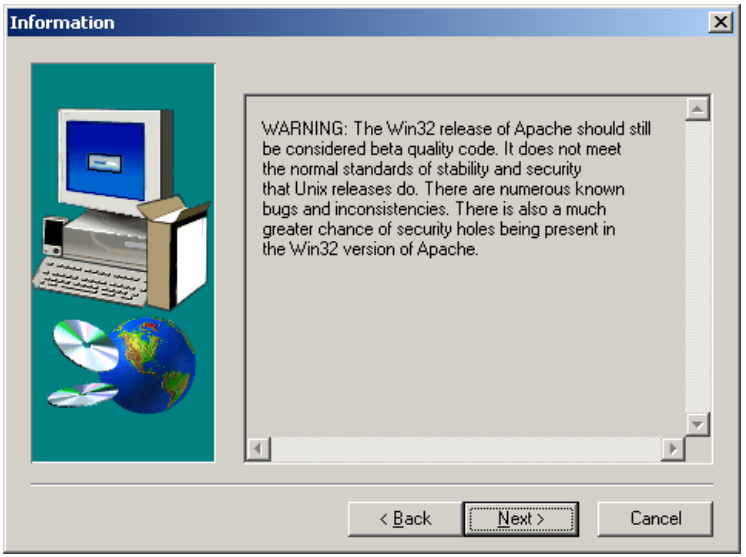
After reading the information in the first window, click on "Next".

10. In the next window you are now asked whether you accept the terms of the license.



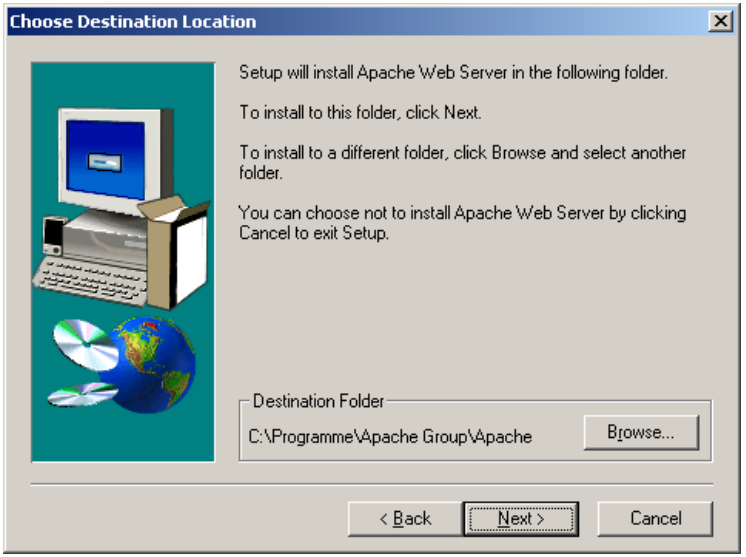
Click on "Yes" if you agree to the license agreement. Click on "No" if you do not agree and wish to cancel the installation.

11. The next window gives you information about the Apache Web Server.



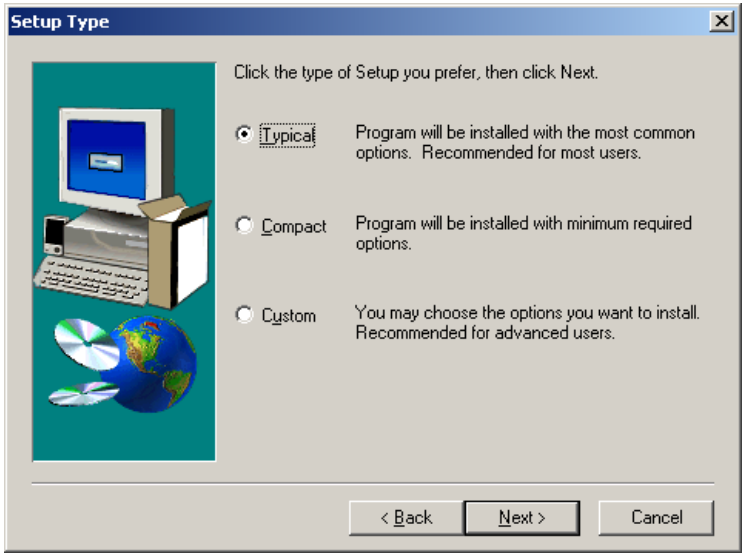
Click on "Next" after you have read everything.

12. A target path is suggested for the program in the next window.



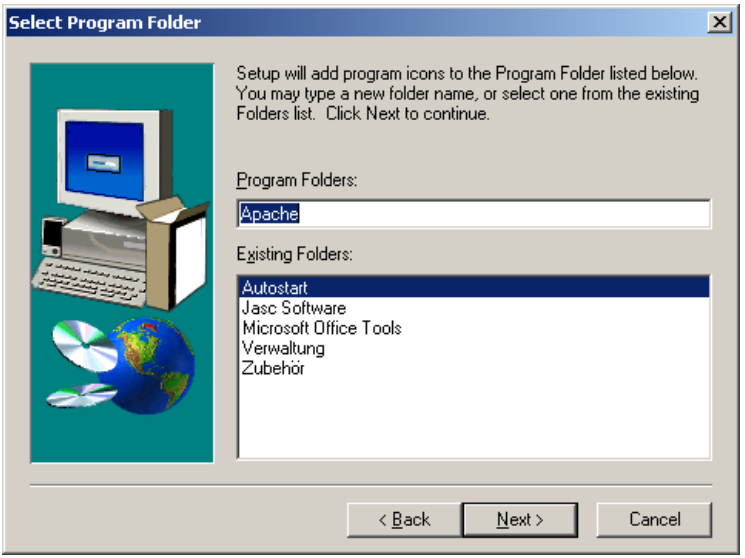
Confirm the suggested one with “Next” or select another target folder.

13. Various types of setup are suggested in the next window.



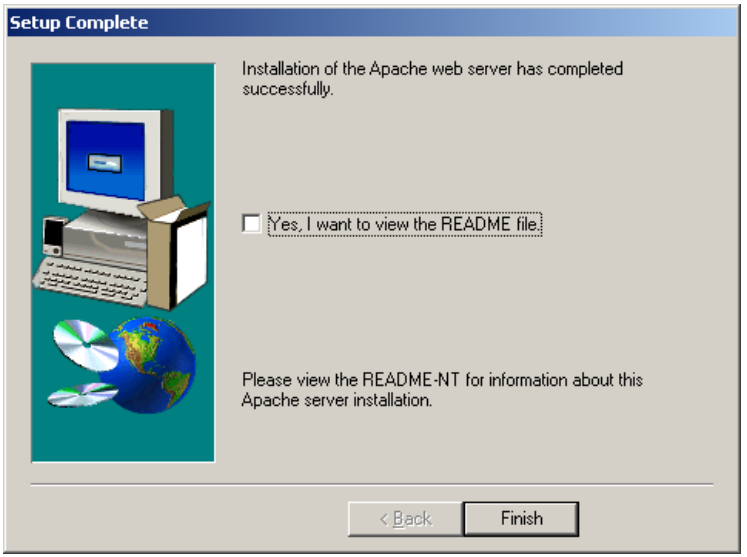
Don't change the "Typical" setup type. Click on „Next".

14. A program folder is suggested.



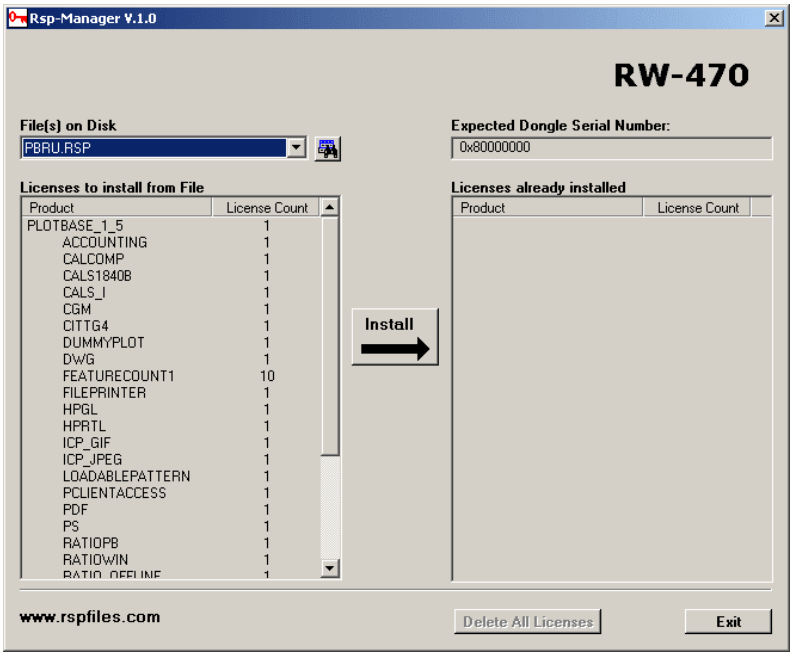
Enter another folder name or confirm the suggested name by clicking on “Next“.

15. In the next window you are informed that installation of the Apache Web Server can now be completed.



Decide whether you wish to view the “Readme” file. To do this, activate the check box. The Readme file contains information about the Apache Web Server. Click on “Finish“.

16. The next dialog informs you, that the license files (RSP) will be installed now. You are requested to insert the license disk into the disc drive. Then click „OK“.
17. A new window is open.



You have the choice to install the standard program version or a demo program version. The demo program version can be used to demonstrate the program options, which you can additionally buy from your dealer. However each scanned file and each print out is marked by stamps. After you have tested the demo program version, you can remove it by installing the license file of the standard program version (License.rsp).

18. Install a license file as follows: In the top of the window you can see a small searching symbol.

Click it to open a file selection dialog. Afterwards select a license file (*.rsp), which is on your license disk, and confirm the selection with „Open“. Click „Install“. The license files will be copied in the correct folder. Close the window.

19. You can now complete the installation by clicking on "Finish" in the straight opened window.
20. Configure the Internet Explorer, which is required to be able to use RW-470 PLOTCLIENT WEB.

Note: The new folder and files created by the installation procedure are exactly explained in the appendix.

Setting up the FTP default folder

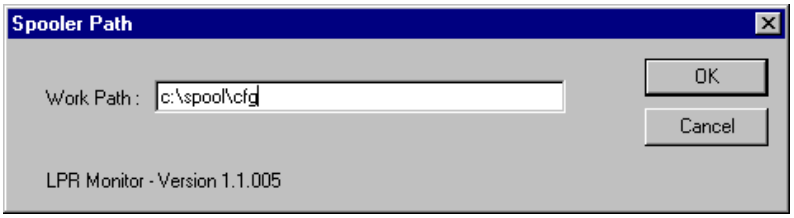
If you want to use ftp command to send print jobs to RW-470 PLOTBASE, you have to install a FTP default folder which is needed as the spool folder.
These settings should not be made until you have completed installation of RW-470 PLOTBASE and RW-470 SCANTOOL. Proceed as follows:

1. Click once on "My Computer" on the desktop and open the context menu using the right hand mouse button. Select "Manage".
2. Open the "Services and Applications" folder with a double click. Select "Internet Information Services". Select „Default FTP Site" and open the context menu using the right-hand mouse button.
3. Select "Properties". A window with the name "Default FTP Site Properties" now opens.
4. Select the "Home Directory" tab. Activate the Option "A folder located on this computer" option. Enter the local path in the "FTP site directory" box. To do this click on the "Browse" button and select the folder "[drive]:\spool". Activate the "write access" option and the "Unix" option under "Directory Listing Style".
5. Confirm all entries by clicking on "OK".

Installation of RW-470 WINPRINT

The Windows printer driver RW-470 WINPRINT allows print jobs to be recorded from Windows applications, to then pass them on directly to RW-470 PLOTBASE as a plot job.
Install the printer driver as follows:

1. Open in the Windows Explorer the installation folder \\<ServerPC>\RW-470\PLOTBASE\Tools\WINPRINT. You can also find this folder on the installation CD. Start the file "Setup.exe". The installation program starts.
2. An information window opens at first. After you have read the notes, click on „Next".
3. In the next window you are asked to confirm the prescribed port name by clicking on "OK".
4. Confirm the printer name, that means the name of the printer driver.
5. Confirm the shared name of the printer driver in the next windows.
6. Detect which operating systems are installed on the client PCs, which will use RW-470 WINPRINT for printing. If it is Windows 95, 98 or ME, click on „Yes" and confirm it with „Next".
7. If one of the appointed operating systems (Windows 95, 98 or ME) is used, more files are required, that probably may not be installed on your PC. In that case put corresponding installation CD of Windows into the drive or select a network path, if the installation files are on a server PC.
8. The installation is finished successfully.
9. Now you have to confirm the spooler folder by opening „Start – Settings – Printer".
10. Select printer driver RW-470 WINPRINT.
11. Select „Properties" in the context menu (right mouse button). Select the tab „Port".
12. Open the following window with „Configure" and confirm the spooler folder:

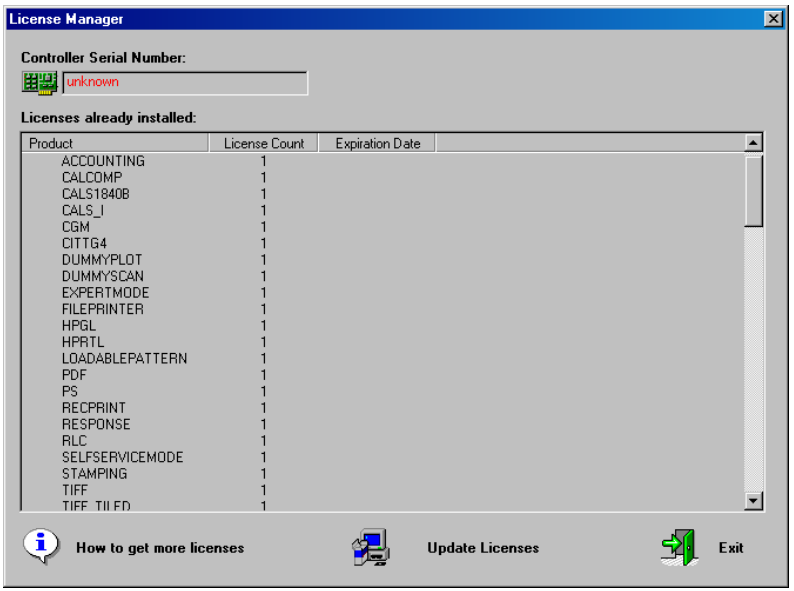


As a standard spooler folder is set on c:\spool\cfg. If you installed the spool folder of RW-470 PLOTBASE on another drive, you have to change the drive path.

Extend licenses

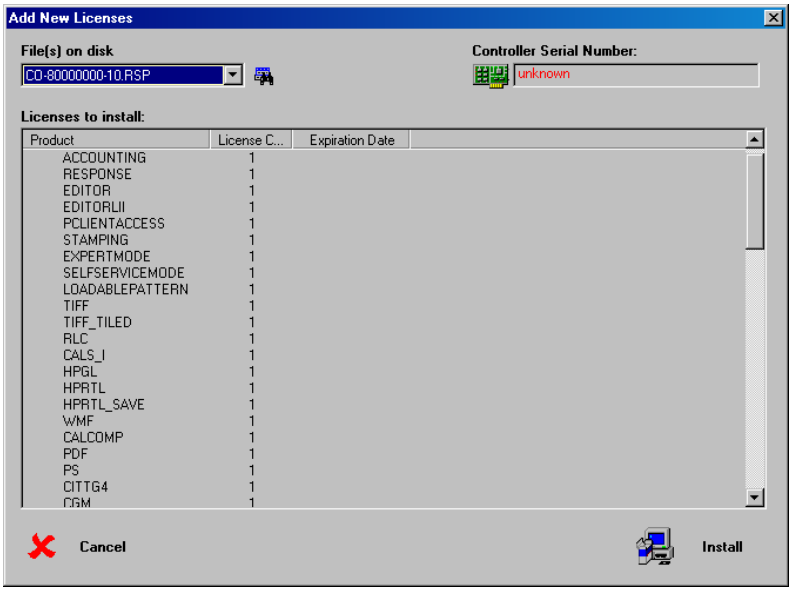
You can extend the functions of this program. To do this, you must install a new license file, which you can obtain from your dealer or the manufacturer. To install the file you require local administrator rights for the RW-470 PLOTBASE computer. Install the file as follows:

1. First open a dialog with the menu command “Help – License Manager”.



The current licenses that are already installed are first listed in the window.

2. If you now wish to install the new license file, please click on "Update licenses ". The following window opens:



3. You can see a small search symbol in the top of the window. Click on this symbol to open a file selection. Then select the new license file (*.rsp), which you have saved on you computer (or diskette) and confirm the selection with "Open".
4. You can now read through the window and check whether all the required options are contained in the file. Then click on "Install" in the lower section of the window. You will then be asked whether you really want to install the license file and overwrite the old file. Confirm accordingly.
5. Restart RW-470 PLOTBASE so that you can use the new options.

Installation Problems

PC doesn't start

The Controller-Board is defective. Use another board.

Kernel driver does not start

Error in COMPAQ BIOS I. Not enough RAM memory in PC. Especially on COMPAQ computers the controller does only work, if the PC is equipped with at least 128 MB of RAM memory.
Make sure that your COMPAQ PC has at least 128 MB of RAM memory.

Plotting speed too slow

- Lack of RAM memory on PC. If the PC is „swapping" all the time (the harddisc is continuously operating), add more memory to your PC. If you are not sure add at least 256 MB.
- CPU blocked by other application. Shutdown other application.
- Usage of complex data formats. When using RW-470PS or CGM data the processing time is quite high. For highest performance use HPGL or TIFF data format.

Part II - RW-470 PLOTBASE

Start and quit program

Although you have to install RW-470 PLOTBASE as a user with administrator rights, only the rights of a standard user are required to use the program.

Attention: RW-470 PLOTBASE cannot be used in multi-user mode. I.e., the program can only be accessed under one user name.

- **Start program**

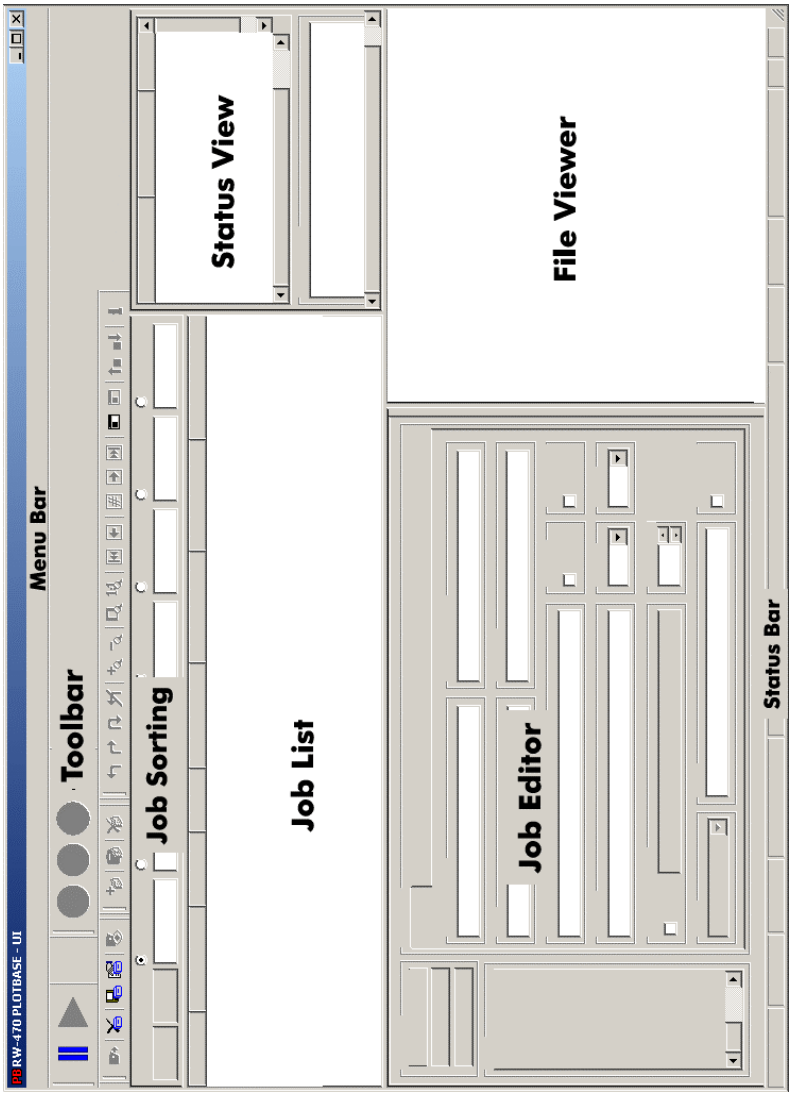
At the end of the installation, the installation program sets up its own program group with the icon. To start RW-470 PLOTBASE, open the program from the "Start" bar or double click on the program symbol on the desktop:

- **Quit program**

You can either quit RW-470 PLOTBASE via the menu bar with "File - Exit" or using the standard Windows keyboard shortcut "ALT+F4".

The following part of the manual describes the program's functions.

Program window



Program sequence

This chapter provides you with an overview of how a drawing is placed in the RW-470 PLOTBASE job list and then printed. A graphic at the end of the chapter illustrates the job flow graphically.
We recommend that you read this chapter at least once so that you know how a drawing is processed from when it is produced through to the RW-470 PLOTBASE job list. Together with the introduction chapter on Page 8ff, this chapter is intended to help you to understand the environment and the embedding of the program within it.
Furthermore, the most important terms used in the program are also explained.

Naming conventions

Job:
A job is a job order, which includes at least one entry or set of entries, which concern the combination of individual to be printed using the plotter. The job can be prepared by an RW-470 CLIENTS and can contain an unlimited number of entries.

User:
The user prepares the jobs using RW-470 CLIENTS or RW-470 SCANTOOL. The user can simultaneously be the client.

Entry:
An entry is a drawing with the corresponding description required for RW-470 PLOTBASE. This description contains all the information about the drawings such as the format, media type, number of copies, etc. Entries are put together in RW-470 CLIENTS to produce jobs or can also represent an individual job.

The entries or drawings can have the following file formats, which are identified by RW-470 PLOTBASE by their file extensions:

- Calcomp .....(*.906, *.907)

- CALS [to MIL-STD-1840B] .....(*.cal)
- CALS [to MIL-STD-28002A] .....(*.cal)
- Intergraph .....(*.cit; *.tg4)
- HP-GL [/2, RTL] ..... (*.plt; *.rtl)
- PCX..... (*.pcx)
- RLC.....(*.rlc)
- T6X .....(*.t6x)
- TIFF ..... (*.tif)
  [Group 3,4; uncompressed; packbits; striped & tiled]
- Windows / OS2 Bitmaps ..... (*.bmp)
- Windows Meta File.....(*.wmf)

The following are available as an optional:

- CGM.....(*.cgm)
- PDF, RW-470PS ..... (*.pdf, *.ps)

The following are available with AutoCAD 2000i installed:

- DWG .....(*.dwg)

Note: A more precise definition of the file formats that can be used is given in the appendix.

SSL file:
The SSL file is produced automatically by RW-470 CLIENT when an order is prepared and contains all the information about the job itself as well as all the descriptions of the individual entries. The SSL file is required by RW-470 PLOTBASE to print off a job on the plotter.

RW-470 CLIENTS:
RW-470 CLIENTS are programs with which the user can collate drawings or entries to form jobs, to then print them via RW-470 PLOTBASE. When preparing the order, the user enters all the information for the individual entries, which are required for the print and which are automatically written in an SSL file. This

information can include, e.g.: format, media type, number of copies and border details.

Draftsman/woman:
The [technical] Draftsman/woman prepares the drawings for the client, which can later be collated by the user to form jobs.

From the drawing to the job

The following describes the path of a drawing from when it is prepared through to the RW-470 PLOTBASE job list. The work steps are illustrated functionally and not related to persons, i.e. several functions can be carried out by the same person.
In this example, the RW-470 CLIENT is interfaced with the RW-470 PLOTBASE, however you can easily use another possibility.

Note: More information on using RW-470 CLIENTS is given in the manual of the same name.

With the help of this section, the following graphic and the first chapter of the manual, you should be able to understand the tasks and possible applications of RW-470 PLOTBASE and the environment.

1. PRODUCTION:
   The [technical] Draftsmman/woman produces the drawing using an EDM, CAD or similar system and saves it in one of the following formats, which are identified by RW-470 PLOTBASE by way of the file extension:

- Calcomp .....(*.906, *.907)
- CALS [to MIL-STD-1840B] .....(*.cal)
- CALS [to MIL-STD-28002A] .....(*.cal)
- Intergraph .....(*.cit; *.tg4)
- HP-GL [/2, RTL] ..... (*.plt; *.rtl)
- PCX..... (*.pcx)
- RLC .....(*.rlc)
- T6X .....(*.t6x)

- TIFF ..... (*.tif)
- Windows / OS2 Bitmaps ..... (*.bmp)
- Windows Meta File.....(*.wmf)

The following file formats can be read by RW-470 PLOTBASE, if a corresponding license has been purchased:

- CGM.....(*.cgm)
- PDF, RW-470PS ..... (*.pdf, *.ps)

The following are available with AutoCAD 2000i installed:

- DWG .....(*.dwg)

Note: A more precise definition of the file formats that can be used is given in the appendix.

A second possibility is to produce the drawing using RW-470 SCANTOOL and to save it in the suitable format.

2. TRANSFER:
   The [technical] Draftsman/woman transfers the files with the drawings to the user, who uses RW-470 CLIENT to put together the print jobs. The files are then sent via the network [LAN, Intranet or Internet] to the directories provided.
3. DRAG & DROP:
   The user fetches all the drawings intended for plotting into RW-470 CLIENT either using Drag & Drop or using the "Insert or add entry " functions.
4. SET CREATING and PLOT SETTING:
   The user puts together the drawings in RW-470 CLIENT to form jobs, assigns the priorities for the print, sets the formats, media types, border settings and much more and checks the drawing using the check view.
5. SENDING PLOT FILE:
   As soon as the user has prepared the jobs, they automatically send it via the network [LAN] using the program command "File – Print SSL" to the directories provided, thus making it available for RW-470 PLOTBASE to print.

You can change or create a SSL file. Please ask your dealer or support technician for further details about creating a SSL file.

6. COLLECTION:
   RW-470 PLOTBASE regularly reads the directories and checks whether there are any new jobs. As soon as a job is available, it is read in by RW-470 PLOTBASE and immediately appears in the job list.
7. RW-470 PLOTBASE:
   The jobs in are now available in the job list for plotting. However, before plotting you can still make changes to the print properties. You can accompany the automatic progression of the program using the status observations and the error control and can intercept at any time, if necessary for urgent jobs, to stop jobs or because of error messages.

Tools

This section gives you a brief overview of the program's tools, which you can activate using the four tool bars as well as the information, which is displayed in the status bar. All toolbars can be freely positioned at the sides, at the top below the menu bar and at the bottom below the status bar. You can blank out and insert the toolbars using the "View" menu.

The following chapter then explains the function and use of the signal lights. Furthermore, a brief section also explains the function of the right-hand mouse button, which you can use to comfortably start and carry out functions, without having to use the menu bar.

Job toolbar

The "Job" toolbar is located directly beneath the "File". The five buttons have the following significance:


Send job to the plotter


Delete job


Save job


Open job information


In the job list, jump to job currently being printed

Entry toolbar

The toolbar for editing an entry is located on the left-hand edge of the monitor after the program is started up for the first time

The buttons have the following significance:

Add entry at the end of the entry list

Insert entry in front of the marked position in the entry list

Delete entry from the entry list

Viewer toolbar

The viewer bar is located on the right-hand side of the monitor after the program is started for the first time, next to the preview window, in which the individual drawing is shown:

Attention: These settings have no effect on the printing result. You can just change the view of the picture in the file viewer.

The buttons have the following significance, moving from right to left:

Rotate drawing 90° to the left

Rotate drawing 90° to the right

Rotate drawing by 180°

Drawing in original position

Successively enlarge drawing

Successively reduce drawing

 Switch over to zoom all of drawing

 Switch over to 1:1 view of drawing

 Multipage document: Show first page

 Multipage document: Go back one page

 Multipage document: Enter target page

 Multipage document: Move forward one page

 Multipage document: Show last page

 Show drawing in black & white view

 Show drawing in grey scale view

 Show drawing in darker view

 Show drawing in lighter view

 Information about the overall settings of a drawing currently loaded

Pause function

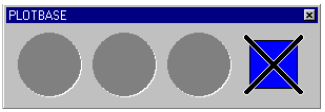
The pause function enables you to quickly interrupt a print, if problems occur during plotting.

 You can click this button, if it is blue. After activating the print is interrupted.

You can click this button, if it is blue. After activating the pause is cancelled and the print is continued.

RW-470 PLOTBASE signal lights

The RW-470 PLOTBASE signal lights shows the status of a print job as well as the automatic function:



The three round areas describe the respective print status using three different colors:

- **Red field:**
  A print problem is indicated if the left-hand field is red. The precise cause is described in the status window.

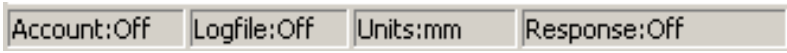
- **Blue field:**
  If the middle field is blue, this indicates that the user has to act. It can be a locked print, a sample print or a necessary operating of the bypass tray.

- **Green field:**
  If the right-hand round area is green, a print is currently underway. This display disappears as soon as the job order has been accepted and processed by the plotter.

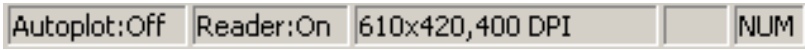
You can activate or deactivate the automatic print function by clicking on the right-hand quadratic symbol. You can see a cross on this button, if the function is activated. In this case the print jobs arriving from other programs are immediately sent to the plotter and are printed. If you wish to trigger the print function manually, the automatic print function should be deactivated.

Status bar

The status bar is located on the lower edge of the monitor and provides you with the following four sets of information seen from left to right:



- **Account:** SDF (Standard Delimited Format) and form file for the account function is activated (On) or deactivated (Off). Presetting is "Off". This function is explained on page 67.
- **Log file:** Logbook file is activated (On) or deactivated (Off). Presetting is "Off". This function is explained on page 67 (see "Response"). It is irrelevant for normal users.
- **Units:** Current valid size unit: You can adjust the size unit in the configuration program. Presetting is "mm". This function is explained on page 67.
- **Response:** The function is activated (On) or deactivated (Off). Presetting is "Off". This function is explained on page 67.



- **Autoplot:** Currently set plot mode: On/Off. You can activate the Autoplot mode using the "Plotter" menu, the RW-470 PLOTBASE signal lights or using "CTRL + A". Presetting is "Off". A more detailed explanation you get on page 119.
- **Reader:** Activation of the reader (On/Off). Presetting is "On". A more detailed explanation you get on page 55.
- Current size of the drawing in the units set (in this example: millimeters) and resolution in DPI.
- Toggle the keypad functions (here: NUM).

Context menu

RW-470 PLOTBASE provides an additional comfortable mouse function for use during your work in the job list and in the entry list . In general, you carry out all work using the left-hand

mouse button. In addition, you can also select so-called context menu commands using the right-hand mouse button, without having to mode to the menu or toolbar. You open the menu using the right-hand mouse button and select the command using the left-hand mouse button.

The commands that you can select using the context menu are listed in the following. Cross-references to the chapters that explain the commands in more detail are given after these.

The following commands are in the job list:

- Plot,
- Priority [set], Pages 77, 74
- Status [set], Page 77
- Job info, Page 80
- [Job] delete, Page 120
- Cancel Job, Page 121

The following commands are in the entry list:

- [Entry] Delete, Page 96
- [Entry] Insert, Page 95
- [Entry] Add, Page 95

You can open a context menu in the edit fields of the "Sorting" in which you will find several standard commands: Undo, Cut, Copy, Delete, Select all.

Configuration

The following chapters describe how you can use the "Configuration" menu to alter the program settings.

Reader

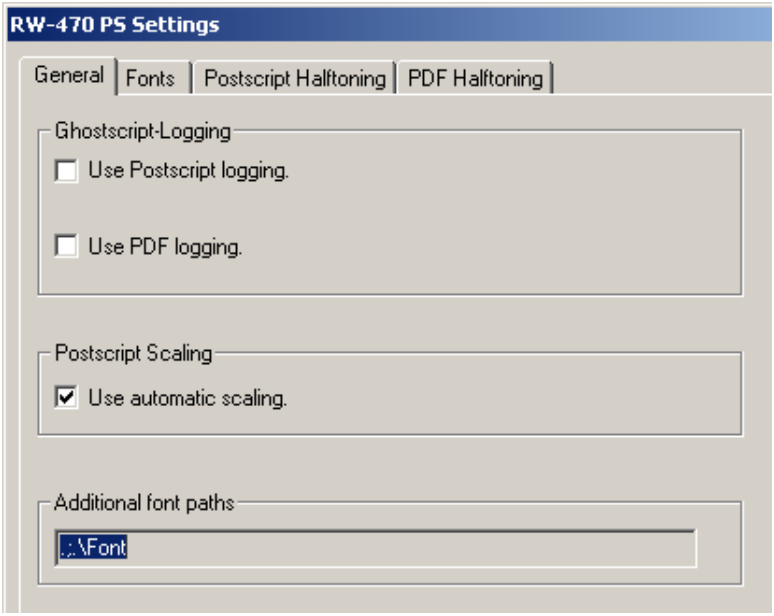
The reader has the task of interpreting the print jobs arriving in the spool folder and to edit them so that they can be processed by the plotter. This function can also be used for error searching and -relieving, which is made by your administrator.
In the configuration menu you can activate or deactivate the reader by clicking on the menu command "Reader on/off". This function should be activated just by the way. No more print jobs are processed if the reader is deactivated.

RW-470PS and PDF (Options)

As an option, RW-470 PLOTBASE can also read the RW-470PS format and PDF format. You can open the settings for these formats using the "Configuration - RW-470PS Default settings" menu:

"General" tab

On the "General" tab you can alter the protocol and font path settings:



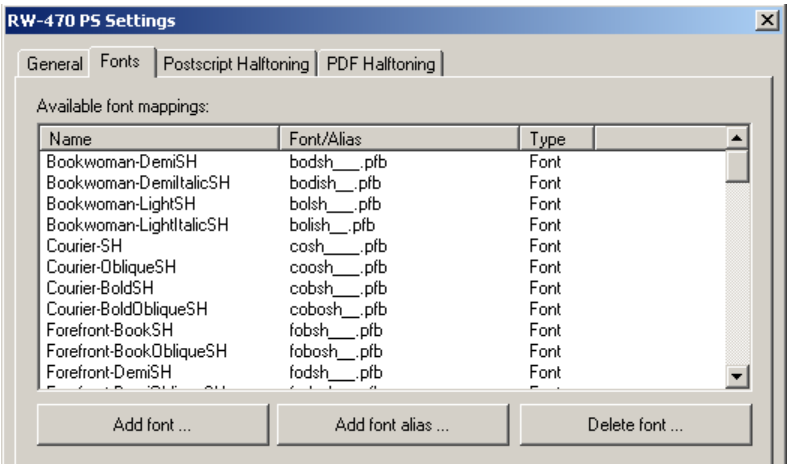
- **Ghostscript-Logging**:
  If you activate these options, the RW-470PS or PDF actions of the program are also logged. This gives the possibility of obtaining further information in case of problems. The file has the name RATIO_PS.LOG, is temporarily stored in the TEMP folder of Windows and can be opened using a simple text editor.

- **Use automatic scaling:**
  RW-470PS files, that do not correspond with the DSC standard, can't displayed in the right size. If you activate this option, the drawings can be adjusted to the required configuration settings with respect to the drawing size. This option should be activated all the time.

- **Additional font paths**:
  The standard path only is initially given in the field. The font path refers to a folder, in which the fonts are stored. If you wish to refer to other font paths, ask your dealer or support technician.

"Fonts" tab

RW-470 PLOTBASE supports:
Type 0 = Composite Fonts
Type 1 = Basic RW-470PS fonts
Type 3 = user-defined fonts
Type 4 = Type 1 fonts with a BuildChar or BuildGlyph procedure
and TrueType Fonts under Windows.
The available fonts are listed on the "Fonts" tab, insert new Fonts or add aliases or delete fonts:



- **Fonts list**:

The fonts currently available are given in the font list.

- **Add font**:

To add a font, carry out the following steps:

1. Click once on the "Add Font" button, to add a new font.
2. In the following dialog, click on the folder selection button, and change over into the required folder with the additional fonts.
3. Click once on the font, which you wish to add and quit the dialog by clicking once on the "Open" button.

4. Enter the name of the selected fonts in the following window under the "Font Name", and close the whole dialog by clicking on OK.
   RW-470 PLOTBASE includes the new font in the font list.

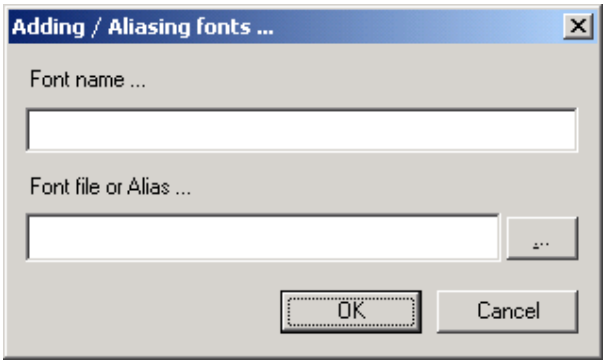
Attention: If you want to add fonts from the WINNT directory, you have to notice the following: The WINNT-directory is write-protected and therefore you can´t select and add a font directly. At first you have to copy the font-files in an other directory (e.g. the temporary directory) and afterwards you can select the font-files from this directory using the dialogue which is described above.

- **Add font alias**:

A font alias is the reference to the font currently being used. As font names sometimes have different names due to different manufacturers and operating systems, in RW-470 PLOTBASE you can produce an alias for the various font names used by RW-470 PLOTBASE on Windows 2000. In this way, RW-470 PLOTBASE can identify which font it must use even if the RW-470PS file uses a different name.

To add a font alias, follow the following steps:

1. Mark the font in the font list, for which you want to add an alias.
2. Click once on the "Add font alias" button, to add the alias. The following window is opened:



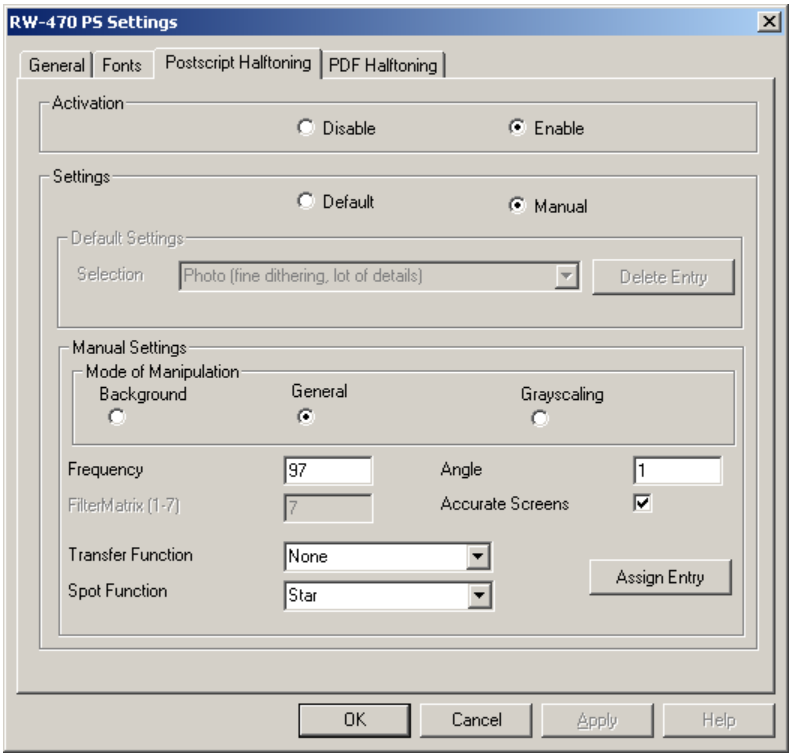
3. Enter the name of the alias under which the font for the program should be able to be found. Enter the name of the file that is in the RW-470PS file [*.ps].
4. Quit the addition of the new alias with OK.
   RW-470 PLOTBASE enters the new alias in the font list.

- **Delete fonts**:

To delete a font or an alias, you only need to mark it in the font list and to click once on the "Delete Font" button.

RW-470PS halftoning tab

Here you have several possibilities for manipulating the grey values in the RW-470PS file. Only make these changes if you have at least a basic knowledge of image editing. The tab appears as follows:



When you opened this tab at the first time, it is disabled. To be able to adjust the settings, you must first switch this module to "Enable". You can now select whether you wish to alter "Default" settings or "Manual" in the "Settings" area. The Default setting is preselected and the corresponding area is activated. You can now select one of the following standard settings from the "Selection" list:

- Photo (fine dithering, lot of details)
- Text (only black/white)
- large technical picture
- Technical picture
- Image/ picture

You will also find the names of the settings, which you have made and stored in the "Manual settings" area in this list. These

individual settings can be removed again by clicking on the "Delete Entry" button.
To alter individual settings, you must first decide in the "Manual Settings" area to what extent you wish to manipulate the settings. You can choose from the following:

- **Background:** Here you can determine the properties of the grey scale pattern. You can select the frequency, angle and spot function. These parameters are explained below.
- **General:** Here you can manipulate all properties except for the filter matrix.
- **Greyscales:** Here you can adjust the filter matrix and transfer scales. These parameters are explained in the following.

The parameters for manipulating the grey scales have the following effects:

- **Frequency:** Is used to determine how often the grey value pattern is repeated. You can enter an integer number between 1 and 999. A frequency above 500 is only required in exceptional cases. Try and find out which frequency is sufficient for your graphic.

- **Filter matrix:** This is used to determine how strong the brightness gradations between the grey scales are. Level 7 means a small grey scale gradation, Level 1 a large gradation.

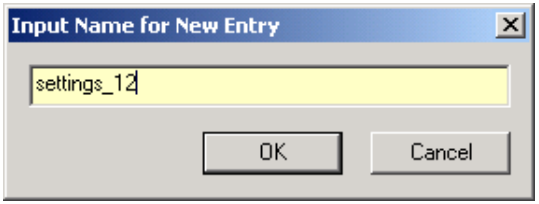
- **Transfer function:** The default setting is that no transfer function is carried out. In addition, the settings "Invers" and 2 to 64 grey scales are available in the pull-down menu. The inversion causes a color inversion. I.e. in black & white images the black areas are shown white and the white areas are shown black. Alternatively, you can also select the number of the grey scale. The more grey scale is used, the more precise the grey scale gradations. The differences in brightness are more precisely reproduced in the graphic.

- **Spot function:** Here you can select the basic pattern of the grey scale patter from the pull-down menu, for example, star, ellipse, etc.

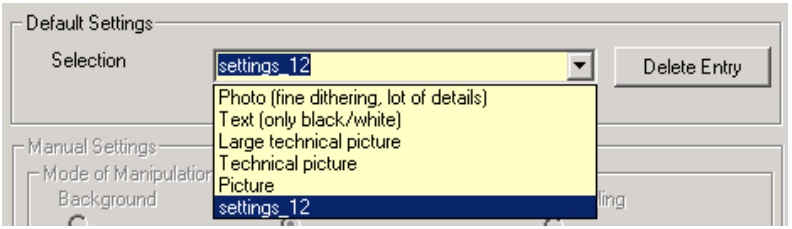
- **Angle:** Here you can determine at what angle the individual objects of the grey scale pattern are relative to each other. Enter an angle between 0 and 90 degrees. We recommend that an uneven angle is used, as otherwise irritating patterns are produced in the graphic.

- **Accurate Screens:** If you switch on this option, a very precise image is calculated and displayed. However, the complicated calculation slows down the processing.

After you have altered all the settings, you can store them, so that you can use them again. Click on the "Assign Entry" button. A window opens, where you can enter a name for these settings.



The new name for the settings will be automatically inserted in the "Selection" list.



Later on you can search for your personal settings from the "Selection" list in the "Default Settings" using this name. This

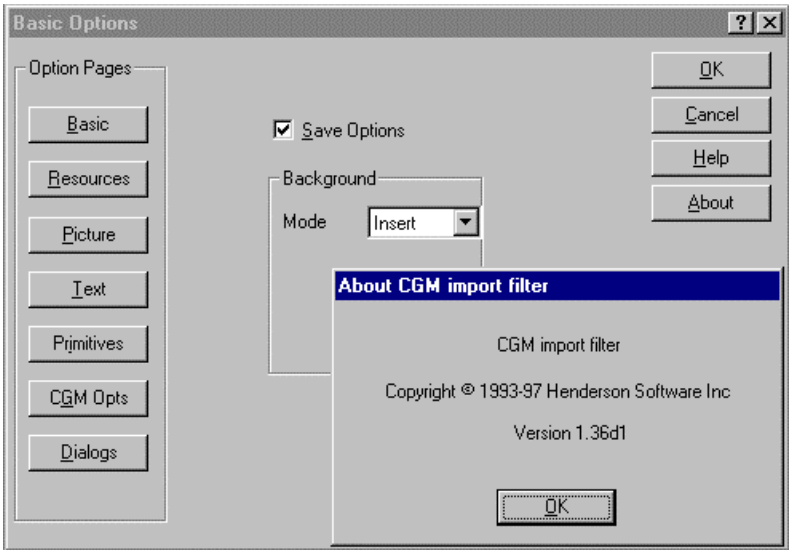
means that you do not have to repeatedly alter this individual settings.

PDF halftoning tab

You can use this tab to manipulate the grey scale values in the PDF file. The functions are the same as those already described in the previous chapter.

CGM (Option)

You can start the CGM settings using the "Configuration - CGM defaults" menu or via the keyboard shortcut "Ctrl + C":



The Help function for the individual CGM format settings can be opened using the HELP button. This calls up detailed help for all the buttons and possible settings as provided by Henderson Software Inc.

Attention: In the "Dialogs" tab, "Option Dialog", the option "Always" must be activated. This setting guarantees that the dialog is shown. Do **not** use the „Never" option, because the dialog will never be shown again respectively it can only be activated again with huge effort.

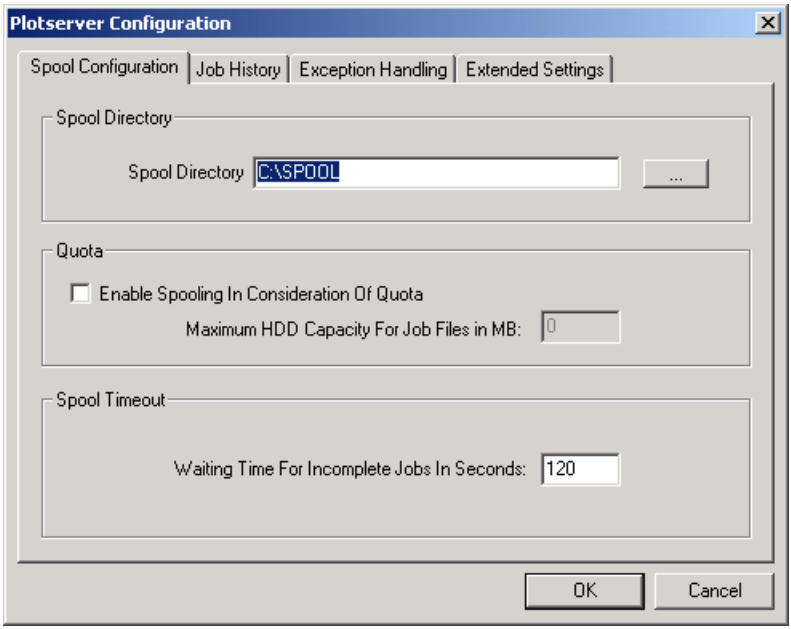
Properties

You can adjust further properties of the program using the "Configuration - Properties" menu. Each of the possible settings is described in their own section in the following.

Note: After you have altered the settings, you can use a test page to check whether the plotter has accepted the settings. To do this, select the menu command "Job – Test Page". You can examine the page produced in Preview window and then print it.

Spool settings

You can use this tab to alter the settings for the spool processes. The tab looks like as follows:



- **Spool folder:** The CFG and SSL subdirectories in which the respective job files can be called up are located in the spool folder. You only have to enter the path of the main folder [drive]:\Spool. The CFG and SSL directories contained in it are automatically read out. The path chosen during installation is given in the field. You can also select another folder, if the spool folder is located in another position. To do this, click on the button next to the field and select another folder from the file selection.

- **Quota:** You can also limit the amount of hard drive memory used by the job files. In this way, you can prevent too much of the hard drive being used for the job files in the spool folder. You must first activate this function by clicking on the check box. Presetting is "0". Enter the maximum hard drive capacity for the job files in the activated field. If the "Quota" value is passed, the spool folder will be locked for further print jobs and it won't be released until having free capacity on the hard disc.

- **Spool Timeout:** To prevent long waiting times for reading in incomplete job files, you can click on the check box so that incomplete jobs read can be edited in the program. You can also enter the waiting time for complete reading of the job files in the field. Enter this time in seconds.

Job History

To ensure that too much hard drive capacity is not used and thereby maintain an adequate performance of the system, older processed jobs have to be deleted occasionally. You can use this tab to set when older jobs should be deleted. To do this, select one of the following criteria:

- **Maximum number of plotted jobs in the job History:** Any old jobs exceeding this number are deleted. Use the arrow key to change the number given or overwrite the number.
- **Maximum job usage of HDD capacity in %:** Enter the percentage size of the hard drive capacity to be used by the jobs. As soon as this hard drive capacity is exceeded, the older jobs are deleted.
- **Delete plotted jobs which are older than (days):** Enter the number of days the jobs shall remain in the job list. Jobs plotted before these days will be deleted.

Exception handling

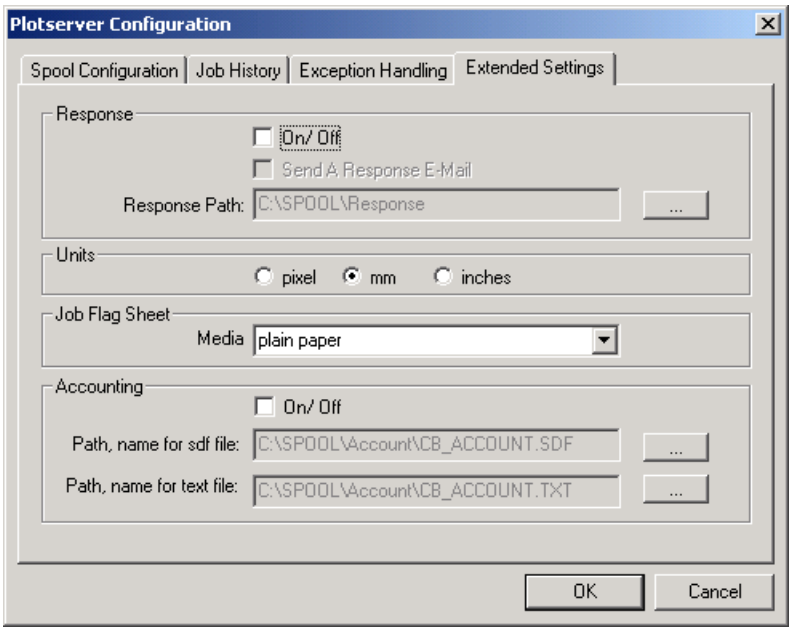
On this tab you can enter what the program should do if a plotter roll is empty or errors occur during the processing of the jobs.

- **On roll empty:** You have two possible options:
  1. You can instruct the plotter to use a roll of the same paper. If it is not available, the plotter should wait for the roll to be changed.
  2. The second option is that the plotter uses a compatible roll, i.e. a roll of the same size of larger. If this roll is not available, the plotter should wait for the roll to be changed.
- **On error:** You can choose between three options:

1. The job is halted in case of an error and if the automatic plot mode is active, this is deactivated.
2. The second option is for the faulty job to be skipped and for the Autoplot mode to continue.
3. If you select the third option („...print next entries of current job.") the faulty entry will be left out and the following entries will be printed. If there are three or more than three faulty entries in this job the whole job will be left out and the next job will be printed.

Extended settings

In this tab you can adjust the response, units and accounting settings.



- **Response:** During the installation of RW-470 PLOTBASE, the "Response" folder is also set up, which is used to display the current status of the jobs sent to the order users. There are two ways of "Logging". Either the current status information is written to its own file or it is added to a

database. The database logs can be read in by other systems or applications too using ODBC if required.

If you have activated the response function, a separate folder is set up in the response folder for each user, the path for which you will have entered here.

Users can be informed of successful completion of their jobs by an in-house or external mail system. Further informations you can get in chapter „Job editor“, page 83.

Note: In PLOTCLIENT WEB you can´t see information about your current print job status, if you don´t activate the response function in this dialogue.

- **Units:** You can set which size unit is to be used for your RW-470 PLOTBASE work: You can choose between “millimeters“, “inches“ and “pixels“. The applicable units are then displayed in the status bar of the main program.
- **Job Flag Sheet**: The Job Flag Sheet contains information about the print job and will be printed together with it as last sheet. Therefore you have to activate the function in the job editor. If you didn´t and a process error appears, a error sheet will be printed instead of the Job Flag Sheet. In this dialogue you can select a media for the Job Flag Sheet and the Error Sheet. If this media isn´t available, the Job Flag Sheet won´t be printed and the processing of the next jobs will be continued. That´s why you should take care that the selected media is available in the plotter. The option „don´t care“ results in a automatic media selection of the plotter.
- **Accounting:** You must activate this setting if you wish to produce bills for the print jobs. Click on the check box, so that a tick appears. An “Account“ folder is now produced automatically, in which an SDF file and a form file are saved.

The paths and names of the SDF and form file are preset. The SDF and TXT files do not have to be saved in the account folder. You can also select other directories. Click on the button next to the respective field. You can then select a folder from the folder tree. The files are automatically produced following activation of the accounting function. They contain the following:

The form file [PB_ACCNT.TXT] can be read into any word processing program. The following details are saved for each individual job:

++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++
Date: 16/08/2001 Time: 09:18:33

Job Number:
Job Name:
Priority:

Original Filename:

User Name:
Customer:
Account:
Distribution:

Media: recycled paper
Used Area:
Plotted Area:

Media: plain paper
Used Area:
Plotted Area:

Media: film
Used Area:
Plotted Area:

Media: transparency

Used Area:
Plotted Area:

Operation Count
Mirror:
Rotate:
Zoom:
Stamp:
Fold:

Notes:
++
++

An SDF file can also be read into and edited in a spreadsheet, for example Microsoft Excel. The file contains the following information:

JobNumber;JobName;EntryName;Customer;CostCenter;Distribution;
UserName;Account;JobPlotter;Priority;RecycledPaperSize;PaperSize;FilmSize;Tra
nsparentSize;UsedTray;RecycledPaperUsedArea;RecycledPaperPlottedArea;Paper
UsedArea;PaperPlottedArea;FilmUsedArea;FilmPlottedArea;TransparentUsedAre
a;TransparentPlottedArea;MirrorCount;RotateCount;ZoomCount;StampCount;Fo
ldCount;FoldProgram;CopyCount;Notes;Time;Date;OriginalFileName;

1001;House21;C:\SPOOL\ssl\House21.085955\\House2.tif;;;;joe;;;Normal;;IS
O A4;;;0;0;0;623;71120;0;0;0;0;0;0;0;0;;0;1;; 09:18:33;16/08/2001;
House2.tif

The fields at the start of the SDF files [PB_ACCNT.SDF] are listed separated by semicolons. All jobs are then listed after this, including the respective field entries, again separated by semicolons. The jobs are read according to the fields. The individual fields have the following meaning:

Field	Explanation
Account	Account to which the job order is charged
CopyCount	Number of job copies printed
CostCenter	Cost center
Customer	Customer for whom the job order is intended
Date	Date of the print off
Distribution	Information, who is to receive the job

EntryName	Name of the entry in the character set
FilmPlottedArea	Film area used in cm^2 / $inch^2$ during the print including possible waste cm^2 / $inch^2$
FilmSize	Film format used for the print
FilmUsedArea	Printed film area in cm^2 / $inch^2$
FoldCount	Number of folds in the printed set of drawings
JobName	Name of the print job
JobNumber	Consecutive number of the print job
JobPlotter	Plotter, used for plotting
MirrorCount	Number of reflections in the printed set of drawings
Notes	Free comments on the job order
OriginalFileName	Original name of the entry file
PaperPlottedArea	Area of paper consumed in cm^2 / $inch^2$ during plotting including possible waste
PaperSize	Paper format used for plot
PaperUsedArea	Printed area of paper in cm^2 / $inch^2$
Priority	Priority of the print job
RecycledPaperPlottedArea	Area of paper consumed in cm^2 / $inch^2$ during plotting including possible waste
RecycledPaperSize	Paper format used for plot
RecycledPaperUsedArea	Printed area of paper in cm^2 / $inch^2$
RotateCount	Number of rotations in the printed set of drawings
StampCount	Number of stamp prints in the printed set of drawings
Time	Time printed
TransparentPlottedArea	Transparency area used in cm^2 / $inch^2$ when plotting including possible waste
TransparentSize	Transparency format used for plot
TransparentUsedArea	Printed transparency area in cm^2 / $inch^2$
UsedTray	Used medium source
UserName	Name of the job producer
ZoomCount	Number of size changes in the printed set of drawings

Job History

All job planned for plotting or that have already been printed are automatically included in the job list:

Job Number	Job Name	Job Owner	Priority	Job State	Date	Plotted
1000	Welcome_		Normal	Ok	17.05.01 10:34:44	17.05.01 10:53:24
1001	auftrag1	mze	Normal	Ok	21.05.01 16:52:46	23.05.01 12:57:49
1002	TestPrint.tif		Normal	Pending	23.05.01 12:50:27	23.05.01 12:50:36

A job order that contains at least one drawing including the corresponding SSL file that contains the detailed plot information is called a job.

Job types

Apart from normal jobs, there are also two special types:

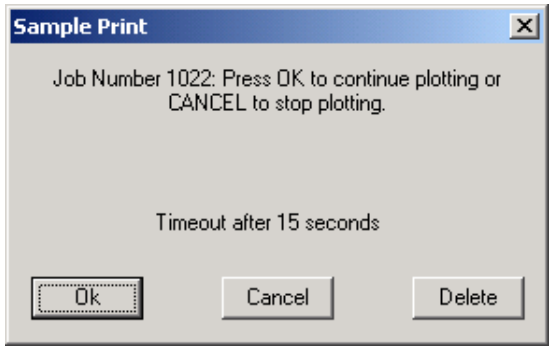
- Locked prints
- Sample prints

Locked Print

A locked print can be used if the drawings it contains are confidential. A security option is activated for the job in a client program. The user assigns a password for this job. Thus, only the user, who knows the password, can view and print this job in RW-470 PLOTBASE. As soon as the job has been printed it is automatically deleted.

Sample print

If a very extensive job with several sets of copies has been produced, it can be useful to print off a test print first, so that you can check the quality of the printouts.
After starting the print job each entry will be printed only once. Then the printing of this job will be stopped automatically so that you can check the sample prints for a while. In the same time a window will be opened where you can find several possibilities for the further action:



There are the following possibilities:

- **no action:** If nobody acts the print job will be canceled and the following print jobs will be processed. You can restart the print job later (see below).
- **„OK"-Button clicked:** You are satisfied with the quality of the sample prints so that the remaining entries can be printed.
- **„Cancel"-Button clicked:** The print job will be canceled. It can be restarted later (see below).
- **„Delete"-Button clicked:** The print job will be deleted.

A canceled print job can be restarted manually (click "Plot" in the context menu of the job list). After that the following window will be opened:

If you select „Yes" the remaining, not printed entries will be printed. If you select "No" a sample print (each entry only once) will be printed again. In this case the window will be opened

which has been described at the top. The possibilities of action have also been described.

Attention: If you want to restart the canceled print job you needn´t to change and save the following print parameters: Sample Print, Collate, Output, Job Copies, Copies. Also you needn´t to exchange, add or delete entries in the entry list. If you still change and save the the parameters the print job will be processed like a new one.

An overview of the job characteristics

A job order has a total seven characteristics, which provide information about the job. In the normal state they are sorted by job numbers. In detail, the order characteristics provide the following information:

- **Job Number**:

This column contains the consecutive job number, which is automatically assigned by the program for each incoming job. The program starts with the number 1,000 with the first program run following installation and numbers through to 10,000,000. It then starts to count from 1,000 again.

This job characteristic cannot be altered.

- **Job Name**:

This is the name of the print job. It is assigned in RW-470 CLIENT.

- **Job Owner**:

This means the user, who e.g. has prepared the job in a CLIENT.

- **Priority**:

The priority is first entered by the user of the job in RW-470 CLIENT and shows which print jobs are to be printed in the job list with priority. The following levels of priority are available:

→ Wait: This priority shows that the print job literally "can wait". The print is not printed until there are no other jobs. This is the lowest priority level.
→ Low: A job with this priority does not wait until all other jobs have been dealt with, but has three other priority levels before it, which are processed first.
→ Normal: If you do not classify jobs with a "high " priority, jobs with "normal" priority are processed quickly.
→ High: This is a high priority level, which the user can assign in a client. It will be set for urgent jobs.
→ Immediately: This is the highest priority level. This priority can only be set in RW-470 SCANTOOL. The current print job will be interrupted until the job with priority "immediately" is done. You can use this priority, if you want to print out a scanned drawing immediately (copy function).

The following chapter describes how you can alter the priority.

- **Job status**:

This job characteristic can be used to obtain information about possible problems or plot errors during the job concerned. The different status conditions are listed below. Behind each status condition you can find an explanation and the color which is shown in the Job list:

OK	The job has been printed. (black)
Pending	The job is ready for printing. (blue)
Plotting	The job is currently being printed. (green)
Locked Print	The job is protected by a password. (light blue)
Sample Print	A test print is to be made first. (light blue)
Problem	There is a problem; the job was not completed. (red)
Cancel	The job order has been canceled. (red)

Further information on the status can be obtained by double clicking on the line of the job concerned with the mouse cursor. The program opens an info window, which contains detailed information about the job status. This function is particularly

useful if the "Problem" status is displayed. In the chapter „Error messages", page 122 you can get further information how to solve problems.

- **Date**:

The date refers to when the job concerned arrives in the plot folder, i.e. when RW-470 PLOTBASE receives knowledge of the job. If several jobs have the same priority, the job with the oldest date is printed first.

Note: A file format is used, which you have set in your operating system.

As soon as you mark a row, the detailed information about the marked job appears in the job editor below it: format, scaling, media type, number of copies, etc.

- **Plotted:** :

This is the date and time of the printout.

Change job characteristics

Only the following job characteristics can be altered in the job list:

- Priority
- Job status

The priority and status job characteristics are altered in a menu reached by clicking with the right-hand mouse button:

1. Mark the job line with the mouse cursor and open a context menu using the right-hand mouse button.

Note: You can also select several print jobs at once. The procedure is the same as for Windows 2000 Explorer. You can thus mark several print jobs and set all of them e.g. to the "Pending" status in one go.

2. Select the item you wish to change from the menu using the left-hand mouse button:

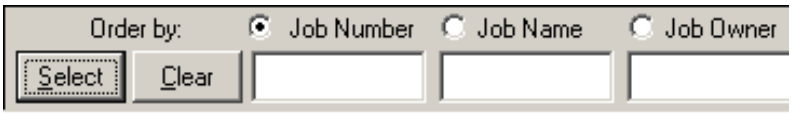
- **Priority**: The user has possibly set one of the following priorities: Wait, low, normal, high and immediately (only in RW-470 SCANTOOL). If they have not assigned any priority, the job is assigned the priority "normal". In this program you can subsequently alter the priority.
  Changing a priority is e.g. useful if you have to alter the job settings. To do this, set the job priority to "wait" and you can then alter the settings in your own time, without having to stop the whole plot process. Furthermore, you can also set jobs with an initially lower priority to a higher priority, to effect a faster printout.

- **Status**: Here you can assign the status "Pending" or "OK". If an error occurs during a job (status display "Problem"), you can first remove the error and then assign the "Pending" status again, to inform the program that the job can now be printed.

  The "OK" status can be assigned of you wish to see the job as completed and no longer want to print it off. You can then change the status to "Pending" to make a printout.

Sort list

The jobs are normally sorted by job number. However, you can also select another of the seven criteria given in the "Order by:" row. To do this, you only have to click on the option field next to a sort criteria.



If you have sorted the job list, RW-470 PLOTBASE draws attention to the fact that the list is not shown according to the standard, i.e. according to consecutive job numbers, by the activated "Order by:" wording to the left of the criteria. If you do

have the list displayed in standard mode, note the following Note:

Note: If the list is not displayed according to consecutive numbers, it can take a while to set up the list when new jobs arrive, because the jobs have to be inserted in the job list according to the correct sort criteria.

Activation of the individual sort criteria is shown as follows:

- **Job number**: The list is displayed in its standard state. The smallest number is displayed first.
- **Job name**: The jobs are shown in their alphabetical order starting with A.
- **User**: The jobs are shown in the alphabetical order of the users' names, starting with A.
- **Priority:** The jobs are displayed with those with the highest priority first. I.e. the job with the priority "high" is in position No. 1.
- **Job status**: When the jobs are sorted by status, they are displayed in the sequence "Problem, OK, Pending, ...etc.". I.e. the jobs, for which there were problems and for which the printout has thus not yet been completed are shown first.
- **Date**:
  The job with the oldest date is in the first position. If jobs have the same date, the job with the earliest time is displayed first.
- **Plotted:**
  The plotted job with the oldest date is in the first position. If jobs have the same date, the job with the earliest time is displayed first.

Carry out selection

RW-470 PLOTBASE also allows you to only display specific jobs in the job list. All seven selection fields of the job list can be used to make a selection: "Job number" through to "Plotted".

Start selection

It is also possible to use several selection fields simultaneously for the query to make a selection.

Only two steps are necessary to make a selection:
1. Enter a value in at least one of the seven selection fields.
2. Click on the "Select" button.

The program immediately lists all jobs, which meet the selection criteria. The activated "Order by:" text is also displayed, which shows that the listen entries are for jobs in which the selection criteria has been limited, so that not all the available jobs are listed.

If several jobs meet the selection criteria, they are listed according to their consecutive number.

You can enter the following presets for making a selection:

- **Job number**: The following five operators can be used for specifying the sort criteria: >, <, =, >= and <=.
  You can thus enter any possible range of job numbers.
  The characters are entered one after the other without a space, e.g.: >=1007.
- **Job name**: Here you can either search for a complete job name or using the * (asterisk) operator. This operator can be used in place of a letter or a sequence of letters: E.g. you can search for all names, which begin with A by entering "A* "or search for a job name with an "o" in the middle by entering "*o*". The names are listed in alphabetic order.
- **User**: When selecting according to users you proceed as for [job] name. You can also use the operator " * ", to replace a

letter or a sequence of letters. The names are listed in a alphabetic order. If you have been used numbers, it is shown in a rising order.

- **Priority**: To make a selection you enter the wording of the priority label: Wait, Low, Normal, High. Using of operators is not possible.
- **Job status**: To make a selection, enter the word for the status label. It is shown in the following order:
  OK, Pending, Problem, Sample Print, Locked Print.

  Jobs, which are ready for printing are shown in blue. Print jobs with the status "Sample Print" or "Locked Print" are shown in light blue. Jobs that have already been completed are black and jobs, in which problems occurred are displayed in red. Print jobs, which are currently being printed appear with a green bar.
- **Date**: The following five operators can be used to specify the query: >, <, =, >= and <=.
  The entry is made consecutive without spaces. Use the date format of your operating system.
- **Plotted:** The instructions under "Date" apply here too.

Cancel selection

To cancel a selection and to view the complete job list, click once on the "Clear" button. The program now lists all the available jobs. The jobs are sorted according to their consecutive number as a standard, where you have not activated another sort criteria.

Job information

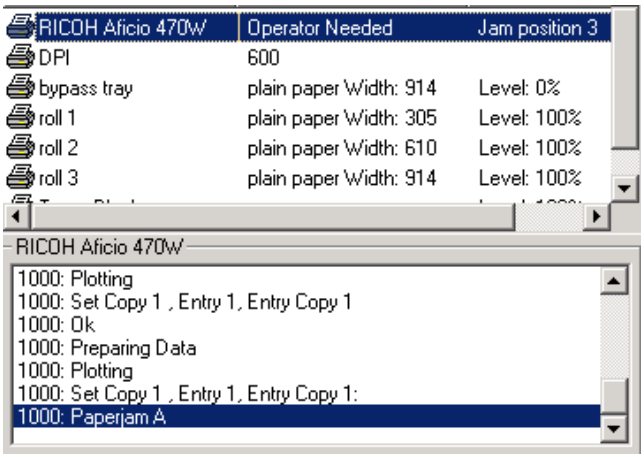
A comfortable way obtaining job information quickly is to use the job info window. You can open the info window in three ways:

- Open the window with a double click of the mouse on the job required.

- Mark the required job and select the menu item “Job - Job Info“.
- Click on the required job with the right-hand mouse button and select the item “Job Info“ from the menu.

Status display

The status display is a pure information window, in which you cannot make any entries and changes.



It contains information about the initialization of the plotter, the plotting sequence itself and any error situations that have occurred. The information for the current job is displayed with the consecutive job number, so that you can quickly allocate the status reports.

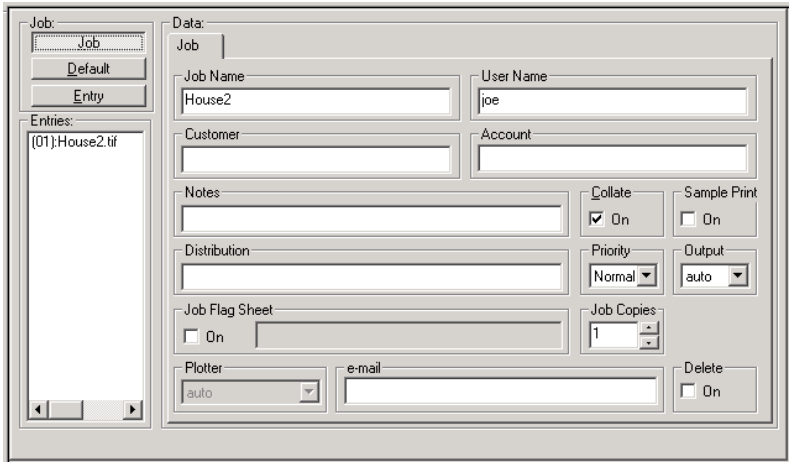
Job editor

You can use job editor to alter the settings for jobs and the entries contained within them. You can also delete jobs or entries.
The individual settings possible range from the format size to the selection of the print medium and the output tray through to details of the drawing header position.
To be able to edit the job settings in the job editor, you must first mark the relevant job in the job list. Only then does the job editor open and the applicable settings are displayed.
The altered settings for jobs or entries can be stored as follows:

- Simply select another job in the job list. The program automatically asks whether you wish to save the previously made settings.
- Select the command "Job – Save Job".

"Job area " and tab

All the entries that the user has made in RW-470 CLIENT automatically appear in the "Job" tab. You can alter these details:



- **Job name:**

This is where the name of the plot job is displayed, which the user has selected. You can enter maximum 40 characters. Please do not use the following characters: " " /n /r

- **User name**:

This field displays the name of the employee who has put the plot job together and sent it for printout. You can enter maximum 40 characters.

- **Customer**:

This is the name of the customer for whom the plot job is being carried out. You can enter maximum 40 characters.

- **Account**:

The account number of the customer is entered here. This can be an account number that is allocated in-house or an in-house invoice recipients. You can enter maximum 40 characters.

- **Notes**:

This field is free for you to make comments. You can enter maximum 60 characters. Please do not use the following characters: " " /n /r

- **Distribution**:

In this field you can enter who is to receive a copy of the job. You can enter maximum 60 characters. Please do not use the following characters: " " /n /r

- **Collate:**

Activate this field if the plot job is to be printed out sorted. Sorted means that the entries of an order are printed out as follows when several copies are required:
E.g. you have the entries A, B and C. Three copies of each are to be produced. With activated sort ("On") the print outs are in the sequence A, B, C - A, B, C - A, B, C. If the printout is not sorted, the complete number of entries are printed out: A, A, A - B, B, B - C, C, C.

- **Priority**:

This shows what priority the job has been given by the user: Waiting, Low, Normal, High. You can alter the priority here or set it to the highest level.

- **Job Copies**:

Here you can enter the number of job copies.

- **Job flag sheet**:

Activate the "ON" field if you want a coversheet to be printed summarizing all the information in, which you have entered in this tab ["Job"]. You can also enter further information in the comments field below it, however with a maximum length of 60 characters. Please do not use the following characters: " " /n /r.

- **Plotter**:

This setting cannot be altered. The RW-470 plotter is preset.

- **E-mail**:

Use of the e-mail function must be switched on in the default values.
Here you can instruct the program to automatically send an e-mail or a message to the user on successful completion of the print job. To send an e-mail, enter the e-mail address of the user.

- **Sample Print**:

If a very extensive job with several sets of copies has been produced, it can be useful to print off a test print first, so that you can check the quality of the printouts. After starting the print job each entry will be printed only once. Then the printing of this job will be stopped automatically so that you can check the sample prints for a while.
You can find further information about the sample print on page 72.

- **Output**:

The list box contains two different options for the output of the plot at the plotter: Front and Rear. If a folder has been activated, it selects the rear output for the folder. Otherwise the plot is issued at the front.

- **Delete**:

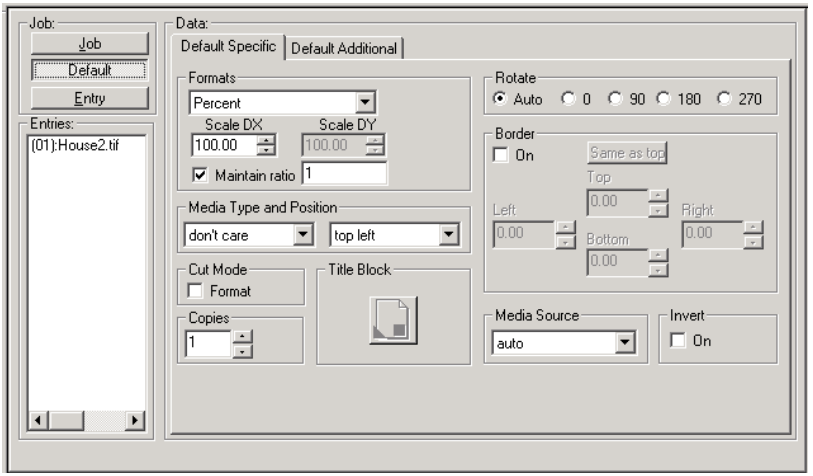
If you activate this option, the job is deleted after printed out.

Default settings area

The following chapters explain which default settings you can enter in the Job Editor. The default settings only apply for new entries to be added. The previous settings apply for older entries.

"Default Specific" tab

On the "Default Specific" tab you can enter the basic setting for all new entries to be added for a job.



Note: All basic settings only apply for newly added entries except for the number of copies.

- **Formats**:

Use this section of the tab to select the drawing format, for the drawing print. Apart from "Original", "Window" and "Percent", you will also find the drawing formats that are the usual standards used: ISO A, ANSI A-E and ARC A-E.

Note: If you use the bypass tray to place paper or an other medium, you can use all formats, also ISO B, C. However you have to place the drawing in the „portrait" position.

In the "Original" format setting the program obtains the format size from the original drawing file. This is the preset.

If you use the "Window" format setting, you can freely adjust the format width and height values, whereby the format size is given by the window value. The freely adjustable settings apply both to the orientation as well as the format size and the format border:

X-Scaling	Format width
Y-Scaling	Format height

If you want to scale the drawing so that it is smaller, set the format to "Percent". In this case, the "Scale" input fields are activated and you can enter any values between 1,0 and 999.0.

If you choose one of the standard ISO, ANSI or ARC formats, you can accept the dimensions or change them as you require: First set the required format. You can now alter the format width ("X-scaling") and the format height ("Y-scaling") values as you wish. If the entered values are not corresponding with the standard formats, the menu entry will change to "window".

The value x in the "Maintain ratio" window represents the side proportions "width = x · height ". If you activate the "Maintain ratio" option, you can only alter the values above it for the width, i.e. the X-scaling. The Y-scaling, or height is then adjusted automatically, i.e. the drawing is scaled proportionally. This can be useful e.g. if you know that the printout of a

drawing is too large for the paper size available. In this case, activate the "Maintain ratio" option and reduce the value slightly, to obtain a proportionally correct printout. The "Maintain ratio" option is already activated as a standard setting.

- **Scaling**:

The X-Scaling input fields only become active, if you have selected "Percent" as the format. You can print out the drawing in a free format of 1.0 % to 999.0 % of the original. The input field for Y-scaling is automatically filled with the value of the X-scaling, if you have activated the "Maintain ratio" option. If you then want to enter the Y-scaling value independently, you must deactivate the "Maintain ratio" option. In this case, you must consider that the drawing will appear distorted.

- **Media type and position**

Use this menu to select which type of media the drawing is to be printed on: Don't care, Plain Paper, Transparency, Film or Recycled Paper. The selection depends on what roll of medium you have fed in the plotter. The "Position" field is used to set the symbolic position on the paper if the image is to be printed on a larger paper format. E.g. if you have a ISO A4 drawing, which is printed in original size on ISO A1, you can fix here where the drawing is to be positioned on the larger sheet.

- **Cut mode**:

If you have **not** activate this option, the plotter trims the drawing immediately after the last data has been printed. This results in optimum paper or medium use, because it produces the smallest amount of waste.
If you want the printout to always be trimmed to a standard format, no matter how much space remains unprinted, activate "Format". The plotter then always trims to the next larger format. This can be a disadvantage if e.g. a drawing is only around 0.5 cm larger than a ISO A5 page is printed on a ISO A4 page and thus almost 50 % of the sheet remains unused. The advantage is that some folder machines require exact formats and you can match them using the "Format" setting.

- **Copies**:

You can enter any number of copies between 1 and 999 to be printed by the job .

- **Rotate**:

Here you can say whether the drawing is to be rotated or not during plotting. Rotations of 0°, 90°, 180° and 270° are possible. When set to "Auto", RW-470 PLOTBASE rotates automatically if this results in less waste paper.

- **Border**:

If you want a white border around the drawing, activate the field "On" and enter the required spacing for all side borders. The current dimensional units are given in the status bar at the bottom of the monitor.

- **Media Source**:

Here you can select the trays in which the rolls with the different Printing materials (plain paper, film, etc.) are located. They can also have varying widths.
If you select the "Auto" setting, the plotter chooses the media source, which matches the format size of the drawing. Should this input tray be empty, the plotter uses the tray (roll) with the next largest format.

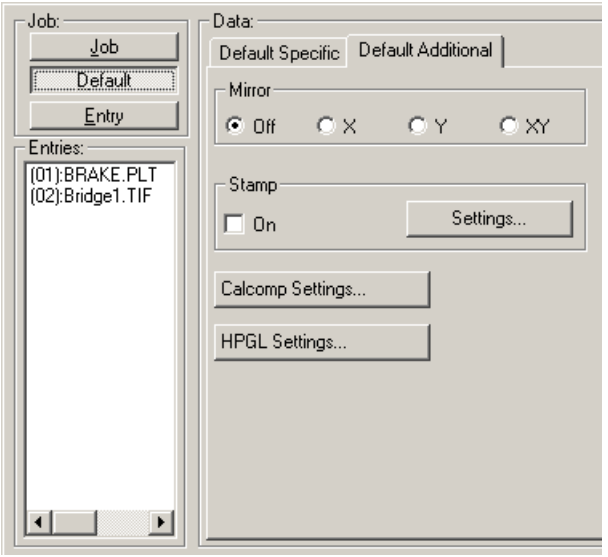
- **Invert:**

If you activate this option, the drawing is inverted, black and white colors are swapped.

"Default Additional" tab

The "Default Additional" tab is used to enter mirroring, stamping and pen details.

The stamp editor and the pen settings (Calcomp, HPGL) are each explained in their own chapter. Please read the separate "Stamp editor" section at the end of this Chapter from Page 96 ff. and the separate chapter on "Pen settings " from Page 103 ff..



- **Mirror**:

In this area you can set whether the drawing is to be mirrored or not during plotting. The individual fields mean the following:

OFF: The drawing is not mirrored during plotting.

X: The drawing is mirrored horizontally.

Y: The drawing is mirrored vertically.

XY: The drawing is mirrored about both axes simultaneously; equates to a 180° rotation.

You usually use these settings if the drawing has been scanned and saved with a mirror inversion. This is especially important if a transparency has been scanned with mirror inversion to increase the contrast.

File Viewer

You can load a drawing in preview window, which is located on the right-hand side next to the job editor, by selecting it in the job editor using the mouse. To do this you must activate the

"File Viewer" option in the "View" menu. You can still change the view by using the tools in the "View" toolbar. These have already been explained on Page 50.

"Entry" area

You can read here, which adjustments can be made for an individual entry.

If you want to alter the settings for the individual entries i.e. alter the drawings, you can do this on the two "Specific" and "Additional" tabs, which can be used to make the same adjustments as described in the "Defaults" tabs.

To begin altering the settings of an entry you must mark it in the left-hand entry list. The "Specific" and "Additional" tabs are then also opened and can be edited. If you want to change back to the job settings or defaults, click once on the "Job" or "Defaults" button above the entry list.

If you want to make entries in the "Specific" tab, read the information given for the "Default Specifics " tab from Page 86.

If you want to alter the settings on the "Additional" tab, read the details for the "Default Additionals" given on Page 89 ff.

You can open a tab for the pen settings on the "Additional" tab. To do this, click on the "Pen settings" button. When an entry or a drawing is marked, the program automatically identifies the format and opens the Calcomp or HPGL settings itself. Please read the separate Sections on the pen settings for Calcomp pens from Page 112 and the HPGL pens from Page 105.

Entry information

Before you can begin with a possible change to the settings, you can view a summary of all the currently loaded settings. Proceed as follows:

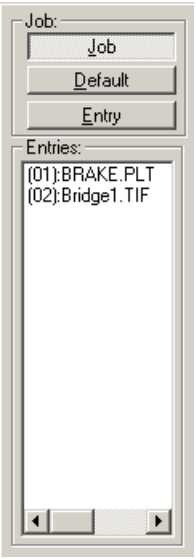
1. Mark the job whose entries you want to look at in the job list above the job.
2. Mark the required drawing in the entry list to the left of the required drawing.

3. Click on the white "i" for information display in the "View" toolbar:

For most file formats you can only see the "Misc" tab. It contains e.g. the information about the file format, the drawing size and used pens. If you open a HPGL- or Calcomp drawing, you can read on this tab information about general settings ("Pen-Source", "Pen-Scale", "Pattern style" etc.) which you can change in the job editor.
The tabs "Drawing" and "Pens" appear only, if you open a HPGL- or a Calcomp drawing file. On the tab "drawing" you get the information about the file format, the drawing size, the used colors etc.. The tab "Pens" informs you of the pen settings. There can also be two symbols which inform you of the setting status: The red exclamation marks point out that the pen is used with several pen sizes and only the last set pen size can be shown. The green check shows, that a pen is used for the current drawing.

Add entries

A job usually already contains all the setting entries to be printed off. However, you may wish to enter another setting value, because changes were made at the last minute or the entry was simply forgotten. You can added this entry to the list of entries, which you can see in the job editor on the left-hand side page:



Newly inserted entries can have the following file formats, which are identified by RW-470 PLOTBASE from the file extension:

- Calcomp .....(*.906, *.907)
- CALS [to MIL-STD-1840B] .....(*.cal)
- CALS [to MIL-STD-28002A] .....(*.cal)
- Intergraph .....(*.cit; *.tg4)
- HP-GL [/2, RTL] ..... (*.plt; *.rtl)
- PCX..... (*.pcx)
- RLC.....(*.rlc)
- T6X .....(*.t6x)
- TIFF ..... (*.tif)
  [Group 3,4; uncompressed; Packbits; striped & tiled]
- Windows / OS2 Bitmaps ..... (*.bmp)
- Windows Meta File.....(*.wmf)

The following are also available as an optional:

- CGM.....(*.cgm)
- PDF, RW-470PS ..... (*.pdf, *.ps)

The following are available with AutoCAD 2000i installed:

- DWG .....(*.dwg)

Note: A more precise definition of the file formats that can be used is given in the appendix.

Apart from the standard options using the "Job editor" menu, you have three other possible ways of adding a new entry. You can either use the button, the context menu using the right-hand mouse button or you can move the drawing into the entry list using "Drag & Drop":

Adding using button

To add an entry with the help of the button, proceed as follows:

1. Mark an entry in the entry list, before or after the place where the new entry is to be inserted.
   If you do mark an entry, new entries are always inserted at the end of the list.

2. Click on the relevant button on the Entry toolbar. If the new entry is to be inserted after the marked entry, click on:

   If the new entry is to be inserted in front of the marked entry, click on:

   The program opens a file selection window.

3. Select the required file, which has one of the above file formats and confirm with "OK". You can now mark several files to insert lots of drawings in one go, as in Windows Explorer.

Add using the right-hand mouse button

To add an entry using the right-hand mouse button, proceed as follows:

1. Mark an entry in the entry list before or after which the new entry is to be inserted.
   If you do mark an entry, new entries are always inserted at the end of the list.
2. Keep the mouse cursor on the entry list and click the right-hand mouse button. The following commands are offered: Delete, Insert, Add.
3. If the new entry is to be inserted in front of the marked entry, select "Insert". If the new entry is to be inserted after it, choose "Add".
   The program opens a file selection window.

4. Select the required file, which has one of the above file formats and confirm with "OK". As in Windows Explorer, you can now mark several files to insert lots of drawings in one go.

Add using Drag & Drop

To add an entry using Drag & Drop, proceed as follows:

1. Open Windows Explorer and arrange the two windows of RW-470 PLOTBASE and Explorer so that thy are positioned next to each other or on top of each other.
2. Mark an entry from the RW-470 PLOTBASE to be inserted after the new entry.
   If you want to insert a new entry in front of an existing entry, mark the entry in the entry list before the existing entry.
   If you do not mark any entry, new entries will always be inserted at the end of the list.
3. Change to the folder in Explorer that contains the file entry that you want to add as the new entry.
4. Click on the required with the left-hand mouse button and holding the mouse button pressed down, drag the file to the RW-470 PLOTBASE entry list. You can also add several drawings in one go as in Explorer, by marking several files.

In this case, by adding a new entry for the job, the basic settings that you prepared for the job concerned on the "Default Specific" tab are correct, c.f. S. 83. If you want to alter these basic settings, mark the new entry, after you have added it, and make the settings on the tab "Specific".

Add entries several times

Sometimes, a customer job order is such that an entry has to be printed several times with different settings: e.g. if an entry is to be plotted once with A0 format on paper and the second time with A1 format on a transparency. To do this, you can also add an entry several times.

Delete entries

If you want to delete an entry from the list, use one of the three following possible methods:

- Mark the entry in the entry list that you want to delete and select the menu item "Job Editor – Delete Entry ".
- Mark the entry to be deleted and click on the following button once:

- Mark the entry to be deleted, click on the right-hand mouse button and choose "Delete" using the left-hand mouse button.

Stamp editor

The stamp settings can be altered on two levels. To configure a stamp for an individual entry, select the "Additional" tab under "Entry". Now click on the "Settings" button under "Stamp". The same button can be find in the "Defaults" area on the "Default Additionals " tab. The settings in the "Defaults" area are basic settings, in which the following must always be noted:

Note: Changes to the basic settings always only apply to new entries that are added. Entries already included in a job retain their settings.

In stamp editor you have two tabs in which you can alter settings. These are the “Settings“ and “Data“ tabs. You can define as many stamps as you like per drawing.

Make stamp

This chapter describes how you can name and save new stamps.
Proceed as follows to configure a new stamp:

1. The first stamp entry is preliminarily named “000“. Click on the following symbol to edit the stamp name:

2. You can now delete the existing name entry and enter your own name for the first stamp.
3. You can now either enter your own settings for the stamps, as described in the following chapters or use an existing stamp configuration. To do the latter, click on the “Open“ button under “Configurations“. Now select a configuration that you have saved previously (read the following chapter “Stamp Configurations“) from the file selection. Now save this configuration for the defaults or the entry by clicking on the button with the same name; i.e. “Save“. This configuration is now saved under the marked stamp name in the “Select Stamp “ window.
4. You can produce as many stamps as you wish for a drawing. If you now also want to configure an additional new stamp, click on the following button:

5. Enter a name and set the desired configurations, as already described under Step 3.

Stamp Configurations

The stamp settings are usually saved for specific entries. This means that these settings only apply for one entry or a limited number of entries. However, you can also save a stamp configuration in its own "Stamp File". It can then be used at any time for producing a new stamp, which you would like to use for other entries.
The stamp files have the file extension [*.stp] and it is advisable that this extension is always retained.
Should you want to start the configuration, you must use the "Open" button. The "Open", "Save [as]" or overwrite old stamp files steps are the same as those used in general file management.

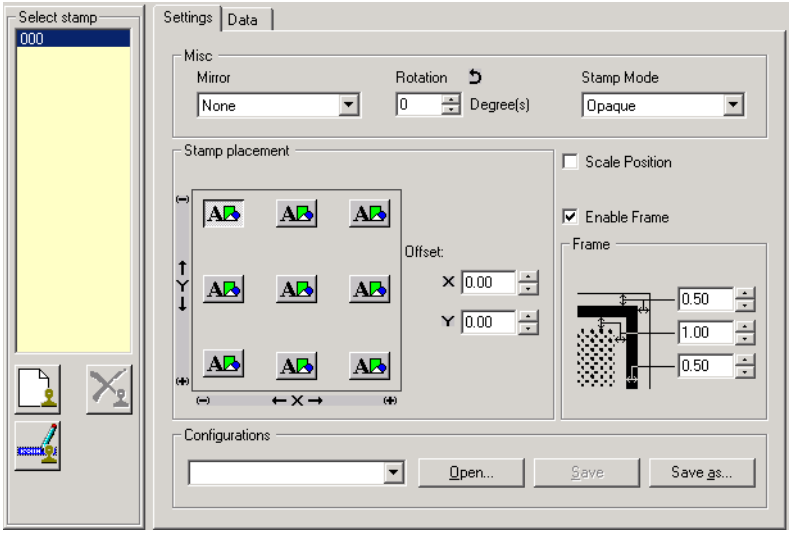
Edit or delete stamp

If you want to make changes to the stamp configurations produced, first click on the correct stamp in the "Select stamp" window and then change the settings. If you now change to another stamp or close the window by clicking on "OK", all the settings are saved.

To delete a stamp, first mark it and then delete it by clicking on the following button:

"Settings" tab

General details, e.g. on mirroring, rotation, stamp type and stamp position are made in the "settings" tab:



- **Mirror**:

The standard orientation of the text is always the reader direction. You can mirror the text here in four ways:

- None: The text is not mirrored and is in the reader direction.
- X-mirror: The text is mirrored horizontally.
- Y-mirror: The text is mirrored vertically.
- XY-mirror: The text is mirrored about both axes simultaneously, which equates to a rotation of 180°.

- **Rotation**:

- The standard orientation of the text is always the reader direction. Here you can alter the text rotation of in 1° steps.

- **Stamp mode**:

The standard setting for the type of stamp is always "Opaque". There are three possible settings:

- Opaque: The stamp overwrites the area of the drawing beneath it.
- Transparent: In the "Transparent" setting the inserted stamp lies "beneath" the existing drawing, which means that parts of the stamp can be overwritten.

- Inverting: It is only the "Inverting" setting that allows both the drawing as well as the stamp to be identified in the plot, because the overlapping areas are shown inverted.

- **Stamp placement**:

This is where you fix the actual position of the stamp on the drawing. The frame equates to the drawing, so that you can choose from the entries for the nine positions from "top", "centered" to "bottom".
In addition, you can shift this fixed position in the field to the right of it by a valid size unit. You set the currently valid size units for RW-470 PLOTBASE in the configuration program and it is displayed at the bottom of the screen in the status bar.

- **Scale position:**

With the "Scale position" you determine whether the stamp always retains its position relative to the edge of the drawing when the size is changed or whether the distance to the edge of the drawing should be scaled too.

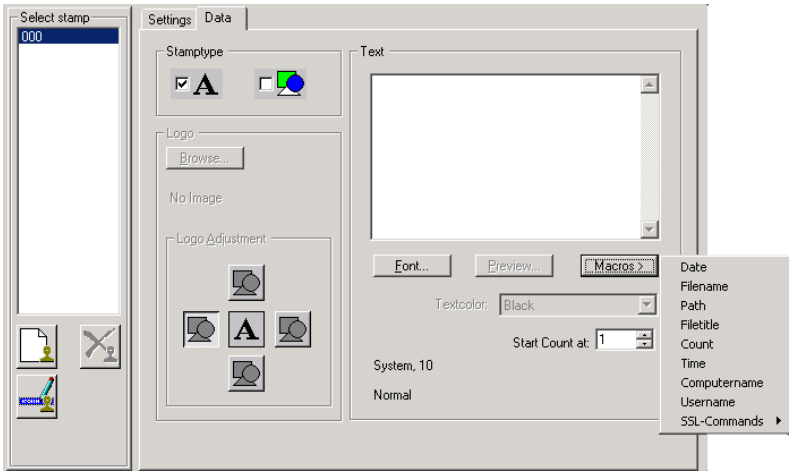
- **Enable Frame**:

Activate the "Enable frame" field if you want a stamp frame to be printed. Three default settings can be set for the stamp frame. Here too, the settings refer to the currently valid size unit, which you can see in the status bar:

- Upper setting - stamp border: With the upper of the three settings you set the distance of the stamp to the edge of the drawing.
- Middle setting – Stamp content: The middle setting gives the distance of the stamp content to the stamp frame.
- Lower setting. The lower setting is used to fix the thickness of the stamp frame.

"Data" tab

On the "Data" tab the user specifies the stamp text and logo. You can also alter the text and text attributes on this tab or even change the logo:



- **Stamp type:**

Before you can begin to enter the settings or change the other fields, you must first select the stamp type, whereby the two symbols are clear: With the "A" you activate the "Text" field, with the colored symbol you let the program know that there is a logo and activate the "Logo orientation" field.

- **Text**:

In this text field you can enter the text to be "Printed" with your stamp. In the text field you can edit in the same way as in common word processing programs.

- **Font**:

The "Font" button opens the usual Windows dialogue for the font attributes. Only the font color setting does not have any effect, because the color is fixed in RW-470 PLOTBASE with black.

- **Preview**:

Use the "Preview" button if you want to view the stamp again before the final print. In this window you can move the directional arrows to move from side to side and enlarge or reduce the view using "+" and "–". The left-hand mouse button can be used to enlarge a selected area.

However, the preview only applies to the stamp itself and the arrangement of its logo and its text. The preview does not show you the stamp's position on your drawing, which you set on the "settings" tab!

- **Macros**:

You can use a macro to enter a text field, which is not filled out until printed. In the preview you can only see the field function. All the file details always refer to the drawing or the entry on which the stamp(s) are printed. The following macros are available:

- Date: With this macro, RW-470 PLOTBASE inserts the date of the plot. In the preview you can just see the current date because the plot date isn´t known.
- File name: This macro inserts the file name of the drawing including the path of the SSL directory.
- Path: This macro gives the path of the server SSL directory where the drawing is saved.
- File title: This macro gives the file name of the drawing how it is saved in the SSL directory of the server PC (e.g. house003.tif).
- Count: This macro is suitable if you have lots of drawings or entries with the same stamp text and you want to differentiate between them by numbering them. If you want to have a consecutive number printed on the plot, you must enter the first number under "Enumeration".
- Time: This macro inserts the time the drawing was stamped.
- Computer name: This macro inserts the server PC name, where RW-470 PLOTBASE is installed.
- User name: The user name gives the user, who logged on the server PC.

In the following section the SSL-Macros are described. The inserted text corresponds to the text fields of the job editor:

- ACCOUNT: This macro inserts the text of the job editor field „Account" in the stamp.
- CREATIONAPPL: This macro gives the name of the application which is used for creating a job (e.g. RW-470 PLOTCLIENT WIN).
- CUSTOMER: This macro inserts the text of the job editor field „Customer" in the stamp.

- DIRECTORY: This macro gives the path of the server SSL directory where the drawing is saved.
- DISTRIBUTION: This macro inserts the text of the job editor field „Distribution“ in the stamp.
- JOBNAME: This macro inserts the text of the job editor field „Job name“ in the stamp.
- NOTES: This macro inserts the text of the job editor field „Notes“ in the stamp.
- ORIGDIRECTORY: This macro gives the path of the directory where the original drawing files are saved.
- ORIGNAME: This macro gives the original name of the drawing file.
- USERNAME: This macro inserts the text of the job editor field „User name“ in the stamp.

- **Text color**:

As black is the only color available in this version of RW-470 PLOTBASE, you cannot alter any settings here.

- **Start count at:**

If you have selected the field function “Count“ as a macro, you must enter the first number here. By using this function you can enumerate each sheet of your print output.

- **Logo:**

Select a graphic using the “Browse“ button, which is to appear in the stamp as a logo. For example, the firm logo. The file formats that can be used are: BMP, Calcomp, CALS, CGM (optional), CIT, EPI (optional), EPS (optional), HPGL, HPGL/2, HPGL-RTL (s/w), PCX, PDF (optional), PS (optional), RLC, TG4, T6X, TIFF G4 and WMF. You can select from four possible positions for the logo relative to the text: above, below, right or left of the text. Select a position by clicking on it.

Pen settings

You can change the pen settings on two levels. On the one hand in the “Default“ area on the “Defaults Additional“ tab and on the other in the “Entry“ area on the “Additional“ tab. The

settings in the "Defaults" area are basic settings, for which the following must always be noted:

Note: Changes to the basic settings always only refer to new entries that have been added. Existing entries already in the job retain their settings.

You can only change pen settings if the entry has either a HPGL/2 or Calcomp file format. There are three tabs each for both file formats, on which you can change the settings. These are the "Pens", "Colors" and "Misc" tabs.

In the "Defaults" settings you must use the separate "Calcomp settings..." and "HPGL settings..." buttons, because a job can contain several drawings with different formats.

If you alter the settings for an entry, RW-470 PLOTBASE immediately identifies the format and automatically opens the respective HPGL or CalComp tabs via the "pen settings..." button.

View the changes

RW-470 PLOTBASE has an additional function, which allows you to look at the changes to the pen widths and some of the pen colors before printing in the File Viewer, if changes have been made to a certain entry. To do this, proceed as follows:

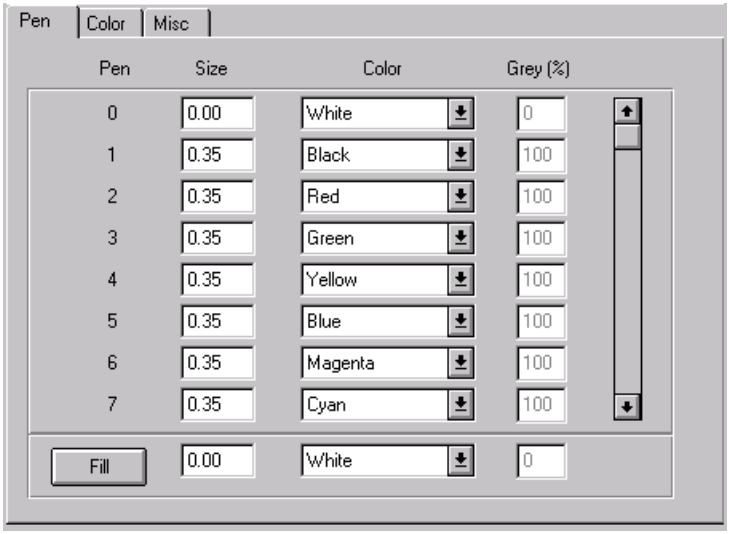
1. Activate the view using the "View - File Viewer" menu item.
2. Mark an entry in the entry list.
3. In the job editor change to the "Additional" tab and open the "Pen Settings...".
4. Make your changes.
5. Now change to the "Misc" tab and activate the pen source as "Custom".
6. Quit the pen settings.
7. Double click on the entry that has just been changed.

The changes are visible in the file view. You may have to enlarge the view if e.g. the pen widths have only slightly changed.

Note: It is possible that if you change colors you will not see any large changes in the File Viewer, if you only change from 50% grey to 60% grey for grey shades say. Clear changes are e.g. visible if you set the color of all pens to "white", but then you don't have to print the drawing either!

HPGL and HPGL/2 - pens

The pen attributes are set in the "pens" tab:



- **Pen size:**

Enter the pen widths directly in the first column under "size" using the keyboard. The maximum values that you can enter depend on the size unit, which you set in the configuration

program. The current valid size unit is given in the status bar at the lower edge of the screen.
If you want to "switch off" a pen, you can enter the pen widths as "0"or set the pen color as "white".

- **Pen color**:

Select the pen color in the second column under "color". Click on the arrow to the right of the color setting and drag the mouse to the desired color. If you want to "switch off" a pen, you can enter the pen color as "white" or the pen widths as "0".
The individual pen colors here only represent a grey scale value: e.g. "yellow" can be represented by 0 % grey, "red" with 50 % grey and blue with 80 % grey, etc. Several pens may also have the same color and thus the same grey scale. This has the advantage that you can simultaneously change the grey scale value for several pens, if you have assigned a different grey scale to a color in the "Colors" tab. You can set which grey scale a color represents on the "Colors" tab.

- **Grey scale**:

The grey scale can only be adjusted if you have chosen "grey" as the color. The changes are also made directly using the keyboard.

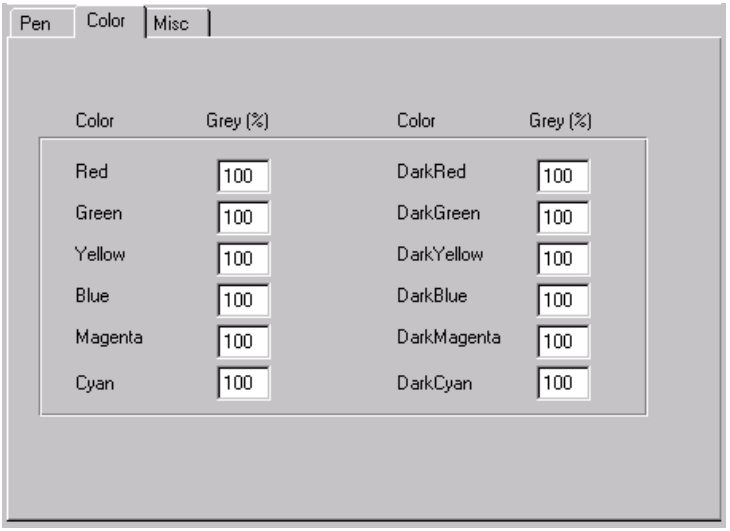
If the plotter is definitely to use the pen attributes from the entry's SSL file, you must activate the "file" field on the "Misc" tab as the pen and/or color source.

- **Fill**:

With "Fill" the program offers you a comfortable way of simultaneously setting the pen attributes for the pens 1 to 255. Pen O must always be set manually. First set the pen widths, the pen color and the grey scale and then click on "Fill" once:

HPGL and HPGL/2 - Colors

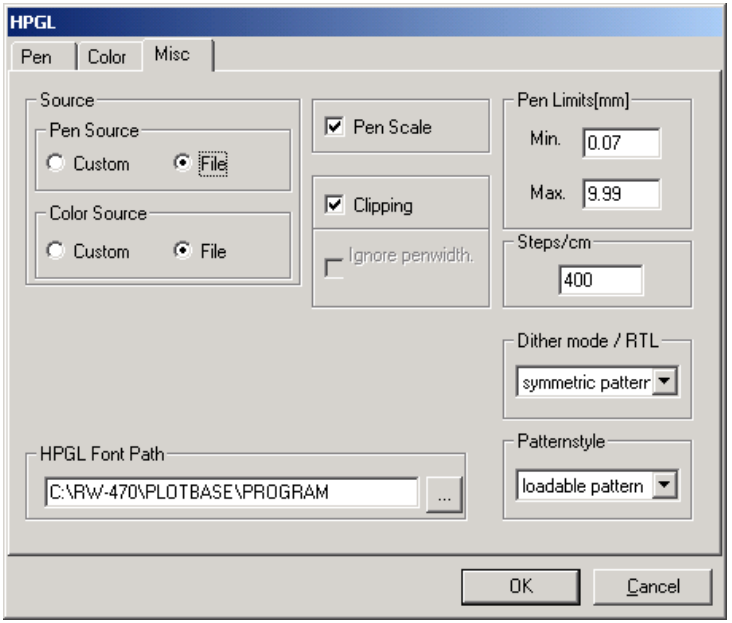
To assign the required grey scale to each of the individual colors, open the "Colors" tab:



In this window you can change the grey scale, which has been assigned to each color. If you do not want to change each color, you can set all pens to "grey" on the "Pen" tab and there you can set the individual grey values for each pen.

You can change the percentage value directly using the keyboard. Click on "OK" to quit the window and your settings are saved. If you do not want to save your changes, quit the window with "Cancel".

HPGL and HPGL/2 - Misc



- **Pen Source:**

If you activate the "File" field you instruct the plotter to use the pen width details when plotting, which are entered in the entry's SSL file and that it should not use the settings in the "Pen" tab. If no pen widths have been defined, the program uses your settings.
If you activate "Custom", your settings are always used.

- **Color Source**:

Is you activate the "File" field, you instruct the plotter to use the pen color information when plotting, which are entered in the entry's SSL file and that the settings on the "Pen" tab are not to be used. If no pen colors are defined, the program uses your settings.
If you activate "Custom", your settings are always used.

- **Pen Scale**:

Activate the check box, if the pen widths are to be scaled with the drawing. To avoid possible loss of information during the printout, you must ensure that you have entered at least one minimum pen width in "Pen Settings" if the drawing is to be reduced in size and at least one maximum pen width if the drawing is to be enlarged.

- **Clipping**:

The trim command removes the white edges on the border of the drawing. Most plotter languages differ from each other in many ways to a greater or lesser extent – including with respect to the section, which, put simply, refers to the paper size.
This fact means that unwished for printing results are obtained, if a drawing is only printed in sections or in the most unfavorable case a white sheet of paper comes out of the plotter.
The "Trim" function" is considered in the context of the widely used reference plotter "HP DesignJet 650 C / C 2859b": If you activate the check box, the drawing is printed in exactly the same way as it was printed on the "HP DesignJet" plotter. However, unwished for printing results can result, if the plotter language of your plotter differs greatly from that of the "HP DesignJet".
If you deactivate the function, RW-470 PLOTBASE looks for the drawing dimensions itself and thus guarantees that the whole drawing is plotted.

- **Ignore pen widths**:

You can only activate this option if you have not activated the "Trim" option.
Activate the option, e.g. in case of a drawing that is exactly ISO A4 size to guarantee that it is printed on an A4 sheet and not on a printout with the next format because the pen widths are too large and the A4 format is slightly exceeded, causing unnecessary wastage.
In all cases where a drawing has exactly the same size as a standard formats, you can ensure that this drawing is printed off on this format and thus avoid unnecessary waste paper.

- **Pen Limits**:

– **Min**:
Using the keyboard, enter the minimum pen widths. The entry here affects all HPGL pens.
As there are plotters in which even at the finest resolution the individual pixels are not reliably reproduced, a minimum pen size is indispensable in these cases.
Should one of your settings not cover the plotter circumstances and no longer guarantee the printout of a drawing object, RW-470 PLOTBASE automatically adjusts the pen widths.

– **Max**:
Using the keyboard, enter the maximum pen widths. The entry affects all HPGL pens.
Analog to the problem with the minimum pen widths, you can set the maximum thickness that the pen draws, e.g. to prevent the drawn objects from overlapping when printed. Setting the maximum pen widths on the other hand is less seldom necessary.
Should one of your settings not cover the plotter circumstances and no longer guarantee the printout of a drawing object, RW-470 PLOTBASE automatically adjusts the pen widths.

- **Steps**:

Some time ago, most plotters had stepper motors, which ran at a varying number of steps per centimeter. In the meantime, the standard is 400 steps per centimeter. The RW-470 PLOTBASE therefore enters 400 as a default value, which does not normally have to be altered. Nevertheless, it is sometimes advisable to ask the customer what step number per centimeter they are used to working with to guarantee plot consistency. Furthermore, it can be necessary to make a change to reduce the DPI, to release more system memory for large drawings:

Attention: If you enter a larger value, you will obtain a smaller drawing: The entry 1 equates to 0.25 %. Example: if you enter 401, the drawing is reduced to 99.75 %.

- **HPGL Font path**:

This entry informs you in which folder the fonts are to be used when printing HPGL files. The path is preselected.

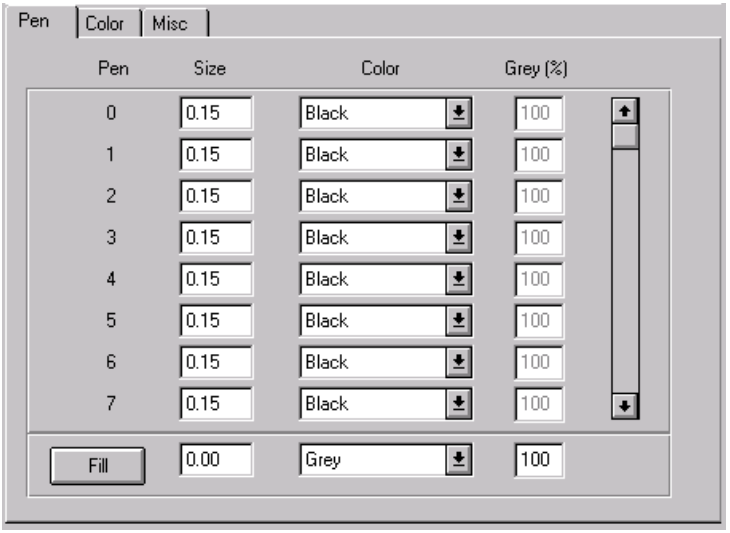
- **Dither mode / RTL:** Here you can select grey value patterns for bitmap graphics. You can choose between the grey value patterns "symmetric pattern" or "diffusion pattern". Test them and see which pattern best suits your graphic. To do this, you have to reload the drawing in the File Viewer after each change.

- **Patternstyle**:

There are four fill patterns that you can use to influence a vector graphic.
"Round" means that a certain colored area is filled with a certain number of filled circles, which are given a certain arrangement on the area, to achieve the intended color saturation.
In "Random" on the other hand a percentage of color saturation is determined for the same colored area, which is then converted into the necessary number of pixel, which are randomly arranged over the area to achieve the intended color saturation.
Which is why that when circle patterns are overlapped, the covered areas can not be as clearly identified as if two random patterns are overlapped. The recommended default setting is therefore "random", because you can achieve the best results.
As the "round" setting has been installed as a standard to date, this option has been retained of you do not see the need to print the same drawings differently in future.
In addition, you can also select the grey value patterns "symmetric pattern" and "loadable pattern". As the name suggests, the „symmetric pattern" produces a symmetrical grey value pattern. If you select the "loadable pattern" as the grey value pattern, a pattern is loaded. Try and see which pattern produces the best printing results.

Calcomp - pens

The pen attributes are set on the "pens" tab:



- **Size:**

The pen widths are entered directly using the keyboard in the first column under "Size". The maximum values that can be entered depend on the size unit, which you set in the configuration program. The current valid size unit is shown in the status bar at the bottom of the monitor.
If you want to "remove" a pen, you can set the pen widths as "0" or as the pen color "white".
The standard values for the pen widths of the 16 Calcomp pens are given in the appendix (Chapter "CalComp commands and pens").

- **Color**:

Select the pen color from the second column under "color". Open the pull down menu and select the required color. If you want to "remove" a pen, you can set the pen color as "white" or the pen widths as "0". You can set the grey shade that a color represents on the "Colors" tab.

- **Grey**:

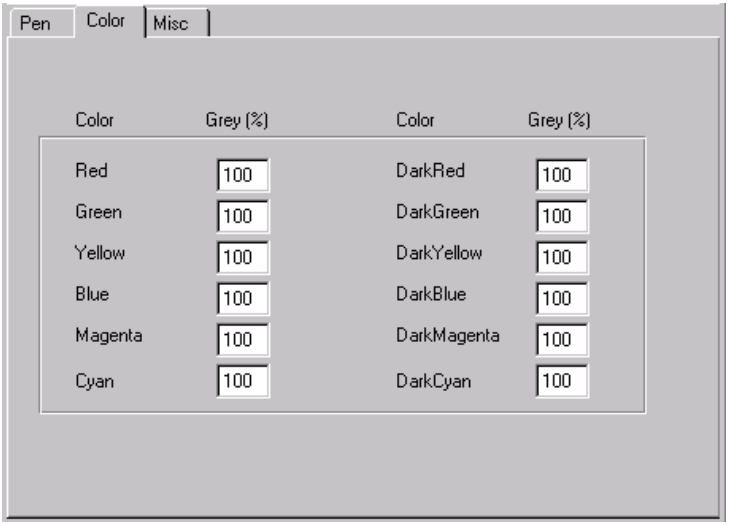
The grey scale can only be adjusted if you have selected "grey" as the color. Here too the changes are made directly using the keyboard.

- **Fill**:

The "Fill" option allows you to set the pen attributes for all 16 pens simultaneously. To do this, first set the pen widths, the pen color and the grey scale and then click on "Fill" once:

Calcomp - Colors

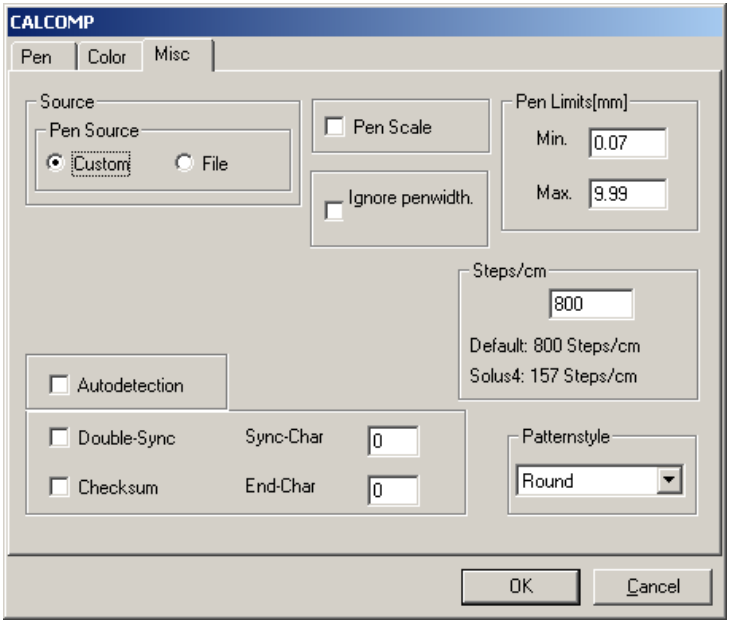
To assign the required grey scale to each individual color, open the "Colors" tab:



The change to the percentage figure is made directly using the keyboard. Quit the window with "OK" and your changes will be saved. If you do not wish to save your changes, quit the window with "Cancel".

In this window you can change the grey scale, which has been assigned to each color. If you do not want to change each color, you can tab set all pens to "grey" on the "Pen" tab and then set the individual grey values for each pen.

Calcomp - Misc



- **Pen Source:**

If you activate the „File" field, you instruct the plotter to use the pen width information in the entry's SSL file when plotting and not the settings from the "Pen" tab. If no pen widths are defined, the program uses your settings.
If you activate "Custom" your settings are always used.

- **Pen Scale**:

Activate this field if the pen widths are to be scaled at the same time as a drawing is scaled. To avoid the possible loss of information when printed ensure that have set at least one minimum pen width if the drawing is to be reduced in size and at least one maximum pen width, if the drawing is to be enlarged by scaling.

- **Ignore pen widths**:

Activate this option, e.g. if a drawing is exactly the same size as a ISO A4 sheet, to guarantee that it is plotted on an A4 sheet

and not on the next larger format because the pen widths were too large causing the drawing to slightly exceed the A4 format, thereby causing unnecessary waste paper.
In this way, you can ensure that a drawing that has exactly the same size as a standard format is printed on this size paper thereby avoiding an unnecessary waste of paper.

- **Pen Limits**:

– **Min**:

Enter the minimum pen widths using the keyboard. The information entered here affects all CalComp pens.
As there are plotters in which even at the finest resolution the individual pixels are not reliably reproduced, a minimum pen size is indispensable in these cases. Should one of your settings not cover the plotter circumstances and no longer guarantee the printout of a drawing object, RW-470 PLOTBASE automatically adjusts the pen widths.

– **Max**:

Using the keyboard, enter the maximum pen widths. The entry affects all CalComp pens.
Analog to the problem with the minimum pen widths, you can set the maximum thickness that the pen draws, e.g. to prevent the drawn objects from overlapping when printed. Setting the maximum pen widths on the other hand is less seldom necessary. Should one of your settings not cover the plotter circumstances and no longer guarantee the printout of a drawing object, RW-470 PLOTBASE automatically adjusts the pen widths.

- **Step sizes**:

Some time ago, most plotters had stepper motors, which ran at a varying number of steps per centimeter. In the meantime, the standard is 800 steps per centimeter. The RW-470 PLOTBASE therefore enters 800 as a default value, which does not normally have to be altered. Nevertheless, it is sometimes advisable to ask the customer what step number per centimeter they are used to working with to guarantee plot consistency. Furthermore, it can be necessary to make a change to reduce the DPI, to release more system memory for large drawings:

Attention: If you enter a larger value, you will obtain a smaller drawing: The entry 1 equates to 0.125 %. Example: if you enter 801, the drawing is reduced to 99.875 %.

- **Pattern style**:

Three types of patterns are defined for Calcomp drawings, in which the "Pattern" command is used.
"Round" means that a certain colored area is filled with a certain number of filled circles, which are given a certain arrangement on the area, to achieve an intended color saturation.
In "Random" on the other hand a percentage of color saturation is determined for the same colored area, which is then converted into the necessary number of pixels, which are randomly arranged over the area to achieve the intended color saturation.
Which is why that when circle patterns are overlapped, the covered areas can not be as clearly identified as if two random patterns are overlapped. The recommended default setting is therefore "random", because you can achieve the best results.
As the "round" setting has been installed as a standard to date, this option has been retained of you do not see the need to print the same drawings differently in future.
Finally, you can also select the grey value pattern "symmetric pattern". As the name suggests, the "symmetric pattern" produces a symmetrical grey value pattern. Try and see which pattern produces the best printing results for your graphic. Try and see which pattern produces the best printing results.

- **Synchronization**

Synchronization is used to check the completeness of the Calcomp—files, which have been sent from the application program. Four pieces of information are used for the synchronization settings:

- Sync char
- End char

- Double Sync
- check sum

You can either let RW-470 PLOTBASE determine the values or you can enter the necessary settings yourself. If the program is to determine the values, activate "Autodetection".

We recommend that you do not alter the standard values if you want to enter the settings yourself. Should you nevertheless want to make a change or to find out more on the topic, compare the settings with those in your CAD system or read the following section in the "CalComp Inc." manual:

"CALCOMP - ONLINE REFERENCE MANUAL" in the section "Data Message Format".

The standard settings are:

Sync character:	2	→ [setting from 0 to 127 possible]
End character:	0	→ [setting from 0 to 31 possible]
Double Sync:	OFF	
Test sum:	OFF	

The following two examples serve as possible comparisons:

- AutoCAD13, 14 or 2000:

Sync character:	22
End character:	13
Double Sync:	ON
Test sum:	ON

- FordCAD:

Sync character:	2
End character:	3
Double Sync:	OFF
Test sum:	ON

Print job

The following chapters explain how you can manually or automatically plot an order. It also explains how jobs can be interrupted or deleted.

Set plot mode

There are two types of program sequence to choose from for the plot mode. Either you let the program run in "Autoplot" mode or you yourself ensure that the jobs are sent to the Plotter. However only one of the two operating modes is possible:

Note: As long as you run RW-470 PLOTBASE in "Autoplot" mode, you cannot send individual jobs to the printer manually using the "Job - Plot" menu item. Bypass tray (manual) is only possible of the "Autoplot" mode is not active.

Automatic plot mode

The "Autoplot" mode is either set using the "Plotter" menu, by clicking on the "Autoplot" button in the RW-470 PLOTBASE signal lights or using "CTRL + A". In this mode, RW-470 PLOTBASE automatically prints off all the print jobs. The sequence in which the jobs are processed depends on the priority of the jobs. If the jobs have the same priority, the job number is taken into consideration.
Activated Autoplot mode is quickly identified because the "Autoplot" button of the RW-470 PLOTBASE signal lights is not crossed through and the plotter prints independently if jobs are in the job list.

It is also possible to alter the job characteristics of jobs at any time, even during the "Autoplot" mode. We recommend two procedures to do this:

1. If you only want to alter the settings for individual jobs, it is advisable to set their priorities to "Wait" first. All other jobs continue to be processed and you can make your changes in your own time. As soon as you are ready, simply set the priority back. Read how to do this in Chapter "Change job characteristics" on Page 76.
2. If lots of jobs need changing at once, you can switch off the "Autoplot" mode and change the priority of all the jobs to be altered to the "Wait" priority and then reset the "Autoplot" mode. You now have time to alter the waiting jobs while the other jobs are processed by RW-470 PLOTBASE.

Manual plot mode

If you do not want RW-470 PLOTBASE to independently process the jobs, deactivate the Autoplot mode using the "Plotter - Auto Plot" menu or by clicking on the "Autoplot" button of the RW-470 PLOTBASE signal lights. The "Autoplot" button now has a line through it.
If you want to send a job to the plotter in this mode, first mark the job in the job list. You can start the print function by

- Selecting the menu command "Job – Plot",
- Click on the relevant button or
- Open the context menu using the right-hand mouse button and select "Plot".

Interrupt plotting

If a fault in the plotter or an error in the plot sequence make it necessary to stop the plotter, you have three possible options:

- **Press the pause key:** As soon as you click on the button with the Pause symbol shown in the following, plotting is immediately interrupted. The activated symbol is blue.

The current job order has not been completed. You can now make any necessary changes to the job and then continue plotting by clicking on the following button.

- **Quit Autoplot mode:** If the Autoplot mode was activated, you can deactivate it by clicking on the "Auto" button. The job order already started is finished. The print function then stops. You can now make changes to the jobs.
- **Cancel creation:** If an individual job only is to be terminated, select the command "Job – Cancel job".

Delete job

Use one of the following four methods if you want to delete a job from the list:

- Mark the job in the job list that you want to delete and select the menu item "Job - Delete".
- Mark the job in the job list that you want to delete and click on the following button:

- Mark the job to be deleted with the mouse, click on the right-hand mouse button and select "Delete".
- The fourth possible method is to leave all the jobs in the job list and to update the job list automatically using your History setting in the configuration program. There you can set the maximum number of jobs to be included in the list. The oldest jobs are deleted.

Reload plotter

This command is used if the plotter has failed to initialize. This can happen e.g. if you have already started RW-470 PLOTBASE, but forgot to switch on the plotter. In such a case let

RW-470 PLOTBASE run, switch on the plotter and once the plotter has warmed up go to the "Plotter" menu and select "Reload Plotter". This reloads the plotter driver. Renewed plotter loading can also be necessary in cases, in which the plotter has had to be switched off due to a malfunction.

Error messages

As soon as the status „Problem" is shown in the job list, you can read a error message in the status window or by making a double click on the job entry. In this chapter reasons for errors and solutions to solve problems are appointed.
In the status windows also errors are appointed, which arise because of a wrong handling or malfunction of the plotter. To remedy the malfunction of the plotter, please use the Copy Reference Manual.
If you can't remedy an error, although you have taken the suggested solution into account, ask your administrator.

- **DLL-Checker identifies faulty DLL files:**
  When starting the operating system all DLL files which are necessary for the RW-470 programs are checked by the so called DLL-Checker. If the DLL-files are faulty and a corresponding error message is shown, you have the possibility to reinstall the DLLs. Start the setup with „Start – Programs - RW-470 – Tools – Common DLLs Setup" und follow the installation instructions.
- **Kernel out of memory**
  The main memory is too small. Shut down all programs, which are opened additionally and which are not used at the moment. If the error message appears furthermore, it is useful, to increase main memory of your PC.
- **Driver is too old**
  You installed an older driver version for the Controller Board. Install the current version.
- **Kernel timeout**

Communication between the program and the plotter is disturbed. This error can have many reasons: machine has been switched off in the meantime, while printing a error appears and so on. Remove the error, which caused the problem. Thereafter you can start the printing again.

- **Plot Error**
  Pay attention to further error messages and advices which are shown in the status window. As far as they are not shown, try to send the job to the plotter again. Otherwise ask your dealer or a support technician.

- **Plotter could not reserved**
  RW-470 PLOTBASE can't use the plotter. It could be, that the interrupt button on the plotter display has been activated. Further reasons could be, that the plotter is just making use of it's own printer functions (copy function, test plot etc.).

- **Scaling data is invalid**
  It's a defective image file or a internal program error. Check the image file in the file viewer or in a image editor.

- **The image doesn't fit on the selected medium in any tray**
  The image does not fit on the plotter roll, which has the selected medium. Install a bigger roll, do it without creating borders or scale the image to a smaller size.

- **Any existing media produces too much paperloss.Load a medium that fit.**
  The automatic roll selecting can't find a roll, on which the unused part of the sheet is smaller than the permissible limit. Install a fitting roll or set a bigger border for the image.

- **You have selected a tray that doesn't contain the selected medium.**
  Change the medium or the tray.

- **There is no tray with the selected medium.**
  Choose an other medium or install a roll with the medium.

- **Error: JobFlagsheet image/description file: ... does not exist**

Installation is defective or it has been damaged. Install the program again.

- **Due to errors the set resulted in no prints**
  Check the job editor, if all entries are present and the images are shown correctly in the file viewer. If errors are appearing, you have to substitute the defective images. If the images seem to be perfect, ask your dealer or a support technician.
- **Due to errors the plot control thread shut down:...**
  An internal program error or processing error appears. Reload your plotter („Plotter – Reload Plotter"). Thereafter the last step will be repeated automatically.
- **Due to errors the set splitting thread shut down:...**
  See above.
- **Due to errors the plotter work thread shut down:...**
  See above.
- **An error occured during set splitting:...**
  During set splitting a error appears. Maybe files are missed or defective. Create a new set and check in the editor, if the image are shown perfectly.
- **Set splitting was stopped due to a heavy error:...**
  See above.
- **A set was plotted out incomplete after a break of set splitting:...**
  Because of a error during the set splitting the job can't be printed through and through. Maybe files are missed or defective. Create a new set and check in the editor, if the image are shown perfectly.
- **At least one sheet of the set was canceled:...**
  Because you have canceled a job one or more entries have not been printed. Repeat if you want the printing.
- **At least one sheet of the set failed:...**
  Printing was made, but one or more entries didn't have been printed. The reasons can be manifold: files are defective, processing error of the plotter, wrong or missing plotter roll,

printing settings can't be used and so on. Check at first if the images are shown perfectly. In this case, check, if the selected printing settings in the job editor match to the settings of the plotter. Example: The image is bigger than the selected plotter roll.

- **Queue default SSL-File not found:...**
  The Default-SSL file can't be found. Maybe it has been deleted in the spool folder. Copy the Default-SSL in the folder \RW-470\Plotbase and insert it in the folder where it has been missed.

- **Plausibility Error:...**
  This error message, which is completed by further informations in the status window, means, that the selected printing settings in the job editor don't match to the settings of the plotter. Maybe you have selected a medium which isn't installed in the plotter or the image is bigger than the width of the plotter roll. Change either the settings in the job editor, the image itself or the settings of the plotter.

- **Sheet ID: ... is not part of this SSL. Cancel this job...**
  A job has been canceled. Through there not every entry has been printed. You tried printing this job again. Thereby you have been asked, if you want to print the whole job again or just the missing entries. After you had chosen the latter option this error message appeared. The reason is, that the entries have been deleted. Try to print the complete job again.

- **Error while opening the Ssl file ... - while processingcode at:...**
  Maybe a file is missing or it is defective. Try to open all images in the file viewer. If one of the entries fails, you can delete the defective entry and print the job again. If the images are shown in the file viewer in spite of the error message, it will be an internal program error. Ask your dealer or a support technician.

- **Error while reading file: ...**
  See above.

- **Set2Single terminates job ... , because there's no entry to generate.**
  There are no entries in the job. You have to create a new job.
- **Module Set2Single could not find the file: ...**
  A file is not available. A certain, preselected time of waiting is observed until this error message appears. You have to create a new job.
- **Module Set2Single could not find the file: ... and thus terminated job ...**
  The job was canceled after a missing file wasn't found.
- **Module Set2Single terminates job ... , because the processing of file ... causes an unhandled exception.**
  The job was canceled, because of a defective file or missing license for a file format.

Part III - RW-470 SCANTOOL

Introduction

RW-470 SCANTOOL is an important user program of the RW-470 system. This application enables you to comfortably and easily use the scanner. The scanned documents can be edited in a drawing editor, before they are collated in print jobs and the passed on the RW-470 PLOTBASE for plotting.

Attention: The scan function is optional. You can get this option from your dealer. Other functions of RW-470 SCANTOOL are always usable.

Operating modes

The functions and tools available within this program enable different applications. The following three typical procedures are explained as examples:

- **Scan – edit drawing– save:** A drawing is first scanned in (see Chapter "Scan"). The scanned file is automatically loaded into the File Viewer and can now be edited (see Chapter "Edit drawings ") using the editor, which can be used for example to rotate or mirror the image. Components of the image can also be deleted or text added. The file is then saved in any folder. Alternatively an existing file could be loaded instead of a scanned file, it is then edited with the editor and then saved. In this procedure, the RW-470 SCANTOOL was primarily used to edit a drawing.
- **Scan – edit drawing– prepare job order:** A drawing is first scanned again and then edited. The first two steps are exactly as described in the previous approach. Instead of only saving the edited drawing, you can also prepare a job order (see also Chap. "Prepare job order "). But first you set several default values for the printout. You can e.g. determine the number of copies, the print medium, and the

format size. You then send the job order to the RW-470 PLOTBASE. There the job order is read fully automatically and passed on to the plotter. Finally, the drawing is printed on the plotter.

A special default setting can be used to scan in several drawings consecutively. It is no longer to activate the scanner each time. After being scanned, the drawings are automatically assigned to a job order. In this case however it is not possible to edit the drawings first.

- **Load files– edit drawings – prepare job order:** As already described, instead of the scanned drawings, you can also load files (Chap. "File management") and edit them using the editor (Chap. "Drawing editor"). Instead of only saving the files, you can now prepare a job order for one or several drawings. To do this, select the files that you want to assign to a job order.

Start and quit program

Although you had to install RW-470 PLOTBASE and RW-470 SCANTOOL as a user with administrator rights, you only need standard user rights to use the program.

- **Start program**

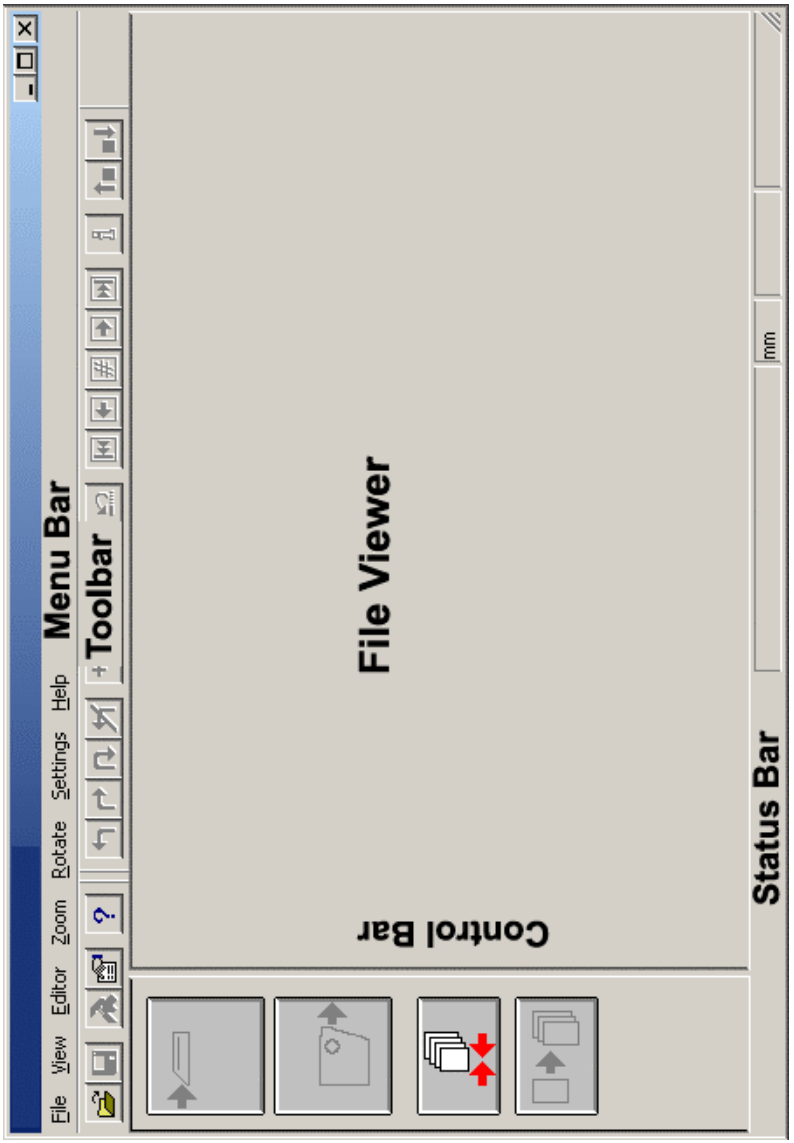
The installation program installs its own program group towards the end of the installation. Start RW-470 SCANTOOL using the Windows Start menu.
After the program has been started, the program window, the job editor and the scanner settings are opened.

- **Quit program**

Quit RW-470 SCANTOOL either using the "File - Exit" menu or using the usual Windows keyboard shortcut "ALT+F4".

The following part of the manual describes the program functions.

Program window



Default values

Before you begin working, you should set the general default values, which remain valid until you explicitly alter them again. The scanners settings are described in the chapter “Scan“ and the settings for the job order in the chapter “Prepare job order “.

Options

You can open the options window via the “Settings - Options“ menu or using the following button from the toolbar:

You will find the two following tabs:

- Format
- General

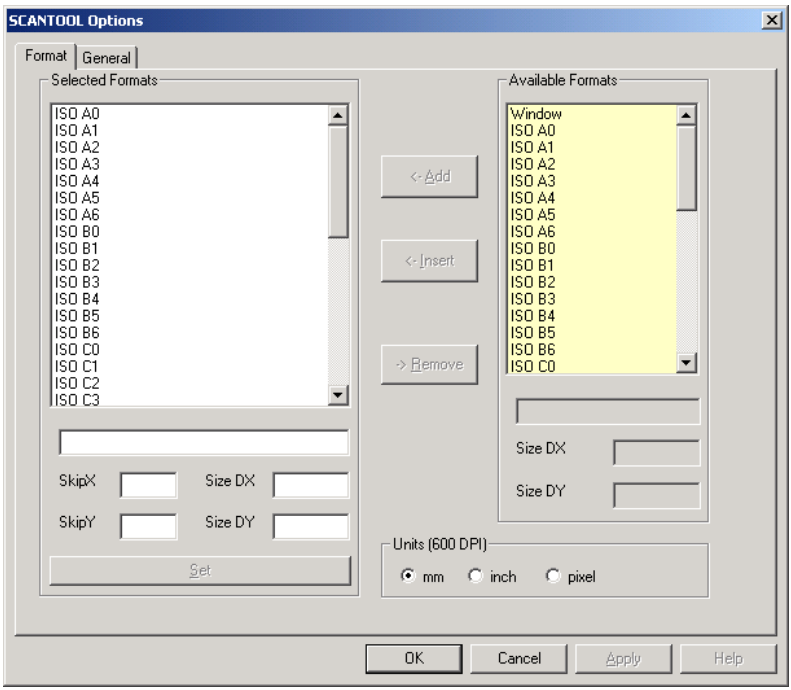
“Format“ tab

Select the drawing formats you require for your work from the “Format“ tab and alter them according to your requirements. All formats that you set here appear in the selection menu of the scanner dialogs. You also determine the valid size unit.

Note: After starting the program for a second time, RW-470 SCANTOOL automatically accepts the formats that you have set in the program RW-470 PLOTBASE. Nevertheless, you can set your own formats or even exclude individual formats for the scanner.

To manually add or remove the individual formats, proceed as follows: Mark the required format in the right-hand list of “Available formats“ and click on the “Add” button. The format is now included in the list of “Selected formats“. The required

formats can also be transferred directly to the list with a double-click of the mouse:

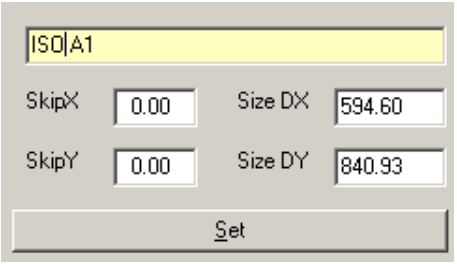


Note: The „Add“ button always adds the selected formats at the end of the list. On the other hand, if you use “Insert“ a format is inserted in the list in front of the format currently marked.

Proceed as above for each format you want to use. It is also possible to include a format several times, if you require different drawings with different sizes and border settings.

With “Remove“, you delete a format from the “Selected formats“ list.

As soon as a format has been included in the "Selected formats" list you can edit it. To do this, mark the relevant format in the list. You can now alter the name, format size and border settings.

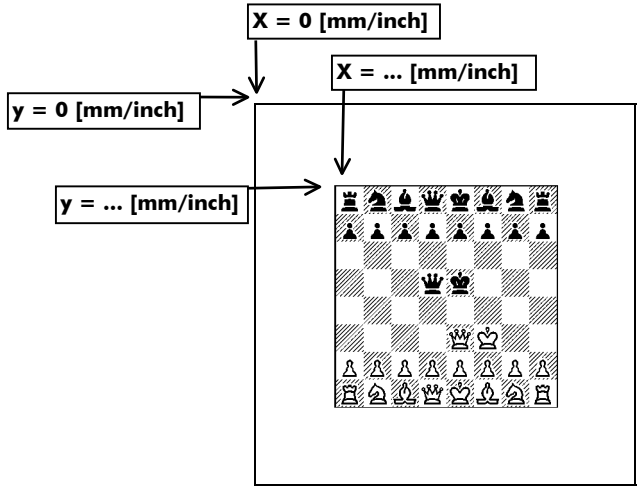


- **Change name**:

You can change names in the upper field.

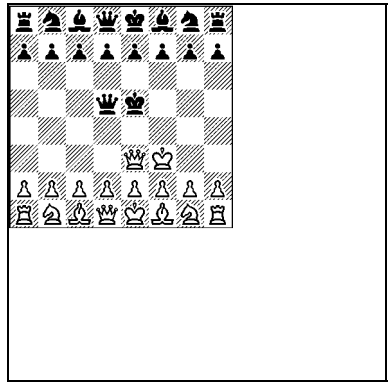
- **Set format borders (x and y values)**:

The format border settings (x and y values) are explained using the following example:



If the drawing is not to be scanned at the top left-hand point (x =0, y =0) of the sheet, because e.g. it has a relatively large border you can stipulate the top left-hand point at which the

scanning process begins using the x and y values. The top and left-hand edge of the original is ignored by the scan:



To delete the undesired borders use the drawing editor (see Page 177). There you can find tools for cutting the borders.

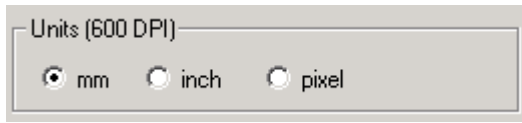
Attention: Bear in mind that these are presettings, which are saved for a format setting. If you want to change an image only once, set the format border in the „Scan Settings" tab (see page 154).

- **Change format size:**

You can change the format size under "DX" and "DY". "DX" means the page width and "DY" the page height.

- **Fix size unit**:

The valid size unit for all the work carried out in RW-470 SCANTOOL is set in the bottom right-hand of the "Format" tab. You can choose from the size units "mm", "inch" and "pixel":

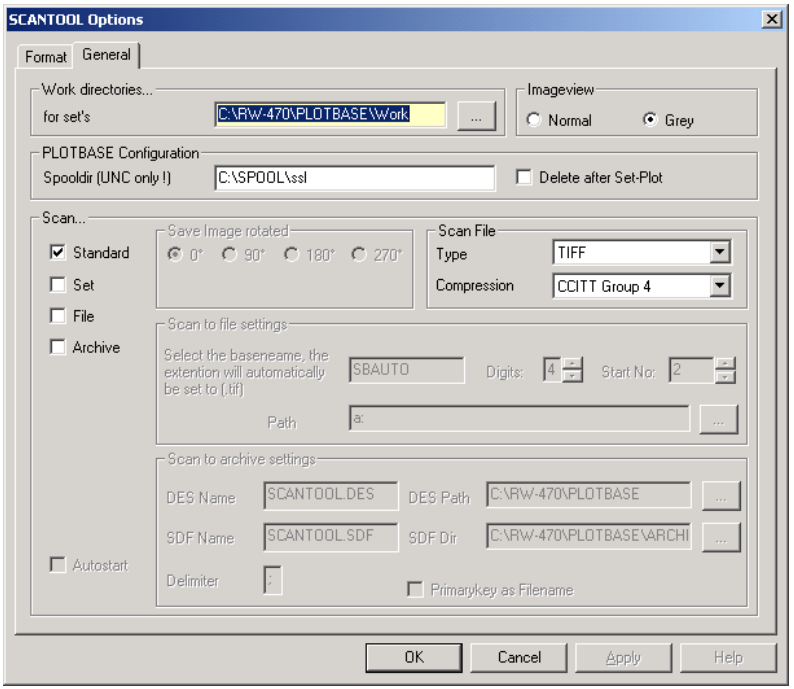


Note: The changed size unit does not become valid, when it appears in the status bar at the bottom edge of the screen, until you have quit the window with “OK“.

“[600 DPI]“ shows that 600 DPI is the standard value in RW-470 SCANTOOL and that all conversions refer to 600 DPI when the size unit is changed.

“General“ tab

The “General“ tab is used to enter various plot and scan settings, which apply in general for all the work carried out with the program e.g. setting the file and access paths:



Working folder for sets: The path of the "Work" working folder is automatically entered after installation. This is where the print jobs are stored with drawing files and SSL files, which have been produced in RW-470 SCANTOOL. A folder with has the same name as the print job is set up for each job order. You can change the folder path by clicking on the button to the right of the input fields. The program opens a window in which you can adjust the required folder.

Plotbase configuration: The spool path is also entered automatically after installation. The print jobs that contain the information for the printout of the drawing files are stored in this folder with all the drawing files. They are produced by the program after a print job has been completed. These SSL files are read out by RW-470 PLOTBASE and further processed. You can change the folder path by clicking on the button to the right of the input fields. The program opens a window in which you can select the required folder.
If you activate "Delete after Set-Plot", the SSL files produced in the folder by this program are deleted after printing.

Image view
These settings concern the display of a drawing on the screen. You can choose from the options "Normal" and "grey":

- Normal

In this selection the screen display looses quality when reduced in size. The advantage is that you can scale the drawing more quickly.

- Grey

In this option, RW-470 SCANTOOL displays the most information when the drawing is scaled. The drawing is displayed with more realistic details. This setting is the standard setting.

"Scan..." window
In this area of the window you can determine what happens with the scanned drawings.

- Standard: The scanned drawings are opened in the File Viewer where they can be edited.

- Set: The scanned drawings are entered in the job editor and thus belong to a job order.
- File: The scanned drawings are saved as files.
- Archiv: It is possible to generate index data which describe the scanned drawings. They are for external archive systems, which import the data.

The settings Set, File and Archiv can be activated simultaneously. The options are explained again in detail in the following.

Note: The Archiv-Settings are explained in chapter „Archiv Management“, page 151.

Standard scan settings
If you select standard, a normal scan process is carried out. The drawing is scanned and automatically opened in the File Viewer for further editing. The scanner settings that you entered in the “Scanner Settings“ are used. You can open this dialog in the “View – Scanner settings“ menu.

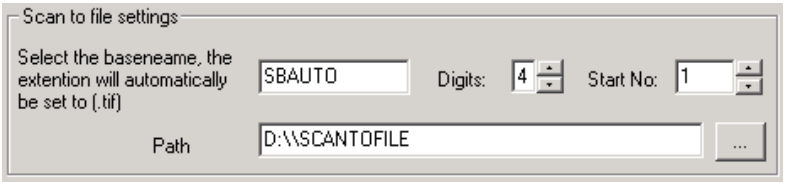
Set scan settings
You activate “Set“ if you want to prepare a set of drawings that contains several drawings that belong together immediately after scanning. Your scanned drawings are then automatically stored as entries in a job order. In addition, you can also activate the “Autostart“ option in the lower part of the window. Activating the “Autostart“ field is useful if you scan several drawings one after the other. RW-470 SCANTOOL adds the first drawing as an entry in the job order and is immediately ready for the next scan, without any other settings being required. This has the advantage that you can remain at the machine and push all the drawings through one after the other without having to press the scan button for each drawing.
In the tab „Settings – Options – General“, area „Scan File“, you can additionally select a file format (partly with compression) for the scanned files. The TIFF format is preselected.

"Scan to file" settings

The following settings are possible:

- **Save rotated image**: If you want to save the drawing in portrait or landscape format, you can set the necessary rotation here. However, remember that all the scanned drawings will be saved in this form.

Other information is required for the file scan, which you enter in the following area of the window:



- **Basic name, digits and starting number**: Give the drawing/s a basic name. Each scanned drawing is given this file name. If you scan in several drawings at once and want to back them up as files, you also assign the starting number, which is to be appended consecutively to the first part of the file name. Then, enter, how many character items this file number should have. Maximum 4 digits are allowed, which equates to the starting number 0001. RW-470 SCANTOOL always saves the files as TIFF Group 4 with the extension "*.tif": SBAUTO0001.tif

Note: The length of the file name should always be based on the operating system and network capacities.

Note for later scanning processes: The program retains the settings after each scan until you change them again.
Example: If you have given your first scan job with 47 drawings the basic name "Engineering", the following scan with 55 architectural drawings is given the same basic name and are numbered consecutively from 48. Change the setting if you

leave the files on the hard drive and want to be able to more easily differentiate between the jobs at a later date.

- **Enter path**:

Finally, you must also enter the folder in which the files are to be stored. You can change the folder path by clicking on the button to the right of the input field. The program opens a window in which you can enter the required folder. As a standard, the program displays "[Drive]:\RW-470\Plotbase\ScanSave".

- **Scan File:**

In the tab „Settings – Options – General", area „Scan File", you can additionally select a file format (partly with compression) for the scanned files. The TIFF format is preselected.

Autostart:

The "Autostart" option is located in the lower part of the window. The "Autostart" field is useful to activate if you want to scan several drawings consecutively and back them up as files. RW-470 SCANTOOL saves the first drawing and immediately and automatically starts a new scan process, without any further settings being required. This has the advantage that you can remain standing at the machine and can push in all the drawings one after the other, without having to press the scan button for each drawing.

Tools

This section gives you a brief overview of the program tools, which you can activate using the toolbar and the control bar and about the information, which is displayed in the status bar. A separate chapter describes the drawing editor due to the extent of its functions. See the next chapter from Page 171.

Toolbar

The toolbar is located directly beneath the menu bar and provides the following tools:

 File open

 File save

 Open drawing editor. See from P. 171.

 Open options window

 Open program information

View bar

The toolbar is located directly in the File Viewer. It makes the following tools available:

Attention: These settings have no influence on the printing. You can just change the view in the file viewer.

 Rotate drawing 90° to the left

 Rotate drawing 90° to the right

 Rotate drawing through 180°

 Drawing in original position

 Successively enlarge drawing

 Successively reduce drawing size

 Switch drawing to zoom all

 Drawing in View 1:1

 View previous

 Multipage document: Show first page

 Multipage document: Forward one page

 Multipage document: Enter page number

 Multipage document: Back one page

 Multipage document: View last page

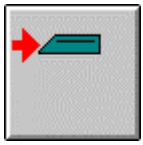
 Display drawing in view lighter

 Display drawing in view darker

 For drawing information, see also Page 148

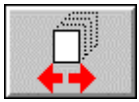
Control bar

The following functions are available in the control bar:

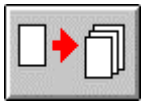


Start scan. Read the chapter on “Scan“ from P. 146

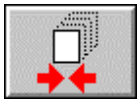
Dispatch job order. Read more in the chapter “Prepare job order “ from P. 163



Load or set up new set of drawings. For more details read the chapter “Prepare job order “ from P. 163



Assign drawing to the job order.

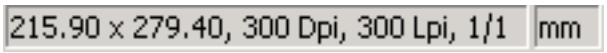


Complete preparation of the set of drawings. Refer to chapter “Prepare job order “, P. 163

Quit scan

Status bar

The status bar is located on the lower edge of the screen and provides you with the following information:



In detail, they mean the following: Image size, resolution in Dpi, resolution in Lpi, number of pages, Size units.

Key combinations

The following lists all the keys and key combinations:

Main screen

F5: Close file, also CTRL+C

F7: Send job order to RW-470 PLOTBASE

F8: Close job order (set)

F9: Add entry to the set of drawings

ALT + **F4**: Quit program

CTRL + **C**: Close the file

CTRL + **G**: Open the "Settings Options" window

CTRL + **O**: Open drawing

CTRL + **S**: Save drawing as

CTRL + **+**: Darken drawing in view

CTRL + **-**: Brighten drawing in view

Keypad:

→: Pan to the right in the enlarged drawing

←: Pan to the left in the enlarged drawing

↑: Pan upwards in the enlarged drawing

↓: Pan downwards in the enlarged drawing

0: Switch to zoom all

1: Switch to View 1:1

+: Zoom out drawing in view

-: Zoom in drawing in view

Drawing editor

ESC + **mouse**: For operations, in which you drag a rectangle or window on the drawing with the mouse (e.g. zoom window, cut, and similar), you can undo the rectangle or window by pressing ESC or clicking the right-hand mouse button.

SHIFT: As long as you hold the SHIFT key depressed, the editor enlarges the drawing to 3:1.

SHIFT + **mouse**: For operations, in which you drag a rectangle or window on the drawing with the mouse (e.g. zoom window, cut, and similar), you can simultaneously press the SHIFT key, to position the rectangle with pixel accuracy (unit depends on your setting: pixels, mm, inches).

CTRL + **C**: Copy [Editor]

CTRL + **V**: Insert

CTRL + **X**: Cut

CTRL + **Z**: Undo

Keypad:

→: Pan to the right in the enlarged drawing

←: Pan to the left in the enlarged drawing

↑: Pan upwards in the enlarged drawing

↓: Pan downwards in the enlarged drawing

0: Switch to zoom all

1: Switch to View 1:1

+: Zoom out on drawing [Editor]

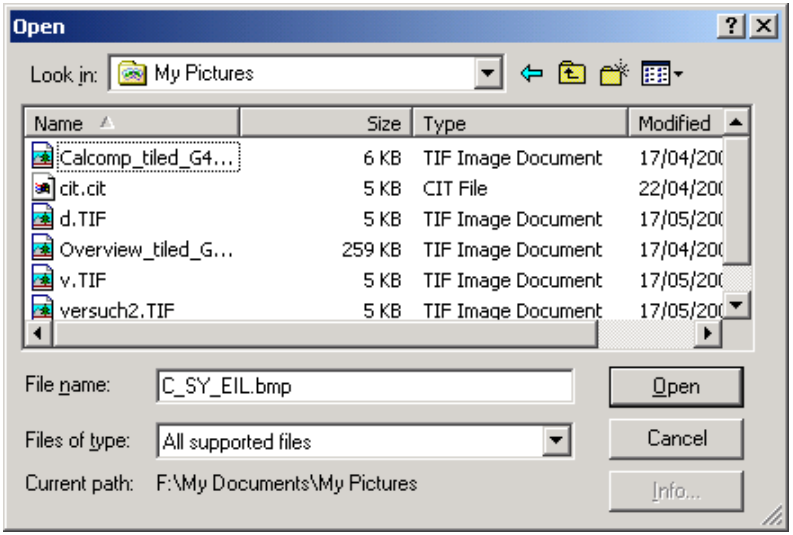
–: Zoom in on drawing [Editor]

File management

This chapter describes how you can open, close and save drawings. It also describes further comfortable tools such as file information and the configurable file display.

Load drawings

Load a drawing using the "File - Open" menu:



Your drawings can have the following, some optional, file formats:

- Calcomp .....(*.906, *.907)
- CALS [after MIL-STD-1840B] .....(*.cal)
- CALS [after MIL-STD-28002A] .....(*.cal)
- Intergraph .....(*.cit; *.tg4)
- HP-GL [/2, RTL] ..... (*.plt; *.rtl)
- PCX..... (*.pcx)
- RLC .....(*.rlc)
- T6X .....(*.t6x)
- TIFF ..... (*.tif)

[Group 3,4; uncompressed; packbits; striped & tiled]
- Windows / OS2 Bitmaps ..... (*.bmp)
- Windows Meta File.....(*.wmf)

The following are available as an optional:
- CGM.....(*.cgm)
- PDF, RW-470PS ..... (*.pdf, *.ps)

The following are available with AutoCAD 2000i installed:

- DWG .....(*.dwg)

Note: A more precise definition of the file formats that can be used is given in the appendix.

Multipage documents

You can also load multipage documents (PDF, RW-470PS, HPGL, HPGL/2, Tiff). There is no limitation to the number of pages per document. You can edit multipage documents in exactly the same way as you edit documents with one page. The following limitation with respect to print and save must be noted:

Note: When editing multipage documents with a RW-470PS and PDF format you should note that RW-470 SCANTOOL can only read both formats, but cannot write to them. This means that you can load a RW-470PS or PDF file and freely change them, but you cannot back them up again as a RW-470PS/PDF file. E.g. you can save them as multipage TIFF files. When saving the files in PCX format the multipage documents are split up into individual files with one per page.

File Viewer

You can change the view of the loaded drawings using the view bar tools (see page 141).

File information

You can obtain information about the drawing currently loaded. To do this, select the command "File - Info" or click the following button:

More information about the opening window you can get on page 91.

Save drawings

If you have made changes to your drawing you can save them using the "File – Save as" menu or using the usual Windows keyboard shortcut "CTRL+S". You must enter a file name. A copy of the drawing file is usually produced so that the source file is not changed. For example, this allows you to print off various edited variants of one file. You can of course also save the changes in the source file, which is however then overwritten.

Note: When saving, do not forget that some formats can only be read but cannot be saved.

RW-470 SCANTOOL can save the following file formats:

- CALS [after MIL-STD-1840B] .....(*.cal)
- CALS [after MIL-STD-28002A] .....(*.cal)
- Intergraph .....(*.cit; *.tg4)
- HPGL/HPGL2 ..... (*.rtl)
- PCX..... (*.pcx)
- RLC.....(*.rlc)

- T6X .....(*.t6x)
- TIFF ..... (*.tif)
- Windows / OS2 Bitmaps ..... (*.bmp)

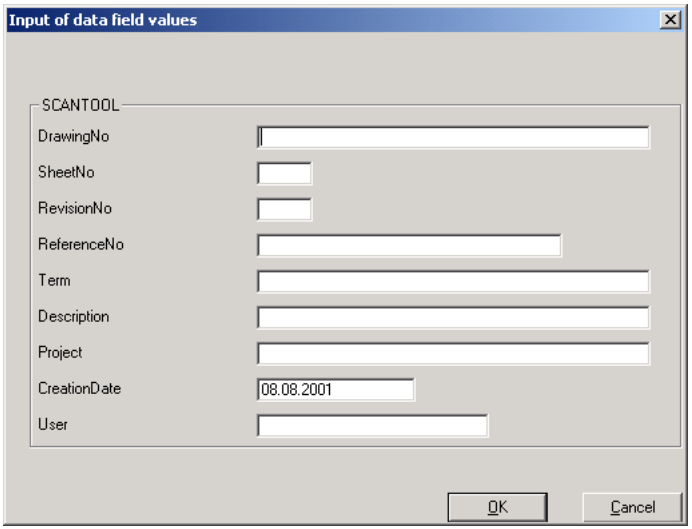
Note: A more precise definition of the file formats you can use is given in the appendix.

Archive Management

With RW-470 SCANTOOL it is possible to generate index data which describe the scanned drawings. They are for external archive systems, which it then imports. These index data are for example the working date, the project name or the name of the editor. In order to use this facility, two basic steps are required in setting it up:

1. In "Options", the presets for "Archive" must be entered. To do this, open the Options offering "Settings, Options". Change to the "General" card, activate "Archive" in the "Scan ..." field and enter your "Archive Scan Settings". Please see p. 151ff.
2. All the file data must be entered in the entry screen. It will be noted that an entry does not have to be made in every box. This will be determined by your field configuration in the DES file.

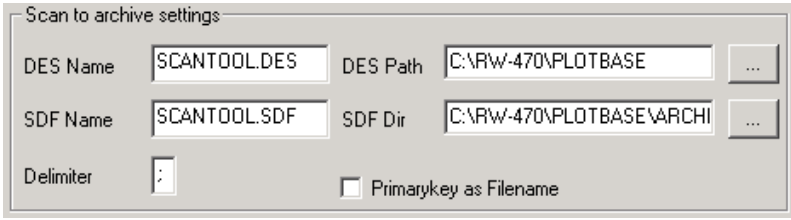
The screen given by the program look like this:



In the following two sections you can see what presets are necessary.

Specifying Presets

If you wish to select the settings for the filing or to change the settings, enable the "Archive" field in the dialog „Settings – Options – General". The activated option causes the automatic opening of the entry screen after each scanning. You can get more detailed information in chapter „File management".
In addition, RW-470 SCANTOOL requires the following additional preset information:



- **DES name and path**

The DES file and the path are already given. This determines how the entry screen is to be structured. All the fields described in the DES file entered will be displayed on the input screen.

You can create your own DES file to change the entry screen. Read chapter „Creating descriptive database file", p. 201 for it.

If you create a new DES file, the next step is to inform RW-470 SCANTOOL which directory to look in for the DES file.

- **SDF name and path**:

After scanning, RW-470 SCANTOOL creates an archive file ending with *.sdf, where the data of the registration screen are saved. The SDF file created can however be imported in any database system. If an SDF file already exists, each new drawing data will add to it until you start a new archive file by allocating a new name.

Name and path of the SDF file is already preselected. If you want to create a new SDF file, allocate a name to the archive file and define the directory in which the archive files are to be stored.

- **Delimiter**

In the SDF file the data are separated by delimiters. Here you enter the character you wish to use to separate the data records in the SDF file.

- **Primarykey as file name:**

The field, which have been selected in the DES file as Primarykey, is used as file name. Example: If the field „drawing number" is the Primarykey, the drawing number stands at the first position of the file name. The specification of the Primarykey is described in chapter „Creating descriptive database file", p. 201.

- **Scan File:**

In the tab „Settings – Options – General", area „Scan File", you can additionally select a file format (partly with compression) for the scanned files. The TIFF format is preselected.

Filing Drawings

If you want to archive drawings you have to select settings and you have to entry data in a entry screen. This is described in the previous chapter. Either the entry screen can be opened manually or it can, if you have activated „Archive" in the settings, be opened automatically after each scan process. That is why there are two ways in which a drawing can be filed. They are described in the following chapters.

Manually filing drawings

Here, you file a drawing "manually" on the pop-up menu:

1. Open the options with "Settings - Options" and change to the card "General".
2. Allocate the file record a name with the extension *.SDF and type in the directory in which the record is to be stored.
3. Tell RW-470 SCANTOOL which descriptive database file (*.DES) is to be used to structure the entry screen and in which directory this file is located.
4. Load the required drawing.
5. Open the database entry screen with the option "File - to Archive" or with "CTRL + A".

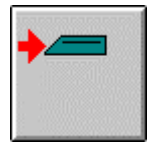
6. Enter your data and save it by clicking on “OK”.

If you wish to archive several drawings, repeat steps 4 to 6. All the drawings will be written to the same SDF file. If you wish to create a new SDF file, enter a new name under Options. Please see p. 151.

Filing drawings after scanning

If you wish to file drawings immediately after scanning them, the following steps are necessary:

1. Open the options with “Settings - Options“ and change to the card “General”.
2. Before starting scanning, activate „Archive“ in Options. To do this, open Options with “Settings - Options” and change to the card “General”.
3. Allocate the archive file name with the extension *.SDF and enter the directory in which the file is to be saved.
4. Tell RW-470 SCANTOOL which descriptive database file (*.DES) is to be used to structure the entry screen and in which directory this file is located.
5. Start scanning by placing the drawing in position and clicking on the scanning toolbar button



6. As soon as the scanning process has been completed and the drawing appears in the file view, the database entry screen will automatically be opened so that you can enter your details for filing the drawing you have just scanned.

If you scan in further drawings, the database entry screen will automatically be opened as soon as each individual scan has been completed. The „Autostart“ option can also be activated.

Scan

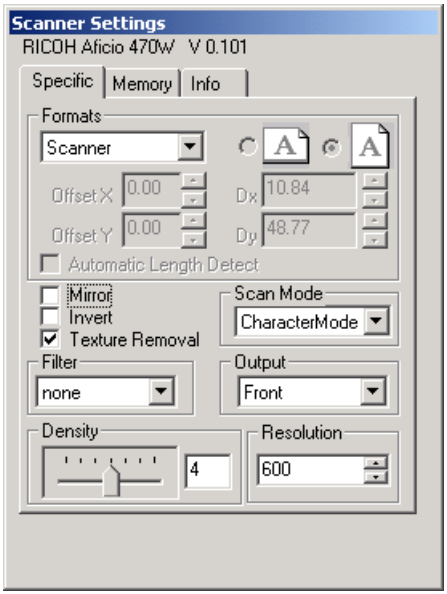
This chapter describes scanning. You will find out which settings are required and how you can start the actual scanning process. If you would still like to print off one or several scanned drawings, you should first read the chapter “Prepare print jobs “, Page 163.

Set scan parameters

Before you begin to scan, set the necessary parameters. To do this, open a dialog window with three tabs using the menu command “View – Scanner settings“.

“Specific“ tab

On this tab, you can enter the format, resolution and density settings, inter alia:



- **Formats**: Select the drawing format in which the drawing is to be scanned from the selection menu. Apart from the standard options, "Scanner" and "Window" you will also find the drawing formats, which you have already set as your default values in the "Settings - Options", "Formats" tab, c.f. P. 132.

  In the case of the format setting "Scanner", the scanner automatically recognizes the format width and format length of the inserted drawing.

  If you select one of your previously set formats, the format size and format border values are used in the scan. However, you can also change the format borders. The format border settings (x border, y border) have the following purpose: If the drawing is not to be scanned at the top left-hand point (x border =0, y border =0) of the sheet, for example because they produce a relatively large border, then you can determine the new top left-hand point at which the scanning process begins, by setting the new x and y borders. The top and left-hand borders of the original are then ignored by the scan. You can get more detailed information on page 134.

  The orientation as portrait or landscape format can be freely adjusted. In addition, you can activate the "Automatic length detect". In this case, only the format width set is retained. The length of the scanned drawing is then oriented to the lower edge of the drawing. The scanning process ends there.

  If you use the "window" format setting, you can set all the values (orientation, format size, format border) in the area as you wish:

  
  Landscape format

  
  Portrait format

  X-border format border from the left

  Y-border format border from top

DX Format width

DY Format height

- **Mirror:** The drawing is mirrored horizontally about the x-axis. You will usually need these settings if the drawing is scanned and saved on the wrong side. This is primarily of significance if a transparency has been scanned in on the "wrong" side (back to front), to increase the contrast.

- **Invert:** The colors black and white are swapped.

- **Remove textures:** If you use this option you can remove textures in a scanned drawing.

- **Output:** There are three possible options for the scanned drawing output: Front, Rear, Rear fixed. "Front" causes the scan to be output at the front tray; "Rear" causes the scan to be output at the rear tray. The "Rear fixed" option causes the drawing to be "held fast" at the rear tray so that it doesn't fall to the floor. You can then carefully draw the drawing from the scanner tray.

- **Scanning mode:** There are several scanning modes are available, which should be tested before using:

The "Character mode" should be used for black & white drawings. The "Photo 70L/I" to "Photo 270L/I" modes are used for documents with photographs or graphics with complex shading. The more "Lines per inch" are shown, the more differentiated the simulated image of the grey values of a photo or another original. Finally, you can also select the

"Character/Photo" mode. Use this mode if the original to be scanned has text as well as photos.

- **Filter:** By using this smoothing filter you can improve the quality of your image.
  None: No filter is used.
  MTF: Enhances the appearance of fine lines and easily blurred images.
  Smoothing: Smoothes the image by blurring the focus.

- **Density**: There are 7 steps for setting the density (brightness). Step 1 produces a dark scan result, step 7 a light scan result.

- **Resolution**: This is where you set the resolution with which the scanner is to scan the drawing. A higher resolution usually produces better results, but also a larger quantity of data. The scanning process takes longer for higher resolutions.
  Maximum resolution depends on original paper size:
  The maximum resolution of the scanner depends on the width of the original paper. For example, the format A0 with a width of 841 mm has a resolution of 652 dpi. The length of the original paper doesn't matter. The maximum length in each resolution is restricted to 6000 mm.
  Even if the original paper size of two drawings are the same, the attainable resolution can be different. The resolution also depends on the paper direction (landscape or portrait): The width of a drawing in landscape direction is bigger than the width of a drawing in portrait direction.

Size	Scan Width (mm)	Max. Resolution (dpi)
Max	914	600
ISO A0 Portrait/ISO A1 Landscape	841	652
ISO A1 Portrait/ISO A2 Landscape	594	923
ISO A2 Portrait/ISO A3 Landscape	420	1200
ISO A3 Portrait/ISO A4 Landscape	297	1200

ISO A4 Portrait	210	1200

Size	Scan Width (inch)	Max Resolution (dpi)
ANSI E Portrait /ANSI D Landscape	34	635
ANSI D Portrait /ANSI C Landscape	22	981
ANSI C Portrait /ANSI B Landscape	17	1200
ANSI B Portrait /ANSI A Landscape	11	1200
ANSI A Portrait	8.5	1200
ARC E Portrait /ARC D Landscape	36	600
ARC D Portrait /ARC C Landscape	24	900
ARC C Portrait /ARC B Landscape	18	1200
ARC B Portrait /ARC A Landscape	12	1200
ARC A Portrait	9	1200

Maximum paper size depends on the resolution:
For example, the original paper width is 457 mm, if you set the resolution to 1200 dpi. That's the maximum width if you use this resolution setting. The length of the original paper doesn't matter. The maximum length in each resolution is 6000 mm.

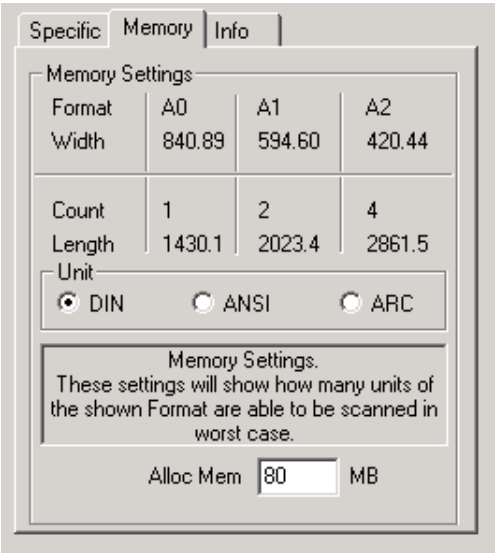
Resolution (dpi)	Max Paper Width (mm)
1200	457
1100	498
1000	548
900	609
800	685
700	783
600	914
500	914
400	914

Resolution (dpi)	Max Paper Width (inch)
1200	18

1100	20
1000	22
900	24
800	27
700	31
600	36
500	36
400	36

"Memory" tab

On this tab you can determine how much system memory can be used for the scan.



Attention: The memory size settings require several settings to have been made in the control panel first, which only the administrator can carry out. The procedure is explained in chapter "RW-470 SCANTOOL settings", page 24.

You can adjust the following settings in the “Memory“ tab:

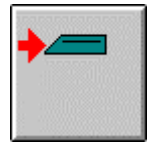
1. In the “Alloc Mem“ field you enter how much system memory is available for the scan. The default setting is 80 MB. You will already have selected the standard format size and resolution for the drawings in the “Specific“ tab.
2. Select a unit for the commonly used formats: ISO, ANSI or ARC.
3. The „Memory settings“ now shows you how many copies of a drawing could be scanned in various formats and how long the scanned drawings can be. These are the results that can be guaranteed. However, it is probable that during low or average loading of your computer large formats will be able to be scanned without any problems. You therefore only have to reserve a large memory space if you want to be extra certain that the images will be properly scanned even if a large proportion of the system capacity is used.

“Info“ tab

All the scanner driver status and error messages appear on this tab.

Start scanning process

After you have set all the parameters, the scanner is switched on and the drawing is ready, you can start the scan. To do this, click on the following button in the control bar:



Place the drawing in the bypass tray how it is described in the “Copy Reference” Manual.

Attention: If the sleep mode of the plotter is activated, you have to deactivate it before scanning. Read the notes in the "Copy Manual" of the plotter for it.

After the scanning process is completed, the drawing is loaded in the File Viewer. You can now edit the drawing (see Chap. "Drawing editor", Page 171). Back up drawing using the keyboard shortcut "CTRL+S" or the relevant save button. If you wish to produce a job order for the scanned drawing, first read the chapter "Prepare print jobs ", Page 163.

Cancel scan

You can cancel the scanning process at any time by clicking once on the STOP button in the control bar:

In the "Autostart" mode (see page 140) this button has two functions:

- If you click this button **during** the scan process the scan process for the current drawing will be canceled and a new one will be started after you have put on the next drawing.
- If you click the button **after** the scan process the "Autostart" mode will be canceled.

Produce files

You might wish to save the scanned drawings as files in a folder of your choice. In the settings ("Settings – Options -General"), select the "File" option. In addition, you should also make the changes to the file scan settings described on Page 139 onwards.
If you have also activated the "Autostart" option in the "Settings – Options" window, you can now scan any number of drawings

consecutively, without having to click on the scan button again for each drawing.

With RW-470 SCANTOOL, you can also scan in and plot whole sets of drawings. What you have to do and watch out for is described, inter alia, in the following chapter “Prepare print jobs ”.

Prepare print jobs

This program enables you to scan in and plot individual drawings or even whole sets of drawings. You can scan in any number of drawings one after the other, have them automatically entered in the job editor and set this as a job order. Apart from the automatically collated job list, you can also produce a set of drawings yourself. The latter procedure has the advantage that you can edit the individual drawings again with the drawing editor before assigning them to the job order. This chapter describes how to produce sets of drawings for a job order.

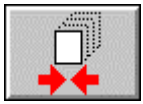
Note: The terms Job, Entry, etc. used in this chapter are explained in the chapter "Naming conventions", Page 44.

When allocating a drawing to a job order manually and automatically, most of the steps involved are similar. Nevertheless they are described in two sections to ensure clarity.

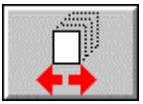
The following describes automatic allocation. If you want to allocate a drawing manually, please refer to P. 167.

Allocate drawings automatically

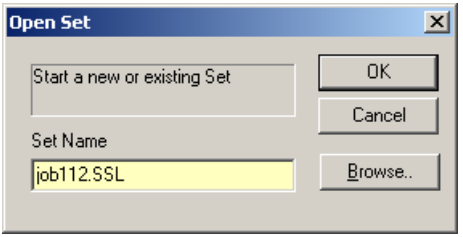
1. When first starting the program, the job editor opens with the job that you last edited. If you do not want to edit it any more, you must first close it by clicking on the following button:



2. To open a existing set of drawings or to create a new one, click on the same button which has changed its appearance:

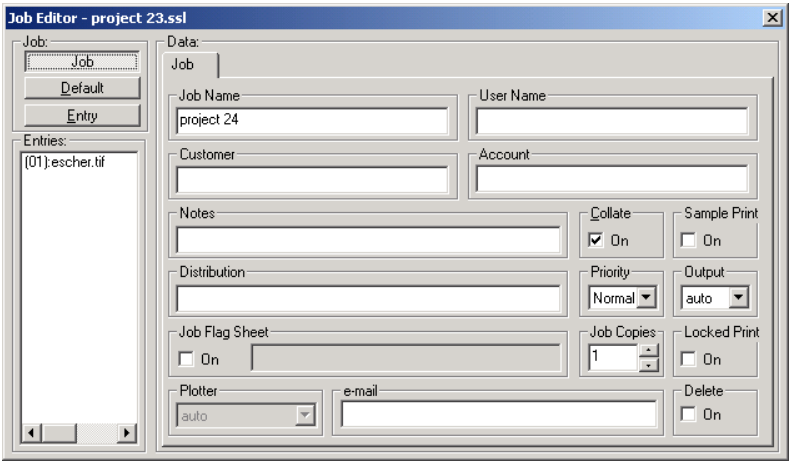


3. A window opens, in which you select a existing set name or give a new set of drawings (job order) a name.



The name can have maximum 40 letters. The file extension "*.ssl" is appended automatically. To select an existing set of drawings for changing or extending, use "Browse" to go to the corresponding defined folder. Confirm with "OK".

4. Next the job editor is opened automatically:

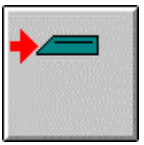


All the settings for further processing the print job in RW-470 PLOTBASE and the printout are set in the job editor. The job name has already been entered. Now enter other settings.

Apart from the "Locked" option the possible settings are described in chapter "Job editor", Page 83. Activation of the "Locked" option is useful, for example, if the drawings contained in the job order should not be available for anyone to see. As soon as you activate this setting activate, you will be asked by a dialog box to enter a password for the job order. Only use alphanumeric characters. The drawings are not displayed in RW-470 PLOTBASE after the print job has been sent. They can only be edited and printed off in RW-470 PLOTBASE by the user (i.e. by you), who knows the password.

Note: A further exceptional feature is the priority setting „immediately". This is the highest priority level. This priority can only be set in RW-470 SCANTOOL. The current print job in RW-470 PLOTBASE will be interrupted until the job with priority "immediately" is done. You can use this priority, if you want to print out a scanned drawing immediately (copy function).

5. You can now begin to scan in the drawings. First check the scanner's default values (see also P. 154 ff.). Now select "Set" in the options ("Settings – Options"). If you have activated this option, the scanned drawings are automatically saved as entries in the job order. Place the drawing in the scan feed.
6. Click on the scan button in the control bar, to start the scan:

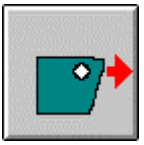


The drawing is scanned and automatically accepted in the list of drawing sets. If you have activated the additional option "Autostart" in the options ("Settings – Options"), the scanner is automatically reactivated after each scan run. You

then no longer need to click the scan key each time and can insert all the drawings in the scanner, one after the other.

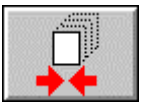
7. Quit the scan run by clicking on the stop key:

8. If you now want to send the job order to RW-470 PLOTBASE for printing, click on the following button:

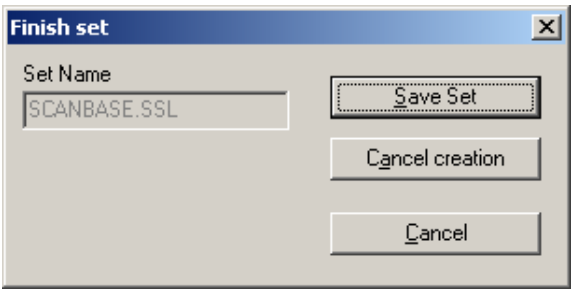


If you save the job order, you can also print it off at a later time. The save is described in the following steps.

9. You can then close the job editor by clicking on the following button in the control bar:



10. The window for saving your settings now opens:



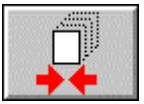
If you want to save the job order, click on the "Save set". You can now change the job order again at a later time or

print it off again. If you want to cancel the job, click on "Cancel creation". If you close the dialog and want to continue to edit the set of drawings, click on "Cancel".

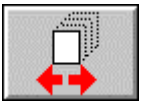
Allocate drawings manually

You can allocate both loaded files as well as scanned in drawing files. The procedure is as follows:

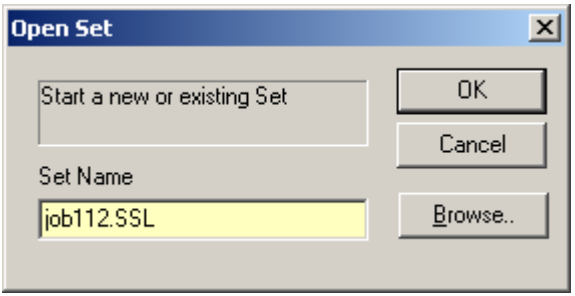
1. When first starting the program, the job editor opens with the job that you last edited. If you do not want to edit it any more, you must first close it by clicking on the following button:



2. To open a existing set of drawings or to create a new one, click on the same button which has changed its appearance:

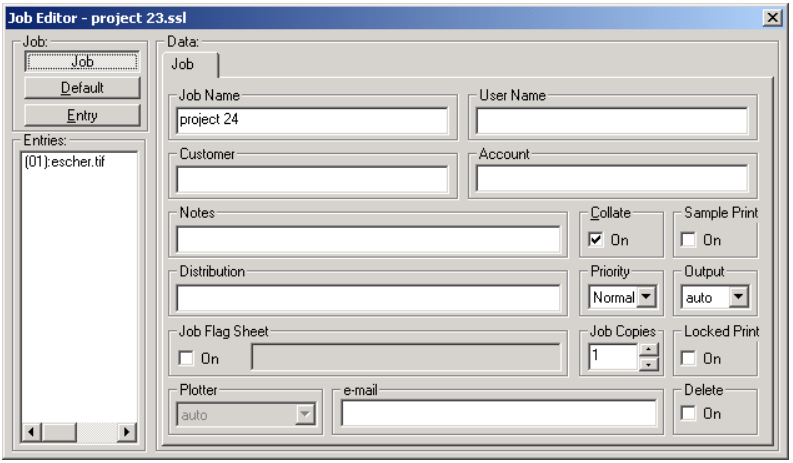


3. A window opens, in which you select a existing set name or give a new set of drawings (job order) a name.



The name can be maximum 40 letters long. The file extension "*.ssl" is appended automatically. To select an existing set of drawings for changing or extending, go to the relevant defined folder using "Browse". Confirm with "OK".

4. The job editor then opens:

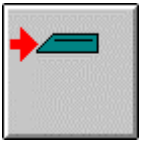


All the settings for the further processing in RW-470 PLOTBASE and the printout are set in the job editor. The job name has already been entered. You can now enter further settings. Apart from the "Locked Print", the possible settings are described in chapter " Job editor", Page 83. It is useful to activate the "Locked Print" option if for example the drawings in the job order are not to be made accessible for anybody to look at. As soon as you activate this setting you are asked in a dialog to enter a password for the job order. Only use alphanumeric characters. The drawings are not displayed in RW-470 PLOTBASE after the print job is sent off. They can now only be edited and printed off in RW-470 PLOTBASE by the user (i.e. by you), who knows the password.

Note: A further exceptional feature is the priority setting „immediately". This is the highest priority level. This priority can only be set in RW-470 SCANTOOL. The current print job in RW-470 PLOTBASE will be interrupted until the job with priority "immediately" is done. You can use this priority, if you want to print out a scanned drawing immediately (copy function).

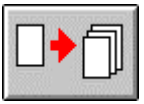
5. You now have two possible ways of accessing drawings that you want to save in the job editor save. You can either load drawing files or scan in drawings. Load a drawing using the "File - Open" menu or using the following toolbar button:

You can now change the drawing using the drawing editor (see P. 171).
If you wish to scan in a drawing, check the scanner's default values first (see also P. 154 ff.). Place the drawing in the scanner feed. Click on the scan button in the control bar:



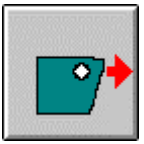
Here too, you can also change the drawing using the drawing editor (see P. 171).

6. Now assign the drawing to the job order (set of drawings), by clicking on the following button in the control bar:



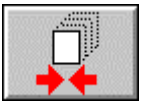
Repeat steps 4 and 5 if you want to add several drawings to the set of drawings.

7. If you now want to send the job order to RW-470 PLOTBASE for printing, click on the following button:

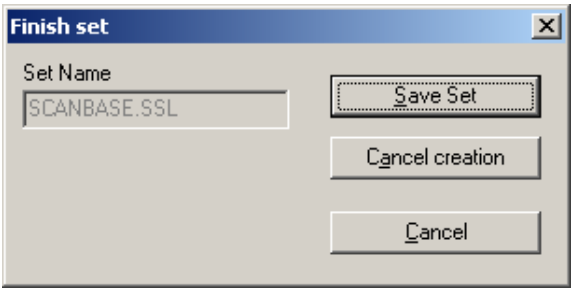


If you save the job order, you can also send it at a later time or change it again. The save is described in the following steps.

8. Close the job editor if the job order is complete and no more changes are to be made:



9. The window for saving your settings now opens:



If you want to save the job order, click on “Save set“. You can now change the job order again at a later time or print it off again. If you want to cancel the job, click on “Cancel creation“. If you want to edit the set of drawings again, click on “Save set“.

Drawing editor

The following section describes the drawing editor of RW-470 SCANTOOL. You can read how to set your default values and edit the required drawing.

Start and quit the drawing editor

Start the drawing editor either via the "Editor –Start the editor" menu or by clicking on the relevant toolbar button:

The drawing editor is started and immediately loads the drawing loaded in the preview window of the main program.

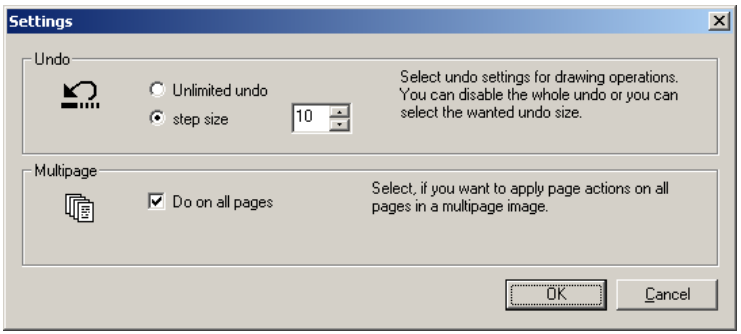
Quit the drawing editor via the "File - Exit" menu or using the keyboard shortcut "ALT+F4".

Set the default values

Before you begin your work in the drawing editor, you can set several default values. The changes concern the general settings and the "Insert mode":

General settings

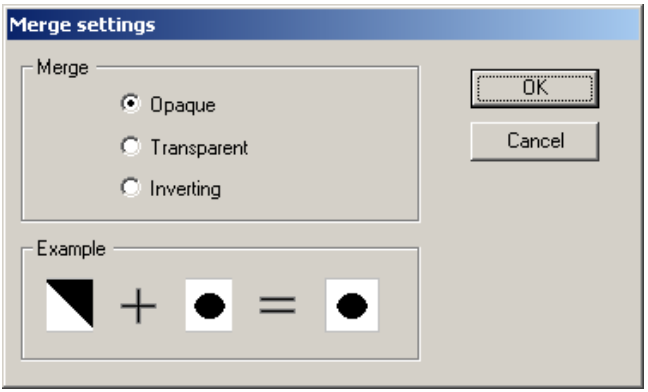
Using the menu command "Options - Common" you open a dialog window:



- **Undo:** In "Undo", you stipulate how many work steps in the program can be undone. If an unlimited number of steps are to be able to be undone, activate the "Unlimited undo" option. However, the number of steps also depends on the size of your computer's memory. Using the other option, "Step size" you can fix a certain number of steps that can be undone.
- **Multipage options:** Here you can activate an option so that certain actions not only affect the page currently being edited in a multipage document, but on all the pages of the document. You can thus significantly reduce the time spent working on these documents.

Determine insert mode

The first default setting deals with the way in which an inserted object is to be placed on the drawing. Open the window via the „Edit – Clipboard merging" menu:



You can select between the entries "Opaque", "Transparent" and "Inversion". You can see what effect insert has in the "Example" field situated directly beneath it. If you select "Opaque", the inserted object overwrites the area beneath it. If you select "Transparent" the inserted object lies "under" the existing image, so that parts of the inserted data can be overwritten. It is only in the third option, "inverting" that both the drawing as well as the inserted object can be identified in the

end result, because the overlapping areas can be displayed inverted.

Edit drawings

The following pages describe how to edit a drawing: Cut out any number of areas, copy, insert again, overwrite and insert text - and all in different grey scale values and view orientations. Furthermore, you can also read how to realign a drawing that has shifted during the scan and how to remove possible contaminations.

File information

You can obtain information about the drawing currently loaded. To do this, select the command "File - Info" or click the following button:

More information about the opening window you can get on page 91.

The toolbar

The following gives an overview of the whole toolbar including a brief description. The following sections describe how to use the buttons:

 Cut area

 Copy area to clipboard

 Insert area from clipboard

 Cut area from drawing and delete the rest ["Crop"]

 Undo last command


Zoom center of cut out


Zoom window selected with the mouse


Successively enlarge cut out area


Successively reduce cut out area


Switchover to zoom all


Switchover to View 1:1


Zoom drawing width extents


Zoom drawing height extents


Rotate drawing 90° in counter-clockwise direction


Rotate drawing 90° clockwise


Rotate drawing through 180°


Mirror horizontally


Mirror vertically


Enter text


Use pen


Use erase


Draw lines


Fill area [black]


Delete area [white]

 Invert whole area

 Filter drawing

 Align drawing

 Multipage documents: Go to first page

 Multipage documents: Back one page

 Multipage documents: Enter certain page

 Multipage documents: Forward one page

 Multipage documents: Go to last page

 Change drawing in black & white

 Change activated drawing

 Set drawing darker

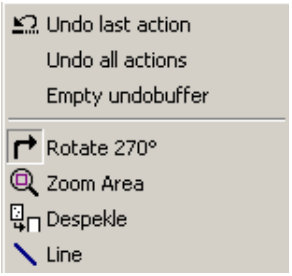
 Set drawing lighter

 File information

The mouse

RW-470 SCANTOOL has an additional comfortable mouse function for you to use whole working in the drawing editor. In general, you carry out all your work using the left-hand mouse button. In addition, you can use the right-hand mouse button to open a window with which you can quickly start and execute, without having to pull down the menus or use the toolbar. You simply open the window with the right-hand mouse button and select the required command with the left-hand mouse button.

The window is usually divided into two blocks after several operations:



In the top block you can undo the last commands. Your last commands are listed in the lower block.

Deskew and despeckle drawing

Before you begin with the actual work, it may be necessary for you to align the drawing first because it has slipped during the scan. Sometimes a drawing also has contaminations, which should be removed.

- **Deskew**

A slipped drawing is very easy to align. Simply select "Deskew" from the "Image" menu or the corresponding button from the menu bar:

You can now set the mouse at any point on the drawing and drag the mouse in the required direction. The program aligns the drawing along this "mouse line".

Note: If the drawing is very large and/or complex and its display requires a large memory space, the aligning can take somewhat longer. In such a case the program

gives you a corresponding message and you can cancel this function.

- **Despeckle**

If the drawing is contaminated after the scan, you can remove it with a filter. Select "Despeckle" from the "Image" menu or the relevant button from the menu bar:

The program opens a window, in which you can enter which areas are to be deleted from what number of pixels and less: If e.g. you enter 7 pixels, all areas with a size of 7 x 7 pixels and less are deleted.

Merge Image

You can also use the drawing editor to "combine" a vector drawing with an already loaded drawing:
Assume you have a plot of land on the old drawing, on which a railway line is to run in the future.
In this case the new drawing only has to contain the railway line and can then be easily positioned at the required location on the old drawing using the "Merge Image" function.
Select "Merge Image" from the "Image" menu:
After selecting the menu, a selection window opens from which you can select the drawing to be combined with the already loaded drawing. You can only load vector drawings in HPGL and Calcomp format.
When you have selected the drawing, it is "attached" to the mouse cursor and you can position it where you want. The drawing is transparent when inserted. The insert mode cannot be changed.

Cut, crop and copy

With the following buttons you can – seen from left to right -

- Cut out an area defined with the mouse
- Copy an area defined with the mouse to the clipboard
- Reinsert the copied area last copied to the clipboard
- Cut out an area selected with the mouse and delete the rest of the drawing

Only two commands are required to cut or copy an area:

1. First click on the button  or  .
2. Using the mouse, drag a relevant-sized rectangle at the required position in your drawing.
   RW-470 SCANTOOL cuts out the area or copies it to the clipboard.

The drawings copied to the clipboard or drawing cut outs can also be inserted in all other Windows applications as a Bitmap.

To reinsert an area and position it at the required position, proceed as follows:

1. Click on the button  .
   RW-470 SCANTOOL "attaches" the cut out section from the clipboard to your mouse cursor.
2. Position the mouse cursor on the drawing at the required position and click the left-hand mouse button.
   RW-470 SCANTOOL inserts the cut out section at the indicated position.

If you only want to retain the area selected with the mouse and delete the rest of the drawing, you only need to click on the second button with the small pair of scissors, mark the area on the drawing and let go – only the required area remains on the drawing:

This is the basic „Crop" function if you don't want to use the following "Format settings" input window.

Here you can set a freely selected rectangle, to then retain it from the rest of the drawing. You can either do this by entering freely selected measurements or you can select an existing or already predefined format from the list of "Valid formats". If the required format is not included in the list, you can select it using the "Configure" button. The program then opens the "Formats" tab, which you have already seen in the "Settings - Options" under the "Settings" menu. When you have selected the format, decide on the format orientation: Portrait or Landscape. Then click on "Use", position the rectangle and close the command with a click on the left-hand mouse button.

Undo and delete clipboard

Use the following button to undo the last command.

In the default values of the drawing editor you were able to set the maximum number of commands that the program should remember, c.f. P. 172. If you want to delete the steps saved in the clipboard to release memory capacity, select the "Edit – Empty Undobuffer" menu. RW-470 SCANTOOL has its own, faster clipboard for this. If another application wants to fetch the [RW-470 SCANTOOL -] data from the clipboard, RW-470 SCANTOOL transfers the data into the Windows clipboard.

As long as the data is not requested by another application, it remains in the RW-470 SCANTOOL -clipboard, and you are asked when leaving the drawing editor, whether the data is to continue to remain available for other applications, i.e. whether it should be transferred to the Windows clipboard.

You can delete the Windows NT clipboard using the "Edit – Empty clipboard " menu item.

Select view and change position

You can choose from thirteen possible options for setting the view with respect to size and position:

From left to right, the buttons have the following meanings:

- Enlarge a position about the center
- Enlarge a section defined with the mouse
- Successively enlarge section
- Successively reduce section
- Return to zoom extents
- Switch to view 1:1
- Zoom drawing to side width
- Zoom drawing to side height
- Rotate drawing 90° counter-clockwise
- Rotate drawing 90° clockwise
- Rotate drawing 180°
- Mirror horizontally
- Mirror vertically

The last five buttons refer to rotate and mirror. These commands change the view and position of the drawing, but they also change the whole drawing. When closing the drawing, the program therefore asks whether the changes should be saved.

Use of the buttons is easy: apart from the two magnifying glasses, you only have to click on the required button and the command is executed directly.

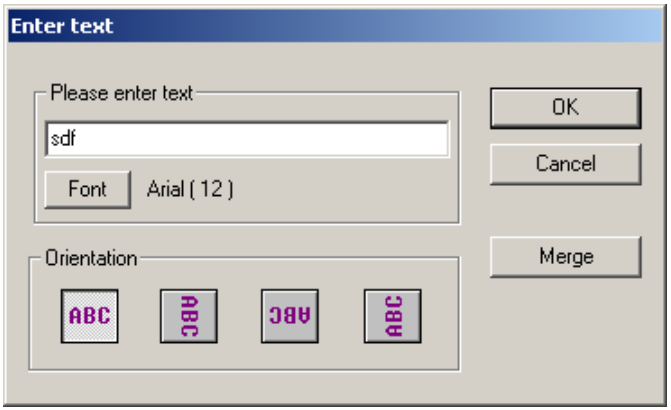
 : If you want to enlarge a position about the center, click on the first magnifying glass from the left and then on the required position in the drawing. The program enlarges by one step and places the position concerned in the center of the screen.

 : To enlarge a certain section, first click on the second magnifying glass from the left and then drag a rectangle of any size at the required position on the drawing. The program enlarges the section enclosed by the rectangle by one step. You can enlarge a section as often as you like without having to click on the magnifying glass again.

Insert text

If you want to insert text into the drawing, you can either open the input window via the "Tools – Enter text " menu item or you can click once on the relevant button:

The window that then opens is for entering text, formatting text, alignment and to determine the insert mode:



- **Text input**:

Enter your free text in the top left-hand field. The length of the text depends on the font size you have selected. You can only enter one line of text; the program does not wordwrap text.
The font size currently set is shown directly below the input field to the right of the "Font " button.

- **Orientation**:

If you don't want to position the text as a standard, you can rotate it clockwise through 90°, 180° or 270°.

- **Font**:

To change the text attributes, click on the "Font" button below the text input field. In this window you can change all the font settings as you are used to doing in other Windows programs: Font, font type, font size and font effects.

Note: The font color is permanently set to "black" and cannot be changed.

- **Merge**:

Open the window using the "Insert mode" button. Choose between "Opaque", "Transparent" and "Inverting ". In the "Example" field directly beneath the window you can see what the effect of the insert is. If you select "Opaque", the inserted text overwrites the area beneath it. If you select "Transparent" the inserted text lies "beneath" the existing drawing, whereby parts of the inserted text can be overwritten. Only the third option, "Inverting" can the both the drawing as well as the inserted text be recognized in the end effect, because the overlapping areas are displayed inverted.

Note: Changing the insert mode via the text input window does not change your defaults. Both settings are independent of each other. The setting here only applies for the test insert.

Use pen and eraser

Apart from the text tool, there are six other possible ways to change the drawing:

The buttons are easy to use. Simply click once on the required button and enter the necessary pen or eraser widths in the input window. You can now you use the tool with the set width.

Draw lines

If you want to draw lines, you can either open the input window via the "Tools - Line" menu item or you can click once on the corresponding button:

Enter the line widths in pixels, inches or centimeters in the input window and draw directly with the mouse, without having to close the window. This has the advantage that you can draw several different line sizes and do not have to reopen the menu every time. The current valid size unit is displayed in the status bar at the bottom of the screen.

Fill area, delete and invert

There are there tools with which you can edit large areas of a drawing:

The buttons mean the following from left to right:

- Fill area [black]
- Erase area [white]
- Invert area

Use of the buttons is the same in all three cases. Activate the required tool and drag a rectangle on the drawing with the mouse. The command is executed directly.

Examine multipage documents

When editing multipage documents with RW-470PS and PDF format, you should note that RW-470 SCANTOOL can only read both formats, but cannot write to them. This means that

you can load a RW-470PS or PDF file and change it as you wish, but you cannot back it up as a RW-470PS/PDF file. However, you can back it up as a multipage TIFF file. When saving in PCX format, multipage documents are divided into individual files with one per page.

When printing multipage documents, you must ensure that all the pages of the documents have the same size and that you can only print all the pages at once. There is no "from page to page" setting for the printout.

You can move about in multipage documents using the following buttons:

 Go to first page of the document

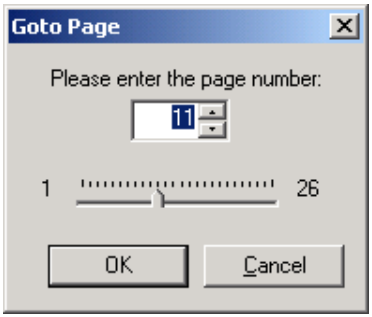
 Go back one page

 Move forward one page

 Go to last page of the document

 Enter certain page

If you use the last button, a dialog opens in which you can directly enter the page you wish to go to:



Grey scale or black & white

There are two possible ways of displaying a drawing: black & white or in grey scale, for which four tools are available:

You can execute the following functions, from left to right:

- Display drawing in black & white
- Display drawing in grey scale
- Set drawing darker if it is displayed in grey scales
- Set drawing brighter if it is displayed in grey scales

The buttons are very easy to use: you only have to click on the required button once and the command is executed directly.

Part IV - Appendix

Overview of the file formats

In the following chart all file formats are listed. The standard formats are listed in the first chart and the optional formats in the second. In the column „Read" you can see, which file format can be opened and read. In column „Write" you can get the information which file formats can be created after scanning or editing and which not.

Format	Related documentation	color depth	compression	Read	Write	remark
TIFF	„Tagged image file format – TIFF, Revision 6.0", Adobe Developers Association	b/w	uncompressed	yes	yes	
			CCITT/3 1D			
			FAX CCITT G3			
			FAX CCITT G4			
			PackBits			
BMP	Windows/OS/2 Bitmap format	b/w	uncompressed	yes	yes	size limits apply
PCX	„PCX format, version 2.x-5.x", ZSoft Paintbrush	b/w	uncompressed	yes	yes	size limits apply
			RLE runlength coded			
T6X	„The T6X file format", Ratio Entwicklungen GmbH	b/w	FAX CCITT G4	yes	yes	
RLC	no formal reference – different market standards	b/w	RLE runlength coded	yes	yes	16 bit size limits

CALS	DODISS, Department of Defense Index of Specifications and Standards					
	MIL-STD-1840B	b/w	FAX CCITT G4	yes	yes	
	MIL-STD-28002A	b/w	FAX CCITT G4	yes	yes	
CIT	„SDN 84-007 / Version 3.2.0“, Intergraph Corporation	b/w	FAX CCITT Group 4	yes	yes	
		b/w	FAX CCITT Tiled-Group 4	yes	yes	
HPGL, HPGL/2	„The HPGL and HPGL/2 command set“, Hewlett Packard	256 pens Palette Color 8 bit	as specified in reference	yes	no	
HP-RTL	„HP-RTL, Raster Transfer Language“, Hewlett Packard	b/w 1 bit	HP-RTL	yes	yes	
		grey 4 bit	HP-RTL	yes	no	
		Palette color 8	HP-RTL	yes	no	
		RGB 24	HP-RTL	yes	no	
Calcomp	„Calcomp 906/907 controller“, Calcomp	16 pens b/w	Calcomp	yes	no	
WMF	Windows Metafile, Microsoft			Yes	no	

The following file formats are optional. You can use the DWG format only, if you have installed an AutoCAD program on your PC.

DWG	Autodesc	tbd		yes	no	
RW-470PS	"RW-470PS Level III Compatible Option"	b/w	PS, EPS	yes	no	
		Palette color 4	PS, EPS			
		grey 4	PS, EPS			
		grey 8	PS, EPS			
		Palette color 8	PS, EPS			
		RBG 24	PS, EPS			
CGM	„NIST CGM ATA, Release **2.0**", National Institue of Standards and Technology, Gaithersburg, MD 20899	b/w	CGM	Yes	No	Reference: „Interpreter Test Specification, Reference Pictures", National Institute of Standards and Technology
		Palette color 8	CGM			
		RGB 24	CGM			

Installed subfolders and files

During installation of RW-470 PLOTBASE, two directories are set up under the main RW-470 folder: the PLOTBASE and the Spool folder.
The subfolders or the files contained in them have the following functions:

Archive:
Here you can find the SDF files and drawing files, which can be imported in a data base system.

PCWeb:
This subfolder contains the program files for RW-470 PLOTCLIENT WEB.

Program:
This folder contains important program files such as the main program "PBRU.EXE".

Samples:
This folder contains example files.

Scan To File:
This is where the graphics scanned in RW-470 SCANTOOL can be found, which can be saved to this folder using the ScanToFile command.

SNMP:
This folder contains a file for the SNMP protocol. IT is used for internal program processes.

SSL:
RW-470 PLOTBASE uses this folder as a working folder for the SSL files, which are currently being edited. You cannot use this folder; it is solely for internal program applications.

Tools:
This is where the installation programs for the following clients are located:

- RW-470 PLOTCLIENT HDI/ADI
- RW-470 PLOTCLIENT MAC

- RW-470 PLOTCLIENT WIN
- RW-470 WinPrint
- RW-470 PLOTCLIENT LPR
- RW-470 Plugins for PLOTCLIENT WEB

This folder is automatically shared for other workstations during installation. This enables you to access the installation programs and to install the clients on your computer.

Work:
This is where the print jobs are stored with the drawing files and SSL files, which have been produced in RW-470 SCANTOOL. A folder is set up for each job order, which contains the name of the print job.

The spool folder contains the three directories described in the following:

Cfg subfolder:
RW-470 PLOTBASE fetches the drawings from this folder in the configuration format CFG, which have been stored here by an RW-470 CLIENT or other clients. The drawings are usually sent with a corresponding CFG file. However, drawings that do not have a CFG file stored in this folder can also be edited. In this case, a "Default.ssl" file is used for the further processing, and which already exists in the CFG folder. This is also used if the CFG file is incomplete. The Cfg subfolder is usually a folder that can be reached via a network.

SSL subfolder:
Empty following installation. The clients send the SSL jobs to this folder, which are then fetched by RW-470 PLOTBASE for editing and plotting. The SSL files arriving in this folder refer to new subdirectories produced for each job, which have the same name as the files themselves and contain the drawings for the job.

Example:
Job file: Hamburg.ssl
Drawings: building.tif, floor.plt, ...
Folder: [C]:\RW-470\PLOTBASE\SSL\Hamburg\building.tif
floor.plt

...

The SSL subfolder SSL is typically a folder that can be accessed from the network.

Jobs in the subdirectories

This section briefly describes how RW-470 PLOTBASE identifies and accepts jobs. It is intended to provide you with an insight into the "Contents" of the new subdirectories.

The following applies for CFG jobs: The graphic file can be sent alone or together with a CFG configuration file. If a configuration has been sent with the job, RW-470 PLOTBASE first reads the configurations sent to be able to process the drawings individually and not according to the standard. If the configuration files are incomplete or not available at all, the program uses a "Default.ssl", to supplement the missing information or to add all the configuration data is there is no CFG file.

SSL based jobs immediately send their own SSL configuration so that the "Default.ssl" is only required if the configuration sent was unable to record all the properties.

Note: CFG- and SSL-files contain the parameters for the print-outs. CFG files are sent with single drawing-files, whereas SSL-files define the properties of complete drawing sets. Normally, these files are created by client-programs automatically. Both file types can be created also by yourself. To do so you have to use the CFG- and SSL-commands, which are described in the Technical Manual.

When reading the SSL files and starting the jobs, RW-470 PLOTBASE proceeds as follows. The program reads the incoming SSL file at second intervals and checks whether the file will become larger, i.e. further entries are added or not. RW-

470 PLOTBASE does not start processing the job until the SSL file stops growing.

SSL based jobs

The "Spool\SSL" subfolder is for jobs that are sent to RW-470 PLOTBASE by RW-470 CLIENTs or other own applications, which produce SSL files. The following work steps are carried out when an "SSL job" is received:

1. An individual subfolder is automatically produced for the new job, which contains the name of the SSL job file and into which the drawing files are copied.
2. As soon as RW-470 PLOTBASE registers the job in the "Spool\SSL" folder, it reads the incoming SSL file at regular steps until it identifies it as having been completely written. If this SSL file does not contain all the necessary properties, the program also reads in the "Default.ssl" in the main PLOTBASE folder, to complete the job configuration.
3. RW-470 PLOTBASE shifts the SSL file in the SSL working folder "PLOTBASE\SSL" and assigns a clear consecutive number as the new file name. This number equals the current number, which you can see in the job list of RW-470 PLOTBASE.
4. The SSL file is processed in the SSL working folder "PLOTBASE\ SSL" and only deleted with the drawings if you delete the job from the job list in RW-470 PLOTBASE or have it deleted by the program in accordance with the history setting.

CFG based jobs

If a CFG based job is received, the following work steps are carried out:

1. If a CFG file is discovered in the CFG folder by the program it is read first. The program then searches for a drawing file with the same name, which has been sent by a client. However, it is also possible that a drawing file has only been placed in the spool folder or in the CFG folder.
2. If a configuration file is available it is automatically rewritten by the CFG reader automatically in an SSL file and transferred to the SSL working folder "PLOTBASE\SSL". The

reader produces an SSL job for RW-470 PLOTBASE, even if a configuration file has not been sent.

3. The corresponding drawing file is moved to the CFG working folder "Program\Data".
4. The new SSL file is processed in the SSL working folder "PLOTBASE\SSL" and together with the drawings, is not deleted until you delete the job in the job list in RW-470 PLOTBASE or have it deleted by the program in accordance with the configuration setting.

HPGL and HPGL/2 commands and pens

In this chapter we have listed all the HPGL and HPGL/2 commands that the program fully or partially supports:

+ = command is fully supported
~ = command is partially supported

- **Configuration and status group**:

DF = +
IN = +
IP = +
IR = +
IW = +
PG = +
RO = +
SC = +

- **Vector Group**:

AA = +
AR = +
AT = +
CI = +
PA = +
PD = +
PE = +
PR = +
PU = +
RT = +

- **Polygon Group**:

EA = +
EP = +
ER = +
EW = +
FP = +
PM = +
RA = +

RR = +
WG = +

- **Line and Fill Attributes Group**:

AC = +
FT = +
LA = ~
LT = +
PW = +
RF = +
SM = +
SP = +
UL = +
WU = +

- **Character Group**:

AD = ~
CP = +
DI = +
DR = +
DT = +
DV = +
ES = +
LB = +
LO = +
SA = +
SD = ~
SI = +
SL = +
SR = +
SS = +
TD = +

- **Technical Graphics Extensions**:

BP = +
CT = +
DL = +
MC = +
PS = +

- **Palette Extension**:

CR = +
NP = +
PC = +
SV = +
TR = +

- **Dual-Context Extension**:

No commands are supported

- **Digitizing Extension**:

No commands are supported

- **Default values for HPGL pens:**

All 256 HPGL pens have the pen thickness 0.35 mm as their default value.
They have the following default values as colors:

Pen	Color
0	white
1	black
2	red
3	green
4	yellow
5	blue
6	magenta
7	cyan
8-255	black

Calcomp commands and pens

In this chapter we have listed all the Calcomp commands and their implementation status in RW-470 PLOTBASE. The standard pen widths for the 16 Calcomp pens are given at the end of the chapter.

\+ = command is fully supported
– = command is not supported

- **951 Commands**:

paper cutter	–
top of form	–
async	–
start of plot	–
force plot	–
plot copies	+
plotter select	–
negate	–
pattern fill	–
hatch	–
setpat	–
setpen	+

- **Electrostatic Extensions**:

newpen	–
color sequence	–
extended pattern fill	–
area fill	black/white
color modify	–
extended setpen	–
xsetpen	black/white
extended setpat	–
diskIO	–
setlevel	–
newlevel	–
raster fill	–
pixel	–
plot status	–

- **Symbols Commands**:

font selection	+ [not all symbols]
symbol string count	+
plotter symbol scaling	+
controller symbol scaling	+
symbol characteristics	+
extended characters	+
select symbol set 0-4	+
plotting symbol from selected symbol set	+
user defined symbol	+
erase user symbol set	+

- **Circles Commands**:

chordal tolerance	+
circle command for circles	+
circle command for arcs	+

- **Dashlines Commands**:

dash bypass	+
dashline	+

- **Additional Commands**:

no operation	+
pass through 8 bits direct to plotter	
no operation	+
newplot	–
manual	–
pause	–
operator message	–
operator message with pause	–

- **Calcomp pen default values**:

Calcomp pens, currently 16 of them, have the following default values for the pen width:

Pen	Pen width in mm	Pen width in pixels
1	0.06	1
2	0.13	2
3	0.19	3

Pen	Pen width in mm	Pen width in pixels
4	0.25	4
5	0.32	5
6	0.38	6
7	0.44	7
8	0.51	8
9	0.57	9
10	0.64	10
11	0.70	11
12	0.76	12
13	0.83	13
14	0.89	14
15	0.95	15
16	1.02	16

Creating descriptive database file

Before you can save data in an archive, a descriptive database file with the extension *.DES must be set up in the program. You can either use an existing DES file or create your own file.

Note: The file must always have the name and be stored in the directory which you have previously entered a DES name and DES path during the setting up procedure. Please see p. 151.

DES files are in simple ASCII format. They can therefore be created with a conventional editor.

Rules for File Creation

It is easy to create files. You need only follow these eleven rules:

1. Every valid line begins with a " = ".
   Lines which start with any other character, will be ignored.
2. Comments and comment lines start with a semicolon ";". All the characters following a semicolon will thus be ignored.
3. Spaces are always ignored.
4. An archive box and its configuration always comprise so-called "key words" and their values.
5. Key words must always be enclosed in equals signs (=).
6. An archive box is created with the key word =Name=.
7. An archive file is configured with the key word =TYPE=.
8. With the key word =FLAG= you have the option of determining the form in which data is entered and displayed in an archive box.
9. You must define at least one unique primary key word in each DES file.
10. No distinction is made between upper and lower case letters.
11. If a key word is used more than once, the word last entered will overwrite the value of the existing one.

The following is an example of a valid archive box with its corresponding configuration:

```
=NAME=operator
=TYPE=string, x20
=FLAG=required, upcase
```

With this example, you will have generated an archive box in which the name of the operator is entered, which must not exceed a length of 20 letters. With the flags, you have specified that the entry of the name is obligatory and that the entry will be converted to upper case letters.

The following paragraph lists the key words that are available.

Description of the Key Words

There are five key words available to you, namely:

1. =NAME= for creating a new archive box
2. =TYPE= for configuring the archive box
3. =FLAGS= defines the form of an archive box
4. =HEIGHT= defines the height of an archive box
5. =PRIMKEY= provides a search key for working in the archive

- **=NAME=**

With this key word, you generate an archive box in which you enter a name:

```
=NAME=field name
```

You can select any name you wish as a "Field Name". The following criteria must however be met:

1. Do not use accented letters (ä, ü, etc.)
2. Do not use special characters or symbols.
3. For separation use an underscore "_" and not a space.
4. If possible, do not exceed 16 characters.
   The acceptable name length is determined by the database driver. It is recommended however that no more than 16 characters be used.

Once the NAME has been allocated for an archive box, the sequence of the corresponding configuration is immaterial. Allocation of the configuration is completed as soon as a new archive box is described.

- **=TYPE=**

For each archive box a field type must be defined. This is achieved by the key word

=TYPE=string, x255

Six definitions are available: string, date, integer, longint, logical, volume.

→ **string**:

If the user is to be permitted to enter a string of characters in an archive box, define the field type as a "string". Additionally, the permitted length of the string must be entered, prefixed with an "x".

If, for example, you have the archive box with the name "Operator" into which the user may only enter his name with a maximum of 20 characters, the syntax will be:

=NAME=Operator
=TYPE=string, x20

→ **date**:

The current date is entered by the program using the syntax "DATE". The field type can be extended by the following instructions:

%d → day of the month
%m → month of the year
%y → year

Example:

=NAME=date
=TYPE=date,%d.%m.%y

In this example, the archive box will automatically have the date displayed in the format < day.month.year >. A corresponding date would be for example: 07.08.01

=NAME=Datum
=TYPE=date,%y-%m-%d

The data format is <year-month-day>. The date would look like as follows: 01-08-07

→ **integer**:
If you wish the field only to accept whole numbers, allocate the type "integer" to the field. When "integer" is used, only whole numbers in a limited range may be entered, e.g. from –32768 to +32767. For very lage numbers, the field type "longint" is available.
The field type "integer" contains no supplementary parameters.

Example:

=NAME=sequential number
=TYPE=integer

→ **longint**:
If you wish to cover a larger range of numbers than is possible with the field type "integer", use a "longint".
The "longint" field type contains no supplementary parameters.

→ **logical**:
Thie field type is a toggle which will accept only two values, e.g. yes/no, on/off, home/abroad:

=NAME=delivery
=TYPE=logical, home/abroad

If you leave the space after "logical" blank in the "TYPE" command, the program automatically enters TRUE or FALSE.
→ **volume**:
With the field type "volume", you instruct the program directly to display the number in the archive box which has been automatically allocated to the record in question.

This field type contains no supplementary parameters.

- **=FLAGS=**

The key word =FLAGS= serves to define the form of input and display of an archive box. Should you wish to allocate several flags to one archive box, you need only to add them, one after the other, separated by commas. It is not necessary to repeat the initial key word each time.

```
=NAME=operator
=TYPE=string, x20
=FLAGS=required, leftjust, upcase
```

There are 10 options open to you:

Required	the user *must* make an entry if the record is to be saved
LeftJust	texts and numerals are justfied left in the archive box
RightJust	texts and numerals are justfied right in the archive box
Centered	texts and numerals are centred in the archive box
LeftAlign	texts and numerals are aligned to the left in the archive box
RightAlign	texts and numerals are aligned to the right in the archive box
ShowOnly	the archive box is only displayed and cannot be altered by the user
Hidden	the archive box is not displayed and remains hidden from the user in the background

The following four flags can only be used for strings [=TYPE=string]:

Upcase	the user's text entry is converted to UPPER CASE letters, and saved
Lowcase	the user's text entry is converted to lower case letters, and saved
IBMANSI	the text is converted from IBM to ANSI characters

ANSIIBM	the text is converted from ANSI to IBM characters

The conversion from one character set to another is of significance where data records have to be exchanged between different operating systems [e.g. DOS ↔ Windows] where the one [Windows] text is save in ANSI and the other [DOS] in IBM format.

- **=HEIGHT=**

To define the height of an archive box, or the number of lines it contains, use the syntax "=HEIGHT=":

=NAME=description
=TYPE=string, x200
=HEIGHT=3

The user can enter a description of the drawing in this archive box extending over three lines but not exceeding 200 characters.

- **=PRIMKEY=**

Each descriptive database file [*.DES] must contain at least one unique primary key. In this context, the term unique means that all the records in the archive must be clearly unambiguous in at least one archive box. The simplest example of this would be the sequential numbering of all records.
In addition, each archive can contain additional search keys which, however, do not have to be unique.

For the primary key, you need the syntax "=PRIMKEY=" which designates an archive box which you have generated with the key word =NAME=:

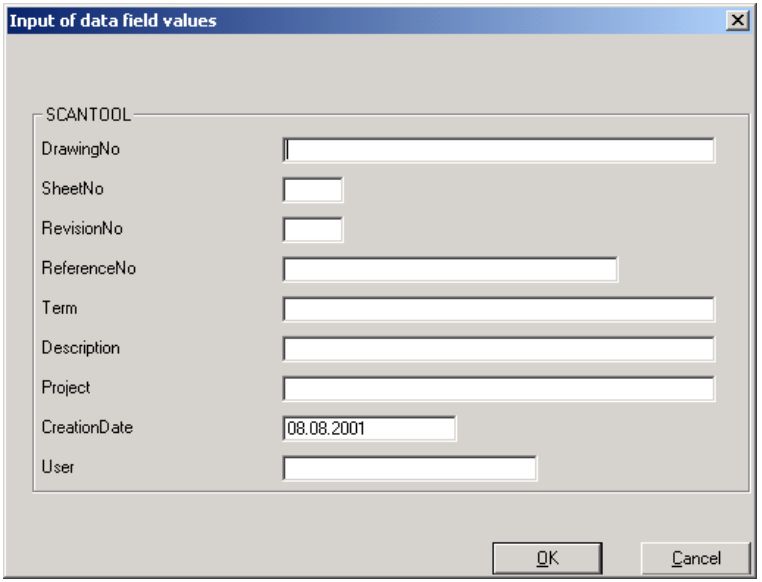
=PRIMKEY=drawing number

In this example ARCBASE indicates that the data records are clearly distinguishable by the number in the "Drawing Number" box.

The following rule applies for the primary key: The sequence of the entries after the syntax "=PRIMKEY=" must move from the

"non-unique" to "unique" → from the sub-assembly, through components, to the component number!

Example of a database description



The above screen would have to be described with the following DES file:

```
=NAME=drawing no.
=TYPE=string,x30
=FLAGS=required
=NAME=sheet no.
=TYPE=string,x3
=FLAGS=required
=NAME=revision no.
=TYPE=string,x3
=FLAGS=required
=NAME=subject no.
=TYPE=string,x20
```

=NAME=naming
=TYPE=string,x30
=NAME=description
=TYPE=string,x200
=NAME=project
=TYPE=string,x30
=NAME=creation date
=TYPE=string, x15
=NAME=creator
=TYPE=string,x15

=PRIMKEY=drawing no.,page no.,revision no.

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