

CIMCO Edit v6 User Guide

Contents

1	Introduction	1
1.1	What is new in this version of CIMCO Edit v6	1
1.2	Overview	2
1.3	License information	5
2	Installation	9
3	Database	11
3.1	Database	11
3.2	Search	13
3.3	Program	15
3.4	Status	20
3.5	Transfer	23
3.6	Backup	25
3.7	Customer	27
3.8	Administration	29
4	Editor	33
4.1	File	33
4.2	File Type	35
4.3	Edit	36
4.4	Find	38
4.5	Window	39
4.6	Help	40
5	NC Functions	41
5.1	Block Numbers	41
5.2	Insert / Remove	42
5.3	Transform	43
5.4	Info	52
5.5	Macros	53
5.6	Macro Setup	56

5.7	Multi Channel	63
6	Backplot	65
6.1	File	66
6.2	View	67
6.3	Toolpath	70
6.4	Tool	71
6.5	Solid	73
6.6	Other	75
6.7	Information Bar	78
7	File Compare	81
7.1	File Compare	81
7.2	Go To	82
7.3	Sync	83
7.4	Other	83
8	Transmission	87
8.1	Transmission	87
8.2	Machine	88
9	Editor Setup	89
9.1	General Program Settings	89
9.1.1	Editor Settings	92
9.1.2	Printing	95
9.2	File Types	97
9.2.1	Colors	99
9.2.2	Block Numbers	102
9.2.3	Load/Save	106
9.2.4	File compare	109
9.2.5	Machine	112
9.2.6	Backplot	115
9.2.7	CNC-Calc	118
9.2.8	Multi Channel	121
9.2.9	Tool List	124
9.2.10	Other	126
9.3	Global Colors	128
9.4	External Commands	129
9.5	Mazatrol Viewer	131
9.6	Plugins	133

10 DNC Settings	135
10.1 Port Setup	137
10.2 Transmit settings	140
10.3 Receive settings	143
10.4 Directory settings	145
10.5 Version info	147
11 Serial communication overview	149
11.1 RS-232 / RS-422 / RS-485	149
11.1.1 RS-232	149
11.1.2 RS-422	150
11.1.3 RS-485	150
11.2 RS-232 layout for 9 pin connector	151
11.3 RS-232 layout for 25 pin connector	151
11.4 Standard RS-232 serial cable	152
11.5 How to build a loopback device	153
11.5.1 Loopback device for a 9 pin connector	153
11.5.2 Loopback device for a 25 pin connector	154
12 Using on-line help	155
12.1 Using help in dialogs	155
12.2 Printing help information	156

List of Figures

1.1	CIMCO Edit v6 User interface	2
2.1	CIMCO Edit v6 setup program	9
2.2	CIMCO Edit v6	9
3.1	Database Login	11
3.2	Search	13
3.3	Program	15
3.4	The dialog 'Add Program'	16
3.5	Add existing file	17
3.6	Add new file	17
3.7	Status	20
3.8	Add change comment	22
3.9	Transfer	23
3.10	Select a machine for the receive operation	24
3.11	Backup	25
3.12	Restore	26
3.13	Customer	27
3.14	Add customer	28
3.15	Administration	29
3.16	System Log	30
4.1	File	33
4.2	File Type	35
4.3	Edit	36
4.4	Mark/delete dialog box	37
4.5	Dialog 'Insert File'	37
4.6	The Find dialog	38
4.7	Window	39
4.8	Help	40
5.1	Block Numbers	41
5.2	Insert / Remove	42

5.3	Transform	43
5.4	Adjust feedrate dialog	44
5.5	Adjust spindle speed dialog	45
5.6	Simple math functions dialog	46
5.7	Rotate Dialog	48
5.8	Mirror Dialog	49
5.9	Offset/Tool compensation Dialog	50
5.10	Translate Dialog	51
5.11	Info	52
5.12	Macros	53
5.13	Program Start/End Dialog	54
5.14	NC Code selection in an inserted macro	54
5.15	The dialog 'Modify Macro' (example)	55
5.16	Macro Setup dialog	56
5.17	Example of 'Macro definition' with 6 parameters	58
5.18	Macro parameter input fields (example)	59
5.19	Error message for value lower than 'Min'	60
5.20	Allow letters	62
5.21	Multi Channels	63
6.1	File	66
6.2	Backplot Setup for ISO Milling	67
6.3	View	67
6.4	Measure distance	69
6.5	Toolpath	70
6.6	Show/hide the paths of the tool	70
6.7	Options for toolpath simulation	71
6.8	Tool	71
6.9	Tool library (Milling tools)	72
6.10	Tool setup and Tool path color	73
6.11	Solid	73
6.12	Solid Setup	74
6.13	Other	75
6.14	Workpiece- and tool offsets	76
6.15	5-Axis Machine Setup	77
6.16	The Backplot Information Bar (Milling)	78
6.17	The Backplot Information Bar (Turning)	79
7.1	The File Compare menu	81
7.2	The 'Go To' menu	82
7.3	The Sync menu	83
7.4	The 'Other' menu	83
7.5	File Compare Settings	84

7.6	File compare results with the option 'Show all differences' . . .	85
7.7	File compare results with the option 'Mark changes only' . . .	86
8.1	The Transmission menu	87
8.2	The Machine menu	88
9.1	General program settings	89
9.2	Editor setup dialog	92
9.3	Printer setup	95
9.4	File type overview	98
9.5	Add a new file type	99
9.6	Color setup	99
9.7	Block number configuration	102
9.8	Load/Save configuration	106
9.9	File compare configuration	109
9.10	Machine type configuration	112
9.11	Backplot Setup dialog	115
9.12	The CNC-Calc configuration dialog	118
9.13	Multi Channel configuration dialog	121
9.14	Tool List Dialog	124
9.15	'Other' configuration dialog	126
9.16	Global Colors	128
9.17	The External Commands Dialog	129
9.18	Mazatrol Viewer	131
9.19	The Plugins dialog	133
10.1	DNC Setup dialog	135
10.2	Add a new DNC machine	136
10.3	Basic port settings	137
10.4	Transmission setup	140
10.5	Receive settings	143
10.6	Transmit and Receive directories setup	145
10.7	Version info	147
11.1	Diagram for 9 pin connector	151
11.2	Diagram for DB25 connector	151
11.3	Standard RS-232 serial cable	153
11.4	Loopback device for a 9 pin connector	153
11.5	Loopback device for a 25 pin connector	154
12.1	Click the question mark	155
12.2	The question cursor	155
12.3	The pop-up information	155
12.4	Help buttons	156

List of Tables

11.1	9 pin RS-232	151
11.2	25 pin RS-232	152
11.3	Standard RS-232 serial cable	152

Introduction

Congratulations on your purchase of CIMCO Edit v6. CIMCO Edit v6 is the latest version in a long line of proven CNC editing solutions from CIMCO Integration.

1.1 What is new in this version of CIMCO Edit v6

CIMCO Edit v6 includes a number of improvements over previous versions.

- **New user interface**

The new user interface in CIMCO Edit v6 follows the latest standards for Windows user interface design.

- **Comprehensive on-line help**

Now everything you need to know about functions that was previously contained in the reference manuals is on-line and at your fingertips. Stumped on a function? the **F1** key or the **Help** button will take you right to the information you need.

- **Optimized editor engine**

The new optimized editor engine loads large files quickly, and with minimal memory usage.

- **Flexible configuration**

Flexible configuration of colors, NC commands etc.

- **Advanced standard protocol**

Advanced standard protocol allows you to communicate with multiple CNC's simultaneously.

1.2 Overview

- **Purpose**

You can use CIMCO Edit v6 to make changes and check CNC programs for your CNC machines. If you have a serial communication line from the PC to the CNC machine, you can send and receive programs directly, even when working with other CNC programs.

CIMCO Edit v6 is designed for editing CNC-programs. CIMCO Edit v6 is able to distinguish between several different formats including ISO, APT and Heidenhain to name some.

- **User interface**

CIMCO Edit v6 has a standard Windows user interface, having one or more windows for every open file. The functions in CIMCO Edit v6 can be activated through the Ribbon Bar, which helps you to quickly find the commands needed for a task. The commands are organized into logical groups under tabs.

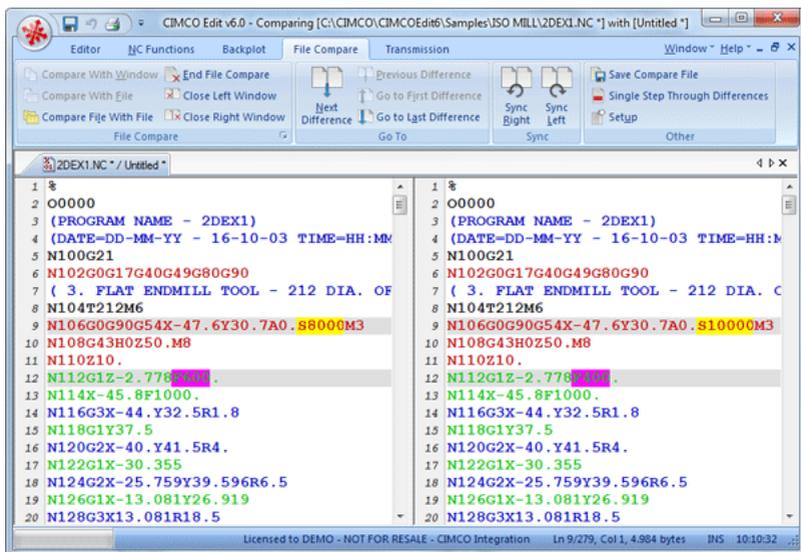


Figure 1.1: CIMCO Edit v6 User interface

- **Functions**

You can undo and redo (almost) all operations you have done since the file was opened. You can find the position of a tool change, a spindle speed change or feed rate change, or display the range of the X/Y/Z axes.

If you are not sure if two CNC-programs are equal, the File Compare functions of CIMCO Edit v6 help you to pinpoint the differences. File Compare lets you choose two files that are put into a two-frame window. The differences are shown by coloring the line. You can step through the files, stopping at each difference.

You can customize the colors used to display coordinates and NC commands, renumber block numbers, and add/remove spaces to increase readability, or decrease program size/transmission time.

The DNC part of CIMCO Edit v6 lets you send and receive NC programs to your CNC machines in the workshop. The file can be sent from a window in CIMCO Edit v6 or directly from the harddisk. The file transmission is done while you are working with other CNC programs.

- **Setup**

CIMCO Edit v6 offers you a lot of possibilities to control the behaviour of the editor. The Ribbon tabs let you select functions and configure settings. You can access the configuration dialogs using the icon .

Using the **Editor** tab, you can configure the Global settings for *General*, *Editor*, and *Printing*.

In the *General* dialog, the appearance of the windows can be modified. You can choose whether a file should be displayed in more than one window, or if alterations to a file inside CIMCO Edit v6 through another program should be indicated. Further you can choose whether to share settings between users, or protect read-only files.

You can specify the tab width, as well as the size of the recent files list. The language used for viewing Editor menus can also be selected.

In the *Editor* dialog, you can set the speed of the keyboard and choose if you want scrollbars or not.

The appearance of the printed CNC programs is controlled in the *Printing* dialog. Here, you can define a header and/or a footer. If you have a color printer, you might mark the color option.

CIMCO Edit v6 has 5 different templates for different CNC machines. You can set up how the NC functions behave and how the NC codes appear in the editor window. The **Find** function in the Editor menu

needs a definition of *Tool change*, *Feed rate change* etc. This definition is made here.

- **Where to find further information**

In the section File, all CIMCO Edit v6's functions are described. A lot of functions can also be accessed through one of the icons.

The setup of **Machine Types** is described in File Types.

If you need help on how to set up a serial communication line, you can refer to DNC Settings and Serial communication overview.

The On-line help is accessible through the ? icon, the **F1** key or the **Help** button. Chapter Help gives you an introduction to the On-line help.

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Installation

To install CIMCO Edit v6, follow the instructions below.

1. Locate installation files

If you receive CIMCO Edit v6 on a CD-ROM, open the `CIMCO Edit v6` directory on the CD. If you receive CIMCO Edit v6 via e-mail, save the file in a temporary directory.

2. Run installation program

Start the installation program by clicking on CIMCO Edit v6 setup program:



Figure 2.1: CIMCO Edit v6 setup program

3. Copying your keyfile

If you do not have a keyfile but wish to install an evaluation version, just proceed to the next step.

If you have received a keyfile, it should be copied to the program directory after the installation is completed.

4. Starting the editor for the first time

When the installation is completed and you have copied your keyfile, you are ready to start the editor for the first time. Click on the program icon on your desktop.



Figure 2.2: CIMCO Edit v6

When the editor is started, verify that your company name is shown in the **Licensed to** field in the *About* box. If not, you forgot to copy the keyfile to the editor directory.

Note: If you are running an evaluation version, the license name is *Demo version*.

Database

In this chapter, the functions under the **Database** tab are described. The functions in CIMCO Edit v6 are activated using the appropriate icons on the Ribbon. The commands are organized into logical groups under the different tabs.

Note: The database is optional and will be present in the Editor only if you also purchased it.

3.1 Database

This section describes the functions in the **Database** menu, from which all commands can be called. Some functions also have keyboard shortcuts assigned. These are shown next to the commands, along with the icons.

- **Explorer** /  / *Ctrl+E*

Opens the database window.

The following dialog appears to let you log into the database.

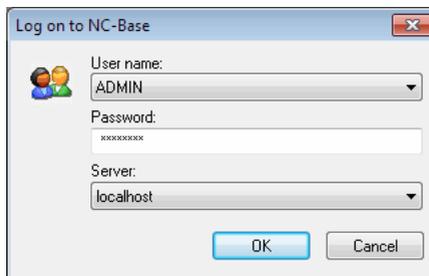


Figure 3.1: Database Login

Enter your User name and Password in the corresponding fields and click the **OK** button.

Further information on User Rights is found under the *Installation Guide*.

- **Logoff** / 

Logs you out from the database.

The NC-Base Explorer closes when you log off from the database.

Note: By default, NC-Base Explorer auto logs you off after 5 minutes. You can specify the auto logout time under the *Installation Guide*.

- **Database Setup** / 

Use this dialog to configure the database.

To configure the database, select **Database**, **Setup** or click on the corresponding icon.

Please refer to chapter the *Installation Guide* for details.

3.2 Search

This section is concerned with the Database **Search** function. This menu contains the functions described below for file editing. If a function can be activated through the Ribbon bar or a keyboard shortcut, the icon or the shortcut is displayed next to the command name.

For more details about Search settings, please see the *Installation Guide*.



Figure 3.2: Search

- **Queue** / 

Finds all programs on the import queue.

Click on this icon to display a list of all programs on the import queue.

Note: Queued programs are marked with a red cross on the corresponding icon. Programs on the import queue can be accepted or rejected, and only approved programs can be edited. The queue function can only be used with DNC-Max enabled. Programs received by using DNC-MAX auto receive or auto import options can be placed on the queue.

- **Find programs received from CNC's** / 

Finds all programs on the queue received from CNC's.

Click this icon to display a list of received programs from CNC that are placed on the queue.

- **Find auto imported programs** / 

Finds all auto imported programs on the queue.

Click this icon for a list of auto imported programs that are placed on the queue.

Note: The auto import function can only be used with DNC-Max enabled.

- **Last 24 Hours** / 

Finds all programs modified within the last 24 hours.

Click on this icon to display a list of programs that have been modified within the last 24 hours.

- **Find Modified Last 7 Days** / 

Finds all programs modified within the last 7 days.

Click on this icon for a list of programs that have been modified within the last 7 days.

- **Locked** / 

Finds all locked programs.

Click this option to display a list of all locked programs.

Notice: To search for locked programs, the function **Use locking system** must be activated in the NC-Base Configuration dialog under *Server Settings* , *Advanced*.

- **Find All Unlocked** / 

Finds all unlocked programs.

Click this option for a list of all unlocked programs.

Notice: To search for unlocked programs, the option **Use locking system** must be checked in the NC-Base Configuration dialog under *Server Settings* , *Advanced*.

- **Read/Write** / 

Finds all read/write programs.

Click on this icon for a list of all read/write programs.

Note: To search for Read/Write programs, **Use read-only system** must be activated in the NC-Base Configuration dialog under *Server Settings* , *Advanced*.

- **Find All Read-only** / 

Finds all read-only programs.

Click this option to display a list of all read-only programs.

Note: To search for Read-only programs, **Use read-only system** must be activated in the NC-Base Configuration dialog under *Server Settings* , *Advanced*.

- **Find Deleted** / 

Finds all deleted programs.

Click this icon to display a list of all deleted programs.

3.3 Program

This chapter describes **Program** on the Database tab. The **Program** menu contains the functions described below for file handling. If the function can be accessed through the Ribbon bar or a keyboard shortcut, the icon or the shortcut is displayed next to the command name.

For more details about Program settings, please refer to the *Installation Guide*.

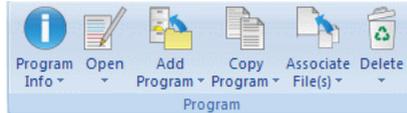


Figure 3.3: Program

- **Program Info** / 

Shows program info for the selected program(s).

Note: Program Info can be specified for the fields defined in the *Installation Guide*.

- **Copy Program Info** / 

Click this option to copy the program info from the selected program.

- **Paste Program Info** / 

Click this option to paste the copied program info to the selected program.

- **Open** / 

Opens the selected file.

Click this icon to open the selected file with the associated file extension application (e.g. *.pdf will open with Acrobat Reader, *.doc with Microsoft Word etc.).

- **Open with CIMCO Edit** / 

Opens the selected file in CIMCO Edit.

Click this icon to open the selected files for viewing or editing in CIMCO Edit.

- **Compare** / 

Compares the selected programs.

Click this option to opens the selected files in CIMCO Edit - File Compare. When you select two programs and compare them, the corresponding NC programs are usually also compared.

If you want to compare associated files, you must select them. You can compare associated files for different programs.

- **View Version Report** / 

Views a version report for the selected file.

Note: To view version reports, the option **Use versioning system** must be activated in the NC-Base Configuration dialog under *Server Settings*, *Advanced*.

- **Show File Notes** / 

Shows the file notes.

- **Add Program** / 

Adds a new program to the database.

When you click on this icon, the following dialog appears:

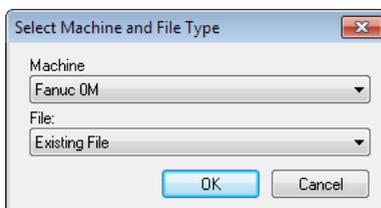


Figure 3.4: The dialog 'Add Program'

Machine: Select a machine to add to the new program.

File: Files can be added as follows:

- **Existing File**

Adds an existing file to the selected machine group.

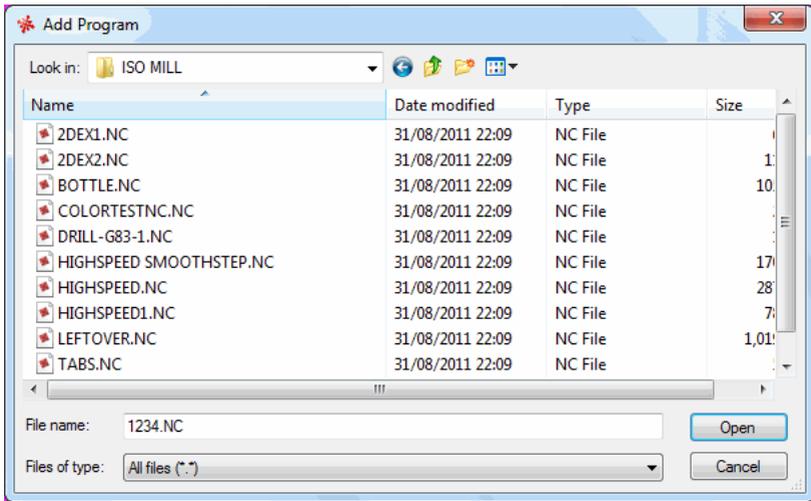


Figure 3.5: Add existing file

Select a program and click **Open**.

– **New File**

Creates an empty file and adds it to the selected machine.

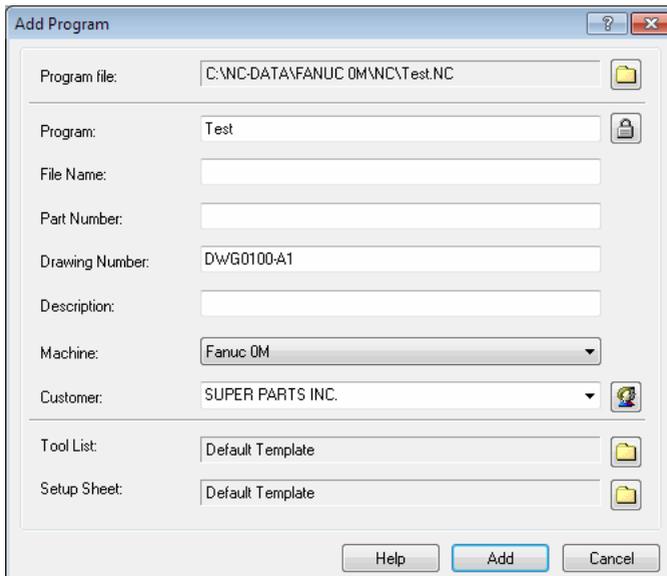


Figure 3.6: Add new file

Enter a descriptive name in the input field *Program* and click on **Add**. If necessary, you can add the file before entering any other information about the file (e.g. customer, status, etc.). Click **Cancel** to exit the dialog without entering data.

– **Empty Mazatrol File**

Creates an empty Mazatrol file and adds it to the selected machine. Proceed as described under New File to add the file.

Notice: The editor must be licensed for Mazatrol Viewer to use this option.

• **Add Current Program** / 

Adds program in current window to the database. Proceed as described under New File to add the file.

• **Copy Program** / 

Copies the selected program. Proceed as described under New File to add the file.

• **Associate File(s)** / 

Associates file(s) to a program. You can associate any file to the program (e.g. digital pictures in jpeg-format, drawings in pdf-format, etc.).

Note: The preview is active for supported formats such as jpeg, bmp, and pdf, but not for unsupported formats.

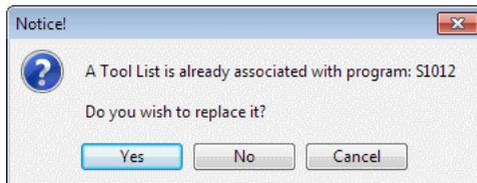
• **Add/Update Memo File** / 

Add/Update new memo file.

• **Add/Update Tool List** / 

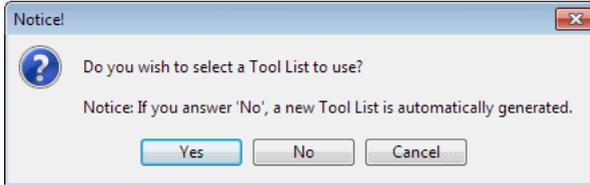
Add/Update new tool list.

Note: By default, a tool list is automatically generated when adding new programs (can be deactivated by checking the box **Disable tool List** in *Server Settings, Associated Files*). If you still want to add a tool list, the following message appears:



Click **Yes** to replace the existing tool list with a new one. Click **No** to abort the operation.

If you click **Yes**, the following message appears:



Click **Yes** to add an existing tool list. Click **No** to generate a new tool list automatically. Click on **Cancel** to exit without any changes taking effect.

- **Add/Update Setup Sheet** / 

Add/Update new setup sheet.

Please proceed as described above under *Add Tool List*.

- **Delete** / 

Deletes selected program(s).

Notice: Deleted programs can be restored (please refer to *Restore Deleted Programs* for details).

- **Purge** / 

Purges selected file(s).

Notice: Purged programs can NOT be restored.

- **Undelete** / 

Undeletes selected program(s).

Notice: Permanently deleted programs can NOT be restored.

3.4 Status

This section describes the **Status** function. The **Status** menu contains the functions described below for file processing. If the function can be activated through the Ribbon bar or a keyboard shortcut, the icon or the shortcut is displayed next to the command name.

Please refer to chapter the *Installation Guide* for further information.



Figure 3.7: Status

- **Lock** / 

Locks the selected program(s).

Note: Locked programs can not be transferred to CNC machines. To lock a program, select *Server Settings, Advanced*, and check the field **Use locking system**.

- **Unlock** / 

Unlocks selected program(s).

- **Read-only** / 

Marks selected program(s) as read-only.

Note: When a program is marked as read-only, it can be simulated (in Backplot) but not edited. To use this option, check the field **Use read-only system** under *Server Settings, Advanced*.

- **Read/Write** / 

Sets selected program(s) read/write.

- **Accept** / 

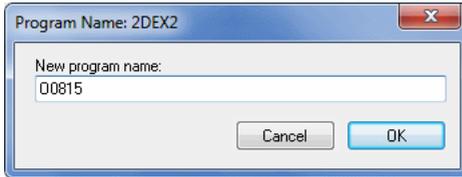
Accept imported file.

Click this option to accept the imported file under the name defined in DNC-MAX auto receive or auto import.

Note: Programs on the import queue can be accepted or rejected. The queue function can only be used with DNC-Max enabled (see also Search, Queue).

- **Accept Imported File As** / ✓

Accept imported file under a different name. The following dialog appears:



Enter a new program name and click **OK**. Click on **Cancel** to exit without entering a new filename.

- **View Imported File** / 

Shows a preview of the imported program. This function allows you to view the file before accepting or rejecting it.

- **Compare with Imported File** / 

Compares the imported file with a program on the queue. This allows you to view the file before accepting or rejecting it.

- **Reject** / ✗

Reject imported file.

- **Add Comment** / 

Add change comment to the selected program. The following dialog appears:

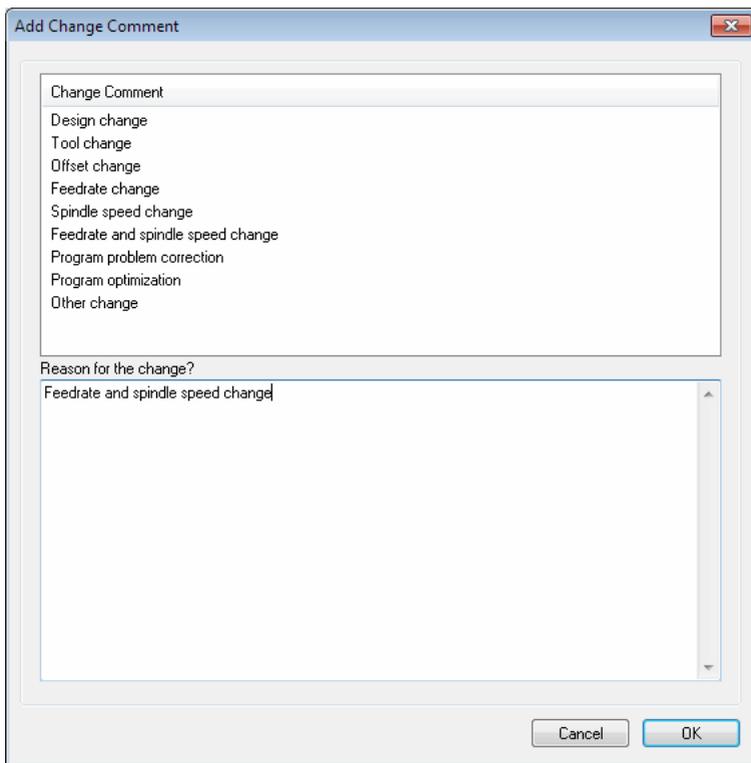


Figure 3.8: Add change comment

In the field **Change Comment**, select a comment and click **OK** to insert it. To add your own comment, select *Other change*, enter your comment in the field **Reason for Change?** and click **OK**. To cancel the operation, click **Cancel**.

- **Change Status** / 

Click this option if you wish to change the program status.

3.5 Transfer

In this chapter, the Database **Transfer** command is described. The **Transfer** menu contains functions described below for file processing.

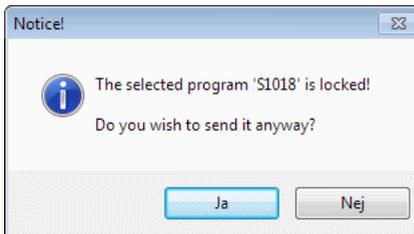
Information on the Transfer settings is found under the *Installation Guide*.



Figure 3.9: Transfer

- **Send** / 

Sends the selected program(s). When you click on this icon, the following message appears:



Click **Yes** to send the file. If you want to cancel the operation, click **No**.

If multiple CNC machines are associated with an NC-Base machine group, you must first select a machine in the *Select Port* dialog below:

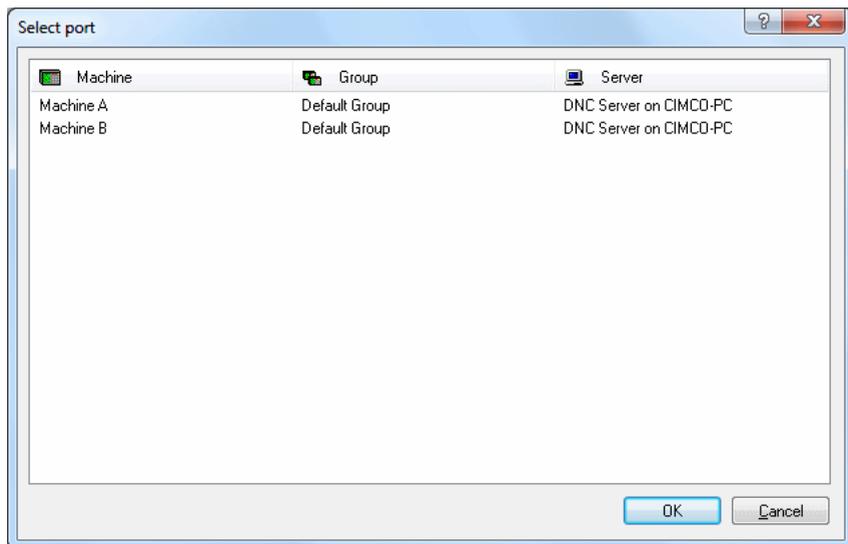


Figure 3.10: Select a machine for the receive operation

Click finally on **OK** in the dialog *Info, file set on the transmit queue*.

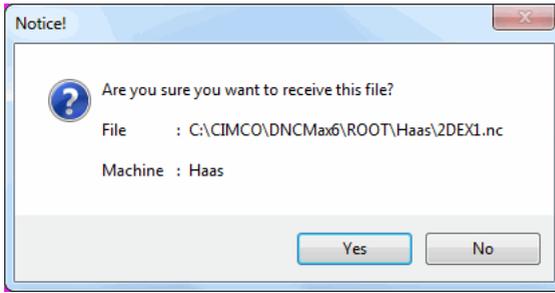
Note: You need DNC-Max to send NC programs, and DNC-Max must be configured for this operation. It is also possible to send programs from NC-Base using the DNC module of the Editor (optional). Please contact your local dealer for information about the required DNC settings.

- **Stop current DNC Transfer** / 

Stops the current DNC transfer (only when using the Editor DNC Option).

- **Receive** / 

Receives the selected program(s) in the database. Existing files are overwritten. When you click on the Receive icon, the following message appears:



Click **Yes** to receive the file. To cancel the receiving process, click **No**. If multiple CNC machines are associated with an NC-Base machine group, you must first select a machine in the *Select Port* dialog.

Click finally **OK** in the dialog *Info, file set on the receive queue*.

Note: You need DNC-Max to receive NC programs, and DNC-Max must be configured for this operation. If DNC-Max is in use, the NC programs are normally received automatically. It is also possible to receive programs in NC-Base using the DNC module of the Editor (optional). Please contact your local dealer for information about the required DNC settings.

- **Receive New Program** / 

Receives a program in a new window.

3.6 Backup

This chapter is concerned with the Database **Backup** function. This menu contains the functions described below for file transfer. If the function can be accessed through the Ribbon bar or a keyboard shortcut, the icon or the shortcut is displayed next to the command name.

Please refer to the *Installation Guide* for further information.



Figure 3.11: Backup

- **Restore** / 

Restores the selected program. Clicking on this icon will open the following dialog (example).

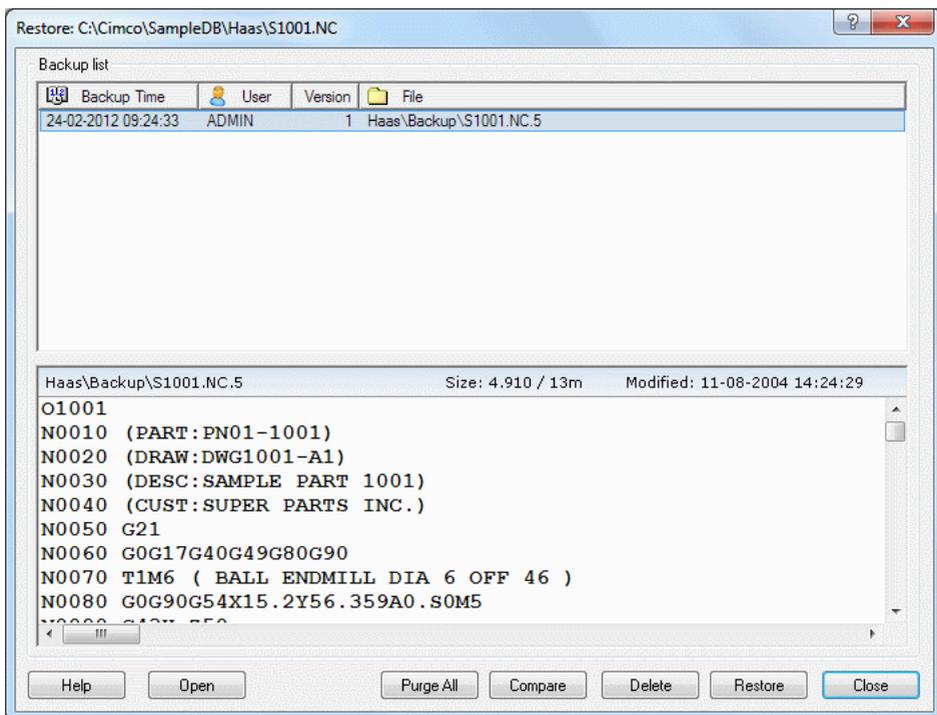


Figure 3.12: Restore

- **Help**
Opens the on-line help.
- **Open**
Opens the selected backup file in the editor.
- **Purge All**
Deletes all listed backups.
- **Compare**
Compares the selected backup with the current version.
- **Delete**
Deletes the selected backup.

- **Restore**
Restores the selected backup.
- **Close**
Closes the backup dialog.

- **Restore Latest** / 🔄
Restores latest backup of the selected program(s).
Notice: The latest created backup is restored.

- **Compare With Latest Backup** / 📄
Compares the selected file with the latest backup.

- **Backup** / 📁
Makes a backup of the selected program(s).

3.7 Customer

This section describes the Database command **Customer**. The Customer menu contains functions described below for file processing. If the function can be accessed through the Ribbon bar or a keyboard shortcut, the icon or the shortcut is displayed next to the command name.

Information on Customer settings is found under the *Installation Guide*.



Figure 3.13: Customer

- **Add Customer** / 👤
Click this icon to add a new customer to the database. The following dialog appears:

The image shows a software dialog box titled "Add customer". It has a standard Windows-style title bar with a question mark icon and a close button. The dialog is organized into two main sections: "Customer Info" and "Contact Info".

The "Customer Info" section includes the following fields:

- Customer: A single-line text input field.
- Address: A multi-line text input field.
- City: A single-line text input field.
- St/Prv: A single-line text input field.
- Zip/Postal code: A single-line text input field.
- Country: A single-line text input field.
- Telephone: A single-line text input field.
- Fax: A single-line text input field.
- Homepage: A single-line text input field with a small house icon to its right.

The "Contact Info" section includes the following fields:

- Name: A single-line text input field.
- Telephone: A single-line text input field.
- Email: A single-line text input field with a small envelope icon to its right.

At the bottom of the dialog, there are three buttons: "Help", "Add", and "Cancel".

Figure 3.14: Add customer

Enter the customer data in the corresponding fields and close the dialog by clicking on **Add**. If you want to exit without entering data, click on **Cancel**.

- **Modify Customer** / 

Click this option to modify the selected customer. A dialog which is similar to the *Add customer* dialog appears, although with the title **Modify customer**. Enter the new customer data and click **Modify**, or click **Cancel** to abort the operation.

- **Delete Customer** / 

Click this option to delete a customer from the database.

3.8 Administration

In this chapter, the Database **Administration** command is described. The below mentioned functions are used for system administration.

Information on how to configure this function is found under the *Installation Guide*.

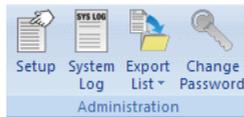


Figure 3.15: Administration

- **Setup** / 

Click this icon to configure the database.

Please refer to section the *Installation Guide* for more information on how to configure the database.

- **System Log** / 

Opens the system log browser.

The screenshot shows a window titled "NC-Base System log" with a table of system events and search filters below it.

User	Time	Program	Filename	Text
ADMIN	09:32:52			Configuration changed
ADMIN	09:28:28			Configuration changed
ADMIN	09:27:02			User logged in: PC Name: CIMC...
ADMIN	09:26:59			User logged off: PC Name: CIMC...
ADMIN	09:24:33	S1001	S1001.NC	Backup created by user
ADMIN	09:22:05			User logged in: PC Name: CIMC...
ADMIN	22-02-2012 14:09:25			User logged off: PC Name: CIMC...
ADMIN	22-02-2012 13:05:43			Configuration changed
ADMIN	22-02-2012 12:48:22			Configuration changed
ADMIN	22-02-2012 10:08:31			User logged in: PC Name: CIMC...
ADMIN	21-02-2012 15:56:26			Configuration changed
ADMIN	21-02-2012 15:08:50			User logged in: PC Name: CIMC...
ADMIN	21-02-2012 15:08:25			Configuration changed
ADMIN	21-02-2012 15:07:55			User logged in: PC Name: CIMC...
ADMIN	21-02-2012 15:07:22			Configuration changed
ADMIN	21-02-2012 08:48:52			User logged in: PC Name: CIMC...

Below the table are search filters:

- Program:
- Event type:
- User ID:
- Date / Time:
- From:
- To:

Buttons at the bottom: Export, Clear, Search, Exit.

Figure 3.16: System Log

– Program

Use this field to specify a program name.

Example: To find all events for the program MOULD1, specify MOULD1 in this field. To find all events for programs containing MOULD in the program name, specify *MOULD*.

Note: Wildcards are allowed.

– User ID

Specify the user info in this field.

– Event type

Use this field to specify the type of event. Select the blank field to display all types of events.

– Date / Time

Use this field to specify dates that should be searched.

– From

Use this field to specify the date that should be searched.

- **To**
Use this field to specify the date that should be searched.
 - **Export**
Click this button to export the log file.
 - **Clear**
Clears all search fields.
 - **Search**
Press this button to search the log.
 - **Exit**
Closes the log window.
- **Export List** / 
Click this option to export current search to a file.
 - **Print Program List** / 
Prints the result of current search.
 - **Change Password** / 
Click this icon to change your password.

Editor

This section describes the functions in the **Editor** tab. The functions in CIMCO Edit v6 are activated using the appropriate icons on the Ribbon bar. The commands are organized into logical groups under tabs.

4.1 File

This chapter describes the commands in the function **File**. The menu contains the functions described below for file editing. You can access the file configuration using the icon . If the function can be activated through the Ribbon bar or a keyboard shortcut, the icon or the shortcut is displayed next to the command name.

For details about the File settings, click on the corresponding icon or see Editor Setup.

Note: The **File** functions described below can also be reached through the

icon .



Figure 4.1: File

- **New** /  / *Ctrl+N*

An empty window opens, ready for input.

Note: Configure the machine type for the program by clicking on this icon .

- **Open** /  / *Ctrl+O*

The open file dialog window lets you open an existing program.

- **Recent** / 

A list of recently used files. Click the down arrow next to the *Open* icon to open recently used files.

- **Close** /  / *Ctrl+F4*
Closes the current window. You will be prompted to save changes if the file has been modified.
- **Close All**
Closes all open windows. You will be prompted to save changes for all modified files.
- **Save** /  / *Ctrl+S*
Saves the current CNC program.
- **Save All** / 
Saves all open CNC programs under their current names.
- **Save As** / 
Saves the current CNC program under a new name.
- **Print** /  / *Ctrl+P*
Prints the current CNC program. This icon is on the Editor toolbar.
If you want to print a part of a program, mark the area of interest and choose **Print**.
- **Printer Setup** / 
The dialog window for printout configuration is opened.
- **Global setup** / 
Lets you configure the general program settings of the CIMCO Editor. Please refer to chapter Editor Setup for more details.

4.2 File Type

This section describes how to configure File Type settings. The icon  lets you access the global configuration of File Type. If the function can be executed through the Ribbon bar or a keyboard shortcut, the corresponding icon or keystroke will be shown.

The File Type settings determine how to perform renumbering, look for tool changes, configure backplot settings, colors, where to save files etc.

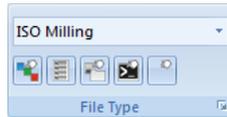


Figure 4.2: File Type

- **Colors** / 
Configure color highlighting.
- **Configure Block Numbering** / 
Configure Block Numbering.
- **Directories / Extensions** / 
Configure Directories and Extensions.
- **Machine templates** / 
Configure machine template specific parameters.
- **Other settings** / 
Configure other settings.
- **Setup - File Type** / 
Here you can configure the file type settings. The file type determines the colors, syntax, etc.

4.3 Edit

In this chapter, the ordinary text editing functions are described. If the function can be activated through the icon or the keystroke, the keystroke will be shown next to the command name.



Figure 4.3: Edit

A part of the text is marked by dragging the cursor from start point to end point, while pressing the left mouse button. The background color on the marked text is changed to indicate the selected area.

- **Copy** /  / *Ctrl+C*
Copies the selected text to the clipboard.
- **Cut** /  / *Ctrl+X*
Deletes the selected text and saves it on the clipboard.
- **Paste** /  / *Ctrl+V*
Inserts the clipboard contents at the current insertion position.
- **Select all** /  / *Ctrl+A*
Selects entire file content.
- **Undo** /  / *Ctrl+Z*
Undo the last edit operation.
- **Redo** /  / *Ctrl+Y*
Redo the last undo operation. You can redo all undo actions performed since the file was last opened.
- **Del** /  / *Del*
Deletes the selected part of the CNC program.

To move a part of a program, select the section of the program you wish to move, then **Cut** it, move the cursor, and use the **Paste** function described above.

- **Mark/Delete range** / *Ctrl+M*

In this dialog window, you can specify a range of lines or block numbers to be marked or deleted.

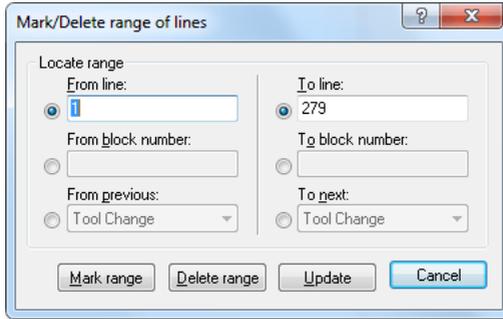


Figure 4.4: Mark/delete dialog box

- **Append File** /  /

Appends file to the end of the current window.

- **Insert File** / 

Inserts file into the current window.

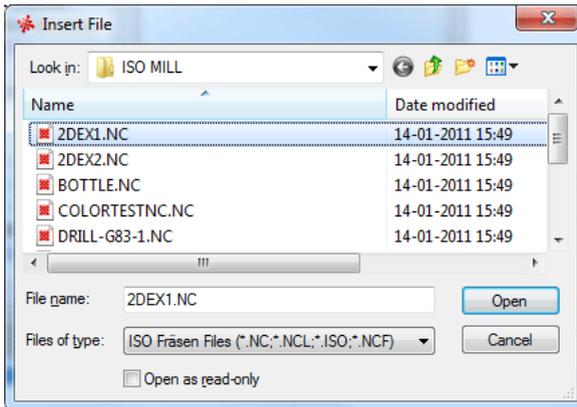


Figure 4.5: Dialog 'Insert File'

4.4 Find

This chapter describes the search for data through the file. If the function is accessible through a keyboard shortcut, this is indicated by the corresponding icon or keystroke.

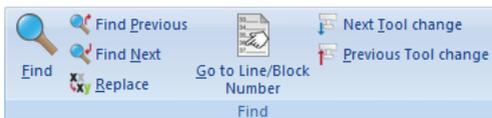


Figure 4.6: The Find dialog

- **Find** /  / *Ctrl+F*
In the appearing dialog box, you can specify a text string and search for it through the CNC-program. You can choose one of the defined tool operations instead of a text string.
- **Find Previous** /  / *SHIFT+F3*
Finds the previous occurrence of the specified search string in the CNC program.
- **Find next** /  / *F3*
Finds the next occurrence of the specified search string in the CNC program.
- **Replace** /  / *Ctrl+H*
Replaces a specified string in the CNC program with another string. Specify the search string and the substitute string in the dialog box.
- **Goto line/Block number** /  / *Ctrl+J*
Locate line or block number in current window.
- **Next tool change** / 
Goes to next tool change.
- **Previous tool change** / 
Goes to previous tool change.

4.5 Window

This section describes how the sub-windows containing the CNC programs can be arranged.

Click on **Window** on the top right corner of the Ribbon. This will open a drop-down menu with four display modes of the programs:

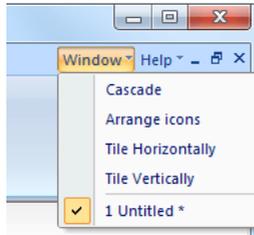


Figure 4.7: Window

- **Cascade**

Places the open files in an overlapping cascade in the window.

- **Arrange icons**

Assembles the icons of the minimized CNC programs in the lower left corner of the window.

- **Tile Horizontally**

Places the open files in horizontal editor windows in the program window.

- **Tile Vertically**

Places the open files in vertical editor windows from left to right.

The names of the open files are listed in the lower part of the drop-down menu. When you click on a file to select it, the file will be marked with a check mark at the beginning of the line. The top of the dialog box is highlighted and the corresponding tab is activated in the editor window. This allows you to see, which window you have activated.

4.6 Help

The on-line help system of CIMCO Edit v6 is explained in Using on-line help.

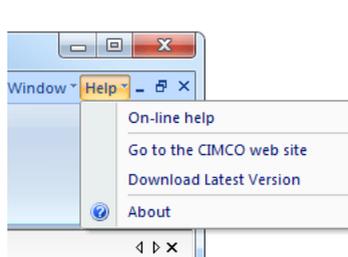


Figure 4.8: Help

- **On-line help**
Opens the on-line help file.
- **Go to CIMCO-Homepage**
Takes you directly to CIMCO website if your computer is connected to the Internet.
- **Download Latest Version**
Click this option to download the latest version of the editor CIMCO Edit.
- **About**
Shows information about CIMCO Edit v6 and CIMCO Integration.

NC Functions

This chapter describes the NC functions in the CIMCO Edit Ribbon. You can access the configuration of these functions using the icon . With the NC functions, CNC programs can be built or changed quickly. If the function can be activated through a keyboard shortcut, the shortcut is shown next to the command name.

The functions in CIMCO Edit v6 are activated using the appropriate icons on the Ribbon tab. The commands are organized into logical groups under the tabs.

5.1 Block Numbers

This chapter describes the functions concerning the appearance of the CNC program. For instance the commands and the block numbers can be changed. If the function can be activated through the NC Toolbar, an icon is shown next to the command name.



Figure 5.1: Block Numbers

- **Renumber** /  / *Ctrl-T*

Inserts block numbers in the CNC program (or renumber the block numbers if some already exist in the CNC program).

- **Remove** / 

Deletes all block numbers from the CNC program.

- **Configure Block Numbering** / 

Opens the Block numbers configuration dialog. Please refer to Block Numbers for more details.

5.2 Insert / Remove

The function **Insert / Remove** allows you to quickly write and edit NC programs. If the function can be activated using a keyboard shortcut, the shortcut is indicated by the corresponding icon.



Figure 5.2: Insert / Remove

- **Mark / Delete range** /  *Ctrl+M*
Marks or deletes a range of lines.
- **Block Skips** / 
Inserts block skips.
- **Remove Block Skips** / 
Removes any block skip characters.
- **Insert Spaces** / 
Inserts space characters between the commands in the CNC program, where there is no space character between two commands. Existing space characters are left as they are.
- **Remove Spaces** / 
Deletes all the space characters and tab signs from the CNC program (whitespace characters).
- **Remove empty lines** / 
Removes empty lines from the NC program.
- **Remove comments** / 
Removes comments in the CN program.
- **Insert strings** / 
Inserts strings in the NC program.
- **Remove strings** / 
Removes strings from the NC program.

- **Insert monitoring macros** / 

Inserts monitoring macros in the NC program.
- **Remove monitoring macros** / 

Removes monitoring macros from the NC program.
- **Auto insert spaces** / **_X**

Auto inserts spaces in the program.
- **Uppercase** /  / *Ctrl-U*

Changes the case of the text to uppercase.
- **Lowercase** /  / *Ctrl-Shift-U*

Changes the case of the text to lowercase.

5.3 Transform

This chapter describes the function **Transform** that allows you to quickly write and change NC programs. If the function is accessible through a keyboard shortcut, the shortcut is indicated by the corresponding keystroke/icon.

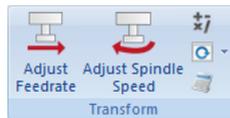


Figure 5.3: Transform

- **Adjust Feedrate** / 

In this dialog, it is possible to adjust the feedrate of the active program. To do this, click and drag the pointer or click on the sliding bar of the pointer, *or* enter the new feedrate in the field **New feedrate** (see the following in this section). Click **Cancel** to close the window without any changes taking effect.

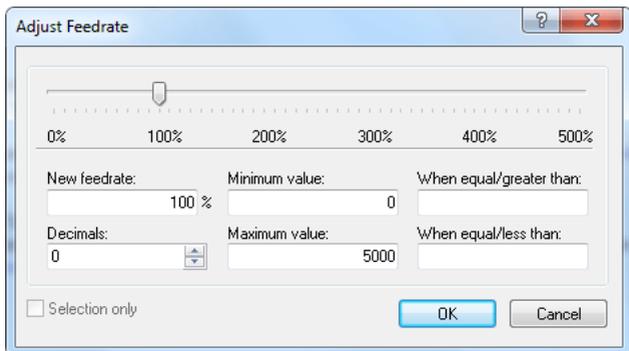


Figure 5.4: Adjust feedrate dialog

– **New feedrate**

In this field, the percentage with which the feedrate should be changed is entered.

– **Minimum value**

Enter the minimum feedrate into this field.

– **Maximum value**

Enter the maximum feedrate into this field.

– **Decimals**

Enter the number of decimals to the right of the decimal point into this field.

– **When equal/greater than**

Only values greater than or equal to the value specified here will be modified.

– **When equal/less than**

Only values less than or equal to the value specified here will be modified.

– **Selection only**

Check this field to alter the feedrate in the selected program blocks only.

• **Adjust spindle speed** / 

In this dialog, the spindle speed of the active program is adjusted. click and drag the pointer or click on the sliding bar of the pointer, *or* enter the new spindle speed in the field **New spindle speed** (see the following in this section). Click **Cancel** to close this window without any changes taking effect.

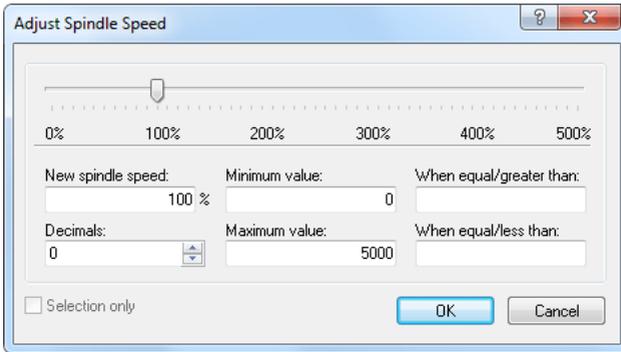


Figure 5.5: Adjust spindle speed dialog

– **New spindle speed**

Enter into this field, the percentage with which the spindle speed should be changed.

– **Minimum value**

Enter the minimum spindle speed here.

– **Maximum value**

Enter the maximum spindle speed here.

– **Decimals**

Enter the number of decimals to the right of the decimal point here.

– **When equal/greater than**

Only values greater than or equal to the value specified here will be modified.

– **When equal/less than**

Only values less than or equal to the value specified here will be modified.

– **Selection only**

Check this field to change the spindle speed in the selected program blocks only.

- **Simple math functions** / 

Performs simple mathematical functions on the chosen NC file parameters.

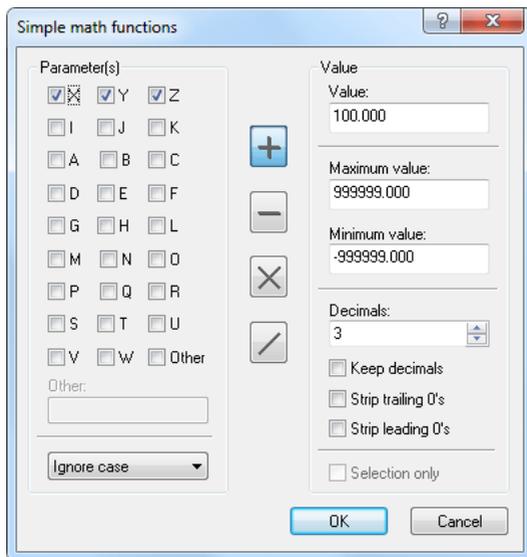


Figure 5.6: Simple math functions dialog

- **Parameter(s)**

Check the fields of the parameters to be changed.

- **Other**

Check this field to enter parameters with more than one character.

- **UPPER/lower case**

Use this field to specify UPPER and/or lower case of the parameters to be changed.

- **Addition** /  /

Adds the specified value to all selected parameters.

- **Subtraction** /  /

Subtracts the specified value from all selected parameters.

- **Multiplication** /  /

Multiplies all selected parameters by the specified value.

- **Division** /  /

Divides all selected parameters by the specified value.

– **Value**

Enter the value to be inserted in the mathematical functions (Addition/Subtraction/Multiplication/Division) in this field.

– **Maximum value**

Enter the maximum value in this field. Parameters with values higher than specified here will not be altered by the math functions.

– **Minimum value**

Enter the minimum value in this field. Parameters with values lower than specified here will not be altered by the math functions.

– **Decimals**

In this field, enter the number of decimals to the right of the decimal point.

– **Keep decimals**

Check this field to provide the new value with the same number of decimals as the original value.

– **Strip trailing 0's**

Check this field to remove all zeros from the end of the number.

– **Strip leading 0's**

Check this field to remove all zeros from the beginning of the number.

– **Selection only**

Check this field to change the value of the selected program blocks only.

- **Rotate** / 

In this dialog you can rotate the outline around a specified point and with a specified angle. Click **Cancel** to close this window without any changes taking effect.

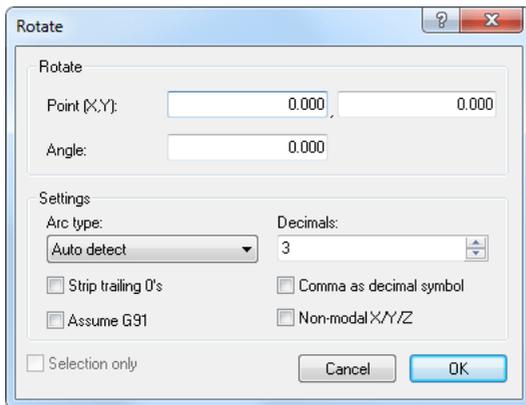


Figure 5.7: Rotate Dialog

- **Point (X,Y)**
Enter the coordinates of the center of the rotation in these fields.
- **Angle**
Enter the angle of rotation by degrees in this field.
- **Arc type**
Specify the arc type. You can choose between *Auto detect*, *Relative to start*, *Relative to end*, and *Absolute arc center*. Auto detect is default.
- **Decimals**
Enter into this field the number of decimals to the right of the decimal point.
- **Strip trailing 0's**
Check this field to remove all zeros from the end of the number.
- **Comma as decimal symbol**
Check this field to use comma as decimal separator.
- **Assume G91**
Check this field when the control is preset for relative coordinates.
- **Non-modal X/Y/Z**
Check this field to use non-modal X/Y/Z values.

- **Mirror** / 

In this dialog you can mirror the outline around a specified line. Click **Cancel** to close this window without any changes taking effect.

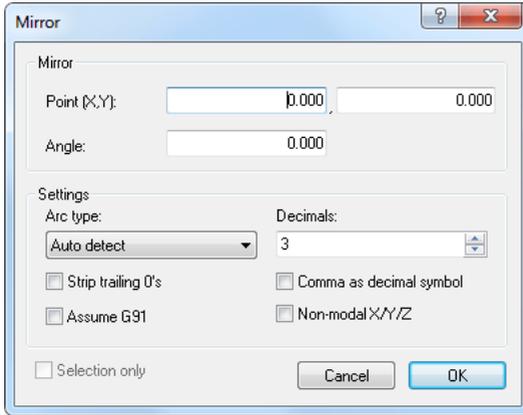


Figure 5.8: Mirror Dialog

- **Point (X,Y)**

Enter into these fields the coordinates of the point of the mirror axis.

- **Angle**

Enter into this field the angle of rotation by degrees of the mirror axis.

- **Arc type**

Specify the arc type. You can choose between **Auto detect**, **Relative to start**, **Relative to end**, and **Absolute arc center**. Auto detect is default.

- **Decimals**

Enter into this field the number of decimals to the right of the decimal point.

- **Strip trailing 0's**

Check this field to remove all zeros from the end of the number.

- **Comma as decimal symbol**

Check this field to use comma as decimal separator.

- **Assume G91**

Check this field when the control is preset for relative coordinates.

– **Non-modal X/Y/Z**

Check this field to use non-modal X/Y/Z values.

• **Offset/Tool compensation** / 

In this dialog you can define a tool compensation for the active program (offset left G41, offset right G42).

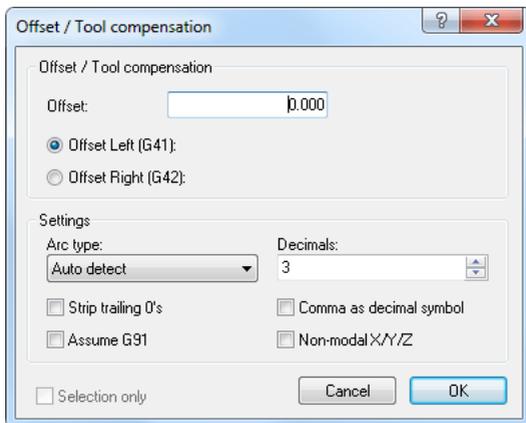


Figure 5.9: Offset/Tool compensation Dialog

– **Offset**

Enter the offset value into this field.

– **Offset Left (G41)**

Enable compensation of the milling path, offset left (G41).

– **Offset right (G42)**

Enable compensation of the milling path, offset right (G42).

– **Arc type**

Specify the arc type. You can choose between *Auto detect*, *Relative to start*, *Relative to end*, and *Absolute arc center*. Auto detect is default.

– **Decimals**

Enter into this field the number of decimals to the right of the decimal point.

– **Strip trailing 0's**

Check this field to remove all zeros from the end of the number.

– **Comma as decimal symbol**

Check this field to use comma as decimal separator.

- **Assume G91**

Check this field when the control is preset for relative coordinates.

- **Non-modal X/Y/Z**

Check this field to use non-modal X/Y/Z values.

- **Translate** / 

This dialog translates the outline. The outline is moved to a position offset by the values entered in the Translate (X,Y,Z) fields.

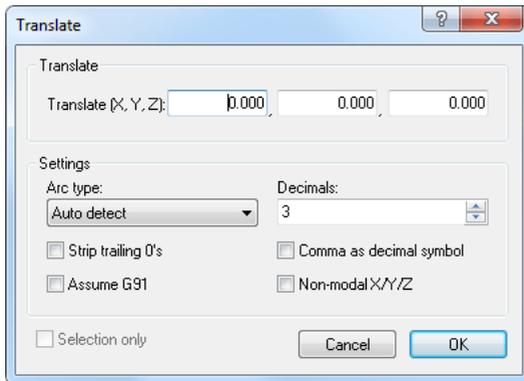


Figure 5.10: Translate Dialog

- **Translate (X,Y,Z)**

Enter into these fields the X, Y, and Z values to offset the outline.

- **Arc type**

Specify the arc type. You can choose between *Auto detect*, *Relative to start*, *Relative to end*, and *Absolute arc center*. Auto detect is default.

- **Decimals**

Enter into this field the number of decimals to the right of the decimal point.

- **Strip trailing 0's**

Check this field to remove all zeros from the end of the number.

- **Comma as decimal symbol**

Check this field to use comma as decimal separator.

- **Assume G91**

Check this field when the control is preset for relative coordinates.

– **Non-modal X/Y/Z**

Check this field to use non-modal X/Y/Z values.

- **Heidenhain / ISO Converter** / 

Converts 3D Heidenhain Programs to ISO Programs.

- **Show windows calculator** / 

Opens Windows calculator.

5.4 Info

The menu **Info** contains functions for calculating Toolpaths Statistics and generating Tool List. You can access the configuration by using the icon . If the function can be activated using a keyboard shortcut, the keyboard shortcut is shown next to the command name.



Figure 5.11: Info

- **Toolpath Statistics** / 

Find range of X,Y,Z, machining time etc.

- **Make Tool List** / 

Create a tool list for the current window.

- **Configure Tool List** / 

Configure how the tool list is generated.

5.5 Macros

This chapter describes the function **Macros**. You can access the configuration of this function using the icon . CIMCO Edit v6 includes built-in cycles and macros for common operations like program start, program stop and tool change. You can also record or create custom cycles and macros for the operations most common to your own specific setups and applications.

If the function can be activated using the keyboard shortcut, the icon will be visible next to the command name.



Figure 5.12: Macros

- **Macro Name**

Shows the current macro for the selected file type. Click on the arrow and select a macro from the drop-down list.

- **Insert Macro** /  

Insert the selected macro.

Before inserting a macro, you must first define two types of parameters: A) The required parameters and B) the optional parameters (marked with *).

Click on the icon  to open the parameter input box. Enter the parameters and click OK.

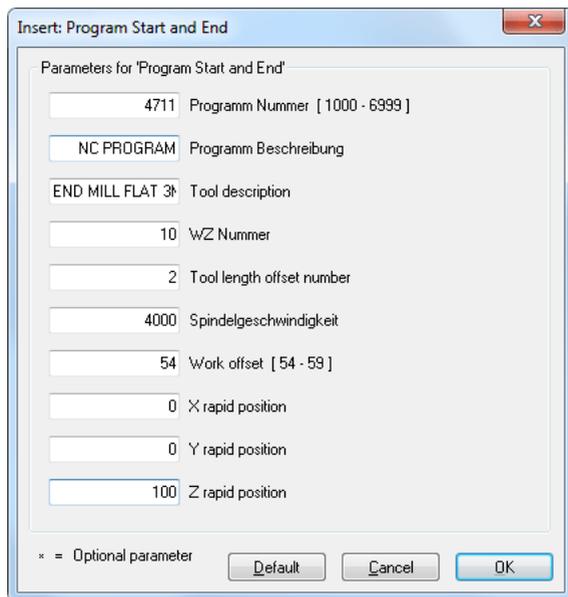


Figure 5.13: Program Start/End Dialog

- **Modify Macro** / 

Modify the selected macro.

To modify an NC code in an inserted macro (e.g. change the Z value of the macro *Program Start/Program End* from 100 to 80 mm), highlight the NC code and click on the Modify Macro icon . Enter the new Z value and then click OK.

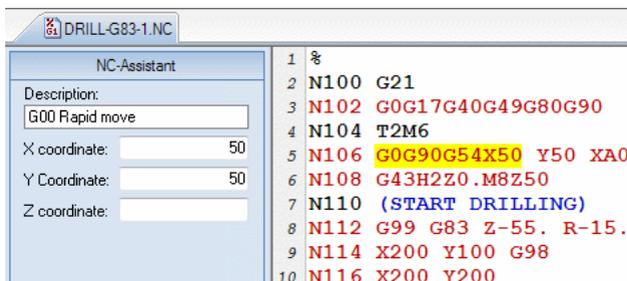


Figure 5.14: NC Code selection in an inserted macro

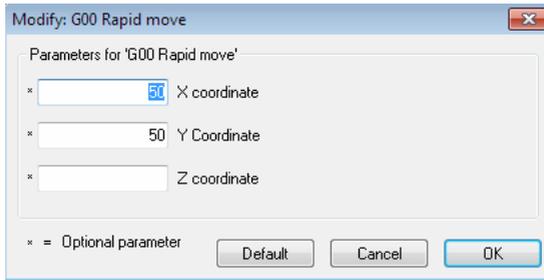


Figure 5.15: The dialog 'Modify Macro' (example)

- **Find Macro** / 

Click this icon to search for the specified macro.

You can search for a macro in an NC program in two ways:

1. In the field *Cycles/Macros*, select the macro to search for in the NC program and press the button **Find Macro**.
2. Select the macro to search for from the drop-down list and click on the icon  *Find Macro*.

Note: If you receive the message: 'Cannot find the macro', it is because the desired macro was not specified as a macro. The NC text has been copied or created manually.

- **Record Macro** / 

Creates a new macro based on the selected text.

To record a specific or frequently recurring NC block, select the block in the NC program and then click on **Record Macro**. The dialog *Add Macro* appears. Enter a name for your NC block (macro) and click **OK** to save it. The name is visible in the field *Macro name* of the *Macro Setup* dialog.

Note: If macro specific NC codes are variables, you must replace them with user-defined parameters in the *Macro Definition* field of the *Macro Setup* dialog.

- **File type**

Shows the current file type. Click on the arrow to select another file type.

- **Macro Setup** / 

Here you can configure, add, and modify macros for the file types.

5.6 Macro Setup

CIMCO Edit v6 includes built-in cycles and macros for common operations like program start, program stop and tool change. You can create custom cycles and macros for the operations most common to your own specific setups and applications.

- **Show/Hide NC-Assistant** /  / F8

Click this icon to show or hide the NC-Assistant.

- **Show/Hide NC-Assistant Balloons** /  / F8

Shows or hides the NC-Assistant Balloons.

- **Macro Setup** / 

The dialogue *Macro Setup* is divided into three functional areas that are described in details in the following section.

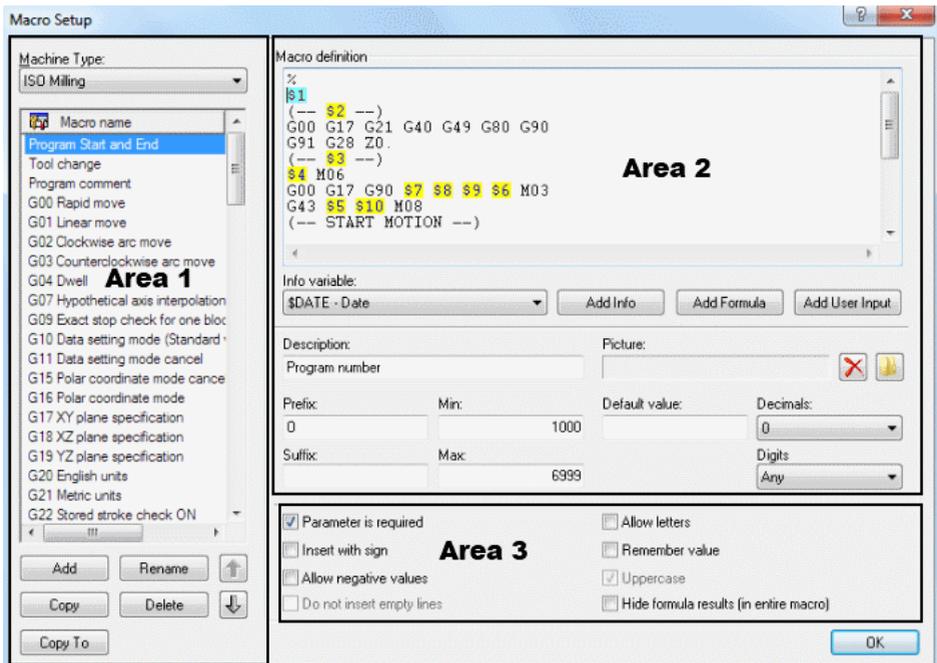


Figure 5.16: Macro Setup dialog

Area 1: List of defined macros

- **Machine Type**

This drop-down menu provides a list of defined machine types you can select from (e.g. ISO Milling, ISO Turning, Heidenhain, etc.).

- **Macro name**

Here you can see all available macros for the selected machine type.

Clicking on the **Add** button will open the dialog *Add macro*. Enter the name of the new macro and click **OK**. You will find this name at the bottom of the *Macro name* list.

- **Add**

Press this button to open the dialog **Add macro**. Enter the name of the new macro and click **OK**.

- **Rename**

Press this button to rename the selected macro.

- **Copy**

Press this button to make a copy of the selected macro. You can make a few changes in the name and the contents of the macro to create a similar macro and save it.

- **Delete**

Pressing this button will display a warning message asking if you really want to delete the selected macro. If you answer **Yes**, the macro name and its contents will be deleted.

- **Up / Down arrows**

Use these buttons to move the selected macro up or down the list.

- **Copy To**

Click this button to copy the selected macro to a different configuration.

Area 2: Macro structure

- **Macro definition**

In the field *Macro definition*, the macro block sequence is shown as it will appear in the NC program. NC code variables are replaced by parameters in ascending order. These parameters will be added to the macro program using the button **Add** (data input via the keyboard is not permitted and will not be accepted!).

The macro *Tool change* consists of 7 NC program blocks with 6 parameters (\$1 .. \$6). The block number format (e.g. N0100) and interval (e.g. 10) can be configured and modified in the dialog section 9.2.2.

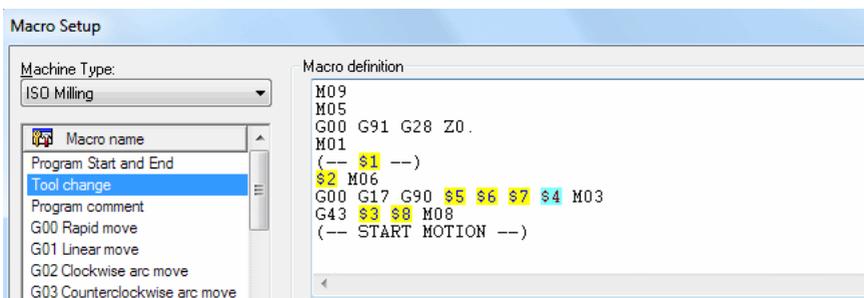


Figure 5.17: Example of 'Macro definition' with 6 parameters

- **Info variable**

Use this drop-down menu to add additional information to the macro (for example: Date, time, date and time, filename, etc.).

- **Add Info**

Press this button to insert a new information variable.

- **Add Formula**

Press this button to insert a new formula.

- **Add User Input**

Press this button to insert a new user variable.

- **Description**

Use this field to specify a description of the selected parameter.

Note: When you insert the macro into the CNC program by clicking the icon , a parameter input box appears to let you enter all

macro parameters. The description of the parameter is right next to the parameter field.

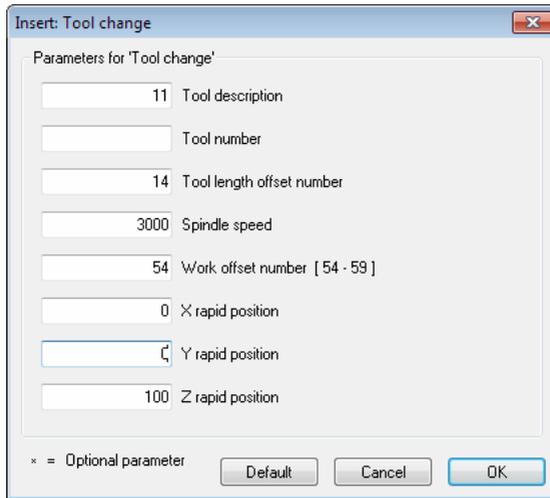


Figure 5.18: Macro parameter input fields (example)

- **Prefix**

Use this field to specify a prefix string for the selected parameter, e.g. *S* for spindle speed.

- **Suffix**

Use this field to specify a suffix string for the selected parameter.

- **Min**

Use this field to specify a minimum value for the selected parameter. If you enter a value lower than the *Min* value, you will immediately be prompted for correction.

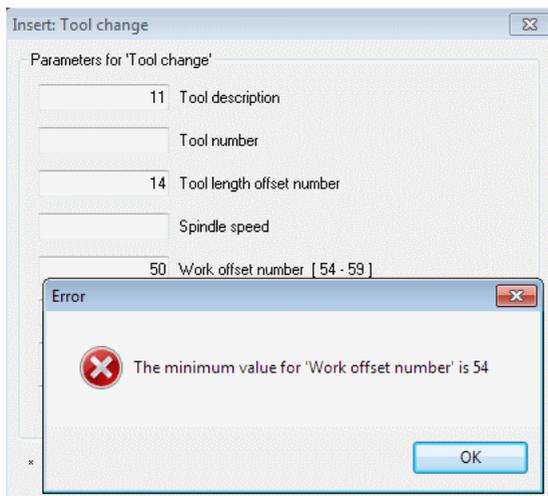


Figure 5.19: Error message for value lower than 'Min'

- **Max**

Use this field to specify a maximum value for the selected parameter. If you enter a value higher than the *Max* value, you will immediately be prompted for change.

- **Default value**

Use this field to specify a default value for the selected parameter.

- **Decimals**

Use this field to specify the number of decimal digits.

- **Digits**

Use this field to specify the number of digits.

Example: When inserting an O-number with 4 digits, the result becomes 'O0007'.

Area 3: Parameter monitoring - Additional options

Use the check boxes to enable or disable additional options.

Notice: The additional options must be selected carefully, as they affect the final result.

- **Parameter is required**

Check this field if the user is required to specify a value for the selected parameter.

If you do not check this box, the sign * will appear in the parameter input field, indicating that this parameter is 'optional'. In this case, you do not need to enter a value in the field. If you do it anyway, you will change the (modal) value for this NC code.

Optional Parameters can for example be found at the 3 axes (X, Y, Z) of linear move (G01).

- **Insert with sign**

Check this field if the parameter value should be inserted with a sign.

Example: The value 123.4 will be inserted as *+123.4*.

- **Allow negative values**

Check this field to allow negative values.

If you leave this field unchecked, only positive values will be accepted!

Notice: If you (accidentally) enter a negative value into the macro fields, the (-) sign will be ignored. The entered value will be considered as the absolute value of the parameter and will output positive NC codes in the CNC program.

- **Do not insert empty lines**

Check this field if no blank line should be inserted when this parameter is not specified.

- **Allow letters**

Check this field to allow the user to enter text string.

According to ISO Convention, texts in the CNC program must be written in parentheses so they can be read on CNC machines. To prevent forgetting the brackets, these are generated automatically in CIMCO Edit v6 when the field *Allow letters* is checked. Besides, the input fields *Min*, *Max*, *Decimals*, *Digits* and the box *Allow negative values* are grayed out.

The parameter \$2 in the macro *Program Start and End* can include programmers' initials, text strings, and special characters in parentheses.

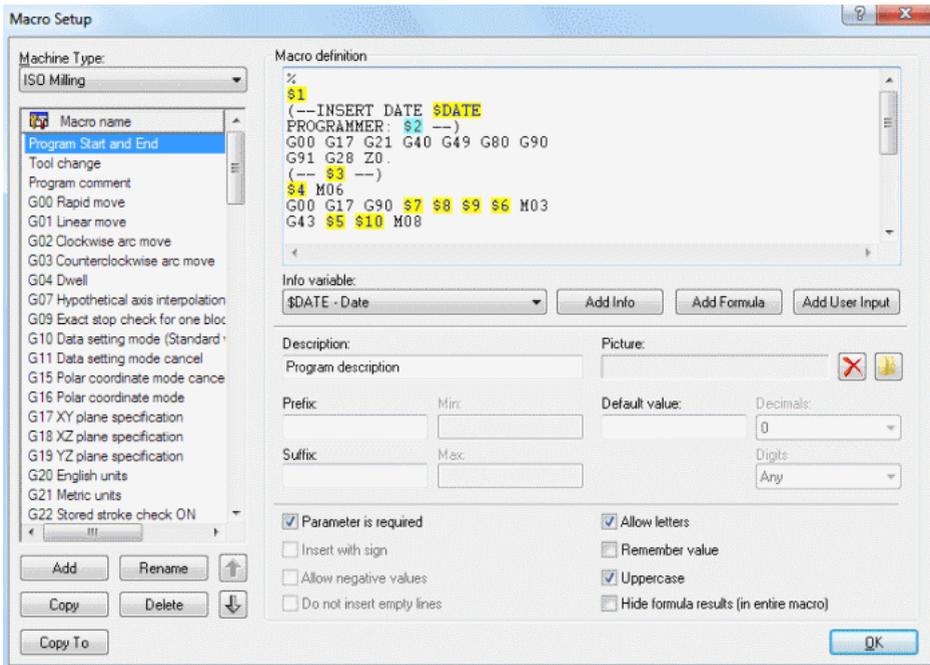


Figure 5.20: Allow letters

- **Remember value**

Check this field if the value should be used the next time the macro is called.

- **Uppercase**

Check this field to make the user input uppercase.

Note: You must check this box if you want to use both lower and uppercase in the text.

- **Hide formula results (in entire macro)**

When this field is checked, the results of NC-Assistant macro formulas are hidden.

5.7 Multi Channel

This section describes the NC Function command **Multi Channel**. You can access the configuration of this function using the icon . If the function can be activated through a keyboard shortcut, the shortcut is shown next to the command name.

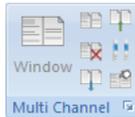


Figure 5.21: Multi Channels

- **Window** / 

This option enables you to view the current file in multi channel mode.

- **Files** / 

Click this icon to view multiple files in multi channel mode.

- **Close** / 

Closes the multi channel view.

- **Previous** /  / *Ctrl+Up Arrow*

Jumps to the previous synchronization point.

- **Next** /  / *Ctrl+Down Arrow*

Jumps to the next synchronization point.

- **Synchronize Scrolling** /  / *Ctrl+Up Arrow*

Use this option to scroll all channels at the same time.

- **Setup Multi Channel** / 

Lets you configure the multi channel view.

Backplot

This chapter describes the Backplot function in the Editor Ribbon.

The optional 3D/2D backplot in CIMCO Edit v6 is used for the simulation of CNC programs. The Backplot configuration is accessible through the icon . If a function can be executed from the tab menu and a keyboard shortcut, the corresponding icon and the key combination will be shown next to the command.

The functions in CIMCO Edit v6 are activated using the appropriate icons in the Ribbon. The commands are organized into logical groups under the tabs.

The graphical backplotter shows the toolpath for milling and turning operations in the ZX plane (G18). The CN program is displayed in the left pane of the backplot window, while the plot is shown in the right pane. You can stop and restart the simulation, control the speed and direction of the tool movement, etc.

During the dynamic simulation, a gray bar shows in the CN program, which NC block is being processed. You can use *Full Screen* to make the graphical simulation cover the whole screen without showing the program. You can also skip through the NC codes with the options *Jump to next tool*, *Jump to next cutting pass* and *Jump to next move*.

Dynamic zoom, pan, rotate and measuring functions can be used to analyze the plot.

Notice: You need a backplot enabled licence key to use this function.

6.1 File

In this chapter, the backplot function **File** is described. The file menu contains the below described functions for file simulation and general backplot settings.

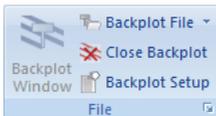


Figure 6.1: File

- **Backplot Window** /  / *Ctrl+Shift+P*

Shows backplot of current window.

The window splits in two, allowing the lines of the program file and their toolpath simulation to be shown simultaneously.

The icon  is active only when a program file is already opened.

- **Backplot File** / 

Enables you to backplot file directly from disk, without opening the file.

When you click this icon, a window opens to let you select a file to plot. A click on the down arrow next to the icon will display a list of recently simulated programs. In both cases, you get a complete plot of the selected program without showing the CNC program.

- **Close Backplot** /  / *Ctrl+Shift+Q*

Closes the backplot window.

- **Backplot Setup** / 

Lets you configure the backplot.

- **File Setup** / 

Configures the backplot file.

Before starting the graphical simulation, you must first configure the file type for the program you have already opened. To do this, click on **Backplot Setup** to open the configuration dialog. In the Setup dialog, select the *Control Type* (for example 'ISO Milling') and configure the desired parameters. When done, click OK to close the dialog.

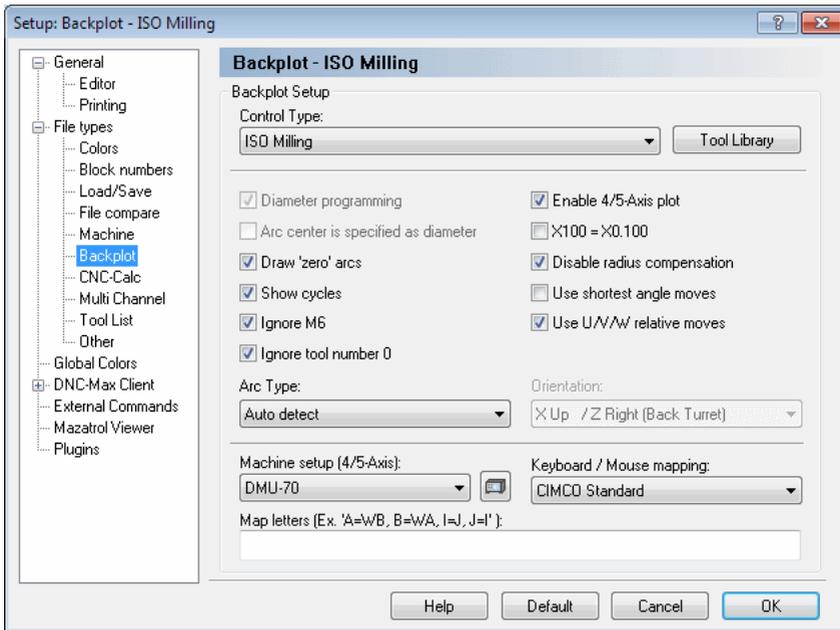


Figure 6.2: Backplot Setup for ISO Milling

6.2 View

This section describes the **View** menu of the optional 3D/2D Backplot command.

Note: After selecting a view, you can restart the graphical toolpath simulation. It is possible to change to a different view during the simulation.



Figure 6.3: View

- **Zoom in** / 

Click on this icon to zoom in.

- **Zoom out** / 

Click on this icon to zoom out.

- **Fit To Window** / 
Click this icon to fit the view to the window.
- **Zoom selection** / 
Click this icon to zoom in on the selected area.
- **Zoom To Highlighted** / 
Click on this icon to zoom to the highlighted element.
- **View reset** / 
Click this icon for the default perspective view.
- **View from top (XY/G17)** / 
Click this icon to view the simulation from the top.
- **View from Bottom (XY)** / 
Click this icon to view the simulation from the bottom.
- **View from front (XZ/G18)** / 
Click this icon to view the simulation from the front.
- **View from back (XZ)** / 
Click on this icon to view the simulation from the back (XZ).
- **View from left (YZ/G19)** / 
Click on this icon to view the simulation from the left.
- **View from right (YZ)** / 
Click this icon to view the simulation from the right.
- **View from tool)** / 
Click this icon to view the simulation from the tool.

- **Measure distance between 2 points** / 

Click this icon to measure the distance between 2 points.

If you want to measure the distance between two points of the generated toolpath, click this icon to get an arrow with a ruler. Move the mouse to the first point and press the left mouse button to select it. Point 1 becomes black. Drag the mouse pointer to point 2 (or point 3, 4, 5 etc..) while holding the left mouse button down to obtain the absolute distance (in space) and the distance in the XY plane (G17) and the ZX plane (G18) between the two points.

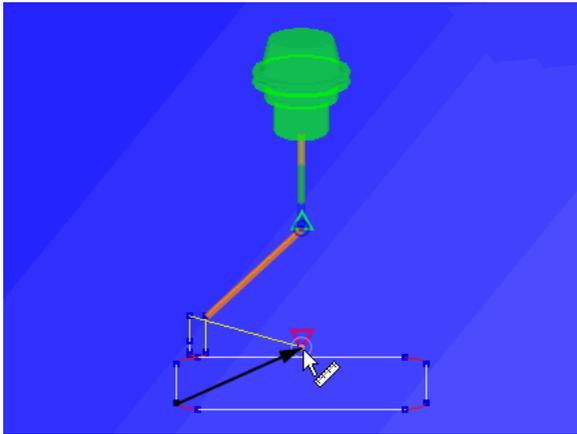


Figure 6.4: Measure distance

- **Rotate View** / 

Select this item to rotate the view.

- **Zoom View** / 

Select this item to zoom the view.

- **Pan View** / 

Select this item to pan the view.

- **Show Bounding Box** / 

Click on this icon to show the toolpath bounding box.

- **Set Origin Location** / 

Select this item to set the origin location.

- **Show Plot control** / 

Select this item to show/hide the plot control.

6.3 Toolpath

This section describes the **Toolpath** function in the Backplot menu. This is the representation of the current file relative to the toolpath in the simulation.

Note: After selecting a view, you can restart the graphical simulation of toolpath. It is possible to change to a different view during the simulation.

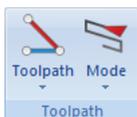


Figure 6.5: Toolpath

- **Toolpath** / 

Show/hide the paths of the tool.

Click the down arrow under this function to activate or deactivate toolpath options.

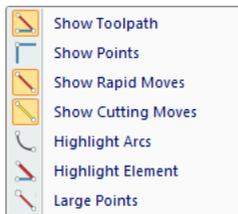


Figure 6.6: Show/hide the paths of the tool

- **Mode** / 

Show toolpath from start until current position.

Click on the down arrow to open a drop-down menu, from which you can select options and additional functions for toolpath simulation.

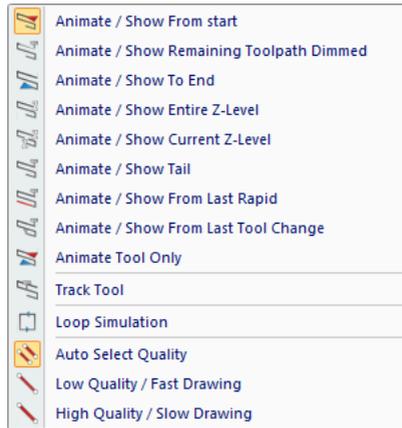


Figure 6.7: Options for toolpath simulation

6.4 Tool

This section describes the Backplot function **Tool**.



Figure 6.8: Tool

- **Show / Hide Tool** / 

Select this item to show or hide the simulation tool.
- **Show Toolholder** / 

Select this item to show the toolholder.
- **Show Tool Transparent** / 

Select this item to show the tool transparent.
- **Show Tool Colors** / 

Select this item to show the tool colors.
- **Show Tool Vector** / 

Select this item to show the tool vector.

- **Tool Setup** / 

Click this icon to configure tool types and colors.

Clicking on this icon will open the tool library. Here you can select a tool with one click and double-click to get the tool dimensions. You can also change one or more dimensions of the tool, enter a tool name and then assign it to the opened CNC program. Click OK to save tool information in the tool library.

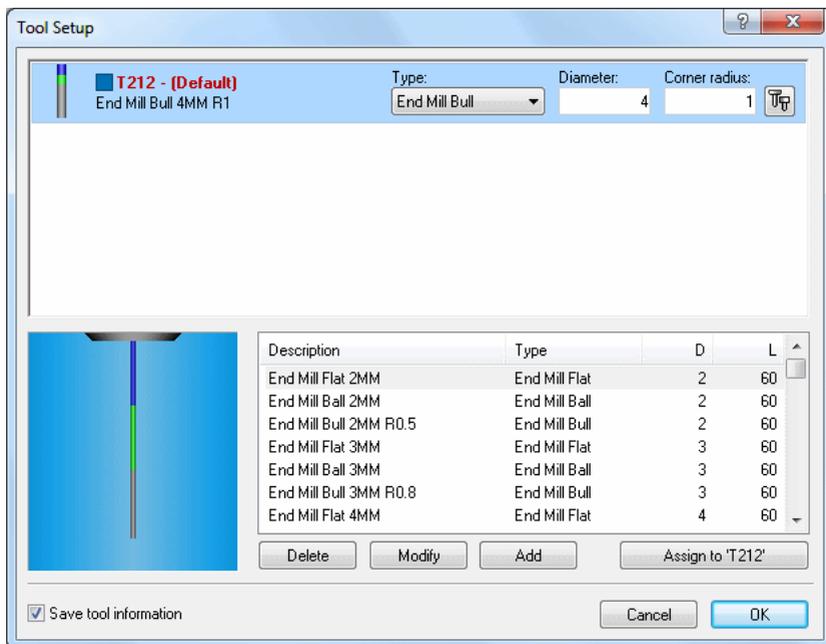


Figure 6.9: Tool library (Milling tools)

Click on the icon in the top right corner of the window to open the configuration dialog for the selected tool. In this dialog, you can determine the color of the toolpath.

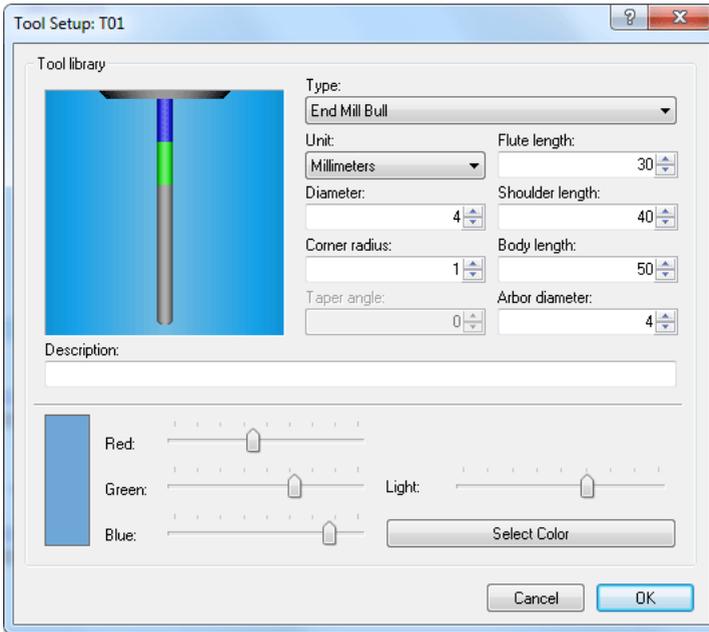


Figure 6.10: Tool setup and Tool path color

6.5 Solid

In this chapter, the Backplot function **Solid** and the simulation of the Solid Model are described.

Note: The Solid Model is only available for Milling operations.

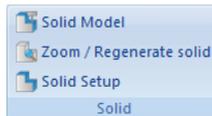


Figure 6.11: Solid

- **Solid Model** / 

Shows / Hides the solid model.

Click on this icon to toggle between the toolpath view and the Solid visualization with toolpath.

- **Zoom / Regenerate solid** / 

Creates a solid from the current view.

Click this icon to generate a solid model of the workpiece with toolpath.

- **Solid Setup** / 

Click on this icon to configure the Solid Model. The specified stock dimensions are the minimum and maximum X, Y, Z values in your NC program. If you want to increase or decrease the stock dimensions to get a much more even toolpath, then click one or several times the corresponding button (+5% or -5%) to obtain the desired dimensions. Use the button *Round* to round off stock dimensions.

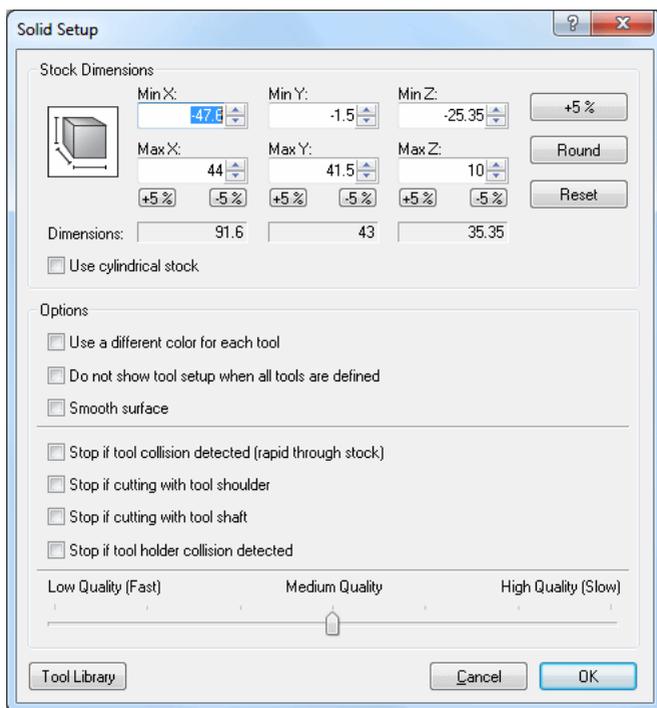


Figure 6.12: Solid Setup

6.6 Other

This chapter describes the Backplot function **Other**. This function is concerned with Simulation in Full Screen, Workpiece and Tool Offsets, 5-axis Machine Setup, Load of STL files, DXF Files Export, and the Simulation Control Type.

Note: The Solid Model is only available for Milling operations.



Figure 6.13: Other

- **Full Screen** / 

Shows the backplot in full screen.

- **Set Workpiece / Tool Offsets** / 

This option enables you to set workpiece and tool offsets.

When you click on this icon, the Workpiece/Tool Offset dialog appears:

Workpiece / Tool offsets

Machine coordinates offset

Auto assign a value above the work piece

Offset X: Offset Y: Offset Z:

Z positive when above work coordinates

WCS 1 - 6 (G54-G59)

	Offset X:	Offset Y:	Offset Z:
G54	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
G55	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
G56	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
G57	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
G58	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
G59	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

5-Axis Workpiece Offset

Offset X: Offset Y: Offset Z:

5-Axis Tool Length Offset

Use tool length in library Length:

Add to tool length

Overwrite tool length

Cancel OK

Figure 6.14: Workpiece- and tool offsets

Enter the X, Y, Z coordinates of Machine Offset and Workpiece Offset, as well as the Tool Length Compensation.

- **5-Axis Machine Setup** / 

Lets you configure 5-axis machines.

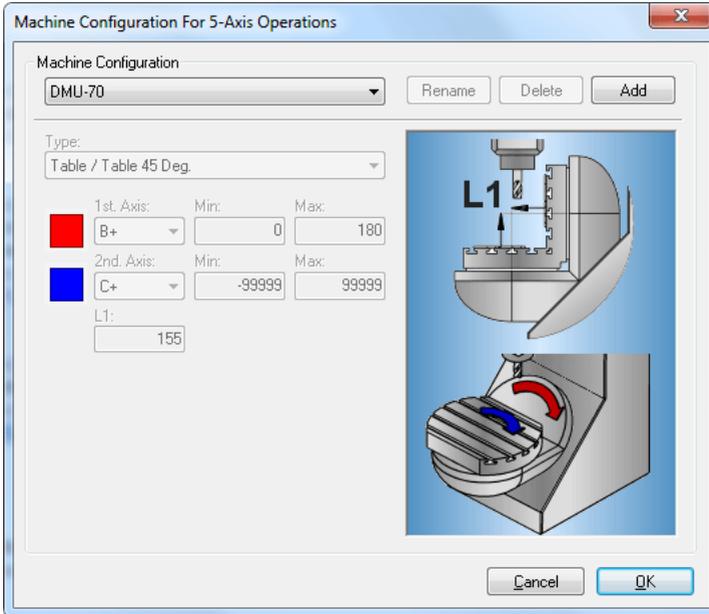


Figure 6.15: 5-Axis Machine Setup

- **Load STL File** / 

Loads STL File.

- **Export as DXF File** / 

Exports toolpath as a DXF file.

- **Control Type** / 

Select the control type from this list.

- **Backplot Setup** / 

Lets you configure the backplot settings. Please refer to File Types for further information.

6.7 Information Bar

This section describes the Backplot Information Bar. The Information Bar is used to control the simulation and show information about NC codes.

Backplot Information Bar (Milling)

The Information Bar is shown in the lower part of the Backplot window and contains the following elements:

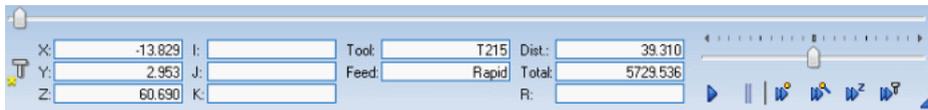


Figure 6.16: The Backplot Information Bar (Milling)

- **Dynamic Simulation Progress Bar (0 - 100%)**



- **Speed and Direction Slider:**

From midpoint to the right = forward, slow ... fast.

From midpoint to the left = backward, slow ... fast.



- **Current tool coordinates within the defined preparatory functions (G00 - G03)**



- **▶ Start / Stop simulation.**
- **|| Pause simulation.**
- **⏩ Jump to next move.**
- **⏪ Jump to next cutting pass.**
- **⏴ Jump to next Z-level.**
- **⏶ Jump to next tool.**

-  Show / hide information bar.

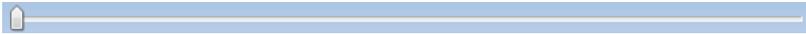
Backplot Information Bar (Turning)

The Information Bar is shown in the lower part of the Backplot window and contains the following elements:



Figure 6.17: The Backplot Information Bar (Turning)

- **Dynamic Simulation Progress Bar (0 - 100%)**



- **Speed and Direction Slider:**

Move control from midpoint to the right = forward, slow ... fast.
Move control from midpoint to the left = backward, slow ... fast.



- **Current tool coordinates within the defined preparatory functions (G00 - G03)**



-  Start / Stop simulation.
-  Pause simulation.
-  Jump to next move.
-  Jump to next cutting pass.
-  Jump to next tool.
-  Show / hide information bar.

File Compare

This chapter describes the **File Compare** menu in the CIMCO Edit Ribbon. You can access the configuration of the function using the icon . Some functions have a keyboard shortcut. The icons and the keystrokes are shown next to the command name.

7.1 File Compare

In this section, the functions used to compare two files are described. You start a comparison of two files by choosing the files. The files are put into a double framed window, and you can start the search for differences. To exit the file compare window, use the *End File Compare* menu item or button .

The functions can be activated through the icons of the image below.

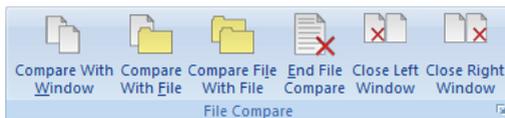


Figure 7.1: The File Compare menu

- **Compare with Window** / 

Compares the file in the current window with a file in another.
- **Compare with File** / 

Compares the file in the current window with a file. The other file is opened through the Open file dialog.
- **Compare File with File** / 

Compares two files which are not already in a window. The files are opened using the Open dialog.
- **End File Compare** / 

The File compare session is stopped and both files are left open.

- **Close Left Window** / 

Closes left file compare window.
- **Close Right Window** / 

Closes right file compare window.
- **Setup** / 

Use this icon to set up file compare settings.

7.2 Go To

This section describes the functions used to move through the differences found during file compare.

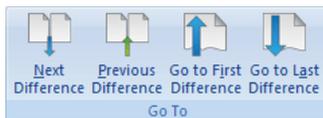


Figure 7.2: The 'Go To' menu

- **Next Difference** /  / *Ctrl + Down Arrow*

The cursor jumps to the next difference.
- **Previous Difference** /  / *Ctrl + Up Arrow*

The cursor jumps to the previous difference.
- **Go to First Difference** / 

The cursor moves to the line containing the first difference.
- **Go to Last Difference** / 

The cursor moves down to the line containing the last difference.

7.3 Sync

This section describes the features used to synchronize differences.

When you synchronize a difference, the selected difference is copied from one window to another. The icons described below determine the synchronization direction (from right to left or from left to right). When the text is moved from one to another window, the line is no longer highlighted. This is because the texts in both windows are identical after synchronization.



Figure 7.3: The Sync menu

- **Sync Left** /  / *Ctrl + Left Arrow*
Synchronizes current difference from right to left window.
- **Sync Right** /  / *Ctrl + Right Arrow*
Synchronizes current difference from left to right window.

7.4 Other

This section describes other functions used for file compare.

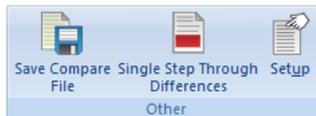


Figure 7.4: The 'Other' menu

- **Save Compare File** / 
Saves the result of file compare into a file.
- **Single Step Through Differences** / 
By activating this function, any change possibility is limited to the line containing the difference, i.e. the line where the cursor is positioned.
Example: If the function  is enabled and the cursor is positioned on the second line of a three-line red block, then the text of this line can

be synchronized from left to right or from right to left. The first and the third lines of the block are not affected by the action and continue to show the differences in red.

Click on the icon  or open the **File compare settings** dialog to activate the *Single line step* function.

- **Setup** / 

Configure the settings of the File Compare function. You can set up the different parameters for File Compare in the **File Compare Settings** dialog. The behavior of the File Compare functions is changed through the Machine Type settings.

If you want to change the configuration during a file compare operation, you must first end the current operation with the icon , and then start a new operation with the icon .

Note: In the 'File Compare Settings' dialog below, different File compare options can be selected by checking the fields.

The file compare results of two settings *Show all differences* and *Mark changes only* are shown as example.

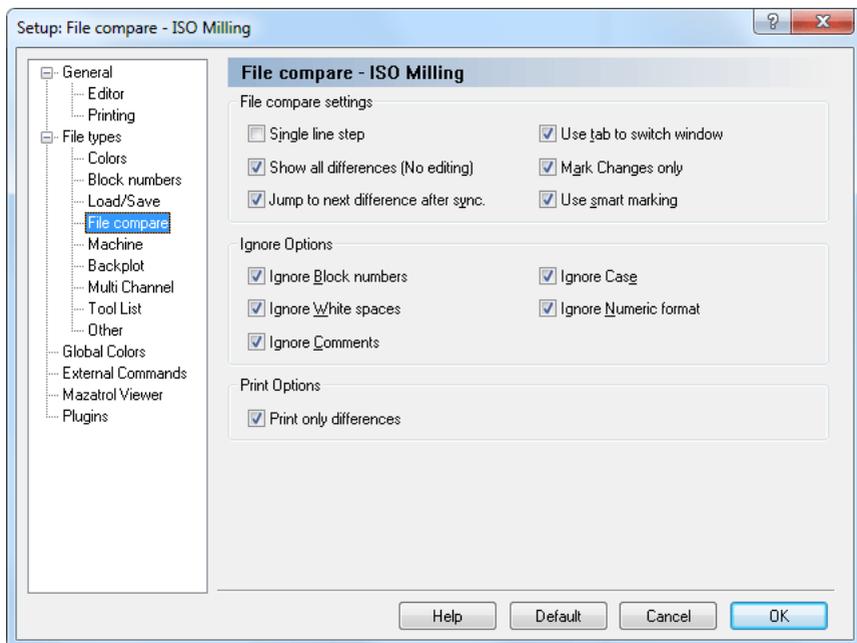


Figure 7.5: File Compare Settings

- Show all differences

When this option is enabled, all lines in both windows containing at least one difference are gray, and the difference is highlighted with red.

If you move the cursor with the icon  to a line with a difference, the whole line is colored in red. If the following lines also contain differences, the block is marked red. You can use the icon  to synchronize one or more highlighted line(s) from left to right, or from right to left with the icon .

When text is moved from one window to another, no line is highlighted. This is because the texts in both windows are identical.

- Mark changes only

When this option is enabled, all lines in both windows containing at least one difference are gray, but only the difference is highlighted with red.

If there are differences in successive lines, and the cursor is moved to the first line with the icon , all lines are gray and the texts are marked red. You can synchronize the highlighted block from left to right with the icon , or from right to the left with the icon .

Further information about the *File Compare settings* is found under File compare.

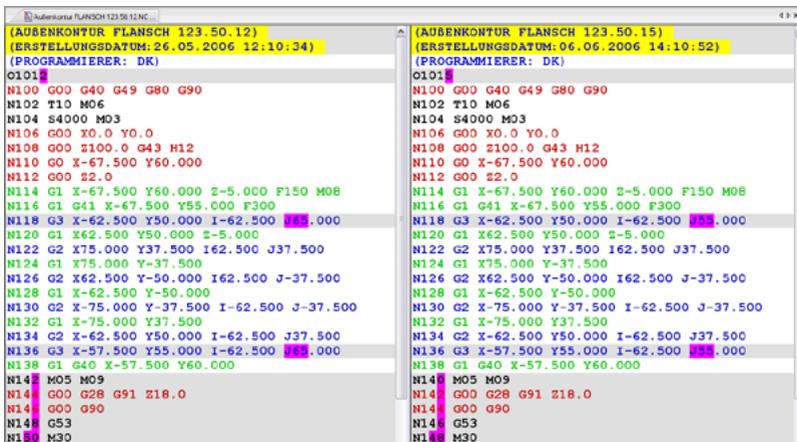


Figure 7.6: File compare results with the option 'Show all differences'.

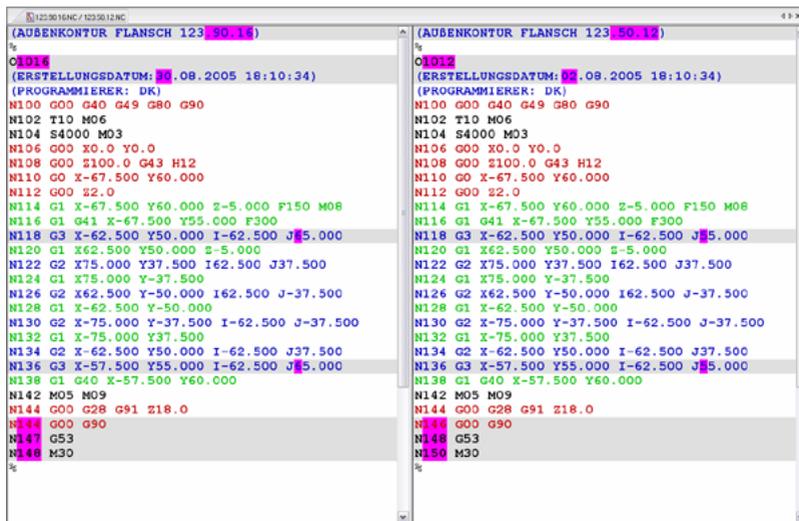


Figure 7.7: File compare results with the option 'Mark changes only'.

Transmission

In this section, the **Transmission** menu in the CIMCO Edit v6 Ribbon is described.

Transmission is used to send NC programs from a PC to CNC machines or receive programs from the CNC machines. You can access the configuration of this function using the icon .

The functions in CIMCO Edit v6 are activated using the appropriate icons in the Ribbon. The commands are organized into logical groups under the tabs.

8.1 Transmission

In this chapter, the functions related to sending files to and from CNC machines are described. The functions are reachable through the **Transmission** tab. The toolbar is shown below, and every icon is showed next to the command name.

With the *DNC option*, the CIMCO Edit v6 user is able to send CNC programs from a PC to a CNC machine or receive programs from it. It is also possible to transfer CNC programs to / from multiple CNC machines at the same time.

Note: The editor must be licensed for DNC operations to use this option.



Figure 8.1: The Transmission menu

- **Send File** / 
Transmits a file to a selected machine.
- **Send** / 
Transmits the current CNC program to a selected machine.

- **Receive File** / 

Receives a CNC program from a selected machine, saving it as a file.
- **Receive** / 

Receives a CNC program from a selected machine, opening it in a new window.
- **Receive Into Current Window** / 

Receives a CNC program into the current window.

8.2 Machine

This section describes the functions related to the DNC settings for existing machine types. You can also configure and/or add new CNC machines.

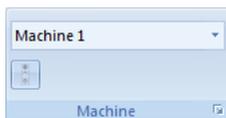


Figure 8.2: The Machine menu

- **Machine Type** / 

Select the CNC machine for the data transmission from the drop-down list. Click the arrow  to view the machines available for selection.

Note: The machine type determines the COM port and DNC settings.
- **Status** / 

Click this option to list the status of current transmissions and/or receptions.
- **DNC Setup** / 

Configure the DNC settings in CNC-Edit.

Editor Setup

This section describes how to configure the CIMCO Edit settings.

9.1 General Program Settings

If you wish to change the program settings concerning the program in general, enter the **Setup** menu and click on **General**. The general configuration dialog is shown below:

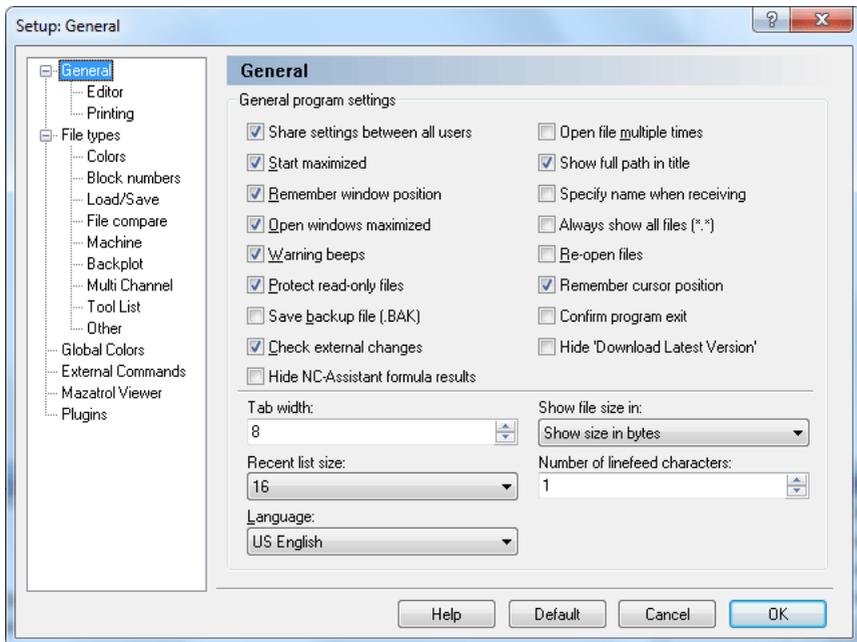


Figure 9.1: General program settings

- **Share settings between all users**

Check this field to share the editor settings between all users. All users must have read/write access to the program directory.

Notice: If a user does not have read/write access to the program directory, this option is disabled.

- **Start maximized**

When this field is checked, CIMCO Edit v6 will always start maximized, i.e. filling up the whole screen.

- **Remember window position**

When this field is checked, the editor is given the same size and position, as the last time the editor was used.

- **Open windows maximized**

When this field is checked, Edit windows will be opened maximized.

- **Warning beeps**

Check this field to use warnings beeps (switch this off for silent operation).

- **Protect read-only files**

Check this field to prevent read-only files from being modified or edited.

- **Save backup file (.BAK)**

Check this field to backup the previous version when saving a file. The backup file is named *filename.BAK*.

- **Check external changes**

When this field is checked, the editor will check if a file is modified outside the editor.

If a file is modified outside the editor, you will be notified and you will be asked if you want to reload the file. If you choose to do that, any changes made since the last save are lost.

- **Hide NC-Assistant formula results**

Check this field if the result of NC-Assistant macro formulas should be hidden.

- **Open file multiple times**

Check this field if you want to be able to open the same file in more than one window in the editor.

- **Show full path in title**

Select this option to show the full path of files in the window title.

- **Specify name when receiving**

Check this field if you wish to specify a filename when using the Transmission tab function *Receive file and open in editor*.

- **Always show all files (*.*)**

Check this field if the file dialog should always show all files.

- **Re-open files**

Select this option to re-open files when the program is started.

- **Remember cursor position**

Check this field to place the cursor at the position where it was when the file was last opened.

- **Confirm program exit**

Check this field to confirm when closing the program.

- **Hide 'Download Latest Version'**

Check this field to hide the *Download Latest Version* link from the Help menu.

Notice: You must restart the editor after changing this option.

- **Tab width**

Use this field to specify the tab width.

- **Show file size in**

Select from the list, how the file size should be displayed in the status bar.

Note: The file size can be shown in bytes, in meter, or in feet.

- **Recent list size**

Use this field to specify the number of files shown in the *Recent List*.

- **Number of linefeed characters**

Use this field to specify how many line feed characters that should be used to calculate the file size shown in the status bar.

Example: If you specify a value of 2, and the file contains 12 lines, 24 bytes will be added to the file size shown in the status bar.

- **Language**

Select the language to be used in menus and dialogs.

Note: Changing language will not have effect until the program is restarted.

9.1.1 Editor Settings

By clicking on **Editor** in the left hand list of the **General** Setup menu, the Editor window will be displayed (see below). In this window, you can configure the settings for the editor.

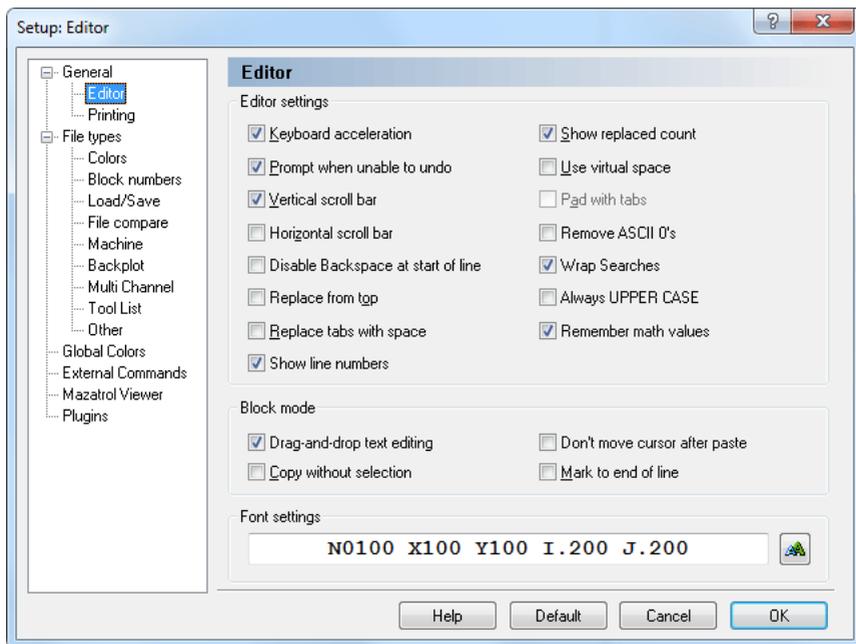


Figure 9.2: Editor setup dialog

9.1.1.0.1 Editor settings

- **Keyboard acceleration**

Enables your cursor to move faster.

- **Prompt when unable to undo**

When this is active, you will be told when you are about to do something (such as renumbering a large file) which cannot be undone. If this is switched off, no such warning will appear.

- **Vertical scroll bar**

Enables a vertical scroll bar.

- **Horizontal scroll bar**

Enables a horizontal scroll bar.

- **Disable Backspace at start of line**

Prevents that lines are joined by using the backspace key.

- **Replace from top**

Any search and replace options will automatically start from the beginning of the file.

- **Replace tabs with space**

Inserts spaces when the tab key is used, and replaces existing tabs with spaces when a file is opened.

- **Show line numbers**

Check this field to show line numbers.

- **Show replaced count**

Shows the number of strings that were replaced after the *Replace all* function has been used.

- **Use virtual space**

Allows the cursor to move into space that currently contains no text.

- **Pad with tabs**

Use tabs to fill in large empty spaces in virtual space. (Please refer to **Use virtual space** above.)

- **Remove ASCII 0's**

Check this field to remove ASCII 0's from the file. If you do not check this option, ASCII 0's are replaced with ASCII 128.

Notice: If you transmit files with 7 databits, ASCII 128 becomes ASCII 0.

- **Wrap Searches**

Check this field if searches should continue searching from the top of the file if no match is found before the end of the file.

- **Always UPPER CASE**

Check this field if inserted text should always be UPPER CASE (all CAPS).

- **Remember math values**

Remembers the last values used in the *Simple Math Functions*.

9.1.1.0.2 Block Mode

- **Drag-and-drop text editing**

When this option is enabled, you can drag any selected text to a new location.

- **Copy without selection**

Enables you to copy the line at the cursor, without marking it as a selection.

- **Don't move cursor after paste**

When this option is checked, the cursor will not move to the end of the pasted text, but remain at the beginning of the text.

- **Mark to end of line**

If a whole line is selected, the indication continues across virtual space to the side of the window.

- **Font settings**

This field shows an example of the selected font. Click the **Select font** icon to the right to change the font used in the editor window.

9.1.2 Printing

To change printer settings, choose **Printing** from the left hand list of the **General Setup** menu. The printer configuration dialog is shown below:

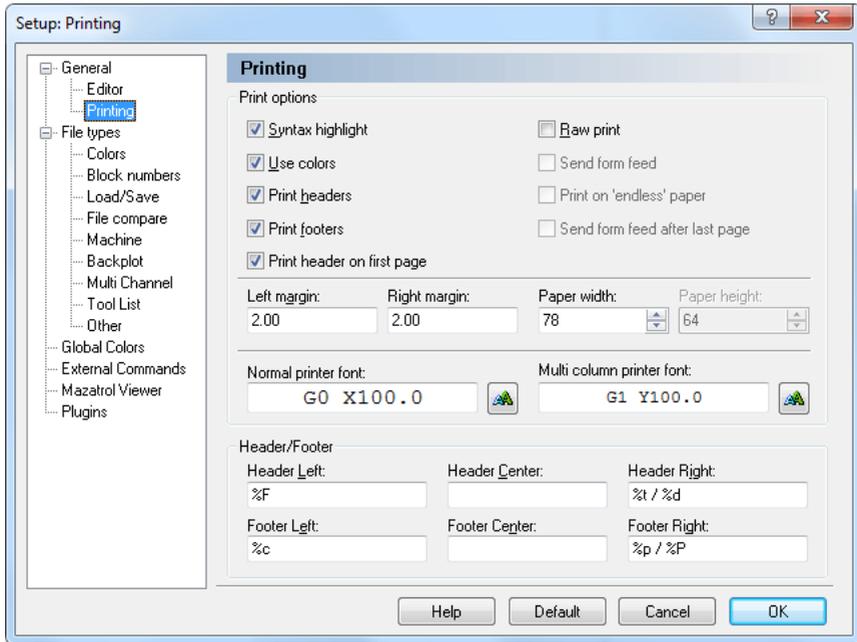


Figure 9.3: Printer setup

9.1.2.0.3 Print options

- **Syntax highlight**

Select this option to apply syntax highlighting to the printed text. Use **Bold** and *Italic* to highlight NC commands and comments.

- **Use colors**

Enables color printouts. This requires a color printer.

- **Print headers**

Prints headers on every page.

- **Print footers**

Prints footers on every page.

- **Print header on first page**

Select this option to print a header on the first page.

- **Raw print**

Produces simple text output to the printer. This is useful when printing large programs to matrix printers. When raw print is selected, no header or footer is printed.

- **Send form feed**

Sends a form feed after every printed page.

- **Print on 'endless' paper**

Check this field to print on endless paper. When this option is selected, no header and/or footer is printed.

- **Send form feed after last page**

Sends a form feed after the last printed page.

- **Left margin/Right margin**

Specify the size of the margins in centimeters. If the margins are in inches add "*in*".

Example: To specify a one-inch margin, enter "*1in*".

- **Paper width/ Paper height**

Specify the size of the paper in width and height of the paper in characters.

- **Normal printer font**

Select font size and type for the printout.

- **Multi column printer font**

Click the icon to the right to select the font used when printing in 2 or more columns.

9.1.2.0.4 Header/Footer

Use these fields to specify the contents of the header and footer.

The following options are available:

- %p : Page number
- %P : Page count
- %f : File name
- %F : File name with path
- %t : Time
- %d : Date
- %c : Company name
- %U : Windows user name

9.2 File Types

This section describes how to configure file type settings.

File type settings determine how to perform renumbering, look for tool changes, compare files, backplot settings, set up colors, where to save files etc.

File type is a macro file, which contains specific properties for the machining type (e.g. Turning, Milling, etc.), program codes (ISO G-code, Heidenhain plain text), and commands (renumbering, tool changes, colors, backplot etc.).

The File types *ISO Turning*, *ISO Milling*, *Heidenhain TNC*, and *Text file* are integrated in CIMCO Edit v6. You can add new file types e.g. *Turning* by modifying existing macros or inserting your own macros. Information on how to proceed is found in the section Macro Setup.

To configure File types settings, select **Editor, Global Setup**, or click on the corresponding icon . This will open the Editor setup window. Click on **File types** in the left window of the setup dialog. The following dialog appears:

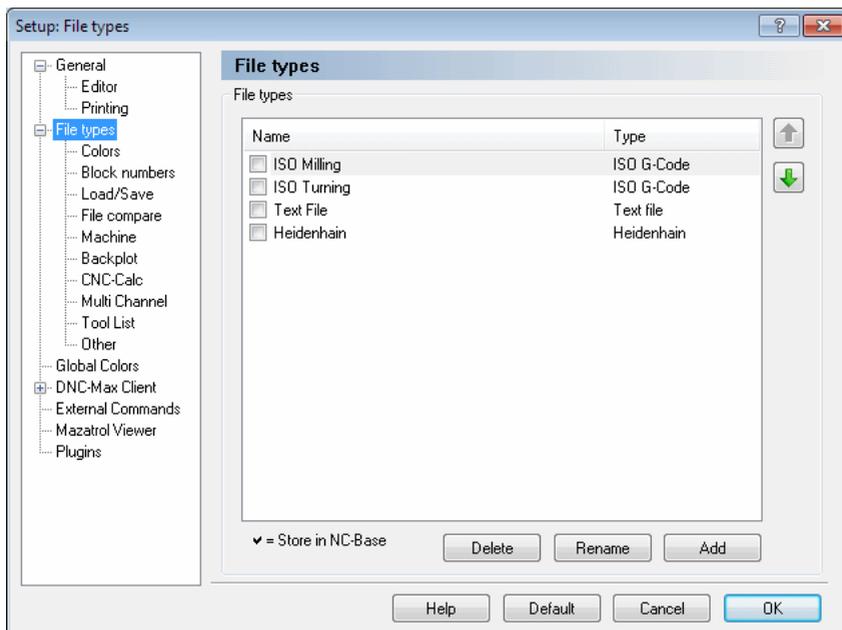


Figure 9.4: File type overview

9.2.0.1 File types

This field shows a list of defined file types.

- **Up/Down arrows**

Use these buttons to move the selected file type up or down on the list.

- **Delete**

To delete a file type, highlight it and click on the button **Delete**. You will be prompted to confirm the delete operation.

- **Rename**

Click this button to rename the selected file type.

To rename a file type, highlight it and click on the button **Rename**.

- **Add**

Click this button to add a new file type

To add a new file type, click on the button **Add**. The following window appears:

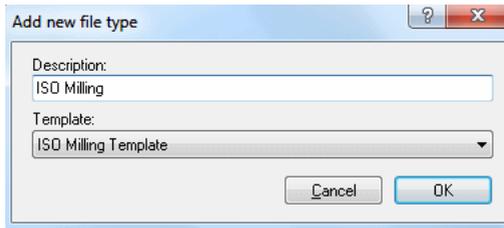


Figure 9.5: Add a new file type

Enter the name of the new file type, select a file type template from the drop-down list and click **OK**. Click **Cancel** if you wish to abort the operation.

9.2.1 Colors

Use this dialog to configure color settings for the selected file type.

To define the colors used for highlighting within a certain file type, select **Colors** from the **File types** menu in the left window of the Editor setup dialog. The color configuration dialog is shown below.

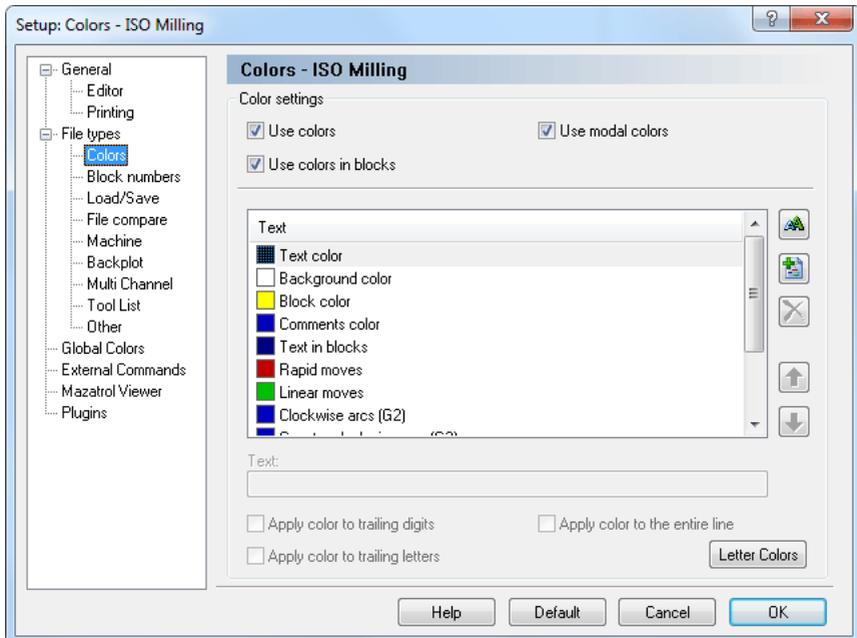


Figure 9.6: Color setup

9.2.1.0.1 Color settings

- **Use colors**

Select this option to use color highlighting.

- **Use colors in blocks**

Check this field to use color highlighting inside a selected block. When this field is unchecked, the default color for *Text in blocks* is used.

- **Use modal colors**

Check this field to use 'modal' colors. When this option is selected, blocks containing rapid moves, linear moves, and arcs will be assigned different colors.

9.2.1.0.2 List of defined colors

- **Text color**

The color used for text, when *Use colors* is not checked.

- **Background**

The background color used for editor windows.

- **Block color**

The background color within a selection.

- **Comments color**

The color used for comments, as defined by the *Comment start* and *Comment end*, or *Block Skip* character on the *Machine template* configuration tab.

- **Text in blocks**

The color used in one or more selected program blocks when the field *Use color in blocks* is not checked.

- **File compare colors**

The colors used for the background for different lines/text, for missing lines, etc.

- **Select color** / 

Select a new color. To select a new color, highlight a color in the list and click on the button (you can also double-click in the list).

- **Add new color** / 

Press this button to add a new color (you can also double-click in the list). Enter the text for the new color in the field **Text**.

- **Remove selected color** / 

Press this button to remove the selected color (you can also double-click in the list).

Notice: You can only remove new added colors.

- **Up/Down arrows**

Use these buttons to move the selected color up and/or down on the list. Entries higher on the list have higher priority.

- **Text**

Use this field to specify a string that will be highlighted using the selected color.

- **Apply color to trailing digits**

If this option is checked, the selected color will be applied to any digits following the selected letter.

- **Apply color to trailing letters**

If this option is used, the selected color will be applied to any letters following the selected letter.

- **Apply color to the entire line**

Check this field if the selected color should be applied to the entire line.

- **Letter Colors**

Press this button to create a different color for each letter. This will set the coloring similar to the default in CIMCO Edit V6.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Color Configuration window without executing changes.

- **OK**

Click this button to execute the new settings made in the Color Configuration window.

Note: The color settings will only affect the selected file type.

9.2.2 Block Numbers

To configure renumbering and/or automatic block numbering, select **Block numbers** from the **File types** menu in the left window of the Editor setup dialog, or click the configure block numbering icon . The block number configuration dialog is shown below:

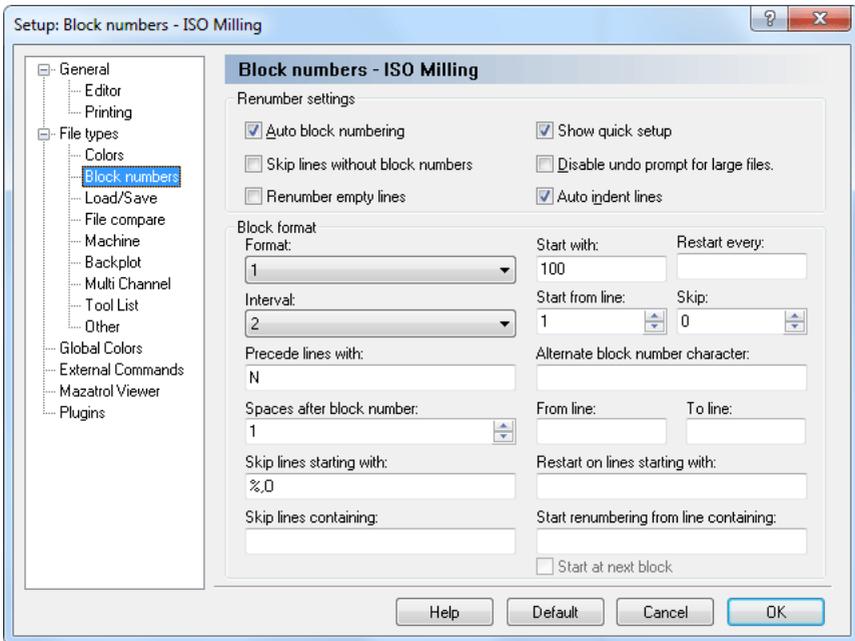


Figure 9.7: Block number configuration

9.2.2.0.3 Renumber settings

- **Auto block numbering**

Inserts line numbers automatically, according to the format described. If you make a new line (after the existing lines), the new line number will

be governed by the preceding line number and the setting for *Interval*. If you insert a line in an existing program, the new line number will be midway between the preceding line and the following line.

- **Skip lines without block numbers**

Check this field to skip lines without a block number.

- **Renumber empty lines**

Check this field to renumber empty lines.

- **Show quick setup**

Check this field to show a 'Quick Setup' dialog when renumbering a program.

- **Disable undo prompt for large files**

When this field is not checked, you will be told when you are about to renumber a large file, which cannot be undone. If this is switched on, no such warning will appear.

- **Auto indent lines**

Indents new lines. The indentation is set at the same level as the line above.

9.2.2.0.4 Block Format

- **Format**

This field provides a list of available block number formats. Select a format from the drop-down list.

Notice: This will not limit the number of digits in the line number. If you wish to limit the number of digits, you have to specify a maximum line number in the *Restart every* field.

- **Start with**

Makes it possible to specify the starting value of the block number.

- **Restart every**

Specify when the line number must restart. This number is equal to the maximum line number.

Example: To use line numbers from 0-9999, specify *9999* in this field. If no value is specified, the line number will increment until it reaches 100000000, before it restarts.

- **Interval**

Select the interval, by which the block number must increase, for each block. If you select one of the *Auto...* options, the number selected is the maximum block number, and the interval will be selected to distribute the block numbers as evenly as feasible, within this maximum block number.

- **Start from line**

Specify the first line in the program that will be given a line number.

- **Skip**

Use this field to specify if block numbers should skip lines.

Example: If you specify 2 in this field, only every 3rd line will be numbered.

- **Precede lines with**

Here, you can enter a string that will be inserted before the line number. For ISO type machines, this is normally the letter *N*.

- **Alternate block number character**

Use this field to specify an alternate block number character.

Example: If the control uses both *N* and *:* for block numbers, specify *:* in this field.

- **Spaces after block number**

Use this field to specify the number of spaces to insert after the block number. To insert block numbers with a specific column width, specify a negative value.

- **From line**

Specify the number of lines that should be skipped before the renumbering begins.

- **To line**

Use this field to specify the maximum number of lines that should be renumbered.

If a positive number is written here, it specifies the last line to be renumbered, counted from the beginning of the program.

Example 1: If your CNC program starts with 4 comment lines and a program start line (with program start trigger and number, but without 'N'), only the first 10 NC blocks will be renumbered if you specify 15 in this field.

If a negative value (-N) is specified, the last N lines (counted from the end of the program) will not be renumbered.

Example 2: If you specify the value -2, and the last line of your CNC program (line containing the program end code *M30*) is followed by another line containing a special character (e.g. %), then only the last line is not renumbered.

- **Skip lines starting with**

Defines that lines starting with a particular string and/or characters should be omitted. Multiple strings can be specified using a comma , as separator. If you wish to omit lines beginning with a comma ,, specify ,,.

- **Restart on lines starting with**

Use this field to specify when the block numbers should be restarted.

Example: To renumber several programs in the same file, specify O in this field, then the block numbers will be reset everytime an O-Number is encountered.

- **Skip lines containing**

Here you can specify that lines containing a string and/or character should be omitted. Multiple strings can be specified using a comma , as separator.

- **Start renumbering from line containing**

Use this field to specify a renumbering start trigger. If you specify a renumbering start trigger, renumbering will start from the first block containing the specified string. To start from the first block after the block containing the string, check the *Start at next block* option below.

- **Start at next block**

Check this field to start renumbering from the block after the line containing the renumbering start trigger.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Block Numbers window without executing changes.

- **OK**

Click this button to execute the new settings made in the Block Numbers Configuration window.

Note: The Block number settings will only affect the selected file type.

9.2.3 Load/Save

To configure Load/Save parameters, select **File Type** from the **Setup** menu and then click **Load/Save**. The Load/Save configuration dialog is shown below:

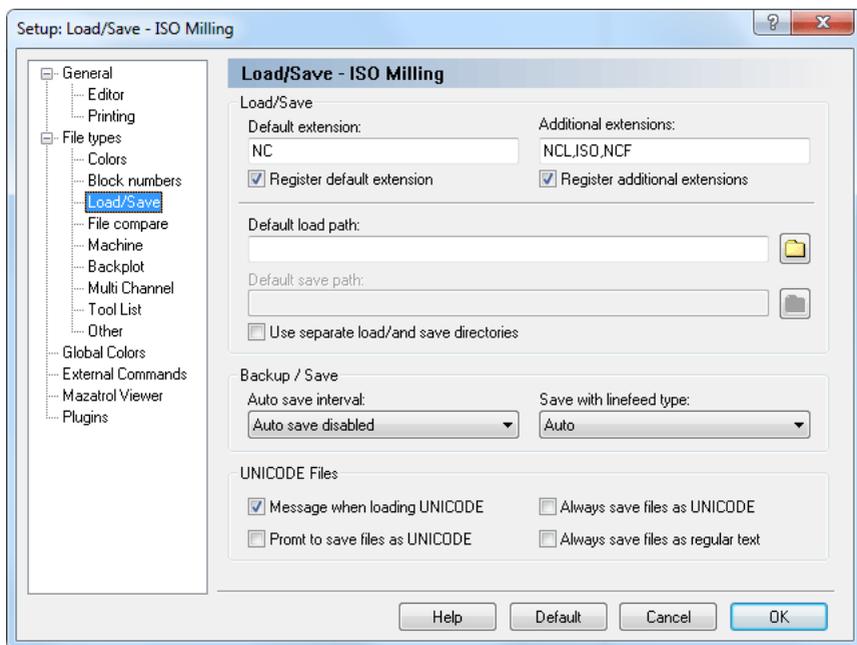


Figure 9.8: Load/Save configuration

9.2.3.0.5 Load/Save

- **Default extension**

Specify a default extension to use for the selected file type. This extension will be appended to any new files saved, unless an extension is specified in the *Save as* window.

- **Register default extension**

Check this field to register the specified default extensions. When an extension is registered in Windows, clicking on a file with the specified extension in the Windows Explorer will automatically open the file in the editor.

- **Additional extensions**

Define additional file extensions associated with your machine type. Extensions determine the type(s) of file(s) you wish to open (only files with the extension(s) defined here will be displayed in an *Open file* window). You can define more than one extension using a comma ',' as separator.

Example: To associate the extensions .ISO and .NC, specify *ISO, NC*.

- **Register additional extensions**

Check this field to register the specified *Additional extensions*. When an extension is registered in Windows, clicking on a file with the specified extension in the Windows Explorer will automatically open the file in the editor.

- **Default load path**

This function specifies the default load path, which is where the file *Open* dialog will first point to. If no path is defined, the last directory you loaded a file from will be used. Click on the folder button to browse for an adequate load path.

- **Default save path**

This function specifies the default save path, which is where the file *Save* dialog will first point to, when you wish to save a new file of the selected type or when you use the file *Save as* menu. If no path is defined, the last directory you saved a file in will be used. Click on the folder button to browse for an adequate save path.

- **Use separate load/and save directories**

When this field is checked, the editor will remember the last load and save position independently.

9.2.3.0.6 Backup/Save

- **Auto save interval**

Select the length of the interval between auto saves from this list. *Auto save* saves your file at a regular interval, overwriting the original file.

- **Save with linefeed type**

Use this field to specify the linefeed type used when saving files.

Auto: Do not change linefeed type. When saving new files, the DOS/Windows linefeed type is used.

DOS/Windows: CR LF (ASCII 13 10)

Unix: LF (ASCII 10)

Mac: CR (ASCII 13)

9.2.3.0.7 UNICODE Files

- **Message when loading UNICODE**

Displays a message when a UNICODE file is loaded.

- **Prompt to save files as UNICODE**

Check this field if the file should be saved as UNICODE.

- **Always save files as UNICODE**

Check this field if files always should be saved as UNICODE.

- **Always save files as regular text**

Check this field if files should never be saved as UNICODE.

- **Help**

Click this button to open the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Load/Save window without executing changes.

- **OK**

Click this button to execute the new settings made in the Load/Save configuration window.

Note: The Load/Save settings will only affect the selected file type.

9.2.4 File compare

To configure file compare settings, select **File compare** from the **File types** menu in the left window of the Editor setup dialog, or click on the Setup file compare icon  on the file compare toolbar. The file compare configuration dialog is shown below:

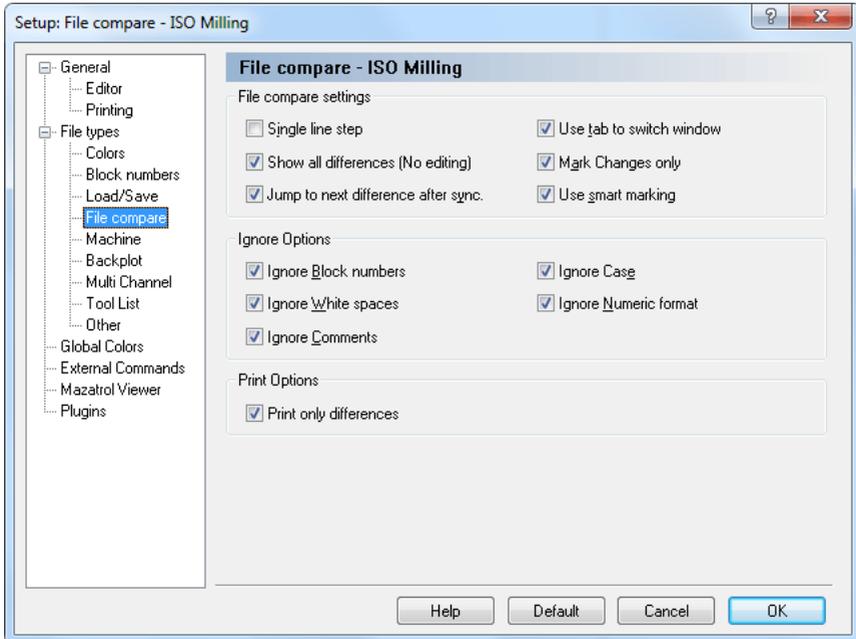


Figure 9.9: File compare configuration

9.2.4.0.8 File compare settings

- **Single line step**

Use this option to single step through multiple consecutive differences. Only the difference on the current line is highlighted.

- **Show all differences (No editing)**

Check this field to show all differences at the same time.

- **Jump to next difference after sync.**

When you select this option, the editor will jump to the next difference after you have synchronized two differences.

- **Use tab to switch window**

Select this option if you want to use the tab key to switch between the two files being compared. You will not be able to insert tabs in any of the files when this option is enabled.

- **Mark Changes only**

Only the difference will be highlighted, not the entire line.

- **Use smart marking**

Not only the different part of the command will be marked, but the complete command if it contains differences.

9.2.4.0.9 Ignore Options

- **Ignore Block numbers**

The values of block numbers will be ignored, as will the presence/absence of block numbers (i.e. the fact that there are block numbers in one file and not in the other will be ignored).

- **Ignore White spaces**

White space characters will be ignored. White space characters are space (ASCII 32) and tab (ASCII 9).

- **Ignore Comments**

Anything inside a comment will be ignored. For this to work, you must have specified the correct *Comment start* e.g. `'(` and *Comment end* e.g. `)'` characters for this machine template under the *Machine templates* tab.

- **Ignore Case**

It will be ignored, if one program contains lowercase and the other UPPERCASE characters.

- **Ignore Numeric format**

Leading and trailing zeros will be ignored, as will optional `'+'` characters, i.e. `'X+14.10'` matches `'X14.1'`, if this option is used.

9.2.4.0.10 Print Options

- **Print only differences**

Check this field to print only the differences between two files.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the File compare window without executing changes.

- **OK**

Click this button to execute the new settings made in the File compare configuration window.

Note: The File Compare settings will only affect the selected file type.

9.2.5 Machine

To configure machine specific characters and commands, select **File Types**, **Machine** from the left hand list of the **Setup** window. The machine configuration dialog is shown below:

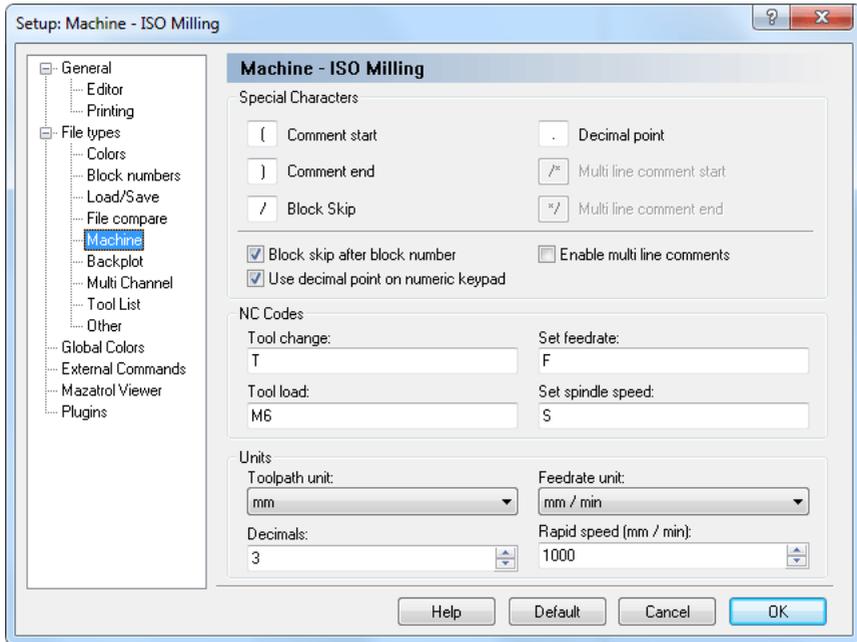


Figure 9.10: Machine type configuration

9.2.5.0.11 Special Characters

- **Comment start**

Enter the comment start character here, for example (.

- **Comment end**

Enter the comment end character here, for example).

- **Block skip**

Enter the block skip character here. If you don't want a block skip character, just leave the field empty.

- **Decimal point**

Enter the decimal separator here (decimal point or comma).

- **Multi-line comment start**

Use this field to specify the multi-line comment start string.

- **Multi-line comment end**

Use this field to specify the multi-line comment end string.

- **Block skip after block number**

Check this field if a block skip should be inserted after the block number. If you leave this field unchecked, the block skip will be just before the block number.

Note: You can specify another block skip character in the field *Block skip*, if necessary.

- **Use decimal point on numeric keypad**

Check this field if the decimal key on the numeric keypad should insert the decimal point specified above.

- **Enable multi line comments**

Check this field to enable coloring of multi line comments.

9.2.5.0.12 NC Codes

- **Tool Change**

Use this field to specify the tool change prefix.

Example: If the tool number is specified as T010101, specify *T* in this field.

- **Tool load**

Use this field to specify the tool load command. If the tool load command is found on the same line as the tool change command, the tool is loaded immediately.

Example: N1230 T020202 M6.

- **Set feedrate**

Use this field to specify the feedrate prefix.

Example: If the feedrate is specified as F1000, specify *F* in this field.

- **Set spindle speed**

Use this field to specify the spindle speed prefix.

Example: If the spindle speed is specified as S1000, specify *S* in this field.

9.2.5.0.13 Units

- **Toopath unit**

Select the path unit from this drop-down list.

- **Feedrate unit**

Select the feedrate unit from the drop-down list.

- **Decimals**

Use this field to specify the number of decimals shown in the backplot etc.

- **Rapid speed (mm / min)**

Use this field to specify the rapid feedrate.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Machine Configuration window without executing changes.

- **OK**

Click this button to execute the new settings made in the Machine Configuration window.

Note: The machine settings will only affect the selected file type.

Note: You can not delete the built-in commands.

9.2.6 Backplot

Use this dialog to configure general backplot settings.

To configure the Backplot settings, select **Backplot** from the **File types** menu in the left window of the **Editor Setup** dialog. The following dialog appears:

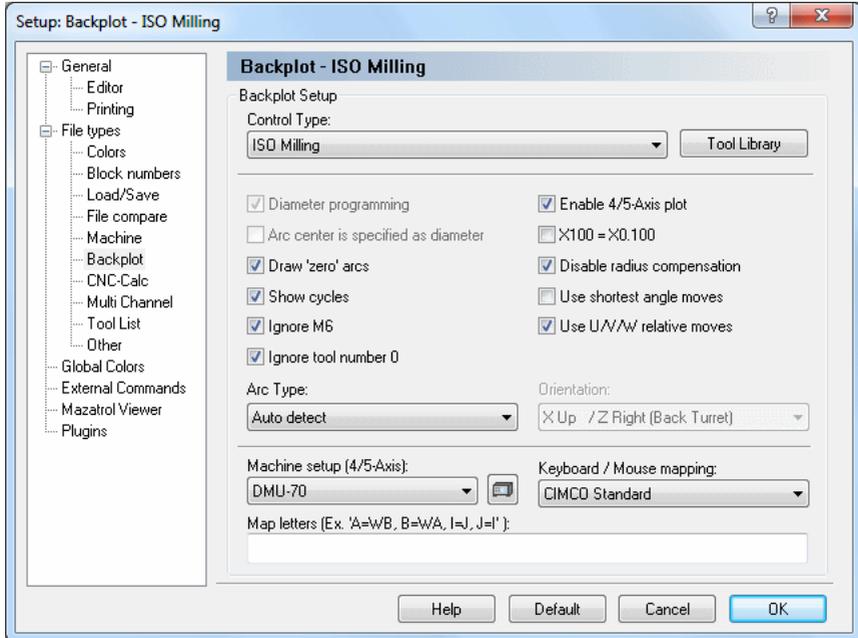


Figure 9.11: Backplot Setup dialog

Note: Only the backplot options for the selected file type are active. All other options are grayed out.

9.2.6.0.14 Backplot Setup

- **Control Type**

Select the control type for the backplot from the list.

- **Tool Library**

Use this button to set up the tool library for the selected control type. Information on how to set up tools is found under Tool.

- **Diameter programming**

Check this field to select diameter programming.

- **Arc center is specified as diameter**

Check this field to select diameter programming for arc centers also (I coordinate).

- **Draw 'zero' arcs**

Check this field if a full circle should be drawn on arcs with the same start and end-point.

- **Show cycles**

Check this field to plot cycles.

- **Ignore M6**

Check this field to ignore tool load commands (like M6).

Notice: You can specify the tool load command on the *Machine* setup page.

- **Ignore tool number 0**

Check this field to ignore tool number 0. This is useful if T0/T00/T0000 is used to cancel the length offset.

- **Enable 4/5-Axis plot**

Check this field to enable 4/5-Axis backplotting.

- **X100 = X0.100**

When this option is selected, the program will assume that a value without a decimal separator is 1/1000 of a regular move.

- **Disable radius compensation**

Check this field to disable tool radius compensation.

- **Use shortest angle moves**

Check this field to use the shortest angle.

Example: When moving from 359 degrees to 1 degree, the simulation will normally move 358 degrees back. When this option is checked, only a 2 degrees move is performed.

- **Use U/V/W relative moves**

Check this field if U/V/W should be used as relative moves.

- **Arc type**

Select the type of arc that is used from this drop-down list.

- **Orientation**

Use this field to specify the orientation of the plot for turning operations.

- **Machine Setup (4/5-Axis)** /  /

Use this field to specify the machine type. The machine type/geometry is important for 5-Axis simulation. Click on the icon next to the field to edit the machine configuration.

- **Keyboard / Mouse mapping**

Select the keyboard mapping from this list.

- **Map letters (Ex. 'A=WB, B=WA, I=J, J=I')**

Use this field to map the default letters to a different string.

Example: If a CNC uses XA for A-axis rotation, specify $A=XA$ in this field.

Example: If a machine has switched the X and Y axis, specify $X=Y$, $Y=X$.

- **Help**

Click this button to open the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Backplot Setup window without executing changes.

- **OK**

Click this button to execute the new settings made in the Backplot configuration window.

9.2.7 CNC-Calc

Use this dialog to configure general CNC-Calc settings.

To configure CNC-Calc settings, select **CNC-Calc** from the **File types** menu in the left window of the **Editor Setup** dialog. The following dialog appears.

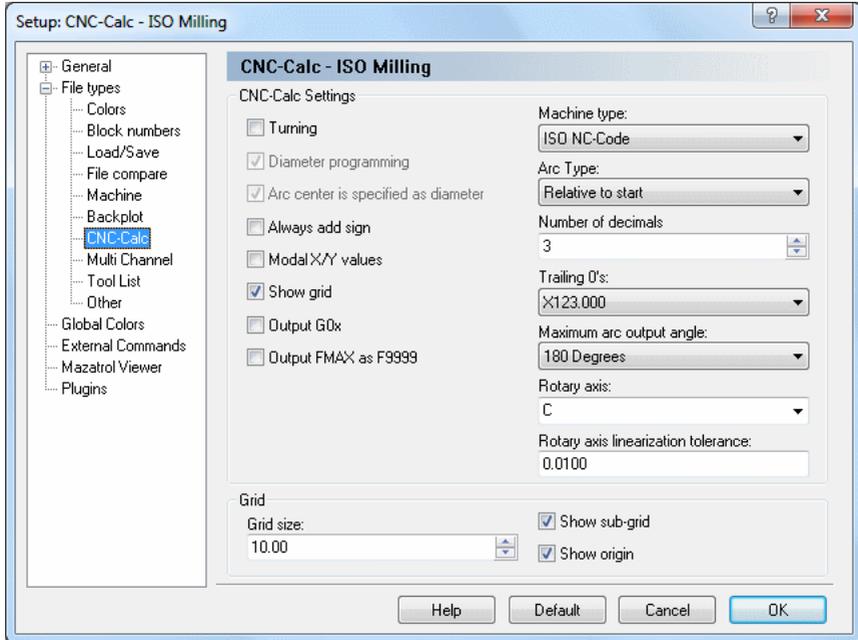


Figure 9.12: The CNC-Calc configuration dialog

Note: Only the options for the selected file type are active. All other options are grayed out.

9.2.7.0.15 CNC-Calc Settings

- **Turning**

Use this option to simulate 2D Turning (Lathe) programs.

- **Diameter programming**

Check this field to select diameter programming.

- **Arc center is specified as diameter**

Check this field to select diameter programming for arc centers also (I coordinate).

- **Always add sign**

Use this check box to specify if sign always should be shown for coordinates etc.

- **Modal X/Y values**

Check this field if modal coordinates should be used for the X and Y coordinates.

- **Modal X/Z values (Turning)**

Use this check box to indicate if modal coordinates should be used for the X and Z coordinates.

- **Show grid**

Use this option to specify if the grid should be shown.

- **Output G0x**

Check this field to output G0 as G00, G1 as G01 (and so on).

Notice: You can specify the tool load command in the *Machines* settings.

- **Output FMAX as F9999**

Outputs Heidenhain rapid moves as F9999.

Note: This option is used on older Heidenhain controls.

- **Machine type**

Use this field to specify the type of code that should be generated.

- **Arc type**

Select the type of arc used from the drop-down list.

- **Number of decimals**

Specify the maximum number of decimals in coordinates for example in this field.

- **Trailing 0's**

Use this field to specify the way trailing zeros should be applied to coordinates.

- **Maximum arc output angle**

Use this field to specify the maximum angle of the arcs in the generated NC program.

- **Rotary axis**

Specify the name of the rotary axis used when machining using rotary axis substitution.

- **Rotary axis linearization tolerance**

Use this field to specify the linearization tolerance when machining using rotary axis substitution.

9.2.7.0.16 Grid

- **Grid size**

Specify the distance between grid points in this field.

- **Show sub-grid**

Check this box if the sub-grid should be shown.

- **Show origin**

Use this check box to specify if axis should be shown.

- **Help**

Click this button to open the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the CNC-Calc Setup window without executing changes.

- **OK**

Click this button to execute the new settings made in the CNC-Calc Configuration window.

9.2.8 Multi Channel

The Multi Channel option enables you to view NC programs for 2 or 3 channel machines correctly in the editor, at the same time. The NC codes for each channel are automatically displayed in their own window when the corresponding Wait code is specified.

To configure Multi Channel settings, select **Multi Channel** from the **File types** menu in the left window of the **Editor Setup** dialog. The Multi Channel configuration dialog is shown below.

Notice: The windows can be synchronized with the wait codes and editing can be done in all windows. Wait codes that match are shown in yellow and missing wait codes are shown in purple.

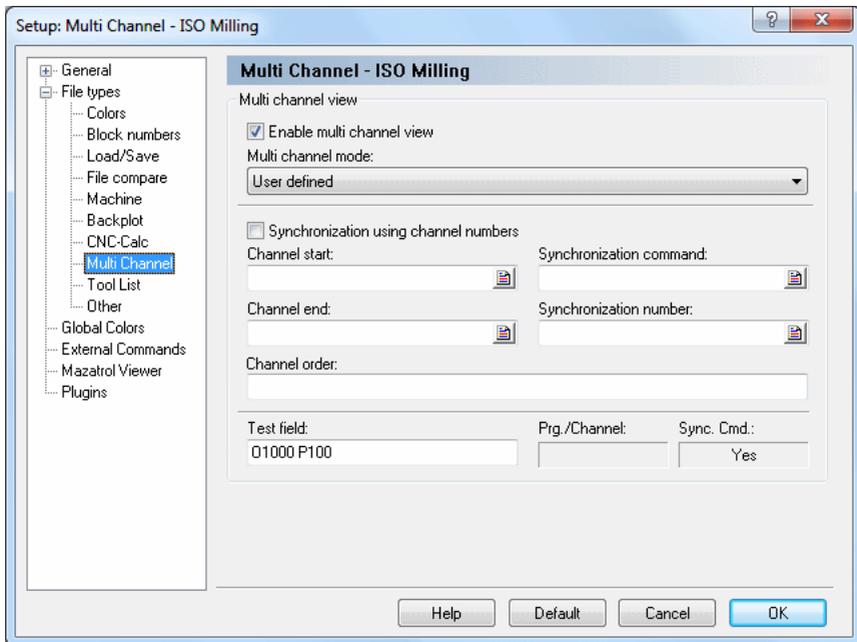


Figure 9.13: Multi Channel configuration dialog

9.2.8.0.17 Multi channel view

- **Enable multi channel view**

Check this field to enable the multi channel view.

- **Multi channel mode**

Use this drop-down list to specify how to read the multi channel information. You can either select one of the predefined types, or the custom type to manually define the multi channel commands.

- **Synchronization using channel numbers**

Check this field if the synchronization commands specify which channel to synchronize with.

Example: !2 means synchronize with channel 2.

If this field is not checked, then the synchronization is done using synchronization numbers.

Example: M303 means synchronize with all channels that contain M303.

- **Channel start**

Use this field to specify the start of a channel information, when multiple channels are stored in the same file.

Example: Specify O if each channel starts with an O number. You can specify multiple strings separated by comma. For example, if the first channel starts with G13 and the second channel starts with G14, then specify G13,G14 in this field. You can also specify the start of channel information using an advanced trigger.

- **Channel end**

Use this field to specify the end of a channel information, when multiple channels are stored in the same file.

Example: Specify M30 if each channel ends with M30. You can also specify the end of channel information using an advanced trigger.

- **Synchronization command**

Use this field to specify the synchronization command.

Example: If synchronization points are indicated with !1, !2, ..., specify ! in this field. If you specify the command using an advanced trigger, then you must place <> around the synchronization information.

Example: To synchronize on M300-M399, specify M3<[0-9] [0-9]> in this field. To synchronize on all Pxxx, specify P<[0-9]+> in this field.

- **Synchronization number**

Use this field to specify the synchronization number.

Example: If synchronization points have an ID number like WAIT(1001, channel 1, channel 2) where the ID number is 1001, that must also match in addition to the synchronization command.

- **Channel order**

Use this field to specify the channel order, for example 1,3,2.

- **Test field**

Use this field to test the multi channel setup.

- **Help**

Click this button to open the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Multi Channel Setup window without executing changes.

- **OK**

Click this button to execute the new settings.

9.2.9 Tool List

This section describes how to set up tool list triggers and generate tool lists. To configure Tool list settings, select **Tool List** from the **File types** menu in the left window of the **Editor Setup** dialog. The Tool List configuration dialog is shown below.

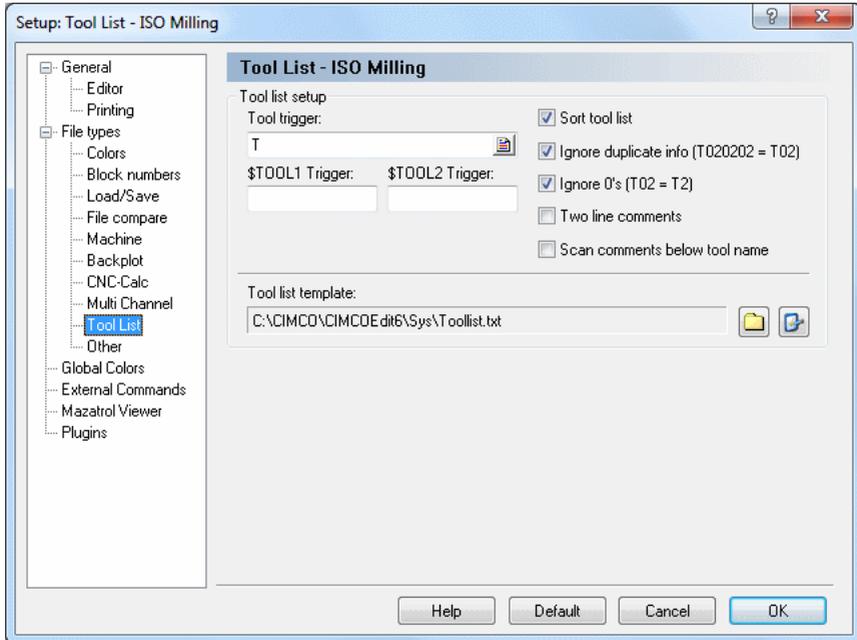


Figure 9.14: Tool List Dialog

9.2.9.0.18 Tool list setup

- **Tool trigger**

Specify the tool trigger in this field.

Example: If the machine uses T01 for tool 01, specify *T* in this field.

- **\$TOOL1 Trigger**

Use this field to specify the advanced trigger that should be used to generate the \$TOOL1 variable.

Example: To include the value specified after R into the following line: (T1 5MM DRILL R33), specify the trigger `R<[0-9]+>`. This will assign the value *R33* to \$TOOL1.

- **\$TOOL2 Trigger**

Use this field to specify the advanced trigger that should be used to generate the \$TOOL2 variable.

Example: To include the value specified after R into the following line: (T1 5MM DRILL R33), specify the trigger R<[0-9]+>. This will assign the value *R33* to \$TOOL2.

- **Sort tool list**

Check this field to sort the tool list.

Notice: When you check this field, each tool is only listed once.

- **Ignore duplicate info (T020202 = T02)**

Ignores duplicate/magazine info in the tool number, i.e. T020202 should be listed as T02.

- **Ignore 0's (T02 = T2)**

Ignores leading zeros in tool numbers, i.e. T02 should be listed as T2.

- **Two line comments**

Check this field if the tool comment consists of two lines.

- **Scan comments below tool name**

Check this field if the tool comment is always located below the tool change line.

- **Tool list template**

Use this field to specify the directory of the tool list template. Click the folder icon to the right to select a tool list template.

Note: Click the icon next to the folder icon if you wish to edit the specified tool list template.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Tool list configuration window without executing changes.

- **OK**

Click this button to execute the new settings.

9.2.10 Other

This section describes how to configure File type specific settings, i.e. the settings made here will only be applied to the selected file type, ex. ISO Milling.

To configure Other settings, select **Other** from the **File types** menu in the left window of the **Editor Setup** dialog. The following dialog appears:

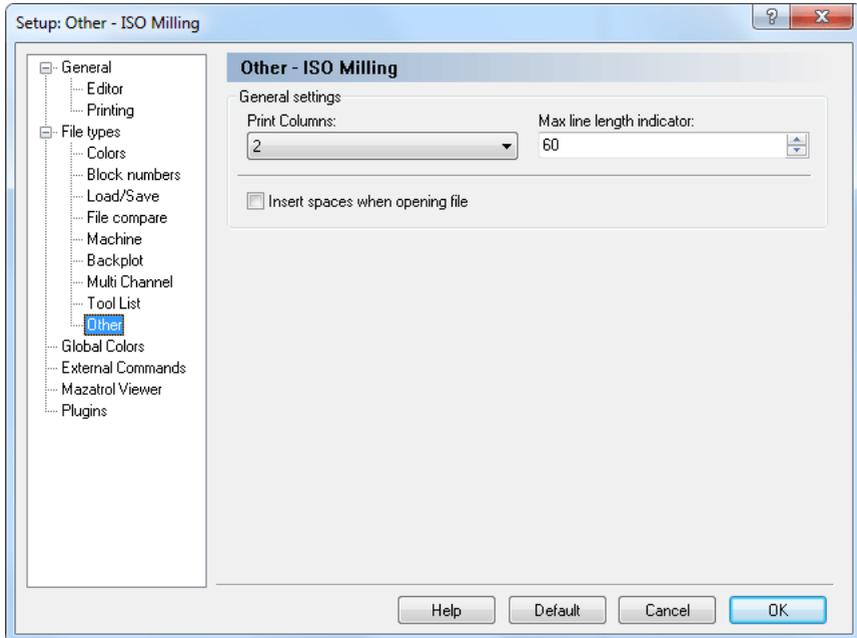


Figure 9.15: 'Other' configuration dialog

9.2.10.0.19 General settings

- **Print Columns**

Use this field to specify the number of columns to print.

- **Max line length indicator**

Use this field to set the position of the *Max line length indicator*.

Notice: If you are using a proportional font (i.e. all letters are not the same width), the indicator does not show the exact line length.

- **Insert spaces when opening file**

Check this field to automatically insert spaces when opening a file.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Other Configuration window without executing changes.

- **OK**

Click this button to execute the new settings made in the *Other* configuration window.

9.3 Global Colors

This section describes how to configure the general colors settings. Here, you can create your own colors for program simulations etc., and the CNC-Calc window (background, axes, contour, etc.). To modify a specific color, select it from the list and move the sliders to get the desired color.

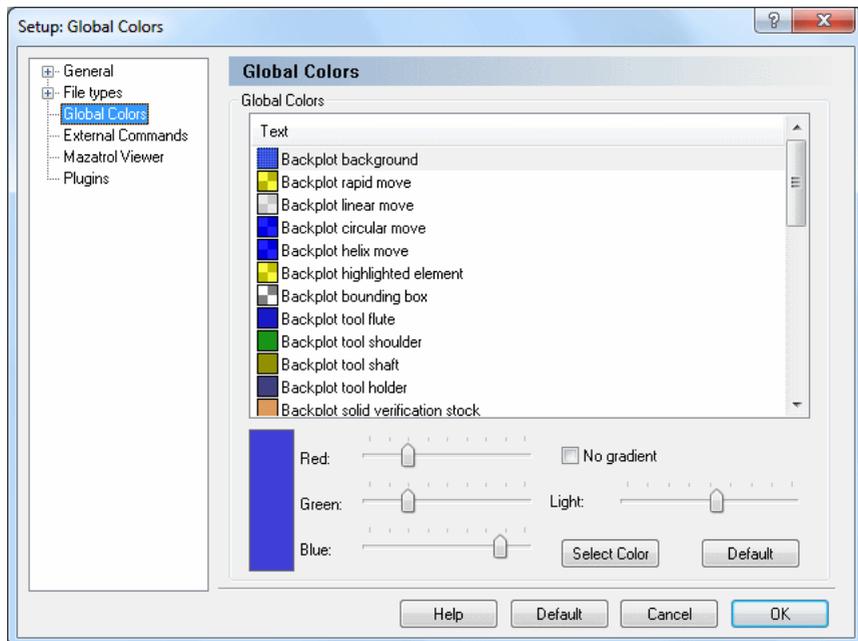


Figure 9.16: Global Colors

- **Select color**

Click this button to select a predefined color from the list or create a custom color.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Global colors dialog without executing changes.

- **OK**

Click this button to execute the new settings made in the Global Colors configuration window.

9.4 External Commands

This section describes the setup and use of external commands.

To configure External Commands, select **Editor**, **Global Setup**, or click on the corresponding icon . This will open the Editor setup window. Click on **External Commands** in the left window of the Setup dialog. The following dialog appears:

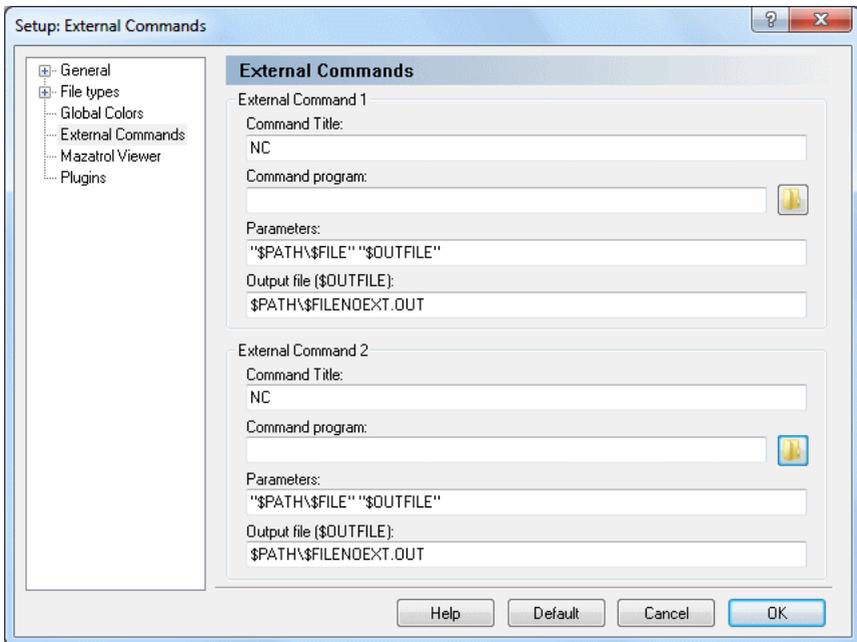


Figure 9.17: The External Commands Dialog

9.4.0.1 External Command 1 / 2

- **Command Title**

Use this field to specify the menu text shown in the *NC Functions* menu.

- **Command program**

Use this field to specify the application to execute.

- **Parameters**

Use this field to specify the parameters to the command.

The following variables are available:

\$FILE: Defines the file name without path.

\$PATH: Specifies the path of the file.

\$FILEPATH: Specifies the file name with path.

\$FILENOEXT: Defines the file name without extension.

Example: To execute the command with the parameters *-g C:\NCPRG\MOULD C:\NCPRG\MOULD.NEW*, specify *-g \$FILE \$OUTFILE*, and then *'\$PATH\ \$FILE* in the **Output file** field.

- **Output file (\$OUTFILE)**

Use this field to specify the name of the output file.

The following variables are available:

\$FILE: Defines the file name without path.

\$PATH: Specifies the path of the file.

\$FILEPATH: Specifies the file name with path.

\$FILENOEXT: Defines the file name without extension.

Example: To execute the command with the parameters *-g C:\NCPRG\MOULD C:\NCPRG\MOULD.NEW*, specify *\$PATH\ \$FILENOEXT.NEW*, and *-g \$FILE \$OUTFILE* in the **Parameters** field.

Notice: If no output filename is specified, it is assumed that the input file is modified.

9.5 Mazatrol Viewer

This section describes how to set up the Mazatrol Viewer. The Mazatrol Viewer enables you to open and view Mazatrol files directly from your PC.

Note: Mazatrol Viewer is an optional module, and requires therefore a Mazatrol Viewer enabled licence key. Mazatrol Viewer is activated under *Plugins*.

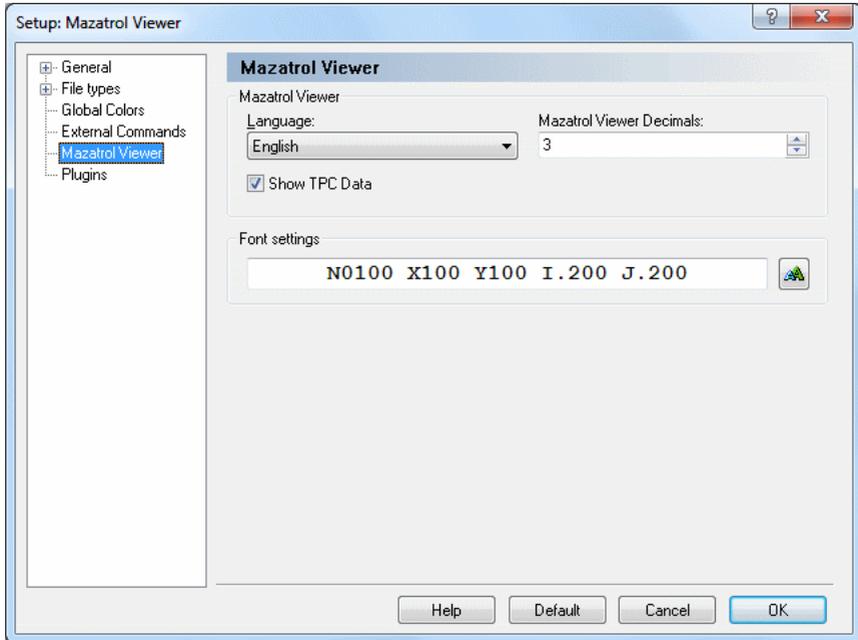


Figure 9.18: Mazatrol Viewer

9.5.0.2 Mazatrol Viewer

- **Language**

Select the language used for showing the Mazatrol data.

- **Mazatrol Viewer Decimals**

Use this field to specify how many decimals should be used to display values in the Mazatrol Viewer.

- **Show TPC Data**

Check this field to include TPC data when viewing Mazatrol files.

- **Font settings**

This field shows an example of the selected font. Click on the button to the right to select another font.

- **Help**

Click this button to open the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Mazatrol Viewer dialog without executing changes.

- **OK**

Click this button to execute the new settings made in the Mazatrol Viewer configuration window.

9.6 Plugins

In this section, you will find general information about how to manage Plugins.

Note: The editor must be licensed according to the plugins you wish to run in the Editor.

When you select **Plugins** in the Editor setup window, the following dialog appears:

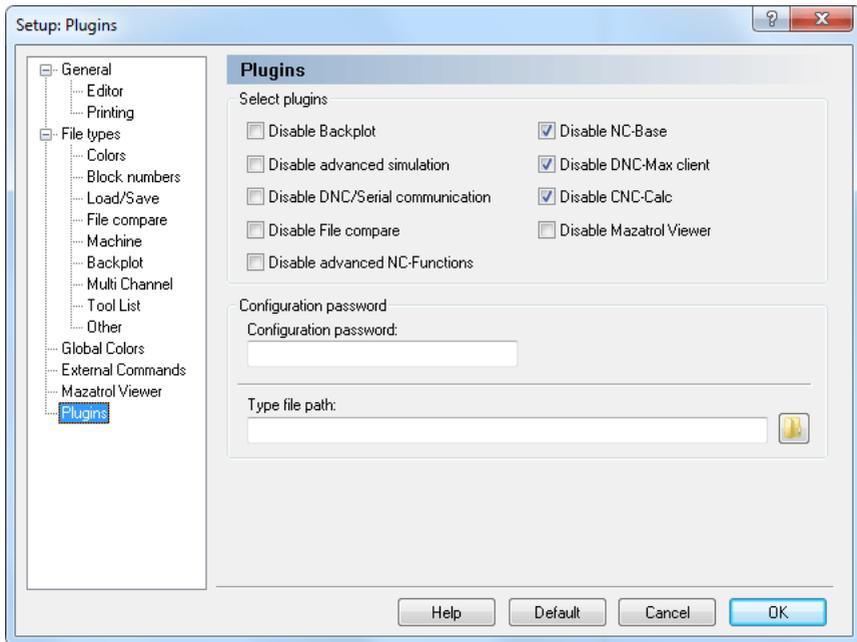


Figure 9.19: The Plugins dialog

9.6.0.3 Select plugins

- **Disable Backplot**

Check this field to disable the Backplot module.

- **Disable advanced simulation**

Check this field to disable the advanced simulation module.

- **Disable DNC/Serial communication**

Check this field to disable the DNC/Serial communication module.

- **Disable File compare**

Check this field to disable the File compare function.

- **Disable advanced NC-Functions**

Check this field to disable the advanced NC functions (Macros/Mirror/Rotate/...).

- **Disable NC-Base**

Check this field to disable the NC-Base Client.

- **Disable DNC-Max Client**

Check this field to disable the DNC-Max Client.

- **Disable CNC-Calc**

Check this field to disable the CNC-Calc module.

- **Disable Mazatrol Viewer**

Check this field to disable the Mazak Mazatrol viewer module.

9.6.0.4 Configuration password

- **Configuration password**

Use this field to specify the configuration password.

Notice: If you forget the password, hold down CTRL+SHIFT when you start the editor.

- **Macros/Machine configuration path**

Use this field to specify where the file types (*.mac) should be stored. Click the folder icon to the right to select a path.

Notice: You can use \$USERNAME and \$COMPUTERNAME as directory variables.

- **Help**

Opens the on-line help.

- **Default**

Click this button to revert to default settings.

- **Cancel**

Click on this button to close the Plugins configuration dialog without executing changes.

- **OK**

Click this button to execute the new settings made in the Plugins configuration window.

DNC Settings

If you wish to configure the settings for the communication between the PC and a selected machine, you can do it in two ways: You can select **DNC Setup** from the **Transmission** menu, select the desired machine, and click **Setup**. Or you can select the desired machine from the **Transmission** toolbar and click on the DNC Setup icon  next to **Machine**.

If you select **DNC Setup** from the **Transmission** menu, this window will appear:

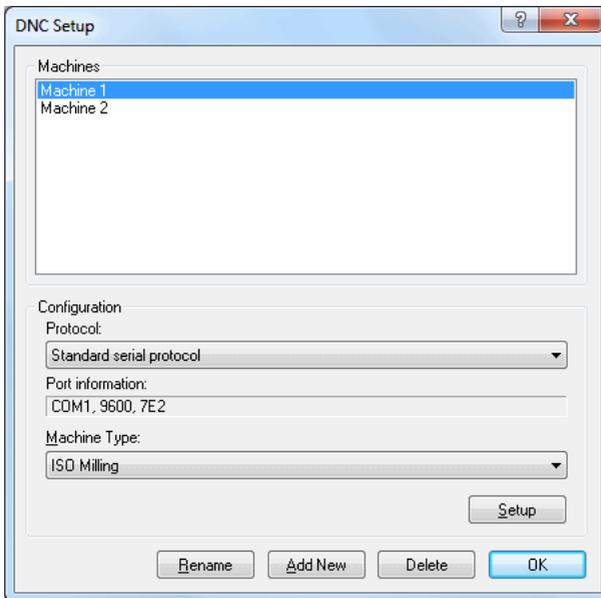


Figure 10.1: DNC Setup dialog

- **Machines**

If there are several machines connected to the computer, you can select which machine to communicate with or configure.

Configuration

- **Protocol**

Here you select the communication protocol for the selected machine. The Standard serial protocol is default in CIMCO Edit v6. Optional protocols are available for CNC controls like Heidenhain, Mazak, etc.

Notice: You can not select a protocol which you have no license for. If tried, the computer will automatically select the earlier used protocol.

- **Port information**

Shows in shorthand the most important of the machine settings.

Example: COM1, 9600, 7E2 (Port: COM1, Baud rate: 9600, Data bits: 7, Parity: Even, Stop bit: 2).

- **Machine Type**

Shows a list of different machines, which can be used as templates (e.g. Heidenhain, ISO Milling, ISO Turning, etc.)

- **Setup**

Click this button to enter the configuration dialog for the selected machine.

- **Rename**

Click this button to rename a configuration.

- **Add New**

Click this button to add a new configuration. The following window appears:

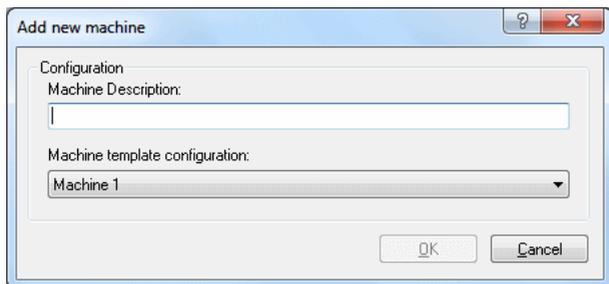


Figure 10.2: Add a new DNC machine

Enter the name and machine template for the new machine, and then click **OK**. Click **Cancel** to cancel the operation.

- **Delete**

Click this button to delete a configuration. You will be prompted if you really want to delete the machine configuration.

- **OK**

Click this button to execute the new settings and close the configuration dialog.

10.1 Port Setup

To change the DNC settings, select **DNC Setup** from the **Transmission** tab, or click the DNC setup icon on the transmission menu.

The basic port configuration dialog is shown below:

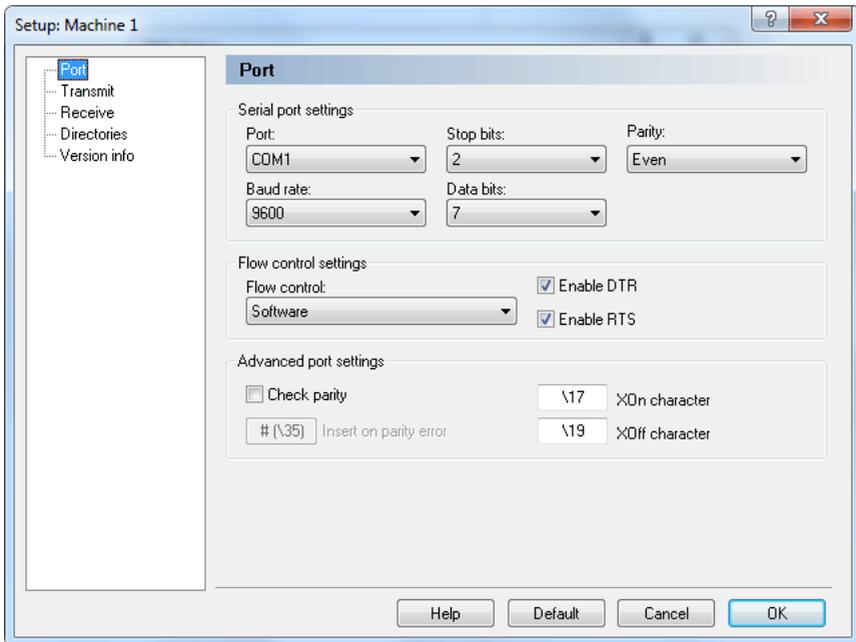


Figure 10.3: Basic port settings

10.1.0.5 Serial port settings

- **Port**

List of the serial ports on your PC. Select the one you wish to use with this machine configuration.

- **Baud rate**

The transmission speed in bits per second. Select the desired Baud rate from the drop-down list.

- **Stop bits**

Select the number of stop bits appended after each character in the communication to separate the data bits.

Notice: The number of stop bits required depends on the CNC control. Please refer to the reference manual for more details.

- **Data bits**

Select the number of bits in each character. By default, the 7-bit ASCII code is used for NC data transmission.

- **Parity**

An error checking method which indicates if a transmission was successful or not. The method can operate in different modes:

None: Is selected when no parity error checking is to be used.

Even parity: An even number of 1's is used in each character.

Odd parity: An odd number of 1's is used in each character.

Mark parity: The parity bit is always '1' and the line is 'low'.

Space parity: The parity bit is always '0' and the line is 'high'.

10.1.0.6 Flow control settings

- **Flow control**

The handshake procedure for synchronizing the communication between the computer and the control. Software handshake uses the XON/XOFF ASCII characters, Hardware handshake uses the RTS/CTS control lines in the RS-232 communication specifications.

You can select one of the following flow control methods from the drop-down list:

None: No flow control is performed.

Software: Software handshake is used for the flow control.

Hardware: Hardware handshake is used for the flow control.

Hardware and Software: Both Hardware and Software handshakes are used.

- **Enable DTR**

Check this box to set DTR high.

- **Enable RTS**

Check this box to set RTS high.

10.1.0.7 Advanced port settings

- **Check parity**

If you want CIMCO Edit v6 to report parity errors, then mark the **Check parity** box. Every time an error occurs, the specified character is inserted into the file at the receiving point.

Non standard XOn and XOff characters can be specified.

- **Insert on parity error**

Use this field to specify a character to insert in the received file, if a parity error occurs while receiving data from the remote machine. If the field is left blank, no character is inserted. You can specify the character by entering the ASCII character, i.e. enter **\$** to get ASCII character 36, or you can enter the ASCII value like this **\36**.

- **XOn character**

Use this field to specify the XOn character. If the field is left blank, the standard XOn character is used. If your machine needs a non-standard XOn character, you can specify it here. You can specify the XOn character by entering the ASCII character, i.e. enter **\$** to get ASCII character 36, or you can enter the ASCII value like this **\36**.

- **XOff character**

Use this field to specify the XOff character. If the field is left blank, the standard XOff character is used. If your machine needs a non-standard XOff character, you can specify it here. You can specify the XOff character by entering the ASCII character, i.e. enter **\$** to get ASCII character 36, or you can enter the ASCII value like this **\36**.

10.2 Transmit settings

To configure transmit settings, click on **Transmit** in the left hand list of the Machine Setup window. The transmit configuration dialog is shown below:

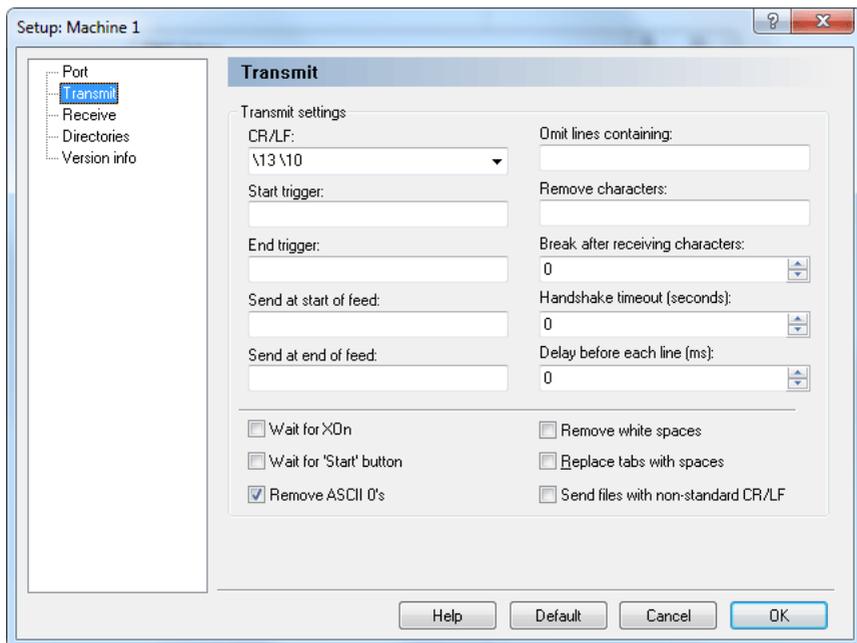


Figure 10.4: Transmission setup

- **CR/LF.**

In this field, you can select the carriage-return or line-feed character(s) from the drop-down list, or you can enter them manually. ASCII 13 and ASCII 10 have no character representation, so they must be entered as \13 and \10 respectively.

- **Start trigger**

Use this field to specify the start trigger. The DNC will start transmitting data from the first line in the file that contains the specified start trigger.

- **End trigger**

Use this field to specify the end trigger.

Notice: The line containing the end trigger is not transmitted.

- **Send at start of feed**

Here, you can specify a character or a string that should be sent at the start of the transmission. You can specify one or more characters by entering the ASCII characters, i.e. enter **\$*** to get ASCII character 36 followed by ASCII 42, or you can enter the ASCII value like this **\36\42**.

- **Send at end of feed**

Specify a character or a string that should be sent at the end of the transmission. You can specify one or more characters by entering the ASCII characters, i.e. enter **\$*** to get ASCII character 36 followed by ASCII 42, or you can enter the ASCII value like this **\36\42**.

- **Omit lines containing**

Excludes lines containing one or more selected characters. The consequence of entering anything here is that any line containing one of these characters or strings will not be transmitted.

- **Remove characters**

Use this field to specify characters that should be removed from the transmitted data.

- **Break after receiving characters**

Ends the transmission to the control after the specified number of characters have been sent, even if the program is not finished. If this field is left empty, any incoming characters are ignored.

- **Handshake timeout in seconds**

The chosen time that CIMCO Edit v6 should wait after receiving a stop flow signal (XOff and/or CTS Low) from a remote machine before it terminates the connection. If the timeout value is not specified, it will wait until a start flow is received.

- **Delay before each line in ms**

Specify the time in milliseconds CIMCO Edit v6 should wait before it begins transmitting a new line.

- **Wait for Xon**

This box is checked if you wish CIMCO Edit v6 to wait for an Xon before transmitting data. This option is only available if Software handshake is enabled in the port settings.

- **Wait for 'Start' button**

Check this field if the transmission should not start until you click the *Start* button on the transmit status dialog.

- **Remove ASCII 0's**

Check this field if ASCII 0's should be removed from the transmitted data.

- **Remove white spaces**

White spaces (ASCII 32) and tabs (ASCII 9) are removed automatically from the file transmitted to the remote machine. This feature is activated with a mark in the box.

- **Replace tabs with spaces**

Converts tabs (ASCII 9) to spaces (ASCII 32) before sending the file to the remote machine. This feature is activated with a mark in the box.

- **Send files with non-standard CR/LF**

Check this field if you wish to send files that contain non-standard linefeed characters like CRLFLF or CRCR.

Note: When entering characters in one of the character entry fields, the characters can be entered in two ways: You can enter the characters themselves, like \$*, or you can enter the ASCII values of the characters like \36\42.

10.3 Receive settings

To configure receive settings, click on **Receive** in the left hand list of the Machine Setup window. The receive configuration dialog is shown below:

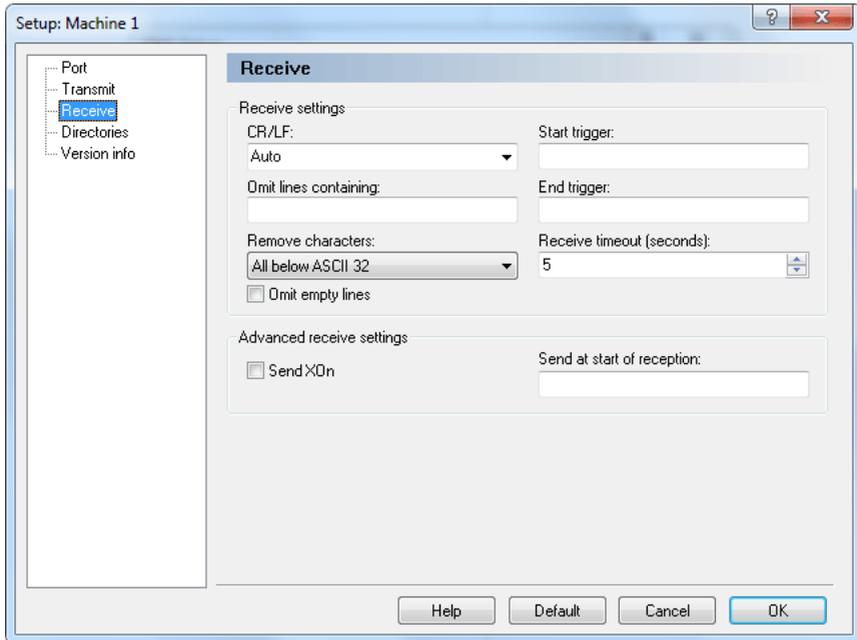


Figure 10.5: Receive settings

10.3.0.8 Receive settings

- **CR/LF**

Use this field to specify the line feed character(s).

If you select *Auto*, the DNC will try to auto-detect the CR/LF combination used. If the remote machine does not use any of the standard combinations of ASCII 13 and ASCII 10, you must enter the appropriate CR/LF combination manually.

The normal combination is ASCII 13 followed by ASCII 10. ASCII 13 and ASCII 10 have no character representation, so they must be entered as `\13` and `\10` respectively.

- **Omit lines containing**

Excludes lines containing one or more selected characters. The consequence of entering anything here is that any line containing one of these characters or strings will be discarded when received.

- **Remove characters**

Selected characters will automatically be removed from the received stream. You can select *None*, *ASCII 0* or *All below ASCII 32* from the drop-down list if one of those is appropriate.

- **Omit empty lines**

Check this field if empty lines should not be saved.

- **Start trigger**

Start triggers are characters indicating that CIMCO Edit v6 should start saving incoming data. If no start trigger is used and the field therefore is left empty, CIMCO Edit will start saving at the beginning of the file.

Notice: The start trigger is the first sequence of characters received.

- **End trigger**

End triggers are characters indicating that CIMCO Edit v6 should stop saving incoming data. If no end trigger is used and the field therefore is left empty, CIMCO Edit v6 will continue to save until the end of the file, where a timeout occurs.

Notice: The end trigger is the last sequence of characters received.

- **Receive timeout in seconds**

Indicates the time delay after the last character has been received from the remote machine, until the computer concludes that the receiving operation is finished. If no end trigger is specified, you should specify a value here, or you will have to stop the receive process manually from the receive status dialog.

10.3.0.9 Advanced receive settings

- **Send XOn**

When this field is checked, the DNC will send an *XOn* character when it is ready to receive data.

- **Send at start of reception**

Specify a string that should be sent to the CNC when a receive operation is started.

Note: When entering characters in one of the character entry fields, the characters can be entered in two ways: You can enter the characters themselves, like \$*, or you can enter the ASCII values of the characters like \36\42. (\$ has the ASCII code number 36).

10.4 Directory settings

In the following dialog, you can define the Transmit and Receive directories. To specify the directories, click on the **Directories** tab in the left DNC Setup window. The following dialog appears:

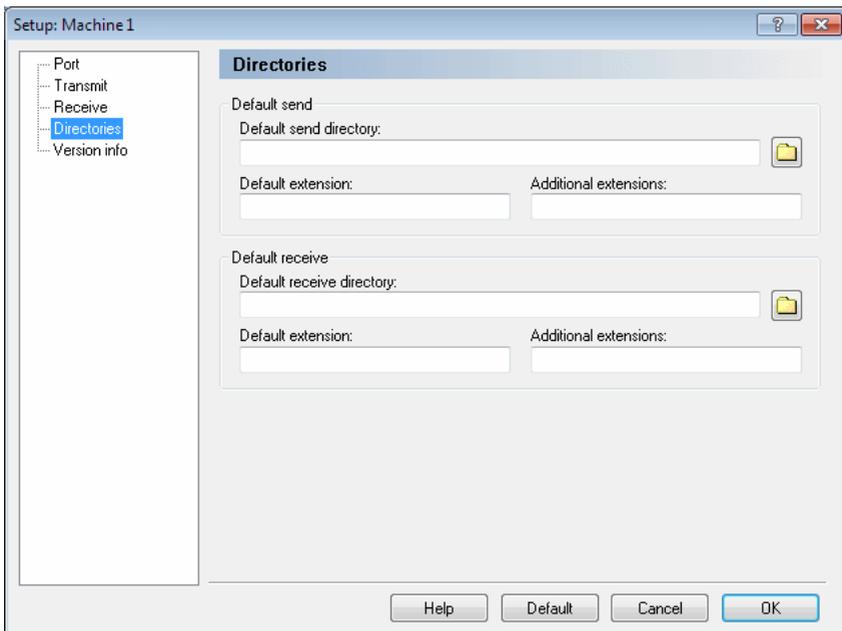


Figure 10.6: Transmit and Receive directories setup

- **Default send directory**

Specify the default send path in this field, or click on the folder icon to the right to select a directory.

- **Default extensions**

Use this field to specify the default extension of files to be sent.

- **Additional extensions**

Use this field to specify additional extensions for files to be sent.

- **Default receive directory**

Specify the default receive directory, or click on the folder icon to the right to select a directory.

- **Default extension**

Use this field to specify the default extension for received files.

- **Additional extensions**

Use this field to specify additional extensions for received files.

10.5 Version info

If you want to find out which version of CIMCO Edit v6 you are running, just click on **Version Info** to the left. You can also get this information if from the main menu, you select *Help* and click *About*.

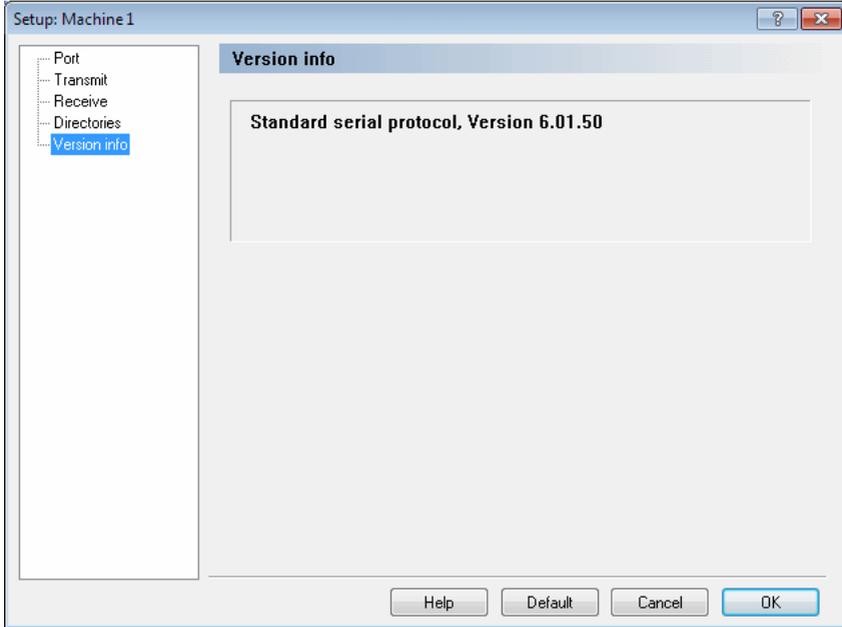


Figure 10.7: Version info

Serial communication overview

This section contains information about how to build a standard serial cable and loopback device.

11.1 RS-232 / RS-422 / RS-485

11.1.1 RS-232

Quite possibly the most widely used communication standard is RS-232. This implementation has been defined and revised several times and is often referred to as RS-232 or EIA/TIA 232. The IBM PC computer defined the RS-232 port on a 9-pin D sub connector and subsequently the EIA/TIA approved this implementation as the EIA/TIA 574 standard. This standard is defined as the 9 Position Non-Synchronous Interface between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange. Both implementations are in widespread use and will be referred to as RS-232 in this document. RS-232 is capable of operating at data rates up to 20 Kbps at distances less than 50 ft. The absolute maximum data rate may vary due to line conditions and cable lengths. RS-232 often operates at 38.4 Kbps over very short distances. The voltage levels defined by RS-232 range from -12 to +12 volts. RS-232 is a single ended or unbalanced interface, meaning that a single electrical signal is compared to a common signal (ground) to determine binary logic states. A voltage of +12 volts (usually +3 to +10 volts) represents a binary 0 (space) and -12 volts (-3 to -10 volts) denotes a binary 1 (mark). The RS-232 and the EIA/TIA-574 specification defines two type of interface circuits: Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE).

11.1.2 RS-422

The RS-422 specification defines the electrical characteristics of balanced voltage digital interface circuits. RS-422 is a differential interface that defines voltage levels and driver/receiver electrical specifications. On a differential interface, logic levels are defined by the difference in voltage between a pair of outputs or inputs. In contrast, a single ended interface, for example RS-232, defines the logic levels as the difference in voltage between a single signal and a common ground connection. Differential interfaces are typically more immune to noise or voltage spikes that may occur on the communication lines. Differential interfaces also have greater drive capabilities that allow for longer cable lengths. RS-422 is rated up to 10 Megabits per second and can have cabling 4000 feet long. RS-422 also defines driver and receiver electrical characteristics that will allow 1 driver and up to 32 receivers on the line at once. RS-422 signal levels range from 0 to +5 volts. RS-422 does not define a physical connector.

11.1.3 RS-485

RS-485 is backwardly compatible with RS-422; however, it is optimized for party line or multi drop applications. The output of the RS-422/485 driver is capable of being Active (enabled) or Tri State (disabled). This capability allows multiple ports to be connected in a multi drop bus and selectively polled. RS-485 allows cable lengths up to 4000 feet and data rates up to 10 Megabits per second. The signal levels for RS-485 are the same as those defined by RS-422. RS-485 has electrical characteristics that allow for 32 drivers and 32 receivers to be connected to one line. This interface is ideal for multi drop or network environments. RS-485 tri state driver (not dual state) will allow the electrical presence of the driver to be removed from the line. Only one driver may be active at a time and the other driver(s) must be tri stated. The output modem control signal RTS controls the state of the driver. Some communication software packages refer to RS-485 as RTS enable or RTS block mode transfer. RS-485 can be cabled in two ways: two wire or four wire mode. Two wire mode does not allow for full duplex communication and requires that data be transferred in only one direction at a time. For half duplex operation, the two transmit pins should be connected to the two receive pins (Tx+ to Rx+ and Tx to Rx). Four wire mode allows full duplex data transfers. RS-485 does not define a connector pin out or a set of modem control signals. RS-485 does not define a physical connector.

11.2 RS-232 layout for 9 pin connector

The original wiring diagram for standard RS-232 was developed for a 25 pin D-sub connector (DB-25). This design provides a secondary channel for serial RS232 communications, but in practice only one serial communication channel with accompanying handshaking is present. Therefore, the smaller DB9 version is more commonly used today.

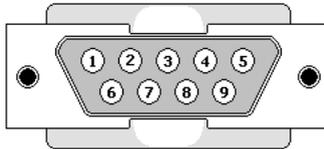


Figure 11.1: Diagram for 9 pin connector

The following table shows the signals of a 9 pin RS-232.

<i>Pin</i>	<i>Signal</i>	<i>Name</i>
2	Received Data	RX
3	Transmitted Data	TX
4	Data Terminal Ready	DTR
5	Signal Ground	GND
6	Data Set Ready	DSR
7	Request To Send	RTS
8	Clear To Send	CTS

Table 11.1: 9 pin RS-232

Note: Only signals used for regular RS-232 communication are shown.

11.3 RS-232 layout for 25 pin connector

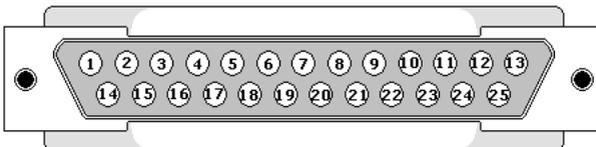


Figure 11.2: Diagram for DB25 connector

This table shows the signals of a 25 pin RS-232 connector. There are 25 connections in the complete specification, but it is very likely to find less than half of these in a given interface.

<i>Pin</i>	<i>Signal</i>	<i>Name</i>
3	Received Data	RX
2	Transmitted Data	TX
20	Data Terminal Ready	DTR
7	Signal Ground	GND
6	Data Set Ready	DSR
4	Request To Send	RTS
5	Clear To Send	CTS

Table 11.2: 25 pin RS-232

Note: Only signals used for regular RS-232 communication are shown.

11.4 Standard RS-232 serial cable

To build a standard RS-232 serial cable, you will need two 9 or 25 pin female connectors and a cable with 7 wires, preferably shielded cable.

<i>Connector A</i>	<i>Connector B</i>
RX	TX
TX	RX
DTR	DSR
DSR	DTR
RTS	CTS
CTS	RTS
GND	GND

Table 11.3: Standard RS-232 serial cable

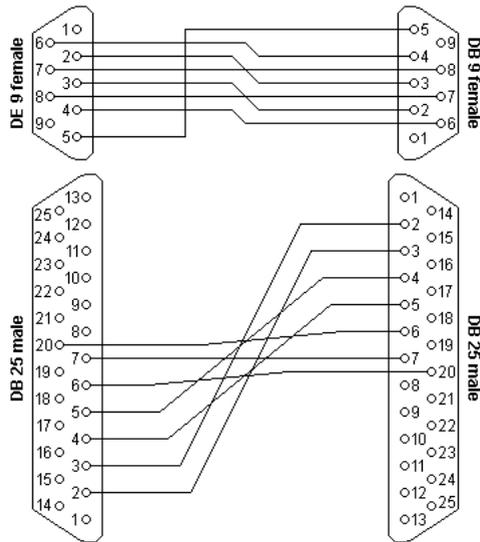


Figure 11.3: Standard RS-232 serial cable

If the cable is shielded, you should use the shield as ground (*GND*).

11.5 How to build a loopback device

A loopback is a device that sends the signal back through the same port as it is sent out of. It is used for testing purposes and is not used under normal operations.

To make a loopback device, you will need a 9-pin or 25-pin male connector and three pieces of wire.

11.5.1 Loopback device for a 9 pin connector

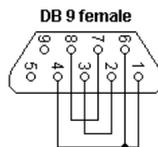


Figure 11.4: Loopback device for a 9 pin connector

- **RX/TX**
Connect pin 2 (RX) to pin 3 (TX).
- **DTR/DSR**
Connect pin 4 (DTR) to pin 6 (DSR).
- **RTS/CTS**
Connect pin 7 (RTS) to pin 8 (CTS).

11.5.2 Loopback device for a 25 pin connector

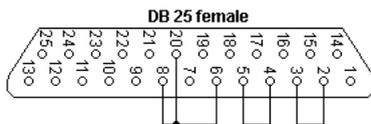


Figure 11.5: Loopback device for a 25 pin connector

- **RX/TX**
Connect pin 3 (RX) to pin 2 (TX).
- **DTR/DSR**
Connect pin 20 (DTR) to pin 6 (DSR).
- **RTS/CTS**
Connect pin 4 (RTS) to pin 5 (CTS).

Using on-line help

This section describes how to use the on-line help system in CIMCO products. A standard Windows Help file is available through the drop-down **Help** menu or by pressing the **F1** key.

12.1 Using help in dialogs

CIMCO Edit v6 contains multiple dialogs that provide drop-down menus, check boxes, and buttons for specific configurations.

To get help for a particular dialog item, click the ? at the top of a dialog box, as shown below.



Figure 12.1: Click the question mark

This will change the cursor to an arrow and a question mark indicating that you are in *Help Mode*. The new pointer is shown below.

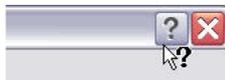


Figure 12.2: The question cursor

Now click on the item that you want further information about. If help is available for the selected item, a small window will pop up displaying the help text. If no help is available the general on-line help is launched. An example of a pop-up help is shown below.

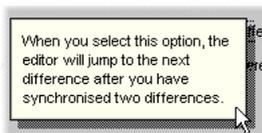


Figure 12.3: The pop-up information

You can also display the pop-up help for a dialog item by clicking in the field and then pressing **F1**.

12.2 Printing help information

If you wish to print just a single section of this on-line help, press the **Print** button on the toolbar (shown below).

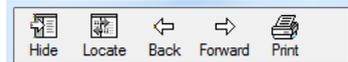


Figure 12.4: Help buttons

If you wish to print more than a few sections, you should open the *PDF* version of the on-line documentation. The *PDF* produces a much nicer printout.

The *PDF* version is located in the CIMCO Edit v6 Help directory.

Note: You will need Adobe acrobat reader to open the *PDF* file.

Index

- \$TOOL1 Trigger, 124
- \$TOOL2 Trigger, 125
- 5-Axis Machine Setup, 77

- About, 40
- Accept, 20
- Accept Imported File As, 21
- Add, 57, 98
- Add Comment, 21
- Add Current Program, 18
- Add Customer, 27
- Add Formula, 58
- Add Info, 58
- Add New, 136
- Add new color, 101
- Add Program, 16
- Add User Input, 58
- Add/Update Memo File, 18
- Add/Update Setup Sheet, 19
- Add/Update Tool List, 18
- Addition, 46
- Additional extensions, 107, 146
- Adjust Feedrate, 43
- Adjust spindle speed, 44
- Allow letters, 61
- Allow negative values, 61
- Alternate block number character, 104
- Always add sign, 119
- Always save files as regular text, 108
- Always save files as UNICODE, 108
- Always show all files (*.*), 91
- Always UPPER CASE, 93

- Angle, 48, 49
- Append File, 37
- Apply color to the entire line, 101
- Apply color to trailing digits, 101
- Apply color to trailing letters, 101
- Arc center is specified as diameter, 116, 119
- Arc type, 48–51, 117, 119
- Arrange icons, 39
- Associate File(s), 18
- Assume G91, 48, 49, 51
- Auto block numbering, 102
- Auto indent lines, 103
- Auto insert spaces, 43
- Auto save interval, 107

- Background, 100
- Backplot File, 66
- Backplot Information Bar (Milling), 78
- Backplot Information Bar (Turning), 79
- Backplot Setup, 66, 77
- Backplot Window, 66
- Backup, 27
- Baud rate, 138
- Block color, 100
- Block skip, 112
- Block skip after block number, 113
- Block Skips, 42
- Break after receiving characters, 141

- Cancel, 101, 105, 108, 111, 114, 117, 120, 123, 125, 127, 128, 132, 134

- Cascade, 39
- Change Password, 31
- Change Status, 22
- Channel end, 122
- Channel order, 123
- Channel start, 122
- Check external changes, 90
- Check parity, 139
- Clear, 31
- Close, 34, 63
- Close All, 34
- Close Backplot, 66
- Close Left Window, 82
- Close Right Window, 82
- Colors, 35
- Comma as decimal symbol, 48–51
- Command program, 130
- Command Title, 129
- Comment end, 112
- Comment start, 112
- Comments color, 100
- Compare, 16
- Compare File with File, 81
- Compare with File, 81
- Compare with Imported File, 21
- Compare With Latest Backup, 27
- Compare with Window, 81
- Configuration password, 134
- Configure Block Numbering, 35, 41
- Configure Tool List, 52
- Confirm program exit, 91
- Control Type, 77, 115
- Copy, 36, 57
- Copy Program, 18
- Copy Program Info, 15
- Copy To, 57
- Copy without selection, 94
- CR/LF, 143
- CR/LF., 140
- Current tool coordinates within the defined preparatory functions (G00 - G03), 78, 79
- Cut, 36
- Data bits, 138
- Database Setup, 12
- Date / Time, 30
- Decimal point, 112
- Decimals, 44, 45, 47–51, 60, 114
- Default, 101, 105, 108, 111, 114, 117, 120, 123, 125, 127, 128, 132, 134
- Default extension, 106, 146
- Default extensions, 146
- Default load path, 107
- Default receive directory, 146
- Default save path, 107
- Default send directory, 145
- Default value, 60
- Del, 36
- Delay before each line in ms, 141
- Delete, 19, 57, 98, 137
- Delete Customer, 28
- Description, 58
- Diameter programming, 116, 118
- Digits, 60
- Directories / Extensions, 35
- Disable advanced NC-Functions, 134
- Disable advanced simulation, 133
- Disable Backplot, 133
- Disable Backspace at start of line, 93
- Disable CNC-Calc, 134
- Disable DNC-Max Client, 134
- Disable DNC/Serial communication, 133
- Disable File compare, 134
- Disable Mazatrol Viewer, 134
- Disable NC-Base, 134
- Disable radius compensation, 116
- Disable undo prompt for large files, 103
- Division, 46
- DNC Setup, 88
- Do not insert empty lines, 61
- Don't move cursor after paste, 94
- Download Latest Version, 40

- Drag-and-drop text editing, 94
- Draw 'zero' arcs, 116
- Dynamic Simulation Progress Bar
(0 - 100%), 78, 79
- Enable 4/5-Axis plot, 116
- Enable DTR, 139
- Enable multi channel view, 121
- Enable multi line comments, 113
- Enable RTS, 139
- End File Compare, 81
- End trigger, 140, 144
- Event type, 30
- Exit, 31
- Explorer, 11
- Export, 31
- Export as DXF File, 77
- Export List, 31
- Feedrate unit, 114
- File compare colors, 100
- File Setup, 66
- File type, 55
- Files, 63
- Find, 38
- Find All Read-only, 14
- Find All Unlocked, 14
- Find auto imported programs, 13
- Find Deleted, 14
- Find Macro, 55
- Find Modified Last 7 Days, 14
- Find next, 38
- Find Previous, 38
- Find programs received from CNC's,
13
- Fit To Window, 68
- Flow control, 138
- Font settings, 94, 132
- Format, 103
- From, 30
- From line, 104
- Full Screen, 75
- Global setup, 34
- Go to CIMCO-Homepage, 40
- Go to First Difference, 82
- Go to Last Difference, 82
- Goto line/Block number, 38
- Grid size, 120
- Handshake timeout in seconds, 141
- Heidenhain / ISO Converter, 52
- Help, 101, 105, 108, 111, 114, 117,
120, 123, 125, 127, 128,
132, 134
- Hide 'Download Latest Version', 91
- Hide formula results (in entire macro),
62
- Hide NC-Assistant formula results,
90
- Horizontal scroll bar, 93
- Ignore 0's (T02 = T2), 125
- Ignore Block numbers, 110
- Ignore Case, 110
- Ignore Comments, 110
- Ignore duplicate info (T020202 =
T02), 125
- Ignore M6, 116
- Ignore Numeric format, 110
- Ignore tool number 0, 116
- Ignore White spaces, 110
- Info variable, 58
- Insert File, 37
- Insert Macro, 53
- Insert monitoring macros, 43
- Insert on parity error, 139
- Insert Spaces, 42
- Insert spaces when opening file, 127
- Insert strings, 42
- Insert with sign, 61
- Interval, 104
- Jump to next cutting pass., 78, 79
- Jump to next difference after sync.,
109
- Jump to next move., 78, 79
- Jump to next tool., 78, 79

- Jump to next Z-level., 78
- Keep decimals, 47
- Keyboard / Mouse mapping, 117
- Keyboard acceleration, 92
- Language, 91, 131
- Last 24 Hours, 13
- Left margin/Right margin, 96
- Letter Colors, 101
- Load STL File, 77
- Lock, 20
- Locked, 14
- Logoff, 12
- Lowercase, 43
- Machine Setup (4/5-Axis), 117
- Machine templates, 35
- Machine Type, 57, 88, 136
- Machine type, 119
- Machines, 135
- Macro definition, 58
- Macro Name, 53
- Macro name, 57
- Macro Setup, 55, 56
- Macros/Machine configuration path, 134
- Make Tool List, 52
- Map letters (Ex. 'A=WB, B=WA, I=J, J=I'), 117
- Mark / Delete range, 42
- Mark Changes only, 110
- Mark changes only, 85
- Mark to end of line, 94
- Mark/Delete range, 37
- Max, 60
- Max line length indicator, 126
- Maximum arc output angle, 120
- Maximum value, 44, 45, 47
- Mazatrol Viewer Decimals, 131
- Measure distance between 2 points, 69
- Message when loading UNICODE, 108
- Min, 59
- Minimum value, 44, 45, 47
- Mirror, 49
- Modal X/Y values, 119
- Modal X/Z values (Turning), 119
- Mode, 70
- Modify Customer, 28
- Modify Macro, 54
- Multi channel mode, 122
- Multi column printer font, 96
- Multi-line comment end, 113
- Multi-line comment start, 113
- Multiplication, 46
- New, 33
- New feedrate, 44
- New spindle speed, 45
- Next, 63
- Next Difference, 82
- Next tool change, 38
- Non-modal X/Y/Z, 48, 50–52
- Normal printer font, 96
- Number of decimals, 119
- Number of linefeed characters, 91
- Offset, 50
- Offset Left (G41), 50
- Offset right (G42), 50
- Offset/Tool compensation, 50
- OK, 102, 106, 108, 111, 114, 117, 120, 123, 125, 127, 129, 132, 134, 137
- Omit empty lines, 144
- Omit lines containing, 141, 144
- On-line help, 40
- Open, 15, 33
- Open file multiple times, 90
- Open windows maximized, 90
- Open with CIMCO Edit, 15
- Orientation, 117
- Other, 46
- Other settings, 35
- Output file (\$OUTFILE), 130

- Output FMAX as F9999, 119
- Output G0x, 119
- Pad with tabs, 93
- Pan View, 69
- Paper width/ Paper height, 96
- Parameter is required, 61
- Parameter(s), 46
- Parameters, 130
- Parity, 138
- Paste, 36
- Paste Program Info, 15
- Pause simulation., 78, 79
- Point (X,Y), 48, 49
- Port, 138
- Port information, 136
- Precede lines with, 104
- Prefix, 59
- Previous, 63
- Previous Difference, 82
- Previous tool change, 38
- Print, 34
- Print Columns, 126
- Print footers, 95
- Print header on first page, 96
- Print headers, 95
- Print on 'endless' paper, 96
- Print only differences, 111
- Print Program List, 31
- Printer Setup, 34
- Program Info, 15
- Prompt to save files as UNICODE, 108
- Prompt when unable to undo, 92
- Protect read-only files, 90
- Protocol, 136
- Purge, 19
- Queue, 13
- Rapid speed (mm / min), 114
- Raw print, 96
- Re-open files, 91
- Read-only, 20
- Read/Write, 14, 20
- Receive, 24, 88
- Receive File, 88
- Receive Into Current Window, 88
- Receive New Program, 25
- Receive timeout in seconds, 144
- Recent, 33
- Recent list size, 91
- Record Macro, 55
- Redo, 36
- Register additional extensions, 107
- Register default extension, 107
- Reject, 21
- Remember cursor position, 91
- Remember math values, 93
- Remember value, 62
- Remember window position, 90
- Remove, 41
- Remove ASCII 0's, 93, 142
- Remove Block Skips, 42
- Remove characters, 141, 144
- Remove comments, 42
- Remove empty lines, 42
- Remove monitoring macros, 43
- Remove selected color, 101
- Remove Spaces, 42
- Remove strings, 42
- Remove white spaces, 142
- Rename, 57, 98, 136
- ReNUMBER, 41
- ReNUMBER empty lines, 103
- Replace, 38
- Replace from top, 93
- Replace tabs with space, 93
- Replace tabs with spaces, 142
- Restart every, 103
- Restart on lines starting with, 105
- Restore, 26
- Restore Latest, 27
- Rotary axis, 120
- Rotary axis linearization tolerance, 120
- Rotate, 48

- Rotate View, 69
- Save, 34
- Save All, 34
- Save As, 34
- Save backup file (.BAK), 90
- Save Compare File, 83
- Save with linefeed type, 108
- Scan comments below tool name, 125
- Search, 31
- Select all, 36
- Select color, 100, 128
- Selection only, 44, 45, 47
- Send, 23, 87
- Send at end of feed, 141
- Send at start of feed, 141
- Send at start of reception, 145
- Send File, 87
- Send files with non-standard CR/LF, 142
- Send form feed, 96
- Send form feed after last page, 96
- Send XOn, 144
- Set feedrate, 113
- Set Origin Location, 69
- Set spindle speed, 113
- Set Workpiece / Tool Offsets, 75
- Setup, 29, 82, 84, 136
- Setup - File Type, 35
- Setup Multi Channel, 63
- Share settings between all users, 89
- Show / hide information bar., 79
- Show / Hide Tool, 71
- Show all differences, 85
- Show all differences (No editing), 109
- Show Bounding Box, 69
- Show cycles, 116
- Show File Notes, 16
- Show file size in, 91
- Show full path in title, 90
- Show grid, 119
- Show line numbers, 93
- Show origin, 120
- Show Plot control, 69
- Show quick setup, 103
- Show replaced count, 93
- Show sub-grid, 120
- Show Tool Colors, 71
- Show Tool Transparent, 71
- Show Tool Vector, 71
- Show Toolholder, 71
- Show TPC Data, 131
- Show windows calculator, 52
- Show/Hide NC-Assistant, 56
- Show/Hide NC-Assistant Balloons, 56
- Simple math functions, 46
- Single line step, 109
- Single Step Through Differences, 83
- Skip, 104
- Skip lines containing, 105
- Skip lines starting with, 105
- Skip lines without block numbers, 103
- Solid Model, 73
- Solid Setup, 74
- Sort tool list, 125
- Spaces after block number, 104
- Specify name when receiving, 90
- Start / Stop simulation., 78, 79
- Start at next block, 105
- Start from line, 104
- Start maximized, 90
- Start renumbering from line containing, 105
- Start trigger, 140, 144
- Start with, 103
- Status, 88
- Stop bits, 138
- Stop current DNC Transfer, 24
- Strip leading 0's, 47
- Strip trailing 0's, 47-51

- Subtraction, 46
- Suffix, 59
- Sync Left, 83
- Sync Right, 83
- Synchronization command, 122
- Synchronization number, 123
- Synchronization using channel numbers, 122
- Synchronize Scrolling, 63
- Syntax highlight, 95
- System Log, 29

- Tab width, 91
- Test field, 123
- Text, 101
- Text color, 100
- Text in blocks, 100
- Tile Horizontally, 39
- Tile Vertically, 39
- To, 31
- To line, 104
- Tool Change, 113
- Tool Library, 115
- Tool list template, 125
- Tool load, 113
- Tool Setup, 72
- Tool trigger, 124
- Toolpath, 70
- Toolpath Statistics, 52
- Toopath unit, 114
- Trailing 0's, 119
- Translate, 51
- Translate (X,Y,Z), 51
- Turning, 118
- Two line comments, 125

- Undelete, 19
- Undo, 36
- Unlock, 20
- Up / Down arrows, 57
- Up/Down arrows, 98, 101
- UPPER/lower case, 46
- Uppercase, 43, 62

- Use colors, 95, 100
- Use colors in blocks, 100
- Use decimal point on numeric keypad, 113
- Use modal colors, 100
- Use separate load/and save directories, 107
- Use shortest angle moves, 116
- Use smart marking, 110
- Use tab to switch window, 110
- Use U/V/W relative moves, 116
- Use virtual space, 93
- User ID, 30

- Value, 47
- Vertical scroll bar, 92
- View from back (XZ), 68
- View from Bottom (XY), 68
- View from front (XZ/G18), 68
- View from left (YZ/G19), 68
- View from right (YZ), 68
- View from tool, 68
- View from top (XY/G17), 68
- View Imported File, 21
- View reset, 68
- View Version Report, 16

- Wait for 'Start' button, 142
- Wait for Xon, 141
- Warning beeps, 90
- When equal/greater than, 44, 45
- When equal/less than, 44, 45
- Window, 63
- Wrap Searches, 93

- X100 = X0.100, 116
- XOff character, 139
- XOn character, 139

- Zoom / Regenerate solid, 74
- Zoom in, 67
- Zoom out, 67
- Zoom selection, 68
- Zoom To Highlighted, 68

Zoom View, 69