

Contents

Chapter 1 - What is Macro Pro?	1
Introduction	1
Overview.....	1
What's New	1
Installation	2
Running Setup.....	2
Chapter 2 - The Editor	3
The File Menu.....	3
Opening a File.....	3
Saving Your Work.....	4
Using Save As	4
Closing a File	4
The Code Library	5
Code Library Setup.....	7
Setting the Default File Extension.....	8
File Extension Groups	8
Printing the Current File	9
Exiting Macro Pro	10
The Edit menu.....	10
The Right Mouse button	10
<u>U</u> ndo	10
<u>R</u> edo.....	11
<u>C</u> opy	11
<u>P</u> aste.....	11
<u>C</u> ut.....	12
<u>D</u> elete.....	12
Syntax Check	12
Comments	12
Change Uppercase.....	13
Select <u>A</u> ll	13
C <u>l</u> ear All	13
Time/ <u>D</u> ate	13
The <u>S</u> earch Menu	13
<u>F</u> ind.....	13
<u>R</u> eplace	14
Using Book Marks.....	15
The Macro Menu.....	15
Inserting Variables.....	15
Customizing Macro Pro's Data.....	17
The Tool Bars	17
The Standard Tool Bar.....	17
The Edit Tool Bar.....	18
The Reference Tool Bar.....	18

Customizing the Tool Bars.....	18
Using the Probe Cycles Menu.....	19
The Custom Entries menu	20
The <u>W</u> indow Menu	20
<u>C</u> ascade.....	20
<u>T</u> ile	21
<u>A</u> rrange Icons.....	22
Open files menu	22
Using the On-Line Help	22
Context Sensitive Help	23
Chapter 3 - Communications	24
Sending your Macro to the Control.....	24
What you will need.....	24
Appendix A - The Macro Pro Files	27
What Does the Install Program Do?.....	27
The Macro Pro Directory	27
The Macro Pro Files	27
Removing Macro Pro.....	29
Glossary of Terms	30
Index	31

Chapter 1 - What is Macro Pro?

Introduction

Overview

Macro Pro is an enhanced Multiple Document Interface (MDI) text editor designed specifically for creating CNC Custom Macro programs. Macro Pro v3.0 runs under the 32 bit Microsoft© Windows operating systems 95/98 and NT.

The Macro Pro menu system has all of the Local, Common and System variables for Custom Macro B predefined in easy to use list boxes. To insert a new variable, you simply click on the Macro menu and choose the type of variable you want. A dialog box will open with a list box that contains the predefined variables of this type.

The editor has all the standard features you expect in a Windows Text editor such as Find/Replace, Copy, Paste, Open, Close and Print. Each of Macro Pro's menu items will be explained in a later section.

What's New

Some of the features added to Version 3.0 include:

- True 32 bit program – There isn't any 16 bit code in Macro Pro 3.0
- File Extension Groups – Create up to 9 groups of file extensions
- Floating Dialog boxes – All of Macro Pro's dialog boxes now *float* on top allowing you to keep them open while working in the editor.
- Office 97 style floating tool bars – You can drag the menus anywhere you want them. Right click over a menu and you can customize the menus.
- Fully Customizable Data files - All of Macro Pro's Macro Variables are now stored as standard text files and can be modified by the user.
- Custom Entry Menu – You can now include up to 25 of your own files as menu items in Macro Pro.
- Optional Tools and Reference menus – CNCHelper's Tools and Reference menus can be integrated into Macro Pro.

If you are new to Macro Pro, key features from Version 2.0 include:

- Drag & Drop Editing - Just like Word for Windows©
- MDI - So you can open several files at a time
- Code Library - A searchable library for code segments
- Comments – Add or remove parentheses from your program
- Recently Used Files - A list of the last 9 files opened
- Right Mouse Button Support for the Edit menu
- Unlimited File Size - File size is only limited by disk space

Installation

Macro Pro v3.0 is a 32 bit Windows application and requires Microsoft Windows 95/98 or NT 3.51 with SP5 or NT 4.0 with SP3. This is the only requirement for the computer hardware. The faster the computer and the better the display, the better Macro Pro will run. An 800 x 600 monitor resolution works much better than the 640 x 480 of VGA.

Running Setup

The Setup program is a Windows application. If Autorun is enabled on your computer the setup program will start automatically. If not you can run the setup program manually. To run the Setup program, click **File, Run** from the Windows Start button. Type D:Setup (or E:Setup) and press **ENTER** where D or E is the drive letter of your CD-ROM drive.

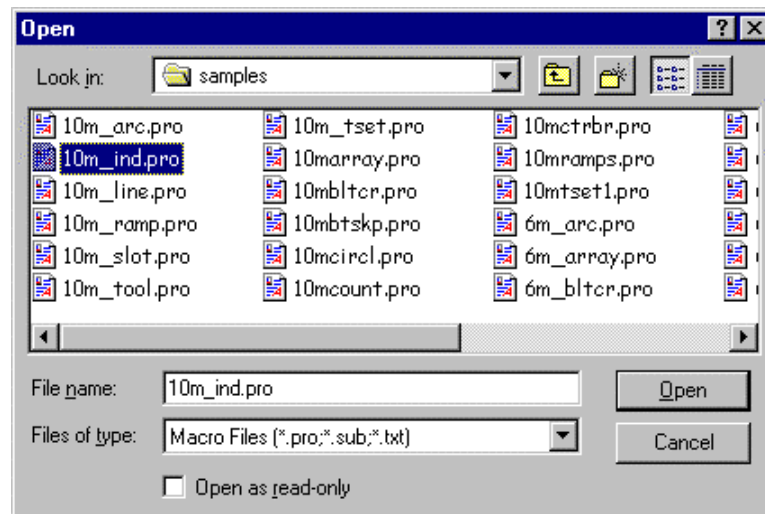
Chapter 2 - The Editor

The File Menu

Opening a File

Double click the Macro Pro Editor Icon in the Macro Pro group. The best way to get to know Macro Pro is to jump right in and use it. The setup program installed the application programs from the manual in the data folder under the Macro Pro Editor folder. We can use one of the application programs to illustrate the features of Macro Pro.

Select File, Open and click on 10m_ind.pro in the file list. When you click on 10m_ind.pro in the List Box, the filename will be placed in the File Name text box. See the next figure for an example.



The Macro Pro Editor file open dialog

Command Line Arguments

You can create a shortcut to Macro Pro and have it open a file automatically. All you need to do is add the name of the file after the command to start Macro Pro. For example, to start Macro Pro and open a file called 10m_ind.pro you would use this statement:

D:\Program Files\Programming Unlimited\Macro Pro Editor\MACRO.exe

followed by

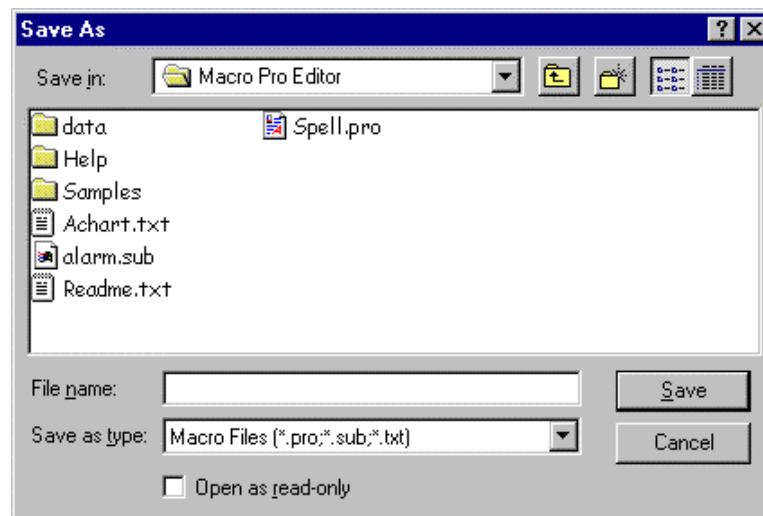
D:\Program Files\Programming Unlimited\Macro Pro Editor\SAMPLES\10m_line.pro

You can have multiple files on the command line. If you add a second file separate it from the first with a comma. **Do not** use a space before or after the comma.

Saving Your Work

The current file name is displayed above the program on the document's window pane. If you are creating a file from scratch UNTITLED:1 is displayed before you save your work for the first time. This is a reminder that you should save your work in case of a power failure or other problem.

The first time you select Save from the File menu you will be presented with a standard file save dialog box. Enter a name for the file in the box titled File Name. See the next figure.



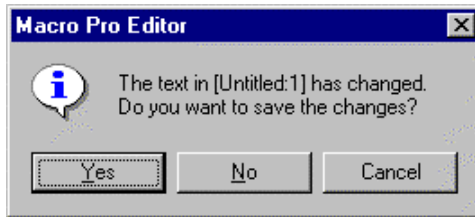
The File Save dialog

Using Save As

If you want to save your current work under a different file name, use the Save As menu choice in the File menu. You will be presented with the same Save As dialog box that you saw in the above example. Enter a new file name and click OK.

Closing a File

To close the file you are currently editing, select the Close item from the File menu. If the file has changed since the last time you saved, a dialog box will appear. You have the choice of Saving the changes, losing the changes or canceling and returning to the editor. See the next figure.

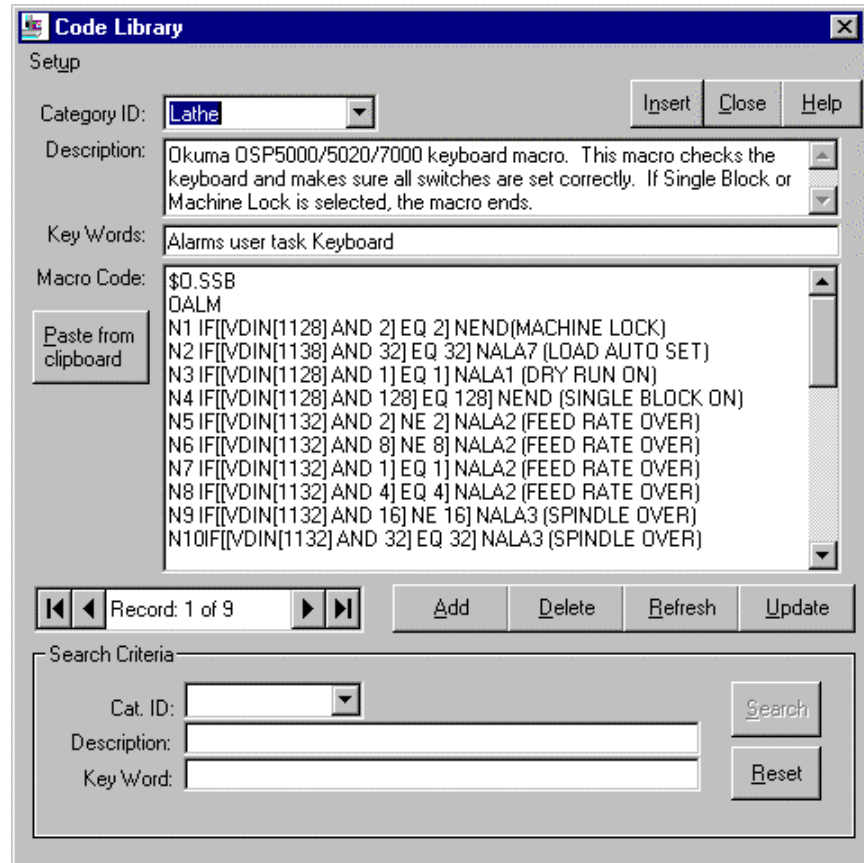


The Save Changes dialog

The Code Library

The code library is a Microsoft Access 97 compatible database where you can store often used code. We find that there are pieces of macro code that you use over and over. Rather than trying to remember what program has the code you want, opening it in the editor and then doing a cut and paste, you simply keep it in the code library.

You can organize the code segments by category and then use Keywords to search the category. You can even include a searchable description of the segment.



The Code Library

Organizing Code Segments

The code library uses three searchable fields to organize code segments - Category ID, Keywords and Description. You should give some thought to how you're going to organize your code segments before using the library.

The Category ID is a text field that can have up to 8 letters or numbers. For example, you could use category 1 for probe related code, category 2 for pallets, category 3 for alarms and so on. You could also use the words probe, pallets and alarms.

Then you would use the Keywords to narrow the search down. For example, 15M for code specific to 15M controls, M32 for code specific to Mazak M32's or HAAS for Haas code. This way you can narrow a search very quickly.

The sample database has an entry for a probe related segment for a Mazak M32. To find it you would enter Category ID PROBE, Keyword M32 and click Search. Another sample segment is a keyboard alarm macro for an Okuma OSP control. To find it enter Lathe for Category ID, Alarms for the Keyword and click search.

Adding an Entry to the Database

The first step is to open a file that has the code you want to put into the database. Highlight the code using the mouse or the keyboard. Right click the mouse and select **C**opy to copy the text to the clipboard.

The left arrow with the line in front moves to the first record. The right arrow with the line in front moves to the last record in the database.

Click **F**ile, **C**ode **L**ibrary... or **CTRL+L** to open the database. Click Add to create a new record. Click **P**aste from **C**lipboard to paste the code into the database. Now select a category from the category ID field, enter a description in the description field and one or more keywords in the keyword field. Finally, click **U**ppdate to add the record. You could also click the single right arrow on the Record Selector to add the record.

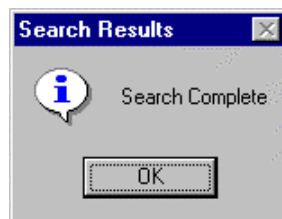
The category field can have up to 8 characters, the description field can have 250 characters and the keyword field can have up to 400 characters. A practical limit for Key words is probably closer to 50 characters or 5 words. The code segment can be up to 32k.

Searching for an Entry

To search for an entry in the database, enter values for one or all of the following in the Search Criteria frame:

- Cat. ID:
- Description:
- Key Word:

Click on **S**earch. A dialog will appear to notify you that the search is complete. Click OK to clear the dialog. To reset the database click Reset or do a search with no entries in the Search Criteria text boxes.

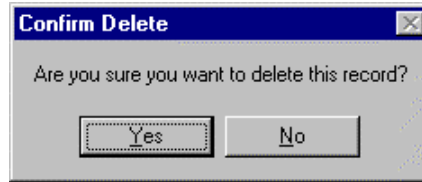


Inserting Code into Macro Pro

To insert the code segment into Macro Pro, click on **I**nsert. The code is inserted where the cursor is located and the library is closed.

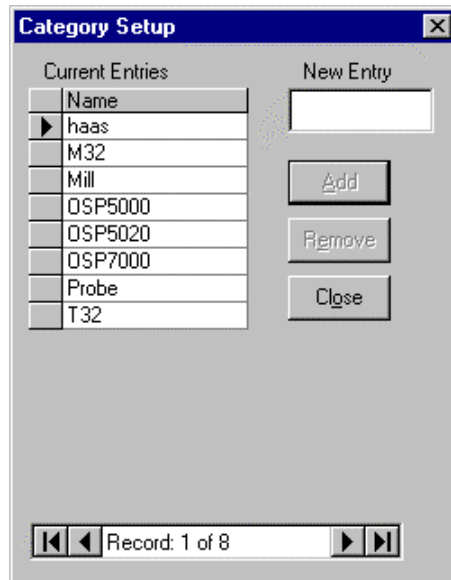
Deleting an Entry

To delete an entry, use search or the record selector to make the code segment the current record. Then click **Delete** to delete the entry. You will be prompted to confirm the delete. If you have changed your mind click on No and the record wont be deleted.



Code Library Setup

The most important part of the code library is the category ID. The Category ID allows you to sort your data into logical groups. For example if you have several different types of controls in your shop you might want to create categories based on control type. The following figure shows the setup dialog:



Adding a new Category

To get started, click on Setup on the Code Library form. A new dialog will open with the focus set to the New Entry text box. Type the new category into the text box and click on Add. You will then see the entry in the Current Entries list box.

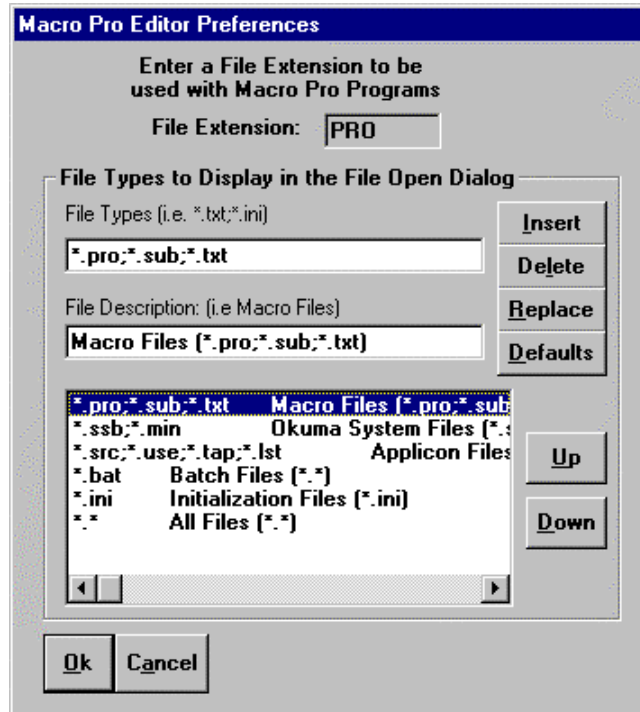
Deleting a Category

To remove a category simply click on it in the Current Entries list box and then click Remove. You will notice that Remove is grayed out unless you have an entry selected.

Setting the Default File Extension

When Macro Pro is installed, the Default file extension is .PRO. You can use the **P**references item in the **F**ile menu to change the default file extension. Changing the default File extension allows you to create macros that can be easily used with your CAM or DNC system.

To change the default file extension that is used when you save a file, click **F**ile, **P**references. You will be presented with the following dialog box:

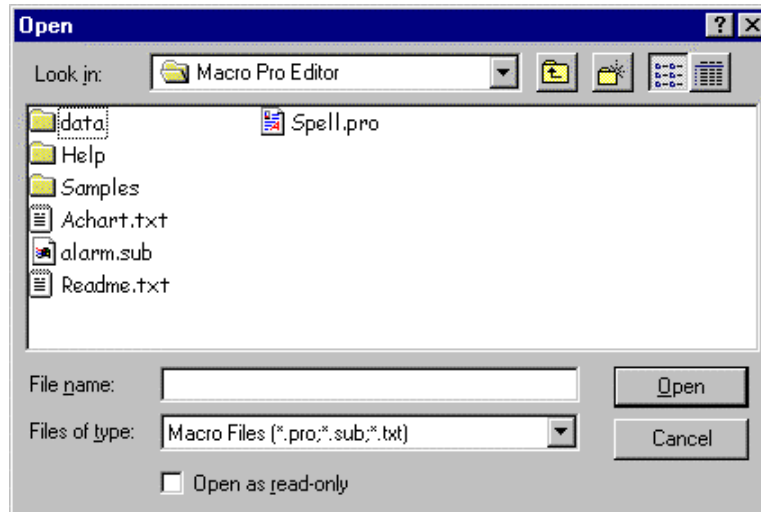


The Preferences dialog

Enter the new file extension in the box and click OK. You must exit Macro Pro and restart it before the change is effective. The file extension is saved in the Macro Pro Editor.INI file in the Windows directory.

File Extension Groups

The Macro Pro Editor allows you to create up to nine groups of file extensions. For example in the above figure *Macro Files* is a group that includes the extensions PRO, SUB and TXT. This group is the first one listed in the list box. When the Open File dialog is displayed this will be the default filter applied to files. That is, any file that has a file extension of PRO, SUB or TXT will be displayed. See the next figure:



The File Open dialog with Macro Files displayed

Adding Groups

To add a new group click in the **File Types** text box and type an asterisk (*) followed by a period (.) and the extension you want. If you want to enter more than one file extension separate the extensions with a semi-colon (;). For example *.pro;.sub;*.txt then click in the File Description text box and enter a description. In this example Macro Files (*.pro;*.sub;*.txt). This is just a description and isn't used to open the files so the description can be anything you want. When you have finished entering the extensions and description click **Insert** to add the entry to the list. Remember, you can have up to nine groups of files.

Deleting an Entry

To delete a file extension group simply click on it in the list box and then click **Delete**. The entry will be removed. If you change your mind and decide that you didn't want to delete the group simply click **Cancel** and close the dialog.

Changing an Entry

If you decide to modify an entry simply click on it in the list box, make the changes in the File Type and File Description text boxes and then click **Replace**. The entry in the list box will be updated. If you change your mind and decide that you didn't want to delete the group simply click **Cancel** and close the dialog.

Arranging Groups

You can click on an entry in the files list box and then use the Up/Down buttons to change its order in the list. The file groups are displayed in the File Open dialog in the same order that they appear in the list box.

Printing the Current File

To print the program you are working on, select the **Print** option from the **File** menu.

Exiting Macro Pro

To exit Macro Pro, select the **E**xit choice from the **F**ile menu. If the file has changed since the last time you saved, a dialog box will appear. You have the choice of Saving the changes, losing the changes or canceling and returning to the editor. See the above figure for an example of the dialog box.

The Edit menu

The Macro Pro editor is very easy to use. If you are familiar with Windows programs, you will feel at home in Macro Pro. If this is your first Windows program, this section on editing will have you up to speed in no time.

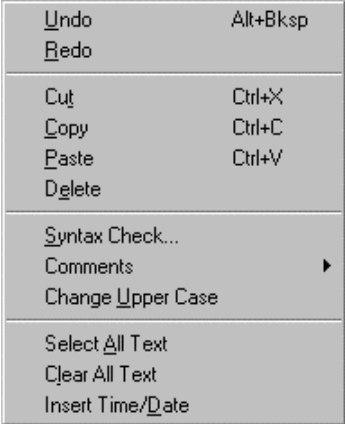
To move through the file, press the Page Up or Page Down key on the keyboard. You can also use the mouse and click the Up or Down arrow on the scroll bar on the right side of the screen.

Mouse click VS Keyboard

You can use the ALT key with the underlined character on a menu or button instead of using the mouse to select an action. For example, you can use ALT+E to select the edit menu instead up clicking it with the mouse. Macro Pro is very keyboard friendly as most buttons and menus have this feature.

The Right Mouse button

Macro Pro supports the right mouse button when the pointer is over a file. When you place the pointer over a file and click the right mouse button, the **E**dit menu will appear on the screen. You can then select the menu item you need and click the left mouse button to choose the menu item. This is a great time saving feature once you get used to it.



<u>U</u> ndo	Alt+Bksp
<u>R</u> edo	
<u>C</u> ut	Ctrl+X
<u>C</u> opy	Ctrl+C
<u>P</u> aste	Ctrl+V
<u>D</u> elete	
<u>S</u> yntax Check...	
<u>C</u> omments	▶
<u>C</u> hange <u>U</u> pper Case	
<u>S</u> elect <u>A</u> ll Text	
<u>C</u> lear <u>A</u> ll Text	
<u>I</u> nsert Time/ <u>D</u> ate	

The Edit Menu

Undo

The undo item does just what it says, It undoes the last edit you made. Undo in Macro Pro has 255 levels. This means you can keep clicking Undo on the toolbar or on the menu to undo changes made earlier.

Redo

Redo is just the opposite of Undo, it Redoes the Undo operation if you change your mind.

Copy

The Windows environment makes copying text very easy. There are two ways to copy text. Both methods require you to highlight the text before copying. The first method has two steps.

1. Place the caret, that's the blinking vertical bar, in front of the text and press the SHIFT key. Press the ARROW key that points in the direction of the text that you want to highlight. You can also Click the mouse before the text and drag it over the text you want to copy.
2. Press the CTRL key and the Insert key at the same time. This copies the text to the Windows Clipboard. You can paste the text back into the Macro Pro file or into any other Windows program. This is one of the advantages of the Windows environment. You can easily share text between two applications.

The second method uses a menu command to copy the text.

1. Highlight the text as in the above example.
2. Select **Edit, Copy** from the Menu Bar. This places the text on the Windows Clipboard like the above method did.

Drag & Drop

Macro Pro also supports Drag & Drop editing. If you want to copy text from one place to another simply highlight it, hold the left mouse button and the CTRL key down then drag the text to a new location. When you press the left mouse button, the cursor will change to show that drag & drop is enabled. This takes some getting used to but it's very fast once you get used to it.

Paste

Inserting text is essentially the opposite of copying. Again there are two methods, one from the keyboard and one from a menu. To use the keyboard to insert text follow these two steps:

1. Place the caret, that's the blinking vertical bar, where you want the text inserted.
2. Press SHIFT and INSERT at the same time. The text will be inserted at the caret and any text following the caret will be move out of the way.

To use the Menu method:

1. Place the caret, that's the blinking vertical bar, where you want the text inserted.
2. Select **Edit, PASTE** from the menu bar. The text will be inserted at the caret and any text following the caret will be move out of the way.

Cut

Cut deletes highlighted text from the file and copies it to the Windows clipboard. You can then move the mouse to a new location and select Paste to paste the text back into the file.

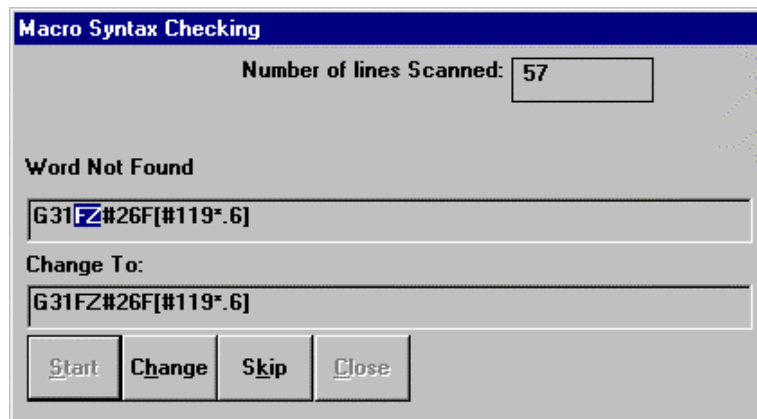
Delete

This menu item *deletes* the highlighted text. The text isn't copied to the clipboard. If you want to copy the highlighted text, use the Copy menu item followed by Paste.

Syntax Check

Macro Pro has a basic Syntax Checker built in. This new feature under the Edit menu is used to check your macro for syntax errors. The checker reads each line of the macro and verifies that there are an even number of parentheses and brackets on the line. It will also find misspelled words like WHILE, THEN, GOTO, Etc. It will not find errors such as IF[#2G#4]GOTO because the G (which should be GE) is followed by a non-alpha character.

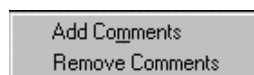
If an error is found in your macro, the checker will stop and highlight the error. You make the correction in the Change To: box and click Change. The rest of the line will be checked for additional errors. The following figure shows the syntax checker in action:



The Syntax Checker dialog

Comments

This is a new feature in version 3.0 that can save you a lot of time. If you want to add comments to your macro or comment out (skip) part of your macro without deleting it, use this menu item. Simply type the comments you want and then highlight them. Select **Comment, Add Comments** and parentheses are added to the text. You can also use CTRL + A to add Comments. This is much easier than typing individual parentheses for each line.



The Comments menu

To remove parentheses, simply highlight the text and select Remove Comments or press CTRL+B.

Change Uppercase

The most CNC controls will only accept Uppercase letters. If you import text that is not uppercase, don't worry. Macro Pro has a menu item to change the text to uppercase. Select **E**dit, **C**hange To **U**ppercase and all text is changed to uppercase.

Select All

This menu item simply highlights the whole file. This is useful if you want to copy the file to another file.

Clear All

This menu item *deletes* all the text in the file. The text isn't copied to the clipboard. If you want to copy a complete file use the **S**elect **A**ll menu item followed by **C**opy.

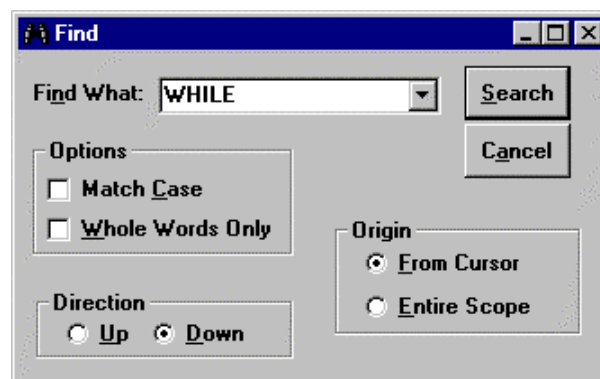
Time/Date

This menu item inserts the current time and date enclosed in parentheses into file. This is useful if you want to track edits to the macro. An example of a time/date entry is (1/11/99 10:06:11 PM).

The Search Menu



Find

Macro Pro has a text search feature to help you locate a specific string of text in your program. To use the text search feature, select **S**earch, **F**ind... from the menu bar. A dialog box will open prompting you for the string to search for. The next Figure shows the dialog box.



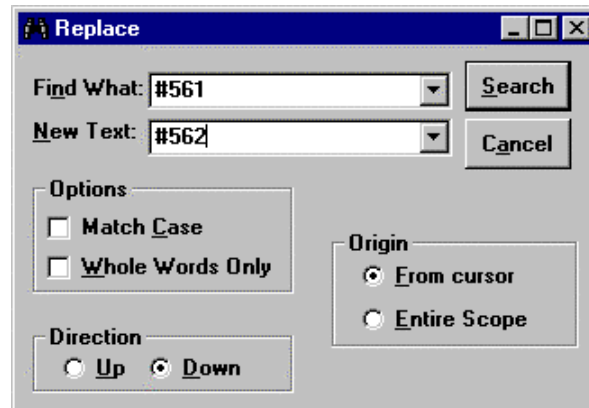
The Find dialog

Enter the text you want to locate and click **OK**. If the text is located in the program, it will be highlighted to make it more visible. By default, the file is searched from

the cursor down. You can click **Entire Scope** in the Origin Frame to look in the whole program. You can also click the Find button on the tool Bar . To find the next occurrence you can click binoculars with the arrow under them. 

Replace

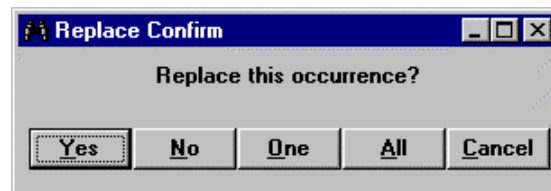
Macro Pro has a text replace feature to help you replace a specific string of text in your program. To use the text search feature, select **Search, Replace...** from the menu bar. A dialog box will open prompting you for the string to search for and the string to replace it with. The next Figure shows the dialog box.



The Replace dialog

Enter the text you want to replace in the **Find What:** text box and the replacement text in the **New Text:** box and click **OK**. If the text is located in the program, it will be highlighted and a new dialog box will appear. This dialog gives you the following choices:

- **Y**es Replace this occurrence and continue searching
- **N**o Skip this occurrence and find the next one.
- **O**ne Replace this occurrence and stop searching
- **A**ll Replace all occurrences without further prompting
- **C**ancel Stop the search and return to the editor



The Replace Confirmation dialog

By default, the file is searched from the cursor down. You can click **Entire Scope** in the Origin Frame to look in the whole program.

Using Book Marks

Macro Pro allows you to add book marks to your code. Book marks allow you to quickly jump to different parts of your program. You can add as many book marks as you like. The text on the line with the book mark will be colored the same as the Windows desktop. Book marks aren't saved with the program.

Adding a Book Mark

You can use the Add Book Mark item of the Search menu or the Book Mark icon on the tool bar to add a book mark. This is what the Add Book Mark icon looks like:



The actual book mark will be placed where the caret is at on the line. You can use the "Column =" display on the status line to see what the current caret position is if you want to place the book mark at an exact location.

Jumping to a Book Mark

You can use the Goto Book Mark item of the Search menu or the Goto Book Mark icon on the tool bar to jump to a book mark. This is what the Goto Book Mark icon looks like:



When you use Goto Book Mark it will place the caret on the line with the next book mark and at the column where the mark was added. If you keep clicking Goto Book mark you will be cycled through all of the existing book marks.

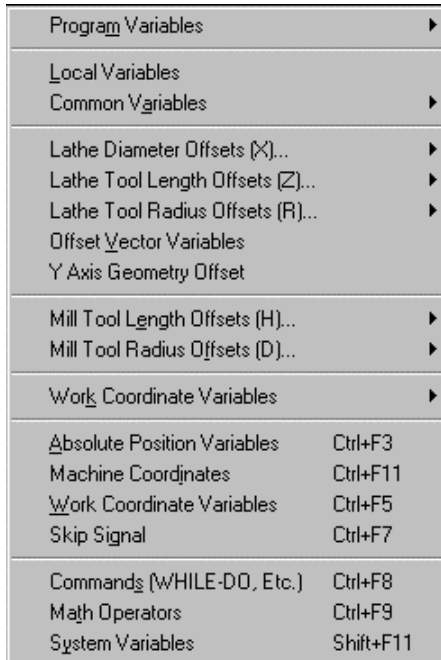
The Macro Menu

This is the real purpose of Macro Pro. The variables are located in the **Macro** menu on the menu bar.

Inserting Variables

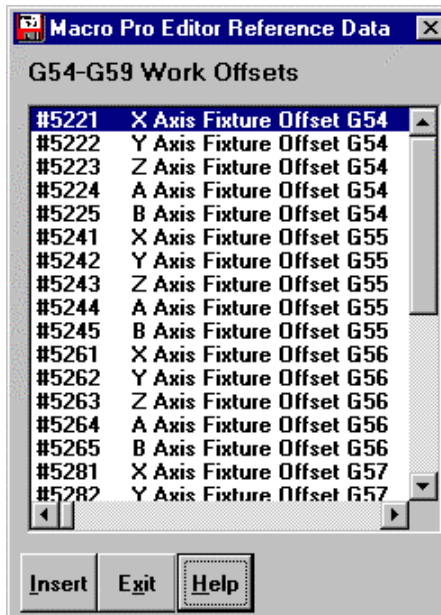
To insert a macro variable, simply place the blinking caret where you want the variable inserted, and click the **Macro** menu.

The variables are arranged into logical groups. For example, the variables related to tool length offset (Geometry & Wear) are grouped together under the menu choice **Mill Tool Length Offsets...** in the Macro menu. The three ellipses (...) after the menu choice indicate that another menu will open after you select this choice. Pick the type of variable you want and click the left mouse button. A dialog box will open with all the variables to that group. The next figure shows the Macro menu.



The Macro menu

The dialog box that opens is common to all the variables. The value of the variables change depending on the menu selected. When you see the variable you want to insert into the program, click on it. The variable will be highlighted. See the next figure for details.



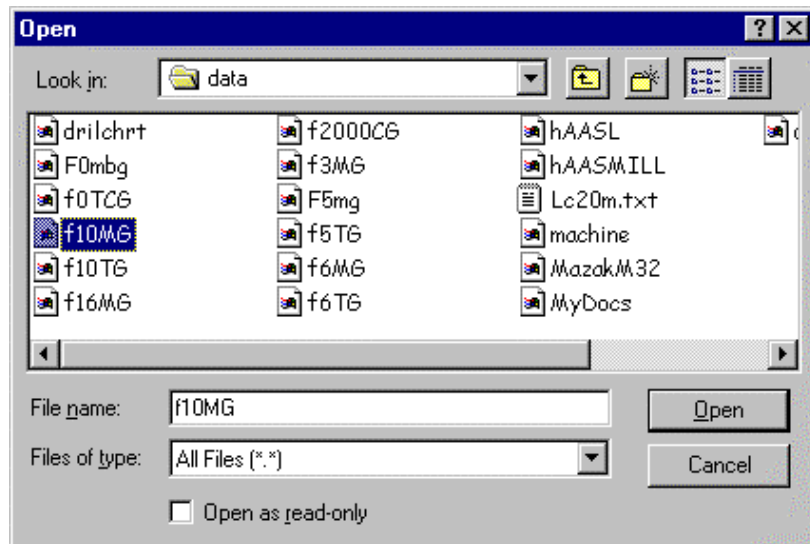
A Variables dialog

You will notice a short description to the right of the variable. The description is used to help you identify the variable before selecting it. Click Insert to **insert** the variable into your program. You can also click on **Help** to open the file.

Customizing Macro Pro's Data

Each menu loads a file from the Macro Pro Editor\data folder. It's fairly obvious what menu item each file belongs to. For example, \data\G54CoorVar is the file that is loaded with the Work Coordinates G54-G59 menu.

If you would like to edit one of the files it's very easy. Click on **File, Open**, then click on *Files of type* and select All Files. Now double click on the Data folder. You will see all of the files. Click on the one you want to open. In the next figure the Fanuc 10M is selected:



Open a Menu file for editing

Click Open to open the file in Macro Pro. When the file opens you will recognize the entries. Scroll to where you want to add or edit an entry. To add an entry, press Enter to add a new line and then type the new data. Do not use a comma in the line. If you do the comma will be interpreted as a separator and the line will be broken. Press the space bar and then the TAB key to separate a variable from its description. If you make a mistake you can use the standard editing keys to fix it. If you get completely mixed up simply close the file without saving it.

The Tool Bars

The Standard Tool Bar

The next figure shows the standard tool bar icons. If you have used Microsoft Office 97 you will recognize most of the buttons. To use a function on the toolbar, simply click the icon. If you forget what a button does, hold the mouse over the button. A description of the function will be displayed as a tool tip.



The Standard Tool Bar

The Edit Tool Bar

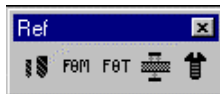
The Edit Tool Bar contains all of the menu items from the Edit Menu. The four Buttons at the top of the figure are the standard Cut, Copy, Paste and Clear All. Row two contains Undo, Redo and Select All. The third row is Insert Time/Date, Find, Find Next and Replace. Finally, the last row contains Syntax Check, Add Comments and Remove Comments.



The Edit Tool Bar

The Reference Tool Bar

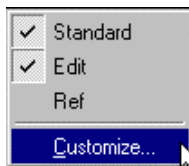
The reference tool bar opens the optional tools from CNC Helper. If you purchase CNC Helper the Tools menu and the Reference menu are enabled in Macro Pro. This tool bar contains buttons for the Drill Chart page, the Thread Data database and the Screw Dimension database.



The Reference Tool Bar

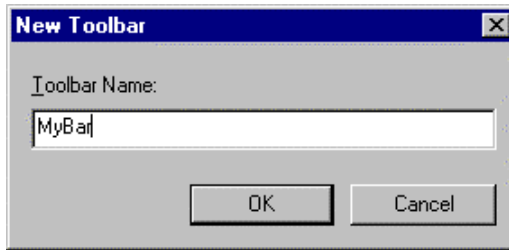
Customizing the Tool Bars

You can customize the existing tool bars or create your own. To get started Right Click on the tool bar and select customize. See the next figure:



Customize Tool Bars

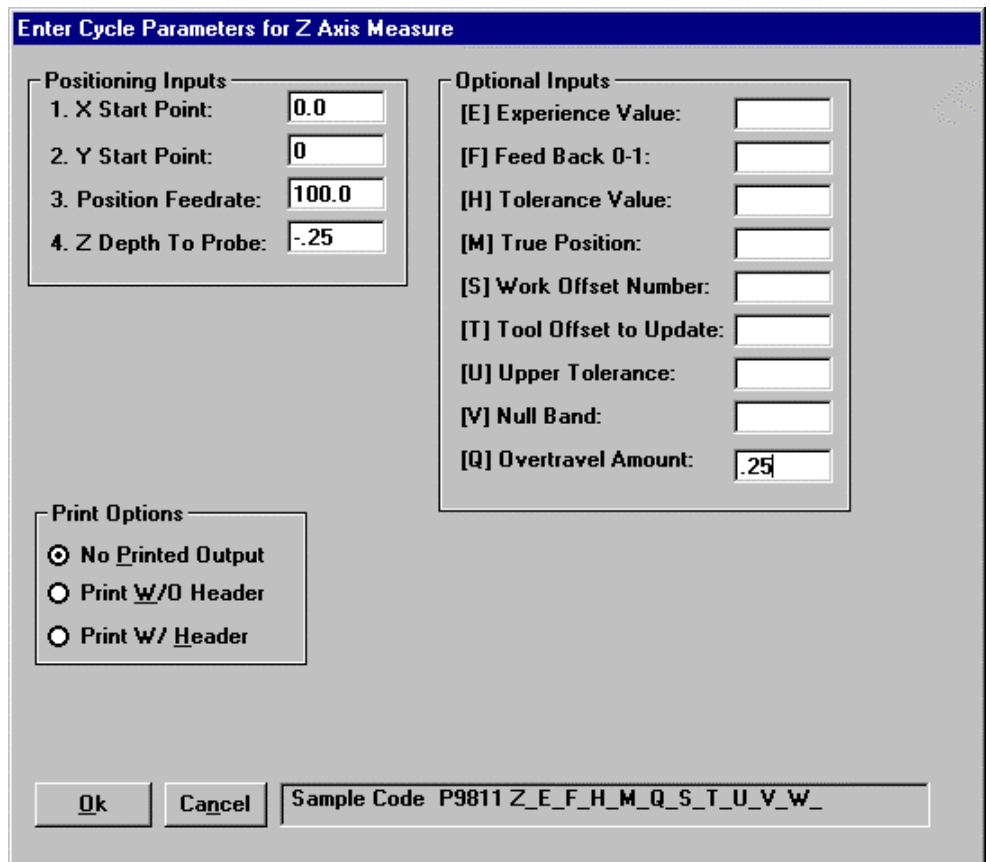
To create a new tool bar click New and enter a name for the tool bar. Click OK and then click on the *Commands* tab. Click on File, Edit or Ref to bring up the commands available on that tool bar. Now select a tool from the Commands listbox and drag it onto the new tool bar. It's that simple!



Create a new tool bar

Using the Probe Cycles Menu

Macro Pro has a menu that helps you write probe cycles. When you select a cycle, a new dialog box opens that is specific to the cycle. See the next figure.



The Z Axis Measure dialog

You enter values for each choice and then click **OK**. Macro Pro enters the code for the protected positioning moves and appropriate probe cycle. If you decide not to continue, click **Close** to exit without entering the code into your program.

The Sample Code shown in the lower right corner of the screen shows you the type of cycle that will be produced.

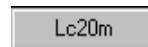
The Custom Entries menu

The Custom Entries menu allows you to add up to 25 of your own reference tables to Macro Pro. To add your own entry simply create a standard text file (ASCII File) using Macro Pro or any word processor that can save a file as an ASCII file.

The same dialog that is used with the other reference data is used with the custom entries. Each line in the file will be displayed on a separate line in the list box. Do not use a comma in the line. If you do the comma will be interpreted as a separator and the line will be broken. If you want to be able to click Insert and have the first word on the line inserted into your program you must have a space between the first word and the second. You can use a TAB after the space.

When you are finished adding data to the file save it the \data folder. The file name will become the title for the menu so choose the filename carefully. You must use a TXT file extension when you save the file.

For example a good file name for the M codes for an Okuma LC20 might be Lc20m. Here is what the menu would look like if you saved Lc20m.txt to the \data folder:



Custom Menu

The Window Menu

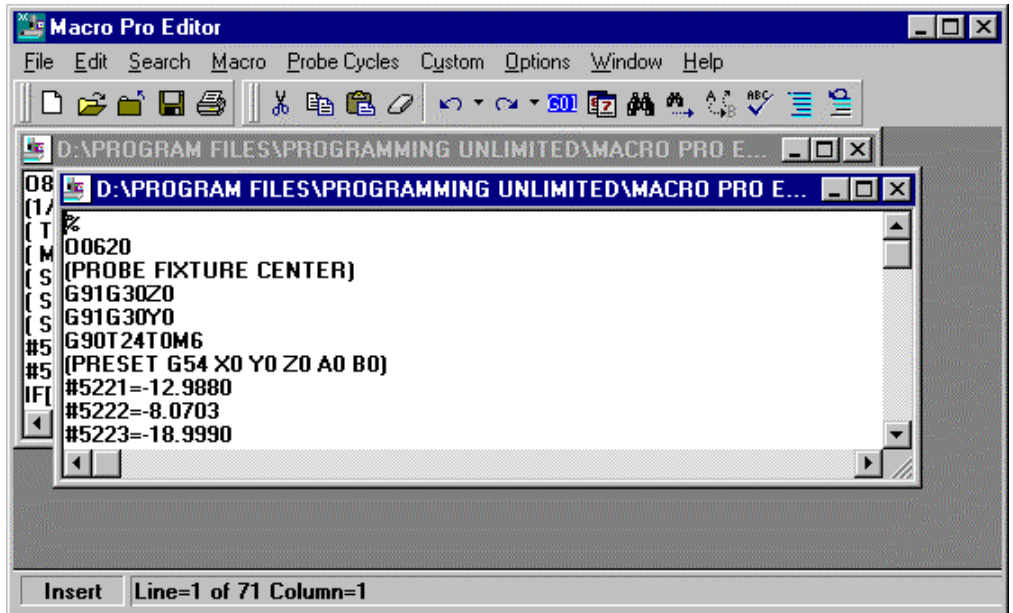
Macro Pro is now an MDI editor. This means you can open more than one file at a time. The Window menu allows you to switch between files and control the way the files are displayed on the screen.



The Window menu

Cascade

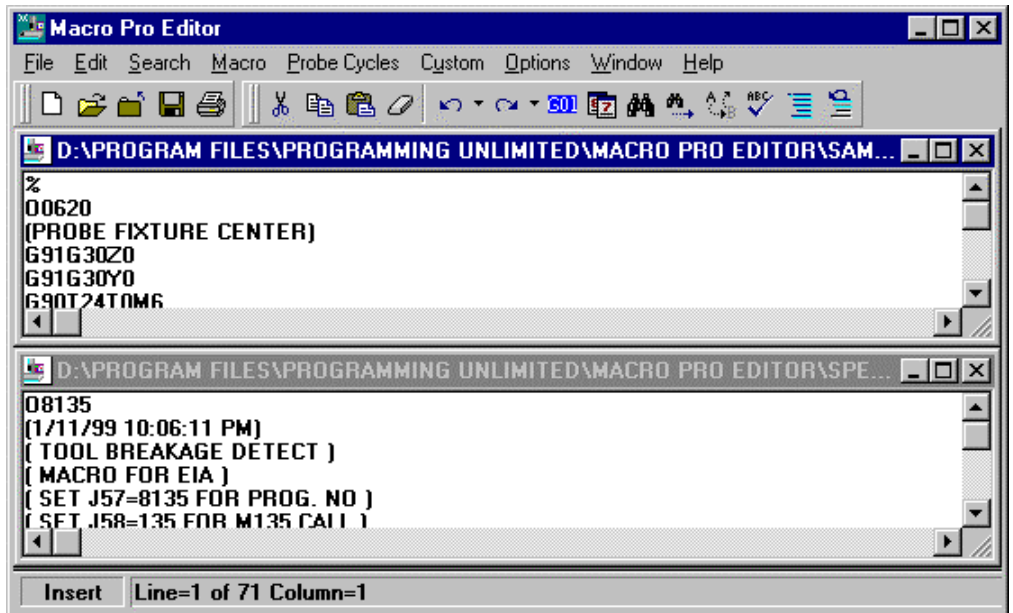
This menu item arranges the files so that the titles of each file are visible. This is similar to file cards in an index, you can see each file and immediately click on it to bring it to the front. See the following figure for a look at cascaded files.



Macro Pro Cascaded

Tile

This menu item arranges the files horizontally so that you can work on each file. This is very convenient when you want to copy code from one program to another. The following figure shows the same files tiled.



Macro Pro Tiled

Arrange Icons

Open files in Macro Pro can be minimized to icons at the bottom of the screen. The Arrange Icons item puts these icons in neat rows. This only works if all files are minimized.

Open files menu

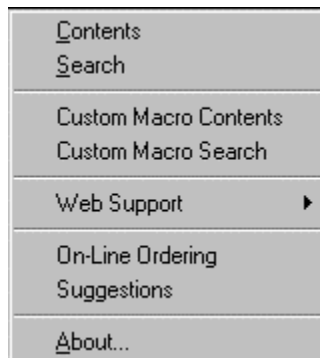
The files listed below the Arrange Icons item are the currently open files. You can click on and file to make it the active file. This is very useful when you are editing several files and want the active one to be maximized. Simply click Window and select the file you want to activate.

Using the On-Line Help

Macro Pro contains has extensive On-Line help for the Custom Macro language in addition to Macro Pro. As you work on a macro program, use the On-Line help to look up variable definitions and see examples of how to apply the macro language.

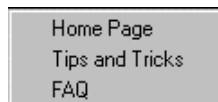
The help file is a complete Windows Hypertext program which means you can search for keywords or topics. If you are not familiar with using Help, see you Windows manual or experiment on your own.

To access the On-Line help, click the Help menu. You can select either Help on Macro Pro or on the Custom macro language. See the next figure.



The options, *Contents* and *Search* apply to the Macro Pro editor and the two choices for *Custom Macro* open the language Help file. Please take time to go through the Custom Macro help file at least once.

The Macro Pro Editor Help menu can also take you to the Programming Unlimited web site if you have an Internet connection. The Web Support menu has the following sub menu:



Support Menu

These choices will take you to the Home page where you can look for announcements, the Tip and Tricks page where you can see more macro examples and to the FAQ (Frequently Asked Questions) page.

Suggestions

If you have an Internet connection and would like to give us direct feedback about the Macro Pro Editor simply click Help, Suggestions. You will be taken to a suggestions form on the Programming Unlimited web site.

Context Sensitive Help

Macro Pro also has Context Sensitive Help. This means you can press the F1 key under most circumstances and receive help about the selected button or control.

Context Sensitive help is even available when you have a menu item highlighted. To use the context sensitive help with a menu, simply highlight the menu choice and press F1 while still holding the mouse button down.

Take advantage of the context sensitive help to make learning Macro Pro easy.

Chapter 3 - Communications

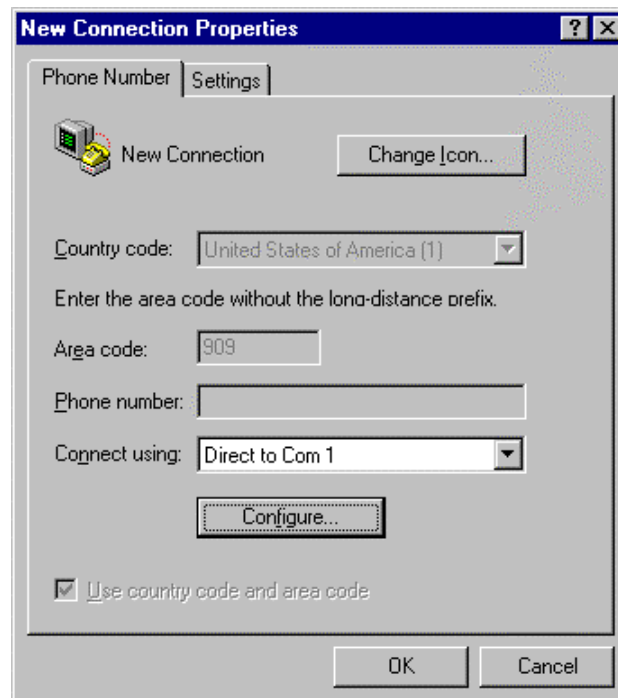
Sending your Macro to the Control

What you will need

Macro Pro allows you to quickly and easily create macro programs for your control. You will then need to use a communications package to send the program to your control.

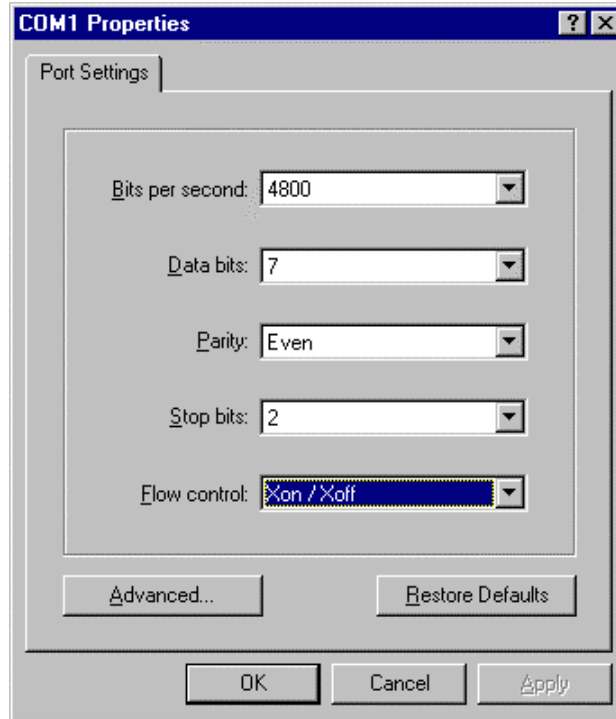
If you are using a CAM system, use the communication mode of the CAM package to send the file. If you don't have a CAM system you can use the HyperTerminal program that came with Windows 9x and NT.

The HyperTerminal program should be set up to send and receive ASCII characters using 7 bits, even parity and 2 stop bit. A baud rate of 4800 works very well for most shop environments.



Configure Hyperterminal to use a com port

To configure HyperTerminal, select File, Properties, Settings. Select *Direct to Com 1* under Connect Using. Click Configure to set the com parameters. Finally select Settings, ASCII Setup. Under *ASCII Receiving* put a check in Append Line Feeds to Incoming Line Ends.



Configure Com Parameters dialog

Setting the Control Parameters

The control must be set for ISO communication using the same data communication specifications. The following tables list parameters for several controls:

To set parameters on the System 6 control, you must switch the Memory Enable switch inside the control cabinet to Enabled. You will then see the alarm P/S 100 on the CRT. This is to notify you that you are in parameter enabled mode. You must be in MDI mode to set parameters.

Fanuc 6M/T Control		
Parameter	Value	Setting
311	1200 BAUD	10110111
312	1200 BAUD	10110111
340	Input Device	2
341	Output Device	2
SETTING Page Even Parity & ISO Code Format		

The System 10 through System 15 use the same parameters. To set these parameters, use the setting page and search for parameter 5110. If you use the Setting page, you will have to set parameter 8000 (Parameter Write Enable) to 1. You will then see alarm P/S 100 on the CRT. You must be in MDI mode to set parameters.

Fanuc 10-15M/T		
Parameter	Value	Setting
0000		00001010
5110	Device Type	5
5111	Stop Bits	1
5112	Baud Rate	6 = 300 Baud
		8 = 1200 Baud
		9 = 2400 Baud
		10 = 4800 Baud
		11 = 9600 Baud

See your Fanuc Operators manual for additional settings to use with your control.

Making the Cable

The cable to connect the computer to the machine tool is easily made. You will need one male and one female 25 pin "D" connector. These are available at most electronics supply houses or Radio Shack. You will also need 3 conductor shielded cable. The pin outs for each end are as follows:

Computer Connector		Control Connector
9 Pin	25 Pin	25 Pin
Pin 3	Pin 2	Pin 3
Pin 2	Pin 3	Pin 2
Pin 5	Pin 7	Pin 7
		Pin 4-Pin 5 Jumped Together
		Pin 6, Pin 8, Pin 20 Jumped Together

Never Use Pin 24 On Control Side (12v).

4800 BAUD UP TO 250 FT.

Appendix A - The Macro Pro Files

What Does the Install Program Do?

The Macro Pro Directory

The installation program creates a directory for the Macro Pro files. The default directory name is Program Files\Programming Unlimited\Macro Pro Editor. You have the option of changing the default but we recommend using the default. This directory is created on the hard drive you chose during setup. The default drive is the drive that Windows is installed on. The installation requires less than 6 MB of disk space.

The Macro Pro Editor directory structure looks like this:

Program Files\Programming Unlimited\Macro Pro Editor – Program Files

DATA Folder– Text Files containing macro variables and other data.

Samples Folder– Sample macro programs.

Help Folder – Macro Pro's Help files

In addition there will be a Programming Unlimited folder under the *Common Files* Folder in the Program Files folder. This folder contains macro32.mdb which is a database shared between Macro Pro and CNC Helper.

The Macro Pro Files

Macro Pro uses it's own initialization file, Macro Pro Editor.INI which is installed in the Windows directory. The following additional files are copied to your Windows\System directory (system32 under NT):

File1=MSVBVM50.DLL

File2=STDOLE2.TLB

File3=EMEDIT32.OCX

File4=OLEAUT32.DLL

File5=OLEPRO32.DLL

File6=COMCAT.DLL

File7=ASYCFILT.DLL

File8=COMDLG32.OCX
File9=INICON32.OCX (In the Program Folder)
File10=MFC40.DLL
File11=MSVCRT40.DLL
File12=MSMASK32.OCX
File13=C:\WINDOWS\Macro Pro Editor.INI
File14=DBGRID32.OCX
File15=DBLIST32.OCX
File16=SYSINFO.OCX
File17=MFC42.DLL
File18=MSVCIRT.DLL
File19=MSVCRT.DLL
File20=MSJET35.DLL
File21=MSJTER35.DLL
File22=VBAJET32.DLL
File23=VBAR332.DLL
File24=MSJINT35.DLL
File25=MSRD2X35.DLL
File26=MSREPL35.DLL
File27=VB5DB.DLL
File28=EMEDIT32.OCX
File29=ACTBAR.OCX

The Macro Pro Editor directory will contain the following files:

Sample Files in the Samples Folder

Various Macro Programs stored in the Samples folder.

Executable Files in the Macro Pro Editor Folder

MACRO.EXE The Macro Pro Executable File
MACRO32.MDB The Code Library Database

Help Files in the Help Folder

ACHART.HLP ACHART Program Help File
BOOK.HLP Macro Language Help File
CNC Helper.hlp CNC Helper Help File
Macro Pro Editor.HLP Macro Pro Help File

Text Files

ACHART.TXT Readme File for ACHART
README.TXT Macro Pro Readme File (May not exist)

TipofDay.TXT The text file containing startup tips.

Removing Macro Pro

If you ever need to uninstall Macro Pro, use the following steps:

1. Open the Control Panel and select Add/Remove Programs.
2. Select "Macro Pro Editor" and click Add/Remove. If you also have CNC Helper installed do not delete the shared files when prompted.
3. Delete the Macro Pro Editor Folder in the Program Files Folder. Simply highlight the group and press Delete until all of the Icons are deleted. This folder may be deleted by the uninstall program.

Glossary of Terms

dialog box

A form that opens allowing you to enter data the program needs to continue. For example, when you save a file, a dialog is used to enter the filename.

ASCII file

A file with no special formatting. The term is an abbreviation for American Standard Code for Information Interchange. This is a standard method of encoding alphanumeric characters into 7 or 8 binary bits.

file extension

The Disk Operating System (DOS) used by Windows allows a three character combination after the period in a file name. For example, sample.pro. You can use three characters for the extension.

Index

C

- caret 11, 15
- Change Uppercase 13
- Code Library 2, 5–7, 28
 - category 5–7
 - Current Entries 7
 - delete an entry 7
 - Key Word 6
 - logical groups 7, 15
 - record selector 6
 - search 5–6, 13–14, 22, 26
 - setup 2–3, 7, 27
- Comments 2, 12
- Custom Macro language 22

D

- Default file extension 8
- Delete 7, 9, 12
- Drag & Drop 2, 11

F

- Fanuc 25

M

- Macro Pro Editor.INI 8, 27–29

O

- On-Line Help 22

R

- record selector 6

S

- scroll bar 10

T

- text replace 14
- text search 13–14
- The Macro Menu
 - Variables 1, 15–16
- The Search Menu
 - text replace 14
 - text search 13–14

V

- variables 1, 15–16