BENCHMAN®
Machining Center

Addendum:
Control Program Version 2.0

LIGHT MACHINES

A **DAVENPORT** INDUSTRIES DIVISION

Table of Contents

BENCHMAN®-XT Control Program Version 2.0 Upgrade

The Version 2.0 Upgrade of the BENCHMAN®-XT Control Program offers several new features, and is Year 2000 compliant.

1. Installation

Put the BENCHMAN®-XTControl Program Version 2.0 CD into the CD-ROM drive of the computer.

From the Windows® NT desktop, click on **Start > Run**.

Type in [**drive letter**]**:\setup.exe**.

Follow the instructions on the screen.

A 3.5" floppy disk with machine-specific parameters will be supplied with the Control Program CD. When prompted during installation, insert the disk, and click on the Install box.
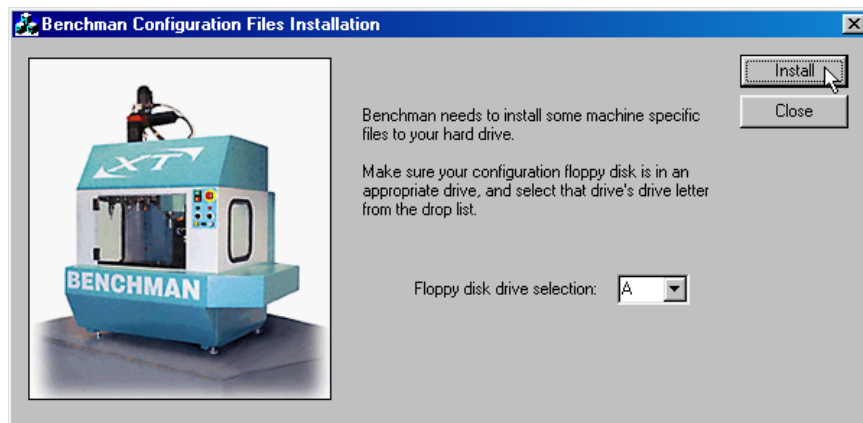
Once installed, you can start the BENCHMAN® Control Program by clicking on **Start > Programs > BENCHMAN XT > BENCHMAN XT** in the Windows® NT desktop.

2. Menu Commands
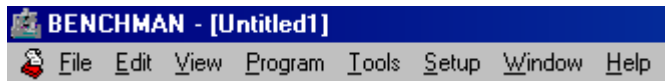
The Main Menu Commands in the Control Program (located in the top left corner) are unchanged; but there have been several additions and revisions to their pull-down menu options.

2.A. View Menu

The **ATC Control** toolbar option has been added to this menu. When there is a check mark next to **ATC Control**, the ATC toolbar is visible in the control program.
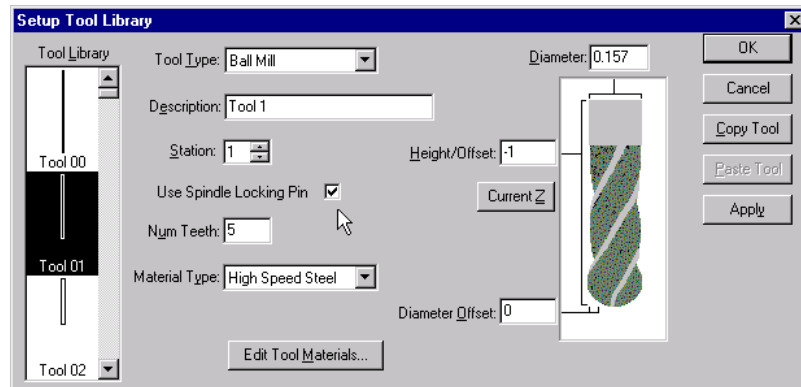

ATC Control Toolbar
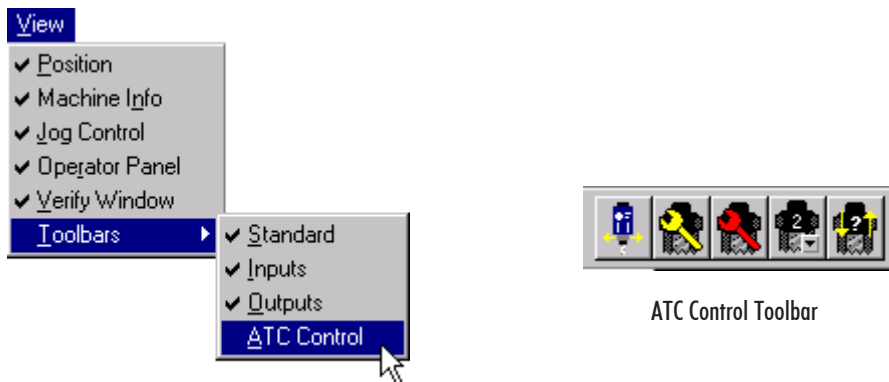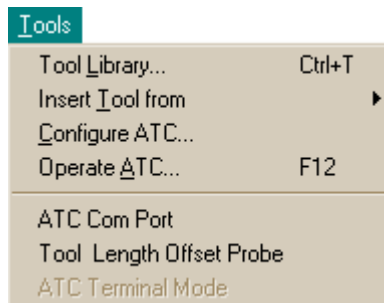
2.B. Tools Menu

The **Tool Library** and **Operate ATC** dialog boxes have been modified. The **Tool Wizard** option has been removed from the **Tools** menu. Three ATC command options have been added: **ATC Com Port**, **Tool Length Offset Probe**, and **ATC Terminal Mode**.
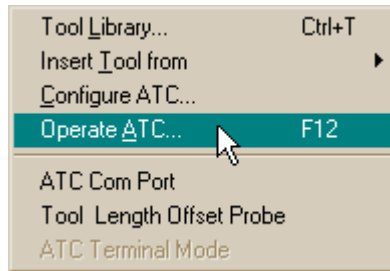
2.B.1. Tool Library

Click on the Tool Library menu option to open the Setup Tool Library dialog box.


The only change is the **Use Spindle Locking Pin** option. When checked, the tool will be locked into the spindle. This option should only be used when machining deep cuts into hard materials.
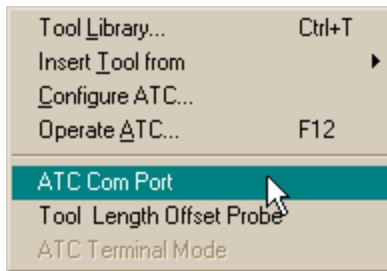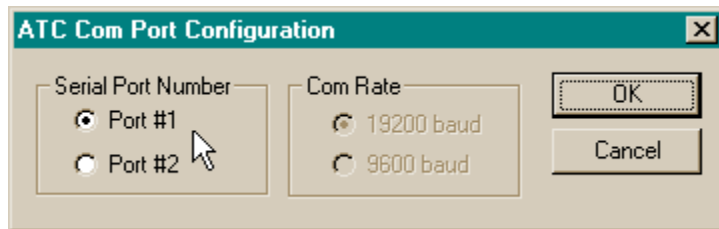
2.B.2 Operate ATC

Click on the **Operate ATC** menu option to open the **Automatic Tool Changer Control** dialog box. The buttons to manually control the ATC have been rearranged for ease of use.
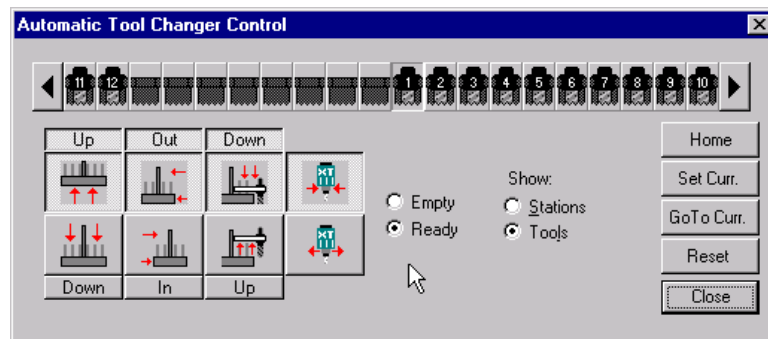
2.B.3. ATC Com Port

Click on the **ATC Com Port** menu option to open the **ATC Com Port Configuration** dialog box.

The ATC previously plugged into the COM1 port only on your computer. Now you can use this dialog box to set the serial port to COM1 or COM2. This allows you to use the COM1 port for another device.

2.B.4. Tool Length Offset Probe
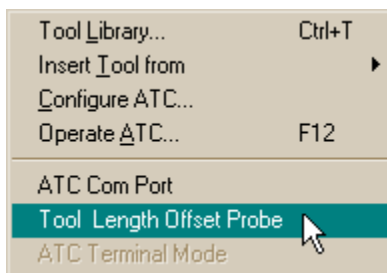
The **Tool Length Offset Probe** option is only available if you have the **ACC-5269 Tool Length Offset Probe** option on your BENCHMAN®-XT. See Section 4.A. for more information for using the **Tool Length Offset Probe** features in the control program.

2.B.5. ATC Terminal Mode
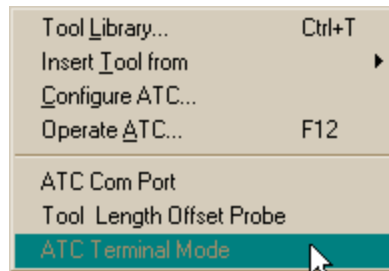
The **ATC Terminal Mode** is an inactive menu option, and is only used by authorized service personnel for diagnostic testing.

2.C. Setup Menu

The **Set/Check Home** dialog box has been simplified. The **Verify Current Tool, Tool Locking,** and **Configure System** commands have all been added.

The **Digitizing Probe Enabled**, **Tool Length Offset Probe Enabled**, and **CAN Module Enabled** indicators have also been added; and can only be used if you have any of those options installed on your machine.

2.C.1. Set/Check Home

Click on **Setup > Set/Check Home** to open the **Home to Reference Point** dialog box. Click on **Home** to send the BENCHMAN®-XTto its machine home reference point.
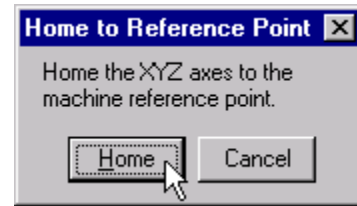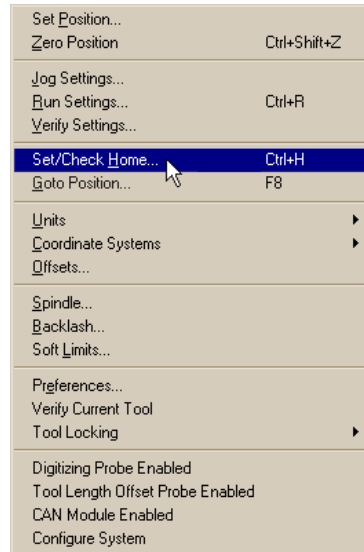
2.C.2. Verify Current Tool
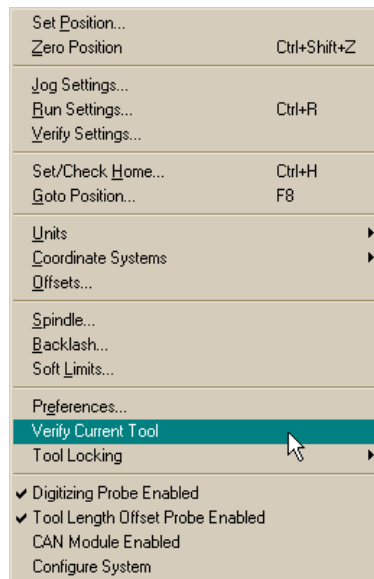
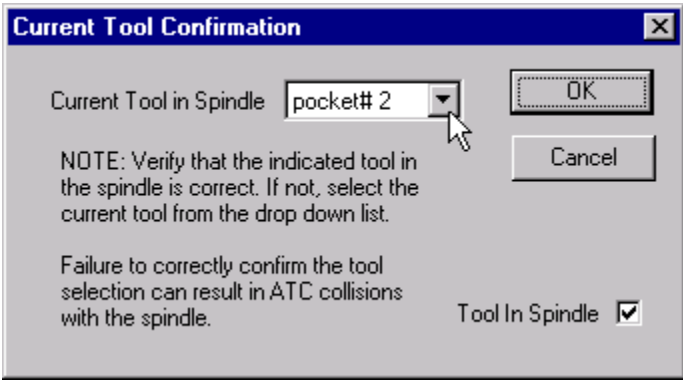Click on the **Verify Current Tool** option in the Setup menu to open the **Current Tool Confirmation** dialog box. This will allow you to confirm that the correct tool is in the spindle, or allow you to change the setting to the tool that is in the spindle.

2.C.3. Tool Locking
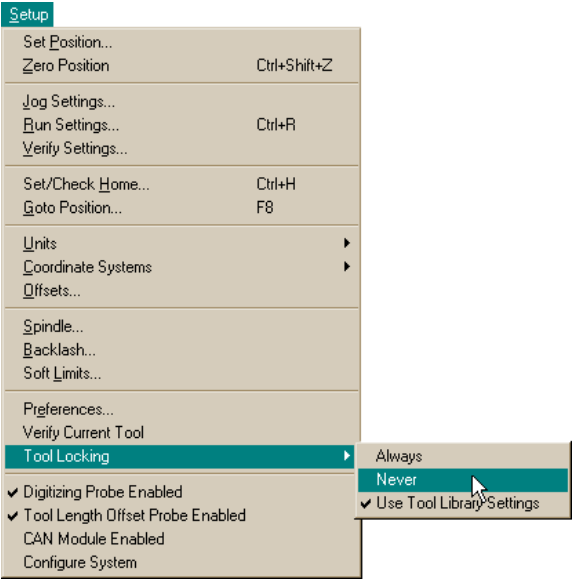
The **Tool Locking** menu allows you to override the **Use Spindle Locking Pin** option in the **Setup Tool Library** (refer to Section 2.B.1). Click **Always** to set the spindle to lock on every tool, or click **Never** to not lock any tool, regardless of **Setup Tool Library** setting. Click **Use Tool Library Settings** to use the **Setup Tool Library** setting for each tool.

Warning!

ALL THE SYSTEM SETTINGS FOR EACH BENCHMAN®-XT ARE PRE-SET AT THE FACTORY! YOU SHOULD NOT USE THE CONFIGURE SYSTEM COMMAND WITHOUT CONSULTING THE SERVICE DEPARTMENT AT LIGHT MACHINES FIRST!

```
Set Position...
Zero Position                    Ctrl+Shift+Z

Jog Settings...
Run Settings...                  Ctrl+R
Verify Settings...

Set/Check Home...                Ctrl+H
Goto Position...                 F8

Units                                       ▶
Coordinate Systems                          ▶
Offsets...

Spindle...
Backlash...
Soft Limits...

Preferences...
Verify Current Tool
Tool Locking                                ▶

✔ Digitizing Probe Enabled
✔ Tool Length Offset Probe Enabled
  CAN Module Enabled
  Configure System
```

The **Configure System** utility is used to review parameters for the machining center, and will allow you to make changes or enable options. It should only be used if you are using system options that need to be turned on/off like the **Digitizing Probe, CAN Module,** or **Tool Length Offset Probe.** If you are experiencing problems with your machine, consult Light Machines' Service Department first.

When you click the **Configure System** option, you are prompted with the following message:

Changes made to the system configuration will not take effect unless the control program is closed, then re-opened. Click **Yes** to close the BENCHMAN® control program, and open the **Configuration Utility** dialog box; or click **No** to return to the control program.
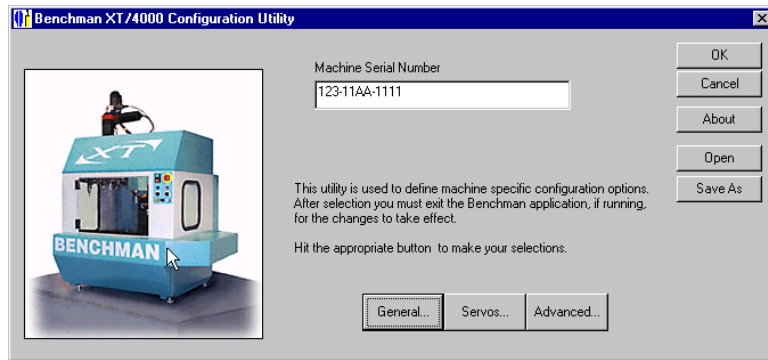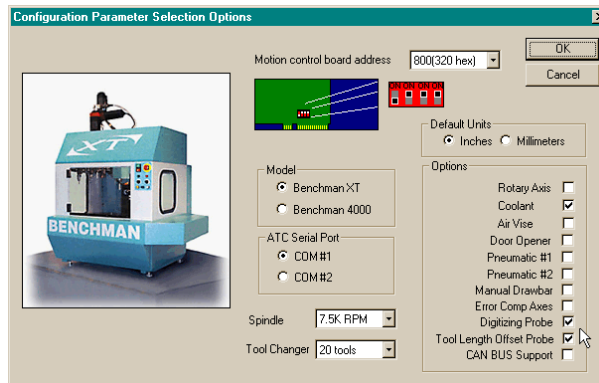

NOTE!

CHANGING SYSTEM SETTINGS WITHOUT CONSULTING LIGHT MACHINES CORP. COULD CAUSE THE MACHINE TO MALFUNCTION!

Click on the **General** button to open the **Configuration Parameters Selection** dialog box. This screen will allow you to make general changes to the machining center.
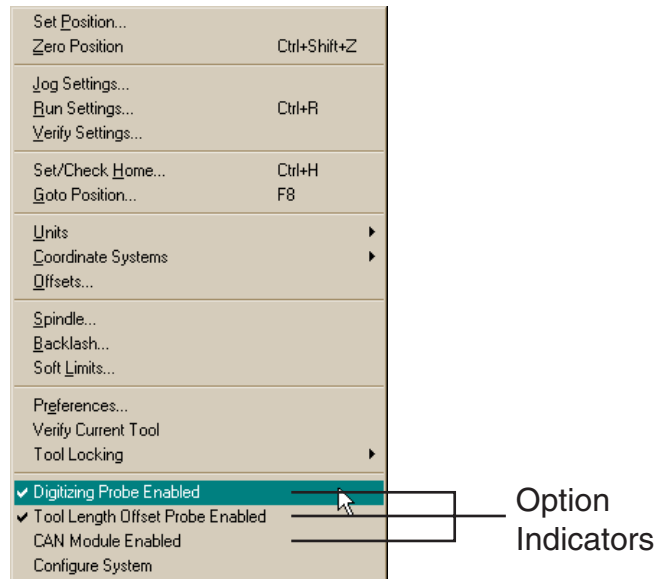
Click on the **Servo** button to open the **Configure Servo Parameters** dialog box. This screen allows you to change the parameters for the X, Y, and Z axis servo motors.
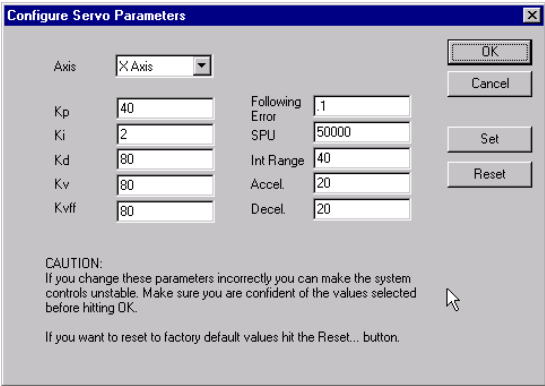
Click on the **Advanced** button to open the **Advanced Settings** dialog box. This screen will allow you to make changes to the spindle and axes settings.
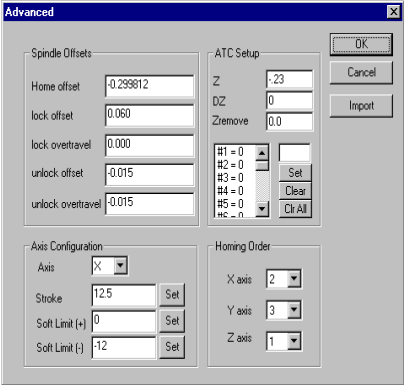
2.C.5. Option Indicators

The **Option Indicators** can be used to turn factory-installed options on or off. If there is a check mark next to an option, it has been activated in the **XT Configurator**. If there is no check mark, it is not activated.
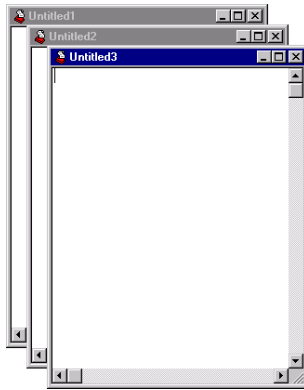
Click on an option to open the **BENCHMAN®-XT Configuration Utility**. See Section 4.A. for more information on activating/deactivating options.
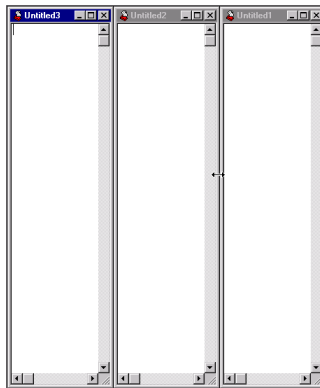
2.D. Window Menu
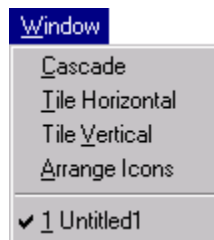
The **Window** menu has three options for modifying the display of NC programs in the **Edit Window**: **Cascade**, **Tile Horizontal**, and **Tile Vertical**.
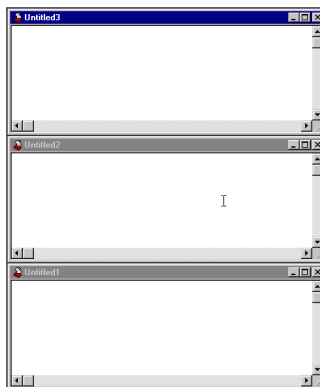
Click on **Cascade** to tile your programs on top of each other as shown.

Click on **Tile Vertical** to stretch your programs in the vertical direction, and place them side by side.

Click on **Tile Horizontal** to stretch your programs in the horizontal direction, and place them on top of each other.
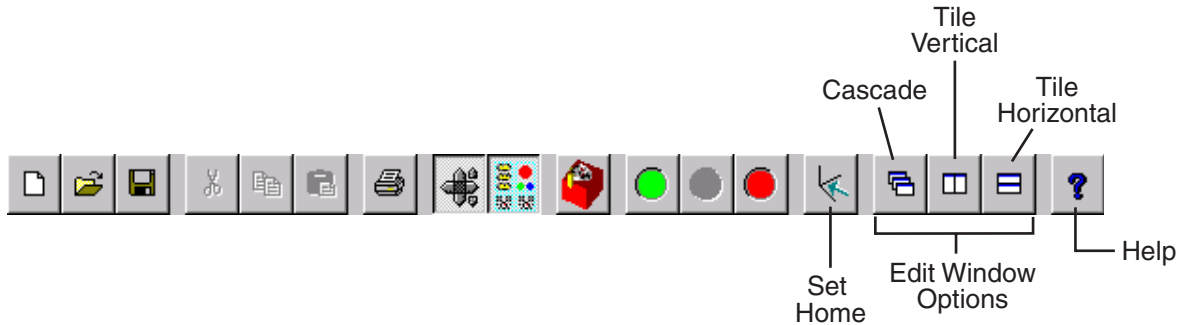
3. Icons

3.A. Standard Tool Bar

The **Standard Tool Bar** contains new icons. The **Help** icon has been moved to the end of the **Standard Tool Bar**.

3.A.1. Set Home

 Set Home

Click on the **Set Home** icon to open the **Home to Reference Point** dialog box. Refer to Section 2.C.1.

3.A.2. Edit Window Options

 Cascade

 Tile Vertical

 Tile Horizontal

Click on these icons to modify the display of multiple NC programs in the edit window. Refer to Section 2.D. for more information.
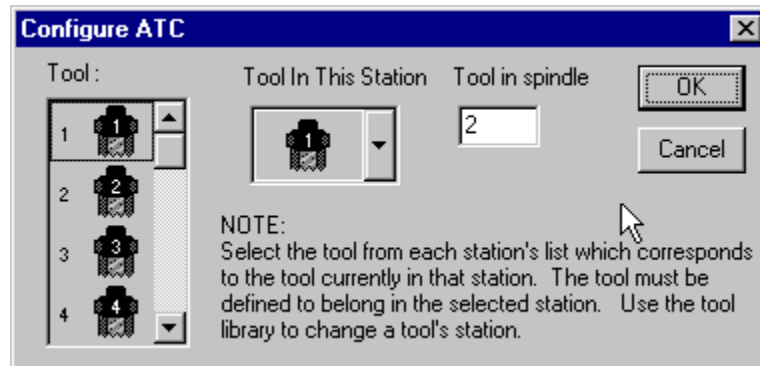
3.A.3. Automatic Tool Changer (ATC)

The Automatic Tool Changer toolbar has been added to the BENCHMAN®-XT control program to give quick access to ATC commands. To enable/disable the ATC tool bar, see Section 2.A.
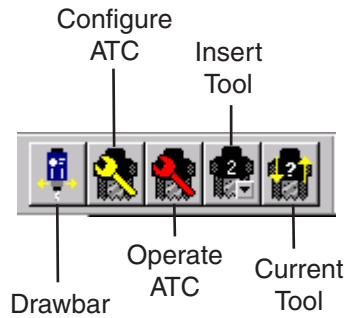
The **Drawbar** icon allows you to clamp or unclamp a tool in the spindle. **CAUTION! WHEN DEPRESSED, THE DRAWBAR ICON WILL UNCLAMP THE TOOL IN THE SPINDLE. ANY TOOL THAT IS IN IT COULD FALL OUT!**

The **Configure ATC** icon opens the Configure ATC dialog box. This allows you to set the tools in specific stations on the ATC.

The **Operate ATC** icon opens the **Automatic Tool Changer Control** dialog box. See Section 2.B.2. for more information.

The **Insert Tool** icon produces a drop-down menu of defined tool stations. Click on a tool number to insert the tool from that station in the spindle.
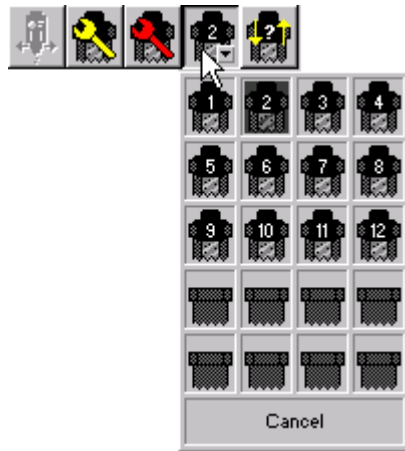
The **Current Tool** icon opens the **Current Tool Confirmation** dialog box. See Section 2.C.3. for more information.

4. Tool Length Offset Probe

Some features have been added for the Tool Length Offset Probe option. This option can be used to measure tool height offsets, and store them in the control program.

4.A. Activating/Deactivating Tool Length Probe Option

To activate/deactivate the probe option, click on **Setup,** then **Configure System,** or click on the **Tool Length Offset Probe Enabled** option in the **Setup Menu**.


The program will prompt you with the message that it will shut down the control program, and open the **Configure** utility.
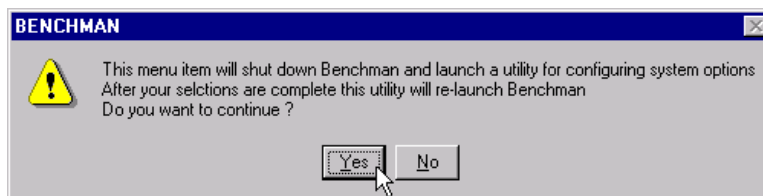
Click **Yes** to open the **Configuration Utility** dialog box. Remember, changes made to the system configuration will not take place unless the system is closed, and then re-opened.
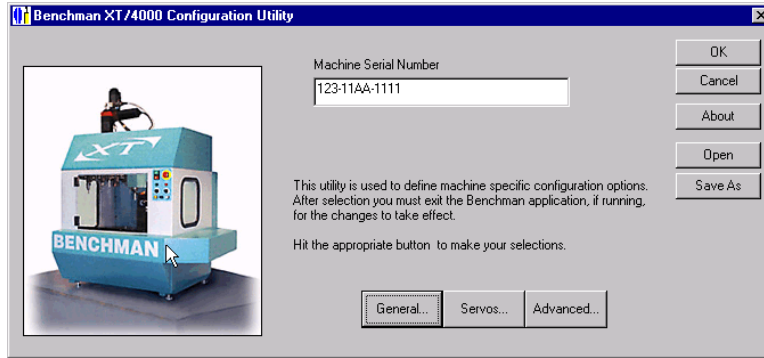
Click on **General** to open the **Configuration Parameter Selection Options** dialog box.
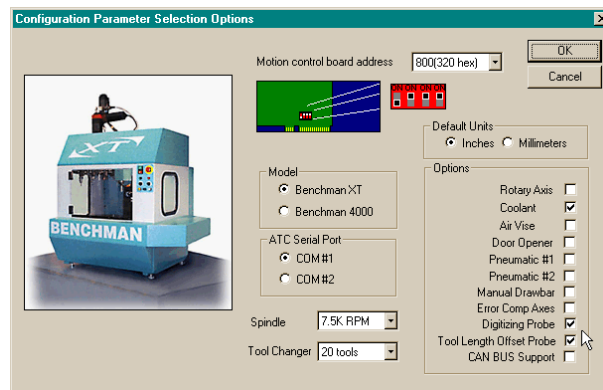

The **Digitizing Probe** and **Tool Length Offset Probe** features are listed under **Options**. Click once in the box next to each feature. A check mark in the box means the option is activated; a blank box means the option is deactivated.

When you activate an option, a check mark will appear next to it in the Setup menu in the control program (see Section 2.C.5).

When the **Digitizing Probe** and/or **Tool Length Offset Probe** option is activated, a probe icon is added to the Outputs toolbar.

Digitizing or
Tool Length Offset
Probe
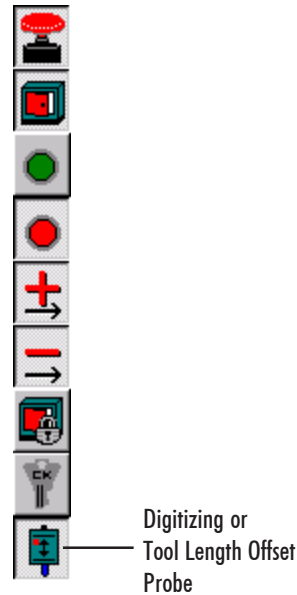
When the **Tool Length Offset Probe** option is activated, the **Tool Length Offset Probe** menu item under **Tools** becomes active.
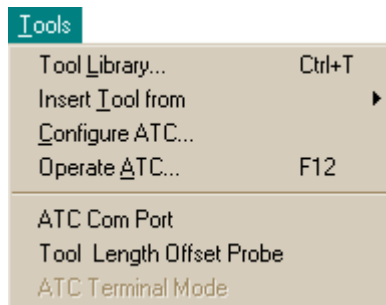
Click on **Tool Length Offset Probe** to open the **Tool Height Pickup Selection** dialog box.
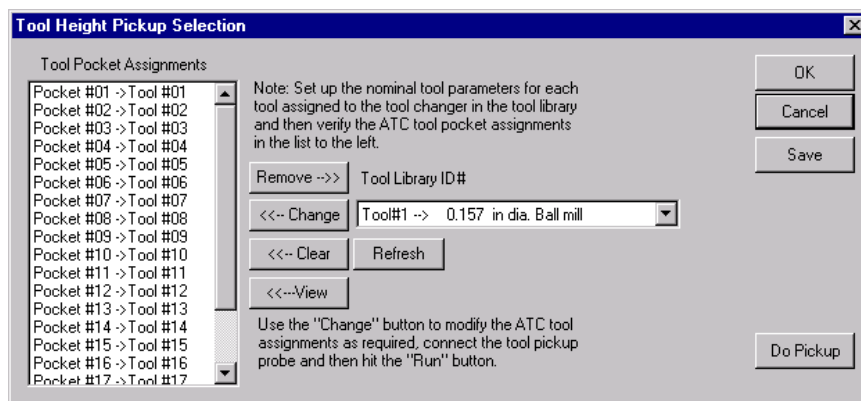
Click on **Do Pickup** to open the **Tool Length Offset Pickup** dialog box.