

**Techno** *Inc.*

# Techno SERVO GCODE INTERFACE for the Wood LATHE

- Setup
- Quickstart Tutorial



## Windows Version

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# Techno Wood Lathe GCODE Interface

Windows Version

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# SAFE OPERATION OF YOUR MACHINE

Read these instructions thoroughly BEFORE operating machine

**WARNING! IMPROPER OR UNSAFE OPERATION OF THE MACHINE MAY RESULT IN PERSONAL INJURY AND/OR DAMAGE TO THE EQUIPMENT.**

1. Keep fingers, hands, and all other objects away from machine while power is on.
2. Disconnect power to all system components when not in use, when changing accessories, and before servicing.
3. Do not loosen, remove, or adjust machine parts or cables while power is on.
4. Exercise care with machine controls and around keyboard to avoid unintentional starting.
5. Make sure voltage supplied is appropriate to specifications of components.
6. Machines must be plugged into three-pronged grounded outlets. Do not remove the grounding plug or connect into an ungrounded extension cord.
7. Keep cables and cords away from heat, oil, and sharp edges. Do not overstretch or run them under other objects or over work surfaces.
8. Use proper fixtures and clamps to secure work. Never use hands to secure work.
9. Do not attempt to exceed limits of machine.
10. Do not attempt to use machine for purposes other than what is intended.
11. Use machine only in clean, well-lit areas free from flammable liquids and excessive moisture.
12. Stay alert at all times when operating the machine.
13. Always wear safety goggles.
14. Do not wear loose-fitting clothing when operating machine. Long hair should be protected.
15. Always maintain proper balance and footing.
16. Maintain equipment with care. Keep cutting tools clean and sharp. Lubricate and change accessories when necessary. Cables and cords should be inspected regularly. Keep controls clean and dry.
17. Check for damaged parts. An authorized service center should perform all repairs. Only identical or authorized replacement parts should be used.
18. Remove any adjusting keys and wrenches before turning machine on.
19. Do not attempt to override or circumvent the Techno Lathe Safety Door/Interlock.

**DO NOT OPERATE MACHINE IF YOU ARE UNFAMILIAR WITH THESE SAFE OPERATING INSTRUCTIONS. DO NOT OPERATE MACHINE WITHOUT KNOWING WHERE THE EMERGENCY STOP SWITCH IS LOCATED.**

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# I. The Techno Lathe GCODE Interface

The Techno Lathe GCODE Interface executes GCODE toolpath commands and sends them to your Servo Lathe controller, which operates the machine to produce your part. The GCODE Interface also:

- Gives you both keyboard and mouse jogging options.
- Previews GCODE toolpaths before running your program.
- Allows you to set specific parameters for one file without changing the Interface's default settings.
- Clearly shows you every offset, speed and function through a series of manageable window screens.



The Techno GCODE Interface CD may include a README file containing information about the software unavailable at the time this manual was printed. Please read this file.

# Techno Lathe Setup

## System Requirements

To use the Techno Lathe GCODE Interface, you must have a PC with these minimum requirements:

- **Windows 98/ME/2000/XP**
- **Pentium II or Celeron 600 Mhz Processor**
- **One Available PCI Slot**

## Outline of Setup Procedure

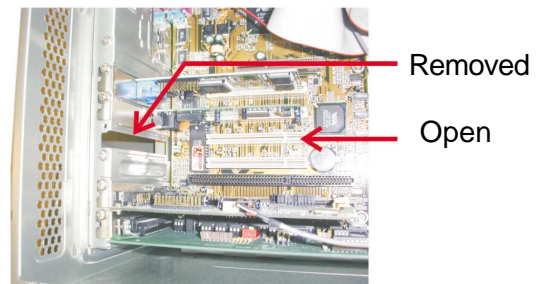
- A. Install Lathe Interface Card in your computer.
- B. Load Techno Lathe GCODE software.

### A. Installing the Lathe Interface Card

**WARNING! Computer boards and components contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you must follow some precautions.**

1. Make sure that you unplug your power supply when adding or removing your Lathe Interface Card. Failure to do so can cause serious damage.
2. Keep the Lathe Interface Card in its antistatic bag until you are ready to install.
3. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case. Hold components by the edges and try not to touch the chips, leads or circuitry.
4. Place the Lathe Interface Card on top of a grounded antistatic pad or the antistatic bag it came in whenever the card is separated from the machine.

1. Unplug all the electrical cords on your computer
2. Remove the system unit cover.
3. Locate an empty PCI slot. Make sure the slot is unobstructed.
4. Remove the corresponding slot cover from the computer chassis.



**WARNING:** Make sure to ground yourself before continuing.

5. Remove the Lathe Interface Card from its bag by the edges.

**NOTE:** Cards are installed in PCI slots face down.

6. Position the card directly over the PCI slot. Insert the card firmly but gently into the slot.
7. Fasten the card's mounting bracket to where you removed the slot cover.
8. Replace the cover on the system unit.
9. Connect the Lathe's controller cable to the PCI's external connector on your unit.

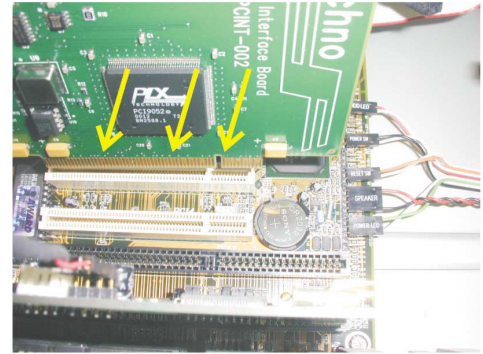
**NOTE:** The PCI card's connectors mate with the PC's Mother Board connectors in only "one" way.

10. Connect or reconnect any other cables to your unit. You are now ready to install the driver for the Lathe Interface Card.

**NOTE:** Remember to leave the Lathe CD in the drive before starting your computer. Make sure all other applications are closed before attempting to install the Lathe Interface.

11. Turn on your computer and wait for Windows to boot up. Windows will recognize the new hardware (Lathe Interface Card) and prompt you to search for the device driver. Follow the onscreen instructions. If prompted for "optional search locations" choose CD and continue.

Windows will now automatically find the driver that is on your Techno Lathe CD. When prompted, click Finish to complete the PCI driver installation. If Windows prompts you to reboot after driver installation, do so.



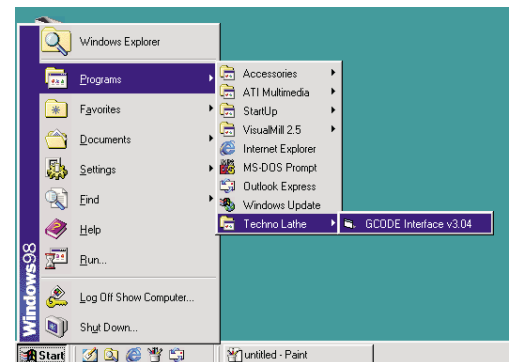
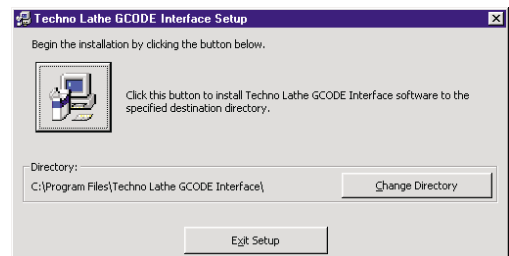
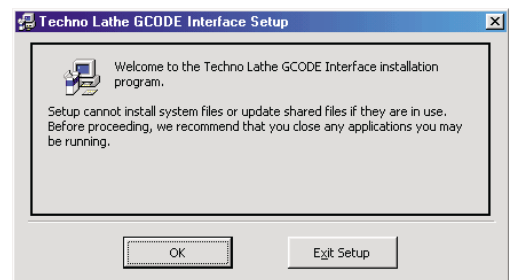
**Special Mastercam Note:** At this point, prior to installing the Techno Lathe software, if you do not have Mastercam installed on your machine, and you plan you use Mastercam in conjunction with the Techno Lathe, **INSTALL IT NOW**. Installing Mastercam now will save you from having to copy the right Post (.pst file) later. For instance, the Techno Lathe Interface will automatically locate your Mastercam folder and install the Post there the very first time you start the Interface. If you install Mastercam after the first time you run the Techno Lathe Interface, then you will have to copy the Post to the right directory. So, in the interest of saving time, install Mastercam now.

## B. Installing the Techno Lathe GCODE Software

1. Double-click on the **My Computer** icon on your desktop.
2. From the My Computer window, double-click on the Lathe CD drive. From the Lathe CD window, double-click on the Setup Techno Lathe.exe file and follow the onscreen instructions.
3. Click OK on the Welcome Screen.
4. Click the big button to begin the installation.
5. Choose the default Program Group Setup and click Continue.
6. Click OK to complete the installation.
7. Go into the Start Menu/Programs/Techno Lathe and click on GCODE Interface to start it up for the first time.

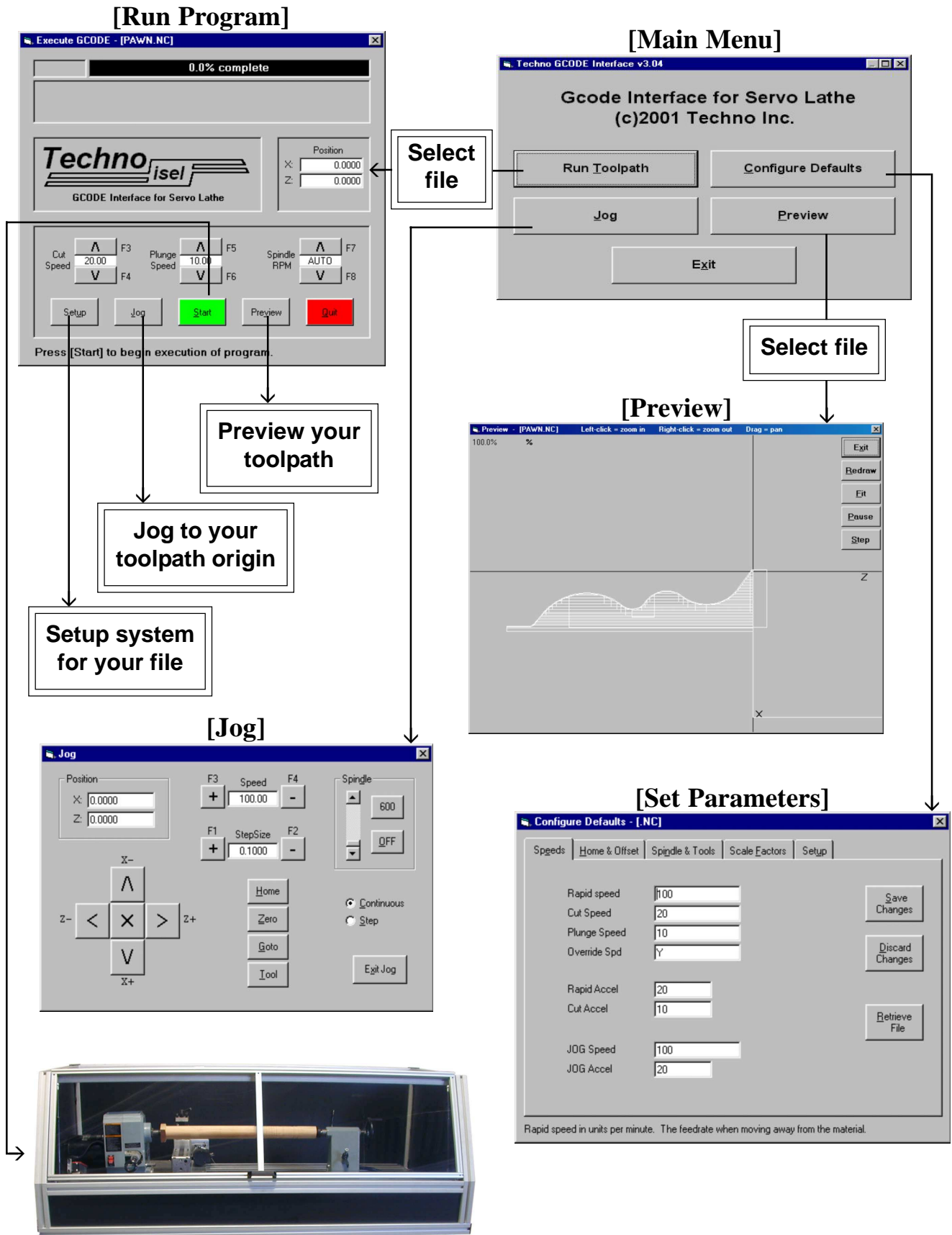
**NOTE:** There might be a slight delay during the first time you attempt to run the program.

8. Installation is complete when the Lathe Main Menu appears.





# INTERFACE MENU MAP



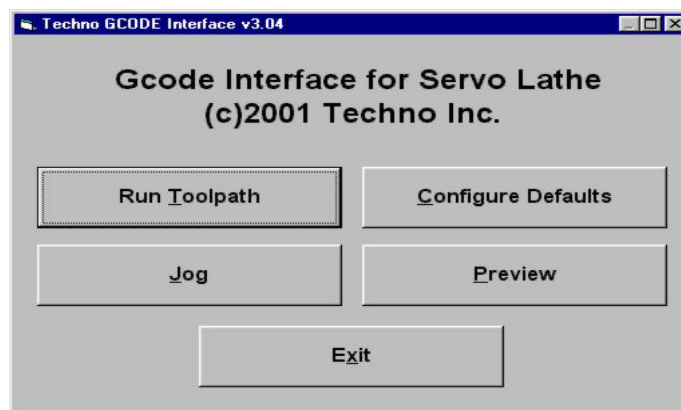
## II. Quick-Start Tutorial

This simple tutorial employs and explains the main functions of the Techno Servo Lathe GCODE Interface by having you run the sample toolpath program, **pawn.nc**.



1. From the  Start menu, select  Programs and then  GCODE Interface

The Interface Main Menu opens:

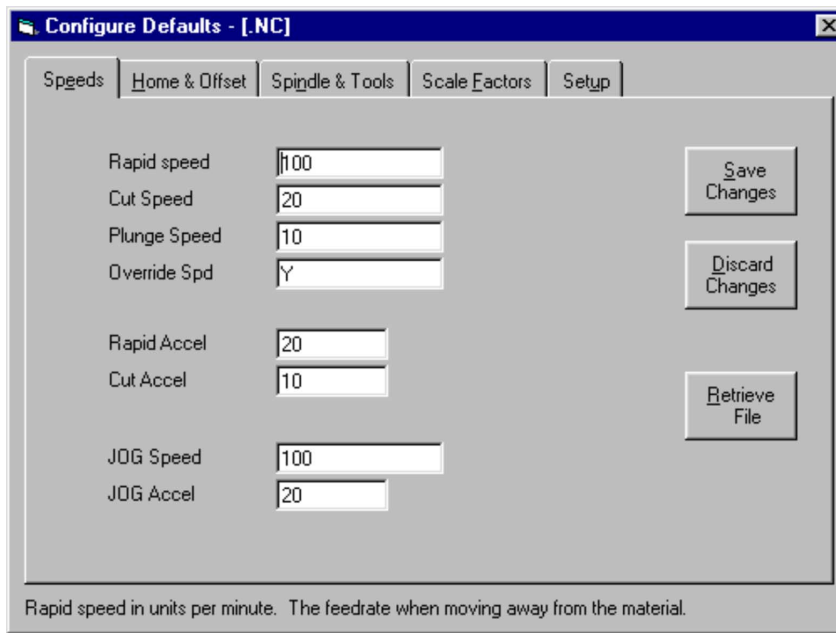


Click 

**Be Careful!** From here, system default parameters can be adjusted (**and permanently changed.**)

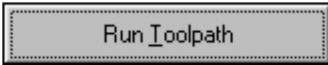
**Note:** These default settings are not arbitrary numbers. In fact, these parameters have been preset to standard performance values. While you should be careful not to mistakenly change these default settings, they are not set in stone. The more familiar you become with the Techno Lathe and Interface, the more adept you will become at adjusting parameters. Until you feel confident

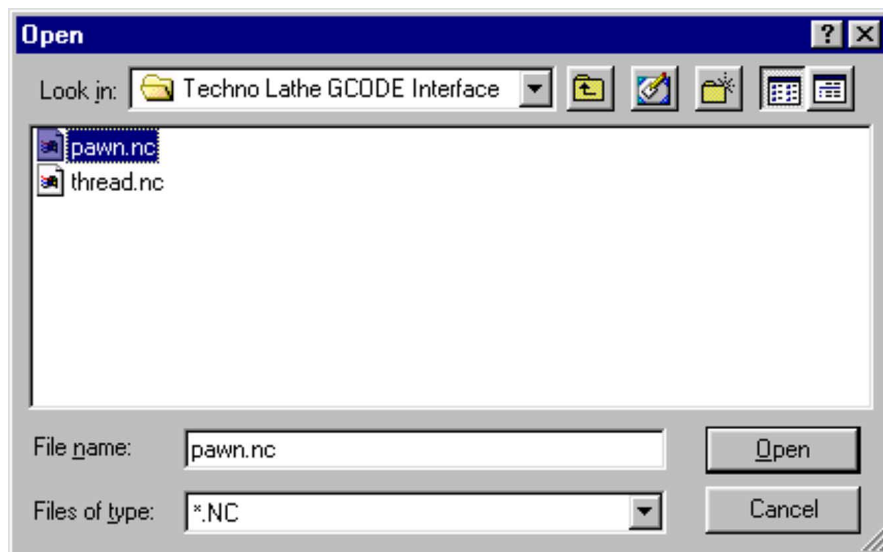
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in changing parameters that do not have to be altered, stick with the default settings.

- The five tabs at the top of the Configure Defaults Window represent five different sub windows in which to input and/or change Interface parameters. Click on the different tabs to familiarize yourself with them, then Click and return to the main menu.

**Note:** If you were to click  , anything (even accidentally) changed would become

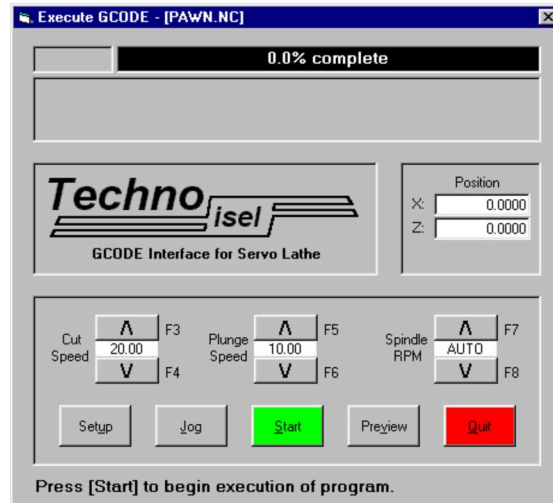



the new default setting for the GCODE Interface.

- Click from the Main Menu.



The Open File Window opens.

The Execute Window opens.

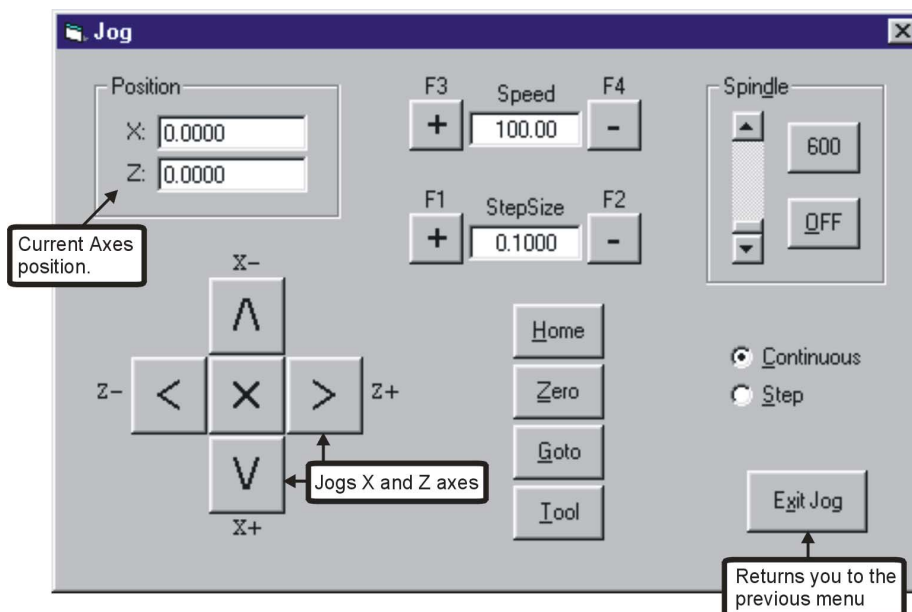


5. Click  to double check the configuration file for **pawn.nc**.

Setup lets you adjust parameters for the particular .NC file you want to run. The Setup Window looks almost exactly like the Configure Defaults Window we just encountered in Step 1, with just two exceptions. One, the title bar reads Setup and not Configure Defaults and Two, the user is locked out of making any changes in the Setup sub window.

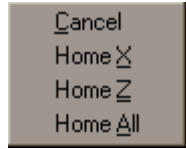
6. Click  and return to the Execute Window.
7. Click .

The Jog Window opens.



**Warning: Remove all tools, bits, and wrenches from inside the lathe before a jogging or homing operation. Make sure the axes' travel is not obstructed.**

8. Click 



From the pull-down menu, select Home All.  
The machine will move to the (mechanical) home position and the counter should read (0,0).

**Note:** Mechanical home equals the axes' end of travel plus (or minus) the Home Backoff value. This is also the home position referenced in the **HOME BEFORE RUN** feature. Usually, you will enter the X and Z Offsets so that the software home position equals the mechanical home plus (minus) the offsets.

9. Click the     buttons to jog the X and Z axes.



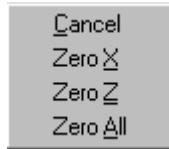
The up and down arrows jog the X-axis



The side-to-side arrows jog the Z-axis

10. Set your Toolpath Origin by Jogging the X-axis as close to -1.0000 and the Z-axis as close to

- 1.0000 as you can. Don't worry about  
g e t jogging the axes to the exact number, just  
them close.



worry about number, just

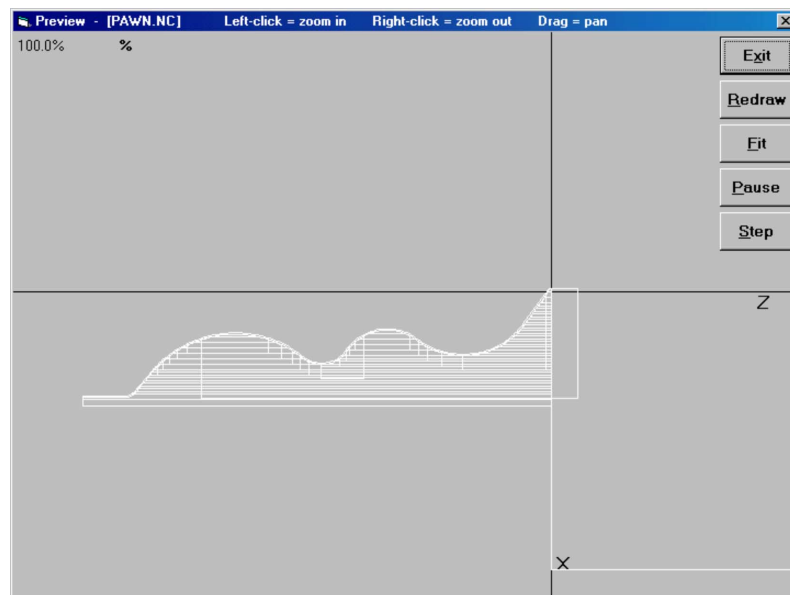
11. Click

From the pull down menu select Zero All

**Note:**  The machine is now at a new **TOOLPATH ORIGIN**, and the counter should once again read (0,0).

12. Click  to return to the Execute Window.

Before executing **pawn.nc**, we will preview the toolpath.



13. Click from the Execute Window.



14. Press the  key to quit Preview and return to the Execute Window.

Close the Lathe's Safety Door and you are ready to run **pawn.nc**.

### F.Y.I.: During Program

Run



- Clicking stops the machine  after it has  completed its most current motion.



After Pause, you may either from this point, to the clearance position,

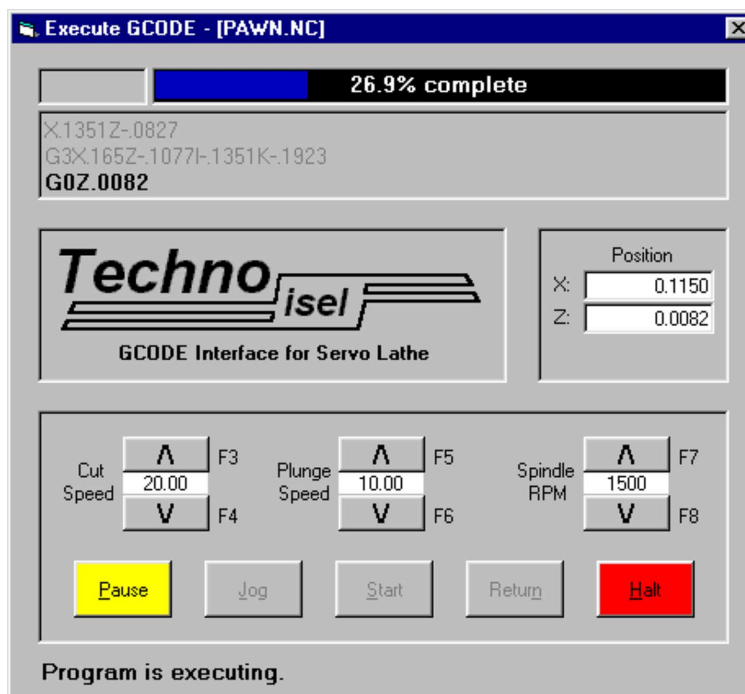



or click and proceed one step forward.




or  stops the machine immediately, but does **not** allow you to resume.

15. Click from the Execute Window.



The Interface executes **pawn.nc** on your  machine.

The Window below shows the screen as it appears while running a program.

16. When  the sample program is complete, a pop-up box opens.