Techno Inc.
CNC Router Systems
In Business Since 1986

TECHPROBE INTERFACE MANUAL

OUTLINE

I.   TEST PROBE
II. 2D TRACE
III. 3D SCAN

SYSTEM REQUIREMENTS

- Windows 98, ME, 2000 or XP
- Pentium II or Celeron 600 Mhz processor
- 1 available PCI slot

⚠ Make sure that the machine is operating correctly and that the E-stop Button is working properly.

I.   TEST PROBE

STEP 1: Start the **Techno TechProbe Interface**. The Interface's **Main Screen** should appear (see Screen Cap 1).

STEP 2: Click on **Setup**.

STEP 3: From the **Setup Screen's** left-side navigation window, click on **DIAGNOSTICS** (see Screen Cap 2).

STEP 4: Click on **Test Probe** and follow the onscreen instructions.

STEP 5: The **Probe Test Passed Screen** should appear (see Screen Cap 3), click **OK**.

If the test does not pass, check wires and assembly, reboot computer and try again. If it still does not pass, call Techno.

STEP 6: Go to the **Setup/System Screen** (see Screen Cap 4) and make sure the Scale Factors that appear in your **Techno CNC G-Code Interface** are the same that appear in the **Techno TechProbe Interface**.
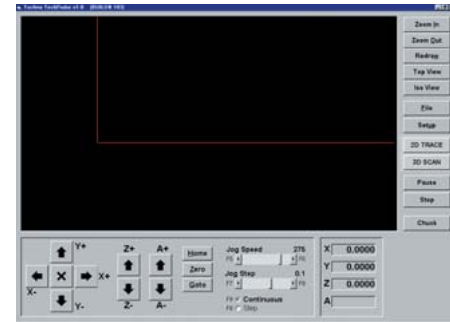
II.   2D TRACE

NOTE[1]: The probe can move the object you are scanning, so unless the object is very heavy, secure the object to the surface.

STEP 1: Jog to lower left side of object to be scanned. Jog the ball-end of the probe near the material, but not touching.
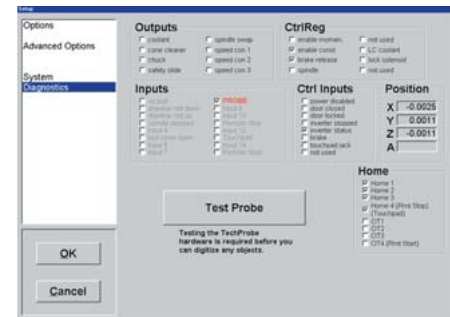
NOTE[2]: The probe's first move is always to the right. This is why you need to position the probe to the left of the object being scanned.

STEP 2: From the Interface's Main Screen, click **Zero** then **ALL** to set the Zero Position.
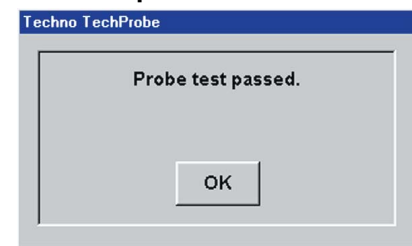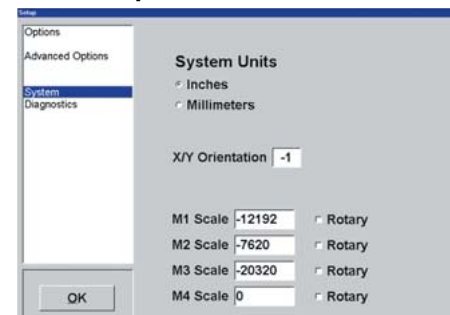
Screen Cap 1

Screen Cap 2

Screen Cap 3

Screen Cap 4

STEP 3: Check **Setup/Advanced Options Screen** (see Screen Cap 5). The default settings for 2D Scan should be adequate for most scans.

STEP 4: Click the [2D TRACE] button to begin the scan. Watch the Onscreen Preview of the trace (see Screen Cap 6).

When the scan is complete a screen-prompt will appear:

Click **YES** if trace is complete.

STEP 5: Save the file as either a **.txt** or a **.nc**. (see Screen Cap 7).

Saving as a **.txt** file saves a list of X-Y coordinates that can be imported into most CAD/CAM programs where it can be generated into a toolpath. The purpose of saving as a standard G-Code **.nc** file is to go directly from scan to cut.

NOTE[3]: Depending on the size and/or angle of a corner on your object, the probe may require you to slightly round or fill the area. Try to scan the area first, if it does not scan accurately, slightly modify the area until it scans uninterrupted.

III.   3D SCAN

NOTE[4]: A 3D Scan involves setting a depth value for the Zero Position and setting area parameters for the object being scanned. As an example we will scan a collet (see Picture 1). Notice, the collet is resting on top of double-sided tape so that it doesn't move during the scan. Also we inserted a screw into the top of the collet to fill the hole.

STEP 1: To set the zero position for the Y-axis, jog to the lower front portion of the collet. Jog the probe close, but not touching. Then, from the Interface's **Main Screen** click [Zero] then [Y]. This sets the Y-axis Zero Position.

Screen Cap 5
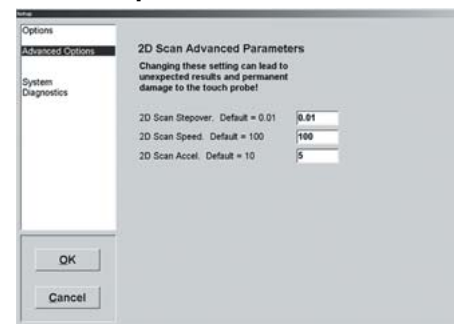
Screen Cap 6
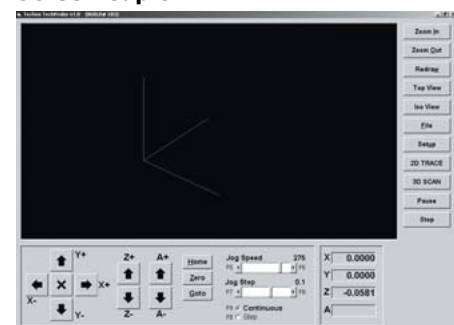
Screen Cap 7

Picture 1

STEP 2: To set the zero position for the X-axis, jog to the lower left portion of the collet (your left if you are facing the collet). Jog the probe close, but not touching. Then, from the Interface's **Main Screen** click ⟨Zero⟩ then ⟨X⟩. This sets the X-axis Zero Position.
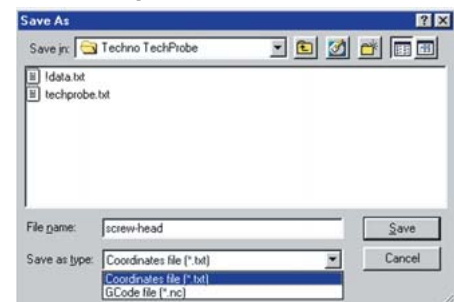
STEP 3: To set the zero position for the Z-axis, jog the probe slightly above the collet. Then, from the Interface's **Main Screen** click ⟨Zero⟩ then ⟨Z⟩. This sets the Z-axis Zero Position.

NOTE[5]: We still need to set Scan Parameters for each axis (see Screen Cap 8a). The scan parameters set the distance each axis will travel away from their respective Zero Position. The Y-axis travels from front to back (of the machine), the X-axis travels from left to right (facing the front of the machine) and the Z-axis travels from top to bottom (toward the table surface).

STEP 4: Click ⟨Setup⟩ and the **Setup/Options 3D Scan Parameters Screen** appears (see Screen Cap 8b). Input the amount of distance you want each axis to move away from its Zero Position. For example, for the collet in Picture 1, we input 1.2 for the X and Y-axes, and 1.28 for the depth of scan of the Z-axis. Input these values so that the "scan area" is slightly larger than the object you are scanning.

WARNING: Do not input a depth value for the Z-axis that exceeds the length of the probe. This will damage the probe.

STEP 5: From the **Setup/Options 3D Scan Parameters Screen** input the Scan Stepover values for Axis 1 & 2 Step (see Screen Cap 8C). We changed the default value to 0.05 for the collet because it was a small scan. The smaller the scan stepover value the larger the file will be.

NOTE[6]: The default parameters for Jog Speed & Accel, as well as Scan Speed & Accel should be fine for most applications.

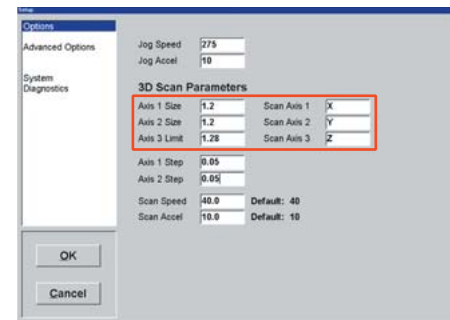**STEP 6:** Click **OK** to save any changes made in **Setup**. Then from the **Main Screen**, click ⟨3D SCAN⟩ to start the scan. The program run starts at the Zero Position then plunges the Z-axis down and the X-axis goes right toward the object.

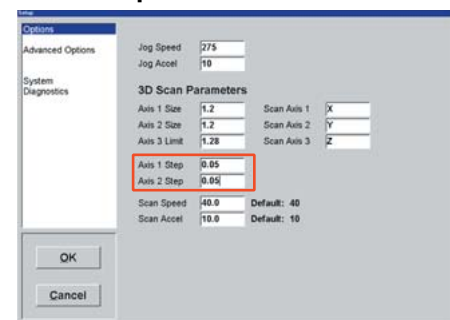**STEP 7:** Watch the **Main Screen's Preview** as it collects the scan data (See Screen Cap 9).
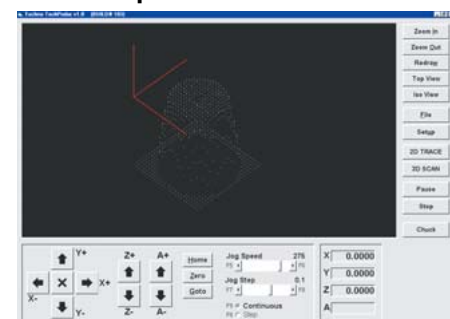
Screen Cap 8a
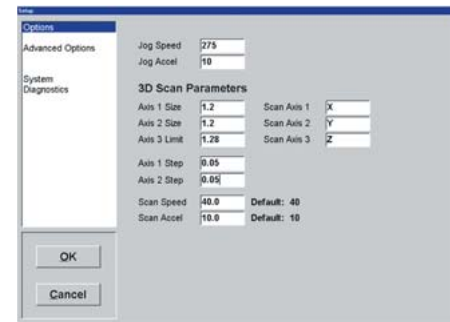
Screen Cap 8b

Screen Cap 8c

Screen Cap 9

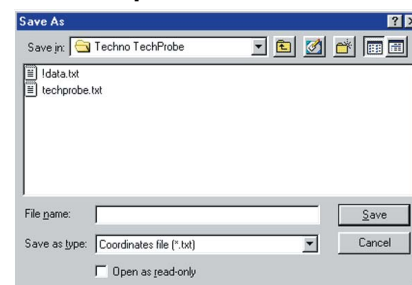**STEP 8:** When the scan is complete a screen-prompt will appear:

Click **YES** if scan is complete.

STEP 9: Save the file in either as a **.txt** or a **.nc**. (see Screen Cap 10).

Saving as a **.txt** file saves a list of X-Y coordinates that can be imported into most CAD/CAM programs where it can be generated into a toolpath (see Screen Cap 11). The purpose of saving as a standard G-Code **.nc** file is to go directly from scan to cut.

NOTE[7]: Depending on the size and/or angle of a corner on your object, the probe may require a you to slightly round or fill the area. Try to scan the area first, if it does not scan accurately, slightly modify the area until it scans uninterrupted.

Screen Cap 10

Screen Cap 11