# Setting Workpiece Offsets in VR CNC Turning
Article #3000

1. Open the VR CNC Turning software.

2. Load a piece of stock into the chuck on the lathe.

3. Connect to the CNC machine. To do this, click the *Machine* button. When connected, a Control Panel window will appear.

4. Home the machine by clicking the *Both* button. Make sure each axis goes home (moves). If not, click each individual axis button.

5. Enter Jog mode by clicking the Jog tab.
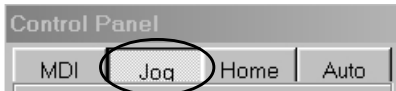
6. Turn on the spindle. If the lathe you are using has a computer-controlled spindle, click the M code button and select M3 Spindle Forward. If the lathe you are using has a manual spindle, turn it on by flipping the on/off switch. You may adjust the spindle speed by turning the override knob on the front of the machine and/or by turning the Spindle Speed knob in the software.
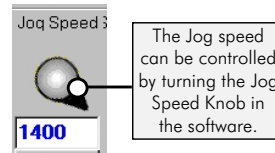

Spindle Speed Control knob

875
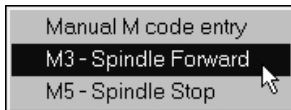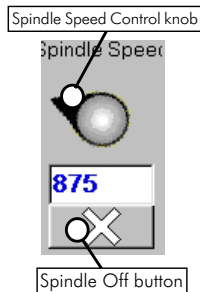
Spindle Off button

If the CNC machine you are using is fitted with a spindle override knob, turn the knob a little past center. If the speed is too low, the spindle will not turn on.

7. The Jog button should look like the button shown here indicating that Continuous mode is active. If needed, click the button to toggle to this mode.
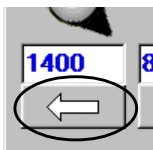

If the CNC machine you are using is fitted with a feedrate override knob, turn the knob a little past center. If the feed is too low, the axes will not move.

8. Jog the cutter so that it lightly touches the end of the part as shown below. This will locate the Z zero position. *The tool DOES NOT need to touch the centerline. Just make sure that the cutter is touching the end of the stock.*

Jog Speed 3

The Jog speed can be controlled by turning the Jog Speed Knob in the software.

1400

- To move the Z axis, press and hold down the [Left Cursor] & [Right Cursor] arrow keys.
- To move the X axis, press and hold down the [Up Cursor] & [Down Cursor] arrow keys.
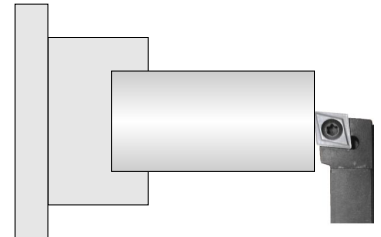
9. When the end of the part has been located, click the Offsets button. The Workpiece Offsets window will appear. Right click Offset 1 then left click Add.
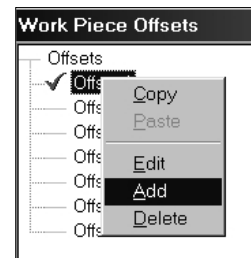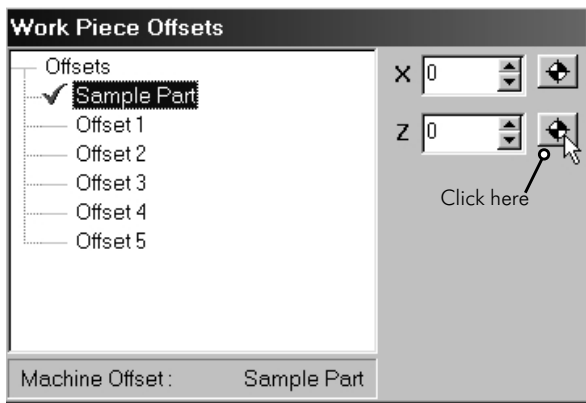

10. A new offset will be added. Left click slowly on the new offset name three times. This will do two things; first it will add a checkmark to the offset. This activates the offset. Secondly, it will allow you to type a new name. Type a unique name and press [Enter].
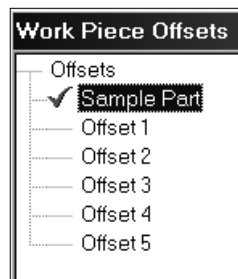

If a checkmark does not appear before the offset, right click the offset and select Make Current.

11. Click the datum button next to the Z box.

Work Piece Offsets

Offsets
✓ Sample Part
Offset 1
Offset 2
Offset 3
Offset 4
Offset 5

X [0]
Z [0]

Click here

Machine Offset :   Sample Part

12. The Z Offset window will appear. Type a **0** (zero) for both the Distance and Clearance. Click OK when done.

Z Offset

Distance to origin
[0]   inches
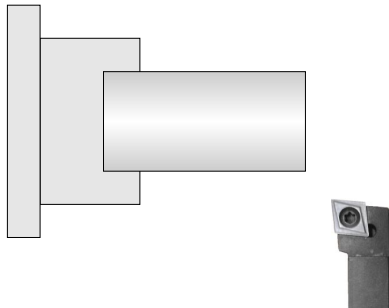Clearance
[0]   inches

OK   Cancel
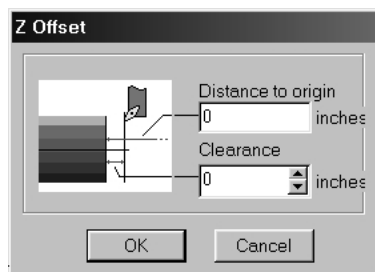
> You may type different values if needed for the machining operation you are performing.

13. Click the Jog tab to active Jog Mode. The tab will turn color when active. Move the cutter to the right to clear the stock as shown here.
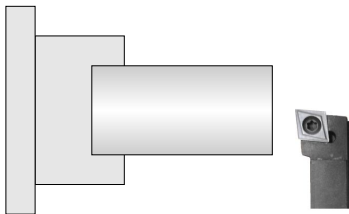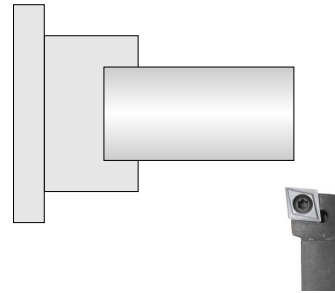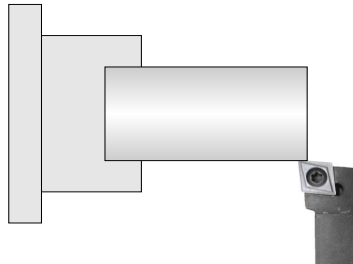
> Leave the Work Piece Offsets window open when jogging.

> The illustrations in this document illustrate a front mounted tool. The same rules apply for a lathe with a back tool.
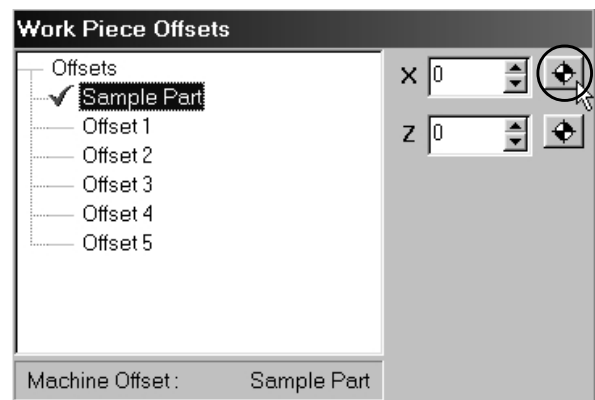
14. Move the cutter down.

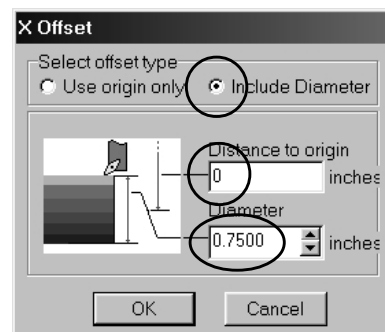15. Move the cutter to the left (Z- direction).

16. Move the cutter up until it lightly touches the edge of the stock. This will locate the X zero position.

17. Click the datum button next to X in the Offset window.

Work Piece Offsets

Offsets
✓ Sample Part
Offset 1
Offset 2
Offset 3
Offset 4
Offset 5

X [0]
Z [0]

Machine Offset :   Sample Part

18. The X Offset window will appear. First select Include Diameter. Change the Distance to origin to **0** (zero) and the Diameter to read the diameter of the stock to be machined. Click OK when complete.

X Offset

Select offset type
○ Use origin only   ● Include Diameter

Distance to origin
[0]   inches
Diameter
[0.7500]   inches

OK   Cancel

> You may type different values if needed for the machining operation you are performing.

19. The offsets are complete. Click the Offset button to close the window.
20. Home the machine by clicking the HOME tab and the *Both* button.