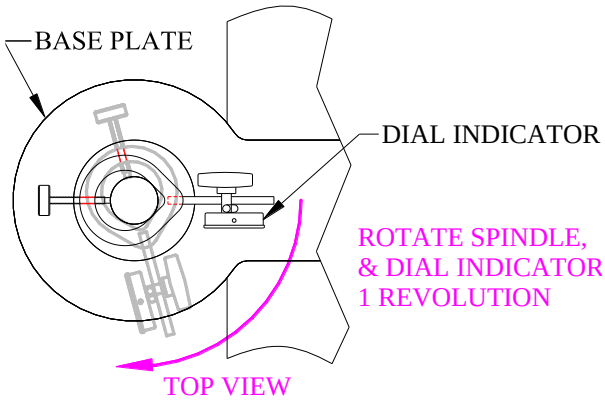
Great Lakes
Custom Tool Mfg., Inc.
Your American Cutting Tool Partner
Phone: 800-873-4528

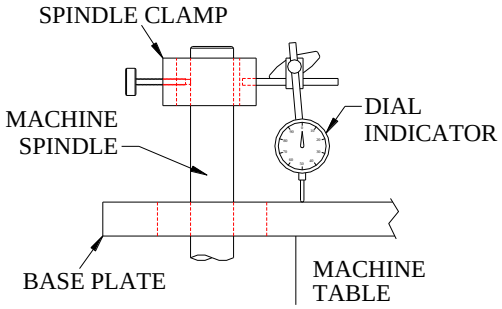
Machine Checking/Squaring Fixture Instructions

We would like to state that we are a tooling manufacturer and not a machine manufacturer; however, the best tooling in the world will not cut correctly unless the machine is also perfectly tuned. Therefore, one of the most important areas of the machine is the spindle and its perpendicularity to the machine table or bed.

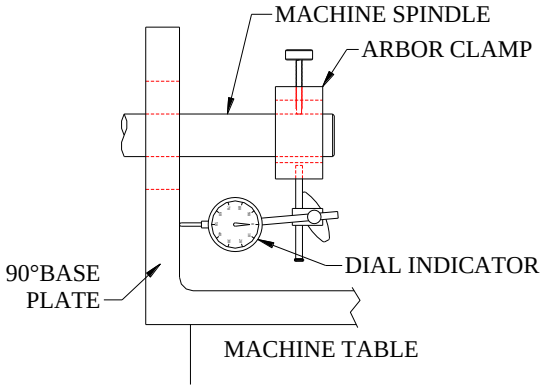
The instructions are for checking the spindle perpendicularity (squareness) to the machine table using GLCT Machine Checking /Squaring Fixtures. Order Part Number **900-11741-000** base plate, and **900-11741-0100** spindle clamp with dial indicator for checking spindle perpendicularity.

1. Great Lakes Custom Tool recommends the **use of safety glasses at all times.**
2. Disconnect and lock-out power to the machine. Be sure to follow **LockOut/TagOut** procedures and use all appropriate personal protection equipment.
3. If a cutter is on the spindle, remove it and clean the spindle, removing all burrs or foreign material that may be on the spindle.
4. Clean the machine table of wood chips, pitch, etc. Check table bed visually using a long straight edge to determine if the table bed is worn. If the table bed is not worn, then the squareness of the spindle to the table bed can be checked. On a machine with a vertical spindle, set the fixture on the machine table, centering the 4” diameter hole in the base plate over the spindle.
5. Mount the spindle clamp and dial indicator onto the spindle. Set the dial indicator so the end is touching the base plate 1/4” to 1/2” in from the outside diameter. Slide the indicator down so the indicator needle revolves at least 2 revolutions. Holding this position, tighten all clamps. Rotate the faceplate of the indicator to set zero on the needle.
6. Rotate by hand the spindle, clamp and dial indicator. Watch the dial indicator, read and record the high and low readings and the location where these readings occurred. The high and low reading should be directly across from each other. The maximum total indicator run out, the difference between the high and low reading, should be .003” Total Indicator Reading (TIR) or less.
7. The spindle will need to be adjusted 1/2 the difference between the high and low reading, in the direction between the high and low reading.
8. Adjust the spindle as recommended by the machine manufacturer.
9. After adjusting the spindle, recheck the readings all the way around (one complete revolution). The total indicator run-out should be .003” or less.
10. The checking procedure for a machine with a horizontal spindle is the same as for a vertical spindle, only a 90° base plate **(Part No. 900-11741-0200)** needs to be clamped to the machine table.





VERTICAL SPINDLE CHECKING SET-UP



HORIZONTAL SPINDLE CHECKING SET-UP