BD-09: Check for Machine Error (Sundstrand)

SAFETY FIRST

- ☐ Follow all Caterpillar facility safety standards when performing this task.
- ☐ A greasy surface, wires, cables, and hoses on and around the Sundstrand contribute to an existing tripping hazard.
- ☐ Moving equipment and rotating shafts are hazardous when moving the spindle during measurements.

EQUIPMENT

- ☐ Maintenance Mechanic hand tools
- ☐ dial indicator (capable of reading .0001”)
- ☐ magnetic base
- ☐ test bar

RESOURCES

- ☐ Sundstrand Maintenance Mechanic Manual

Check for Machine Error (Sundstrand)

Note: If an oscillation is observed (the indicator needle jumps) during any reading with the indicator, notify an Electrician to adjust the drive.

Check for Repeatability (Lost Motion)

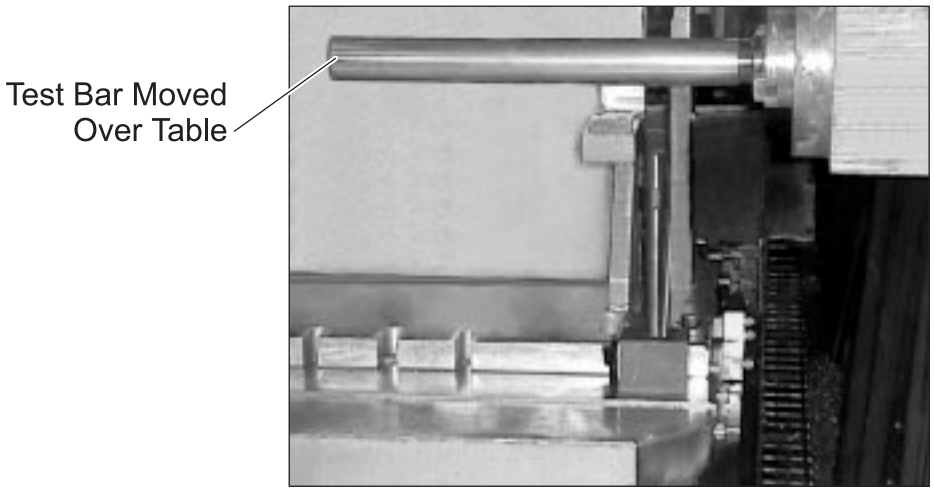
1. Install the test bar.

2. Set up the dial indicator on the table.

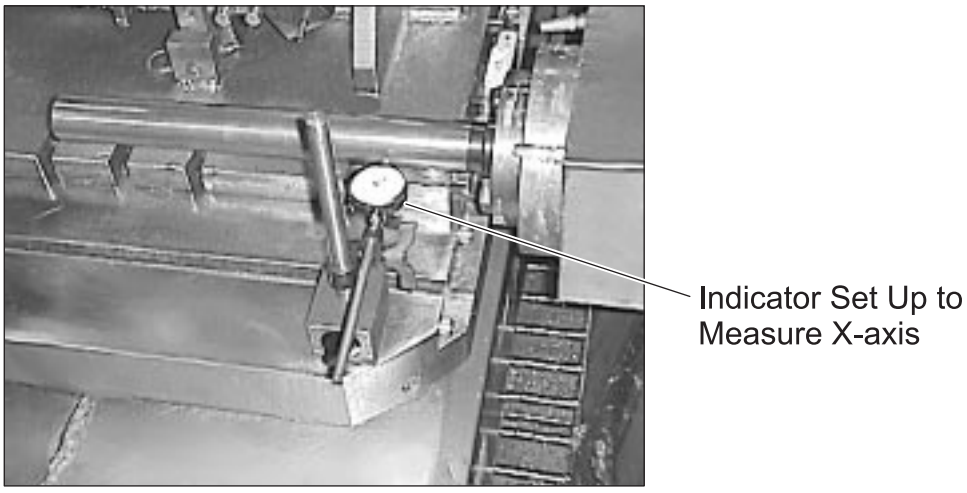
- ☐ Place the magnetic base on a scraped section of the table.

3. Position the spindle to measure for repeatability on the X-axis.

☐ Move the spindle until the test bar is over the table.



4. Position the indicator to measure the X-axis.



5. Zero the indicator.

6. Set the Mode to Increment .001 inches.

7. Press the X-axis button in the positive (+) direction ten (10) successive times.

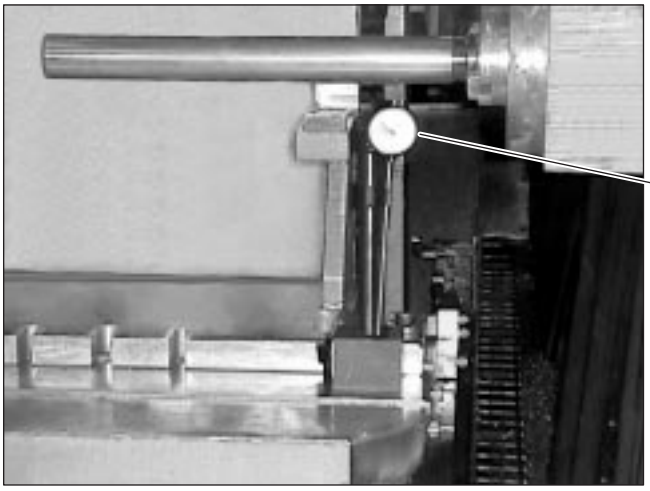
8. Move the spindle back to the zero position.

- ☐ Press the X-axis button in the negative (-) direction ten (10) successive times.

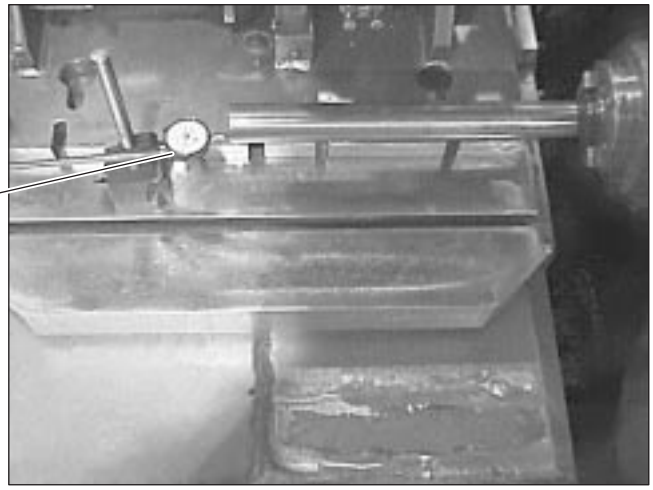
9. Check the indicator.

- ☐ The reading must be within .0002" tolerance.
- ☐ If the reading is out of tolerance, perform the task BC-04: Check Axis for Lost Motion (Sundstrand) to verify the ball screw.

10. Repeat steps 3-9 for the Y-axis, substituting Y-axis where X-axis is shown.

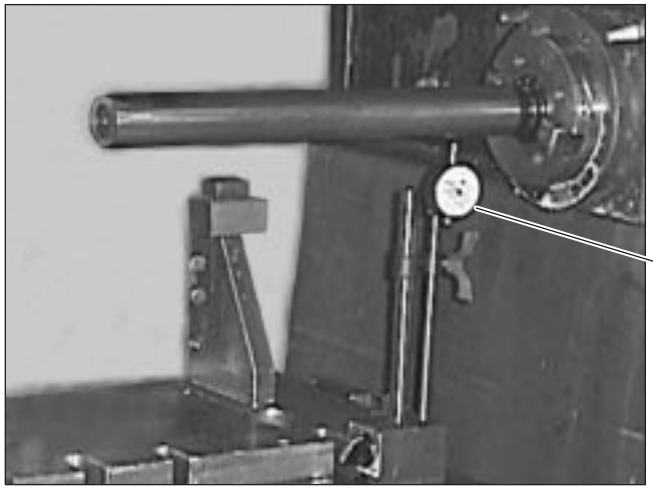


11. Repeat steps 3-9 for the Z-axis, substituting Z-axis where X-axis is shown.



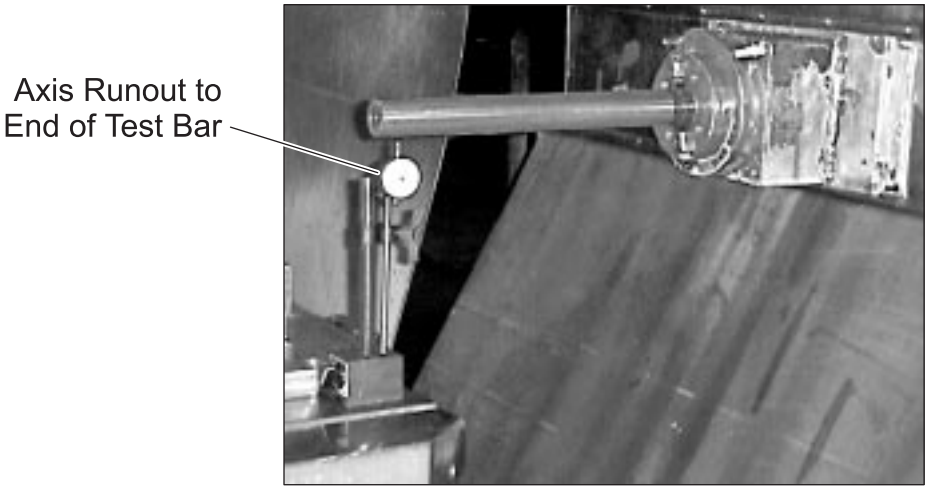
Check Squareness of the Head (Tram)

1. **Position the indicator on the bottom of the test bar as shown below.**



2. **Zero the indicator.**

3. **Move the Z-axis in the positive direction until near the end of the test bar.**

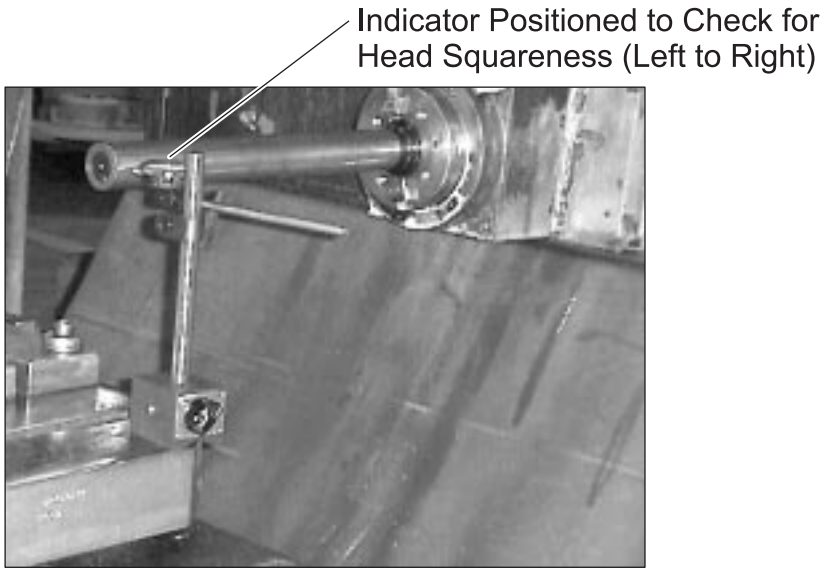


Note: Remember to observe for oscillation as you move the test bar.

4. Check the indicator reading.

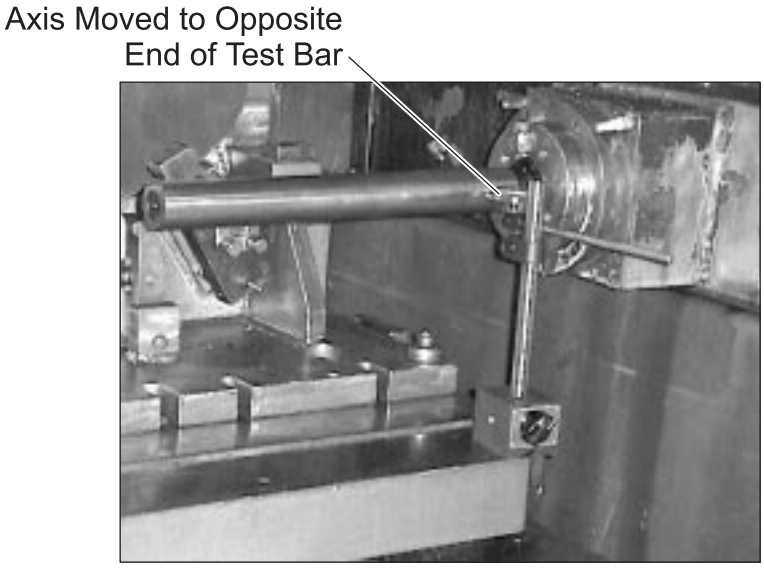
- ☐ If the indicator readings exceed .002” in either direction, perform the task BD-08: Check Machine Geometry.

5. Position the indicator on the side of the test bar as shown below.



6. Zero the indicator.

7. Move the Z-axis in the negative direction until near the end of the test bar.



8. Check the indicator reading.

- ☐ If the indicator readings exceed .001” in either direction, perform BD-08: Check Machine Geometry.