Effective Date: January, 2001 - June, 2011

SL-10/GT-10/20 - Spindle Head - Alignment

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1. Attach the spindle alignment bar to the spindle. Adjust the position of the alignment bar until the measured runout at both the base and end of the bar is less than 0.0001”. To adjust the position of the alignment bar, slightly loosen the mounting bolts and tap on the mounting end of the alignment bar.

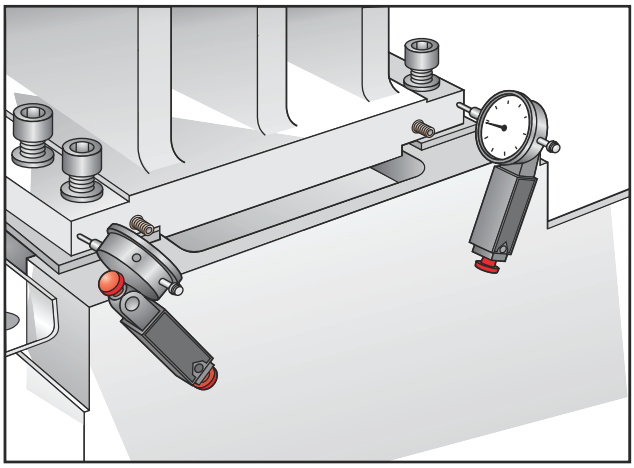
2. Loosen the eight SHCS mounting bolts for the spindle head. Back out the two set screws on the front side, lower edge of the spindle head.

3. Attach a 0.0001” dial indicator to the turret. Jog the X- and Z-axes to position the dial indicator on the side of the alignment bar.

4. Sweep down the length of the alignment bar to measure the spindle head parallelism with the Z-axis.

5. Push the spindle head toward the back of the machine. Run in the set screws on the front, lower edge of the spindle head until they contact the locating dowels underneath the spindle head. Adjust the spindle head parallelism with the Z-axis using these two set screws. The spindle head should be parallel with the Z-axis with in 0.0004”/10”.

6. Mount two travel dial indicators onto the side of the base. Place the tips at the extreme ends of the spindle head casting. Zero the indicators.



7. Attach a 0.0001” dial indicator into the end of the alignment bar.

8. Install a boring bar toolholder into tool position #1. Ensure the bore of the toolholder is clean and free of any burrs, chips, or other contaminants. The toolholder must be seated completely against the turret.

9. Jog the X-axis down to the original spindle centerline.

10. Jog the Z-axis until the tip of the dial indicator can be placed on the inside of the bore in the toolholder. Sweep the bore to measure the concentricity of the spindle head to the tool position. The toolholder bore must be concentric with the spindle within 0.001” TIR.

11. Adjust the position of the spindle head by carefully screwing in the set screws if the tool pocket is low. Loosen the set screws and push the head stock towards the back of the machine if the pocket is high. Ensure that the spindle head parallelism to the Z-axis remains constant by moving the spindle equal amounts as indicated on the two travel dial indicators.

12. Once the runout is less than 0.002” TIR, verify that the spindle head parallelism to the Z-axis is within 0.0004”/10”. Evenly torque the spindle head bolts to 300 ft-lb and ensure that all SSS in the spindle head casting are bottomed out on the dowel pins.