

# Automation

## Consultants Inc.

*"Sales, Service and Support for Modern Manufacturing"*

### **Adjusting the drawbar spacing on a 510 Colt**

The following procedure should be used to determine the size of the drawbar spacer on 510's.

1. Remove the Belleville springs and stop nut.
2. Remove the drawbar and clean thoroughly. Verify that the three 5/16 bearings are present and in good condition.
3. Remove the drawbar spacer. Reinstall the drawbar pulling it up by hand. This is done without a tool holder.
4. While holding it up by hand, measure the distance from the top of the drawbar to the spindle. This will be measurement A.
5. Repeat the measurement with a tool holder in place. This new value will be measurement B.
6. The thickness of the drawbar collar is determined by:  
 $A - B = C$   
 $C - 0.035" (0.9mm.) = \text{Correct spacer thickness.}$   
Normal range 7.2 -7.4 mm
7. Install the Belleville springs and stop nut. Tighten the stop nut to obtain the following values between the bottom of the nut and top of the spindle.  
4,000 / 6,000 RPM = 2.363" (60mm)  
10,000 RPM =2.011" (51.1mm)
8. Reinstall the clamp/unclamp cylinder. Measure the gap between the cylinder and drawbar. Adjust the shims on the cylinder to obtain a gap of .019" (0.5mm) when no tool holder is in place.
9. Remove the hose for air blow to prevent air from blowing when unclamping. Confirm that the tool holder is pushed out when unclamping. The knockout value should be .035".

If the tool holder is not pushed out check the following:

1. Incorrect draw bar size.
2. Clamp/unclamp cylinder stroke is inadequate.

The Belleville spring clamp force is 1,720 psi (780 Kg)

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