

## **--Machine Issue? Or Tooling Issue?--**

**Follow these 6 steps to determine the origin of your problem:**

1. Touch off the tool in question and write down the tool tip reference position.
2. Remove the tool from the spindle and loosen the retention knob.
3. Re-tighten the retention knob, this time only finger tight, do not torque the knob.
4. Reload the toolholder in the machine.
5. Touch off the tool again and write down the tool tip reference position.
6. Compare the readings. If the numbers are different, the difference is the distance the toolholder stops short of full engagement with the spindle. If the numbers are the same, your toolholder is properly engaged with the spindle. Re-tighten the retention knob; no other adjustments need to be made.

**If tooling is the issue, High Torque Retention Knobs are the solution.**

Order Ht Knobs today.

Call (800)322-7750 or visit our website, [www.jmperformanceproducts.com](http://www.jmperformanceproducts.com).

**JM Performance Products, Inc. is the industry leader in milling machine optimization. Our toolholder test can be used to determine if manufacturing problems are a result of a machine issue or a tooling issue. If you have tools that are not running at their optimal level, give the test a try and let us know your result. Contact us at (800) 322-7750, for more information.**



### **High Torque Retention Knobs**

**Insures full engagement of the toolholder in the spindle**

- » Increase productivity 10-30%
- » Reduce chatter and harmonics
- » Reduce set-up times
- » Increase spindle life
- » Improve finishes
- » Reduce run-out

**JM PERFORMANCE  
PRODUCTS, INC.**

*The Industry Leader in  
Milling Machine Optimization*