A Rotary Table Tailstock, version 1.0

By R. G. Sparber

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After setting up my 8 inch rotary table to be the drive for my 4th axis[2], it was time to figure out the tailstock. I could buy one on eBay for around $100 including shipping, I could make one from scratch which would take a few days, or I could adapt something I already owned. A bit of hunting turned up my 5C collet spinner. It is a solid enough casting. I just needed to set the height correctly and come up with the dead center to go into a collet.

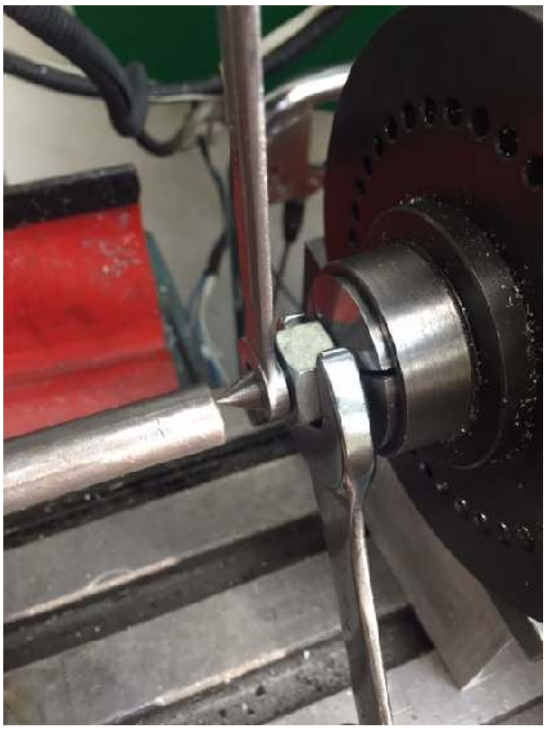
I started with a block of aluminum which was milled top and bottom to set the center of rotation of the spinner even with the rotary table's center of rotation.

Then I had to figure out how to make a dead center that could be tightened into the workpiece it was to support.

[1] You are free to distribute this article but not to change it.
[2] See http://rick.sparber.org/AAD.pdf

Since I wasn't sure this idea would work, I made the adjustable dead center out of ½ inch diameter CRS. I may later make one out of drill rod and harden the point.

The rod was put on my lathe and the point turned. Then I single pointed the ½ - 13 threads and followed up with a die. Moving over to the mill, I cut two flats near the point that were slightly under 5/16 inch apart.



The dead center is mounted in a ½ inch collet in the spinner. I put a 5/16 inch wrench on the flats and a ¾ inch wrench on the nut. The nut is in contact with the nose of the collet. By turning the 5/16 inch wrench, I can jack out the dead center into the work piece. And finally, the collet is tightened.

See http://Rick.sparber.org/4AA for how I am able to align this tailstock to the rotary table.

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