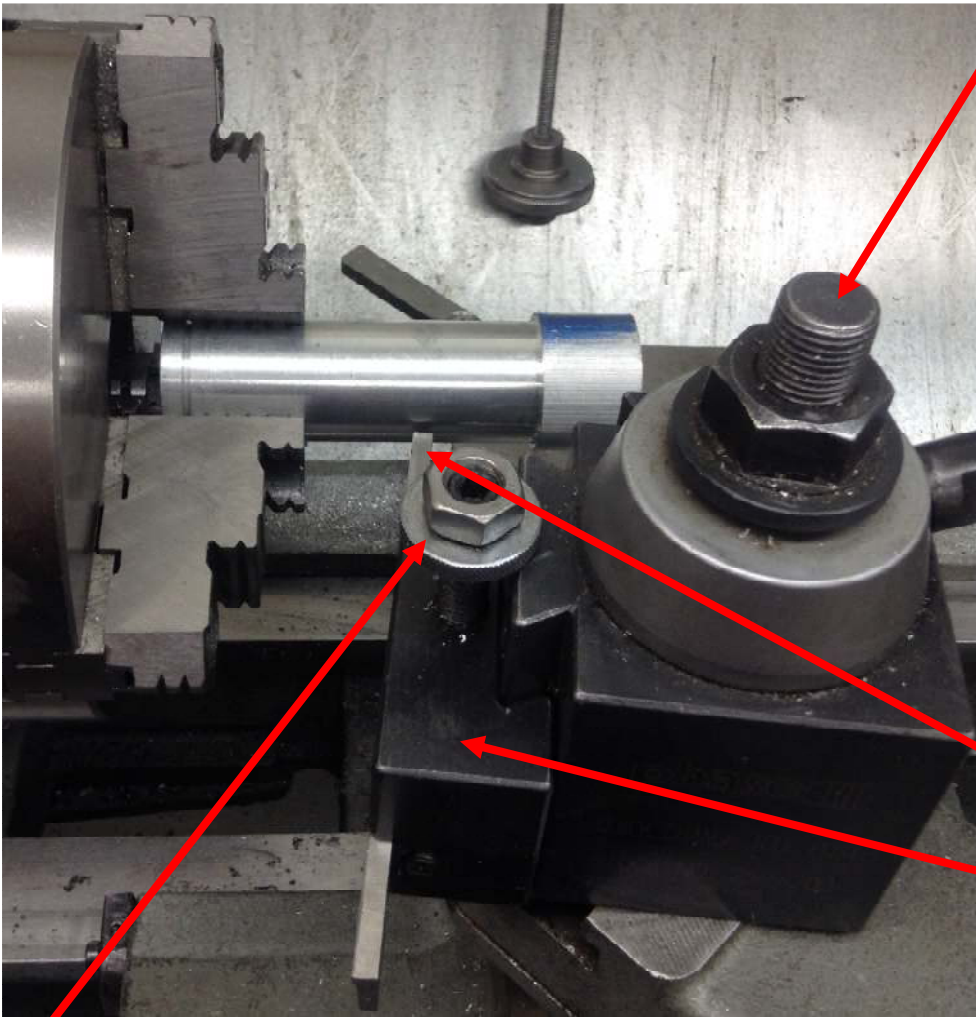


# A Low Cost Quick Change Tool Post Angular Stop, version 1.0

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By R. G. Sparber



My Phase II BXA Quick Change Tool Post is all I use on my lathe. It is very easy to change tooling yet is nice and solid.

In case you never heard of a BXA Quick Change Tool Post (QCTP), the basic idea is that each cutter is locked into its own tool holder. The tool holder has a built in

vertical stop. Once you have set the height of the cutter and locked this stop, it is a simple matter to slide off a tool holder and drop on another one. The cutter height is just as you left it.

The more expensive QCTPs also have an indexing base which lets you rotate the QCTP with respect to the lathe's center of rotation by known increments. My QCTP freely spins around when the center bolt is loose. As you can see, above, I want to use a cut off tool but my QCTP is not set at 90°.

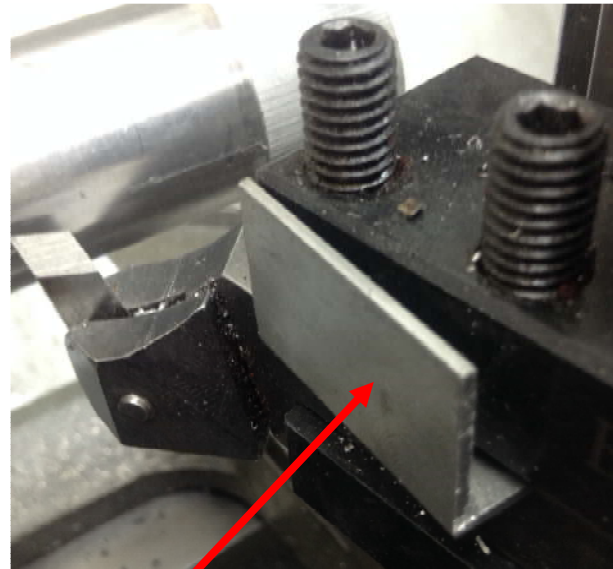
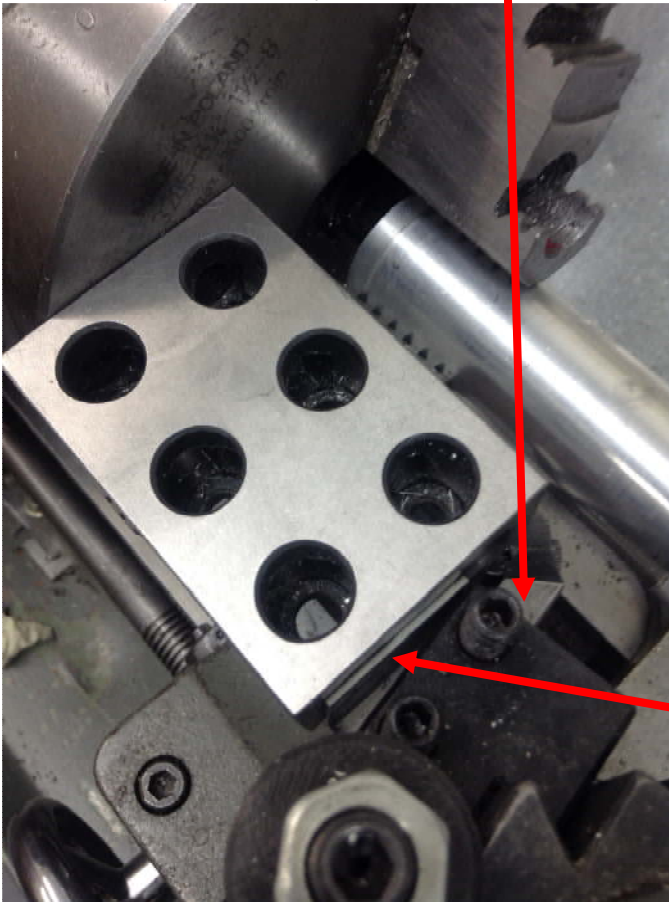


An elegant trick I learned when I got my QCTP is to place a 1-2-3 block on one of the jaws of the chuck. Then slide the QCTP's face into the block and tighten the top bolt. The QCTP is now parallel to the chuck face so perpendicular to the center of rotation.

This is a great method of aligning the QCTP if that is the angle you need. But I have other cutters and they are not set to 90°.

My solution is to "finish the job" of the tool holder. It already sets the cutter height. Why not have it also set the angle of the cutter with respect to the center of rotation?

Here you see my left hand Diamond Tool Holder<sup>®</sup>. I'm using my 1-2-3 block to align it.



A closer look reveals a piece of thin aluminum angle stock<sup>1</sup> which is captured between the front two set screws and the cutter.

This angle stock is my *angular stop*.

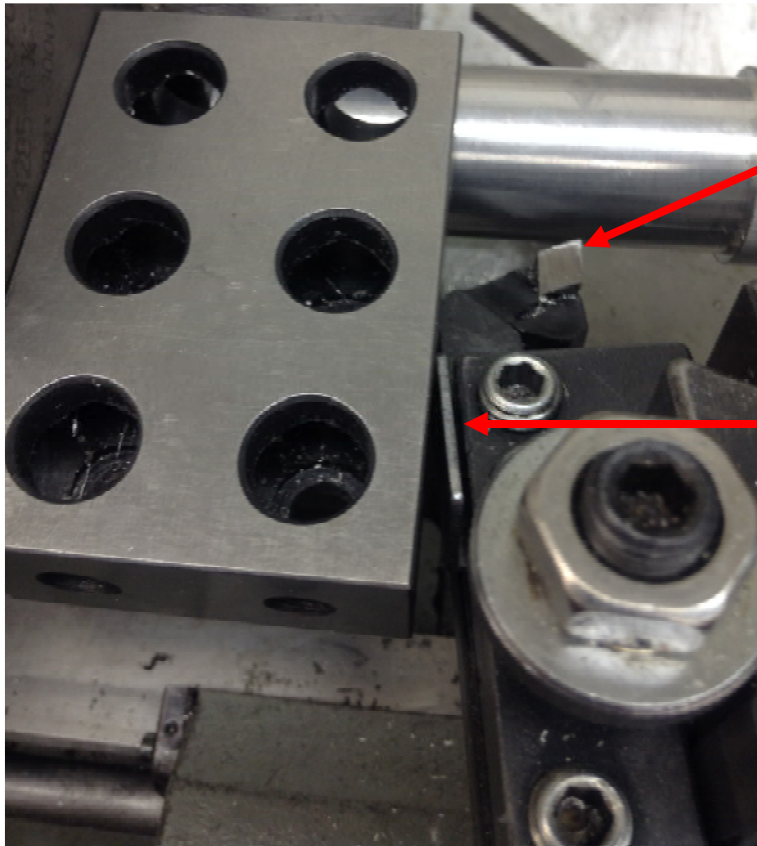
The angular stop was initially positioned by adjusting the QCTP for this cutter. Then the 1-2-3 block and angle stock were installed. With the angle stock touching the 1-2-3 block, the set screws were tightened. It may be advantageous to cut some of the horizontal part of the angle stock away in order to minimize overhang.

With the angular stop installed, I can now change cutters with less fuss. I

1. Unlock the tool holder and remove the first tool holder
2. drop in the new tool holder and lock it to the QCTP
3. loosen the center bolt
4. put in my 1-2-3 block
5. slide over the QCTP until the angular stop touches the 1-2-3 block
6. tighten the center bolt
7. remove the 1-2-3 block.

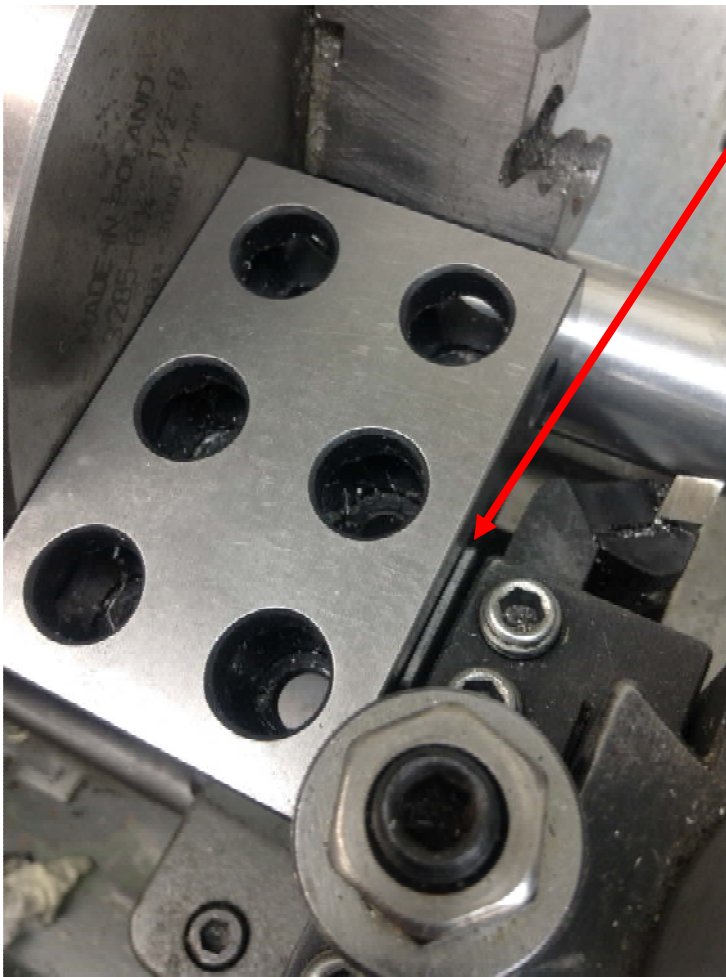
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<sup>1</sup> I used aluminum because that is what came out of my junk pile first. Some may prefer steel.



Here is my right hand Diamond Tool Holders. The QCTP was set for my left hand cutter so is now at the wrong angle.

See the angular stop clamped between this cutter and its tool holder.



I loosened the center bolt on the QCTP, moved the QCTP such that the angular stop touches the 1-2-3 block, and tightened the center bolt.

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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