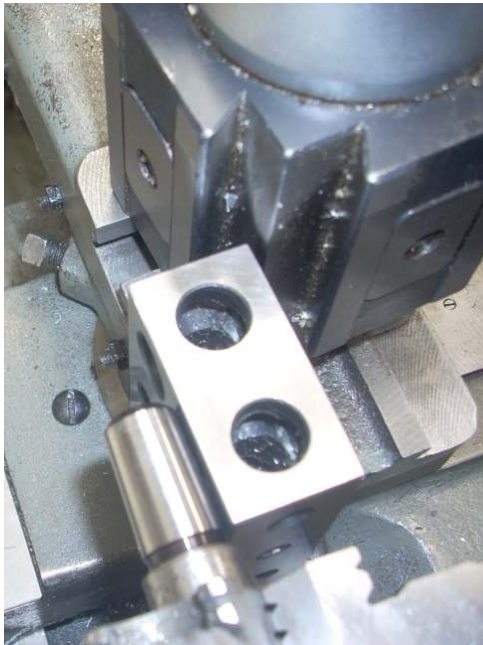


Setting the Compound to Match a Taper, Round 2 version 2

By R. G. Sparber

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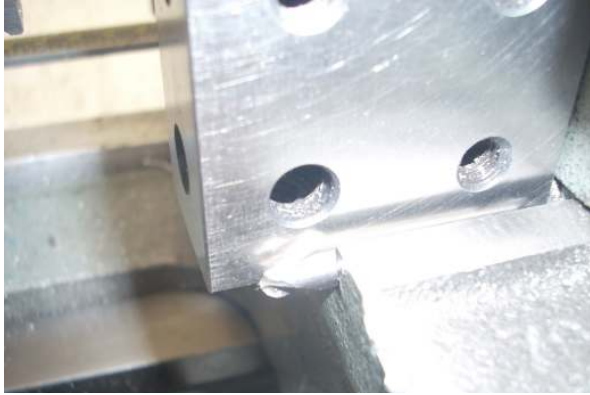
Round 1 was employing a Dial Test Indicator and math to set the compound of a lathe to match a known taper. This time I will show a method that uses neither. I was given this approach by Neil Butterfield of the Valley Metal Club. My contribution was to do it without making anything new.



I am using a 1-2-3 block to align the ways of the compound to the taper. When no light is seen between the block and the taper, I lock the compound into position.

There is a bit more to this story. First of all, I am assuming that the compound's ways define the motion of the cutter clamped to the tool post. I figure that if this was not true, the ways would jam. Second, I reference the 1-2-3 block to the dovetail and not to the upper lip of the dovetail.

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You can see a centering drill set into the dovetail. The 1-2-3 block contacts it.

The goal is to keep the 1-2-3 block in contact with the drill bit, the bottom machined surface of the ways, and the taper at the same time. I found this easier than trying to rig up a clamp for the block.

Now, the obvious question is - how accurate is this method?

To answer, I used my DTI to measure how much the compound's angle differs from the known taper. With the DTI secured to the tool post, I set the DTI's finger to the center of rotation of the lathe. I used a spud held in a drill chuck mounted on my tail stock as my alignment point.

Then I ran the DTI along the known taper and saw a change of around 0.001" per inch.

I repeated the procedure a few times and always ended up with this amount of error. So it seems that is the limit of this method.

I welcome your comments and questions. All of us are smarter than any one of us.

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