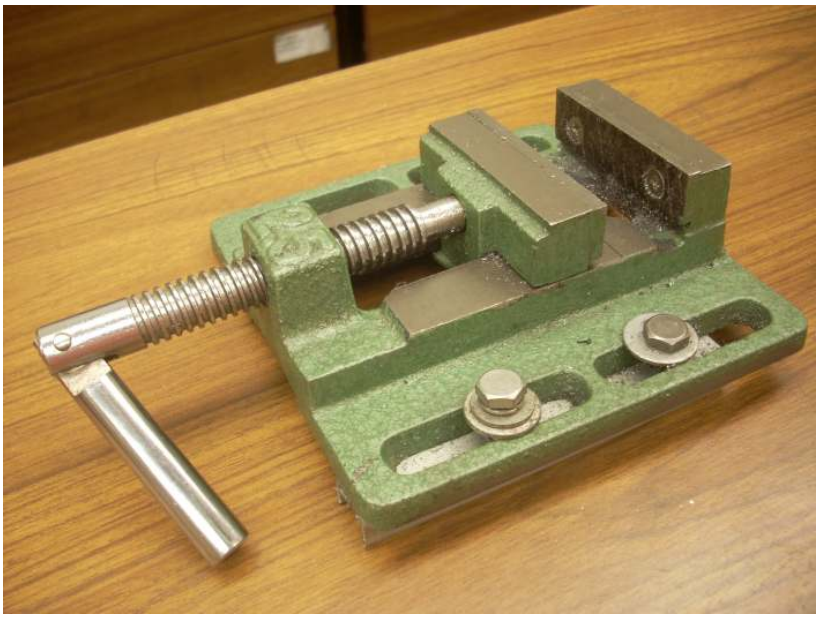
Cutting it A Bit Closer

By R. G. Sparber

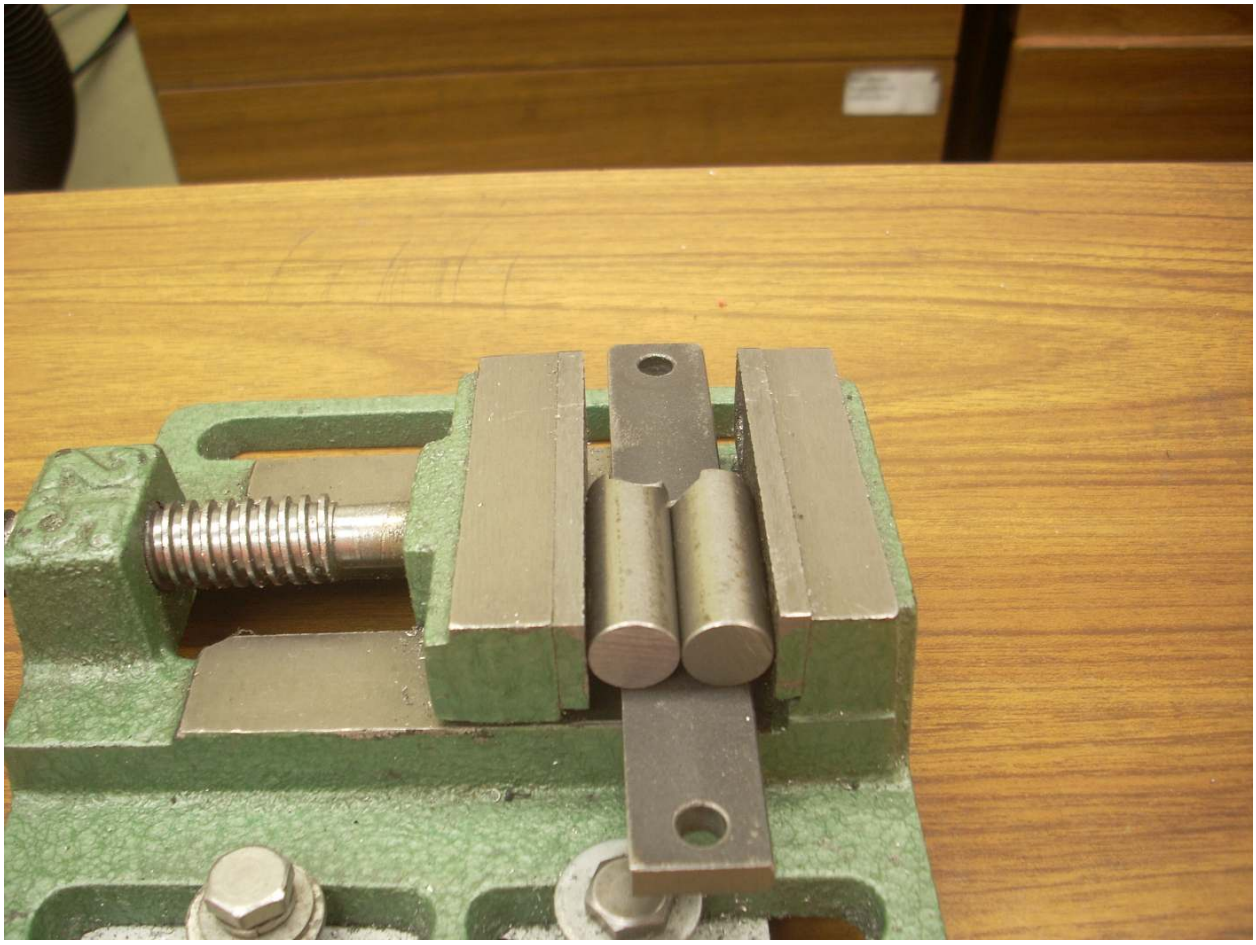
Recently I needed to cut a cylinder longitudinally along its diameter on my horizontal/vertical bandsaw. The cut was not critical but I did want it to look good. I was off by maybe 0.02" which was serviceable but certainly not pleasing to the eye. That got me thinking, how can I better align my blade for a closer cut. Here is how I did it.

To hold the work piece I used a drill press vise from Harbor Freight®. One side has been raised up about ½" so when the bandsaw blade is down on the vise ways, it is in full contact. This is a very handy trick that I picked up on some gifted Japanese craftsman's web site.

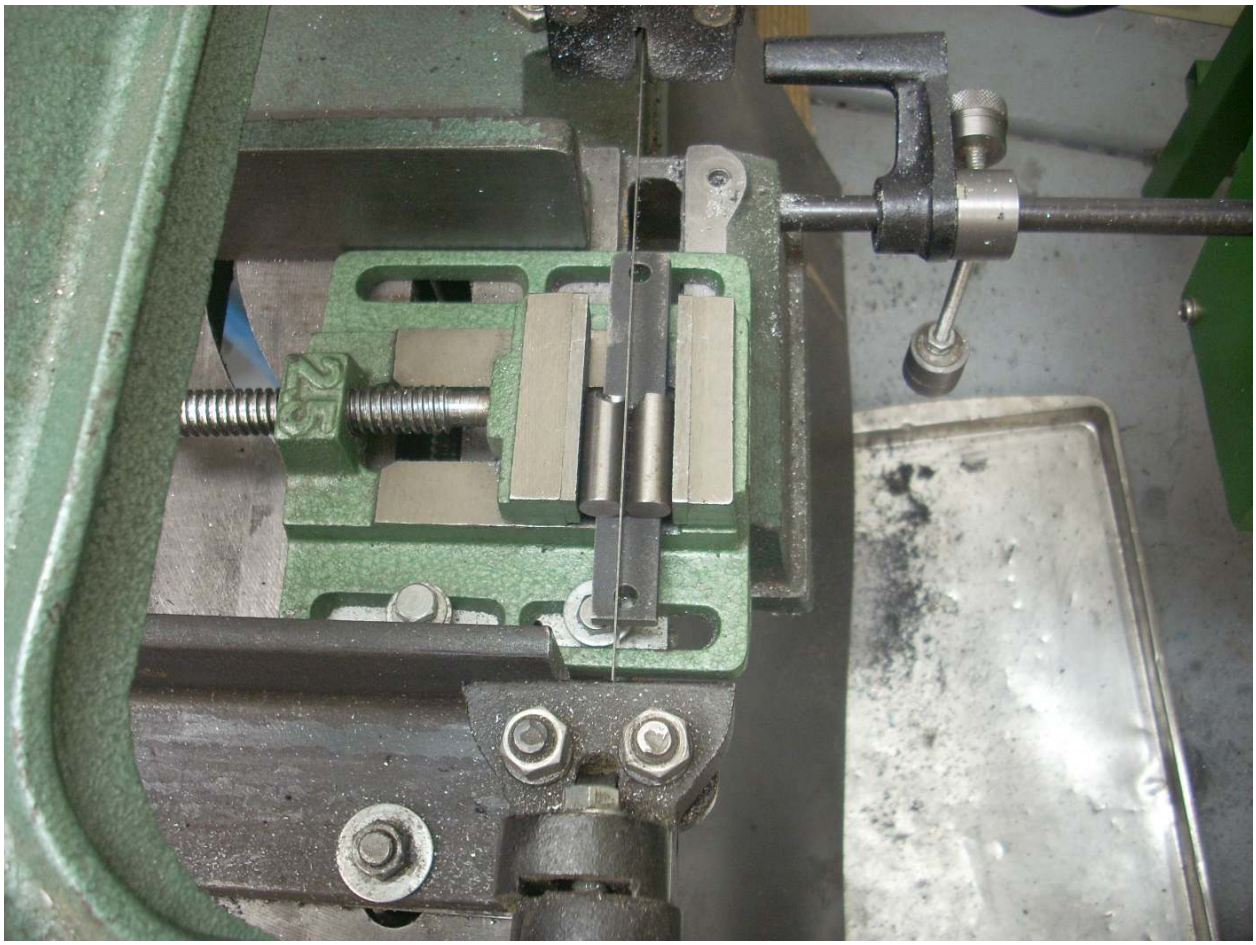


My cylinder was 1" in diameter so I want the center of my blade to be ½" from the fixed jaw. Typically, I do this by eye but it is hard to see in there so my results are not that great.

[1] You are free to copy and distribute this document but not change it.



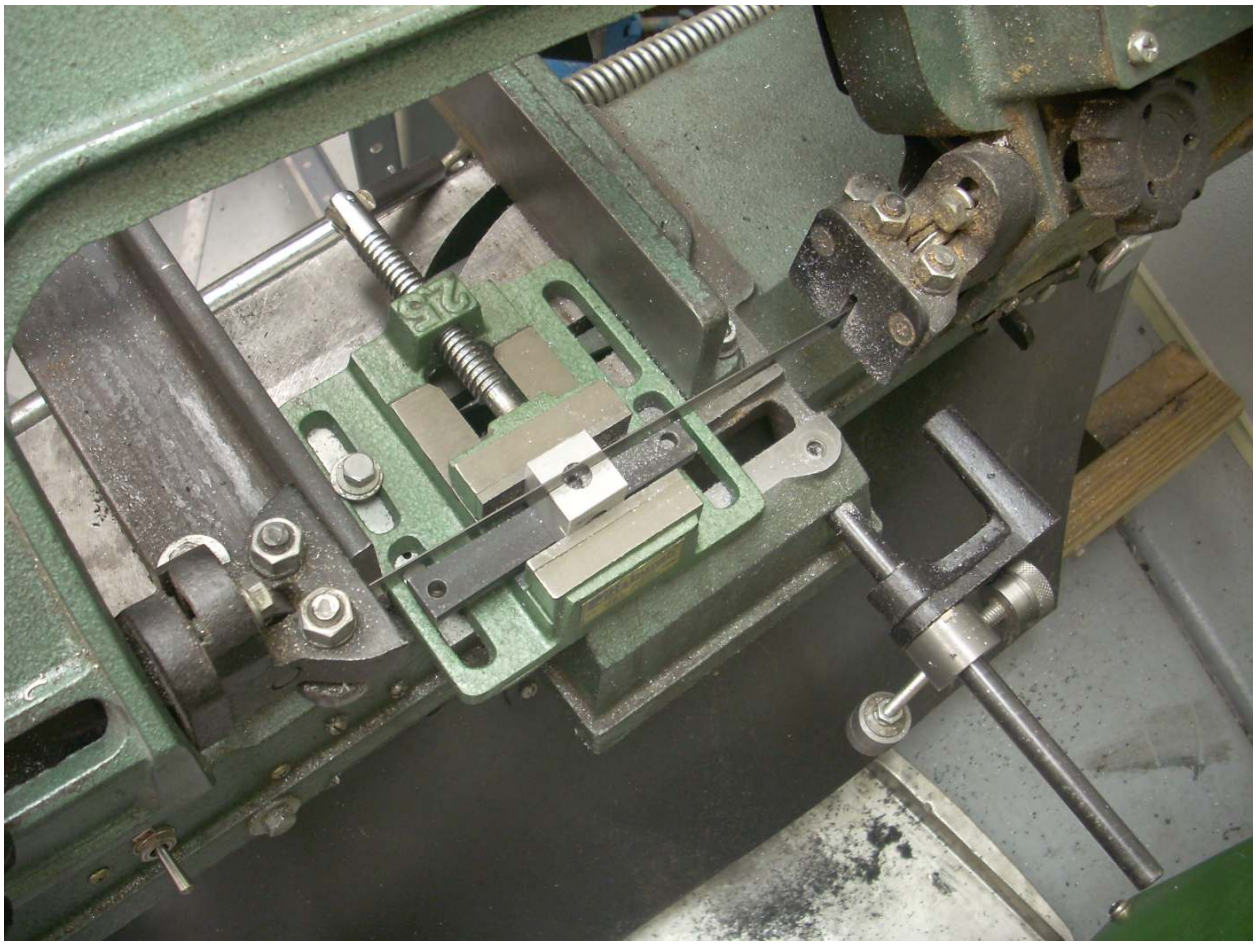
I started by clamping two pieces of ½” round stock in the vise. The bar was necessary to prevent the right bar from falling in the gap between vise ways and fixed jaw.



I then placed the assembly in my horizontal/vertical bandsaw vise so it could still slide side to side. With the saw off, I lowered the blade into the gap between rods. With a little wiggling, I could feel it drop in.

Next I raised and lowered the blade into this gap. I could hear a faint twang as the blade was deflected by one of the rods. I slightly moved the inner vise, and continued to raise and lower the blade until there was no sound. Then the saw's vise was tightened.

This procedure should put the center of the blade "very close" to ½" from the fixed jaw's face.



To test my alignment, I put a block of aluminum in the vise and made a cut about 0.1” deep.

I then remove the test block and measured the distance from the face that contacted the fixed jaw to the nearest edge of the saw kerf. It was 0.475”. I then used a pin gage to measure the saw kerf which came out to 0.040”. And lastly, I measured the diameter of each rod used during the alignment. They came out to 0.497”.

The distance from the face of the block that contacted the fixed jaw to the center line of the kerf was $0.475” + \frac{0.040”}{2} = 0.495”$. That compares almost too well with the diameter of the rod at 0.497”.

Now, I know this is not a proof, but it does demonstrate that I can set the inner vise a lot better with this procedure than by eye.

I welcome your comments and questions.

Rick Sparber
Rgsparber@aol.com
Rick.Sparber.org