

Adjustable Depth Of Cut Stop for 4 X 6 Horizontal/Vertical Bandsaw, version 1.2

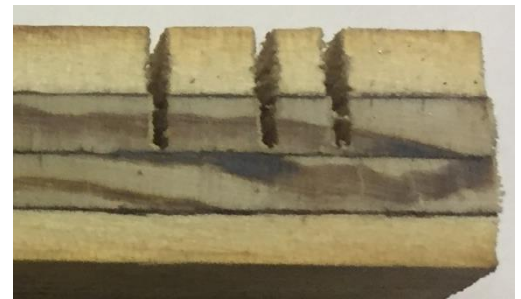
By R. G. Sparber

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I use my 4 × 6 bandsaw a lot. It therefore makes sense that I am also thinking up ways to make it run better. My latest addition is an adjustable Depth Of Cut Stop (DOCS).

Most of the time, I just want to cut through the stock. But sometimes I want to stop part way down.



My eyes are focused on the blade and stock so I want any adjustment to be nearby. It must also be easy to set.

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This is what stops the arm when in the horizontal mode.



With the arm down, part of the casting near the bottom wheel rests on the bolt head.

Seems like a good place to add a depth stop.

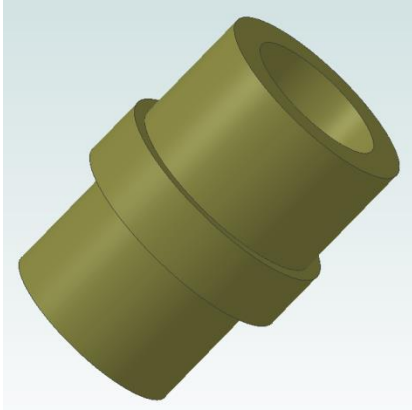


Here is the finished part in the maximum height position.

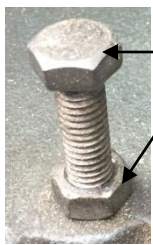
When turned all the way down, the top of the bolt head is flush with the top of this threaded aluminum sleeve.



At maximum height, the blade stops about an inch above the table. This should address most of my needs.



The threaded sleeve was cut to fit and was modified as I went along.



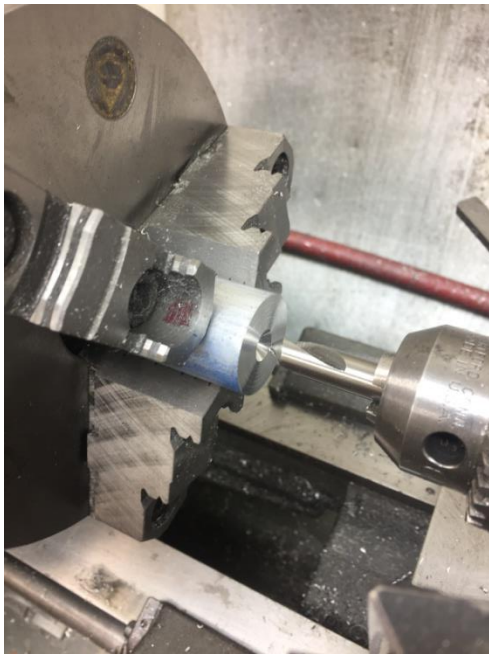
First I measured the distance from the top of the bolt head to the top of the nut. It came out to about $1\frac{1}{2}$ ". This determined the overall length of my stock. I also measured the maximum diameter of the bolt head and found a piece of aluminum $1\frac{1}{8}$ " in diameter that offered a reasonable wall thickness.



Of course, my first stop was to my trusty 4 × 6 to saw off the stock.



I took the blank over to my lathe and faced off the first end. Before removing it, I used a file to deburr.



The second end was then faced followed by center drilling it.

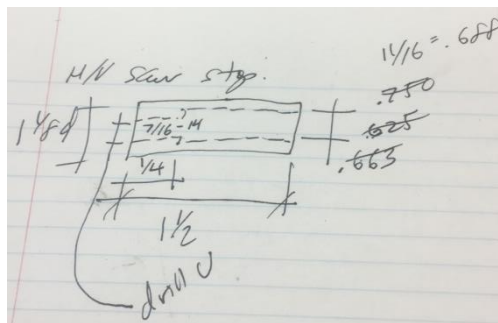


My bolt has a $\frac{7}{16}$ - 14 thread so I through-drilled with a U drill in preparation for tapping.

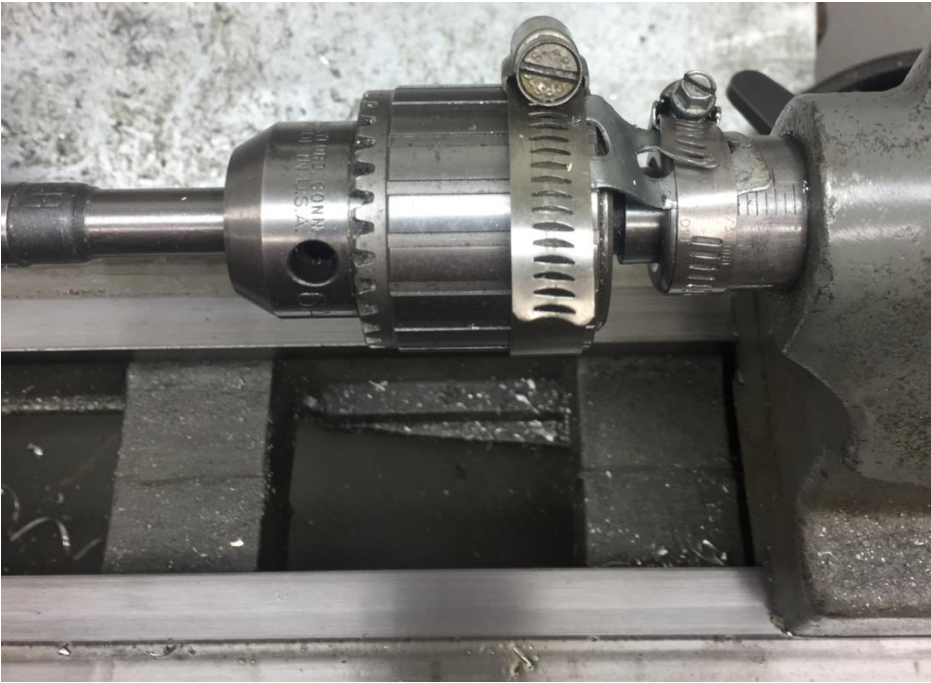


Using a $\frac{1}{2}$ " drill, I went in $1 \frac{1}{4}$ " inches. This left me $\frac{1}{4}$ " to thread.

My original plan to was just clear the points of the bolt head but that would have meant boring the hole out to 0.663". Too much work. So instead I drilled out with my $\frac{5}{8}$ " drill. I had a $\frac{3}{4}$ " drill but that would have permitted the sleeve to wobble. Then I realized I had an $\frac{11}{16}$ " drill so opened out to 0.688".



No shame in changing the design on the fly.



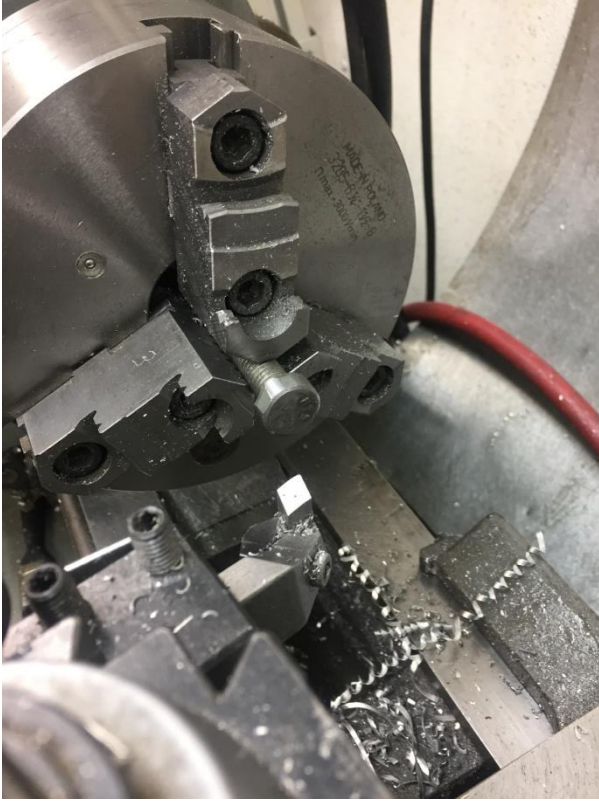
I've had problems in the past with the drill chuck pulling out of the tailstock during heavy cuts. Adding these hose clamps and the strap has solved that problem.



I used my $\frac{7}{16} - 14$ tap to cut the threads in the bottom of the sleeve. The lathe was put in back gear to lock the chuck. Naturally, I forgot I did this and was reminded with a loud squeal from the belts when I applied power again.

Here is the part so far.



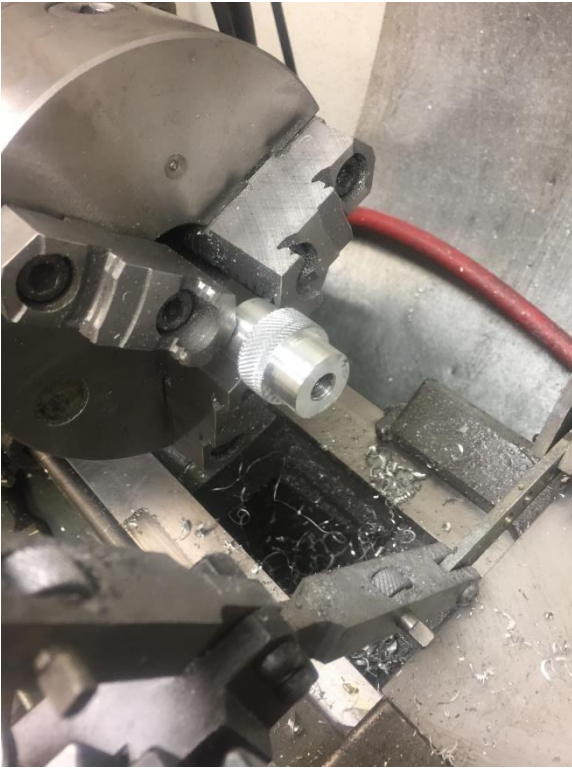


The points of the bolt head prevented it from sliding down the bore of the sleeve. I chucked up the bolt and took a series of light cuts on the head's outside diameter. The result was better than expected because I was able to achieve a nice sliding fit between the bolt head and bore. This kept the sleeve from wobbling on the bolt.

Next, I trial fit the bolt and sleeve on the saw. The top outside lip of the sleeve hit the lower saw blade wheel. OK, turn the sleeve down a little.



Solved that problem so could be done. But the new shape suggested that I could reduce the diameter of the other end and knurl the larger diameter section.



The actual outside diameters were not important. I just needed a larger diameter to give the knurled surface crisp edges.

A second fitting of the sleeve showed it was a little too tall. Back to the lathe to trim off about 0.1". Cut and try is part of the job.



With the sleeve all the way down, the blade just kisses the plane of the table.





With the sleeve all the way up, the blade is about 1" above the table.



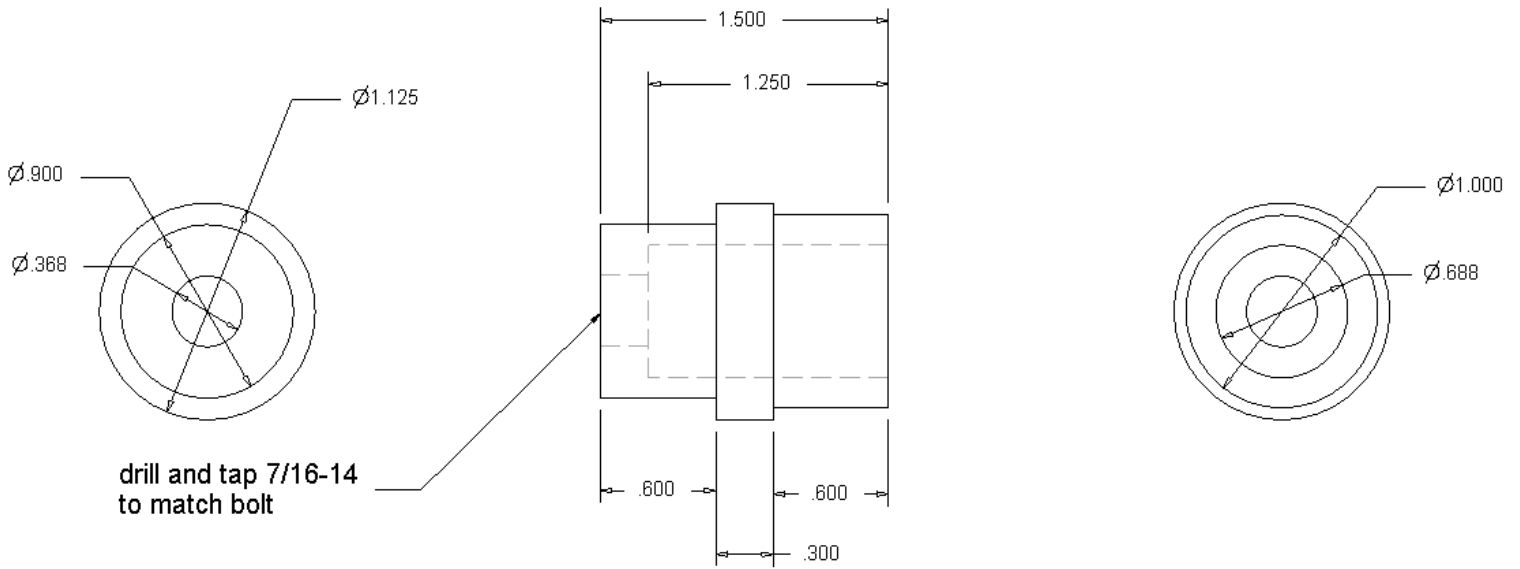
Is this good enough? Don't know but I think it will handle most of my needs.

The fact is that the threaded sleeve idea has this range and can't do any more.

To use the Depth Of Cut Stop, I first lower the blade down to where I want it to stop. Then I spin the DOCS up until it can't turn anymore. During sawing, the arm will come down until it contacts the DOCS and just hangs. Yup, that is what I want.

Not that the design is precise or universal, but here is my shop drawing. I drew it up for this article. My hand sketch was good enough to get the job done.

Material: aluminum
Quantity: 1



John Herrmann built this stop and discovered it could not be raised enough for his needs. His solution was to make an extension that simply drops on top when needed.



Since it is tethered to the saw, it can't be lost. Well done, John!



Acknowledgment

Thanks to Dave Kellogg for finding what should have been an obvious typo but was not. Thanks to John Herrmann for the improvement to the design.

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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