Comparing a Wimberley Toolholder with a Diamond Tool Holder, Version 2

By R. G. Sparber

Background

I have been the happy owner of a Diamond Tool Holder for over 10 years. If I need to face or turn an outside diameter, it is my tool of choice. Recently I was given a prototype Wimberley Toolholder plus associated documentation in order to evaluate it in my shop. Thanks go out to David Wimberley for this generous gift. Understand that he did not expect anything back from me but an honest review.

Conclusion

Don't expect the Wimberley to cut any different than the Diamond when it comes to facing or turning outside diameters – they have different geometries but work about the same. The advantage of the Wimberley is in forming the cutter and resharpening it. The Diamond uses a special fixture that comes with the tool holder. It works well but you will spend a lot of time removing HSS before you get the proper shape. The Wimberley takes a lot less time and effort plus there is no need for a special fixture as long as you are using a Quick Change Tool Post system.

The Diamond has a second cutter design that enables single point threading. The Wimberley design does not.

Once the Diamond or Wimberley cutters are formed, there really isn't much difference it cutting action compared to a conventional cutter in a standard toolholder.

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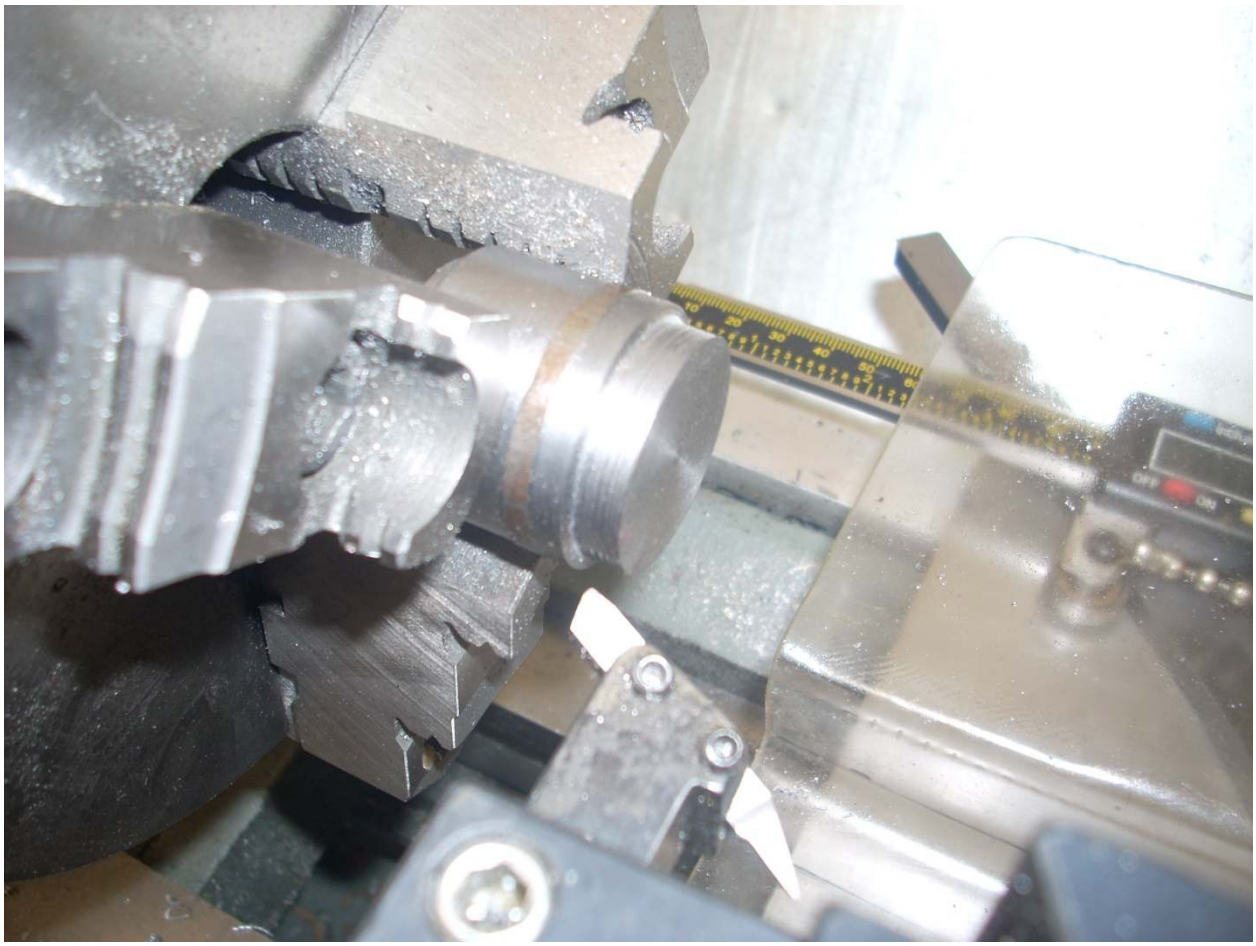
I have evaluated using the Wimberley Toolholder and making a new cutter. I will not comment on the documentation because I received an early draft.

Using the Wimberley Toolholder and Cutter

Let me refer to the Wimberley Toolholder and Cutter as the Wimberley System.



Here you see a simple facing and turning job performed with my Wimberley System. Had I used my Diamond Toolholder and cutter, the part would have looked the same.

Making the Wimberley Cutter

First I want to say a few words about nomenclature. The cutter is held by the toolholder. The toolholder is in turn held by the toolblock. In operation, the toolblock is held by the Quick Change Tool Post.

There are a few ways to form the cutter. The easiest is with a Carbide Grinder which I just happen to own.

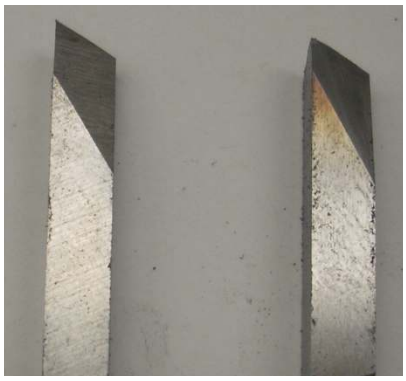
Here you can see me grinding the cutting edge used for turning. I am using a block behind my toolblock to set the angle with respect to the small slide angle support that came with the grinder. It took a little trial and error to figure out how far to stick out the HSS blank so the toolholder clears the wheel. One thing that makes it easier to grind the Wimberley cutter is that it is 3/16" x 3/16" so is smaller than the Diamond's ¼" x ¼" cutter. I didn't notice any difference in rigidity during my 0.05" deep cuts. Forming the cutter took me under 10 minutes starting with a

blank of HSS. Doing the same task for a Diamond cutter would take me around 30 minutes of hogging. The reason it took this long was that I held the cutter blank in my fingers. When it was too hot to hold, I let it air cool. I now understand that I could have held the blank in some pliers and got it rather hot without hurting it.

I expect that re-sharpening the Wimberley cutter would take less than 2 minutes while doing the same on the Diamond might take 10. However, the Wimberley requires that I set two angles on the grinder while the Diamond only needs one.

My First Wimberley Cutter

On the left is a top view of the cutter given to me by Mr. Wimberley. On the right is my first attempt at making my own.



Here you can see the cutting edge used for facing. The one on the left is from Mr. Wimberley while the one on the right is mine.

This is a front view with the one on the left being Mr. Wimberley's and the one on the right being mine.

I don't see much difference between cutters.

The one place I diverged from Mr. Wimberley's grinding procedure is that I used a stone to get the radius of the point. It just took a few passes with the stone and looked fine. It also cut acceptably well as you can see on page 1.

What's Next

Mr. Wimberley gave me a second cutter which I have tested but not documented. It has a rather unique geometry and cuts well. I may document this second cutter in the future.

Mr. Wimberley indicated to me that he may offer his Wimberley System for sale. I hope he does so as this design is certainly an advancement in the art.

Acknowledgements

Thanks to Corey Renner who pointed out this opportunity to receive a cutter and holder. I wish to thank Mr. Wimberley for giving me this cutter system. It will be a nice addition to my shop. I also wish to thank Larry Gill for editing this article.

Thanks to Daniel Remer for pointing out the excessive time to grind the Diamond cutter blank.

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