

Sharpening Gravers for WW Lathe Work

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Most of the time I use HSS for my gravers – reserving carbide for very hard steels. The steel is ordered as 1/8” square lathe tools. The majority of the work that I do is on nickel silver and brass so the HSS with or without cobalt added works fine. I mount these lathe tools in aluminum holders. This allows quickly changing tools as required for the task at hand and a firm grip on the tools while at the lathe.



These handles are like super sized pin vises. The tips work like a typical collet. Here is a view of the ends.

I have found that four of these handles are all that I require.

They are durable and will last for years if a little grease is applied to the inside of the collet closer now and then to prevent wear.

Pictured at the right is one lathe tool before shaping the tip.

A small block of wood with a number of holes will easily hold all of the sharpened tools without any damage to the tips.





I usually use my old Glendo power hone with an assortment of diamond laps for sharpening. These hones run at a slow speed to prevent any possible overheating. An important part of the equation is the precision tool holder which holds the tooling at the desired angle for grinding.



Shown here are the three grits of diamond laps that I use - 260, 600, and 1500. The power hone and diamond laps are relatively expensive but I am fortunate to live where “deals” can be found on diamond laps during the annual Tucson Gem & Mineral Show in February each year.



The tool holder or sharpening fixture that I prefer to use is also an old Glendo item.

The angle setting holder slides down onto an upright upon which it can pivot.

I have had and used this setup for close to 40 years with no problems.

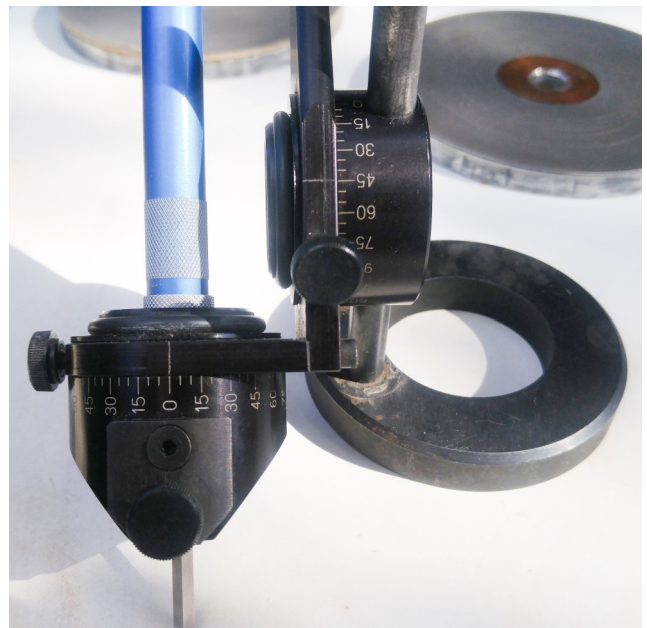
It is reliable and repeatable in its operation.

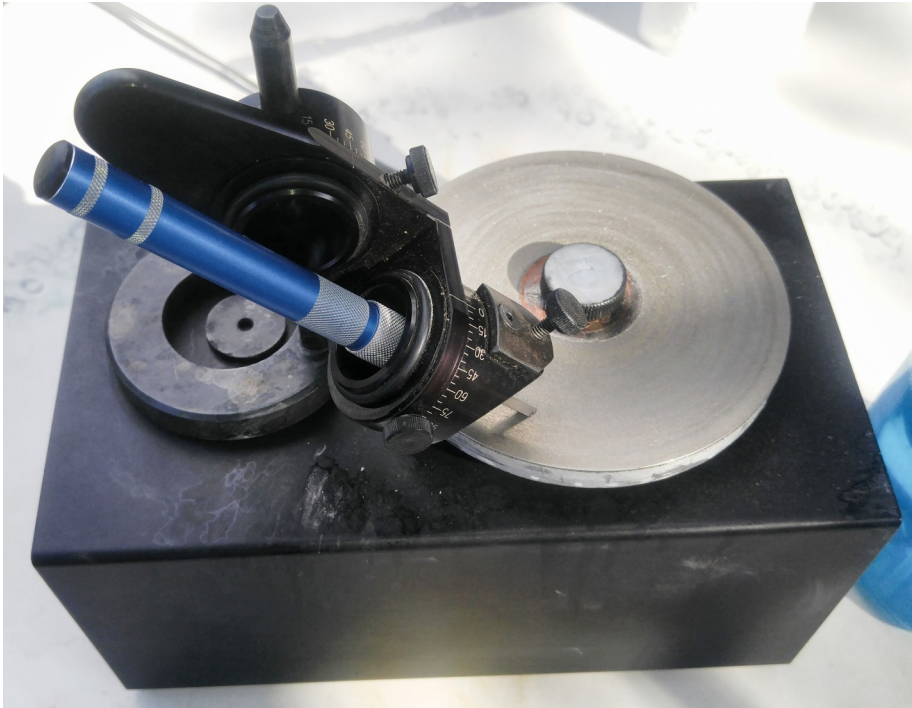


Here is a closer view of the setting circles.

In operation, the tool can be sharpened or touched up while still mounted in the handle. It is firmly gripped within the sharpening fixture and held at the desired angle.

As shown at the right, the fixture is set to grind the traditional diamond point for lathe work.





In use, the fixture base sits on the motor unit positioned so that the tool to be ground may be freely swung back and forth as the lap grinds the tip.

This back and forth motion helps to prevent uneven wear of the lap surface.

I spray the lap with Windex while grinding to wash away the steel or carbide particles. Doing so prevents clogging of the lap.

Shown here is the lap grinding away from the tip. The tool may be swung to the other side of the lap for grinding

into the tip which helps prevent edge burrs.



Here is a closer view of the action.



I like to place the fixture ring base on top of several neo magnets to hold it in position.

This back and forth grinding is done with each grit until the tip is as needed for lathe work.

I should note that I freehand rough grind the tip on a bench grinder before using the power hone.

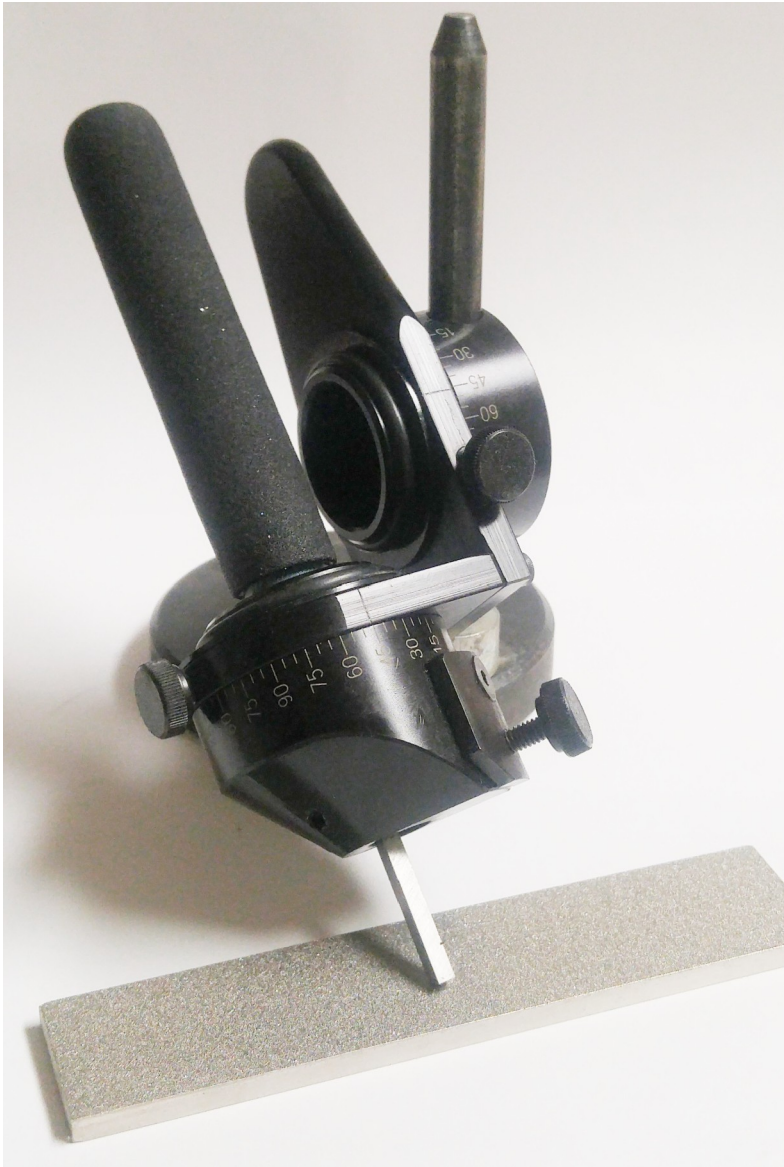
The reflection of the finished tip may be seen to the right.

Three finished tools are shown below.



A less expensive option is to obtain several grits of diamond sharpening bars.

This assortment includes 200, 400, 600, and 1200 grits.



This is the setup for sharpening by hand. The flat diamond bar gets sprayed with Windex and the tool is moved back and forth in an arc.

As with the power hone, all grits are run through.

When I want an absolute mirror finish on the tip, I quickly touch it to a PSA disc (grit measured in microns) on the power hone. I merely stick these discs to an extra lap and spray with Windex.

This mirror finish takes only seconds.