WOODTURNING FUNDAMENTALS:

Unfinished Business—Finish Sharpening Your Tools

Tim Heil and Mark Palma | March 2024

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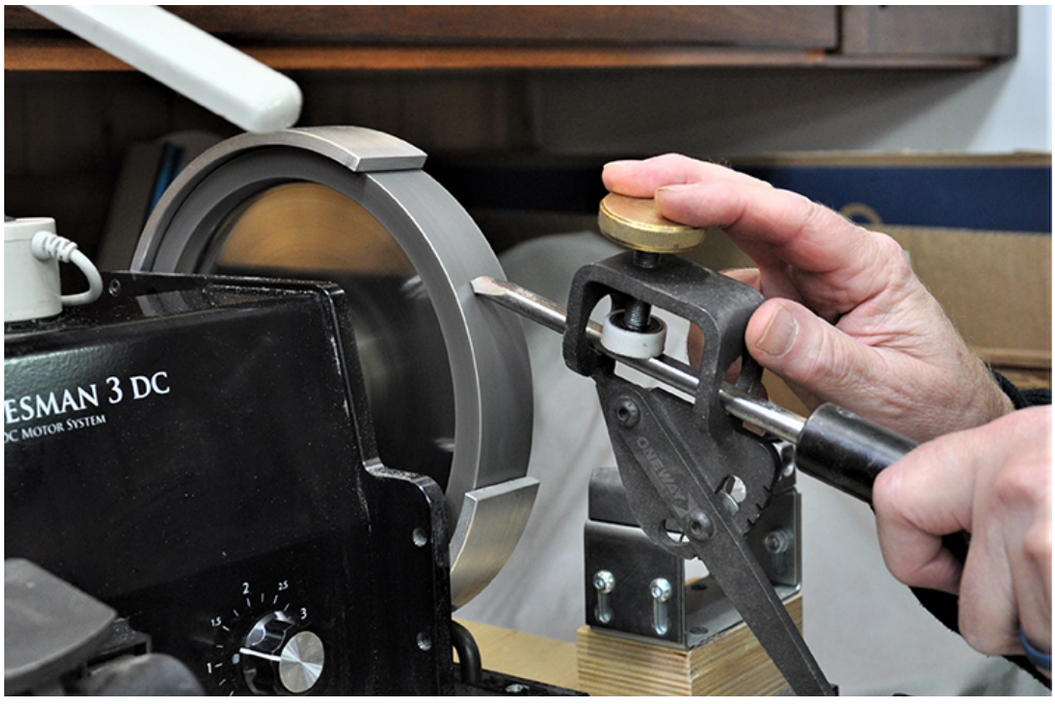

Sensing a dull tool, you shut off your lathe, mount your tool in a sharpening jig and take the steps to put an edge back on the tool. You're good to go back to work, right? You've made a great start towards an optimally sharp tool, but there is more you can do to elevate sharpening to a higher level. The sharper the tool, the better the cut. Here are the steps to achieve the ultimate edge and the ultimate cut.

A sharp tool edge is created where two metal planes intersect. Skew chisels and most parting tools illustrate this concept, and we intuitively recognize that sharpening both faces of the cutting edge is essential for a sharp tool. When we take a bowl or spindle gouge or a scraper to the grinder, we address one edge. A series of simple techniques that address both faces will enhance the edge that subsequently comes off the grinder.

Skew

Sharpening any tool on a grinder leaves a fine burr on the top edge of the tool. On skew chisels (and gouges) that burr will scratch the wood. Honing removes the burr and polishes the edge to slice wood cleanly, leaving a surface that may not need any sanding.

This is an important step with a skew, which works most efficiently when it is incredibly sharp. Left intact, the burr acts to dull one side of the skew. To remedy this, some turners hone away the burr with a sharpening stone or diamond card. A strop also works. Barbers have long known the secret of stropping to sharpen a razor's edge.

Most woodworkers use a fine green honing compound (chrome oxide) that adheres well to leather and leaves a mirror finish. Use only one type of compound on your strop, as mixing compounds is akin to combining multiple grits into a single sheet of sandpaper.

To use a strop, set the bevel of your tool on the far end of the strop and draw the tool back towards you, maintaining a consistent angle as you traverse the strop. After about five passes you should see a mirror edge. Never push a tool into a strop as you will cut into the leather.

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A Shopmade Strop

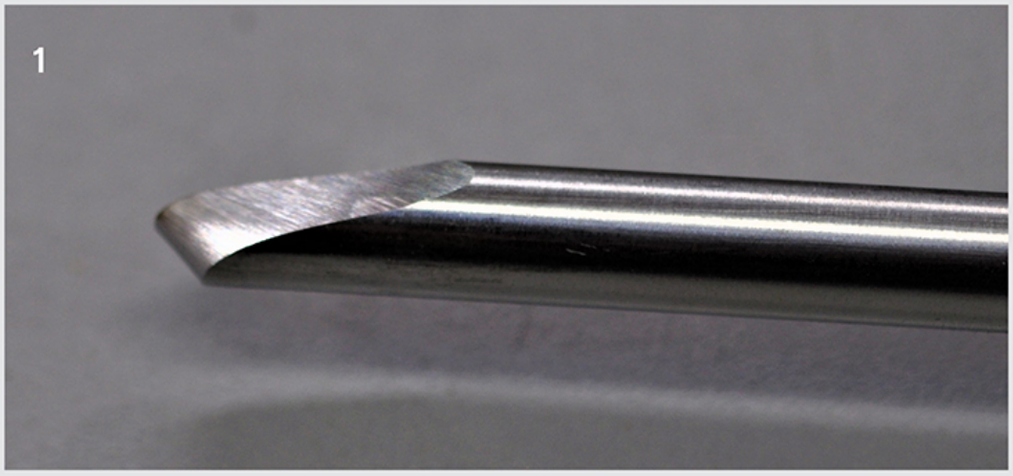
An effective strop is as simple as a piece of leather charged with a honing compound. If you want to get fancy, you can glue the leather to a piece of wood, though doing so will eliminate the option of using it to address internal curves. The leather is charged by rubbing honing compound on the leather. A heavy coat is unnecessary, as each time you use the strop, more compound will be loaded into the leather. A few drops of mineral oil applied over the compound will soften the leather and make an ideal stropping bed. Keep the strop in a drawer or hanging in a spot where it won't be contaminated by dust.

For a deeper dive into strops, check out James Wright's video "All About Strops for Woodworking."

Gouges

Whether using a jig or sharpening freehand, your objective is to grind a continuous curve without facets or flat spots **(Photo 1)**. After achieving that outcome, turn your attention to the inside of the gouge. All gouges can benefit from some polishing or honing of the inside curved surface.

Check Blade Geometry



After addressing the edge on a grinder, examine the tool to assure you achieve a single facet and a continuous curve on your tool.

If you're familiar with sharpening a bench chisels or plane blade, you'll recall the first step upon acquiring a new tool is to polish the back to a mirror surface across the edge of the blade. We're applying the same concept here with the interior flute of a gouge. And as with planes and chisels, once the flute interior is polished, it's good for many sharpenings. Consider a touch-up every fifteen or so trips to the grinder.

Polishing

One approach to polishing a gouge is to use honing compounds, just as with the skew. Rather than use a strop, apply the honing compound to a short dowel that has a smaller diameter than the gouge's. Depending on how much attention the manufacturer paid to finishing the flute, this process may take a few minutes or ten minutes. Touch-ups will take less than a minute.

Alternatively, you can use abrasives to polish the flute **(Photo 2)**. Silicon carbide paper (often marketed as wet/dry paper) is the best choice. Wrap a piece of abrasive around the dowel and polish away. If the flute surface is rough you may need to start at 220-grit and move through grades to finish with 800-grit. Touch-ups can be done solely with 800-grit. Use oil rather than water as a sanding lubricant.

Polish The Interior

Wrap a dowel slightly smaller in diameter than the gouge flute with silicon carbide abrasive. Lubricate with light oil to float away swarf. Keep your fingers clear of the tool edge while using the flute to guide the dowel and avoid rounding off the bevel edge. Proceed through the abrasive grits, finishing with about 800-grit.

Scrapers

Scrapers function differently in woodturning than skews and gouges. The burr that forms on the top of a scraper during sharpening performs the task of removing wood. Many turners go right from the grinder to the work with the scraper, and that works. But a turning scraper is analogous to a cabinet scraper, and we can take advantage of the flat woodworker's approach to sharpening the cabinet scraper to improve this turning tool.

After grinding a scraper, use a diamond stone to polish the top surface—this will remove the burr you just raised with the grinder. Now use a burnishing tool to raise a uniform burr along the cutting edge **(Photo 3)**. A burnisher functions by deforming the thin edge of a cutting face into a raised burr. You can purchase a burnishing tool, use a substitute tool, or make one of your own **(Photo 4)**. A screwdriver or drill bit shank will work although the edge will not be as uniform as other methods. Either a commercial or shopmade burnisher will roll a more consistent edge. The smaller the diameter of the burnisher shank, the more pressure it will apply to the edge.

Burnish Scrapers

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Rub the top edge (not the entire bevel) of the scraper with the burnisher using firm pressure. You should be able to detect the wire burr with your fingernail. To maximize the lifespan of your sharpening efforts, use different sections of the edge as you scrape so that you use up all the edge, not just one spot. Watch your shavings. As they become smaller and dustier, use the burnisher to renew the edge and start again.

Burnisher Options

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A burnishing tool consists of a round metal shaft that rolls a wire burr on the top of a scraper. From top-to-bottom: a commercially made burnisher with an integrated abrasive surface and a carbide pin, a shopmade burnishing tool by Dan Ernst with a 1/8" (3mm) carbide rod held in a turned handle, and a screwdriver whose shank can be used as a burnisher.

Off a grinder, the wire burr is quite fragile and irregular. By using a burnisher you push the metal back into the burr and raise it into a stronger and more uniform hook. The burr will cut more aggressively, but more importantly, more predictably and longer. Compare the long ribbons of shavings coming off the burnished edge with the short shavings and chips coming off the ground edge and you should be convinced **(Photo 5)**. You can use the burnisher to renew the edge two-to-four times before you need to go back to the grinder and start the process over.

Shavings Don't Lie

Shavings from a scraper with a burnished edge are wide and wispy, contain little or no dust, and show the clean cutting action coming from the burr. The resulting surface needs minimal sanding to be ready for finish.

Conclusion

A sharp tool makes for fun turning and better results. The time you spend on the steps discussed here will pay dividends with reduced tearout and less time sanding. Give it a try.

Additional Resources

For additional information on super sharpening woodturning tools, see Alan Lacer and Jeryl Wright's Summer 2009 article "Refining the Edge," in *American Woodturner*, and Dennis Belcher's February 2023 article "An Introduction to Sharpening," also in *American Woodturner*.

About the Authors:

Tim Heil was introduced to woodturning in junior high school woodshop in 1966. He joined the AAW and the Minnesota Woodturners in 2002, and that put his woodturning skills in

high gear. His favorite wood is curly maple.

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