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Learn to Sharpen Progressively

By Alan Lacer

Part

2

This is the second of a two-part article on grinding. The first part—sharpening scrapers—appeared in the Fall 2003 issue.

Sharpening the spindle roughing gouge

The spindle roughing gouge is perhaps the friendliest gouge to use and one of the easiest to sharpen. It differs from all the previous tools (Fall 2003 issue) as we are now into curved edges. Traditionally, the tool is a deep U-shape with a straight across cutting edge.

Profiling is fairly straight forward. Make sure the tool is straight across when viewed from

the top and viewed from the side. You can have the top corners canted back a few degrees, but not canted forward (a forward cant will make a more aggressive tool). The bevel angle should be approximately 45 degrees.

Sharpening begins at one corner, with the heel of the bevel touching the wheel and the cutting edge parallel to the face of the wheel. Rotate the tool in the same curved plane until you reach the other corner, then return to the point where you began by

rotating backwards (but still grinding) to your original motion. I tend to repeat these motions until I have lapped all the way to the cutting edge. Stop when the sparks just trail over the top of the edge.

On the larger roughing gouges, some turners like to work about one third of the edge at a time until that section is fully sharpened. They make one final pass along the entire length of the bevel to blend it all together. The biggest problem turners seem to

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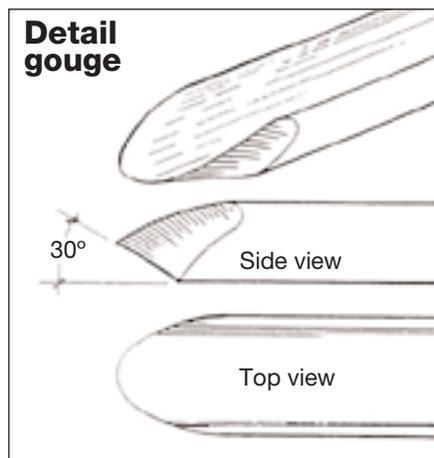
have is moving the tool edge in and out when trying to rotate the tool through that large curved plane. Use your fingers to create an artificial plane to lock the tool in. If you have trouble staying in that 45 degree bevel zone, set the angle of the tool rest and maintain downward pressure to keep the tool flat and thereby in the correct orientation.

If by chance you have a large shallow gouge ($\frac{3}{4}$ " or larger) that was packaged in your tool set as a roughing gouge, here are my suggestions. Odds are pretty good it has a domed edge (maybe almost looks like your thumbnail). You might consider simply grinding it straight across and sharpening as suggested for the deep-fluted roughing gouge.

If you decide to leave it with that "fingernail" look—in order to do some detailing work such as large coves or beads— then approach it the way you would the detail gouge.

The detail gouge

What's in a name? A shallow fluted gouge with a fingernail shape--primarily designed for spindle work and used for detailing work--will be the same



tool no matter what we call it. I wish we could some day standardize a few names for turning tools, but that's a lot to ask for. This tool goes by at least four names: detail gouge, spindle gouge, shallow gouge, and fingernail gouge. All of these names point to some truth about it, but still leads to much confusion. For this article, it's a detail gouge.

This detail gouge is probably the first tool to get your goat. (It was the first tool I'm aware of that a grinding jig was developed to do the sharpening.) No tricks of setting the tool rest at the right angle will help, nor will simply rotating the tool back and forth.

None of us may have a tool that is

A sharp tool at the right cutting angle is virtually effortless.



Give a protractor a try.

We got a few letters after last issue's grinding article about grinding the correct angle. This metal protractor--available for about \$12--is one inexpensive and reliable solution.

in an oval plane with the steel below the edge in varying thicknesses.

Let me explain. If I shape the tool into a fingernail shape, orient the tool with the flute facing the

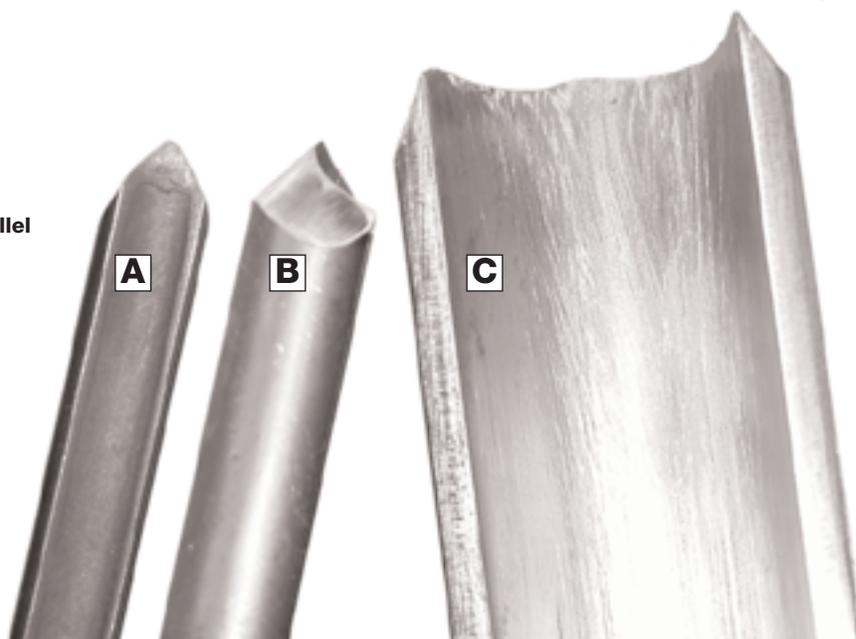
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At right are improperly ground gouges:

A: A detail gouge ground too pointy. This is caused by either rotating the entire tool parallel to the face of the grinding wheel (as with a roughing gouge), or over grinding the sides.

B: A bowl gouge ground on the side with a concave profile. This makes an aggressive tool and one that does a poor job of leveling if used to shear scrape.

C: A roughing gouge overground along the edge. This most often shows up as a jagged or saw-toothed edge.



grinding wheel, and rotate it along a circular path that is parallel to the face of the wheel, I will probably produce a pointy or “spear-pointed” cutting edge that is not very versatile nor friendly to the user (see page 57).

Profiling is essential to the detail tool. It performs astutely in forming concave and convex forms in between center work or details on feet, bases and rims of bowl and vessel work. The shallow draft of its flute (a low “sweep” if we are talking to carvers) allows the tool to sneak in between details, often on its side and do its fine work.

The deep fluted roughing gouges and bowl gouges have trouble detailing elements that are close together. So, the detail profile should reflect its intended activities. Establish a fingernail shape to the cutting edge—thus making the detail gouge more of a side-cutting tool, especially when rotated on its side.

Just as your fingernail would not grow to a point, so must the end of the tool not be too pointy. The analogy with the fingernail is a good one: the smaller the gouge the more it is like a little fingernail; the larger the gouge the more it is domed like a thumbnail. I like to profile by holding the tool nearly flat on a tool rest set to about 90 degrees to the wheel. Gauge your progress by the view from above—striving to get a balanced radius on both sides of the tool (see illustration on page 57). Next, rough in an approximate bevel angle of 30 degrees. This flatter angle reflects

the need of the tool to fit between details while in use.

There are several strategies for matching the edge to the profile, but I will give you the easiest one for me. Treat the bevel of the tool as having three parts: a middle section, and a right and left side. Start by holding the tool with the flute pointed up, contacting the bevel heel in the middle section. This will be the basis for all detail grinding, and the reference point for grinding of the bevel middle area or sides.

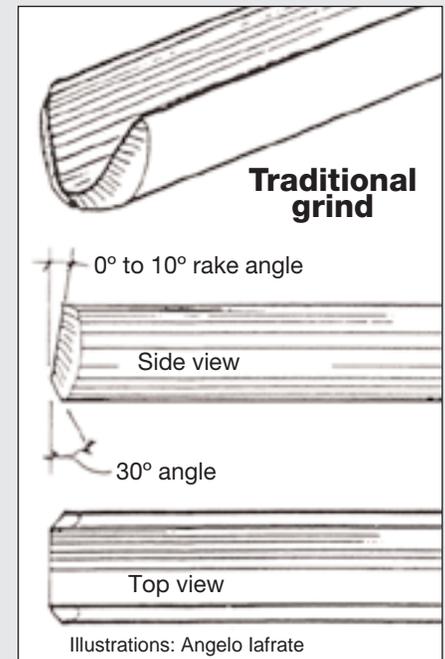
With a push up and rotation to the right, move the tool to the left side of the wheel. Grind as you reverse this action and return to the original starting point. When both sides show sharpness from the spark trail, blend the center section into each side.

Bowl gouges

I recommend tackling bowl gouges last, but not because they’re extraordinarily difficult. In major reshaping, you’ll remove considerable amounts of steel. Plus, bowl gouges have at least one tricky grind that causes some problems.

The preferred profile is one of personal choice. Most turners use one of three common grinds. What I term “traditional” is shaped exactly like a roughing gouge—and the sharpening is attended to in the same manner, only easier because of the reduced size. The “transitional” is one favored by many bowl turners, and may be the only profile you require on a bowl gouge. Careful study of the

Three ways to

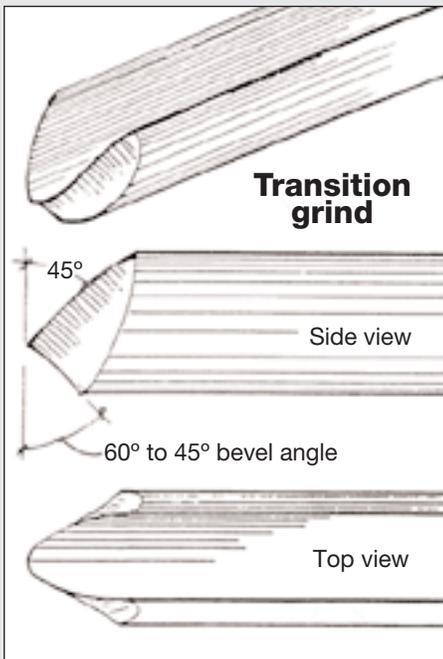


A traditional (fingernail) grind has some sound applications: the outside of a face grain bowl when mounted backwards (base is at tailstock side) or for opening the interior of a bowl (opening is now facing tailstock side).

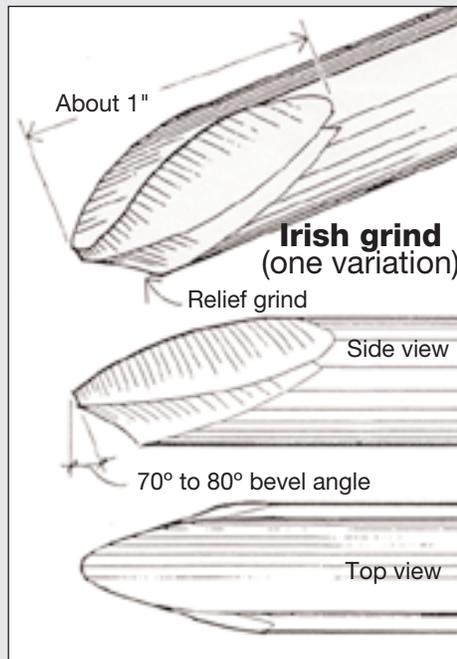
diagram shows it to be close to the fingernail shape we put on the detailing gouge. The side profile should be straight or a bit convex—just avoid concave. Once profiled, I sharpen in the same manner as the detail gouge.

The bowl grind that has launched more than a few commercial and shop-made jigs is the Irish grind. Although it looks formidable with such a long edge, it is in truth quite tame—if you have a strategy. Get the profile correct from above, the side, and rough in the steep bevel angle on the nose. Then divide the tool into three sections: the two long sides and the front nose. Grind the

sharpen a bowl gouge



I recommend the transition grind for new bowl turners. You work the outside of a face grain bowl regardless of the orientation. The ground sides provide the opportunity to do a little shear scraping.



Experienced turners may prefer the more-complicated Irish grind. It's a good roughing tool for bowls, a detailing tool with the elliptical front, a shear-scraping tool, and a tool to make a smoother transition from sides to bottom.

sides nearly parallel to the face of the stone. Finally, grind the small front section with the same technique for the detail gouge. I finish with a little blending of the nose into the sides.

Tests for sharpness of cutting tools

- If you can see the edge there is no edge. Short of actually turning, this is the best test I know. Use an incandescent light to check for any reflection along the edge. A sharp edge disappears into a black line; dull spots reflect light.
- What comes off the tool—dust or curls? Even in dry material, a sharp tool forms a longer chip or

ribbon while dull tools produce dust or short chips.

- How much effort does it require to remove the material? Unless you are roughing out a large piece, a sharp tool presented at the right angle is almost effortless; a dull tool requires more force.
- How does the cutting action sound? A sharp tool makes a sound reminiscent of a sharp hand plane; the dull tool sounds flat or makes a scraping sound.
- How clean is the surface when you stop the lathe for inspection? Generally a sharp tool gives far superior results to the surface of the wood.

Grinding jigs

This is perhaps sacrilegious, but I am not a big fan of the grinding jigs. I still find most individuals learn sharpening with no other “jig” than their tool rest and hands—at least for most tools.

But is there a place for the grinding jigs? Yes! For those folks who cannot seem to learn freehand grinding, those with physical limitations, those who need a crutch to get started (like training wheels on your first bike), those sharpening a large number of tools for others (some classroom or manufacturing situations), or those one or two difficult tools you just can't seem to get at all or consistently. If you



A jig may be helpful in some situations of learning to grind.

fall into one of these camps, get a jig—but at least learn to resharpen your tools by hand when all that is needed is a light refreshing. The information in this article applies to most aspects of sharpening whether you do it freehand or with a grinding jig. Be forewarned though, jigs still require considerable judgment and they can also “shorten” your tools.

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