

## Tool Grinds

Here are some photos of lathe tool grinds submitted by our Turning forum visitors. It is our suspicion that there are as many grinds as there are turners, and that a skilled turner knows instinctively how to present an edge to the work for the best result. Nonetheless, we feel that by publishing these photos and explanations, we can offer you some options and rationales for alternative grinds and techniques.

To submit a tool grind to our grind gallery, please e-mail a photo and a paragraph of explanation to the [Webmaster](#). Please tell what size gouge or tool we are looking at, as well as your reasons for using this grind, what jobs it is good for, special grinding or usage techniques, etc.



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**TURNER:** Terry Daniel

**TOOL:** All bowl gouges

**COMMENTS:** I use no other grind although I do use smaller and larger gouges with this same grind.





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**TURNER:** Ellis Valentine

**TOOL:** Henry Taylor, "Ellsworth signature model" bowl gouge

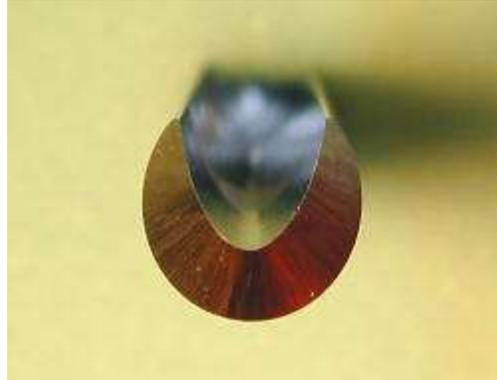
**COMMENTS:** This is David's classic bowl gouge. He uses it for roughing, slicing and shearing cuts on the outside of bowls, and for roughing and finishing on the inside.

Two manufacturers -- Crown and Henry Taylor -- make this particular gouge, which is actually about 9/16" in diameter. Crown calls it a 5/8" gouge and Henry Taylor calls it a 1/2" gouge, referring to the distance across the flute.

I sharpened this gouge with an Ellsworth jig (top photo at right), but I had it sticking out from the jig only 1 3/4" instead of the 2" that David recommends. As a result, the bevel angle is too steep -- about 70° instead of the 60° that is recommended in the instruction sheet. He likened it more to a scraper grind. The second photo shows what it looked like after David reground it for me.

David has told me that the 60° is actually the middle of a useful range of between roughly 55° and 65°. It is up to the user to learn the differences in the way different bevel angles handle. He says that all the commonly available jig systems will give you a side-grind edge, but not all side ground gouges perform the same, because the angle varies along the sweep. Naturally he prefers his own little cast aluminum jig.





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**TURNER:** Joel Hunnicutt

**TOOLS:** Various bowl gouges

**COMMENTS:** The top gouge is my 5/8" Glaser. The grind is close to a factory grind. It is my workhorse gouge, but very easy to control for fine finishing cuts.

The middle gouge is an artisan gouge that was my first bowl gouge. I use it mostly for shear scraping and for running down a steep side wall. It has gotten so short that it is out of balance now.

The bottom gouge is an ancient Sorby long and strong. It is perfect for making the transition from the sides to the bottom and for running across the bottom.



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**TURNER:** David Ellsworth

**TOOL:** 3/8" Crown spindle gouge, a.k.a. "Detail gouge"

**COMMENTS:** I got this idea from Mike Mode many years ago. He used to use it to turn his Christmas ornaments. The bevel is ground back to a smooth curve in all directions and then sanded and polished. I like it for undercutting the final cut on the bottom of bowls because it has no heel to put compression lines on the wood. You just ride that convex bevel right in. It is also excellent for details on the rims of bowls and for spindles and small objects.

As you see in the lower photo, I've replaced the regular handle with a short one only about 5" long. The shorter handle doesn't get in the way.





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**TURNER:** David Ellsworth

**TOOL:** 3/4" diamond parting tool

**COMMENTS:** Here is the grind I prefer for my parting tools because of the mass and support that the curved lower bevel brings to the edge, eliminating most vibration.



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**TURNER:** David Ellsworth

**TOOL:** Bent hollow turning tool

**COMMENTS:** This is my bent hollow turning tool. It has a 3/16" square tool-steel tip mounted at 45° to the 9/16" shank. I try to grind a round nose on the tip, with roughly a 65° bevel at the front and a 70° bevel partway back the sides. The carefully rounded nose makes it easier to scrape the tool back and forth smoothly inside a vessel. For the center cuts inside a vessel, I use a similar straight tool, with a 1/4" square tip coming straight out the front, ground to the same angles.

When sharpening the rounded profile, I only use the corners of the wheel, not the face.





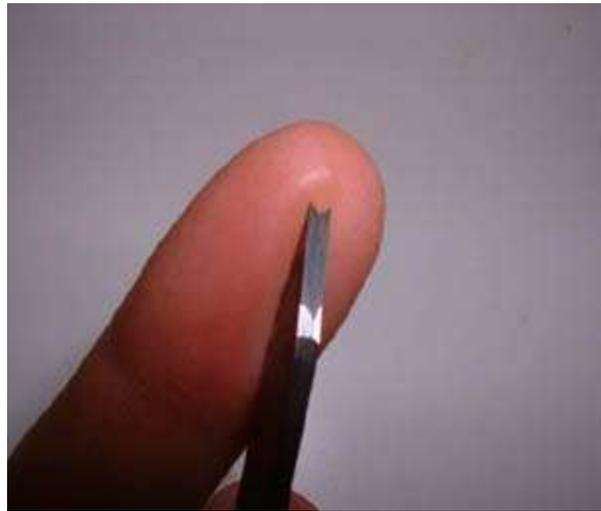
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**TURNER:** Jennifer Shirley

**TOOL:** Parting Tool

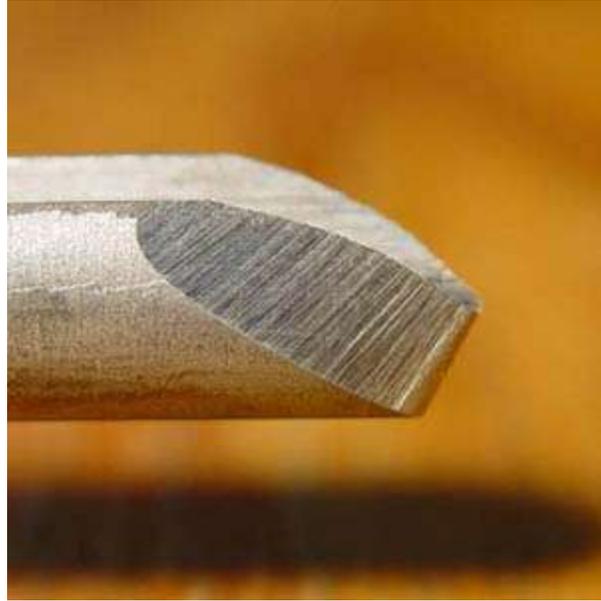
**COMMENTS:** This grind is achieved by using the "corner" or edge of the grinding wheel to create the V in the tip. Both of the points cut the wood, and then the interior scrapes away the area between the cuts from the points. This tool cuts very fast and with less heat build up. This particular parting tool is very small, but you can use this grind on any size parting tool. Be careful when making this or any grind using the edge or side of the wheel. It is not recommended by the wheel manufacturer.



**TURNER:** Dave Peebles

**TOOL:** Bowl Gouge

**COMMENTS:** This is my 3/8" V-15 Glaser gouge. I use this for detailing work. It works very well for forming tenons for mounting in the chuck. I also use this gouge for making a last clean up pass on difficult woods. The nose bevel is also about 62 degrees on this one.



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**TURNER:** Dave Peebles

**TOOL:** Bowl Gouge

**COMMENTS:** This is my 5/8" V-15 Glaser gouge. I use this for about 90% of my work. It has a little longer side grind than my other gouges. This is also the gouge that I do most of my shear scraping with. The nose bevel is about 62 degrees.



**TURNER:** Dave Peebles

**TOOL:** Bowl Gouge

**COMMENTS:** This is my 3/4" V-15 Glaser. I use it mostly for roughing out large blanks. It removes a lot of wood in a hurry. This is basically the way it was ground when I bought it. The nose bevel is about 65 degrees.



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**TURNER:** Mark Kauder

**TOOL:** Bowl Gouges

**COMMENTS:** Here are my pictures of the grinds on the four bowl gouges that I use. I am not sure what good they do others, but they work for me. My fingernail grinds are longer than most. I did not plan this grind, it evolved, and I like it, so I stuck with it. When I buy a new gouge, I may try the more traditional grind again. Until then, I am saving the steel and leaving them the way they are.

I suspect that they work for me because I work on a 1/2 HP Jet Mini Lathe. I have to take relatively light cuts, to keep from stalling the motor. I predominately take long shearing cuts with the side of the gouge, and thus a long grind gives me more cutting edge to work with.

Sharpening setup: I use the Oneway Wolverine Jig. The grinder is a home made slow speed, old 1HP 1750 motor connected to a mandrel holding two grinding stones, one 100 grit, one 80 grit. Both have worn down to 5 1/4 " in diameter - about time for new ones. The slow motor speed, and the small diameter makes for a very slow speed grinder! All of my gouges are ground on the 80 grit wheel.

The back of the pocket on the Wolverine grinder when using the fingernail jig, is 7" from the face of the wheel. The bottom of the pocket is 4 1/4" below the center of the center of the grinding wheel. When using the fingernail jig, all gouges are extended out 1 3/4" from the jig and the jig arm is set to approx 40 degrees. The front angle on all of my fingernail grinds is 60 degrees.

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**TURNER:** Mark Kauder

**TOOL:** 1/2" Bowl Gouge

**COMMENTS:** The 1/2" Sorby Bowl Gouge is my main gouge - 80% of my

**1/2" Sorby Bowl Gouge Side View**

turning is done with this gouge.



**1/2" Sorby Bowl Gouge Top View**



**1/2" Sorby Bowl Gouge Front View**



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**TURNER:** Mark Kauder

**TOOL:** 3/8" Sorby Bowl Gouge

**COMMENTS:** This was originally ground to a fingernail grind. I decided one day to grind it to an old style/conventional grind, but at a high angle, so that I could use it at a fairly straight angle for the transition from the wall to the top of some semi-enclosed forms, and along the transition at the bottom in some tall forms. I like it, but this is my experimental gouge. Notice that I am too cheap to grind

**3/8" Sorby Bowl Gouge Side View**

away all of the old fingernail grind, so it gives it a rather odd appearance.



**3/8" Sorby Bowl Gouge Top View**



**3/8" Sorby Bowl Gouge Front View**



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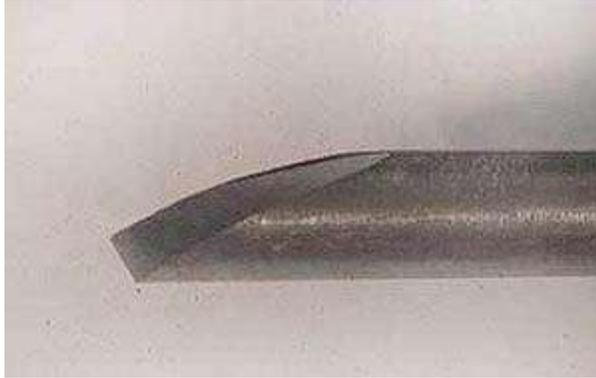
**TURNER:** Mark Kauder

**TOOL:** 1/4" Sorby Bowl Gouge

**COMMENTS:** This was my first bowl gouge. I continue to use it, mostly around the foot, when I am working close to the

**1/4" Sorby Bowl Gouge Side View**

faceplate or with some tight curves, like on the neck of a vase.



**1/4" Sorby Bowl Gouge Top View**



**1/4" Sorby Bowl Gouge Front View**



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**TURNER:** Mark Kauder

**TOOL:** 1/4" Taylor Detail Gouge

**COMMENTS:** I love this little gouge for fine detail work, up around a bead, or around the lip of a bowl. I got it at a tent sale for \$10. It has a shallower flute than the bowl gouges, but not so shallow as my Sorby Spindle gouges.

**1/4" Taylor Detail Gouge Side View**

**1/4" Taylor Detail Gouge Top View**



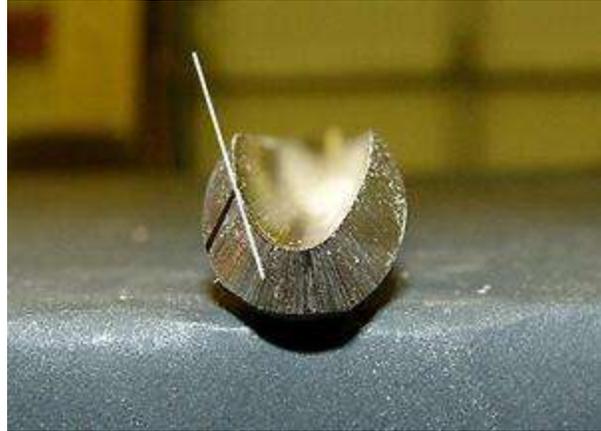
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**TURNER:** Russ Fairfield

**TOOL:** Bowl gouge, side grind

**COMMENTS:** My "workhorse" tool is similar to the Ellsworth tool. The only difference may be in the nose angle and the bevel angle. Mine starts out with a nose angle of about 75° (15° relief angle) and wraps around to a 40°-45° angle along the side grind. This is somewhat different from the Ellsworth tool where the angle is a constant 60° all the way around the cutting edge. I have used both and prefer the variable angle. To me, the changing angle better matches the inside curve of the bowl and I can take deeper cuts in both wet and dry wood. This is one of those cases where I don't know if it is really better or if it is that I have learned to use it and am comfortable with it.





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**TURNER:** Russ Fairfield

**TOOL:** Bowl gouge for "inside" turning

**COMMENTS:** With its convex flute, this one is truly an inside gouge. This is an excellent tool for eliminating grain tear out in such places as the end-grain on the inside of a green natural-edged bowl. This also a better tool for those woods where the heel of the standard gouge will cause ripples in the surface as it passes over the hard grain boundaries. I used to grind these to a smooth bevel with a soft belt and a hard buffing wheel, but have since found that the multifaceted bevel does just as well and it is faster. I can somewhat match the bevel to the curvature of the surfaces and get a strong stable fulcrum on the bevel behind the cutting edge (see the arrow in the photo). The result is excellent tool control and finish on the inside of a bowl.

I have to use a second gouge with a more blunt nose angle to get through the transition and across the bottom of a deeper bowl. The profile works best when the gouge has a deep "U" shaped flute.

The third photo shows how the tool is held to make the cut - about 10° up from level with the lathe bed (tool handle down for those who think that way), the flute rolled back about 10° or just enough to make the cut, and riding the bevel behind the tip.





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**TURNER:** Russ Fairfield

**TOOL:** Continental bowl gouge

**COMMENTS:** I use a Continental Spindle Gouge when I need a smooth cut on the inside of a bowl. I grind the tool with a blunt fingernail shape and usually with a 40° tool angle, but that can be changed for the task at hand.

This is akin to using a curved skew chisel on the inside of a bowl, and the finish it leaves on the wood will look like it was cut with a skew. I use this tool on green wood where grain tear-out is a problem, on the thin wings of square turnings, on other odd shapes where tool pressure can cause deflection and vibration, and in the shallow dish across the outside bottom of the base of a bowl. This is definitely a tool for light cuts only. The advantage is that its cutting ability is independent of speed, and I can rotate the wood across it with the handwheel and still get a smooth and controllable cut.



