FOLLOW-UP TO TURNING TOOL SHARPENING CLASS

By Stan Stephens

I had a couple of thoughts after our sharpening class that I wanted to share.

Sharpening is all about repeatability. When you are grinding your tool, you are grinding away dollars, so you want to sharpen the tool without removing a lot of steel. That's the beauty of jigs as opposed to sharpening free hand.

Exact bevel angles are not terribly critical. It doesn't matter if you use 57-degrees rather than 55-degrees. Be consistent.

I never sharpen without marking the bevel with a Sharpie. That way I can be certain of what is getting sharpened. Sometime I get the occasional brain fart and this is a good way to double check.

There is lots of information on sharping wood turning tools on YouTube and elsewhere. I would encourage you to peruse this information. You will eventually settle on a system and grinds that you find useful.

The following are a few thoughts to support what Craig presented, topics that may not have been covered or a different view on the same subject. There is no right answer to some of the sharpening questions. It's whatever works for you. With practice your confidence will improve.

TOOL STEEL

Older turning tools are made from tool steel. The next evolution was high speed steel (HSS). This is what you are most likely to encounter in older tools. The next evolution was M2 high speed steel, which is a great improvement and what you most likely should be looking for in new tool purchases. M2 steel is much more resistant to both wear and heat than previous steels. More recently M4 high speed steel has become popular. There is also variation of powdered metallurgy (PM or PMC) steels. I think they have some advantages over M2 or M4 steel, but are more costly. I think as a beginner, M2 or M4 steel is a reasonable place to compromise.

SHARPING JIGS

There are numerous tool sharping jigs on the market, and they all work. The Oneway wolverine is probably the most widely used jig and the one Craig used for his demonstration. The Oneway sharping system depends a great deal on the use of the Vari-grind tool holder.

I wanted to add a few comments on the use of the Oneway Wolverine sharpening system, specifically the Vari-grind tool holding jig.

You can find lots of follow-up information on YouTube (must be true if it's on YouTube). You should round the bottom of the Vari-grind jig leg slightly so it rotates in the Vee-arm pocket easier. Just knock off the corners.

This jig is designed to sharpen mostly bowl and spindle gouges. There are three settings that must be considered in setting-up the jig: 1) 1) protrusion of the tool, 2) leg angle and 3) distance of the vee-arm pocket from the grinding wheel.

The Wolverine instructions suggestion a protrusion 1 ¾-inch. Others like 2-inch protruction. It doesn't matter; just be consistent

Leg angle will determine the amount, if any, of the side grind. This is ajusted by moving the leg up or down. The more the leg is set toward the bottom of the jig, the more swept back the sides. You don't want your sides too steep or too thin. However, the swept back grind of the sides (Irish grind) are useful for cutting and especially scraping.

Some instructions suggest you set the leg angle in one position and never adjust it again (see Dave Thompson, attached). Others move the leg to get specific grinds. I have two jigs: one set and one I can adjust. However, you can count the notches or make scatch marks on the jig to indicate leg positions you like. Write the settings on the tool.

The bevel angle of your tool is adjusted by moving the vee-arm toward or away from the wheel. You should develop some system (stick or some sort of spacer, to get repeatable settings.

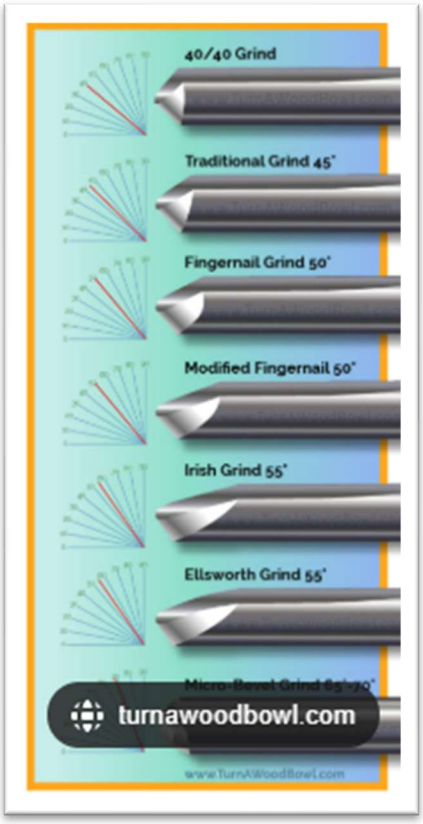
I use colored tape on my tools so I can instantly know the grind of the tool (wait until you get old). This works well with my Tormek because it is easily repeatable.

I hope this makes sense. Again, you want repeatability.

TOOL BEVEL ANGLE

I think it's important to know the bevel angle of your tools. You can find more information about all of this on YouTube and other sources. There is no specific answer as to what is the best bevel angle. Different angles perform differently. You might have several bowl gouges with different bevel angles. I may use 55-degrees with a sweptback side on the outside of a bowl and 60-degrees with no swept back sides for the bottom of a bowl.

You will find there are different opinions on what bevel angle to use for what cut. You need to figure out what works best for you in various situations.



Different bowl gouge grinds

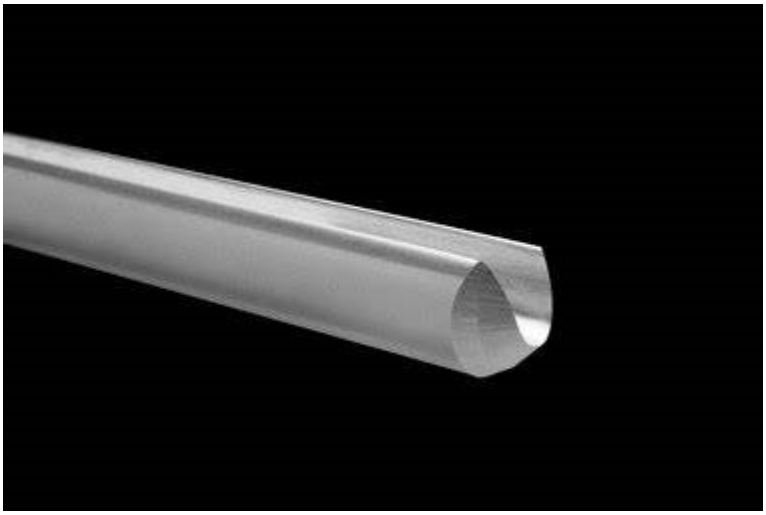
Grinding off the heel of the bevel

Easing or grinding the heel of the bevel of gouges allows you to get around corners without rubbing the heel of the tool. Rubbing will leave a mark. This is easy to do. You can set a spacer in the cup of the vee-arm to raise the tool or make the grind free hand (be careful). It doesn't take much.

Bevel heel eased

Bottom feeder (standard English grind)

Pretty much a straight across grind like a bowl roughing gouge. This is a useful grind for cutting wood on the bottom of the bowl. Other grinds may have trouble getting around the curve of the bottom of the bowl without the heel rubbing. This is a straight across grind like a roughing gouge.



Bottom bowl feeder grind

Handled vs unhanded tools

Getting started you probably have a bunch of turning tools with attached handles. As you become more advanced, you are probably better off buying unhandled tools. They are less expensive than handled tools, although you do need to buy a universal handle. Unhandled tools are easier to maneuver around sharpening jigs.

GOUGES

On new tools, you need to shape the top of the tool so you have a concave shape. You never want to have a concave shape. The shank of a bowl gouge is made from steel rod and then the center is hollowed out concave to form the flute.

Bowl gouge is easily identified due to deep flute. Flutes come in a couple of different shapes, which is important.

Tool size

In England the gouge size is approximately the width of the flute. In the U.S gouges are measured based on the diameter of the rod. Something to be aware of when buying a gouge.

Measuring gouge tool size

Flute shape

Flutes come in several shapes, based mostly on the depth and shape of the flute. I tend to avoid the V-shaped flutes. I find them difficult to sharpen.

Three basic flute shapes

Bowl vs spindle gouge

The difference between bowl and spindle gouges is the depth of the flute. Bowl gouges have relatively deep flutes while spindle gouges have relatively shallow flutes. The use of these two types of tools is also usually quite different. The spindle gouge is used for spindle work.

Bowl vs spindle gouge

There is a difference between a spindle and detail gouge. This is due to the depth of the flute and the bevel angle (and use).

A detail gouge has a shallow flute and a blunt fingernail grind that extends to the top of the bar. The bevel is sharpened at 25-35 degrees. A detail gouge is useful for cutting beads and coves and other detail work.

Detail gouge

The spindle gouge has a slightly deeper flute and a bevel of 40-45-degrees

Spindle gouge

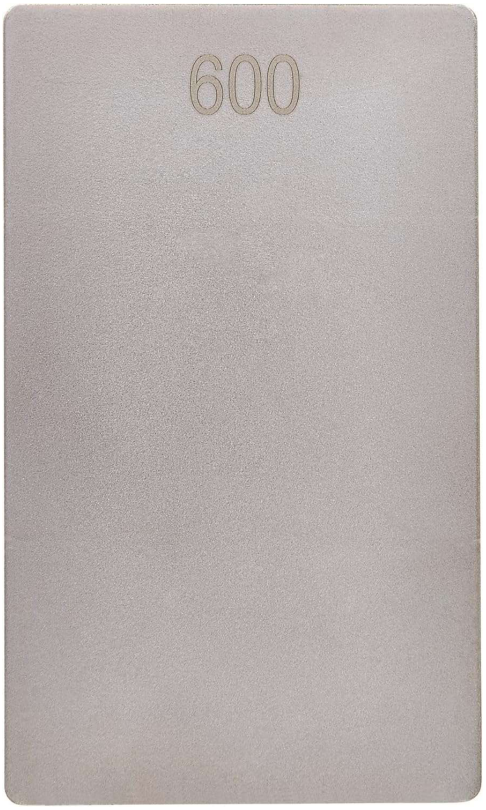
SCRAPERS

I am modifying all my scrapers into negative rake scraper. I don't think they cut as well as single bevel scrapers, but I have experienced some nasty catches that I would like not to experience again. On a negative rake scraper, I use about 60-degrees as the primary bevel and around 30-degrees for the top bevel (not removing much material from the top). When you regrind a scraper, just regrind the primary bevel. This will raise a burr (bent over piece of metal on top edge). It's the burr that does the cutting. The burr only lasts a few seconds. The scraper will still cut, but not as effectively. Rather than resharpen on the grinder, you can hone the bevel using a diamond card, or turn a new burr using a harden piece of steel (screw driver shank). This works well, but eventually you will have to resharpen.

Since the Robo-rest is currently unavailable, you'll need to use your tool platform to sharpen. Again, this is all about repeatability. I use a Wixley (or another brand) angle cube to set my angle of my tool rest. Once you're happy with the angle, mark it on the tool.

Honing

When your tools get dull, they stop cutting as well and you'll know when they need to be resharpened. It's best to stop and deal with a dull tool before they become too dull. I use a diamond card to hand sharpen the tool bevel. I can do this 4-5 times before I must return to the grinder. This is faster and results in less steel being removed from the tool.



Just stick the butt end of the handle somewhere stable and use your diamond card to hone the bevel. Use a Sharpie if you like to see what you're removing. This works on all your tools: gouges and scrapers. This is best way to sharpen your skew. The card I use has 300 grit on one side and 600 grit on the other side. Any similar card will work.

When I'm making finishing cuts, I'll hone the inside of the flute.

Wood turnings I like to watch (most are on YouTube):

Glenn Lucus

Jim Rogers

Tom Yoder

Jimmy Clewes

Michael Hosaluk

Ron Brown

Mike Peace

Stuart Batty

Wyoming Wood Turner (wyomingwoodturner)

Doug Thompson (Sharpening Woodturning Tools - Doug Thompson)

Videos

Craft Supply – very good video on sharpening

https://youtube.com/watch?v=lLvh-MR6Jqs&si=iuS127UbOuYrRapN

Dave Thompson:

MADE BY A WOODTURNER FOR WOODTURNERS! - Thompson Lathe Tools

THOMPSON LATHE TOOLS

Sharpening

The tools come sharp and ready to use, to duplicate this grind here's what you need.

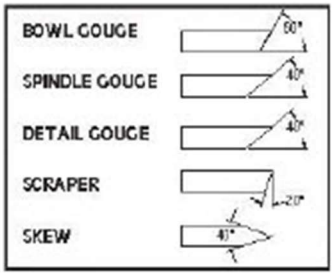
The Oneway Wolverine Grinding Jig and Vari-Grind attachment. This is the best sharpening system on the market and all the gouges will be sharpened with this system. If you don't own one go to www.oneway.on.ca or your favorite catalog and purchase one. Why? Because it works!

Use an 8 inch high speed or slow speed grinder.

Set the arm on the Vari-Grind to the same angle shown in the picture.

Extend the tool 1-3/4 inches out from the jig.

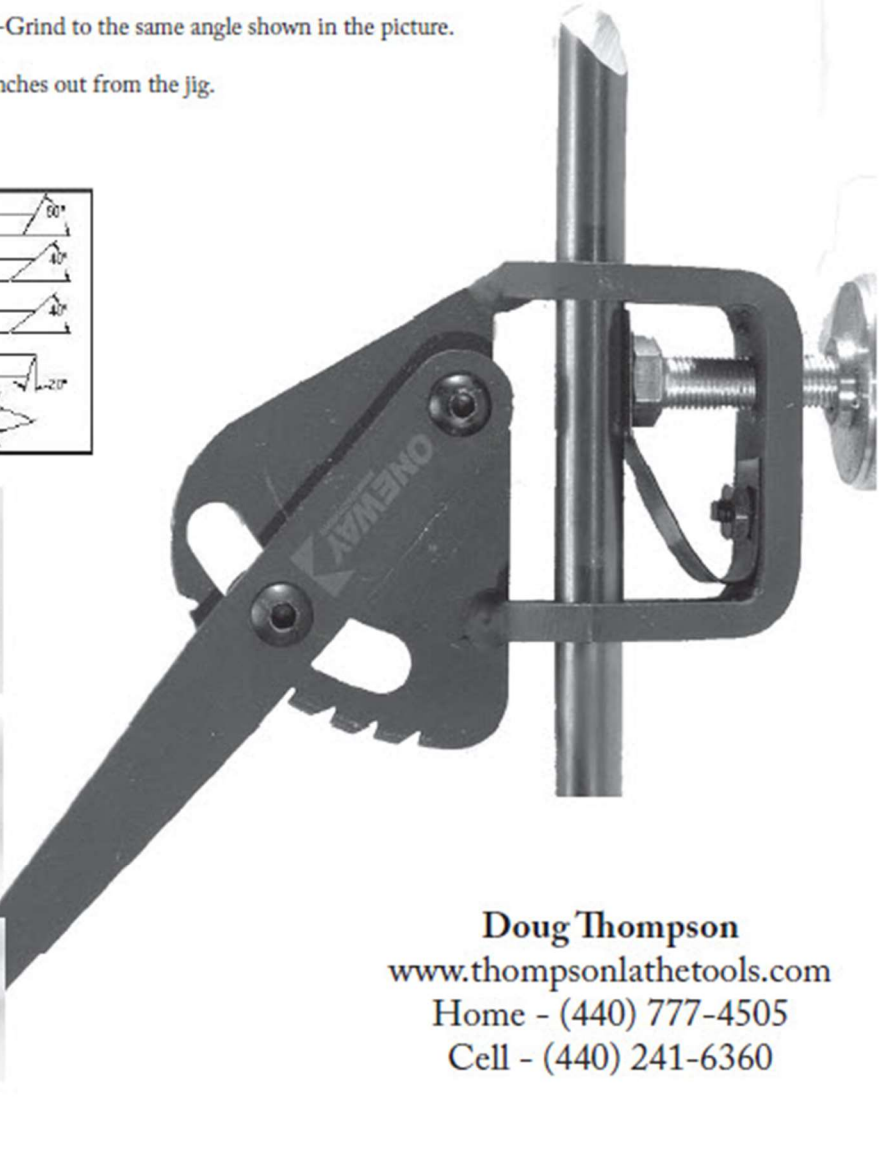
Set the nose angle.



Bowl Gouge

Spindle Gouge

Detail Gouge



Doug Thompson
www.thompsonlathetools.com
Home - (440) 777-4505
Cell - (440) 241-6360