

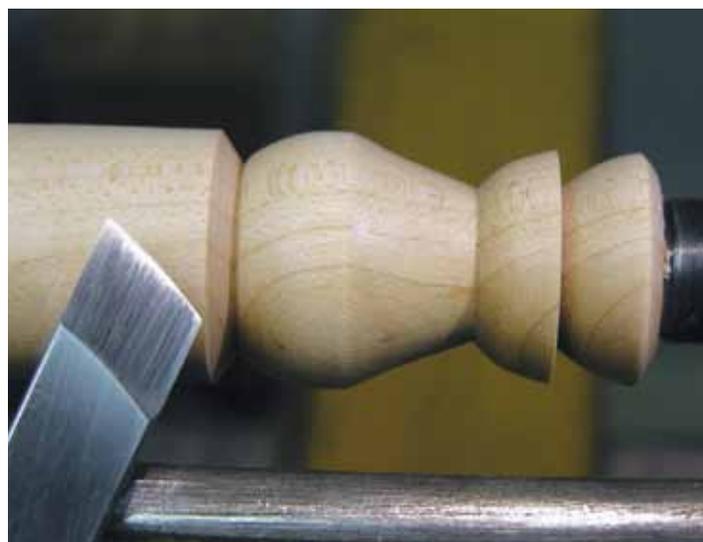
Sharpener Alternatives

{The joy of sharp tools}

Jim Echter



For everyday sharpening, many woodturners rely on a slow-speed grinder with two 8" x 1" white aluminum oxide wheels. On Jim Echter's machine, the left wheel has a TruGrind jig for sharpening gouges, skewers, and parting tools. The right has a Veritas adjustable-angle platform for sharpening scrapers.



Here's why: with sharp tools, you can turn cleanly and skip directly to your finest sandpaper grit.

One of the major differences between an expert turner and most beginners is how sharp each turner keeps his tools.

Sharp tools are also why one beginner becomes proficient much faster than another, and dull tools probably discourage some beginners who just give up. Our turning tools really are consumable items just like sandpaper. They need to be sharpened much more frequently than many beginners imagine, and yes,

repeated sharpening does use them up although it may take years.

When I teach I always advise beginning and intermediate turners to spend time learning how to properly sharpen their tools. A key advantage of belonging to the AAW and becoming active in your local chapter is that our clubs offer many opportunities to learn how to sharpen properly. My local chapter conducts sharpening workshops and we also have a mentoring program to help our new members get their tools properly sharpened so they have one less barrier to learning.

This article provides an overview of the various sharpening systems currently available: dry grinders, wet grinders, belt systems, and the new rotary see-through grinders that have come to market in recent years. I will explain the primary features, benefits, disadvantages, and costs of each system. Because many turners also have other woodworking interests, we will also look at other possible uses. Everyone has a different budget and workshop setup, so there is no single perfect solution, system, or method for sharpening. ▶

Dry grinders

The standard in most woodturning shops is a bench grinder with two 8" × 1" (200 mm × 25 mm) aluminum oxide wheels. Aluminum oxide wheels, usually colored white, blue, or pink, cut faster and cooler than grey carborundum wheels. Occasionally you can find a price near \$100 on an 8" slow-speed (1700–1800 rpm) or dual-speed (1700–1800 and 3400–3600 rpm) grinder with white wheels, which is a great deal. Some of these machines may have a small water tray for cooling the tool tip; the wheel itself runs dry.

The 8" grinder solution is generally considered fast at both reshaping tool profiles and putting new edges on your tools. That is why you are likely to find one in most woodturners' shops, woodturning schools, and at most clubs. If you learn how to use the 8" grinder, you will be comfortable when you take a class, visit other turners' shops, if you teach, or if you mentor beginners. The 8" grinder has two disadvantages: first, with carbon-steel tools it is easy to overheat (blue) the metal and draw its temper; and second, the standard toolrest leaves much to be desired when you are trying to shape a gouge or a skew chisel. Many beginners have carbon-steel tools because they inherited them with their lathe or they bought them at a garage sale. There is much less risk of overheating modern high-speed steel tools, a big advantage for turners who sharpen often.

Interestingly, when a representative from a major abrasives company visited our local club, he made the point that a 3600-rpm grinder with proper wheels was actually cooler on the steel than the same wheel running at 1800 rpm. The rep explained that the wheel surface was designed to fracture and expose fresh cutting edges at the higher speed. I think the higher speed would be an advantage for a professional tool-and-die maker who works with metal every day. However, most woodturners find that slow-speed grinders are easier to control,

which is why they have become so prevalent in our shops. *Dry grinders* lists major and popular brands of dry grinders.

While dry grinders are fast and great for reshaping a tool, they do leave a ragged burr on the edge that sometimes needs honing, especially on fine detail tools like the skew chisel. Some production bowl turners prefer the edge right off the grinder because they believe its raggedness is like a serrated knife cutting through bread, especially when roughing green blanks. Some turners use a buffing wheel to hone their tools, while others prefer to touch them up with sharpening stones.

Dry grinders generally do not come with much in the way of toolrests. While you could cobble up your own, I believe you will get best results with aftermarket grinding jigs and platform rests designed

for sharpening turning tools. Good jigs and platforms help you maintain the tool's shape and bevel angle every time you sharpen. Gouges are particularly difficult to sharpen freehand, but inventors and manufacturers have come up with a number of clever jigs to help you grind and maintain the correct shape and angle. Adjustable-angle platform rests help sharpen skews, parting tools, and scrapers.

Recent and noteworthy jig innovations include the Hannes Tool multipivot gouge jig that permits the multiangle grind advocated by the hat-turner JoHannes Michelsen, and a heavy-duty angle gauge and adjustable-angle platform designed by Stuart Batty of Boulder, Colorado. *Grinding jigs and platforms*, p. 29, lists jigs and platform rests for dry grinders. ▶

Dry grinders				
Manufacturer	Model	Details	Cost	Web address
 Baldor Industrial Grinder	8250W	8", 3600 rpm, replace grey wheels with aluminum oxide wheels	\$900	baldor.com
 Delta Variable Speed Grinder	23-199	8", 1725 and 3450 rpm, one 60-grit aluminum oxide and one 36-grit grey wheel	\$150	deltamachinery.com
 Grizzly Heavy-Duty Bench Grinder	G0596	8", 1800 rpm, replace grey wheels with aluminum oxide wheels	\$495	grizzly.com
 Woodcraft Slow Speed Grinder	105780	8", 1700 rpm, comes with 60-grit and 120-grit aluminum oxide wheels	\$125	woodcraft.com

Grinding jigs and platforms				
Manufacturer	Model	Details	Cost	Web address
 <p>Lee Valley Veritas Grinder Tool Rest</p>	05M23.01	Platform rest	\$55	veritastools.com
Lee Valley Veritas Skew-Grinding Jig	05N13.01	Jig for skews, use with platform rest	\$30	veritastools.com
 <p>Oneway Wolverine Grinding Jig</p>	2291	Base, sliding arm and platform rest	\$90	oneway.ca
Oneway Wolverine Vari-Grind Attachment	2480	Jig for gouges, use with platform rest	\$55	oneway.ca
 <p>PSI Woodworking Complete 4-Piece Precision Lathe Chisel Sharpening System</p>	LCGRIND4	Platform with jigs for gouge and skew	\$115	pennstateind.com
 <p>Sharp-Fast Tool Guide System</p>	S900	Jig for gouges	\$125	tmiproducts.net
 <p>Robert Sorby Universal Sharpening System</p>	447-RS	Platform with jigs for gouge and skew	\$140	robert-sorby.co.uk
 <p>Tru-Grind Sharpening System</p>	TRUGR	Platform with jigs for gouge and skew	\$130	woodcut-tools.com
 <p>Hannes Tool Vector Grind Fixture</p>		Jig for gouges; multibevel grind	\$140	hannestool.com
SB Tools Angle Gauges		Three gauges for setting grinder platform angles	\$105	woodturning.org

Wet grinders

Wet grinders generally feature a 10" x 2" (25 cm x 5 cm) wheel turning slowly in a water bath. The water both cools the steel and carries away the grinding waste. Wet grinders can produce a very fine, smooth, and polished edge, by far the finest edge of all the different mechanical sharpening systems. Many turners believe there is an advantage to having such a sharp edge, but many other turners believe it is just not worth the expense for our type of woodworking. Beliefs aside, the real advantage of a wet grinder is that it is nearly impossible to overheat the tool edge, no matter how thin you grind it.

The most widely known wet-grinding system is the Tormek T-7. Tormek

offers an accessory kit for sharpening woodturning tools. JET Tools introduced their version a few years ago, also with accessories for turning tools. Lately there have been some inexpensive wet grinders coming out of the Far East, although these typically do not have a jig or accessory kit for woodturning tools.

One argument that many turners have against wet grinders is that they do not want a water tray near the lathe because it fills up with chips and makes a mess. Vendors have responded with nice covers to help keep debris out of the water, but many turners still consider it a hassle to have to uncover and cover the unit every time they sharpen. The other issue is that compared to a dry grinder,

a wet system is considered slow when initially shaping a tool profile. Before Tormek came out with their woodturning accessory kit, many turners felt that system also was too slow. However, in my opinion, the jigs available today make sharpening turning tools on a wet system very comparable in speed to sharpening with a dry grinder.

Wet systems are quite expensive, especially when you add in the cost of the accessory kits. On the other hand, most wet-grinding machines include a leather honing wheel, so they do offer a complete solution. If you are a carver or if you use hand planes and chisels for flat work, then it will be easier to justify the expense of one of these systems.

Wet grinders				
Manufacturer	Model	Details	Cost	Web address
 Grizzly Wet Grinder	T10010	10" wet wheel, leather honing wheel	\$170	grizzly.com
Grizzly Accessory Kit #2	T10024	Wheel dresser, angle guide, tool holder.	\$55	grizzly.com
 Harbor Freight Wet/Dry Grinder	35098	Both an 8" wet and 6" dry grinder, no accessories available	\$65	harborfreight.com
 JET Slow Speed Wet Sharpener	JSSG-10	10" wet wheel, variable speed, leather honing wheel	\$350	jetttools.com
 Tormek Sharpener	T-7	10" wet wheel, leather honing wheel	\$630	tormek.com
Tormek Woodturner's Kit	TNT-708	Toolrest, gouge jig, honing wheel, angle guide	\$320	tormek.com

Belt sharpeners

A belt sander offers another way of sharpening turning tools. Most belt-sander systems produce a flat edge, instead of the hollow-ground edge that comes from wet and dry grinders. Some turners make the case that the flat edge gives them better control at the lathe. Others believe that a hollow-ground edge makes for easier honing, and therefore is sharper. What I find interesting is that tool vendors and knife makers all use belt systems in their manufacturing processes. Today, one can purchase high-quality fine-grit belts impregnated with aluminum oxide, blue zirconia, or silicon carbide. These belts are designed to produce a mirror finish on high-speed steel tools. This makes belt systems possibly the best all-around solution for a sharpening system.

The case for belt systems includes: (1) they are cooler than grinding wheels because the belts dissipate heat better; (2) since the belt usually is running away from the edge, you cannot jam the tool like you can with a grinding wheel; and (3) belts are easy to change. You can switch from a coarse belt for profiling to a fine belt for sharpening in a couple of seconds. If the belt is worn out, it is quick to replace. Belts are consistent and do not change dimensionally, like grinding wheels, and belts do not need to be dressed like wheels. Some belt systems, like most wet grinders, have the additional advantage of a buffing or honing wheel, which gives better and more consistent results than honing by hand.

The British tool manufacturer Robert Sorby has recently introduced their ProEdge Sharpening System. It has several optional accessories that include jigs for gouges and skews plus a honing wheel; these are included in the Pro-Edge Plus system. What I find interesting is that the belt runs toward the tool

edge, whereas other systems have the belt running away from the edge so it cannot catch and tear, which seems safer. The ProEdge can do this because its various jigs position the tools in a repeatable manner. However, one major disadvantage of the Sorby system is that it uses non-standard belts.

One of our industry's long-time advocates of belt sharpening is professional turner Jon Siegel of Wilmot, NH. Jon makes a strong case for the flat sanding belt plus honing wheels. If you saw Jon's demonstration at the Hartford AAW symposium in 2010, you know just how fast and efficient he is at turning and sharpening. Jon had developed and sold a well-thought-out

sharpening system based on an inexpensive imported belt sander and buffing wheel. In my opinion, Jon's Big Tree Sharpening System should have been on everyone's tool evaluation and purchase lists. Jon's company recently suspended manufacturing this system, but a redesign is in the works and it will probably be available again early in 2013. Consequently, I decided to build my own belt sharpening system based on one of these low-cost import sanders. If you are a woodturner, the chances are good that you are frugal and handy and could build yourself a system if you wanted. In the December issue of this journal, I will show you how. These belt sharpeners work great and are fast. ▶

Belt sharpeners				
Manufacturer	Model	Details	Cost	Web address
 Harbor Freight Combination Belt/Disc Sander	97181	4" x 36" belt with 6" disk sander	\$100	harborfreight.com
 Kalamazoo Belt/Wheel Sander	2SK7	2" x 48" belt with 7" grinding wheel	\$660	kalamazooind.com
 Lee Valley Sander/Grinder	68Z75.01	1" belt grinder, no motor	\$90	leevalley.com
 Robert Sorby ProEdge Plus System	PED01	2" belt system with jigs for turning tools and honing accessories	\$550	robert-sorby.co.uk

Rotary see-through grinders

Recently, two companies, Jooltool and Work Sharp, have released affordable rotary grinders into the marketplace, alongside the unusual VisiGrind machine. These sharpening systems have a horizontal wheel or sharpening disk and you sharpen the tool on the bottom of the wheel, not on the top like horizontal water wheels. The unique feature is that the disks are slotted or perforated so you can actually observe the tool tip as it is being sharpened. The Work Sharp machine features interchangeable disks and a sanding-belt attachment, and the company recently has introduced a tool bar attachment that accepts Tormek and JET jigs for turning tools. All three manufacturers say their systems run much cooler than conventional sharpening equipment.

It is amazing to use one of these systems and actually see the edge being ground. I think for the experienced and professional turner who has great tool control, using one of these freehand rotary sharpening systems may be very quick for edge touchups. A new turner might find it difficult to use one of these systems freehand or to reshape a new tool. For that reason, the Work Sharp 3000 with JET or Tormek jigs for turning tools might be an interesting though expensive choice.

Summary

As in most things in life, there are multiple methods for solving the woodturner's sharpening needs. You can get a sharp edge with any of these: a dry grinder, a wet grinder, a belt sharpener, or a rotary sharpener. It depends on your budget, your time, and whether you want to sharpen other nonturning tools.

Rotary see-through grinders				
Manufacturer	Model	Details	Cost	Web address
 <p>Clear-View VisiGrind</p> 	K-SM180	See-through perforated diamond disk, top-view magnifier	\$800	sharperdrills.com
 <p>Jooltool</p>	Intro Pack	3M Ninja See-Thru abrasive disks	\$300	jooltool.com
 <p>Work Sharp</p>	3000	See-through dry grinder that can be used top side or see-through from below. Tool bar attachment accepts turning-tool jigs.	\$300	worksharptools.com

If you are a beginner, attend a sharpening workshop or class, and try out different systems. Pick one and go for it. Whatever system you choose, you will need to practice using it. The important thing to remember is that you need to touch up the edge of your turning tools before they get dull, so you can experience the joy of always turning with sharp tools.

Jim Echter is a professional turner who lives near Rochester, NY. He specializes in making tools for fiber artists, turning custom architectural pieces, and teaching. Jim's home club is the Finger Lakes Woodturners Association, and his website is truecreations.biz.

The December issue of American Woodturner will contain an article by Jim Echter on how to build a shop-made belt sharpener. ■