

The logo for AAW Education, featuring the letters 'AAW' in a large, bold, white sans-serif font above the word 'EDUCATION' in a smaller, white sans-serif font. The logo is set against a red, ribbon-like background that tapers at the bottom.

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Woodturning Fundamentals

John Lucas

Shares insights on:

- Connecting Spindles
- Buying Bowl Gouges
- Bowl Turning

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2013 | VOLUME 2: ISSUES 1-6 | Video | Projects | Tools | Techniques | Tips

Woodturning FUNdamentals

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2013 - Volume 2: Issues 1-6

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Woodturning FUNdamentals

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American Association of
Woodturners
222 Landmark Ctr
75 5th St W
St. Paul, MN 55102
phone 651-484-9094
website woodturner.org
Exec. Director: Phil McDonald
phil@woodturner.org
Program Director:
Linda Ferber
linda@woodturner.org

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A Note About Safety:

An accident at the lathe
can happen with
blinding suddenness.
Respiratory and other
problems can build over
years. Take precautions
when you turn. Safety
guidelines are published
online at
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help you continue to
enjoy woodturning.

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Fundamentals

Cover photo: John Lucas

WELCOME

A Note from the Woodturning FUNdamentals Chair

Welcome to Woodturning FUNdamentals, a bimonthly educational publication which features easy-to-use, multimedia materials to help build and expand basic woodturning skills and techniques. Woodturning FUNdamentals is intended to:

- Encourage and assist members of the woodturning community in the development of their skills,
- Provide a source for starting and developing woodturning skills,
- Provide reference for equipment, and
- Provide woodturning safety information.

Woodturning FUNdamentals will alternate with the publishing of the *American Woodturner* journal. Between these two publications, you'll have new information to enjoy each month. Every issue of Woodturning FUNdamentals will include past journal materials, specially created articles, tool and equipment reviews, educational video clips, tips and tricks, and questions and answers.

Feel free to send questions for the Q&A, as well as your suggestions for content to Linda Ferber at linda@woodturner.org. We look forward to hearing from you.

Best,
Kurt Hertzog
Chair - Chapters and Membership Committee

CONNECTING SPINDLES

Connecting Long Spindles

This is the method I use when I need to connect short spindles to create a long spindle. I use this same basic principle when making larger diameter pieces that must connect together. I make basically a round mortis and tenon joint.

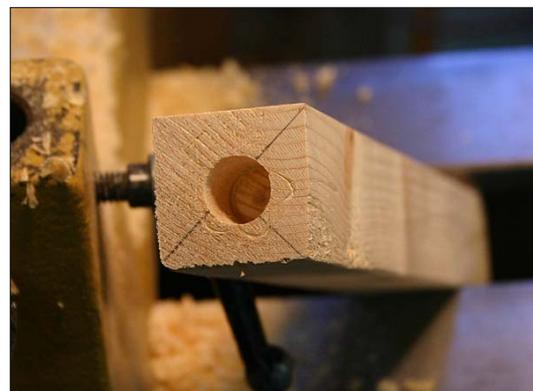
First mark the center of the stock.



I use a Jacobs chuck in the headstock to drill the hole. Place the point of the bit on the center of the workpiece. Then bring the tailstock up and crank the quill feed until it pushes against the stock lightly. Hold the wood and turn on the lathe. If you are using a brad point bit, only the center pin will contact the work and the wood won't spin. Feed the work into the spinning drill bit by cranking the tailstock. Hold the work firmly. I've found this to be quite safe on drill bits up to $\frac{3}{4}$ ". See Note 1 at the end of this article for a safer drilling method.

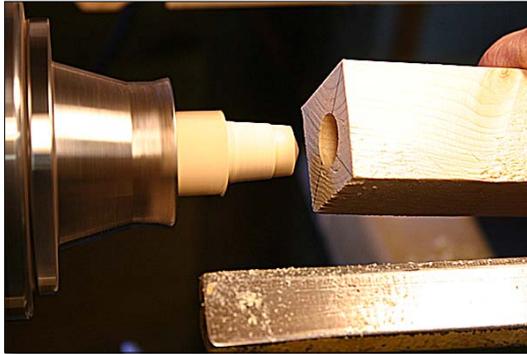


As you can see from the photo below, the bit can easily be pulled off center by the grain of the wood. If you need to have a hole exactly dead center, then it is necessary to clamp the wood. For this purpose it doesn't matter because we will be using the hole as the center point and will reduce the outside portion of the spindle.



If you don't have a drive center that will fit this hole, simply make one. I chuck a small piece of wood in the lathe and turn it down so it has a square shoulder. I turn the tenon with a slight taper so that the end of the taper is a little smaller than the hole. Then push the wood onto the spinning tenon. This will burn or burnish the wood to show you exactly how big to make the tenon.

Take your time turning the tenon to size. You want a snug fit to drive the wood but too snug will split it. See Note 2 at the end of this article for a stronger drive.



You can mount the wood between this drive center and a live center in your tailstock. You can turn a tenon on the other end to go into another section of spindle or into a base such as a lamp base.

Turn the tenon to fit snugly. I prefer to do this on the tailstock end so I can pull the tailstock back and check for accuracy, if needed.



To have a really accurate fit, the shoulder should be perfectly square, I check it with a ruler looking for light that would show a low spot. It is also necessary to square up the shoulder of the end that has the hole. Any inaccuracy on the mating surfaces will show as a gap when you put them together.



This is the joint after both pieces are drilled and trued up.



This is the joint after they are assembled.



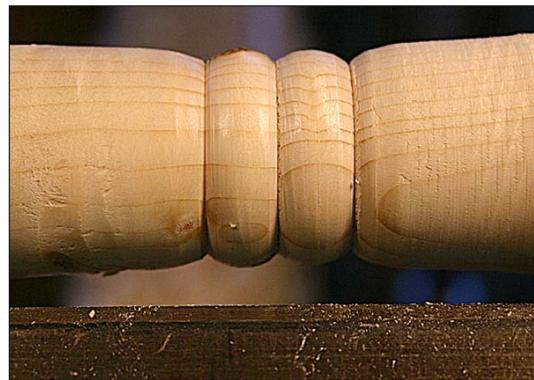
This is the finished joint after I turned a couple of beads. The joint line should always fall between two mating decorations so that it will be a natural shadow line for the eye. If you plan your project carefully by drawing it out first, you can disguise this joint very well. If you use straight grain wood, you may even get the grain to match. It doesn't match in this photo.



Note 1

For safer drilling you need to build a platform to fit your lathe banjo. I use a piece of all-thread rod and cut it off the length I need. I drilled out a cast iron pipe floor flange and epoxied it to all-thread. Then I put a wooden platform on top. I installed a nut on the all-thread for height adjustment.

Put the wood to be drilled between centers using the drill bit as one center. Then adjust the nut until the platform touches the wood. Install a scrap piece of wood as a fence on the other side and clamp it down. This will keep the wood from spinning in your hand. If you use round stock simply make your platform a V block instead of flat.



Note 2

To make a more positive drive center, simply pre-drill some holes a little smaller than your nails. Then drive a nail in and cut off the head at an angle. It is important to make sure the tenon is long enough to touch the bottom of the hole you drilled in your workpiece. Put the workpiece in place and tap the end with a mallet to seat it on the nails. If you are going to use this technique, your drive center should be made of hardwood. Otherwise the nails may simply be pushed farther into the drive center instead of the work.



~ John Lucas
 johnclucas@charter.net
 Baxter, Tennessee

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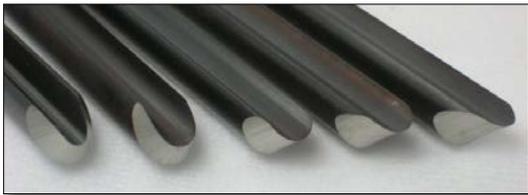
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FIRST BOWL GOUGE

Buying Your First Bowl Gouge

When you first get into turning, buying tools is a rather daunting task. Do you choose high carbon steel, high speed steel, particle metal steel, or carbide? What about cryogenic tools? What size do you need? What are all these tools and which ones do you really need? Well, in actuality this is a very complicated question because every turner is different and we all turn different things.



There is one tool that you will find in virtually every turner's arsenal; the bowl gouge. With a properly ground bowl gouge you can rough out the bowl, turn the bowl, and shear scrape to finish the bowl. It is also an excellent tool for hollowing boxes, hollowing and turning vases, and many other tasks. It is probably the most versatile tool in my toolbox.

To offer a recommendation, I queried many turners from professional to beginner to find out what they owned and what they recommend for a first

time buyer. Virtually everyone suggested a 1/2" (half-inch) or 3/8" (three-eighths-inch) high speed steel or particle metal bowl gouge. Carbon steel is too soft, carbide is too hard, and cryogenically treated tools may offer advantages in edge holding but cost extra.

First, I need to explain that the English tools measure the flute width and the American tools measure the shaft diameter. A 1/2" (half-inch) American tool is roughly the same thing as a 3/8" (three-eighths) English tool. Therefore most people were actually recommending the same size tool.

The flute shaped tools seemed to vary from turner to turner. Some like the V, some like the U and some like the superflute which is sort of in between the V and the U. I have all three and find that I can use them all equally well with only minor advantages of one over the other. For the beginner, I wouldn't worry much about the shape. You will find that you can use any one of the three if it is sharpened properly.

New bowl gouges come with different grinds on the tip. This is because advanced turners have found shapes they prefer and the tool companies have offered these grinds.

The grind most people recommend for a beginner is often called an Irish or Ellsworth grind. The Oneway Wolverine jig at the factory-recommended setting will give you a similar shape. This is a grind with the nose angle anywhere from 50 to 65 degrees and the sides ground back about ¾" (three quarters inch) to form "wings."

The AAW sharpening video has excellent instructions on sharpening a bowl gouge with three different techniques, making it easy to choose a method that will work for you.

I think you will find that a bowl gouge of this size with this grind will get you started on the road to turning bowls and make your turning more enjoyable.

~ John Lucas
johnclucas@charter.net
Baxter, Tennessee

WHERE TO TURN FOR WOODTURNING

Selected readings from *American Woodturner*, journal of the American Association of Woodturners

Getting Started in Woodturning



1. Safety for Woodturners
2. Lathes and Turning Tools
3. Learning at the Lathe
4. Practical Woodturning Projects

Elements of Woodturning

1. Turning Holiday Ornaments
2. Making and Using Turning Tools
3. Turning Bowls



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REVERSE TURNING BOWLS

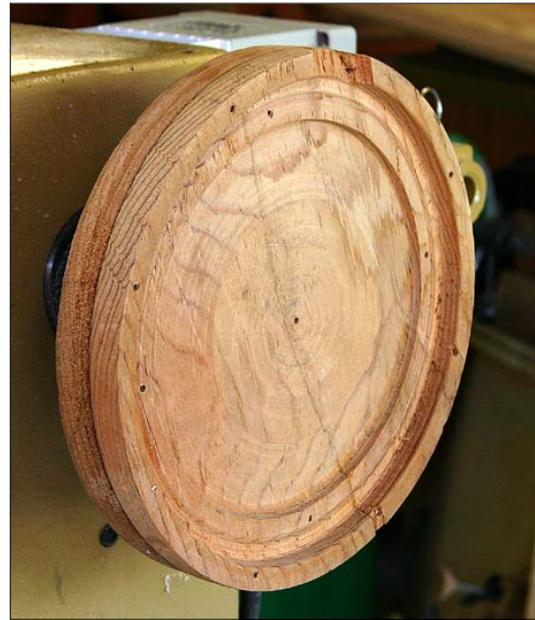
Methods & Jigs for Reverse Turning Bowls

There are many ways to hold bowls and hollow vessels so that you can turn the bottom. In this article I will cover many of the ways of reverse chucking or holding a bowl.

Jam Chuck

The simplest method is often called a jam chuck. This is just a piece of wood, larger than your bowl, attached to a faceplate. You turn a depression in the wood the same size as the bowl's lip. This will align the bowl and drive the bowl with friction. Bring the tailstock up to hold the bowl in place. You can turn most of the foot this way, leaving a small tenon. After you remove the bowl from the lathe you can carve away the tenon.

Sometimes you can force the bowl in the opening with a jam fit and you will be able to remove the tailstock for turning. This depends on the shape of the bowl, of course. Some bowls will not stay on a jam chuck without additional support.



You can often use this disc of wood several times by turning different size grooves for the bowls. When you cut it down to the point that the screws from the faceplate are close, simply true up the surface and glue another scrap of wood on top.

Tape Chuck

A tape chuck is the same as a jam chuck except you use tape to secure it to the jam chuck. This can be a surprisingly strong way of holding the bowl, depending on the shape of the vessel. I use painter's masking tape first and if I'm worried about the tape breaking, I use either duct tape or nylon strapping tape over the masking tape. The advantage of this system over the plain jam chuck is that you can remove the tailstock.



Donut Chuck

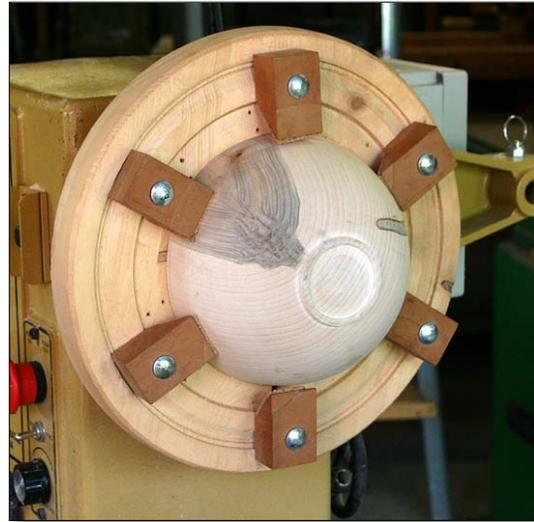
A donut chuck is similar to a jam chuck. You start with a large piece of wood on a faceplate. Then you make another piece of wood with a hole in the middle. The two pieces are bolted together with long bolts. The bowl is placed inside the donut so the bottom protrudes through the hole. Aligning the bowl is easier if you turn a series of rings in the bottom piece of wood. This gives you a way to center the bowl before you snug up the outer ring.



The bolts can be a little dangerous. To limit the problems, I use all-thread rod and extend as much rod as I can through the back of the chuck. This keeps the rod out of my turning area. You can also reverse turn hollow vessels with this system. Simply replace the bowl turning all-thread with longer pieces to accommodate the hollow vessel.

Homemade Adjustable Chuck

I made this chuck to handle a variety of different or odd-shaped bowls. I attached a large circle of wood to a faceplate and trued it up. Then I turned some rings in the front to help align the bowl. I cut slots in the piece to accept some homemade jaws. The jaws are just pieces of wood cut to 45 degrees. I glued cork to the 45-degree face and then added bolts that go through the jaws and attached wing nuts to the back side. I center the bowl up and then move the jaws up against the sides and tighten them down. This chuck is especially useful for bowls that have warped a lot while drying.



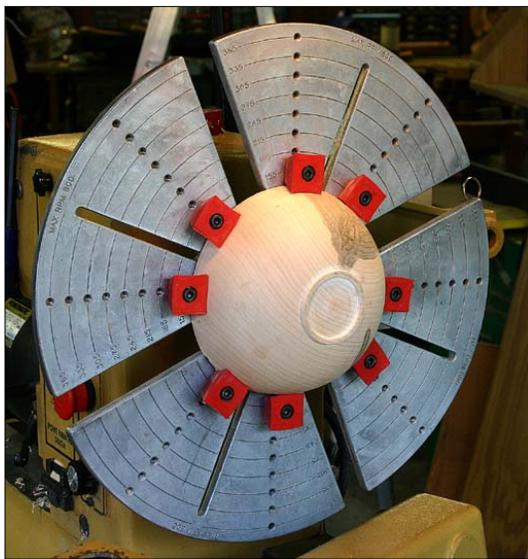
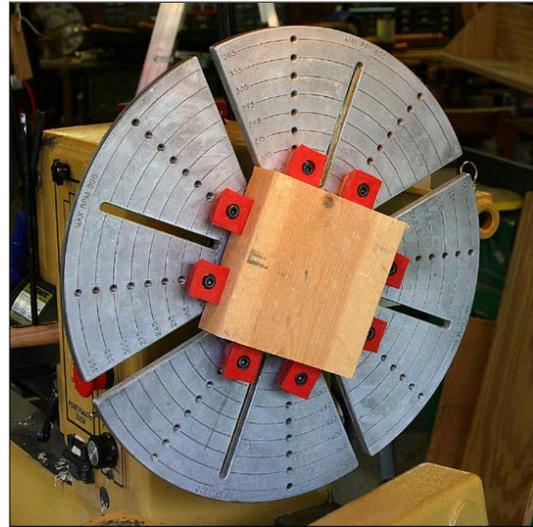
I added a hole in the middle so that I could add other jigs to help hold natural edge and other bowls with odd-shaped lips.



Because the jaws are independently adjustable, you can hold square or oblong pieces to turn the bottom. On the previous page is a photo of a natural edge bowl being driven by friction with the extended jig attached to this chuck.

Adjust-A-Jaws

Adjust-A-Jaws and Cole jaws are large jaws that you can purchase for your chuck. They have moveable feet that hold the bowls. These are very handy and quick to use but you have to remove the jaws from your chuck all the time, or possibly buy an additional chuck and leave the jaws in place.



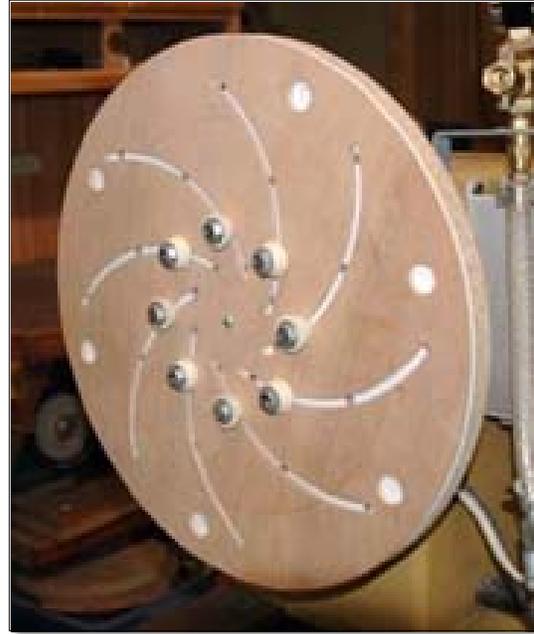
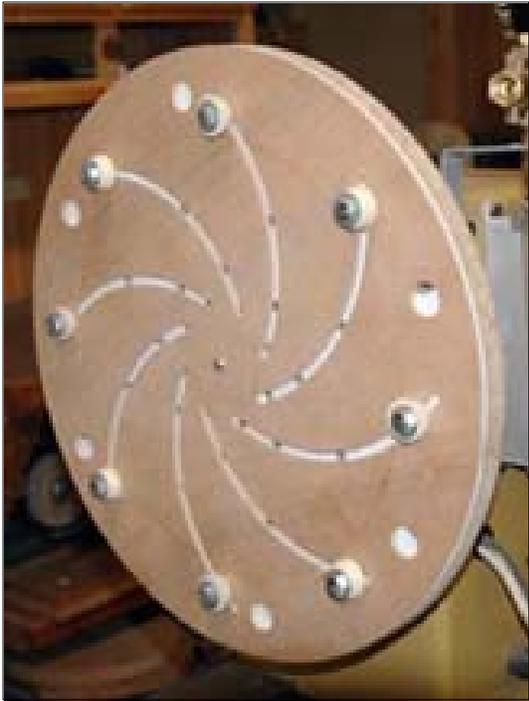
Because the buttons are easily positioned in different holes, you can hold odd-shaped pieces for turning.



One disadvantage of these chuck jaws is the wrench. They don't come with an extended wrench to tighten the jaws and the T-wrench that comes with the chuck won't work to tighten the jaws. I have these installed on a Vicmarc chuck which uses a standard Allen head. You could easily use a ball end Allen wrench on this chuck but I simply welded an Allen wrench onto a longer rod so the T handle would clear the jaws.

Longworth Chuck

The Longworth chuck is a very handy reverse turning chuck that can be easily built if you have the skills. There are plenty of plans on the web - just do a search for Longworth chucks. The Longworth chuck is a self-centering chuck. As you rotate the two parts of the chuck, the jaws move up or down the curved paths and center the bowl.



Here is a photo of the Longworth chuck in use. It is well worth your time to build one of these.



Vacuum Chuck

Vacuum systems have been around for years, but the vacuum chuck is a fairly recent invention for woodturning. A vacuum chuck holds the wood with the pressure of the atmosphere by removing air from the inside of the bowl. You need to purchase a vacuum pump and various devices to conduct the vacuum from the pump through the headstock to the bowl. The best devices have a controller that allows you to adjust the vacuum, depending on the size and thickness of the bowl. Vacuum chucks work only with bowls that do not have holes such as cracks, knots with holes or large worm holes.

You can buy all the parts but it's fairly easy to make your own chucks.



These are all homemade chucks. They have a rubber seal on the lip of the chuck to seal the vacuum from leaking.



Above is a view of one of the chucks. The second photo is with a bowl attached.

One problem with vacuum chucks is centering the work. There are a couple of attachments that allow you to mount the bowl and chuck on the tailstock.



You simply mount the bowl and chuck on the tailstock adaptor and then slide the bowl up to the vacuum chuck. Then you turn on the vacuum pump and remove the chuck from the bottom of the bowl.



Below is a photo of the reverse adaptor from www.bestwoodtools.com. This adaptor has threads for your faceplates or chucks on one side and a #2 morse taper on the other side.



Oneway also sells a threaded adaptor that fits on their tailstock. It screws on the Oneway live center and then screws into your chuck.



Reverse chucks give you many options for turning the bottom of your bowls, vessels and platters. Here are two more examples of what you can do with reverse chucks.



Figure 1



Figure 2

Figure 1 shows some details turned into the bottom. Figure 2 is a bowl with no foot at all that I turned as a commission piece for an artist.

~ John Lucas
johnclucas@charter.net
 Baxter, Tennessee

TEAR OUT REPAIR

Tear Out Repair

Quite often on curly woods, or in this case birds-eye maple, it's really tough to get rid of all the tear-out. Sometimes you don't even see it until you start sanding. In this case I had a choice between making a few more passes with the skew, which would reduce the overall size, or I could repair it. In the past I would sand to fill it with sawdust and then put thin CA glue on. This worked but often left staining around the repair. To solve this problem I would put a layer of finish over the area, which prevented the staining, but often the process of applying the finish would remove the sanding dust. These are very small defects.

To solve this problem I use a slightly different method. I sand the surface with 220 grit to fill the tear-out. Then I apply a drop of thin CA onto the corner of my sandpaper. I then touch it to the filled hole and let it sit for just a second. Then I sand with this same corner for a few passes and then switch to a fresh area and sand until I don't see any evidence of the CA. If I can see the sanded area it means the CA sawdust combination didn't fill it and fresh sawdust did fill it. I repeat the process. This usually does the trick, as you can tell in the photos. This is a narrow portion of a bird's-eye maple mirror handle about 5/8" in diameter. As you can see, the defect is completely gone.

On dark woods this works extremely well and pretty well for most lighter woods that are fairly hard. For defects in end grain on lighter woods or very soft wood the CA can penetrate the wood very rapidly and show up as a stain. For these, I touch the CA sandpaper dot to the wood and then immediately sand with the fresh paper, not the area where I applied CA to the sandpaper.

It might take more applications this way but it doesn't stain as bad.

If it should stain the wood, you can always try to clean it up with another pass of the gouge or skew. I have had this method work extremely well on the inside of bowls, where you often get tear-out in those two areas where you're cutting uphill on the grain.



Before repair



After repair

~ John Lucas
johnlucas@charter.net
Baxter, Tennessee

SHARPENING

Alan Leland's Thoughts on Sharpening

The following tips and thoughts concerning sharpening are methods that I have learned from a variety of turners and sources, mainly Allan and Stuart Batty as they seem to explain turning techniques and skills in a way that makes sense and is easy to understand. I have also experimented on my own with a variety of the jigs that are on the market today, in order to copy some of the recommended shapes for gouges and other turning tools. I have taken many workshops and sponsor many internationally known turners for workshops in my studio and have found that there is not one bevel angle or grind that is universally used. There are a lot of similarities but many turners modify the basic grinds to the type of wood they are turning or more specifically to the type of turning that they do most. I guess what I am trying to say here is that there is not one method or shape for grinding tools that works or is used universally in woodturning or by woodturners. This is especially true when it comes to sharpening scrapers, as they are sometimes modified for a specific task or cut. The one common thread is that there are some guidelines and reasoning that can be used to help one to understand why tools may be sharpened the way they are for certain tasks and which ways may be more appropriate for the type of turning you are doing. My goal here is to shed light on why tools may be sharpened differently and how the various grinds function so that you can choose the

methods or the grinds that are most efficient for the type of turning that you do. I hope to pass on an understanding of the tools and how they work so that your sharpening decisions will be made on an informed basis. From my point of view the best bargain and perhaps one of the best books on woodturning today is the pamphlet by Allan Batty titled, "Woodturning Notes." In it, Allan explains in very simple terms the how and why tools should be sharpened a certain way and methods for using the tools properly. Bear in mind that Allan is a second generation turner brought up in the English apprenticeship system and that as a production turner time and speed were of utmost importance. Some of his methods reflect this need for speed and efficiency.

Below is a list, well, more of a discussion, of what I feel are some of the more important points to consider when sharpening. Remember to always be aware of safety and to wear eye protection, preferably goggles, but at the very least safety glasses with the side shields attached and functioning. No loose clothing, long dangly hair, jewelry or anything else that could possibly get caught up in the spinning grindstones. Always be alert to the fact that there are usually two spinning grinding wheels and avoid making contact with the one that is not being used.

Frequent sharpening is the key to enjoyable, successful woodturning. Turners need to use the grinder frequently to renew the cutting edge of their tools. The following tips will aid you in this not-so-mysterious process of obtaining a sharp cutting edge. The height of the grinder is very important for achieving good results. As with the lathe, the center of the grinding wheel should be at a height even with the turner's elbow. With the grinder at elbow height, it allows for the maximum range of movement for the hands and arms of the turner during the sharpening process. A slow speed grinder (1720 rpm) with an eight-inch-diameter aluminum oxide wheel is highly recommended. A good combination of grinding wheels would be a 40- or 60-grit wheel on one side and an 80- or 100-grit wheel on the other side. If the more expensive powdered metal 2030 and 2060 or A-11 tools are used, upgrading to a SG aluminum oxide wheel would be a good idea.

Before grinding, check to be sure all the safety features of the grinder are properly installed and functioning. Also, with the wheel off the grinder, check to be sure that the grinding wheel is still sound by putting a rod through the wheel arbor hole and tapping the side of the wheel. A distinctive clear ring is a sign that the wheel is sound; a dull thud means that the wheel is fractured and should be replaced. It is far better to spend money replacing a wheel, than to risk injury if the wheel shatters. Dress the wheel to true it up and to expose a

fresh cutting surface, before and during each sharpening session. An inexpensive T-shaped diamond dresser is recommended for dressing the wheel.

Always wear eye protection when grinding. When sharpening a tool, apply just enough pressure to keep the tool on the wheel. Excessive force will hasten clogging of the wheel and create friction that can overheat the tool steel. Many professionals feel that excessive honing or using a progression of sharpening stones on turning tools is time wasted. A proper bevel straight off the grinder is usually good enough, since the sharpened edge will dull quickly when turning.

I have discovered that there is no one bevel angle or tool shape that works for everything. The tool edge that a turner grinds should relate to the style and type of turning being done and the hardness of the wood being turned. Experiment with the various recommended bevel angles and various grinds (e.g., side grinds, fingernail grinds) to find what works best for your specific project. The key is to achieve a continuous facet. The question of leaving the burr on or honing it off is often raised in any discussion on turning. The best answer I have come across is to hone the burr off when turning very hard and dense exotic woods such as cocobolo or ebony, because the burr tends to grab and tear the grain of exotic woods, and leave the burr on for our domestic hard and soft woods.

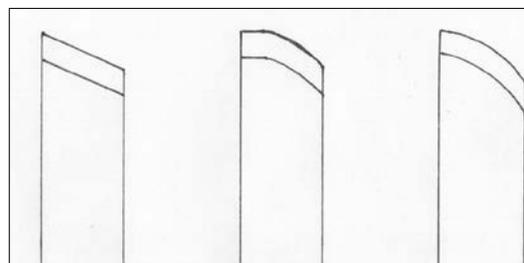
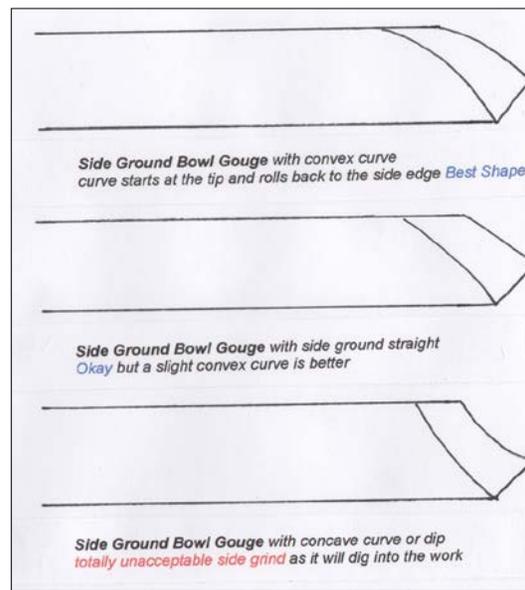
Alan Lacer recommends honing the grinder burr off and replacing it with a fresh burr after honing the top of the scraper, as the burr straight off the grinder is very rough and similar to a weld, as the burr has been melted in place.

The following grinding angles are the most popular, but you may want to experiment and adjust the angles to find the one that is most appropriate for a particular project. I have listed the bevel angles by tool type and have included the most common range for the bevel angles on the tools listed. Popular Grinding Bevel Angles (Bevel angles are listed in degrees) My preferred bevel angles are listed in blue:

- Bowl Gouge (55) 40 to 65 plus
- Scrapers (75) 70 to 80
- Parting Tool (25) 25
- Skew Chisel (30) 25 to 55
- Spindle Roughing Gouge (40) 40 to 45
(Skew Bevel Length 1 ½ to 2 x the thickness of the steel)
- Spindle Gouge (35) 25 to 45

Sharpen your tools frequently. Dull tools are often the cause of many of our turning problems. A variety of sharpening jigs and aids are available through woodturning suppliers and catalogs. One jig that I recommend is the Wolverine system by Oneway Manufacturing.

The jigs make it easy to maintain a constant bevel angle with a continuous facet, thus leaving more time for turning now and for turning in the future.



~ Alan Leland
Durham, North Carolina

VIDEO

Tips for Disc Sander Sharpening



This video clip features John Lucas as he demonstrates disc sander sharpening.

(TRT :57) Video link: <http://vimeo.com/woodturner/review/72485719/b33e8cbb14>

(Tip: If you have trouble accessing the video from this document, you may copy the video link and paste it directly into your browser.)

A Note About Safety

An accident at the lathe can happen with blinding suddenness. Respiratory and other problems can build over years. Take the appropriate precautions when you turn. Among the most important of these is the use of face shields, safety glasses, and dust masks. It is important to observe all manufacturers' safety guidelines. Following manufacturer's safety guidelines and information will help you continue to enjoy woodturning years into the future.

THE ART OF THE PEN

The Art of the Pen

It is rare to find a woodturner who hasn't turned a pen somewhere in their past. There are some, but not many. For a pretty large percentage of the woodturners, the pen is the gateway into woodturning. They saw or participated in the Freedom Pen project, took a pen class at their local wood retailer, or watched pens being turned by an AAW chapter at the county fair. Regardless of their initial exposure, the immediate gratification of taking a piece of wood and quickly creating a functional, personally crafted item is often the hook to a woodturning addiction.



There are some pen turners who are very content to make pens as their main turning projects, continuing to make kits and reveling in turning pens from every wood species that can be found. Others become enthralled by the woodturning craft, move quickly

beyond the pen, and never look back. The pen kit, not requiring extensive turning skills, is sometimes looked down on as a beginner-level project. Explain that point of view to those pen makers who create their own designs, fabricate their own parts, embellish their creations with paintings, pyrography, or piercing, or make their own patterns and cast precious metal components. These makers have created their own art form – one that rivals fine jewelry.



Regardless of your current view of pens, as a low-cost and low-relish entry or a high-end art form of its own, they have a very special place in the world of woodturning. With several pen-turning groups, each numbering in the many thousands, being part of the virtual AAW pen-turning chapter, the pen has the unique position of being the single most popular introduction to the joyous world of woodturning. Without the humble pen, many of us who currently enjoy the world of woodturning might never have started.

~ Kurt Hertzog
Henrietta, New York

WORKING SAFELY

Never Work Hurt

At first this may seem to be a statement that is so obvious that it's unnecessary to a person with common sense. But as we know, common sense can be a bit elusive at times so let's take a closer look at this advice.

You may think I meant that if you had a headache or a broken ankle, it would be best not to attempt to work in your woodturning shop. This is prudent advice because pain can be a distraction and you want to have your head in the game and be focused to reduce the possibilities of an accident.

However, there's another way to look at this statement that's just as powerful in helping you to stay safe and healthy while turning. It's not as obvious to your common sense but can save you from real injuries that can become so debilitating that you would need to quit turning altogether.

Here's a scenario that will highlight my point. You are getting a project ready for your club's show and tell. You worked on it all day yesterday and you want to finish it today. Sometime late in the day you realize that your neck has a crick in it, or perhaps your feet are killing you, or your elbow hurts so much you need to baby it. You're not used to working this many hours but you are determined and push on till you have finished.

Sound familiar? I used to do this all the time when I was younger.

As a consequence I developed repetitive motion injuries that threatened to end my wood turning altogether. Repetitive motion injuries like tennis elbow and carpal tunnel syndrome can develop to be debilitating if you continue to "will" your way through pain. After working in tolerable pain for years, I ended up with injuries so severe, I considered giving up on turning. I sought medical help and when I could turn again, I put a plaque in my studio that says:

NEVER WORK HURT.

Now whenever I feel a localized pain that has developed during the time I work, I assume the pain is caused by the way I am working and I stop until I figure out why I have developed this pain. I spend a few moments to analyze my work flow to see if there is something I can change so I don't hurt anymore.

Most of the time the changes I make are simple. I stretch in the opposite direction of the neck pain or clear the sawdust out from under my feet so I am standing on level footing or consciously remember to lighten up on my grip. Much of the time I realize I've worked enough and I take a "Health Break" or quit for the day all together. No project or deadline is worth hurting for.

~ Don Derry
Ellensburg, Washington

STICKY STICK

Making a “Sticky Stick” – Lathe Sanding Accessory

What’s a Sticky Stick?

Like many woodturners, much of the sandpaper I use is “hook and loop”. That is, the paper is backed with soft “loops” that are used to attach to a sander with mating “hooks”. Velcro is probably the most recognizable name in hook and loop fasteners.

I’m a sucker for a “good idea.”

Some time ago, I read that a woodturner put a strip of adhesive backed Velcro on the ways of his lathe, and used it to organize his loop backed sandpaper during the sanding process.

Having the sandpaper sheets, arranged in order, at my fingertips was very appealing.

- It’s self-organizing. It’s great to go through the steps without having to figure out which grit comes next, and I always know where I am in the process.
- After each step, the paper gets replaced in the “hole” in the lineup, and the next grit is removed from the strip. There’s less chance of missing a step.
- No bench space is required; it’s all done at the lathe.

I took the design one simple step further, and made the strip easily removable by attaching the Velcro to a piece of wood, and attaching the wood to the lathe with magnets.

I use rare earth magnets all throughout my shop. Adding magnets to this project makes the stick:

- Easy to move between machines or take to club demonstrations,
- Easy to clean,
- Easy to get it out of the way when not needed.

The hardest part of this project was coming up with a name for the accessory. I chose the silly name “Sticky Stick” because it really embraces the concept of “sticky.”

- It uses a “stick” of wood.
- It uses magnets to “stick” the wood to the lathe.
- The adhesive backed Velcro “stick” to the wood.
- The sandpaper “stick” to the Velcro.

Here are a few photographs of the setup.



Figure 1

Hook and loop discs are commonly used with right angle drills and inertia sanders. Figure 1 shows a strip set up using six sandpaper discs, with the third grit mounted on the random orbit sander.

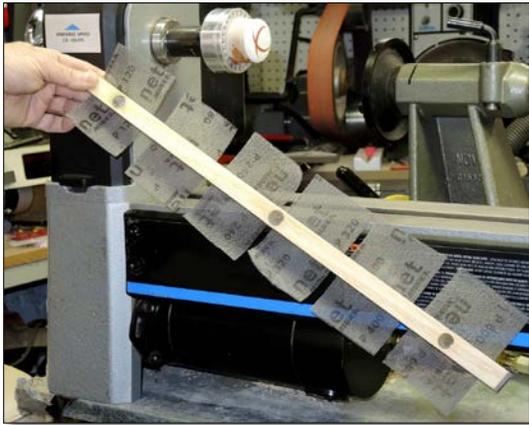


Figure 2

Three $\frac{1}{2}$ " x $\frac{1}{8}$ " rare earth magnets are strong enough to hold a 24" strip securely. I get them on eBay, and prefer N42 strength. Regular magnets found at the hardware store are very weak, so if you use them, you'll need at least twice as many magnets. Figure 2 shows the magnet side of the strip.

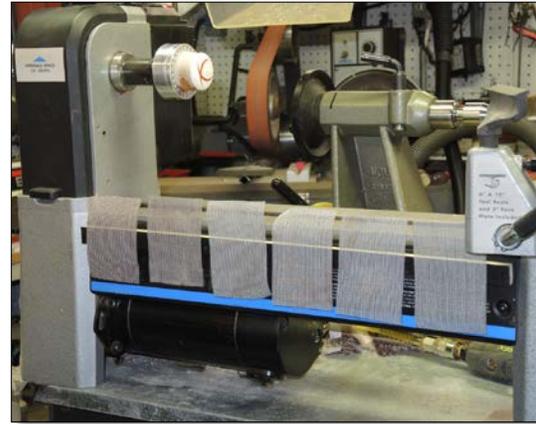


Figure 3

I typically use sheets of loop backed Abranet (an open weave sandpaper) for hand sanding. Figure 3 shows a strip with six pieces, from 120 to 600 grit.

So let's make a sticky stick.

Materials & Tools

- One $\frac{3}{4}$ " x $\frac{1}{2}$ " x 24" pine (or whatever length works for you)
- $\frac{1}{2}$ " Forstner or spade bit in a drill press or hand drill
- Three $\frac{1}{2}$ " x $\frac{1}{8}$ " Neodymium rare earth magnets (N42 strength preferred)
- Thick Cyanoacrylate (CA) glue or pretty much any glue of your choosing
- Roll of $\frac{3}{4}$ " adhesive backed hook and loop fastener

Assembly

Cut wood to length

Length should accommodate a typical set of sanding grits, and fit your lathe.

- Bore holes $\frac{1}{2}$ " wide by $\frac{1}{8}$ " deep.
- Make sure the magnets fit and are flush with the wood.
- Spacing is not critical, three magnets is plenty for two feet of wood.



Glue the magnets into the holes.

- If using CA glue a quick spray of activator locks the magnets in quickly. Otherwise, wait for the glue to dry thoroughly.
- If using wood glue, you might want to drill a very small hole in the center of each $\frac{1}{2}$ " hole, through the wood, to allow for glue squeeze out.



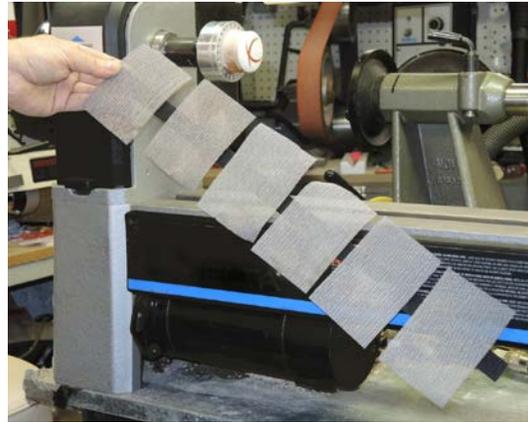
Keep the polarity of the magnets all in the same direction, and make sure the magnet is flush with the wood.



Peel the release paper from the back of the hook fastener and affix to the front of the stick.



Place the sandpaper, in order, onto the Velcro and snap the stick onto your lathe.



Making Sticky Sticks is a simple and useful project. Make a few for your own shop, and perhaps some to give to fellow woodturners or as door prizes for club events.

Turn safely.

~Alan Zenreich
zenAAW@zenreich.com
Oradell, New Jersey

AAW EDUCATION **Where to turn for Woodturning**

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VIDEO

Making a “Sticky Stick” - Lathe Sanding Accessory



This video clip features John Lucas as he demonstrates how to make a sticky stick. (TRT 4:27) Video link: <http://vimeo.com/woodturner/review/65065573/32de8b38ea>

Tip: If you have trouble accessing the video from this document, you may copy the video link and paste it directly into your browser.

A Note About Safety

An accident at the lathe can happen with blinding suddenness. Respiratory and other problems can build over years. Take the appropriate precautions when you turn. Among the most important of these is the use of face shields, safety glasses, and dust masks. It is important to observe all manufacturers' safety guidelines. Following manufacturer's safety guidelines and information will help you continue to enjoy woodturning years into the future.

VIDEO

Tips for Measuring a Tenon on a Spindle Turning Using a Caliper



This video clip features Beth Ireland as she demonstrates how to measure a tenon on a spindle turning using a caliper. (TRT 2:59) Video link:

<http://vimeo.com/woodturner/review/65051640/f2c8cec5c8> (Tip: If you have trouble accessing the video from this document, you may copy the video link and paste it directly into your browser.)

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