WOODTURNING FUNDAMENTALS

American Association of Woodturners
February 2018 • Vol 7 Issue 1

Chucking Tenons

Spindle Roughing Gouge

Turn-to-Learn Candlestick

Big Bottle Opener

Sharpening Angles

Bowls on faceplate

Questions? Answers!

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WOODTURNING FUNdamentals

Dedicated to providing education and information

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Things I Wish I Had Known When I Was a Beginning Turner

Jim Echter

Every advanced woodturner was once a beginner. Some of us were lucky enough to enjoy lessons or had access to books and DVDs on woodturning topics. For many turners, however, woodturning is a self-taught endeavor. Based on my thirty years as a woodturner, I offer a list of tips and suggestions that I wish I had known when first starting to turn wood.

- **Good lighting is key to producing good work.** Purchase quality task lights and utilize full-spectrum (sunlight) fluorescent bulbs in overhead lighting. Sunlight bulbs help to distinguish colors and the surface condition of turned wood better.
- **Dust is your enemy.** It is simply bad for your health. Invest in a good dust collector and dust mask. Wear your dust mask.
- **Sharp tools are a must.** Purchase a grinding system to quickly touch up and sharpen tools. Keep your tools sharp; you have to sharpen them more often than you think is necessary. Some woods have high silica content and will dull tools in seconds. Clean cuts on wood will not happen with dull tools. Using dull tools results in more sanding. Purchase an 8" (20cm) -diameter, slow-speed grinder and a good-quality wheel, appropriate for use with turning tools. A fine oilstone and a 600-grit diamond slip are important for honing. »

Jim Echter turns a bowl in his shop.

Greetings, and welcome!

Welcome to the February 2018 edition of ***Woodturning FUNdamentals***, AAW's online quarterly magazine.

Late last year, the AAW Board of Directors decided to rededicate ***FUNdamentals*** to new and beginning woodturners, to help build foundational expertise and skills. Working closely with ***American Woodturner***, the AAW's bimonthly print journal, ***FUNdamentals*** can be an authoritative, practical, and pertinent guide to learning our art and craft.

At the same time, the Board decided to free up ***FUNdamentals*** founding editor Linda Ferber, who is also AAW's program director. She'll now be able to put her full attention on other membership initiatives and programming.

And as a result, I've been appointed to relieve Linda as editor of ***FUNdamentals***. I'm a writer, photographer, and editor, and I've been a beginning woodturner for a very long time. It's only since I retired from the publishing industry in 2011 that I've really been able to dig in at the lathe. I've still got a lot of questions — and working on ***FUNdamentals*** is a great opportunity for me to ask and continue to learn.

FUNdamentals will continue to offer project-based instruction alongside a close focus on tools, techniques, and materials. We'll continue to blend newly commissioned articles, photos, and videos with evergreen material curated from AAW's complete Journal archive.

The AAW archive spans more than 30 years of woodturners sharing their skills and experiences. The complete archive is available to members online, via the EXPLORE! utility you can access on AAW's main website, ***woodturner.org***. I'm delighted that this issue of ***FUNdamentals***, for the first time, includes direct links to EXPLORE! You'll find these as blue boxes like the one on this page—just click the box, and you should be taken directly to a PDF containing more detailed information. This feature works whenever you are also logged into ***woodturner.org***.

I hope you all enjoy this edition of ***FUNdamentals***, and that you will continue sending in questions, shop tips, and project ideas. Email me any time: editorkelsey@woodturner.org. And meanwhile, as Linda likes to sign off, turn sharp and stay safe.

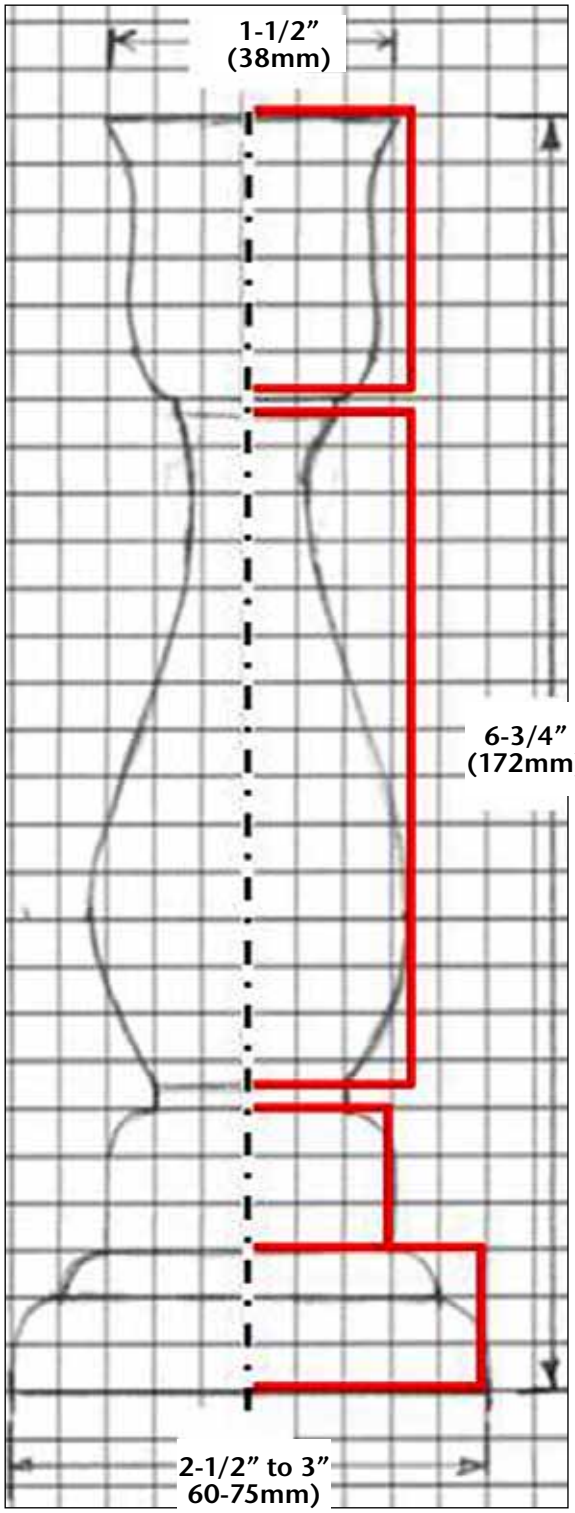
—John Kelsey, Lancaster, PA
editorkelsey@woodturner.org


FUNdamentals editor hard at play in the chilly winter workshop, here investigating grinder platform angles. More about that on page **40**.

1 The candlestick project offers a fun and useful way to practice spindle-turning.

Turn to Learn

Candlestick



by Walt Wager

The candlestick, **1**, is a spindle project easily turned on a mini- or midi- lathe, using the spur drive and live center that came with the lathe. Skills include using a spindle-roughing gouge, a spindle gouge, and a parting tool.

For materials, you'll need a 3" x 3" x 8" (20 x 7.5 x 7.5cm) wood blank, a metal candle insert, and the finish of your choice. I chose cherry because it turns easily without troublesome hard and soft layers in the grain. You'll also need a drill press or portable drill with a 7/8" (22mm) or 1" (25mm) drill bit to match your metal candle insert. You must use a metal insert, because without one a wooden candlestick would pose a serious risk of fire; **3** shows the two types that are readily available online. You'll also need a vernier or outside caliper for measuring diameters, and a small saw for sawing the turning to length — Japanese saw, dovetail saw, coping saw, or hacksaw would all work.

Preparation

The drawing, **2**, will be full size if you download this page and print it out at 100%. Make two copies, one to cut as a template and the other to use for measuring.

2 Full-size drawing, 1/4" (3mm) squares. Blank is 3"x3"x8"; for stability make the base as wide as your wood allows. Small fillets or flats divide the turning into sections marked in red by their largest diameter.

3 (left) Two styles of metal candlestick insert, essential to reduce the risk of fire. Measure your insert to dimension the hole you'll bore.

4 (right) Mark center on both ends of the blank by drawing diagonals from corner to corner.

Saw the cherry wood blank square and to size, and mark the centers by drawing diagonals on the ends, as shown in **4**. Bore one end 1-1/2" (38mm) deep to accept the metal insert you are using, **5**, then set the spur drive in the opposite end using a dead-blow hammer or wood mallet, **6**.

Bring up the tailstock with the live center. Its taper will fit into the bored hole, centering the workpiece on the lathe and holding it tight against the spur drive (**7**). Set the toolrest so that you will be cutting at or slightly above center. Rotate the blank to check that it doesn't hit the toolrest, **8**, next page.

Lathe Speed

Check the lathe speed before turning it on. The proper speed depends upon many different factors including the diameter and balance of the blank, and the condition of the wood. This varies for every project. If you don't have an RPM indicator on your lathe, look at its pulley combinations. For this small spindle, set the speed to about 1200 RPM.

5 Bore a hole for the metal insert 1-1/2" deep in one end of the blank. Be sure to clamp the workpiece.

6 Use a wood or plastic mallet to tap the spur drive into the other end of the blank.

7 Mount the blank between centers. The live center at the tailstock engages the bored hole in the workpiece.

Roughing out

Using the spindle roughing gouge, turn the blank to round using the ABC approach (**8**):

"A" stands for Anchor — anchor the tool on the toolrest before touching the wood.

"B" stands for Bevel—let the bevel contact the wood BEFORE engaging the cutting edge.

"C" stands for Cut. Raise the end of the handle to engage the cutting edge, and then slide the tool across the rest to remove some wood.

The spindle roughing gouge makes a nice clean cut when the angle of the cutting edge to the wood is between 30 and 45 degrees, in the direction of the cut, **8**. Note that the spindle roughing gouge should be used for spindle work only, where the grain of the wood is parallel to the lathe bed, never for faceplate work like a bowl where the grain is perpendicular to the lathe bed. The reason is that the large cutting surface will self-feed into the endgrain and you will get a dangerous catch that can destroy the workpiece, the gouge, or both (more on page **10**).

Keep your right hand against your body, **9** and **10**, so that you can move the tool by rocking your entire body from left to right. This gives you maximum stability and control. Round the blank to a smooth cylinder all the way across, **11**, matching the largest diameter at the base of the candlestick. Be sure to shut the lathe off when you need to move the toolrest, to avoid running the rest into the wood or catching your hand between the rest and the spinning workpiece.

8 With the lathe off, set the toolrest below center so that raising the spindle roughing gouge handle will engage the cutting edge on center. Aim the edge in the direction of the cut.

9, 10 Anchor the spindle roughing gouge on the rest with your left hand. Angle the tool upward so its bevel contacts the wood, brace your right hand against your body, and lift the handle to engage the cutting edge. Rock your entire body sideways from your feet to power the tool smoothly across the workpiece.

11 Use the spindle roughing gouge to make a smooth cylinder from end to end. The drawing shows a 2-1/2" (63mm) base, but if you have the wood, it's better to leave it as large as possible.

The blank is longer than the final candlestick. By boring the insert hole to 1.5" (38mm) deep, you left room to face off the cup side of the blank. Face off about 1/2" (12mm) of the blank using the spindle gouge, so it is square on the end, photo **12**. The 1/2" (12mm) engaging on the live center will be parted off after everything else is turned. It is simply there to hold the spindle in place.

Blocking out

Use your drawing to block out the blank for each element of the candlestick. This means to divide the spindle into sections according to the maximum diameter of each element. The drawing at **2** shows the candlestick divided into four elements:

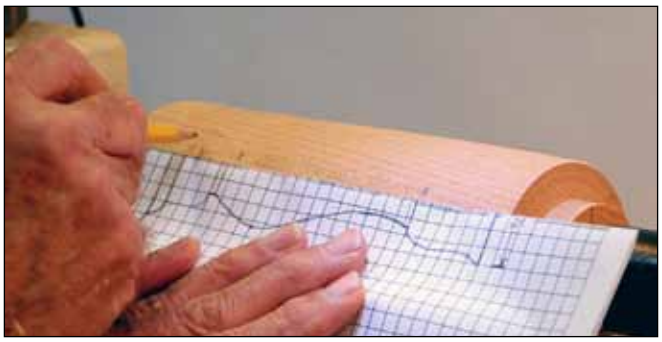
a: the cup that holds the candle,
b: the bulb,
c: the small base,
d: the large base.

There are two small fillets. A fillet is small flat that serves as a transition between two design elements. The first is between the cup and the bulb, and the second between the bulb and the base. Lay the diagram against the blank and mark the different component part on the blank, as shown in **13**. Remember that the 1/2" at the tailstock end is waste, so the top of the cup will be at the edge of the blank past the waste. Make pencil marks at the bottom of the cup, the bottom of the bulb, the bottom of the small base, and the bottom of the large base.

Photo **14** shows the marked blank. Use the parting tool to cut the component sections to the maximum diameter for each section. Start at the cup. The largest diameter is 1-1/2", and it is 1-1/2" long to the fillet. From the fillet by the cup to the fillet at the end of the bulb the maximum diameter is 1-3/4". The base just below the bulb is 1-1/2" diameter, and 2-1/2" to 3" is the maximum diameter of the base.

When using the parting tool, rest the bevel on the blank and raise the handle as you push the tool forward, as shown in **15**. This makes a peeling cut. You can make the same cut using a bedan if you have one.

12 Face off the end using a small spindle gouge. Hold the tool level, rotate to the closed-flute position, and aim the bevel.



13 With the lathe off, use the full-size drawing to mark out the candlestick components.

14 Mark the bottom of the cup, bottom of the bulb, bottom of small base, and bottom of large base.

15 Part each section to the maximum diameter of that section. Rest the bevel on the blank, lift the handle, push.

Shaping

The blocked-out spindle is shown in 16. The next step is to cut the fillets down to their small diameter, then shape each element using the 3/8" or 1/2" spindle gouge. You can use the diagram as a template to guide the work, as shown in **17**. Shape the candlestick elements by cutting from the largest diameter down toward the smallest diameter, often called "cutting downhill." This is cutting across or with the grain, as opposed to cutting into or against the grain, and you are more likely to get a smooth finish, not all ragged and splintery.

Use the ABC approach to the spindle gouge:

A -Anchor the tool on the rest;

B- rest the bevel on the wood with an open flute (flute straight up or 12 o'clock) , and

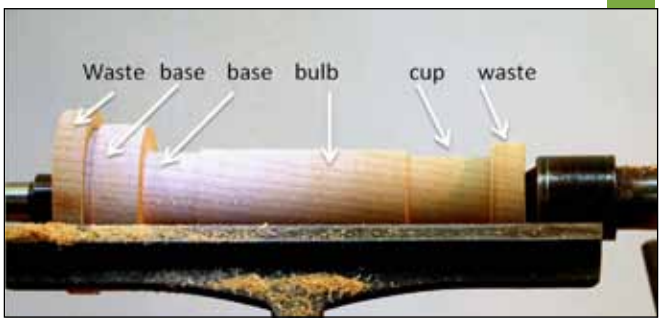
C-raise the handle to begin the cut.

The bevel of the tool should face the direction of the cut. So if you are cutting to the right, the handle should be to the left of the cutting edge. As you make the cut, rotate the gouge to a closed position (3 o'clock). This rotating motion is difficult to describe in words, but you can watch a video on using a spindle gouge at: https://vimeo.com/174507794.

Before starting to turn the bulb section draw a line at the largest diameter as shown in photo **17**. Using the 3/8" or 1/2" spindle gouge, cut from the line down to the fillet, first rounding the bottom of the bulb and then the top. The goal is to make a nice clean curve from the largest diameter to the smallest diameter. You can't do it in just one cut, so make several small cuts. Note in **18** that the cut is to the right, so the handle is to the left.

Under the cup section the bulb has a cove that comes back up to meet the edge of the fillet, **19**. Cut from the fillet down to the center of the cove, then round off the cove on the bulb side. Remember, cut from the large diameter toward the small diameter.

Round the bottom of the cup down to the fillet, and note that the side of the cup has a slight inward cove, coming up to the top edge, a tulip shape as shown in photo 20 (next page). All that's left to do now is sand the candlestick, and part it off from the waste.



16 Block out the spindle by cutting each section to its largest diameter, indicated by the parting tool cuts.

17 Shape the elements using the spindle gouge, always cutting from large diameter down to smaller diameters.

18 Work downhill both directions from the largest diameter line on the bulb section. Cutting to the right, the gouge handle angles downward and to the left, with the gouge flute rolling from fully open (12 o'clock) to closed (3 o'clock) at the end of the cut.

19 The bulb section ends with a cove that meets the fillet beneath the cup. Cut from the fillet down to the center of the cove, then smooth it off from the bulb side.

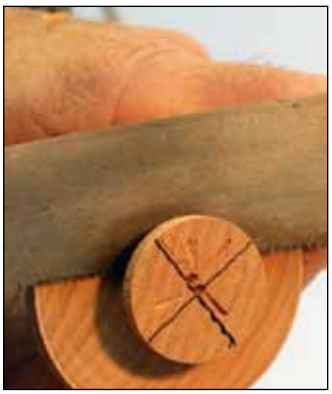
20, 21 The turned elements are complete. To prepare for removal from the lathe, use the spindle gouge to pare the headstock waste down to a slender plug (right).

Parting off

After sanding, use a spindle gouge to remove the bulk of the waste from both the headstock and tailstock ends of the blank. Photo **21** shows using the spindle gouge to cut the waste away from the base of the candle stick. Cut this down to a plug about 1/4" in diameter, and cut the base a tiny bit concave so the candlestick can't rock in use.

Because the candlestick is being supported on both ends by the lathe, you can't just part off one end. Instead, saw through the waste at the cup end using a small handsaw, then take the workpiece off the lathe to saw the remaining plug at the head end (**22, 23**). I use a thin-kerf Japanese saw.

Press in the insert and apply a finish of your choice, and you're done! Unless, of course, you would like to have a pair of candlesticks. It's always instructive to make a design for a second time, with the added challenge of making two the same.



22, 23 Use a small, fine handsaw to cut the waste and separate the candlestick from the lathe.

24, 25 Clean up and chamfer any sharp edges, and press the metal insert into place. The candlestick is ready for the finish of your choice, and, better yet, for you to duplicate to create a matched pair that will grace your dinner table. ■

Walt Wager is a fifteen-year member of AAW. He teaches woodturning classes in Camelot's Woodworking Studio, at King Arthur's Tools, Tallahassee, Florida. His website is waltwager.com; he can be reached at waltwager@gmail.com.

Spindle roughing gouge: a versatile tool

1 Spindle roughing gouge has a deep, semi-circular flute. It's ground straight across at about 45°.

The spindle roughing gouge is used for spindle turning only, where the grain of the workpiece runs parallel to the lathe axis. The large cross-section at the cutting end is effective for roughing down square stock and for removing wood quickly. It's also excellent for planing smooth cylinders and sweeping, gentle curves — a versatile tool.

This tool is commonly sold in 1-1⁄4" and 3⁄4" widths (32mm and 20mm). The inside profile of the flute is concentric with the outside of the tool (**1**). Wall thickness is consistently about 3/16" (4.5 mm). It works best when the end is ground square across, with a bevel angle that's within a few degrees of 45°. A shorter bevel adds unnecessary resistance; a longer bevel is too fragile.

The spindle roughing gouge is dangerous to use on crossgrain bowl blanks because its wide wings will catch and grab. In a bad crossgrain catch, the roughing gouge might be pulled out of your hands and the narrow tool tang (**2**) likely would bend. **Don't use it on bowls.**

Using the spindle roughing gouge

In use, the flute faces up at 90° for the initial roughing cuts, with the handle low and square to the lathe axis. Lift the tool handle so the cutting edge engages the wood, and traverse steadily along the toolrest (**3**). In this position, the large curved edge rapidly gouges away the bulk of the material.

As the workpiece approaches cylindrical, try rolling the gouge a few degrees to aim the flute to the right or left. Small moves can deflect chips; larger moves with a gentle advance will shape the wood. The straight portion of either wing can be presented in a shearing-planing cut that leaves a very smooth surface (**4**).

2 The large spindle roughing gouge has a narrow shank.

3 Spindle roughing gouge quickly removes the corners from a square spindle.

4 Spindle roughing gouge planes a smooth surface.

Sharpening the spindle roughing gouge

The spindle roughing gouge is straightforward to sharpen. It's important to grind it straight across, but the precise angle doesn't matter, 45° or thereabouts (**1**). Once you have established the bevel angle on the tool, it's best and most economical to continue to grind at that exact angle.

If your grinder has a large, flat toolrest, you can set it (with the grinder turned OFF) so the gouge bevel rests evenly on the wheel (**2**). Test it with a quick, light touch and examine the bevel to confirm. If the new scuff mark left by the wheel is a straight line, the angle matches. If the scuff is triangular, pointing up or down, adjust the angle. If you can't quite see the scuff mark, try coloring the bevel with a marker before testing.The freshly ground metal will show up clearly on the colored bevel. It is worth fiddling to get this right.

Use one hand to hold the tool on the rest, and the other to roll the handle and manage the pressure on the wheel. It takes a very light touch and only one or two passes, because the objective is to remove the tiniest whisper of metal, just enough to restore the sharp edge.

Some grinders have a sliding arm carrying a vee socket that cradles the butt of the tool handle (**3**). Once you get it right, you can mark the arm where it enters its housing to return to that setting. Roll the handle to grind with a light touch.

Both methods give great results, but there is one difference. Set the toolrest once and you can sharpen any spindle roughing gouge, whereas the vee arm is reset for each tool. ■

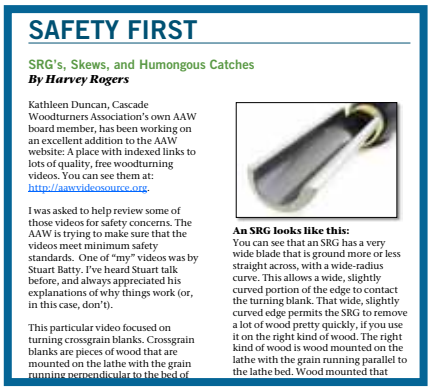
1 Protractor confirms this spindle roughing gouge is ground at 45°.

2 Set the grinder toolrest so the tool's bevel rests evenly on the wheel.

3 The sliding arm carries a vee socket that cradles the tool handle. Adjust the arm until the bevel rests evenly on the wheel.

EXPLORE! Click any blue box to follow the link and find out more

Spindle roughing gouge pages adapted from these linked articles first published



by AAW in American Woodturner and Woodturning FUNdamentals, with

thanks to authors Bob Rosand, Harvey Rogers, and Joe Larese.

An over-sized bottle opener using purchased hardware is a great skill-building project, and it makes the perfect housewarming gift.

Big Bottle Opener

Hefty handle builds spindle skills

AAW Editorial Staff

Here's a simple, useful project that is great for practicing the core spindle-turning skills of roughing to a cylinder, shaping, boring, and detailing. I have found a turned bottle opener is always a welcome gift, beautiful and functional.

This project makes use of commercially available opener hardware, or kits, which come in varying styles from online woodturning suppliers. Some include a threaded insert, which you glue into your turned handle, then screw in the opener part. Others borrow the common 7mm-tube design typical of pen kits. The style shown in this article involves just the opener hardware with threaded post, which is screwed directly into a hole bored in the turned handle.

Just about any species of wood will work fine for this project, but I recommend maple, ash, walnut, or other hardwood. Softer woods such as pine and cedar will quickly become dented from frequent use and knocking around in a kitchen drawer.

Rough-turn a cylinder, form a tenon

1 Rough-turn a cylinder with the blank mounted between centers. Here, I am using an over-hand grip, pushing the tool down on the toolrest. The glove protects my hand from the shavings that come flying down the tool's flute.

2 At the tailstock end, form a tenon to fit the scroll chuck. A simple parting tool leaves a square shoulder and a flat-sided tenon (see sidebar on tenons, page **17)**.

Rough-turn cylinder, form tenon

You can make the opener handle any size you like. I prefer making them over-sized for a dramatic gift and ample leverage during use, so I'll typically start with a blank about 12" (30cm) long and 2" (5cm) square. The extra length also allows for some waste material adjacent to the chuck. I mill most of my own turning wood and air-dry it before use. With this kind of stock (and this forgiving project), finding the exact center at each end for mounting it on the lathe is not critical. Just get close to the center and the work will become concentric when you rough it to a cylinder (**1**).

After you have rough-turned a cylinder, form a tenon at the tailstock end, sized to match your chuck. A simple way to do this is with a parting tool (**2** and page **17**).

Drill and test-fit

Remove the cylinder from the lathe and remount it by holding the tenon in a chuck. This will leave the tailstock end of the workpiece accessible, so you can bore a hole to accept the threaded opener hardware. But prior to drilling, true up the cylinder mounted in the chuck, using the tailstock for support.

Drill a hole in the end of the handle blank, sized to accept your opener hardware (**3**). The threaded post on my openers call for a 3/16" (5mm) hole. When boring with the tailstock, mount the drill bit in a drill chuck, bring the bit up to the workpiece, and lock down the tailstock.

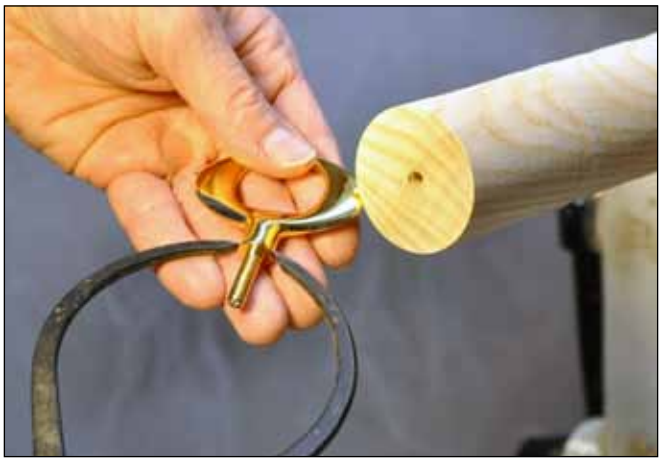
Drill hole, test-fit thread

3 With the workpiece remounted in a scroll chuck and the tailstock in place, true the blank, then replace the tail center with a drill chuck and bore a hole sized to accept the threads on your opener hardware.

4 Test-fit the metal opener, then remove it while turning the handle; it would be dangerous to run the lathe with the opener hardware attached.

Shape opener end

5 The goal is a smooth transition from wood to metal.



6 Use calipers to gauge the diameter of the opener's metal shoulder, above the threads.

With the work turning slowly, advance the tailstock quill a little at a time, pulling the bit out frequently to clear the chips. Drill a little deeper than the threaded post on your opener hardware.

Before turning the handle shape, test-mount the opener hardware in the handle. I find it sufficient to use the opener's threads to cut threads in the wood, but you could also do this with a tap meant for that purpose. Screw the opener into the hole a few turns at a time, backing it out frequently to remove wood chips (**4**). When you are satisfied that the metal opener seats nicely on the wood, remove the metal and set it aside while you turn the handle.

7 Cut downhill with a spindle gouge to taper the end of the handle to a smooth transition from wood to the metal shoulder.

Shape opener end

The goal in shaping the opener end is to create a smooth transition from wood to metal, as shown in **5**. Since this style kit does not use a mandrel with a sizing bushing, gauge the diameter of the metal opener's shoulder using calipers (**6**). Then begin tapering the handle's end to that diameter (**7**). A workpiece this long requires tailstock support during turning, such as this cone center attachment with the cone's point inserted into the drilled hole. It automatically aligns the workpiece on center and does not damage the newly turned handle end. Stop the lathe and check your progress frequently (**8**).

8 The calipers indicate that the wood is about the same diameter as the metal opener .

When you are satisfied with the wood-to-metal transition, bring up the tailstock with cone center again for support as you shape the length of the handle.

Shape handle

9 The spindle roughing gouge shapes a long, shallow cove. The overhand grip is strong but chips will hit your hand.

10 The underhand grip offers good control and gets your fingers out of the chip path.

11 Define the shape of the handle's end with the spindle gouge, cutting downhill from large diameter to small.

12 A parting tool helps remove some waste material to give yourself room for tool access.

13 Take light cuts to clean up the handle end and leave no torn grain.

Shape handle length and tail end

Turn the handle to your desired shape. A long, sweeping cove feels comfortable in the hand and is easy with a spindle roughing gouge (**9, 10**). Stop turning periodically to test the handle in your hand.

When you are satisfied with the handle shape, begin forming the tail end. I use a small spindle gouge to roll a gentle curve, essentially the left side of a bead, for the end (**11**). A parting tool can remove waste material to make room for final-shaping in this tight area (**12, 13**). Leave a stub of wood about 1/2" (13mm) diameter for now so you can add details and sand the handle before parting it off.

Sand the handle, **14**, with the lathe speed low. For a project like this, I work through the grits up to 400. After sanding the final grit with the wood spinning,

Sand it smooth

14 Sand by applying gentle pressure with the lathe turning slowly, no faster than about 800 rpm.

Add burn lines

15 For an easy way to add visual interest, form grooves using a pointed scraper.

16 Press the taut burn wire into the groove until it smokes, creating a dark accent.

turn the lathe off and sand the handle along the grain by hand. This will remove any remaining sanding scratches.

Burned grooves

On opener handles made of plain-looking woods, I like to add burn lines, which I think visually separate the handle's center area from its ends. To do this, form a groove using a small pointed scraper, then apply a burn wire into this groove, pushing downward until smoke appears (**15, 16**). Never wrap a burn wire around your fingers or around the workpiece; a snag could pull your fingers in, causing a nasty cut.

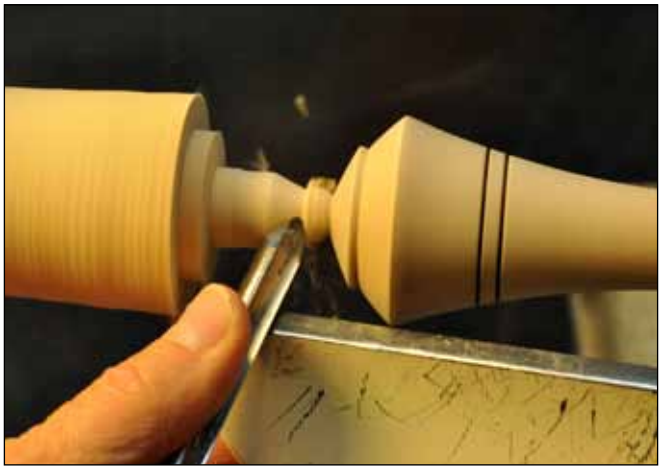
Part off and finish

Move your toolrest to the tail end of the handle, and continue turning the end down to a very small holding point (**17**). With very gentle pressure, sand the newly turned end.

Turn the lathe off and remove the opener handle by cutting it free with a fine-tooth handsaw (**18**). My preferred finish for a bottle opener handle is a spray-on varnish, which provides good wear and water resistance. If you choose to apply a finish while the piece is still on the lathe, do it before reducing the holding wood at the tail end so you'll have enough support for the pressure.

Finally, screw the metal opener part onto the turned handle, and the opener is ready for bottles. Salud!

Parting off



17 Turn the end of the handle to a small nub. Sand gently.

18 Remove the workpiece by cutting it off with a handsaw with the lathe off. Hand-sand the remaining nub. ■

1 Measure the depth of the chuck jaws; 1/2" is typical. The tenon must be shorter, so it doesn't bottom out.

2 Measure the inside diameter of the jaws in their almost-closed position. This diameter grips the most securely.

3 WRONG: The toolrest is too close when it catches the bevel of the parting tool. Note the tenon length is marked.

Chucking tenon on a spindle

Many spindle-turning projects call for a tenon to be formed on one end for mounting the workpiece in a chuck. The same kind of tenon will also work when turning endgrain and crossgrain boxes. The parting tool is easy to use when learning to make tenons. Later, with more experience, you might switch to a bedan or skew chisel presented on its side; these tools take a wider cut than a parting tool and could feel more grabby. The parting tool requires the same tool presentation and motion, but its narrower kerf gives you more control.

4 CORRECT: The turner's thumb presses the shank of the parting tool down onto the rest. With the tool handle angled down, the cutting edge is just above center.

Know your chuck

Begin by knowing the depth of your chuck jaws. In the photos, I am using the Oneway Stronghold chuck with No. 2 serrated jaws, whose depth is about 1/2" (13mm), as shown in **1**. This is important because a tenon that is too long will bottom out in the chuck, preventing the tenon's shoulder from making contact with the top of the chuck jaws. With these jaws, the tenon should be just less than 1/2" long to ensure good contact where it's needed. Also, these jaws are straight-sided, not dovetailed like some others, so the tenon needs to be square to its shoulder.

Most chuck jaws nearly form a circle when almost fully closed (**2**), so a tenon just larger than that will ensure maximum contact with the jaws.

Clean up the endgrain

When you have rough-turned a cylinder mounted between centers, square up the endgrain before making the tenon. More advanced turners might use a skew chisel or spindle gouge for this step, but a parting tool will do the job. The parting tool leaves a rougher surface, but that doesn't matter here, because the tenon will not be part of the finished turning.

Set the toolrest so it is not so close that the parting tool's bevel rests on it; **3** shows an incorrect position. The toolrest should act as a fulcrum for a point a bit further up the shank of the tool; **4** shows the correct toolrest and tool position. The tool presentation should be tool handle down with the cutting edge just above center.

5 The first cut cleans up the endgrain. Slowly lift the tool handle to engage the cutting edge with the wood.

6 Continue to lift the handle while directing the cutting edge in a smooth arc toward the center of the spindle.

7 Finish the first cut close to the tail center, with the tool handle almost horizontal.

Use your left thumb (if you are right handed) to "pin" the parting tool down on the toolrest, and maintain good downward pressure. Begin by slowly lifting the handle to engage the cutting edge with the wood. Continue lifting the handle while directing the cutting edge in a small arc down to the center of the spindle (**5, 6, 7**). Note how at the end of the cut, the tool is nearly horizontal.

Form the tenon

With the endgrain cleaned up, mark the length of the tenon on the wood's surface. Make a shallow cut equal to the width of the parting tool. Confirm the diameter with the caliper reading taken from your chuck jaws (**8, 9**). Beginners should turn the lathe off to apply the caliper; more experienced turners will do this with the lathe running and during cutting, by holding the parting tool with one hand. Crawl before you walk, and walk before you run.

8, 9 To start the tenon, cut the width of the parting tool, then stop the lathe to check the diameter using a caliper set to the chuck jaws (right).

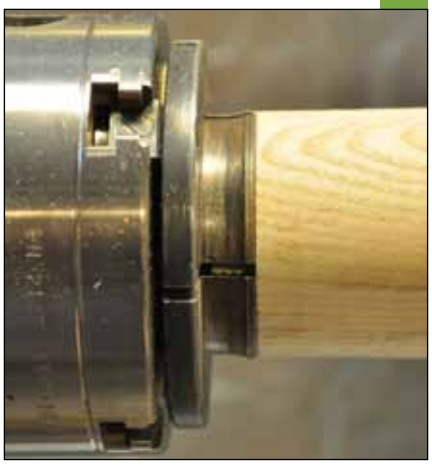
10 Continue to cut one tool-width at a time, until you reach the pencil mark.

11 The completed tenon.

With one step reduced to the correct diameter, move to the left and make another pass, then another, until the full length of the tenon has been brought down to the desired diameter. Strive to make the tenon square with the shoulder (**10, 11**). Note that the stub where the live center contacts the wood does not obstruct the tenon's fit in the chuck, because there is a hole in the center of the chuck jaws. If you find the stub obstructs the fit in your jaws, remove the stub off the lathe using a handsaw or chisel.

When mounting the tenon in the chuck, make sure that the tenon's shoulder makes good, consistent contact with the top of the jaws. **12** shows an incorrect placement, and **13** shows the tenon properly seated. Tighten the chuck firmly. Even with a well-formed tenon seated properly in the chuck, use the tailstock for support whenever possible. ■

12 WRONG: This tenon is not fully seated in the chuck.



13 CORRECT: The tenon shoulder sits tight against the chuck jaws.

Domestic Hardwoods

Apple

by Dave Schell

Apple bowls and bowl blanks by Dave Schell. This bowl measures 7" by 3-1/2".

One of my favorites, apple wood is often overlooked for turning. The grain can be spectacular, it finishes easily, and it is an eye-catcher when displayed. At my most recent bowl show, apple wood bowls sold out quicker than any other species.

Bowl blanks are hard to find online, because successfully drying a blank can be difficult. Free apple wood can be readily found on Craigslist if it grows in your area. Check with local landscapers and arborists because apple wood often goes into scrap and firewood piles since it isn't profitable to sell as lumber. You could also ask local orchards for apple and other fruit woods, since they frequently cull overgrown trees to make room for new ones, but don't expect large diameters for a salad bowl. Orchard wood might also be mostly sapwood with only a little darker heartwood. Even so, it can be good for small turnings, jewelry, utensils, and handles.

Apple wood is not an easy wood to use. Not that it is a difficult wood to cut, but rather, you will need patience to obtain good results. Apple wood is very dense and requires sharp tools to prevent catches. The endgrain tears out easily and will quickly cause frustration if tools are not sharp.

Since it is a fruit wood, you will experience cracking. I like to cut my own apple wood and only use the trunk of the tree, which is the most stable and has the greatest grain variation. I've found that wood past the first crotch is too unstable to use. I prefer to turn apple wood after it has dried, unless I'm going to turn it very thin and don't mind the warping or cracks as it dries. The wood is liable to crack around the pith within minutes of cutting it. To keep as much wood as possible, it is important to wax coat the ends immediately. Otherwise, cut it into small blanks avoiding the pith, turn it the same day, and hope for the best.

When I turn apple, I prepare myself for 50% of the items cracking. I assume 50% of the wood I harvest will crack too much to use. I have had the most success by storing apple in trunk form and then sawing off what I want to turn that day. The thicker the trunk, the higher success, I've found. I have not found any difference among apple species or crab apple.

Apple bark is very thin and can frequently be found with woodpecker holes. The bark does not stay on the wood, so bark-edge projects have never worked for me. The bark usually peels off easily before the wood has fully dried. To dry apple, I prefer to keep the trunk in large whole sections and

Apple wood endgrain, top left, and facegrain, left. These blanks are ready to turn!

Apple wood pendant by Dave Schell. This is a great way to use scraps and small pieces with beautiful figure.

Apple wood bowl blank. This beautifully colored and figured apple-wood blank has the pith of the tree running right through it. Maybe it will crack and split, maybe it won't.

store it in a room-temperature area, such as my basement workshop. Apple dries very fast. In two or three years, I can use wood that has dried enough to avoid cracking once I turn a bowl. More heartwood makes it more stable. The turned bowl seems to air dry within two weeks.

With wet apple, I like to turn a finished thin-wall bowl and let Nature take over as it sits on a shelf and warps or cracks.

Apple wood doesn't have a dominant "apple" smell when turning, unlike the cherry smell you get when turning cherry.

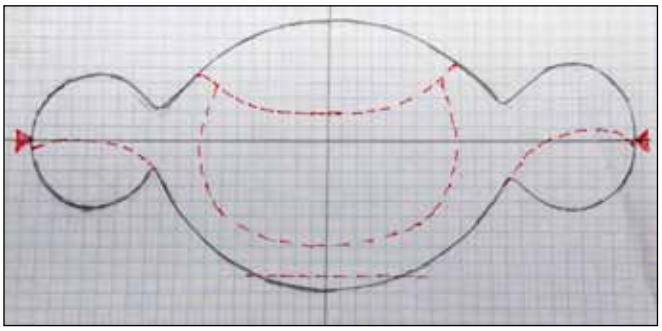
Apple wood is beautiful for turning necklace pendants. You can make easy jewelry items using figured wood around knots and branches that may be too cracked for bowls or spindle turning.

While it can be a difficult and frustrating wood to turn, I think the final products are stunning. I encourage you to pick up a few pieces of apple and try them. You may end up with cracks, but once you learn how to get a good result, you'll be looking for more and it may quickly become your favorite wood.

Dave Schell lives in Mount Joy, PA and is a web designer by day, and bowl turner by night and weekends. Email Dave questions at dave@imakewebpages.com or view his work online at: instagram.com/imakebowls/ ■

Apple bowl with handles

by John Kelsey



Two-handled bowl — Turn an ovoid with two ears, from a small fruitwood log that is fresh cut and not seasoned. While it is green and wet, the wood is soft and easy to turn, saw and carve. The example shown is 10" long, the central ovoid is 4-1/2 in diameter and 5-1/2 long; the handle balls are 3" at most, carving and shaping to your own fine eye.

This two-handled bowl was easy to turn between centers from a small, fresh-cut log of apple, and something like it could be made from any backyard fruitwood.

This one was made in 1977 when I was a woodworking student and beginning turner. Later I learned that apple is notorious for checking and cracking but there would be less distortion if you cut the heart out of the blank, but what did I know? I centered the drive spur and cup center right smack-dab on the pith of the log and turned an egg with two ears. The piece was shaped and hollowed that same day or the next, leaving no more than an inch thickness anywhere. Finished with paste wax. Forty-one years later, no cracks, no checks.

Begin with a 12" (30cm) apple log that is 6" to 8" (15 to 20 cm) in diameter. Mount it between centers on the lathe, with a drive spur in the headstock and a cup center in the tail. Turn off the bark and sapwood at a slow speed, using a spindle roughing gouge. When the wood is green and wet, it will fly off the log like peelings off an apple. There's no need to be exact to the drawing, just turn a nice symmetrical oval in between two ball-shaped handles. The example shown is 10" (25cm) long, the largest diameter is 4-1/2" (11.5cm), and the handles are almost 3" (7.5cm)at their large diameter, and 1-1/2" (38mm)at the neck.

After turning, flatten the bottom and carve, spindle-sand, or saw the bowl opening. The bowl shown was carved with gouge and mallet while the wood was still green and soft. Instead you could screw and hot-glue the flattened bottom to a faceplate with a wood disk (page **32**) to turn the inside hollow. Finally, leave the handles as ball shapes, or saw and sand them to shapes you like. If you bandsaw, be sure to support the workpiece with wedges and blocks hot-glued to an MDF sled (page **24**). ■

Apple specs

Common Name(s): Apple, Crab Apple, Wild Apple

Scientific Name: *Malus* spp. (*Malus domestica, Malus sieversii, Malus sylvestris*, etc.)

Distribution: Found worldwide throughout most temperate climates

Tree Size: 13-30 ft (4-9 m) tall, 1 ft (.3 m) trunk diameter

Average Dried Weight: 52 lbs/ft^3 (830 kg/m^3)

Specific Gravity (Basic, 12% MC): .61, .83

Janka Hardness: 1,730 lbf (7,700 N)

Modulus of Rupture: 12,800 lbf/in^2 (88.3 MPa)

Elastic Modulus: 1,270,000 lbf/in^2 (8.76 GPa)

Crushing Strength: 6,030 lbf/in^2 (41.6 MPa)

Shrinkage: Radial: 5.6%, Tangential: 10.1%, Volumetric: 17.6%, T/R Ratio: 1.8

These specs from the Wood Database:

http://www.wood-database.com/apple/

Under Wood Allergies and Toxicity, the database says no adverse reactions have been associated with apple.

Safely bandsawing small logs

It is safe to cut small logs into turning blanks on the bandsaw, provided you prevent any rock 'n roll during the cut. The bandsaw enables you to work with backyard trees and firewood, whether it is fresh-cut and green, or has air-dried for a while.

Most 14" bandsaws can handle logs 8" to 12" in diameter. For best results, fit the saw with a coarse 3 TPI blade that is 3/8" or 1/2" wide.

Good length for a bowl is several inches longer than the best diameter, leaving rooom to trim past endgrain checks. When a log has flat and reasonably square ends, and fits the bandsaw's capacity, it can safely be stood on end and cut through the center (**1**). The opposite round side can be cut flat and parallel the same way (**2**). These are rip cuts; the chips will be long shavings, so go slow and be ready to back out if the blade jams with debris.

1 Saw small logs on end, but be sure they are stable and don't rock.

2 Sawing the parallel face. Guide the blank from the sides — no hands in the blade's path.

Draw clear layout lines with marker or chalk (**3**), and be sure the standing log doesn't rock. If it does, crosscut it again to get a better end, or hot-glue a wedge under it, or wedge and glue it to a sled (**4**). If you try to hand-hold it, any rock 'n roll risks jamming and probably breaking the saw blade, and maybe cutting you: dangerous, expensive, not good!

3 Carpenter's chalk line marks irregular bark surfaces.

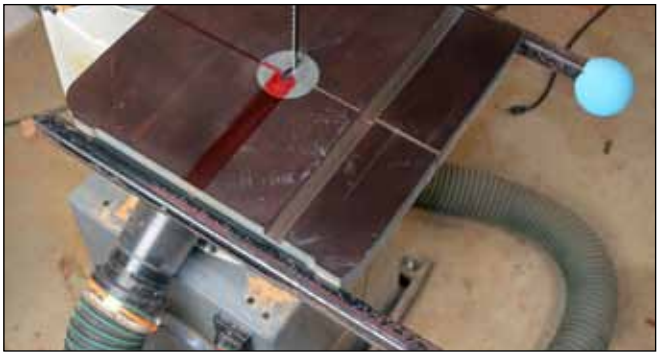
▶

Safety Tip: Bandsaw red zone

Don't put your hands in the path of the bandsaw blade, no matter how much wood is in between. Just don't. Because if there was a flaw or check or soft spot in the wood, the blade could/would race right into your hand.

The simplest bandsaw safety modification is a red band of marker ink on the saw table, as a visual no-hands reminder, **1**. This tip is courtesy AAW member Alan Lacer, AW Journal for Fall 2004; click the center link on the next page.

Two more safety mods: First, fit a dust-collection hose to the saw's lower wheel housing. The details depend on the saw, but on this old Delta 14, it meant cuting a 4" port. Second, fit sponge or tennis balls onto the saw's fence rails, to soften the blow when you back into it.



1 Mark the bandsaw no-hands zone in red, and train yourself never to put your hands there. This old machine also has blue sponge balls on its fence rails, to protect against backing into those rail ends, plus a 4" dust-collector hose installed in the middle of the lower blade housing.

Sacrificial sled stabilizes log for bandsawing

When the round log is too big and/or irregular to saw on end, or when you want long blanks, make a sacrificial sled. The sled is "sacrificial" because you're going to saw into it every time you use it, though you can reuse it until it falls to pieces.

Make the sled of scrap plywood if you have any, or 1/2" MDF, which you can find at most home centers as inexpensive 24" x 48" panels. Saw the panel to a convenient size for your wood, square a line across it and glue a stop-fence to the line (**4**). Use hot-melt glue, the kind formulated for woodworking.

4 Sacrificial sled made of MDF with hot-glued stop-fence.

Whether crosscutting to length or ripping in half, when the log is round it is essential to wedge and glue it to the sled so it can't move, (**5**). Position the log on the sled and eyeball the cut line to top dead center. Corners bandsawn from bowl blanks make good wedges. Hot-glue the wedges to both the sled and the log.

Position the sled on the bandsaw table and bring up the rip fence to guide the cut; be sure the upper blade guides will clear. Feed the sled and log slowly into the blade. This is a deep cut with a lot of sawdust so let the saw take its time (**6**). If the cut veers off, you may need to release the saw fence and steer by eye and hand. End the cut at the stop fence, to save the sled for another day.

***5* Wedge the log** on the sled so it can't rock or roll, then use hot-melt glue to tack the wedges in place.

***6* Guide the sled** against the saw fence to cut the log. Saw slowly, don't jam the blade. ▶

EXPLORE! Click a blue box to follow the link and find out more

Cutting a round workpiece on the bandsaw without proper support is a dangerous proposition. Woodturners often want to cut apart or trim a tenon off of turned spindles, cylinders, cones, and post-shaped forms. Using a handsaw is always safe, but that can be slow and sometimes not even possible. It's tempting, therefore, to use a bandsaw. But without the aid of a jig or other holding method, fingers can be lost.

I often turn pods using green wood, cut them apart, and then carve out the wood inside or use the two sections to make art objects. Years ago, Chris Weiland, a furniture maker from Pennsylvania, showed me an easy-to-make jig that safely holds a round, cone-shaped, or oval object in order to cut it apart using the bandsaw. Unlike multi-use V-jigs or wooden clamps, this jig is a customized, one-use affair, made from inexpensive materials.

Round forms should be held securely in a jig during bandsawing to prevent the workpiece from rolling into the blade. Position your hands at the outer edges of the jig, away from the intended cutline.

A JIG for Bandsawing ROUND OBJECTS

Betty J. Scarpino

Physics and fingers

The reason it is dangerous to cut round forms on the bandsaw is that the blade will enter the wood at a point above the

when I was all-too-casually cutting a length off a dowel. It happened instantly, but fortunately my fingers

bandsaw to help you avoid the temptation of making "just a quick cut." For other, more challenging-to-cut

For more about safely bandsawing blanks for turning, see these articles

The Woodturner's Bandsaw

By Alan Lacer

published by AAW in American Woodturner, with thanks to authors

There is potential danger lurking in the corner of woodturning shops, waiting for the most inopportune time to injure or maim. For some, the thought of operating a bandsaw strikes fear; we have all heard horror stories of bandsaw accidents. The bandsaw's negative reputation, however, is largely undeserved. If we follow a few guidelines, the bandsaw can be one of the safest, and most versatile, of all stationary woodworking equipment. Let's see if we can demystify this machine and acquire a comprehensive understanding of how to operate it safely.

bandsaw SAFETY

Keith Tompkins

Know your machine

Before operating any power equipment, it is imperative to have a basic understanding of its functions, adjustments, and maintenance and safety procedures. Read and periodically review the owner's manual; it contains necessary information required to properly set up and maintain your bandsaw. If you have misgive proper instructions. Under no circumstance should you operate a piece of power equipment without proper training, when tired or under the influence of alcohol or medications, or when the equipment is not in good working condition.

Safety

operator's hands are not safely placed when cutting wood. The red area indicates the danger zone, as seen from above the saw's table. Keeping your hands out of the danger zone will significantly reduce chances of injury while operating the bandsaw. As obvious as this may seem, nearly all bandsaw accidents occurred

Betty Scarpino, Alan Lacer and Keith Tompkins.

Make templates to mark and saw bowl blanks

Before you bandsaw that slab of wood into disks for bowls, pause to consider exactly where to cut. Look at the endgrain and see if the curve of the annual rings suggests a bowl shape (**7**). Assess where the center, or pith, of the tree was. The wood figure you see in the finished bowl has much to do with how you orient the blank relative to the pith (page **27**).

With a flat slab, you can lay out the disk on either side using a compass or dividers (**8**). When the slab has one flat side and bark on the other, use a shop-made disk template. That's a plywood or fiberboard circle (**9**) that you can draw around (**10, 11**) or nail or screw to the log and follow as a sawing guide (**12**). Disk templates work much better than compasses or dividers on irregular slabs. It's well worth the trouble to make a set. Draw the disks with a compass, saw them close to the line, and be sure to drill a small hole at their centers.

Explore!

Click the blue box to find out more...

Turning Your
VERY FIRST BOWL
Old-Time Shop Teacher Demonstrates a Basic Path to Success
John Kelsey

A friend recently asked me for a bowl-turning lesson, but first wanted to understand the complete process. She wanted to know what equipment she might need to add to her basic turning setup, and what expenditures she could postpone or avoid. In particular, did she really have to spring for a scroll chuck before she had even tried bowl turning? I went digging through my woodturning literature but came up dry. I asked Ted Rasmussen, a retired technology teacher from rural Pennsylvania where shop class still matters, for a beginner lesson in turning a bowl without a big investment in special gear.

The shining path, Ted explained, would produce a bowl with no visible trace of its making (Photo 1) by using a pair of faceplates, glueblocks, and a shopmade jam chuck (Photo 2). For this lesson, we will skip finishing since that is an entire topic on its own. Here is the sequence Ted used:

- Lay out the blank, bandsaw it round, and screw a faceplate onto what will be the top of the bowl.
- Thread the faceplate onto the headstock spindle. Use your choice of scrapers and bowl gouges to flatten the foot and shape the outside of the bowl. Sand the outside.
- Glue a small disk of wood onto the foot and screw a faceplate onto this glueblock.
- Remount the blank on the lathe so you can excavate and sand the inside of the bowl.
- Turn a jam chuck to fit the rim of the bowl.
- Reverse the bowl one more time by fitting it over the jam chuck so you can turn away the glueblock and complete the base.

Thanks to Ted Rasmussen of Lancaster, PA

7 Look at the endgrain. The curve of the growth rings indicates where the center of the tree was, and can suggest a good shape for the bowl.

8 On a flat slab, you can use a compass to mark out the bowl blank

9 Bandsaw a graduated set of disk templates using thin plywood or MDF.

10 Draw around the disk template to mark out the circle for sawing.

11 Mark center while the template is in position on the slab.

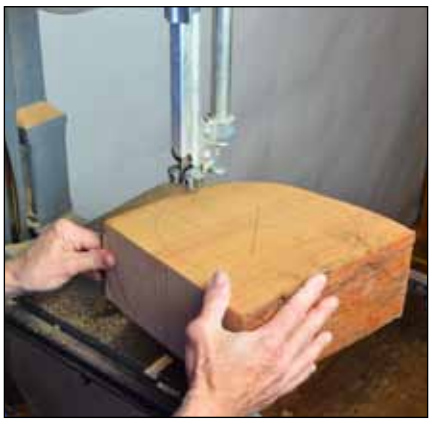
12 On bark or an irregular surface, nail the disk template to the log so you can saw around it. ▶

Bandsawing bowl blanks: try it freehand

When bandsawing slabs into turning blanks for bowls, always plant the flattest side on the saw table and mark the circle on the top side (**13**). Be sure the workpiece sits flat and stable, no rock 'n roll. If it's not stable, use a sacrificial sled with hot-glued wedges (page **24**).

Position the blank so its center lines up with the saw teeth, and pivot the blank around that point (**13**). Don't try to navigate the circle in a single pass. Instead, make release cuts in from the edges of the wood, then sweeping cuts that skim the disk or layout line (**14**).

While you can find many on-line plans for circle-cutting jigs, it is not difficult to bandsaw a good circle freehand. Two references: first, draw a square line edge-to-edge across the saw table, in line with the saw teeth. Second, align the workpiece center with the blade line you just drew. Now steer the blank around that center point, always keeping the center aligned with the blade. Remember geometry class? The tangent to a circle is always perpendicular to a diameter. The bandsaw blade tracks best when cutting on a tangent. When it wanders, check whether the center of the circle is no longer aligned with the blade line. Maybe practice while sawing your first set of disk templates.



13 Steer the wood slab into the bandsaw blade. Be sure the blank sits flat on the saw table.

14 Make relief cuts and bite off chunks. Don't try to saw the full circle in one cut.

15 With the flat side on the table, saw an irregular slab by steering around a shop-made disk template nailed to the wood. ■

Safety Tip

Steer from the sides

At the bandsaw, train yourself to push and steer the workpiece with hands outside the danger zone. The danger zone is anywhere directly in line with the blade's path, no matter how far away. When there is a crack, soft spot or other flaw in the wood, the bandsaw blade might race right through it. Be sure it can't race into your hand. Be sure your hand is not ever there.

Don't push the workpiece with hands in the bandsaw blade path.

Push the workpiece from the sides, so your hands never enter the danger zone.

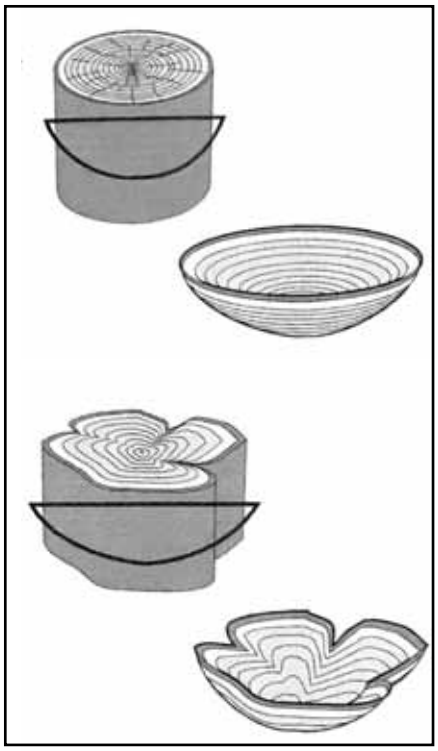
More than one bowl inside that log

There is more than one way to bandsaw a bowl blank from a slab or a small log. Beginning turners often go for the largest possible turning, but that might not be the most interesting and/or attractive.

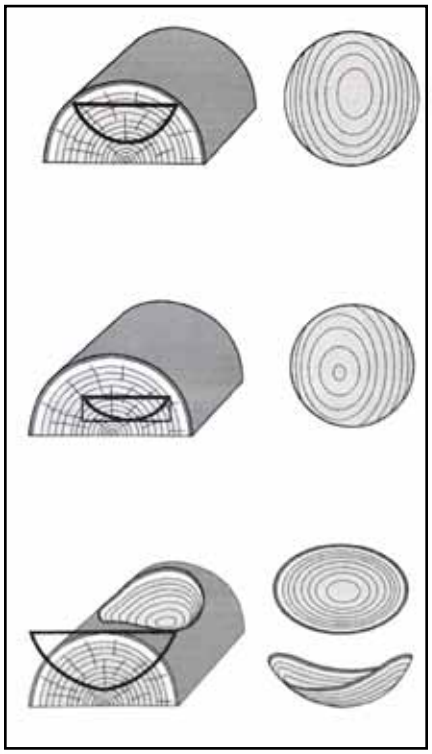
Before you saw, take the time to study the wood grain and figure. The tree trunk is basically a cylinder with its long fibers organized in concentric annual rings. The grain is the wood's actual fibrous structure, while its figure is the annual growth rings and colors you see on each cut surface. Different cuts slice through the rings in different ways.

The fibers in fresh-cut wood are saturated with water. As the wood dries, the cells shrink and so does the wood, though more in width (tangential to the growth rings) than in thickness (radial to the rings), and hardly at all in the length of the trunk. The picture becomes more complex when the log includes distorted wood around a fork, branch, or wound, not to mention burls.

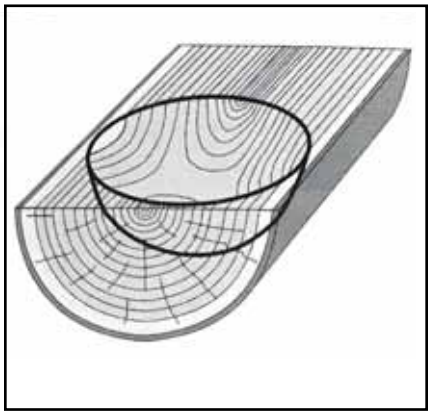
Drawings and ideas by Todd Hoyer. Reprinted with permission from his lecture, **Vessel Orientation.**



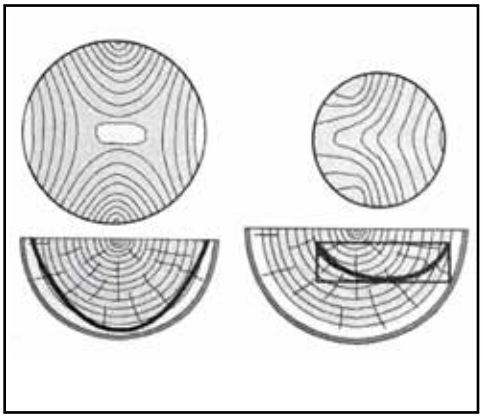
1 Round centered on pith
Crosscut the log and center the pith on a faceplate to turn an open bowl. The growth rings will show as concentric circles. If the bark is sound, the bowl could be natural-edged, with light-colored sapwood as a wide ring just inside the bark, and if the log was convoluted, the bowl will be too. Because of the way wood shrinks as it dries, a bowl turned in this way is likely to distort without cracking if turned thinly.



2 Slab with pith down
Split the log through the pith, then bandsaw a disk and turn the bowl with the pith side at the bottom. The annual rings will display as concentric ovals that can include light-colored sapwood. When the pith is off center, the pattern will be too. Extending the bowl to include the bark can produce an oval-shaped bowl with a saddled edge, a popular nautral-edged form.



3 Slab with pith up
Looking at the end of the split log, the curve of the growth rings looks like a bowl, and turners often prefer go with that, pith side uppermost (left). In this orientation the growth rings will display a hyperbolic shape, a pin-cushion with extended corners. If the bowl is large enough to include sapwood at the rim and the bottom, it will show as light-colored patches (right). Shifting the bowl toward the edge of the log will shift the pattern toward the pith.



■

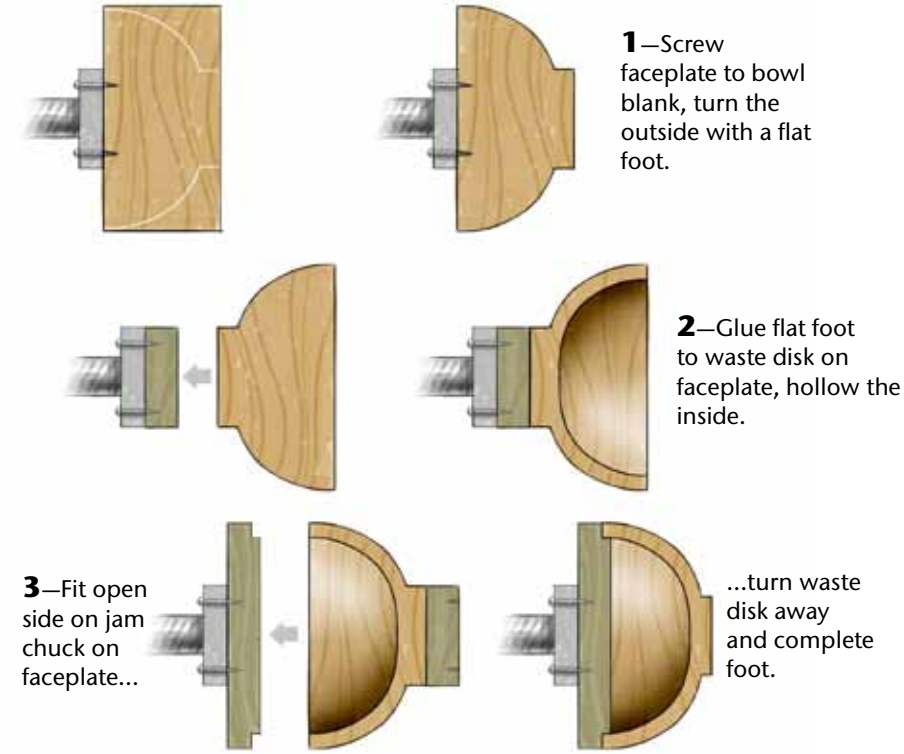
Turning bowls on a faceplate

A faceplate is a heavy metal disk with internal threads that fits onto the lathe's headstock spindle. A crossgrain workpiece can be mounted on the faceplate using wood screws. The faceplate offers a secure and safe, yet inexpensive, way of mounting a workpiece on the lathe. An expensive scroll chuck also works well, if you have one and provided the workpiece fits its jaws. The faceplate method has no such limitations.

You can use faceplates to turn a bowl that shows no trace of how it was mounted. Here's the sequence: First, screw the faceplate to the open side of the bowl and turn the outside with a flat foot. Second, glue the flat foot to a block on the faceplate to turn the inside of the bowl. Third, re-mount the bowl on a jam chuck to remove the glueblock and detail the base.

Most new lathes come with one or more faceplates, typically 3" and

1. Find center. Just plant the corner of a framing square on the edge of the disk, and mark where both arms cross the edge. Connect these points to draw a diameter. Move around the disk and do it again. Any two diameters intersect at the center of the circle.



2. Centering the faceplate. Place the faceplate on the work and eyeball it on center. Use a work light or head lamp to see inside the collar. Mark the screw holes.

3. Depth gauge. Wrap a bit of masking tape around the drill bit to indicate the hole depth. Drill the pilot holes.

▶

Step 1: Screw blank to faceplate, turn outside

4. Drive the screws. To make the screws easy to drive, scrape a little paraffin wax onto their threads.

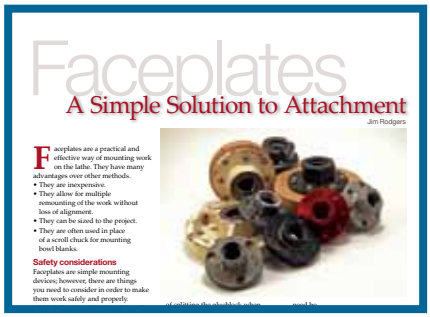
5. Mount the faceplate. Thread the faceplate onto the lathe's drive spindle. Make sure the workpiece sits tight on the faceplate, and that the faceplate fits all the way on. You're ready to turn the outside of the bowl.

6" in diameter, with three or four holes for screws. Choose the largest faceplate that fits the workpiece.

Choose sturdy #12 or #14 flathead wood screws, long enough to extend 3/4" to 1" into the workpiece. Don't use drywall screws. They are brittle and liable to break. Always use at least four screws, and drill pilot holes. ▶

EXPLORE!

Click the blue box to find out more about faceplates.


Faceplates
A Simple Solution to Attachment
Jim Rodgers

Faceplates are a practical and effective way of mounting work on the lathe. They have many advantages over other methods.
- They are inexpensive.
- They allow for multiple remounting of the work without loss of alignment.
- They can be sized to the project.
- They are often used in place of a scroll chuck for mounting bowl blanks.

Safety considerations
Faceplates are simple mounting devices; however, there are things you need to consider in order to make them work safely and properly.

Step 2: Mount base on glueblock to hollow bowl

After you have turned the outside and foot of a bowl, a faceplate with a glueblock can be used to remount it to hollow the inside. This requires a wood disk screwed to the faceplate and glued to the foot of the bowl. The glueblock is a safe and secure way of mounting any crossgrain workpiece.

Use round and square scrapers to get the foot and disk as flat as you can. Check it with a ruler, and refine it by sanding on the lathe using 80-grit or 100-grit sandpaper glued to a flat board (page **32**).

6. Flat foot. Turn a flat foot on the bowl that is a bit bigger than your faceplate. Sand flat using a hard backer-block, and check flatness with a ruler. You'll glue a wood disk onto this surface, so take the time to get it flat.

7. Glueblock. Mount a hardwood disk onto a faceplate and turn a clean, flat and smooth disk the same size as the bowl foot. Remove the faceplate from the lathe but leave it screwed onto the hardwood disk.

8. Glue the block. Remount the bowl on the lathe and spread glue on its flat foot. Position the faceplate-mounted glueblock on the flat bowl foot.

9. Clamp. Bring up the tailstock to clamp the block and faceplate onto the bowl, while the glue dries.

10. Remove faceplate. After the glue has dried, remove the faceplate from the open side of the bowl.

11. Mount the workpiece. Turn the handwheel to thread the faceplate bearing the glueblock and bowl onto the headstock spindle.

12. Tailstock for safety. Bring up the tailstock. It's an extra safety measure while you begin to excavate the inside of the bowl. Leave it in place as long as possible. ▶

Step 3: Make jam chuck to fit bowl opening...

With the faceplate mounting method, you will be left with a glueblock anchored to the bottom of the almost-completed bowl.

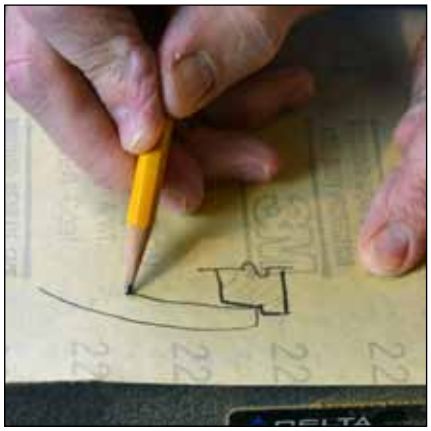
You can remount the workpiece on a jam chuck so the glueblock can be turned away, and the foot of the bowl can be completed.

Begin with a waste disk bandsawn from hardwood or softwood that is the same outside diameter as the open bowl. Screw it to a faceplate and turn a clean, flat disk. Then use the parting tool to turn a ledge in the edge of the disk to exactly fit inside the the bowl opening. The tailstock will help hold the bowl on the jam chuck, so for safety it's essential to have it in place as long as possible. For insurance, tape or hot-melt glue the workpiece onto the jam chuck.

Instead of a jam chuck on a faceplate, you could use a scroll chuck fitted with oversized "Cole" jaws that are large enough for the bowl you are making. But the simple wooden jam chuck can be used for any size bowl, and may be more secure than the rubber bumpers on chuck jaws.

13. Jam chuck. Bandsaw a disk the same outside diameter as the workpiece. Mount it on a faceplate.

14. True the disk. Mount the faceplate on the lathe headstock and turn the disk so it is flat, round and clean. The turner is using a bowl gouge with his hand anchored on the rest and sliding along it.



15. Lay out the ledge. Measure the bowl opening and sketch the ledge you need to turn to make the jam chuck.

16. Turn the ledge. Use a parting tool to turn a ledge or rebate in the edge of the disk. Turn it a bit bigger than the bowl opening, then add a few degrees of taper.

17. Test the fit. Fit the workpiece onto the jam chuck and see how it sits on the taper. ▶

...remount bowl on jam chuck to finish foot

18. Complete the jam chuck. Use the parting tool to adjust the jam chuck. Take light cuts and test again.

19. Mount the workpiece. Press the open side of the bowl onto the jam chuck. It should fit snug and square.

20. Turn the glueblock away. Bring up the tailstock to hold the bowl on the jam chuck. Turn the glueblock away.

21. Detail the foot. Leave the tailstock in place as long as possible, while you turn away the glueblock and detail the bowl foot. ■

Turning Tip: Flat Disks

For gluing, you'll have the best results if the mating surfaces are freshly turned, and truly flat.

Disks can be flattened using a gouge, as shown in Photo **14** on page **31**, or with a heavy scraper, **1** at right. Either way, grip the tool so your hand slides firmly along the toolrest. Check for flat with a straight edge, sighting against the light. Turn the disk as flat as you can make it. Then finish as segmenting turners do, by sanding with 80-grit or 100-grit paper glued to a flat board (**2**). Run the lathe at its slowest speed for sanding.

1. Scrape flat. Use a heavy scraper with a shallow curve. Index your fist against the toolrest. Take light cuts.

2. Sanding board. Tape or glue sandpaper to a flat board and run the lathe at slow speed for final flattening.

Shower curtain traps chips

A friend was doing some renovations and was throwing out a number of old curtain rods with all their roller clips and brackets. I have a very small, crowded shop that is 13' (4m) wide by 18' l(5.5m) ong. When I rough out bowls my shop is completely covered with wood chips that take a lot of time to clean up. It got me thinking that if I could only mount the curtain rods to the ceiling and hang clear shower curtains from the rods it would contain a lot of the wood chips. With a fellow woodturner's help the railings were mounted and hung from the ceiling. The shower curtains were installed and voila — what a difference in clean-up time. The enclosure contains practically all the wood chips — it's a great use for something that was going to be discarded to the land fill.
—Bob Beckwith, Alberta Canada

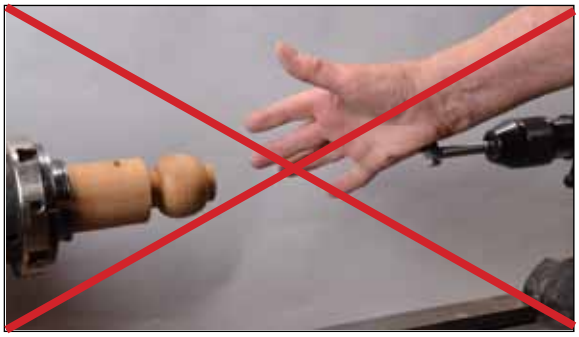
Rolling utility table and trash can

To save floorspace, add workspace, and improve efficiency, I added a 32" dia. (81cm) round plywood (or MDF) worktop to my 32-gallon trash receptacle that sits on a rolling base. As seen in the photo there is a raised rubber outside edge to prevent items from rolling off, and a raised pipe in the center for trash.

It was designed mainly to hold sanding supplies and allow for easy disposal of used sanding supplies, but I have found that I use it for a lot of other reasons. I've even turned the top over to use the platform like a sawhorse and as a flat workbench that's easy to roll around.

Larry Sefton, Tennessee

Safety Tip



Ouch!

As soon as you finish boring into the workpiece, remove the drill bit and chuck from the tailstock, before you drag your hand or arm across the bit's sharp spurs.

Push cut or pull cut? 1/2

Q What exactly is a pull cut and how is it different from a push cut? How does this relate to the tool bevel and the grain direction of the wood? The videos go on about this but I am never sure.

A pull cut uses the left wing of a bowl gouge that has been ground with swept-back wings. The handle is very low and in front of the cutting edge (**1**). The cutting edge is about 45 degrees or even less to the wood (**2**). You are cutting on the bevel of the wing and pulling the gouge toward you, from center toward the outside edge.

You can't do a pull cut on the inside of a bowl. It's also necessary to have the toolrest very low which some lathes simply won't allow because of the height of the banjo.

Many years ago I custom-ground a U-shaped gouge with a very long left wing and did this cut on my hand mirrors, pulling from the center out. This way I could cut down hill with the grain and taper the mirror. This allowed me to keep the tool handle close to my body for better control (**3**). The extremely low handle angle made the cut a shear, very clean. Alternatively, Mike Mahoney and other expert turners use the pull cut to hog off material quickly.

The downside is the depth of cut is controlled by how you rotate the handle so it requires practice to get it right. The tool handle is almost straight down. If you have the handle forward of the cutting edge then you can control the shape by both rotating and steering the handle. Done properly with the handle really low, it's almost impossible to get a catch because the wood is traveling down that wing bevel (**4**).

It's called a pull cut but you can do this exact same cut by pushing. The handle is still very low and forward of the cutting edge a little bit, but instead of standing to the left and pulling, you stand to the right and push. It is a fine shaping cut, and it's a very safe cut. You almost can't get a catch, you're standing out of the line of fire, and the shear angle leaves a very clean surface.

Bowl gouges. Top two, regular grind, best for working deep inside a bowl. Bottom two: swept-back wings.

A push cut is pushing the gouge forward while rubbing the bevel and controlling the cut by steering the handle (**5**). This is a very good cut for controlling shape because you are steering the cutting tip from the end of a 16" lever. That means a small movement of the tool handle equals an extremely small movement at the cutting tip, giving you fine control of the shape (**6**).

A skilled turner can do both cuts accurately but the push cut is probably better for new turners for controlling the shape of the piece. If you have long wings on your bowl gouge, you can do a push cut that uses the wing. You can cut the full length of the wing, which removes a lot of wood very quickly. Glen Lucas demonstrates this by turning the outside of a bowl in three passes. Mike Mahoney uses the pull cut to remove large amounts of wood on the outside. So it's worth playing with each cut to see what works for you.

—John Lucas, Tennessee

EXPLORE!

Click the blue box to follow the link and find out more about how Glenn Lucas turns a bowl using these cuts.

Push cut or pull cut? 2/2

1 Pull cut.

2 Pull cut close-up.

3 Low-angle pull cut.

4 Low angle pull cut close-up.

5 Push cut.

6 Push cut close-up.

■

Measure sharpening angle?

Q What do you mean by bevel angle and grinding angle and sharpening angle? Are these the same? How do you measure the grinding angle of a turning tool? What's the simplest gauge or protractor or whatever to use, where do you put it on a scraper, and on a gouge, and on a skew?
—Larry Green, Bethel CT

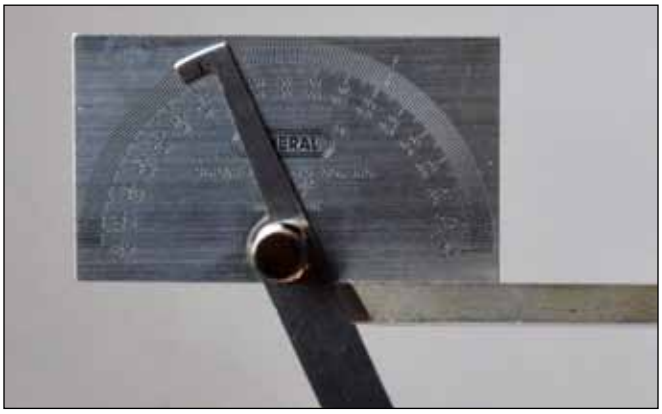
A Basically, grinding angle is the included angle of the steel measured from the top of the tool. And yes, bevel angle, sharpening angle, and grinding angle are all the same, though there is some disagreement over how to measure it.

The scraper is the simplest. If you take a length of steel with a rectangular cross section and grind it flat and square across the front, that would be 90°. Most turning scrapers are ground less than 90°, somewhere between 70° and 80°, as in **1**. Some would call that 10° to 20° off square. For the sake of having the same language, and on our AAW forums this seems to be the majority view, so let's agree to measure from the top.

Photo **2** shows some of the tools you could use to measure the bevel angle. I think the simplest is the protractor shown at bottom right**,** it's unambiguous, inexpensive and readily available on line or at hardware stores and home centers. Use it as shown in **1**: set the body on top of the tool. Read the angle at the small engraved mark on the top of the movable arm.

Photo **3** shows a spindle gouge and **4** shows a skew that has been ground on both sides. If I measure this angle so the gauge is touching both bevels, a machinist would call it the included angle. An included angle is the angle between two sides of a triangle.

Most turners sharpen on a round grinder wheel, which leaves a hollow bevel, as you can see in **3**: measure it from high point to high point. Some belt or flat-wheel sharpening machines leave a perfectly flat bevel.
—John Lucas, Tennessee



1 Plant the base of the protractor on top of the tool and move the arm to touch the ground bevel. Read the angle, this heavy scraper is 70°, at the mark on the arm.

2 Measure the grinding angle with any of these protractors. The round gauge at left is made for turning tools. The simple mechanic's protractor at the right is all you need.

3 This gouge has been hollow-ground at 55°. Look closely where it touches the movable arm to see the hollow grind.

4 Measure the grinding angle of the skew across both bevels. This slender skew has an included angle of 26°.

Grinder angle?

Q Now that we agree on what is the grinding angle, how do you set the vee arm or platform of a grinder for that angle?

A You can make a very simple plywood jig for setting the angle of the toolrest or the vee arm on sharpening systems. It is based on a three-point method developed by the Australian turner and writer Mike Darlow. The triangle-shaped jig has one leg fitting in the vee arm or sitting flat on the toolrest. The other two points touch the wheel. This pretty much guarantees that the setting will be repeatable.

If you want a precise angle there is some trial and error. Begin by grinding the tool to the angle you want, set the V arm or toolrest to duplicate that grind and then make the angle gauge.

Make a long triangle of MDF or 1/4" plywood that fits in the vee jig and comes up to the wheel. Confirm that the vee arm presents the tool to the wheel the way you want it. Then set the triangle in the vee arm and and place it beside the wheel so you can trace an arc of the wheel onto the plywood. Cut that out, then cut out a smaller arc to leave two small areas touching the wheel.

I use a similar jig for the grinder's flat toolrest, with one side of the plywood triangle sitting flat on the toolrest. Then you can draw the same type of arcs to touch the wheel in two places.

To use the tool you set the narrow end of the triangle in the vee arm of the sharpening system and adjust this arm until the two points of the arc touch the wheel. Now it is set perfectly every time, even if the wheel changes size from wear. I find this far more repeatable than single point distance devices.

—John Lucas, Tennessee

Shopmade angle jigs set the sharpening system's platform rest, inset, and vee arm, to grind a gouge. Indexing from the guide apparatus, each jig touches the wheel in two places.

EXPLORE!

Click the blue box to follow the link and find out more about sharpening turning tools and grinding wheels.


A better way to sharpen gouges

Sharpening demystified

By Kirk DeHeer

Quite possibly, you've given up on your grinding jig for producing consistent bevels on your gouges. Here's a reliable method that will get you back to the lathe—with tools you can control.

I've been fortunate enough to meet many of the world's best-known woodturners when they've passed through Provo. Because I'm a self-proclaimed tool freak, I've examined their tools and watched their every move at the lathe.

Most of the turners I've met are freehand sharpeners, as I was when I started assisting them at workshops and demonstrations.

That all changed when Dale Nish asked me to assist him in a beginner's class. Because Dale is a freehand sharpener, he asked me to demonstrate sharpening jigs. And he gave me 30 minutes' notice!

Oh my gosh—that was all new to me. I could quickly see that the bowl gouge would be the hardest tool to sharpen with a jig. So I grabbed my bowl gouge and started to set up the jig.

As I remember, the demonstration went well, but there were questions from the class. Many of them had tried to follow the instructions that accompanied the jig, but my setup wasn't anything like their instruction sheets recommended.

Adjust your thinking

As I researched sharpening jigs, I realized that the control leg did not set the bevel angle like I thought but adjusted the *angle* of the grind on the gouge wing.

The first major hurdle is that the instructions packaged with the Wolverine jig and similar systems confuse new woodturners and experienced turners alike. The side grind is not the *length* of the wing (how far the grinding extended), as the packaged instructions lead you to believe. Rather, the side grind is the *angle* at which the wing is ground.

Although the great turners have different preferences for the bevel angle, there is one common denominator: The bevel of the tool follows around the side to the wing. Unfortunately, if you

Jig grind at 50 degrees


FEATURE

Grinder Wheels

Bill Neddow

Most people don't realize they might need specialized grinder wheels when they begin their adventure with woodturning. The first thing they think of is usually a lathe. Next, turning tools and wood. Maybe sharpening enters into the process at some point, but grinder wheels? Nobody thinks of them.

Having proper wheels on your grinder makes woodturning simpler and more pleasant than struggling to sharpen tools with improper equipment. Quality wheels that are balanced and suitable for your needs will make sharpening easy. Sharp tools make turning fun.

The old pros can sharpen success-

The rest of us, however, appreciate all the help we can get. When we are starting, it is particularly important to simplify the process and have the most appropriate equipment.

I spent more than a decade as a production turner and used a wide variety of grinder wheels. I have tested all the popular types—and some not so popular. Some wheels work quite well, but I have a cabinet full of wheels that do not. Now I want to share those experiences with you.

Grinder size and speed

I have used 6" and 8" (15 cm and 20 cm) grinders both high and low speed. Which is best? Probably the cost. Is it worth buying a new grinder, though? Probably not, unless you are in continual production mode.

More important than the wheel size is the speed of the grinder. There are high-speed (3450 rpm) and low-speed (1725 rpm) grinders. Low-speed grinders are increasingly popular with woodturners because of the lack of heat buildup during use. At a lower speed, there is less chance of *bluing*—heating the metal to a blue color. In the old days, this was considered a terrible thing to do, with good reason. The carbon-steel tools—all we had until the last twenty years—lose their temper if the metal turns blue from heat buildup when grinding. The tools would not hold an edge and had to be ground back significantly to get rid of the soft metal, wasting metal and grinding grit.

The newer high-speed and powdered-metal tools are much less susceptible to overheating, but it can still happen, especially if you put some pressure on the tool and take it beyond the blue stage. Many people recommend dunking a tool in cool water to keep the heat level down. I have done this and seemed to get away with it; however, it can lead to microscopic cracks in the sharp edge. It is better to use a light touch when sharpening a tool to avoid heat in the first place.

If you have a high-speed grinder, there are wheels made specifically for them. Oneway Mfg., for example, sells wheels recommended for use with high-speed grinders. These wheels tend to be harder than the low-speed ones, so don't mix them up. Personally, I prefer the lower-speed wheels because I tend to grind off

Grinder angle with protractor?

Q How can I use a protractor to set the grinder toolrest? These sharpening systems don't have any angle scales on them.

A Here's a way to get pretty close, though you will have to fiddle with it. Set the angle protractor to the exact grinding angle you want to reproduce. Bring the grinder toolrest as close as possible to the wheel. Then place the edge of the protractor on the toolrest with its movable arm pointing upward, and press its corner right onto the wheel where the tool would make contact, with the machine turned OFF of course.

Now sight the protractor arm against something vertical on the other side of the workshop, a door frame or a window. Adjust the toolrest until the protractor arm lines up with that vertical target. Test the grind. The angle won't be exact, but it will be within a couple of degrees, close enough for woodturning and within the range of fiddling.

This low-tech eyeball method only works when the grinder toolrest is level with the wheel center. Tangents to circles are always at right angles to diameters. So when the wheel diameter is level, its tangent is perpendicular, or vertical.
—John Kelsey, Lancaster PA

Setting the angle — Plant the protractor on the toolrest and sight a vertical across the workshop. This works when the grinder platform is level with the wheel center.

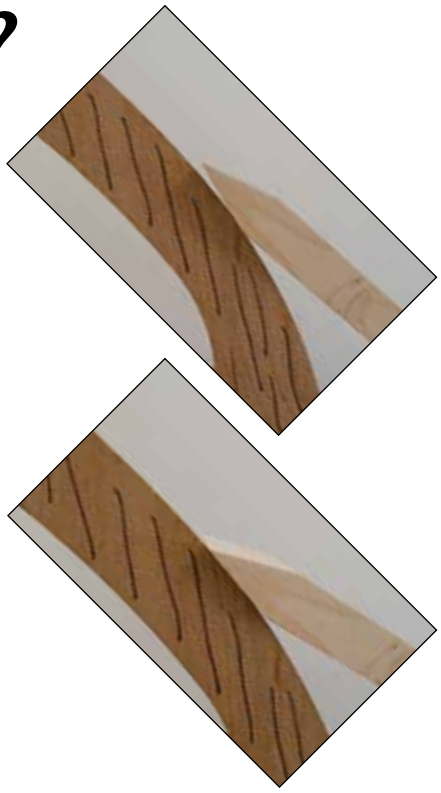
Q: What is bevel rubbing?

A When you grind a tool to create a sharp edge the ground surface is called a bevel. The sharp edge of this bevel is the toe and the blunt edge is the heel.

When you start a cut, remember ABC: Anchor, Bevel, Cut. **Anchor** the tool on the toolrest. Then touch the **Bevel** of the tool to the wood. Then lift the handle until the edge starts to **Cut**.

The bevel controls the depth of cut. Lift too far so you aren't rubbing the bevel, you get a catch because the tool tries to cut too deep. Move the handle down too far and it levers the tool out of the wood, it stops cutting.
To cut a curved surface you have to continually move the handle to guide (or rub) the bevel, to keep the cutting edge in contact with the wood. You control it by steering with the handle of the tool.

Instead of "rubbing the bevel" I prefer "gliding the bevel." Ideally you should not put a lot of pressure on the bevel of the tool. The term "rubbing" implies pushing on the bevel. Gliding, on the other hand, implies sliding the bevel across the wood. I think it's a better description.
—John Lucas, Tennessee



Box corrals finish overspray

You have finished turning your Christmas ornament and would like to spray it with either lacquer or acrylic. However, you don't want the spray to travel all throughout your shop. By "building" this simple spray booth, you can spray the ornament and keep the overspsray contained.

Select a cardboard box that measures about 8" x 12" x 9" (200 x 300 x 225mm). The size can certainly vary according to what you have on hand. Stand the box up on its end with the open side facing toward you. Punch two small holes (1/8" or so) into the top of the box and push a flexible wire up through the holes, creating a loop. Tape the wire ends on the outside top of the box or twist the ends around a pencil. You now have a wire hook for hanging the ornament. Thread a bit of fishing line or string through the screw eye at the top of the ornament, then thread the string through the wire hook hanging at the top of the box. Tie off to secure the ornament to the wire hook. Twist the ornament 8 – 10 times, let go, and as the ornament turns, apply the spray finish.

The ornament can now be removed to a separate drying rack and you can reload the box with the next ornament. Or, simply allow the ornament to dry inside your new spray booth.
— Pat Pitz, Montrose, CO

Cardboard box traps finish overspray. Spin the ornament to spray all sides.

Plastic zip-bags organize segments

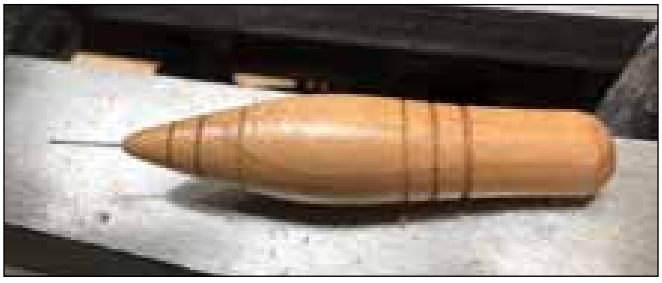
I have got into segmented turning lately and have gone from 8- to 24-piece segmented rings. I like to rip all the wood and then cut all the segments before going on to assembling the rings. Keeping track of all these pieces can get very confusing so I re-use the zip-lock bags that come with pen kits to hold the cut segment pieces for each ring. I add a piece of paper with the ring number to keep the components organized and make it easy when assembling the rings to pick the next bag of segments.
—Peter Huckstep, Albion, NY

Pins and needles

I use sewing pins and needles to open CA glue containers when the tip dries. I also use them as a small scribe. Every time I need a pin or needle that I have borrowed from my wife, I have lost it into the shavings on the shop floor.

So I turned a small 3" long handle out of a wood scrap. Turn the shape and drill a #30 hole for the pin or needle. Glue the pin into the handle using thin or medium CA glue and gently drive it into the handle with a wood mallet. The pin or needle can then be cut to whatever length you want.

Now when the pin falls into the shavings, it is easily found. It is also a whole lot easier to handle.
—Peter Huckstep, Albion, NY



How to sign your work?

Q I've heard of some turners signing their work with a special pen. My woodburning skills are poor and I need some helpful advice. —*Wayne*

A Woods that have a tight consistent grain will definitely give you a better result. Cherry, pear, dogwood, madrone, boxwood, jacaranda and maple work well. Proper sanding is very important; sand to at least 400 grit, and 600 or higher is better.

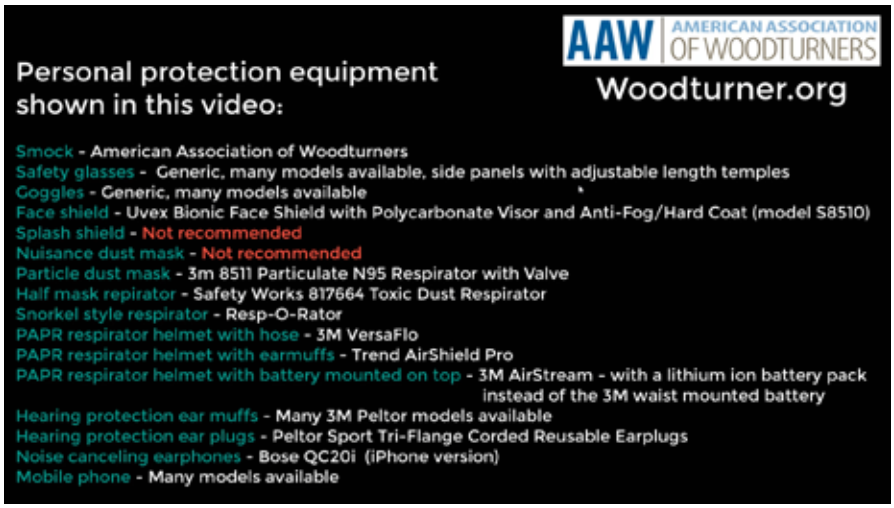
I use the Razertip SS D10 unit and have found the 1/32 ball tip is an excellent choice to write with. Many folks make the mistake of turning the heat up too high. Lowering the heat will make it easier to achieve consistent color. Blobs often occur when learning tool control. With a light gliding stroke and some practice, you will see less and less blobbing.

It is natural to think of the burning pen like a pen or pencil; however, I have better results when I use the pen with a sweeping motion more like a paintbrush. The pen will burn the surface slightly before it hits the wood so a gentle touch is best. The speed of your stroke, pressure on the tool, choice of wood and temperature will all affect the color of your burn lines.

All woods burn at a different temperature so I would suggest working on well-sanded sample pieces of various woods to get a feel for the tool. It is important to sign or print your name legibly. Always apply finish after signing, and practice, practice, practice!
—*Cynthia Carden Gibson, S.C.*

Explore!

Click the big blue box below to link directly to this new AAW safety video.



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- Wayne Miller

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- Jon Magill

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- Lauren Zenreich
- Hans Weissflog
- Mike Peace
- Donna Zils Banfield
- Eli Avisera
- Jay Shepard
- Graeme Priddle
- Stephen Hatcher

SCULPTURE AND INSPIRATION
- Jeff Chelf
- Kristin LeVier

TURNING FOR FURNITURE
- Kai Muenzer
- Rick Rich

Symposium Facility:
Oregon Convention Center
777 NE Martin Luther King Jr. Blvd.
Portland, OR 97232

Host Hotel:
Doubletree by Hilton
1000 NE Multnomah St.
Portland, OR 97232

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Eli Avisera, Israel

- Decorated Plate
- Woodturning Puzzle & Square Bowl
- Avisera Blocks and Inlays

Shalom, 2015, Maple, 16" × 6" (41cm × 15cm)

Photo: Valerie Bogle photography

Mark Baker, England

- Lidded Boxes
- Lidded Bowls
- Hollow Forms/Restricted-Opening Forms Made Easy

Cocobolo Vessel, 2013, Cocobolo, 8⅞" × 4¾" (23m × 12cm)

Donna Zils Banfield, New Hampshire

- Applying Color with Airbrushes
- Pyro-Engraving Patterns and Texture

It Satisfied My Soul No. 13, 2017, Cherry, 23k gold leaf, lacquer, 2½" × 7½" (6cm × 19cm)

Christian Burchard, Oregon

Special Interest Night Presentation

- A Life Made with These Hands, Predictable Unpredictability, and the Nature of Wood

Photo: Christopher Briscoe

3 Disks, 2011, Madrone root burl, 14" × 26" × 12" (36cm × 66cm × 30cm)

Photo: Rob Jaffe

Marilyn Campbell, Canada

- Split Vessels
- Creativity with Epoxy

The White Queen, 2015, Holly, epoxy, paint, magnet, 9" × 5" × 2½" (23cm × 13cm × 6cm)

Jeff Chelf, North Carolina

- Coloring Your Work, from Subtle to Sultry

Musician's Stool, 2015, Poplar, ambrosia maple, milk paint, 20" × 12" (51cm × 30cm)

Kip Christensen, Utah

- Spindle Techniques

Assorted spinning tops

Mark Dreyer, Illinois

- Introduction to Penturning and Taking the Wooden Pen up a Notch

Silver Glass Fiber, 2015, Glass Fiber, 1" × 6" (25mm × 15cm)

Photo: Julane Johnson

Cindy Drozda, Colorado

- Fabulous Finials
- Finial Star Lidded Bowl
- Gilded Sea Urchin Ornament

Cleopatra, Dyed boxelder burl, African blackwood, Akoya pearl in 14k gold, 12" × 8½" (30cm × 22cm)

Karen Freitas, California

- Three-Part Candle Stick

Twist with Flame, 2016, Tulip, buckeye burl, 12" (30cm) tall

Keith Gotschall, Colorado

- Three-Bowl Demo
- Off-Center Platter
- Scottish Quaich

Holly Bowl, 2010, Holly, blackwood, 2¾" × 4½" (7cm × 11cm)

Photo: Tim Brown

Steven Hatcher, Washington

- Inlaying Vessels and Platters with Imagery
- Decorative Inlaid Platter Rims
- Translucent Platter Inlay

Arctic Sun, 2014, Maple, rosewood, ebony with mineral crystal inlay, colorfast dyes, lacquer, 18" × 14" × 3" (46cm × 36cm × 8cm)

Kristin LeVier, Idaho

- Adding Sculptural Elements to Your Turnings
- Bending Wood Without Steam: Introduction to Compressed Hardwood
- Introduction to Micromotor Powercarving

Henceforth, 2015, Maple, compressed beech, silver leaf, acrylic paint, 3¾" × 17" × 3½" (10cm × 43cm × 9cm)

Photo: Jonathan Billing, Archer Photography

Eric Lofstrom, Washington

- Developing Your Skew Skills, "Making The Cuts!"
- Turning a Square-Rim Bowl, "Resonance" Series
- Turning an Endgrain Bowl, "Namaste" Series

Photo: Fred Abeles

Tops/Spinning Series, 2017, Maple, each is approx. 2" × 2¾" (5cm × 7cm)

Tom Lohman, Minnesota

- Segmented Woodturning

Imaginary Tubes, 2017, 6,145 pieces: Bloodwood, holly, yellowheart, cherry, wenge, chakte viga, 5⅛" × 14¼" (13cm × 36cm)

Jon Magill, Oregon

- Ornamental Turning

Twist of Fate, 2005, English boxwood, African blackwood, 3½" × 2½" (9cm × 6cm)

Guilio Marcolongo, Australia

- Emerging Box
- Spoon Box
- Off-Center Box

Off-Center Lidded Box, 2016, 3" × 3" (8cm × 8cm)

Wayne Miller, Massachusetts

- Acrylic Segmenting

Tootsie Pops, 2015, Acrylic, oak, 9" × 7" (23cm × 18cm)

Kai Muenzer, Canada

- Turned Drawer Cabinet
- Box with Tilted Lid

Jewelry Cabinets, 2017, Maple, 4" × 10" (10cm × 26cm)

Mike Peace, Georgia

- Adding Pizzazz with Texturing Tools
- Add Pizzazz with Hand-Chased Threads

Assorted textured works

Ed Pretty, Canada

- Beyond ABC
- Spindle Replication

Coffee Table Legs, 2016, Bigleaf maple, each is 16" × 5" (41cm × 13cm)

Graeme Priddle, North Carolina

- Ammonite Bowl
- Surface, Surface!

Frangipani Vessel, 2017, Pear, acrylic paint, 7" × 3¾" (18cm × 10cm)

Rick Rich, Washington

- Four-Legged Stool

Child's Stool, 2017, Maple, black locust, 12" × 10" (30cm × 25cm)

Jay Shepard, Washington

- Finishing, Buffing, and More

Enceladus II, 2015, Maple, acrylic paint, lacquer, calcite mineral, 3½" × 12" (9cm × 30cm)

Al Stirt, Vermont

- Open Bowl Turning/Balancing the Grain
- Sgraffito Platter
- Turned and Carved Square Platter
- Turned, Textured, and Painted Bowl

Circles, 1998, Maple, gesso, 2" × 15" (5cm × 38cm)

Hans Weissflog, Germany

- Drunken Box
- Box with Pierced-Through Lid
- Standing Oval Box

Sunshine, 2015, Cocobolo, sphere is 10" (25cm) diameter

Lauren Zenreich, New Jersey

- Embellishing Your Projects with Archival Inks

Alan and Lauren Zenreich Collaboration, *3 Spheres on 3-D-Printed Stands,* 2017, Various woods, archival inks, acrylic paint, 3-D-printed wood filament, spheres are 3" (8cm) diameter

Dan Tilden, Oregon

- Turning a Hollow Vessel and Maximizing Your Expensive Wood

Madrone Burl Flower Pot, 2016, Madrone, 12" × 12" (30cm × 30cm)

Ray Wright, Utah

- Using the Force to Turn a Wooden Light Saber

Light Saber, 2017, Walnut, maple, 42" × 1¾" (107cm × 4cm)

ADDITION SYMPOSIUM EVENTS

TRADE SHOW

- Visit 100+ exhibitor booths
- Woodturning seminars and demos
- State-of-the-art woodturning products and supplies
- Handcrafted gifts and artwork

EXHIBITIONS & INSTANT GALLERY

- Exhibits of remarkable turned works
- Instant Gallery of 1,000+ turned works - many pieces are for sale

AUCTIONS OF TURNED ART

- Bid on exceptional turned works to support grant, outreach, and educational woodturning programs.

RETURN TO THE COMMUNITY

- Buy a woodturned bowl to help a Portland area charity, Meals on Wheels People, which enriches the lives of seniors, and assists them in maintaining independence, by providing nutritious food, human connections, and social support.
- See woodturned boxes made for Beads of Courage, which supports local kids coping with serious illnesses.

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PORTLAND 2018

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