WOODTURNING FUNdamentals

AAW EDUCATION

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PROJECTS

TECHNIQUES

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Woodturning FUNdamentals
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INTRODUCTION

Vision 2020: AAW Video Source

Vision 2020 is AAW's new strategic plan to build upon the organization's position as the go-to source for woodturning information. Based on solid research, the plan's programs are inclusive, with the intent to fulfill the needs of hobbyists, professionals, collectors, demonstrators, and vendors. Our newest service, AAW Video Source is a Vision 2020 initiative. AAW VideoSource makes searching for online woodturning videos a snap. The videos are searchable by topic area.

In This Issue

In this issue of *Woodturning FUNdamentals*, we continue with our "Ask the Expert" series. If you have a question for one of our experts, you can submit a question at http://www.woodturner.org/?page=Tips#TipForm2. We'd love to hear from you!

Also in this issue, we are happy to include another in our series on miniatures. We hope this article inspires you to look at shape and design; the techniques are very transferable.

Turning functional items is always a pleasure. There are project articles for two favorites included in this issue—rolling pins and lamps.

As always, *Woodturning FUNdamentals* invites you to submit your questions, tips, projects, and problems. Every turner develops techniques that work and also runs into frustrating obstacles from time to time. You're not alone. Please send your submissions to us at linda@woodturner.org.

I welcome your suggestions and concerns.

Stay Sharp and Turn Safe
Linda Ferber
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Click here to access AAW Video Source.

TURNING MINIATURES

Turning a Miniature Hollow Vessel, Advanced

By Tom Jones

For the next project in my "Turning Miniatures series," I'll discuss turning a miniature hollow vessel. This one is made from cherry, is 1/2" diameter by 7/16" tall, and is completely hollowed to a wall thickness of about 1/16" (photo 1).

Photo 1

The shape of this vessel is very simple, yet the rolled rim and a slight foot give it enough detail to make it interesting. The wide shoulder area which has to be hollowed through a narrow neck adds a bit of challenge, and will require a few new tools that make it possible to reach into the deeper recess.

GETTING STARTED

Start this project by attaching a glueblock to the spindle of your lathe and flatten the face of it. Select a piece of fine-grained wood approximately 3/4" square by 2" long with the grain running lengthwise through the blank. Mount the blank to the glueblock and allow the CA glue to dry for several minutes. Bring the tailstock up and allow the tailstock to support the blank while you rough turn the blank to about 5/8" diameter (photo 2).

Photo 2

Using a detail gouge, begin shaping the top two-thirds of the vessel, as shown in Photo 3. Don't shape too much of the bottom yet; if you make the bottom too narrow, it won't be strong enough to support the vessel while you're hollowing the inside. Shape just enough to make it possible to determine the final shape, so you'll know how deep to go while hollowing.

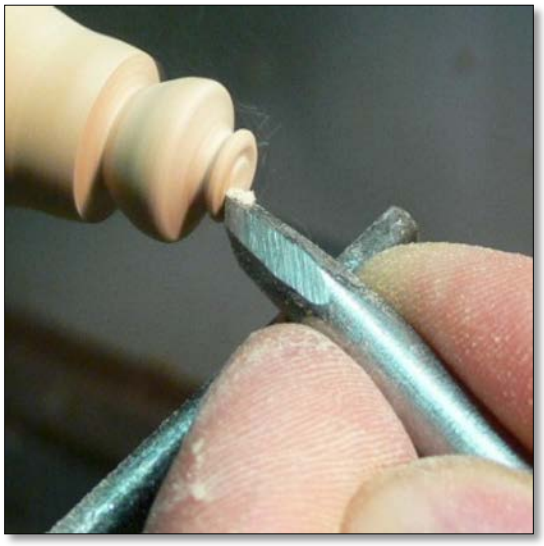

Photo 3

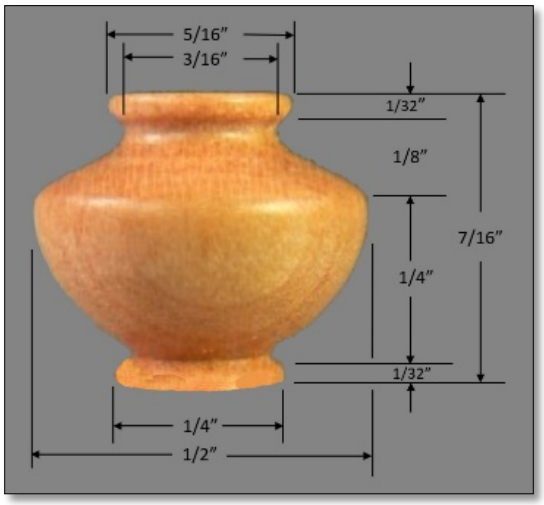

Photo 4

Photo 4 gives a general idea of what the dimensions should be like. The actual dimensions aren't nearly as important as the general proportion. Ideally, the area below the shoulder line should be about twice as tall as the area above the shoulder line.

Create a rolled rim like the one shown in the photos. The rim should be approximately 5/16" diameter by about 1/32" tall. The area below the rim should then taper into a neck that's about 3/16" diameter, before tapering down to the shoulder area, which is about 1/2" diameter.

The portion from the shoulder down to the base is approximately 1/4" tall. This should be a smooth, flowing shape. Notice that the diameter at the base is approximately the same as the diameter at the neck. Proportion is important; if the bottom is too large, the vessel will look "clunky." If it's too small, it can look unstable. Notice the gradual curve from the shoulder to the bottom. Take your time and get it right. It's much easier to adjust the shape now than after the inside of the vessel has been hollowed.

When you're happy with the shape, move the toolrest around so that it's perpendicular to the ways, and positioned about 1/4" away from the rim. Use the detail gouge to cut down and into the neck (photo 3). You want the neck to follow the same contour of the outside, and you want a nice round rim. Use the detail gouge to define that shape prior to starting to hollow.

Typically, the easiest way to begin hollowing is to mount a drill bit in a Jacob's chuck, and use it to hollow out the center portion. If you chose to start this way, be sure to select a drill bit that's slightly smaller than the diameter of the smallest part of the neck. Also, remember to measure the depth that you want to drill by holding the bit next to the vessel, and putting a piece of tape on the drill bit, marking the maximum depth it should be inserted.

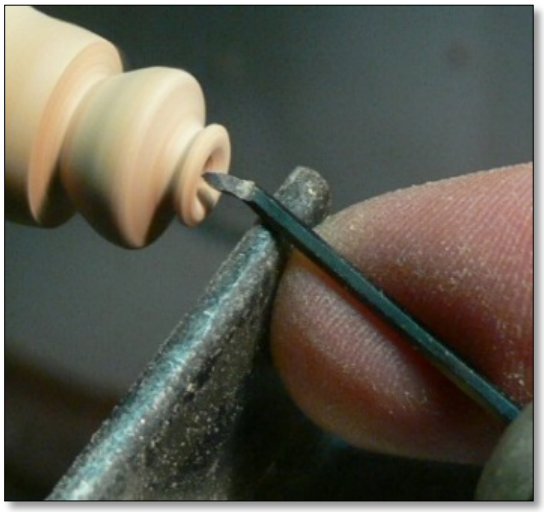

Photo 5

Photo 6

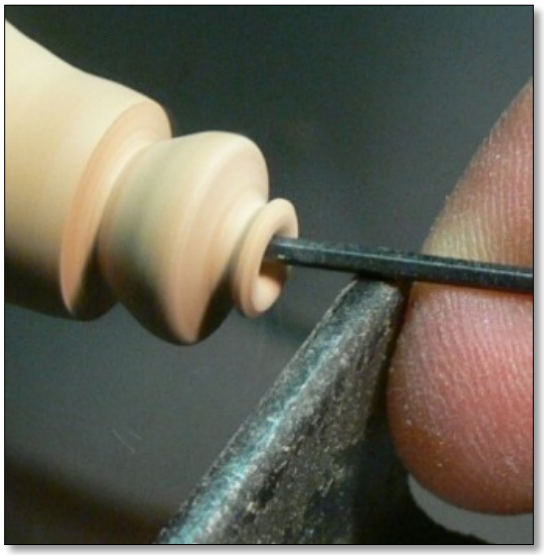

Photo 7

Another way to start hollowing is to simply use a hollowing tool. You can make your own hollowing tool from a 1/16" Allen wrench, that has been cut off just past the bend, then ground to the shape shown in photo 5, and with an approximate 10 – 15-degree bevel. Hold the hollower as shown so that the point is aimed in towards the bottom of the vessel. Press the tip into the wood (photo 6). As it begins to cut, push in towards the bottom of the vessel. Pivot the tip up towards the inside of the shoulder area, while pushing the handle away from you and pulling the tip back towards the rim at the same time (photo 7). You want to hollow the shoulder area first. If you get too deep too quickly, the bottom walls will become too weak, and there's a risk of breaking the vessel off when you try to hollow the shoulders. Be careful that you don't pivot too far, since it might cause the tip to cut through the top!

Photo 8

Stop the lathe frequently and clear out any chips and debris that have accumulated inside the vessel. This is unbelievably important. These chips will get trapped between the tip of the tool and the wood, preventing it from being able to cut. They also bind up, creating resistance, and can cause enough pressure to break the vessel away from the blank. Use a compressor, vacuum, or simply blow through a piece of rubber hose (photo 8).

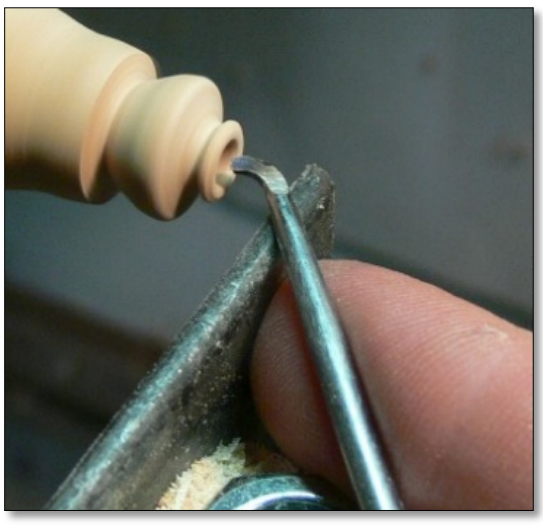

Photo 9

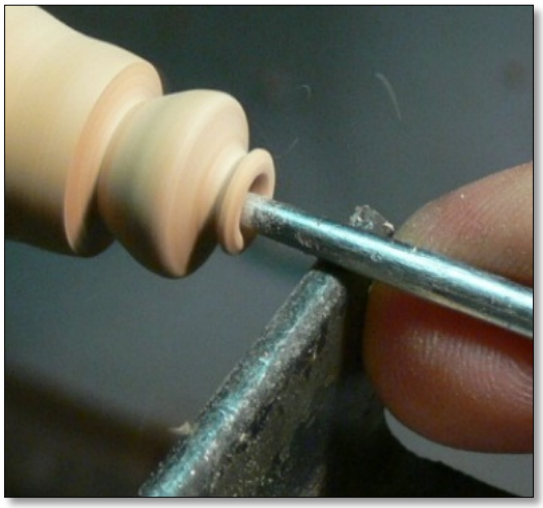

Photo 10

Photo 11

Hollow as much of the vessel using the first hollower (the one with the slight bend at the tip) as you can. However, you'll quickly discover that you won't be able to reach the deep corner of the shoulder with that tool, so you may need to switch to a different hollower, like the one shown in photo 9. This tool is very similar to the first one, except the tip is slightly longer, which enables it to reach farther into the corner.

Be very careful as you insert this tool into the spinning vessel, as the torque will tend to twist it in your hand, which can damage the tool and/or the vessel. Take very light cuts, and remember to clear out the chips frequently. Continue hollowing until you reach the far recess of the corner (photo 10). It's good to have a large collection of different sized tools, like the ones shown in photo 11, which will enable you to easily perform a lot of different hollowing tasks.

A big problem with this type of hollowing is not knowing how thin the walls are. You can't look inside to see where the tip is. It's very easy to hollow right through the side of these vessels. This is where practice becomes very important. You will probably ruin a couple of vessels before you get one completed. Eventually, you will develop a "Zen-like" ability to sense where the tip is while you hollow. But it will take a lot of practice before you get it right.

Placing a piece of masking tape on the hollowing tool will tell you how deep the tool is inserted into the vessel. But this won't tell you how thin the walls are. For that, you'll need some basic measuring tools.

Photo 12

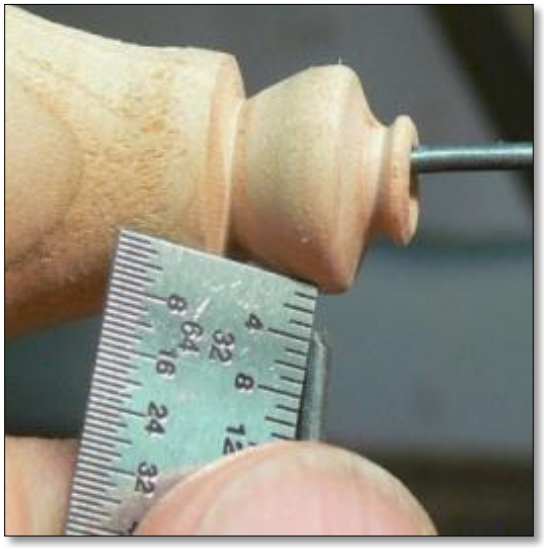

Photo 13

The simplest measurer, and easiest tool to make, is a wire loop (photos 12 and 13). It's a great tool because it can easily be reshaped to make it usable with any size or shape of vessel.

Photo 14

Photo 15

For more accurate results, you might want to make a miniature micrometer like the one shown in photos 14 and 15. This tool is easy to make, and just as easy to use. Photo 15 shows the micrometer being used to measure the thickness of the wall in the corner of the shoulder of our vessel. Measurements are read at the end of the coil farthest away from the opening (in this case, nearest to the bottom of the picture).

As you can see here, the wall thickness is between the first two marks, which are approximately 1/16" apart, making the wall thickness approximately 1/32". That's thin enough!

Continue using the hollowing tools to hollow the rest of the vessel, cleaning out the shavings, and measuring the wall thickness as you go. When you're happy with the inside of the vessel, take time to refine the shape of the inside of the neck. Remember that this is the area people will see. No one will ever be able to stick their fingers down inside the vessel, so how well you hollow the inside is completely up to you.

Photo 16

Photo 17

You want the curves in the neck area to look fluid; no sharp lines, just a smooth transition from the rolled edge down into the vessel, disappearing into the bottom. Use the detail gouge to cut away any creases, scratches, or roughness of the surface (photo 16). Finally, use curled up pieces of sandpaper to sand the inside of the neck (photo 17). Start with 400 grit, move to 600 then finish with curled corners of Abralon pads if you have them.

Continue shaping the lower portion of the outside, as shown in photo 18. Notice the nicely rounded shape of the lower portion of the body. When you get close to the bottom, start to define the shape of the foot (photo 19).

It's best to make the foot a little large at first; you can always make it smaller, but you can't add wood back once it's been cut away!

Turn the lathe off, step back and look at it, paying close attention to the proportions of the foot, to the body, and to the neck then trim away some more until you get it to the size and shape that you want. Try to identify a shape that accentuates the rest of the vessel. If necessary, use a diamond point tool to further define this area.

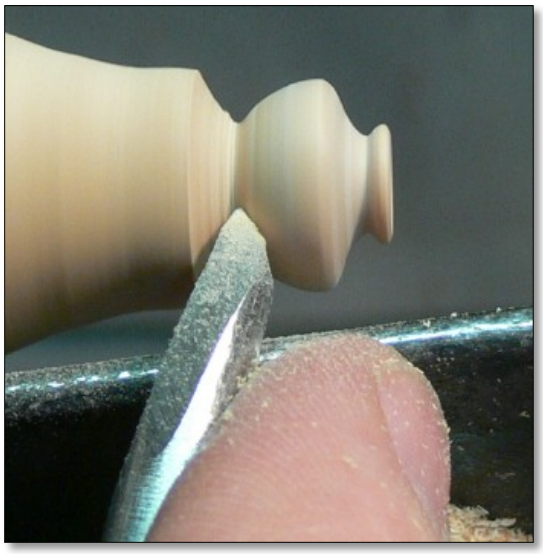

Photo 18

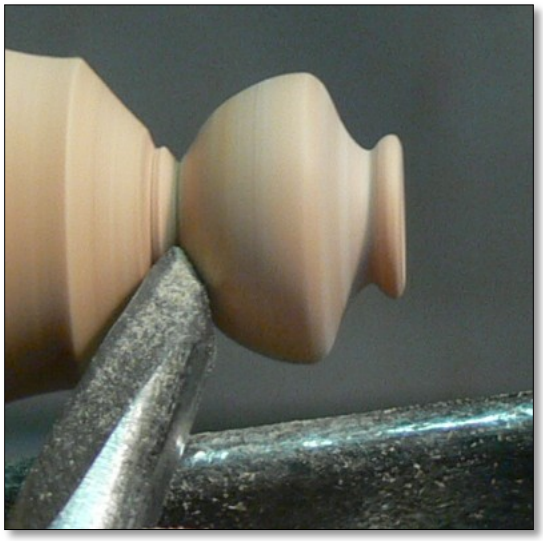

Photo 19

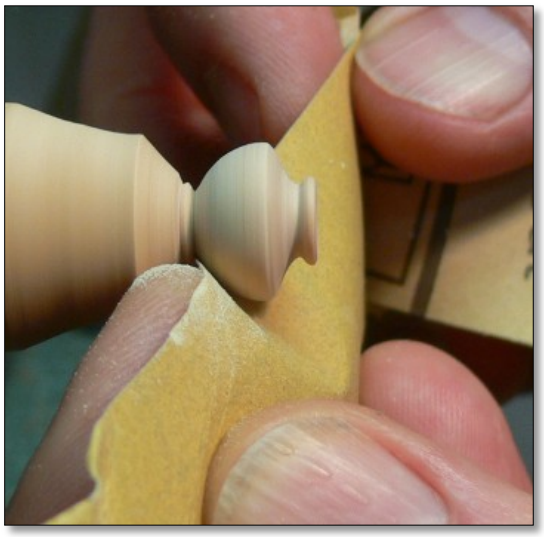

Photo 20

Photo 21

Photo 22

Once happy with the shape, sand the entire outside of the vessel, including the foot and rim. Make sure to hit all the little nooks and crannies (photo 20). The fine sandpaper is your last chance to perfect the shape of the details. Use bright lighting, and maybe even a magnifying glass, to make sure you haven't left any scratches. At this scale, a tiny scratch can look like a huge gouge when you're finished! Work through the grits from 220 to 600 then through the Abralon pads. When satisfied, work in some Ultra-Shine EEE inside the neck as well as on the outside of the body (photo 21). Turn on the lathe and buff well then follow with friction polish (photo 22).

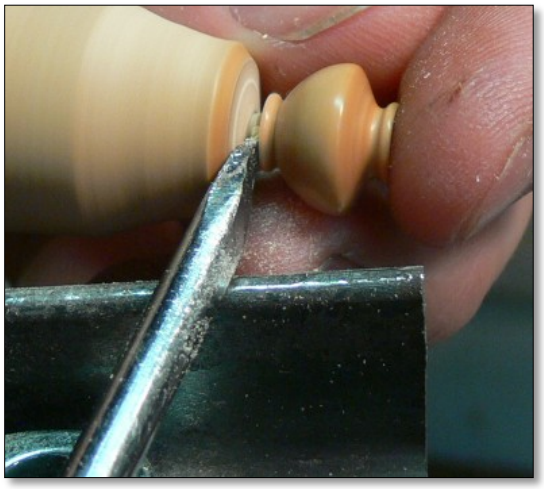

Photo 23

Photo 24

Photo 25

Use a small parting tool to part the vessel off (photo 23). Mount a small piece of dowel in a Jacobs chuck inserted into the spindle, wrap it with double-sided tape (photo 24), and reverse mount the vessel onto it. Use a gouge to shape the underside of the foot and base (photo 25). Be careful that you don't under-cut too deeply and cut through the bottom of the vessel.

Photo 26

Photo 27

Photo 28

The rest of this is routine. Sand the bottom going through all the grits (photo 26) then repeat with the Abralon pads. Wipe with a paper towel, apply Ultra-Shine EEE, buff, and apply friction polish (photo 27). In photo 28, you can see the finished product. Notice how nicely the foot matches the shape of the rest of the vessel.

With very slight variations, you can make a lot of different sized and shaped vessels. Experiment with the design. Try making them taller, shorter, thinner, etc. Change the neck. Make it taller, like a "Jeanie" bottle. Change the size and shape of the opening. Change the shape of the foot. Make one without a foot. Make one from plastic. Use the pyramid tool to add accent lines (after the outside is shaped, but before you start hollowing). You'll be amazed at the number of great vessels you can make with very minor variations of this same design. Photo 29 shows just a few!

Photo 29

From left, blue acrylic Jeanie bottle , cocobolo and maple urn, white acrylic vase, maple vessel, and three multi-colored acrylic urns (photo 29).

THREE ROLLING PIN DESIGNS

Steps to Making "Osolnik" Style Pastry and Traditional Rolling Pin

By Joe Johnson

Introduction

Why go to the trouble to make a rolling pin when you can go down to your local discount store and buy one that works just fine for less than $5? As woodturners, there is always the joy and fun of making. Aside from our own selfish pleasures, there are some other practical reasons.

- Relative ease of making
- Very functional
- Attractive
- Make great gifts
- Sell well at craft shows

As mentioned above, the rolling pins themselves are easy to make and require the simplest spindle turning techniques. The most time consuming part of the process is preparing the turning blanks. Therefore, I will spend a considerable amount of time describing the materials used, blank preparation, and the rolling pin dimensions I have found to work best. I will also briefly describe my finishing technique and recommended aftermarket care.

I will describe the making of three different types of rolling pins. The first is what I call the Osolnik style, so named because I believe Rude Osolnik first made this particular style of rolling pin. The second is the common pastry or French rolling pin. Finally, I will describe my version of the traditional rolling pin.

Materials for making your laminated blank:

Over the years, I have found that if you are preparing a bunch of blanks, it is easier and more efficient to just buy kiln-dried dimensional lumber. By all means, use all of your leftovers and scraps, but the task will be easier and quicker if you're starting with nice, clean dimensional 4/4 lumber.

I always use three contrasting woods for my rolling pin blanks, typically walnut, hard maple, and cherry. If you are buying lumber, select boards to minimize waste. For example, choose widths that are multiples of your blank width plus your saw blade kerf. Also, choose board lengths that are multiples of your blank lengths. I will discuss the rolling pin blank dimensions later.

Blank Preparation

As mentioned earlier, blank preparation is the most time consuming part of the process. Normally, I like to prepare 20-25 blanks at a time.

Cutting Dimensions

Joint and surface each board edge and face as needed to achieve accurate and safe cuts. Use contrasting woods for best effect. I've found that alternating walnut, maple and cherry gives a pleasing combination. See Figure I below.

- Cross cut each board into 24" lengths
- Rip each board section into 2 1/4" widths

Figure 1 - Complementary Woods for Making Rolling Pin Blanks

Glue-up Steps

- Starting with a pile of each type of cut boards, dry stack them on edge, face-to-face, alternating the 3 types of wood. See Figure 2 below.
- After you are satisfied with the arrangement, spread a heavy coat of glue on one side of each board. I use a small 3" paint roller to spread the glue.
- **Important**, only glue up the amount of material you can handle safely because you are going to bandsaw the individual blanks later. Work quickly during this step so the freshly spread glue doesn't get too dry. I generally glue up about 15 boards at a time.
- This is a messy operation. I generally tape down a piece of plastic on the work surface to contain the mess and make clean-up easier.
- The type of glue used is optional. I generally use Titebond II TM.
- After the glue is spread and all the boards aligned, clamp the bundle of boards and let them dry overnight.
- Try to clean up as much of the glue squeeze-out as possible before drying. This will make it easier to cut out the individual blanks from the bundle.

Figure 2 - Stacked Boards Prior to Glue-Up

Marking Out and Bandsawing the Blanks

- You now have a large mass of glued-up wood that's sufficient to cut several rolling pin blanks.
- By trial-and-error I have found that the best visual effect is obtained when the blank is sawn so the edge is 5-6 degrees from the original glued-up edge. Refer to Figure 3 below.

Figure 3 - Mark-out the Glued-Up Blanks

- It turns out you can get this approximate angle when you draw a line from the bottom outside corner of the 1st board to the top outside corner of the 3rd board.
- Simply repeat this process to mark out additional remaining blanks. You will get the magic 5-6 degree angle as long as you have boards that are 3/4" thick and 24" long. By marking out all blanks in this manner, you will have blanks that are 2 1/4" square.
- After marking out all of the rolling pin blanks on the large glue-up, cut out the individual blanks on the bandsaw. Depending on the size of the glue-up, you may want assistance with this operation.

Next, square off the ends of the blanks so they can be easily mounted between lathe centers. See Figure 4 below for a finished blank.

Figure 4 – The Finished Rolling Pin Blank

You are now ready for the easy part ☐ making a rolling pin.

Making a Rolling Pin

Over the years, I have made dozens of rolling pins of various sizes and designs. I have given away many to friends and family and have sold many at craft shows. They have always been a popular item and reliable seller.

As mentioned earlier, turning a rolling pin isn't high tech spindle work. The job can be done with three basic turning tools. First, you need a spindle roughing gouge or a sturdy bowl gouge to convert the blank from square to round. Next, you need a parting tool to mark off critical dimensions. Finally, you need a spindle or detail gouge to turn the handles.

Those proficient with a skew can add a fourth tool to the arsenal. Sandpaper is NOT considered a tool!

I've played around with different designs, but have settled on three basic types. I've provided a photograph of each type along with typical dimensions. I've also noted a few variations you may want to consider. Also, I will point out areas where special attention should be given in order to get a better product.

Osolnik Style Rolling Pin

I first saw this style of rolling pin in Rude Osolnik's craft shop in Berea, KY, in the late '7Os or early '80s. While Rude was best known for his candle sticks, he also made many rolling pins with the characteristic round ball on the ends.

Although I've never kept any data, this is probably my best selling rolling pin. An example is shown in Figure 5 below.

Figure 5 – Osolnik Style Rolling Pin

I generally make this rolling pin about 17 1/2" total length with a barrel length of 11". The barrel diameter is about 2 1/8". Make sure the diameter of the balls is slightly smaller than the diameter of the barrel. Otherwise, on a flat surface the rolling pin would rest on the handles rather than the barrel.

For best appearance:

- Make the ball handles as spherical as possible
- Make the transition between the barrel and ball smooth half coves and try to make them look the same on both ends.

Pastry/French/Pasta Rolling Pins

In recent years this style of rolling pin has become very popular. There are many variations, but I have settled on two styles, one with tapered ends and one with a straight cylinder.

Figure 6 – Tapered Pastry Style Rolling Pin

I generally make the tapered end rollers about 20 1/2" overall length with a 1 7/8" diameter barrel. About 4 1/2" from each end, I begin tapering the barrel to 1 1/8" at the ends. An example of the tapered pastry rolling pin is shown above in Figure 6. These dimensions can be changed to fit individual taste.

For best appearance:

- Round over the ends with a smooth curve.
- Smooth the transition point where the taper begins so there are no noticeable interruptions in the overall profile.

Another variation is to make the rolling pin a simple straight cylinder as shown in Figure 7 below.

Figure 7 – Straight Pastry Type Rolling Pin

I generally make these 20" long and 2" in diameter. If you prefer a more slender appearance, reduce the diameter to 1 3/4". Chamfer the ends for a better appearance and feel.

Traditional Style Rolling Pin

I call these traditional styles because that's the kind of rolling pin my Mother and Grandmother used. Perhaps that only makes them "traditional" to me.

The only real decision in making this style is how to make and attach the handles. There are basically 3 different options:

- Make the handle an integral part of the rolling pin body.
- Make the handle separate with a tenon on the end. The handle is then glued into a hole drilled in the end of the rolling pin body.
- Take the fancy approach. Make a hollow handle such that a dowel rod can be inserted. Glue the dowel into the rolling pin body. Make an end cap to fit the end of the dowel to hold the handle in place. This is a "bearing" type handle which allows the handles to remain stationary while the body of the rolling pin moves.

I have found that the first or second option is the best and simplest. I have made a few of the "bearing type." They are a real pain to make and according to an expert, again my Mother, they aren't worth the effort. She says that after a while they get "gummed up" with flower and dough and stop rotating anyway!

I make the traditional rolling pin with a body 11" long and 2" in diameter. The handles should be about 3 3/4" long and shaped with no sharp edges so as to be comfortable in the hands. The handle should be thin enough to be comfortable for someone with small hands.

A typical example of a traditional style rolling pin is shown in Figure 8.

Figure 8 – Traditional Style Rolling Pin

Finishing

After turning a rolling pin, I sand to 320 grit. The final grit should be sanded with the grain to eliminate crossgrain scratch marks. My finish of choice is plain mineral oil. Mineral oil is inexpensive, readily available at any drug store, easy to apply and completely food safe. I apply a very liberal coat and let it soak in thoroughly. I repeat the process two more times. The rolling pin is now ready to be used. Avoid using olive oil or other vegetable oils as they may become rancid over a period of time.

Care

Since this type rolling pin is made of glued-up components, it is very important to avoid submerging them in water. I always include the following information on a 3" x 5" card for each new rolling pin customer:

Rolling Pin Finish
Mineral oil was used to finish this rolling pin. Therefore, the finish is completely food safe. To keep your rolling pin finish in top form, wipe it with a damp cloth after each use. When the wood begins to look dry, apply more mineral oil, wiping off the excess. While you can use olive or vegetable oils in an emergency, these oils may go rancid after a period of time. NEVER immerse and leave this rolling pin in water or wash it in a dishwasher. This may result in glue joint failure and irreparable damage. With proper care, your rolling pin will be enjoyed for generations.

Joe Johnson
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TURNING ESSENTIAL TABLEWARE

Make a Chip and Dip Platter to Use for Your Next Party

By Glenn McCullough

I began with a 22" × 18" section of spalted sycamore that was given to me by another turner a few years ago. I was waiting for the right inspiration and wanted to get the most out of it, wasting as little as possible of this really nice wood.

The wood was quite dry and lighter than I expected. I cut a circle on my bandsaw as large as I could (17"), and mounted it on my lathe using a screw chuck.

My lathe has a 16" capacity, so I ended up with a blank of 15.75" as the edges were rounded. Toward the outside of the log, a bad spot near the edge developed and I had to turn away a couple of inches to get a solid rim. This worked out okay because it allowed me to swivel the headstock over the ways.

Now in standard turning position, I turned a recess for the chuck jaws, flattened out the bottom, and defined the turn at the outside edge. With the blank reversed and chucked, I defined the opening for the dip bowl.

I left the bulk for support, turned the outside rim, interior edge, and then flattened the platter toward the bowl. Sycamore is a beautiful wood to turn; however, endgrain tear-out can be a challenge!

Next, I smoothed out the flat of the platter, cleaned up the transition from the flat to the bowl and softened the bowl rim. I then sanded using 100 – 400 grit sandpaper with the crossgrain needing special attention.

I made a jam chuck, secured the bowl over it facing the headstock, brought up the tail stock then cleaned up and sanded the bottom. I removed some bottom material but had to leave a less than desired chunk due to the bad wood. The more I tried to clean it up, the more came out, so I decided to let Mother Nature have her way, and left some of the bulk.

For the finish, I used butcher block oil. It brought out the grain better than I expected.

This was my first chip and dip platter attempt but it definitely will not be my last!

BORING HOLES FOR LAMPS

Making this Task Manageable

By John Lucas

When turning a lamp, it is necessary to drill a hole all the way through the lamp for the cord and/or the lamp rod. There are three ways that are the most common.

Routing a grove

The first is to simply start with two pieces of wood. Use a router or table saw to cut a slot down the middle. Glue these two together. Now you have to mount it between centers and turn the lamp. This isn't always easy. I use a four-prong drive center in one side and a cone shaped live center in the tailstock.

Center the drive center on the hole. Make sure the prongs cross the glue line. Some people cut an X shaped slot with a bandsaw and put the drive center in these slots. I haven't found this necessary. Bring up the tailstock and put the cone center in the hole. Now the lamp is centered and ready to turn.

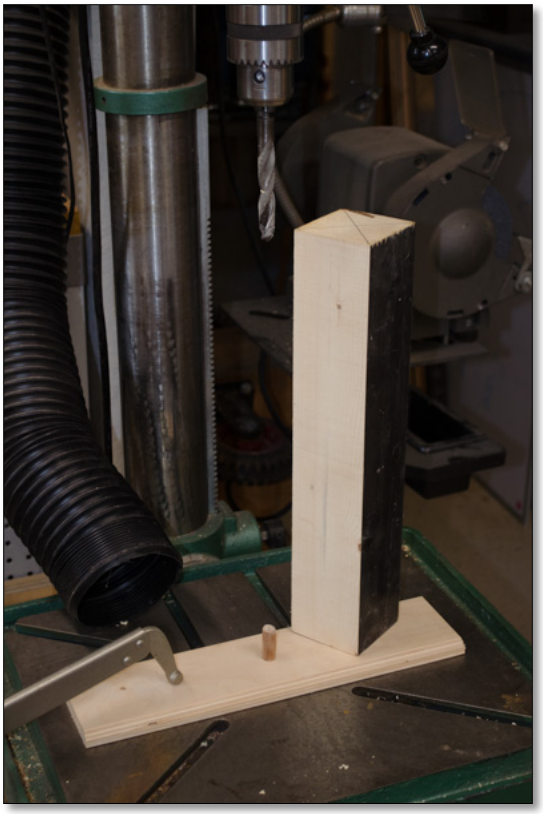
Another method for using this technique is to take a solid piece of straight-grained wood and rive the wood into two parts. Route or carve a slot in the middle. Re-align the pieces and glue them together. You can now turn the wood. The glue line will barely show if done properly.

Shop made centering drives

If you don't have a cone tail center big enough to center the hole, just make your own. I turn a wooden piece that either fits over my existing live center or in my live center, depending on which style of center you own. You can also make your own drive center.

Mount an end grain piece of wood on your faceplate. Turn a tenon that is equal to the diagonal of your square hole. Make the area outside the tenon flat. Carve the tenon square by hand. Drive four small nails into the area outside the square tenon. Cut the heads off and you have a drive center for your lamp.

Another method is to drill a hole all the way through with a long drill bit and then center the blank the same way as the first method. This works well if you have a long drill bit and don't need to center the hole on the wood. The drill bit usually wanders so the hole won't be centered on the other end.



Drilling alignment

To get around the center problem, I drill a centered hole in both ends using a drill press. To keep them aligned, I place a scrap board on the drill press table. I clamp the board to the table and drill a hole using the same size drill I will use to drill the lamp. Now place the lamp on the table and drill the first hole. I drill as far as the quill feed will go. Now flip the lamp. Place a dowel in the board that is on the drill press table. Place the lamp over this dowel and let it slip in the hole. Now you can drill the other side of the lamp and it will be aligned with the first hole. Now use a longer drill bit to connect the two holes. I drill by hand from both ends. Usually they will connect using this method on shorter lamps but really long ones can still be difficult.

Boring with lamp auger

The third method is to use a lamp auger to bore a hole with the wood on the lathe. In order to use a lamp auger, you need to mount the wood between centers. You should have either a hollow headstock or hollow tailstock to use a lamp auger but it's not essential. I'll explain later.

The wood is mounted between centers and the lamp auger is passed through the hollow tailstock and hollow live center. There are hollow dead centers and hollow live centers available for this.

I haven't seen a hollow drive center but it wouldn't be hard to build one using a nut of the proper thread. Drill four holes and put steel pins in the holes. Sharpen these and you have a hollow drive center. Depending on your lamp design, you may be able to use a chuck to hold one side. You can drill through the center of the chuck.

Lamp auger with center hollow center

One disadvantage of using the lamp auger is the thickness of the tailstock or headstock limits how deep you can drill. You will probably have to flip the wood end for end to connect the holes.

Lamp ready for painting

Even a lamp auger isn't fool proof. You must sharpen it better than it comes from the factory. Then feed it very gently. Let it cut; don't force it. Clear the chips very often. This has been my most successful method but will still wander off center on long pieces or if you force the cut. For really long lamps, I suggest doing them in pieces.

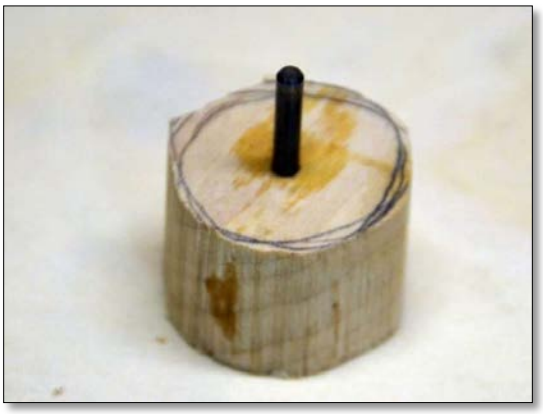
~ John Lucas, a retired photographer, has been working in wood for about 35 years and also dabbles in metalworking. He also enjoys modifying machines, making tools, and sharing his knowledge through written articles and videos. He has taught classes at John C. Campbell Folk School, Arrowmont, and The Appalachian Center for Crafts. Sparta, TN

DREMEL SANDING PAD

Making Your Own Small Dremel Sanding Pad

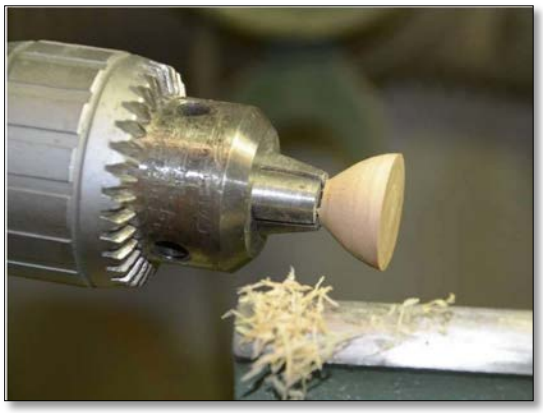
By Herm de Vries

It's easy to make your own pads of any size using this method. And it's cheap. For $10 I can make pads that would cost $60 or more, and these are more flexible, last way longer, the Velcro never wears out, and you can make them any size or shape you want.



Drill a 1/8" hole into a small block of wood (this is maple) and glue in 1/8" metal (brass?) shaft. I use cyanoacrylate glue (CA). This block is 1" in diameter.

Chuck the piece into a Jacobs chuck on the lathe to shape it. I bring up the tailstock to prevent the Jacobs chuck from coming loose.



Here is the piece shaped. It only took 15 seconds with a skew. It's 3/4" in diameter.

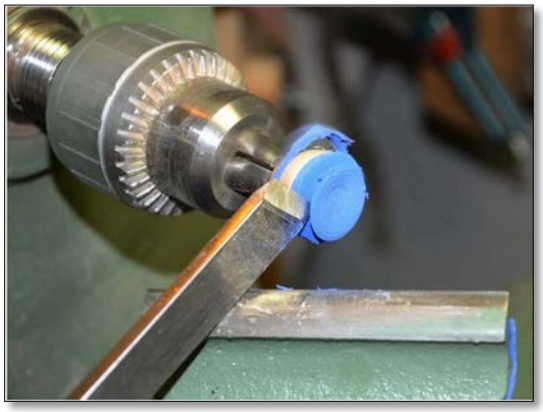
I've chucked it into the Dremel and used a taped down piece of sandpaper to ensure that it runs true.

It's completed and ready for the pad and Velcro.

The pad is made from knee pads from Wal-Mart ($7) and sew-on Velcro from their sewing department. Don't use stick-on Velcro. It doesn't last.

I use a razor knife and scissors to cut a small piece of foam. This is 3/8" thick.

I use Pro Bond contact cement adhesive. This is the best for gluing the parts together. It sets up quickly; in an hour you can press the glued surfaces together. It's available at most big box stores.



After the foam is glued in place, I trim it with the point of a skew and then glue on the hook side of the Velcro. I end up throwing away the loop side.

The finished piece is ready for a small piece of loop sandpaper. I find that the center of my larger sanding disks seldom makes contact during use, so I cut my tiny sanding disks from the centers of my used, larger disks.

With the sandpaper in place, you're ready for action.

Here's a sampling of various other special sanding aids I've made using the same methods. The large disk on the left is 14" in diameter, and does not have a foam pad. All of these are drilled and tapped to fit my lathe spindle. I use the two on the right for sanding grooves and spirals.

TECHNIQUES FOR SUCCESSFUL GLUING

Steps to Making Your Gluing Successful

By Bob Behnke

DO A DRY FIT

Clamp pieces without glue to make sure the joints come together tightly. Test for choice of clamps and blocks. Make blocks, strips, or pads to protect the wood from clamping pressure. Use double-sided tape to keep blocks, strips, and pads in place. Fix joints that are too tight or too loose. Water-based wood glues don't fill gaps, so loose joints may require an epoxy adhesive. For easy clean-up, put masking tape on all joints then cut apart to disassemble. Bridge edge-to-edge joints with a clamp to keep seams from creeping. Check moisture content of all wood to ensure all parts are within 1% moisture content. Clean away any residual sawdust or contamination that may keep joints from fitting tightly.

PREPARE THE GLUE, BRUSHES, TOOLS

Determine the correct glue for the project requirements. Be sure glue is in good condition by mixing with a small stick. If glue has settled, stir in settled material before proceeding. If unsure of glue, test on scrap piece of wood, clamp 24 hours, then break with hammer. Clean glue bottle applicator tip. Clean glue brushes and remove any loose bristles. Coat or mask any iron pipes to avoid black stains. Arrange and orient clamps from the dry fit for easy access.

PREPARE CLEAN-UP ITEMS

For water-based wood glues, have a bucket of water handy for spills. Spread plastic sheeting over work surface to protect against drips.

GLUE UP

Be sure the shop and substrate temperatures are above the chalk point of the adhesive. Consider gluing in stages to reduce open and total assembly time. A threaded rod works well as a tool to spread the correct amount of glue. Wipe joints with acetone before gluing, especially for oily tropical woods. Apply approximately 6 mil wet film or 250 sq.ft. per gallon. Peel off any masking tape when glue is slightly rubbery. Use wax paper under clamps if in contact with any glue squeeze-out. Allow squeeze-out to dry for 10-20 minutes, then remove with a putty knife.

After gluing, remove cap from bottle and clean out glue, replace with clean cap.

DRYING
Allow joints to dry for at least 2-3 hours before unclamping. Best to leave for 24 hours. Allow edge-to-edge joints to dry for several days before sanding or planing smooth.

~ Bob Behnke, Columbus, OH,
bobbehnke@franklininternational.com

SAFETY FIRST

SRG's, Skews, and Humongous Catches

By Harvey Rogers

Kathleen Duncan, Cascade Woodturners Association's own AAW board member, has been working on an excellent addition to the AAW website: A place with indexed links to lots of quality, free woodturning videos. You can see them at: http://aawvideosource.org.

I was asked to help review some of those videos for safety concerns. The AAW is trying to make sure that the videos meet minimum safety standards. One of "my" videos was by Stuart Batty. I've heard Stuart talk before, and always appreciated his explanations of why things work (or, in this case, don't).

This particular video focused on turning crossgrain blanks. Crossgrain blanks are pieces of wood that are mounted on the lathe with the grain running perpendicular to the bed of the lathe, the way most bowl blanks do. I'll just call blanks mounted that way "bowl blanks."

Stuart explained why we can't use a spindle roughing gouge (SRG) on a bowl blank. I've often read that using an SRG on a bowl blank was immoral, stupid, verboten, fattening and dangerous, but I never understood why until I watched Stuart's video.

An SRG looks like this:
You can see that an SRG has a very wide blade that is ground more or less straight across, with a wide-radius curve. This allows a wide, slightly curved portion of the edge to contact the turning blank. That wide, slightly curved edge permits the SRG to remove a lot of wood pretty quickly, if you use it on the right kind of wood. The right kind of wood is wood mounted on the lathe with the grain running parallel to the lathe bed. Wood mounted that way is often called a "spindle blank." When the SRG is presented to a spindle blank, it is always cutting into sidegrain, and not directly into endgrain. The SRG works great cutting into sidegrain.

But if you try to use the SRG on a bowl blank, an "interesting" thing may happen.

Stuart's video helped me understand why that happens. Partly it happens because the tang of an SRG (the metal part that sticks into the handle) is much smaller than the rest of the SRG, so the tang can bend relatively easily if a lot of stress is placed on the SRG. I sort of knew that. I didn't know why a lot of stress gets placed on the SRF if you use it on a bowl blank.

When a bowl blank is spinning on the lathe, each moment the grain is pointing vertically (straight up), the SRG will be cutting side grain, just like it does on a spindle blank. That will happen two times every time the blank spins around.

But each moment the grain is pointing horizontally (sideways) more or less in the direction of the tool, the SRG will be trying to cut into end grain. That will happen two times every time the blank spins around, too.

When the wide, slightly curved edge of the SRG meets endgrain, the edge tries to follow the grain, and the grain tries to lead the tool right into the center of the blank. But it doesn't lead the tool in slowly and gently; it grabs the tool and sucks it in.

Of course, the blank is spinning fast, so in no time at all, the endgrain pulls the edge of the tool down hard. The SRG can't cut the wood away as fast as the wood pulls it in, so you get a humongous catch. The force of that catch can drive the blade of the SRG down past the tool rest, bending the tang, knocking the tool handle up and into a tender part of your anatomy, destroying the SRG, leaving a big hole in the blank, and possibly wrenching the blank off the lathe where it can fly about and do more serious mischief.

The SRG is not the only tool with this feature. Skew chisels can do wonderful work on spindle blanks, leaving a smooth surface that needs no sanding. But we can't safely use skews on bowl blanks for the same reason that we can't use SRGs on bowl blanks: when the end grain comes around and meets the wide, flat edge of the skew chisel, the chisel will want to follow the grain into the center of the blank.

This will give you a humongous, dangerous catch, too, like you would get with the SRG, but you may not bend your skew chisel because its tang is bigger and stronger in relation to the size of the blade. Bowl gouges are built with deep flutes and don't present wide, slightly curved cutting edges to the bowl blank. That's why they are safe to use on bowl blanks, and SRGs and skews are not.

You can help yourself stay safe by choosing your turning tools carefully based on how your turning blank is mounted on your lathe.

~Harvey Rogers
Cascade Woodturners Safety Officer
AAW Safety Committee

SHOP TIP

Your Foodsaver can also save your oil-based finishes.

If you have used oil-based finishes, you've also probably had problems with the finish gelling and becoming unusable before the container is half empty. Although there are several "solutions" from oxygen blockers to wine bottle sealers, I have found that one solution really does work. And, you may already have this product in your kitchen. That's right, your kitchen.

I use my Foodsaver appliance, regular or large-mouth canning jars, 2 lids and one cap lid (or ring). Why two lids? Only one is necessary but on occasion, the seal fails. Foodsaver indicates that by using a second lid, the likelihood of a seal failure is eliminated. So, I always use two.

Put the two lids in place on the jar and then put the Foodsaver device in place. Apply finger pressure. Turn on the Foodsaver and press the vacuum/seal button. When evacuated, the Foodsaver stops.

Remove the second lid and screw on the cap lid (ring).

Finally, label the finish and store it.

Many of my projects require several coats of finish with small amounts used for each coat. Hence, I seal, open, and reseal many times. With this process, there is no deterioration of the finish. I've used this method many times over during the past year with all my finishes and it works great!

~ Del Fussell, Front Range Woodturners, Colorado. Years of Turning Experience: 18

SHOP TIP

Safe Way to Change Chuck Jaws

I have a Supernova 2 chuck that I use for my mini lathe. The jaws for this chuck are mounted on by screws. When it comes time to change jaws, the screws are very snug, and untightening them can lead to fingers flying into the jaws. I have injured many fingers like this, but I discovered that wearing a work glove while unscrewing the jaws protects your fingers from smashing into the jaws. I have saved my fingers from injury many times with this technique.

Wyatt Workman
Wyatt Workman <greenshark911@gmail.com>

ASK THE EXPERT

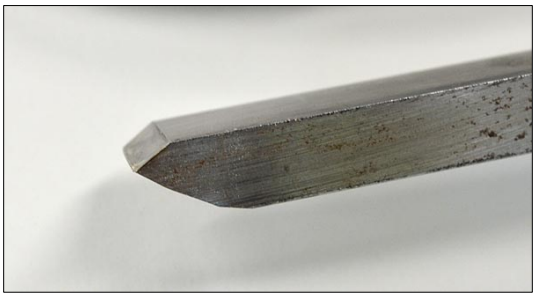
Help! I've got a question for the expert.

Q: What is optimum angle for using a scraper?

I am at the initial stages of my bowl turning experience and would like to know the optimum (if there is one) scraper angle for turning hardwoods, primarily Oak and Cherry. Any suggestions would be welcome.

~ Dick Quince, New Jersey

A: Using a scraper with a burr



A scraper should be used with a burr raised on the cutting or scraping edge. If the angle between the top surface and the grind or what we will call the bevel is 90 degrees or greater, it won't raise a burr when grinding. Early on I ground all of my scrapers just a little less than 90 degrees.

Seemed to work for me but back then I did a lot of scraping, not much bevel rubbing cutting and I assumed you had to sand a lot because there was a lot of wood tearout. Over the years I started to look at scraping with a little more detail. People like Richard Raffan used scrapers to get very clean surfaces. What I found was raising the correct burr was more critical than the grind on the front of the scraper. I now use something like 70 degrees but anything from about 85 degrees to 45 degrees will work. I'm not 100% on this but it seems like the more acute the angle the weaker the burr. The burr on more acute angles seems to cut very clean but only lasts a few seconds. The more blunt angle produces a burr that is stronger, in my experience.

Raising the burr is more critical than the angle of the grind on the end. Use a light touch. Pushing hard raises a bigger burr but it doesn't cut as cleanly. Touch the bevel on the wheel and then raise the handle until you just touch the tip. Feel for the burr.

It should be slight but very noticeable. There are two other ways to raise a burr. Use a diamond hone to polish off the top of the scraper and remove the existing burr. Then push the diamond hone up the bevel from the bottom. Finer hones produce fine burrs; course hones produce course burrs. I find that some steels work better with medium diamond hones and some work better with fine. Apparently the hardness of the metal changes how the burr is formed. The third method is to polish off the burr and then raise a new burr using a piece of hardened steel. Slide the steel across the edge and feel for the burr. Again, too much pressure produces a large burr that may be too aggressive and not cut cleanly. A small precise burr will cut cleaner.

So far everything I've discussed is with reference to the scraper being used flat on the tool rest. All of the above is still true but there is another technique called shear scraping that will produce a cleaner surface than a scraper held flat on the tool rest. In this case the scraper is held at about 45 degrees or slightly steeper. Cut with the lower half of the scraper and pull it across the wood. This will produce very fine shavings and is usually my last technique before going to sandpaper. I have a video showing this technique which can be accessed through AAW Video Source.

~ John Lucas, a retired photographer, has been working in wood for about 35 years and also dabbles in metalworking. He also enjoys modifying machines, making tools, and sharing his knowledge through written articles and videos. He has taught classes at John C. Campbell Folk School, Arrowmont, and The Appalachian Center for Crafts.

VIDEO: Shear Scraping by John Lucas (TRT 8:44)

Access AAW Video Source at
http://aawvideosource.org

Once you are in AAW Video Source, click the blue "Continue to Library" button. When you're on the Library page, select the following:

- **Category**: Techniques
- **Keyword:** Scraping

Then click "Search" button. The John Lucas video will be among the search results.

VIDEO: SHEAR SCRAPING

Ask the Expert: Shear Scraping

Shear Scraping by John Lucas (TRT 8:44)

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2. Once you are in AAW Video Source, click the blue "**Continue to Library**" button.

3. When you're on the Library page, select the following:
   - **Category: Techniques**
   - **Keyword: Scraping**

4. Then click "**Search**" button. The John Lucas video will be among the search results.

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

VIDEO: LATHE CHUCK MAINTENANCE

Video Tip: How to perform chuck maintenance on several models.

VIDEO: Lathe Chuck Maintenance by Jimmy R. Chrisawn (TRT 24:07)

1. Access AAW Video Source at http://aawvideosource.org

2. Once you are in AAW Video Source, click the blue "**Continue to Library**" button.

3. When you're on the Library page, select the following:
   - **Category: Chucks & Centers**
   - **Keyword: Maintenance**

4. Then click "**Search**" button. The video will be among the search results.

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MEMBER GALLERY

Harvey Rogers
Portland, OR

For most of my life my woodworking was devoted to keeping things from falling apart and making stuff we couldn't afford to buy. But one day, over a quarter of a century ago, I picked up an AAW Journal in a woodworking store, and I just had to get a lathe. I got a well-used Delta with the name "Joe" painted on the front in red letters. Joe and I had a lot of fun together, but life got more and more demanding and Joe gathered dust for many years.

A few years ago my younger son needed a special way to propose, so I dusted Joe off and showed my son how to turn a small ring box out of exotic wood. My wife had given me that beautiful wood shortly after I got Joe, but I never turned it because I didn't feel my skills were worthy of it.

Helping my son got me back into turning, and I'm now a member of two AAW chapters, the safety officer for one, going to woodturning symposia, meeting helpful, interesting people, turning whenever I can, and having a ball. I hope someday to get good enough to tackle the rest of that wonderful wood my wife bought me so long ago.

Submissions

Want to share your work in *Woodturning FUNdamentals*? Please send your high-resolution images along with title, size, and materials used to linda@woodturner.org.

Want to "pay it forward"? *Woodturning FUNdamentals* welcomes other content including tips, projects, and informational articles. Please send your content ideas to linda@woodturner.org. The deadline for submissions for the November issue of *Woodturning FUNdamentals* is October12, 2016.

Please note: All content submitted may be subject to edit.