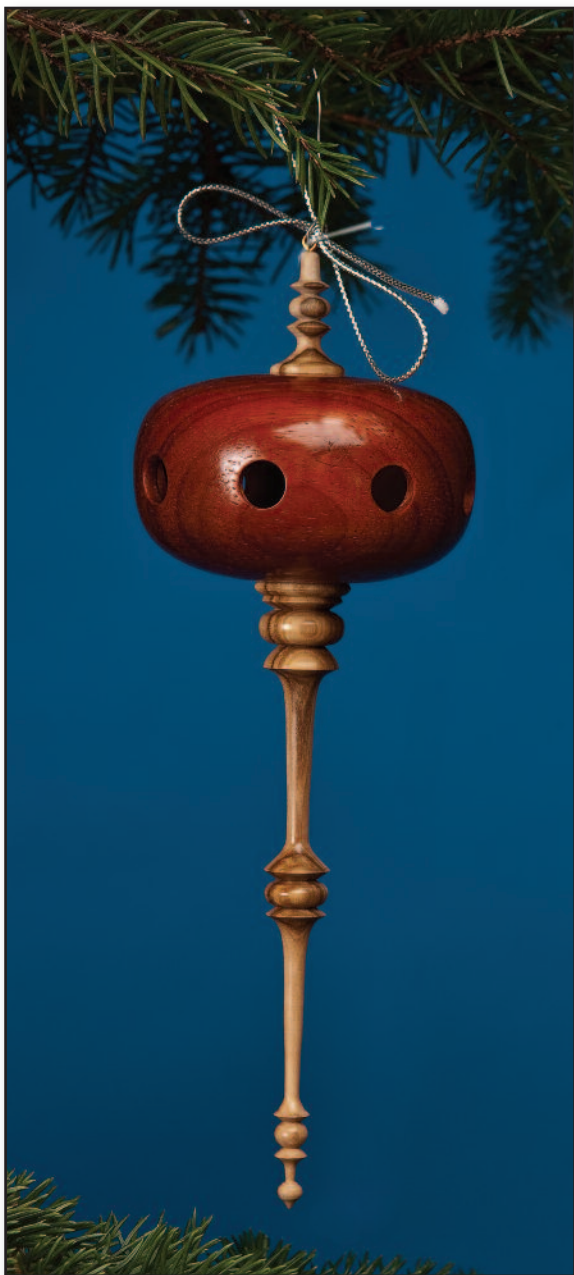


# Christmas Ornaments • Part 2

## Making the Globe

by Johnny Tolly



In the previous issue of *Woodturning Design*, I explained how to make the icicle and top button finial for my Christmas ornaments. In this issue, we will go through the hollowing process of the ball and do the final assembly of the ornament.

### SUPPLIES

Wood: 1-1/2" to 2" thick x 1-1/2" to 3-1/2" square

Tools: lathe with assorted chisels, faceplate, live center, bandsaw, 4-jawed chuck with No. 2 jaws, 3/8" and 5/8" Forstner bits, drill, air compressor with blow gun, Tolly thickness gauges\* (optional), double-ended calipers, small flashlight, shopmade friction drive, center finder, awl, compass

Hunter micro-cutter tools\*\*—3/16" straight cutter on 1/4" shaft, 3/16" swan neck cutter on 1/4" shaft, 5/16" swan neck cutter on 5/16" shaft, 3/8" straight cutter on 3/8" shaft, 3/8" swan neck cutter on 3/8" shaft

Captured hollowing system\*\*\*

Eye screws\*\*\*\*

Assorted grits of abrasive paper

Cyanoacrylate glue (CA or superglue)

Titebond glue

Masking tape

Finish of choice

Paper towels

Cotton swabs

*\*The Tolly special thickness gauges were fabricated for me and are not available anywhere that I know of at this time; though Mike Hunter may fabricate them for you as a special request—contact him about that.*

*\*\*Available from Hunter Tool Systems, P.O. Box 24231, Minneapolis, MN 55424; phone: 612-718-7926; e-mail: [mike@hunterwoodturningtool.com](mailto:mike@hunterwoodturningtool.com); website: [www.hunterwoodturningtool.com](http://www.hunterwoodturningtool.com).*

*Please note: The holders shown in the photo with the Hunter tools are NOT made by Hunter tools at this time. They were fabricated locally for me to hold the Hunter tools in the hollowing system I use.*

*\*\*\*Available from Woodworker's Emporium, 5461 Arville Street, Las Vegas, NV 89118; phone: 800-779-7458; website: [www.woodworkersemporium.com](http://www.woodworkersemporium.com).*

*\*\*\*\*Available from Meisel Hardware Specialties, PO Box 70, Mound, MN 55364-0070; phone: 800-441-9870; website: [www.meiselwoodhobby.com](http://www.meiselwoodhobby.com); order: P/N, 7416—pkg of 20 ea. \$4.00 or pkg of 100 ea. \$14.50, as of this writing.*

*Please refer to all manufacturers' labels for proper product usage.*

Just about any wood will work for this project. Yes, even a southern yellow pine 2 x 4 will make a striking Christmas ornament as long as it is sound wood that is free from any splits or cracks—knots should be avoided, but give them a try if you wish. I have even made ornaments by gluing Trex decking material together to make the body, icicle, and finial (there was a photo of one in the previous article), so experiment and have fun.

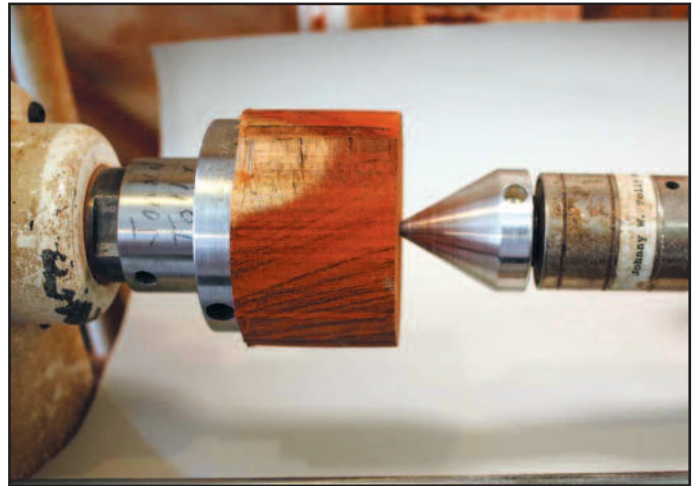
Start by cutting the wood into squares. I find that a body size ranging from 1-1/2" to 3-1/2" across and from 1-1/2" to 2" thick makes a great Christmas ornament that is both easy to work with when hollowing and looks pleasing to the eye when completed. Of course, smaller or larger ornaments can also be made.



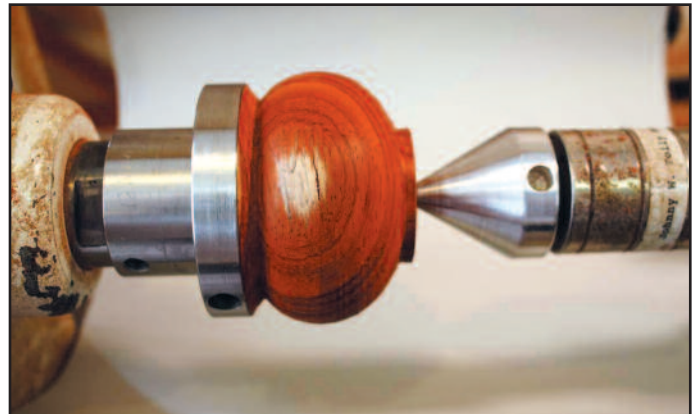
**Step 1.** I started with a padauk block that was 2" thick x 3-1/4" square. After the wood has been cut to size, locate the center of the wood with a center finder. Use an awl to mark the exact center between the lines.



**Step 2.** Mark the diameter of the wood using a compass. I find that cutting off the corners with a bandsaw speeds up the turning process, but you can make the blank round on the lathe as well—it just takes longer.



**Step 3.** Mount the wood on the lathe between a small faceplate and the tailstock point, placing the tailstock point in the awl mark. Screws are not necessary, because the friction from the tailstock will hold the wood just fine for turning.



**Step 4.** Start to rough-turn the globe and form a tenon at the tailstock end. The tenon only needs to be about 1/4" x 1-3/4" in diameter to fit my jaws—yours may differ.

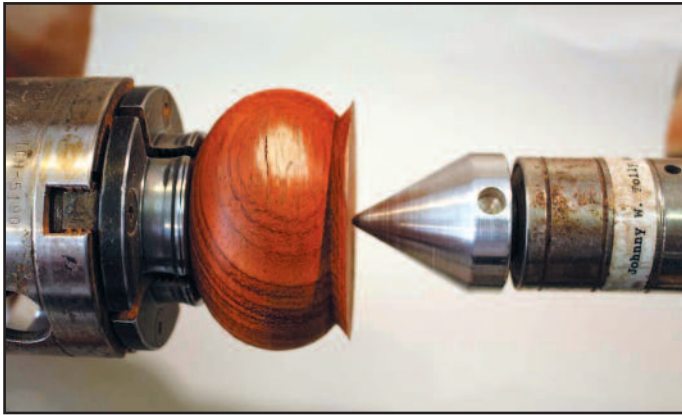
Please be cognizant of the grain direction of the wood, and turn where the grain is always supported to prevent tearout or splintering. You may need to turn the wood from the tailstock toward the larger diameter to do this.



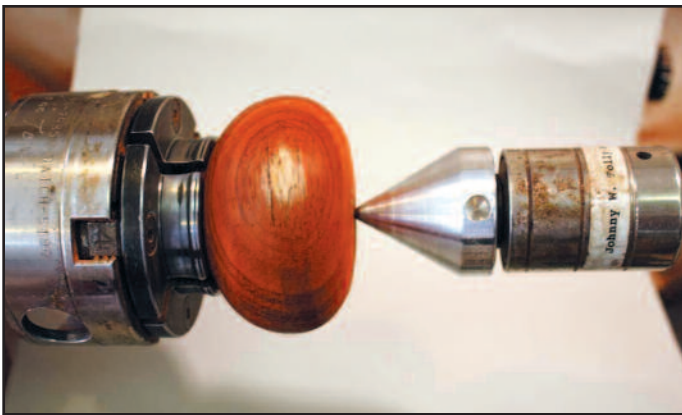
**Step 5.** I have found that after the wood is rough-turned, if you remove the blank from the lathe and put some thin cyanoacrylate glue (CA or superglue) where the tailstock point was, the glue will soak into the wood and give it



more strength when you drill the 3/8" hole through later. The CA helps to prevent the wood from splitting.



**Step 6.** The padauk is mounted in the Oneway Talon chuck using No. 2 jaws; the Oneway live center is brought up for added support.



**Step 7.** Turn away the remainder of the waste to form a globe shape. Sand the wood at this time—this enables you to see if any additional work is needed on the end-grain or tearout problem areas. Sand the body, using grits up to 400. Additional sanding through 800 and possibly up to 2,000 grit will be done later.



**Step 8.** With the lathe stopped, use a 5/8" Forstner bit to measure the depth of the hole. I normally leave about 3/16" of wood at the headstock end, as this provides a stop for the Hunter tools. I use masking tape to mark the bit

so there is a visual reference for the depth I plan to drill. All the hollowing will be done through the 5/8" hole. It is also where I attach the icicle when the Christmas ornament is ready for final assembly.



**Step 9.** Again, drill so that you have about 3/16" of wood remaining at the headstock; **do not** drill all the way through the wood. You may wish to leave a little more wood than 3/16" at the headstock until you have more experience and have a bit more confidence in hollowing the bodies. The remaining wood will be drilled through later, using a 3/8" Forstner bit. This 3/8" hole is where the top finial button is attached.



**Step 10.** Mount the Vicmark captured hollowing system to the bed of the lathe. If you have another style of hollowing system, use it—it will work also. This can even be done freehand with the *Hunter* tools mounted in wooden handles; however, I do strongly recommend using a captured system.

*Editor's Note:* Johnny provided some excellent photos detailing the use of the *Hunter* tools to hollow the ornament body. Unfortunately, we had to cut them because of space constraints. However, you can see the photos on our website ([www.woodturningdesign.com](http://www.woodturningdesign.com)) by going to Current Issue and clicking on Christmas Ornaments Part 2

(additional images).

(Author's Note: I have been making Christmas ornaments for many years, and yes, there are other hollowing tools I could use—and I have tried several and have them here in the shop. However, it is my humble opinion that the *Hunter* micro-hollowing tools are the very best at turning thin-walled ornaments. They are great for other turnings as well, such as small boxes and open or hollowforms. The *Vicmarc* hollowing system is also well suited for this kind of turning. I'm sure that a competent turner could turn the body of the ornament freehand, but using one of the captured systems is truly the way to go, as there is less stress on the arms and hands when hollowing. This makes it much more fun when you can concentrate on form, not the white knuckles.)



**Step 11.** Okay, now let's get started using the *Hunter* straight 3/8" tool. Secure it in the bit holder. Position the tool rest so that the *Hunter* tool cutter is at the centerline of the hole. This photo shows the proper position of the tool rest and the 3/8" cutter at the centerline of the 5/8" hole.

Turn on the lathe and begin to hollow the body. Starting from the 5/8" opening, make a series of sweeping arcs. I normally turn with the lathe set to a high speed, but proceed however you feel comfortable.



**Step 12.** Stop the lathe often and blow out the wood shavings—this will need to be done several times with each

tool while hollowing out the body. Compressed air works best, though, with a small hose, you could use your mouth to blow the dust and shavings out of the body. Just be careful not to suck on the tube, or you will have a mouth full of dust and shavings, which is not good for the lungs.



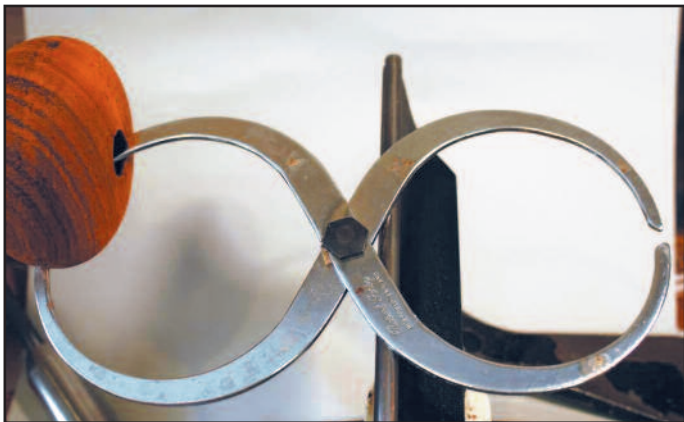
**Step 13.** This is somewhat hard to explain, but when hollowing out the body, **do not** allow any of the *Hunter* tools to hit the back wall of the body at a sharp angle. Should this happen, the *Hunter* tool will grab the wood and slam back, literally blowing up your work (experience talking here). You can see in the photo what it looks like when blowing up a Christmas ornament body. I have only done this once and here is the photo for proof. I hope you don't experience it firsthand.



**Step 14.** Change to the *Hunter* 3/8" swan neck tool. Start by hollowing from the tailstock side, working toward the center of the ornament body; keep in mind the issue discussed above. Then hollow from the back of the body toward the center still using the *Hunter* 3/8" swan neck tool, making cuts in an arc-like motion. This procedure will be learned quickly as you progress in the hollowing process.

Change to the small *Hunter* 3/16" tool on the 1/4" shaft and hollow inside the 5/8" opening. Hollow as far as the small cutter will reach. Stop the lathe often, blow out the shavings, and use a Tolly gauge or something similar to check the wall thickness—**OFTEN**.



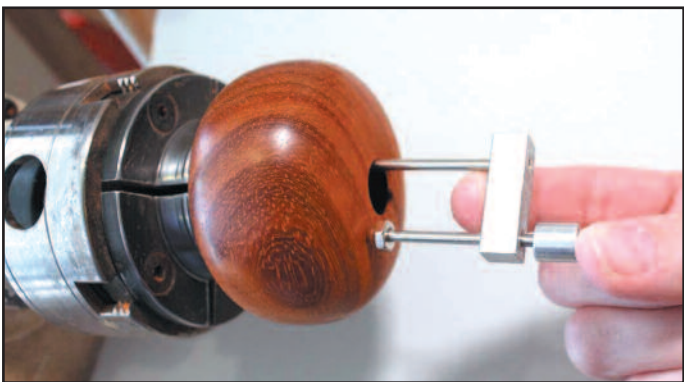


**Step 15.** I only use double-ended calipers, a small flashlight, and the special No. 1 through No. 4 Tolly thickness gauges when hollowing the ornament body. You could use a laser light system to get the desired wall thickness, but I find that I can do the hollowing faster without it. I strive for about 1/8" or less wall thickness, which makes the completed ornament extremely light.

How light will the body be, you ask? That really depends on the types of woods used, the size of the ornament body, and how thin the wall is, along with the weight of the top finial and bottom icicle woods. The padauk and African cherry woods for the ornament in this article only weigh in at 1-1/2 ounces when completed.



**Step 16.** Change to the *Hunter 5/16"* tool, and hollow deeper or toward the center of the body. (Note: The tool rest is away from the body in the photo for photographing only.)

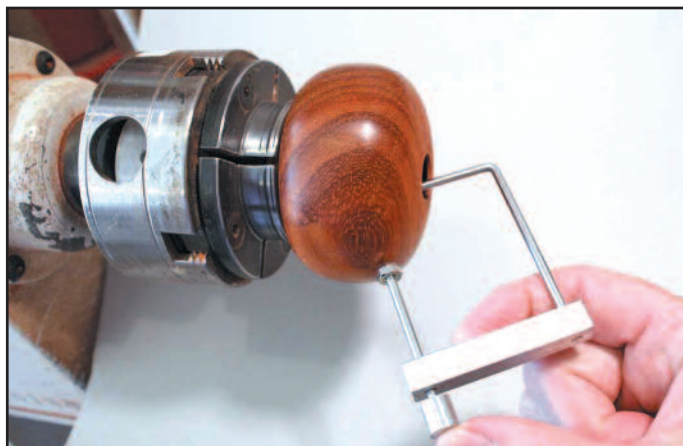


**Step 17.** This photo shows the No. 1 Tolly thickness gauge in

use. Note the 1/16" gap at the round part to the right. This gauge measures from the back of the 5/8" opening shown here to 3/4" in.



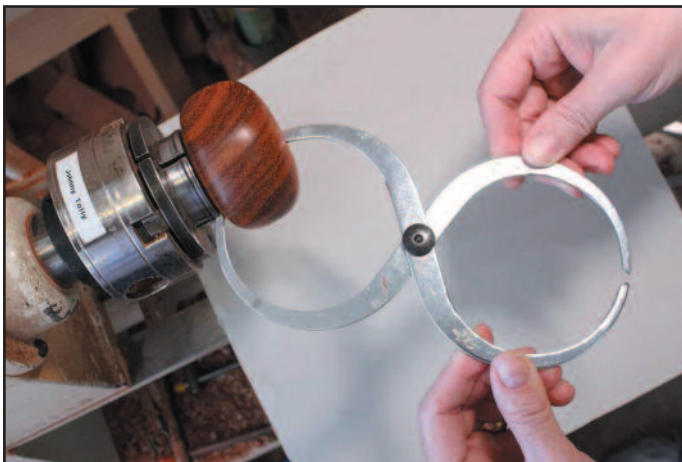
**Step 18.** The No. 2 Tolly thickness gauge with a 1/16" wall thickness at the shoulder area is shown. This gauge goes from 3/4" to about 1" in.



**Step 19.** This photo shows the No. 3 Tolly gauge, which measures from 1" in to the back of the bend area or about 1-1/2" as shown.



**Step 20.** The No. 4 Tolly gauge can measure the side wall thickness. In this photo, there is less than 1/8" at the gap where the thumb and forefinger are.



**Step 21.** The double-ended calipers are used for measuring at the back of the body. Note that there is about 1/8" wall thickness at the outer end of the calipers.



**Step 24.** The part that was in the Oneway Talon chuck is shown. Note that the wall thickness is about 3/16" in the 3/8" hole. Also note that the CA helped to prevent any splintering of the wood.



**Step 22.** I use a small LED flashlight to look in the body while checking for any ridges that may need more attention.

When all hollowing is completed, re-sand the hollowed body using all the grits from 400 up to as high as you need—or wish to. This will remove any scratches caused by the double-ended calipers or the Tolly special thickness gauges. I normally sand to 1,200 grit and oftentimes will go to as high as 2,000 grit. Because my Oneway lathe has both forward and reverse, I usually sand in both directions. This produces a very nice base when the finish is applied.

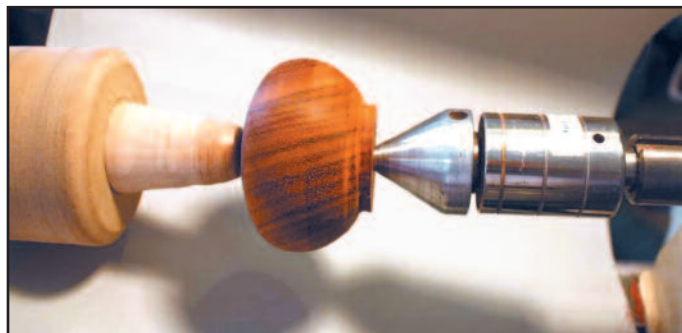


**Step 23.** Use a 3/8" Forstner bit to drill through the back of the body at the headstock end. Remove the hollowed body from the chuck.



**Step 25.** If you have not made a friction drive similar to the one shown here, now is the time to do it. The friction drive will hold the ornament body between centers to turn away the small tenon that was used to hold it when hollowing out the body.

See my previous how-to article at [www.turningwood.com](http://www.turningwood.com) on how to make these medium density fiberboard (MDF)-type chucks. For this project, I turned the maple wood into a cylinder, and then it was glued into the MDF-type chuck. I then turned it to a cone. At the end, I formed a 5/8" tenon and this is what will be used to drive the ornament body. The large cone on the Oneway live center is also used.

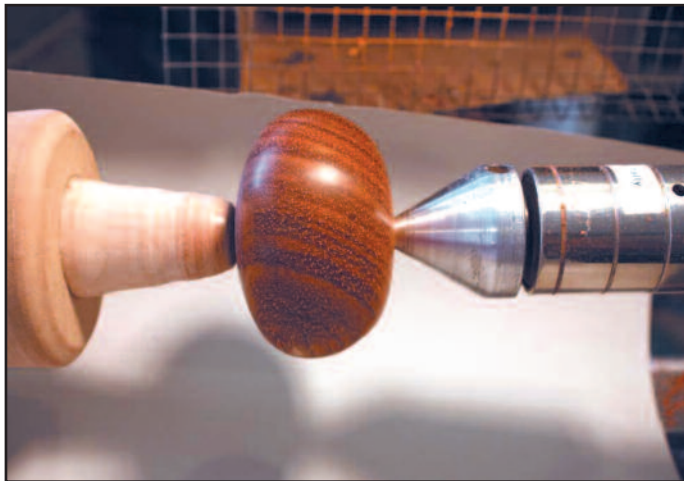


**Step 26.** Place the body between the friction drive and large tailstock point. Turn away the wood using very light



cuts. I like to use a very sharp, small 1/4" gouge for this, but any tool will do.

You may need to tighten up the tailstock slightly if the body slips on the friction drive, but be careful that you **do not** overtighten the handwheel. This is a very thin body that you have spent some time on and you surely do not want to crush it now. Stop the lathe often and use double-ended calipers to determine the wall thickness where the tenon was. This area is where the top finial will be glued in the 3/8" hole.



**Step 27.** When all the turning has been completed and the tenon has been removed, sand this area through all grits, blending the area into the rest of the body.



**Step 28.** Once the sanding is completed, either apply your favorite finish while on the lathe or remove the body and place it on a hook or stand. Spray the body with a clear finish, apply an oil finish, or use whatever finish you prefer. I like to use "rattle-can" lacquer to finish the bodies. The body is put aside for a few days so that the finish can cure good and hard, then I buff out the finish using a good paste wax.

The stand shown here was made to hold the completed ornament body when applying the spray finish. The top of each dowel is turned down to 3/8", and then the dowel is glued into the base. Each 5/8" dowel is about 4" tall so that the body can be put on with either side up.



**Step 29.** These ornaments are sitting on the stand and have just been sprayed with lacquer spray. After a few days, when the finish has cured, place the friction drive back onto the lathe headstock, and place the body between the large Oneway point and the friction drive. Using a good paste wax and a small piece of paper towel, buff the ornament body so that it has a smooth and shiny appearance. Never use a large piece of cloth near a running lathe—you can imagine the consequences should the lathe catch the cloth.

Just be careful if the finish has not cured well, because you can burn or blister it and that really makes a mess. If this does happen, sand off the finish and reapply it.



**Step 30.** Parts can be glued together in any order. For the top finial, place a small amount of wood glue under the finial and around the 3/8" tenon, and push it into the 3/8" opening. Remove any excess glue with a cotton swab. I like to use *Titebond II* glue, but use what you wish. The photo shows two top finials glued into two different ornament bodies. The one on the left is of padauk and on the right is wenge.

**Step 31.** Place a small amount of wood glue under the top of the icicle and around the tenon, and insert it into the body, removing any excess glue with a cotton swab. The photo shows two different styles of icicles glued into the ornament bodies. The body on the right is southern yellow pine; the one on the left is wenge. Both icicles are makore or African cherry.



**Step 32.** The two paidauk bodies shown here were cut using the cutting sled mentioned in the first article. The one on the right had only one cut; whereas the one on the left had four cuts. For these, I glued in 1/8" maple before the hollowing. How do I do this, you ask? I turn the body just as I would for a normal body. I then place the globe on the cutting sled and cut off one side. The maple is then glued between the two pieces. When the glue is cured, I re-turn it back to round. Then I do another side and so on. This method keeps the body round with the maple perfectly spaced to the body. Experiment with different angles or cuts, and just have fun making the ornament bodies.



### Step 33.

This photo shows several bodies of different woods with various numbers of different-sized holes drilled into them.



**Step 34.** Here are the Hunter micro-cutters used for this article. Shown at the top is the 3/8" straight cutter on a 3/8" shaft. Under that is the 3/8" swan neck cutter on a 3/8" shaft. Then the 5/16" swan neck cutter on a 5/16" shaft.



Below that is the 3/16" straight cutter on a 1/4" shaft and at the bottom is the 3/16" deep curved cutter on a 1/4" shaft. This cutter is used to hollow just inside the 5/8" opening.

Note: The holders in the photo were made for me, and at the time of this writing, are NOT available from Hunter tools, though they may be at a later date. If you are interested in them, contact Mike Hunter about making them (see Supplies). Also note that I had a flat milled on the Hunter tools to prevent the tools from rotating inside the holders. This flat could be ground on the shaft using a bench grinder. I highly recommend doing that once the tool is positioned in any holder. Just lock down the grub set screw, then loosen the grub set screw, remove the tool, and grind a flat onto the shank of the cutter tool; then reassemble. This will solve problems later on—trust me on this one.

### Johnny Tolly



Johnny and Marcia Tolly live near Austin, Texas, and are both active in the local woodturner's club. Johnny is the past president and Marcia is the club's past librarian. Johnny welcomes your questions, comments,

and suggestions and can be reached either by sending a SASE to him at 16212 Crystal Hills Drive, Austin, TX 78737-9009 or by e-mail at [johnolly@austin.rr.com](mailto:johnolly@austin.rr.com).

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