

# Hollow Sphere Demo

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This demo is to reveal the secrets of the Hollow Sphere

Blank selection and preparation. Just about any wood will do. Best results will be achieved using hardwoods. I have turned spheres from mesquite, maple, pear as well as soft woods such as pine and cedar. With softwood, you will have a tear out and if you are intending to use pyrography for surface enhancement hardwoods are far better. This is end grain turning and I use scrappers to turn the inside of the sphere just as I would a box. For purposes of this demo I have used cedar (because I had it!) to show the steps of the turning process.



Blank size is optional...I have turned and hollowed balls as small as 2" and as large as 9". The maximum diameter is determined by your ball jig. The length of the blank must be longer than the diameter of the ball with enough length to accommodate a scroll chuck tenon at each end.

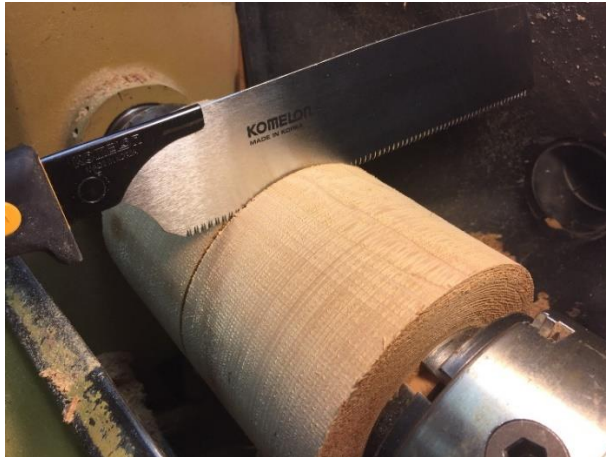
Step 1. Place the blank between centers to turn it to a cylinder and turn a tenon on each end of the blank.



Step 2. Mount the blank between two scroll chucks and select the point at which the cylinder will be parted. This point should be near the center of the blank.



Step 3. I use a 1/16" parting tool to begin this process. On smaller diameter pieces, I complete the separation with the Parting tool. On larger pieces, I start with a parting tool and finish with a saw for safety.



Step 4. After parting, true up the end of each half. This is an important step....the objective is to be able to match the two pieces back together with a seam that is nearly invisible.



Step 5. The next step is to prepare a template to hollow a hemisphere in to each of the pieces. I use plastic lids saved from empty containers such as coffee cans, cottage cheese, etc. For larger diameters card stock, discarded file folders, etc. also work. Material must be ridged enough to be inserted into the hollow which will become the inside of the sphere.





Step 6. Place card stock as pictured above on the end of the prepared half blank and hold in place with a live center on your tail stock as shown in the right-hand picture above. To assist me in making the template cut I have placed the light behind the card stock to help judge where to make the cut. This step gives me a good reason to keep my skew sharp! At This point you/I decide how thick to make the wall of the sphere. If you plan to pierce, 1/16 to 1/8 inch....the thinner the better for piercing. If you are a carver allow adequate thickness to accommodate your design.



Step 7. Next is the hollowing process. I fold the template in half which gives me the desired shape for the hemisphere of half of the ball. This process is like turning the inside of a bowl but requires some precision because the outside will be turned later and if the inside is not precise.....firewood! First, I establish the outside wall thickness using the folded template as a guide. My weapon of choice for this is a square ended scraper...objective, don't mess-up the rim that mates with the other half!



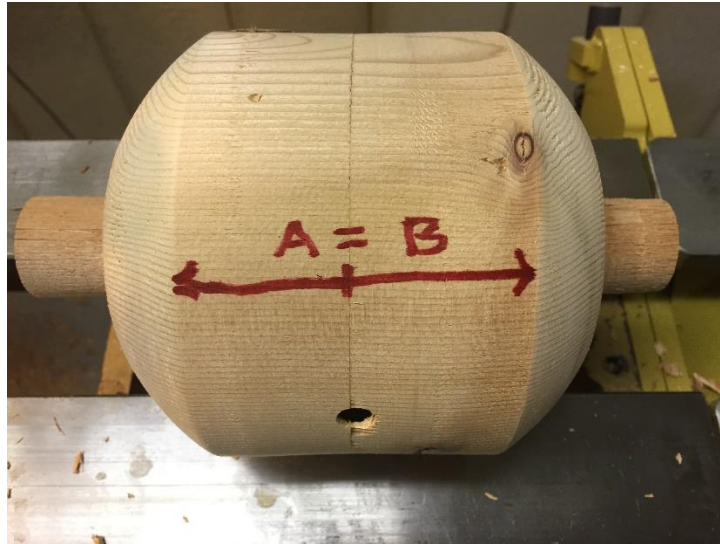
Step 8. Finish hollowing the hemisphere using the template to guide for accuracy. I use a bowl gouge and/or a round nosed scraper.



Step 9. Repeat this process for the other half and when satisfied with the hollowing and the rim surface glue 'm up! I use my lathe as a clamp and usually wait overnight before turning the outside of the sphere. I line up the grain and use a hose clamp to help line up the pieces. It can be removed from the lathe in 20 minutes or so you can get back to turning for empty bowls!



Step 10. I use a ball jig for turning the ball around the hole that I have made in the middle of the cylinder. Important! The ball jig MUST be lined up perfectly on the glue line...This is another firewood prevention measure. Below is a cedar demo piece. I drilled a hole to see the thickness of the wall. I would not do this on a piece I intended to finish. At this point as you can see below I return to turning between center. This allows the ball jig deeper access and smaller tenons to be removed.



Step 11. After turning to the limits of the jig I sand the ball, removing any tool marks left by the jig. At this point carefully continue the contour of the ball as far as your confidence takes you around the end of the ball. I usually do this by eye....you could make a template to the outside diameter to assist in accuracy. In the pictures following I have switched to a Bradford pear ball with the intent to finish it. The left pic shows measuring to assure that the jig is centered. The right pic is the ball after completing as far as I can go with the jig.





Step 12. Show the ball after sanding and using a spindle gouge to take the end stubs down. The farther you go with this step the easier it will be to true the ball to round. To true the ball, you have at least a couple of options. For this ball, I used cup chucks and carefully removed the excess wood remaining on the ends. The other option is to use a vacuum chuck. With either of these options you CAN use the ball jig. I have found that the time it takes to set the jig up accurately is not worth the effort so I use whatever tool I am comfortable with including both gouges and scrapers. This a good time to exercise caution as you have already invested a good deal of time and effort.



When using the cup chucks I often pad them with paper towels or leather to avoid marking the surface of the ball.

Step 13. Now the fun part! Decorating the ball. My feeling is that piercing is a requirement to show that the ball IS hollow and not just a round wooden ball. For designs I have used dragon flies, butterflies, flowers, and abstract design. You can find many ideas on the internet. I use Bing.com images. You can find just about anything you might want to use. I print them and transfer the image to the ball. I have used carbon transfer paper, not the old greasy blue stuff we used on typewriters, but a more refined type that you can get in any art supply store. Wellburn Gourd Farm

([farmwww.welburngourdfarm.com](http://farmwww.welburngourdfarm.com)) has a product called stick-and-burn which is printable and self adhesive that can be used to burn your design onto the ball surface. Another option is free hand which is what I often do, sometimes with a pencil but often with my Burn Master.

Below is the nearly finished pear ball used in previous picture.

