

# 'OPEN' SEGMENTING

The Hard Way by Robin Costelle

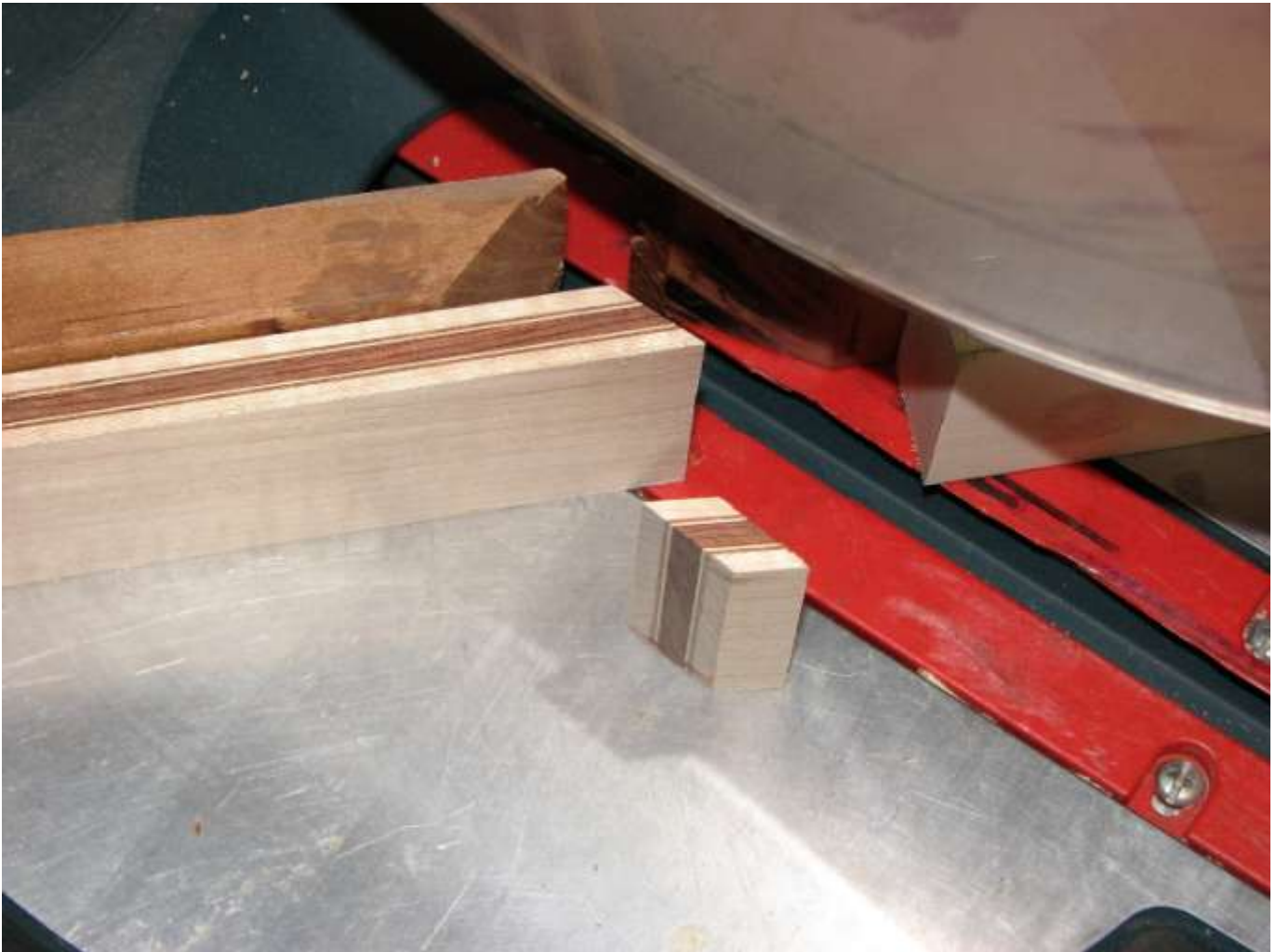


Ok, let me start out with telling you that this could be a tutorial, or maybe a documentary, or maybe even a warning.

You will see me trying this and failing and trying again until I get it finished. Please use this as a guide of sorts to help you figure the best way for you if you decide to try this technique. Be warned-when things go wrong they go fast. You should **always** wear a **face shield** and take every precaution when turning or woodworking. (Don't ask me how I know-you'll see).

My first step is to laminate a few contrasting layers of boards. In this project I choose maple and bubinga. Bubinga, it turns out, may have not been the best choice. It's a pretty hard wood and the transition betwixt cutting air and then bubinga is quite abrupt. That being said-If I can do it so can you.

In this first photo I have taken the laminated board to my miter saw and sliced pieces at a 45 degree angle. The thickness of mine was about 3/8". This can be just about any dimension you like with varying results.



You can see my stop block on the right side. You should probably cut a bunch of these and a couple extras, but leave yourself some board for other elements you made decide on later.



Here are four consecutive cuts showing a complete design element. Actually my board is wide enough that I will end up cutting this in half (shown later) so you have two design elements here.

My next step is to sand one side of each piece in order to glue two together as shown in the photo below.

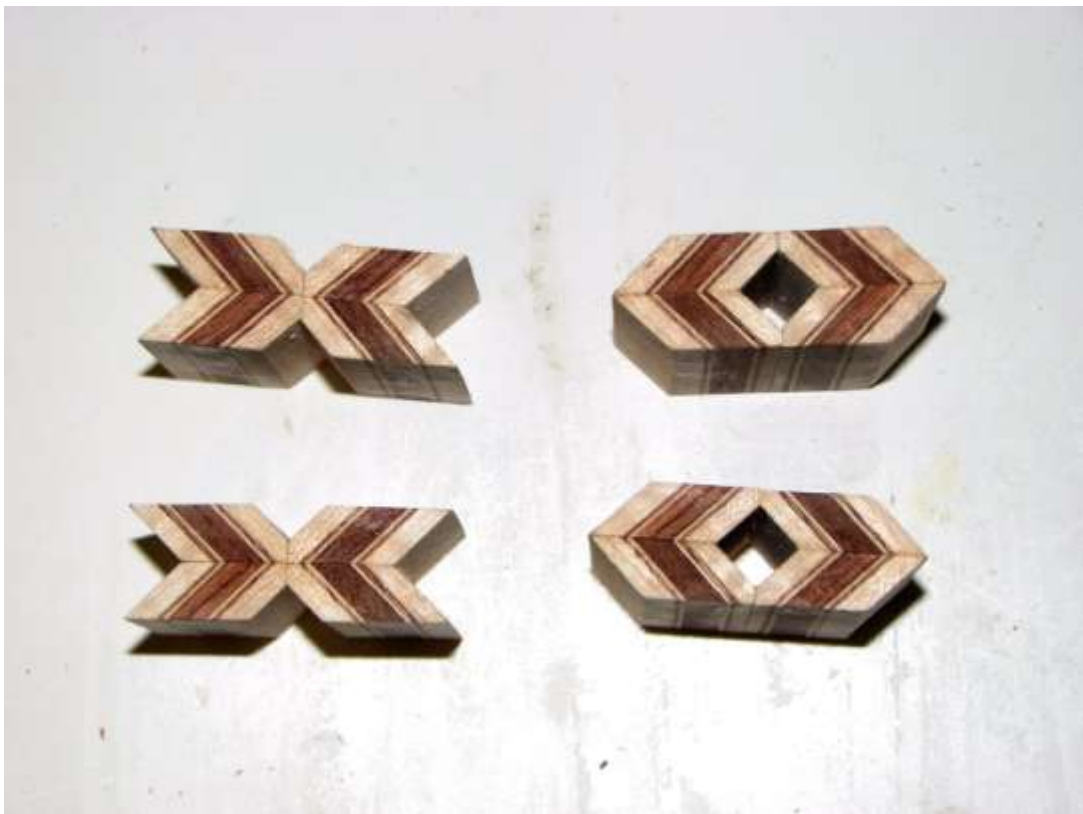
I always use Titebond original glue for my woodworking. Also, use good clean sandpaper to reduce heat build up on your pieces.



Each sanded side should be glued and tightly clamped together and the woods aligned on both ends of the segment. This insures that the elements (in this case the bubinga and veneers) will line up no matter how much is turned away later.

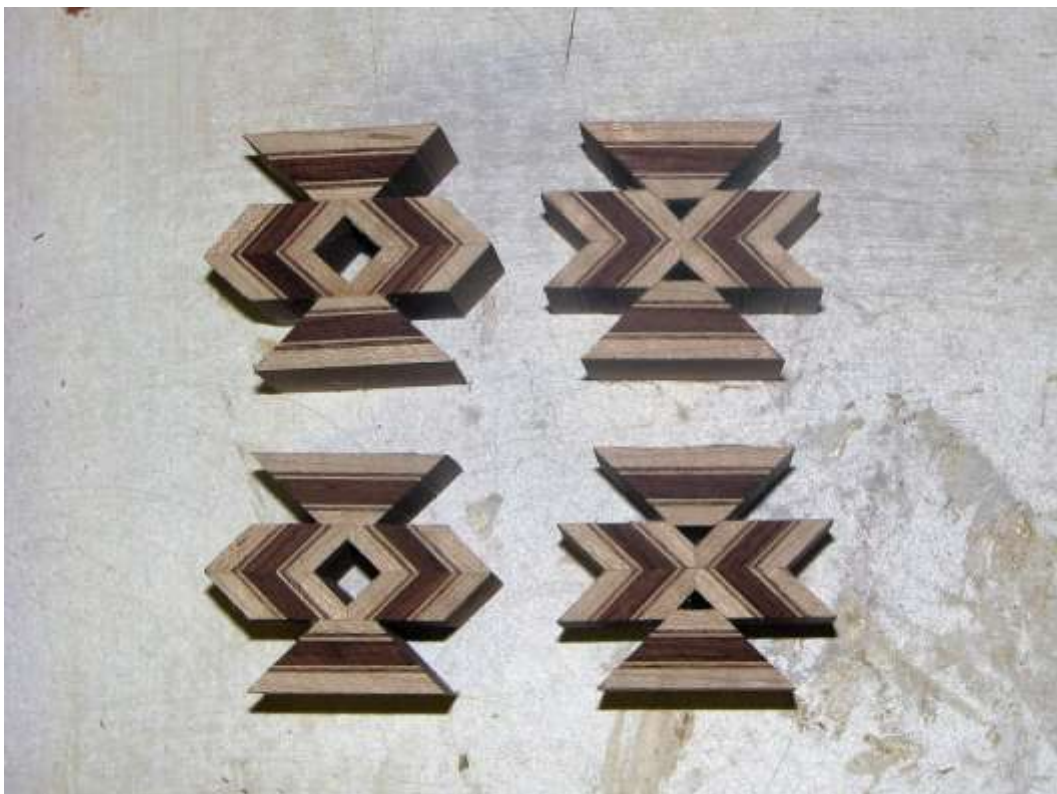


Here you can see that I sanded just a bit off the nose of this piece in order to match with another and form a design piece. See photo below.



The opposite ends were sanded to create the pieces on the right.

Here I have cut wedges from my laminate board to complete my intended design. This is when I started to get cocky, thinkin this would be a synch for me to turn, because I've done things like this before (and forgot how they turned out).



When the wedges are added to the first design elements we get another pretty cool design (see above photo). This could go on and on if you're not careful.



Be sure to clean out any glue squeeze out before it dries.

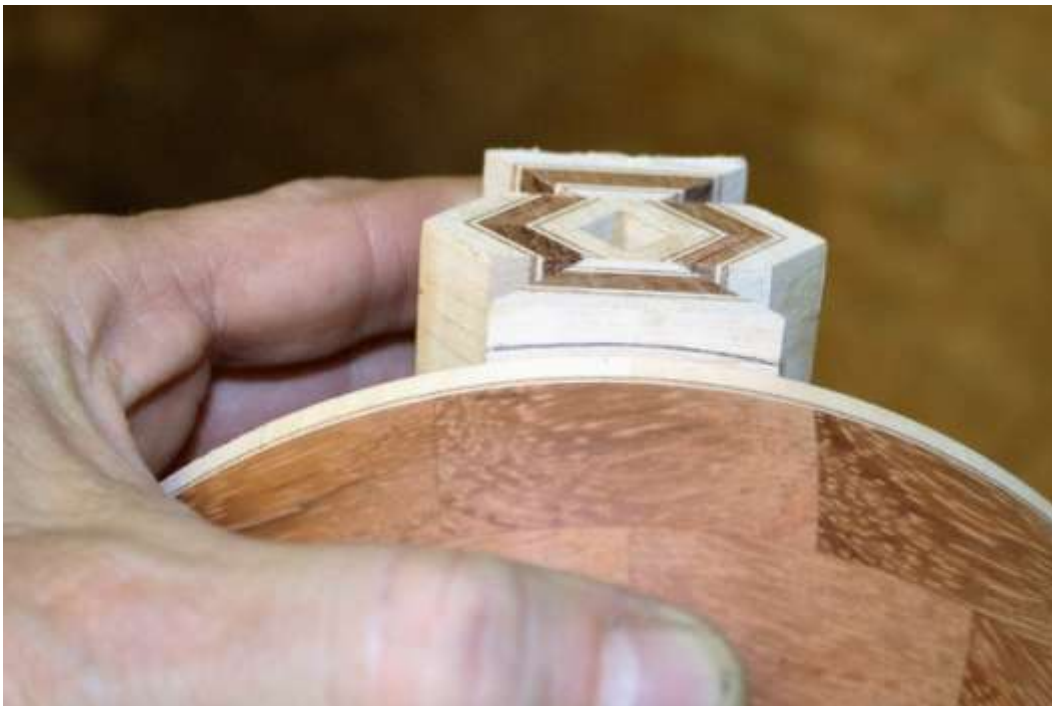
Also in the designs I'm making I had to sand off the tops of the wedges on the diamond designs to accommodate the difference in heights of the two styles of designs. The 'X' designs actually have the wedge pieces inserted into the 'X'.



Now I can start turning my form. I have drawn a plan and cut and glued all my segments and rings together in two halves-top and bottom. I then turn each to kinda resemble the form and to get the outside diameter close. These two halves are not glued together yet!



Next I take a design piece and hold it to the outer diameter, just hanging over about 1/8" and draw a mark.





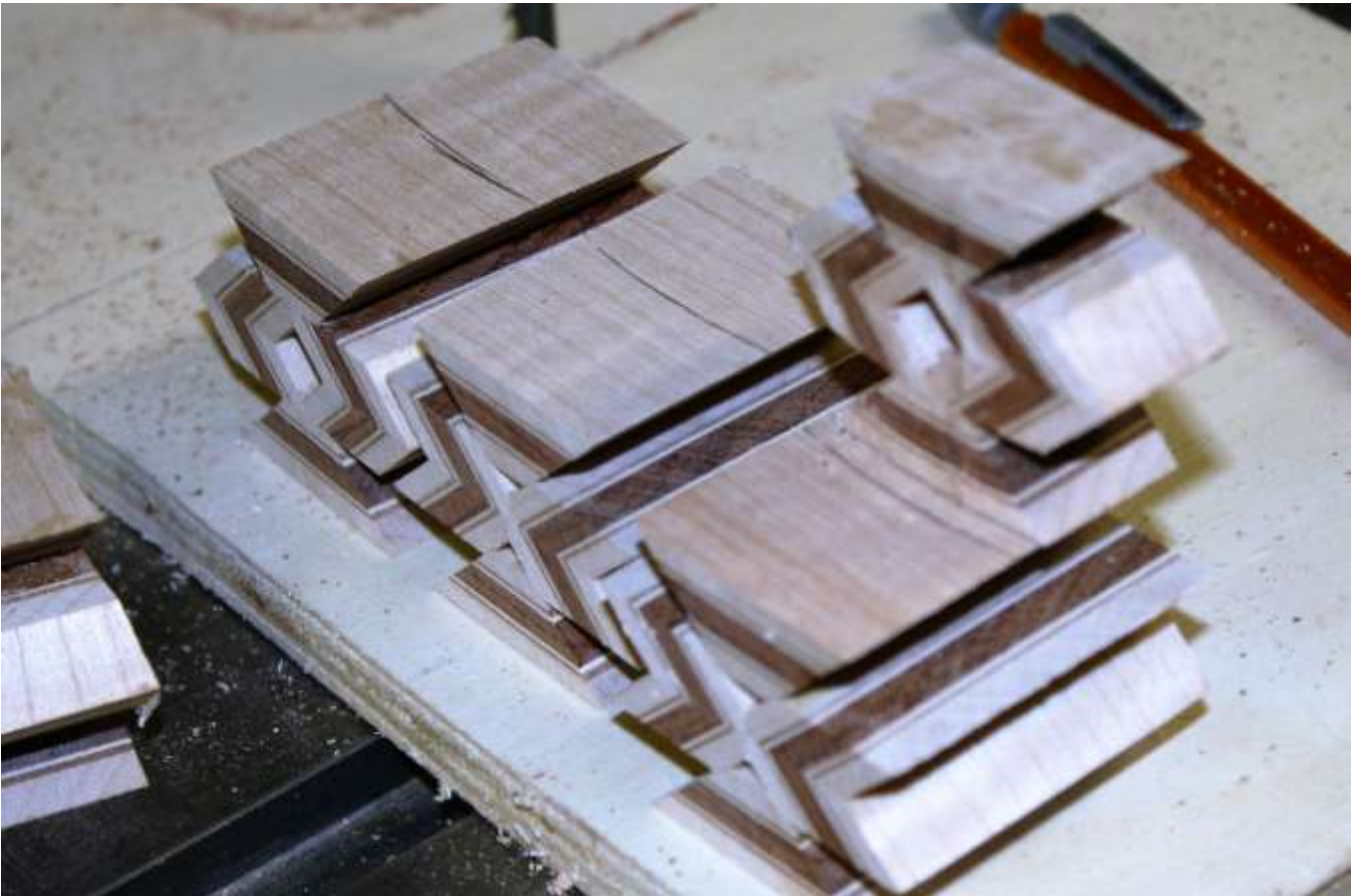


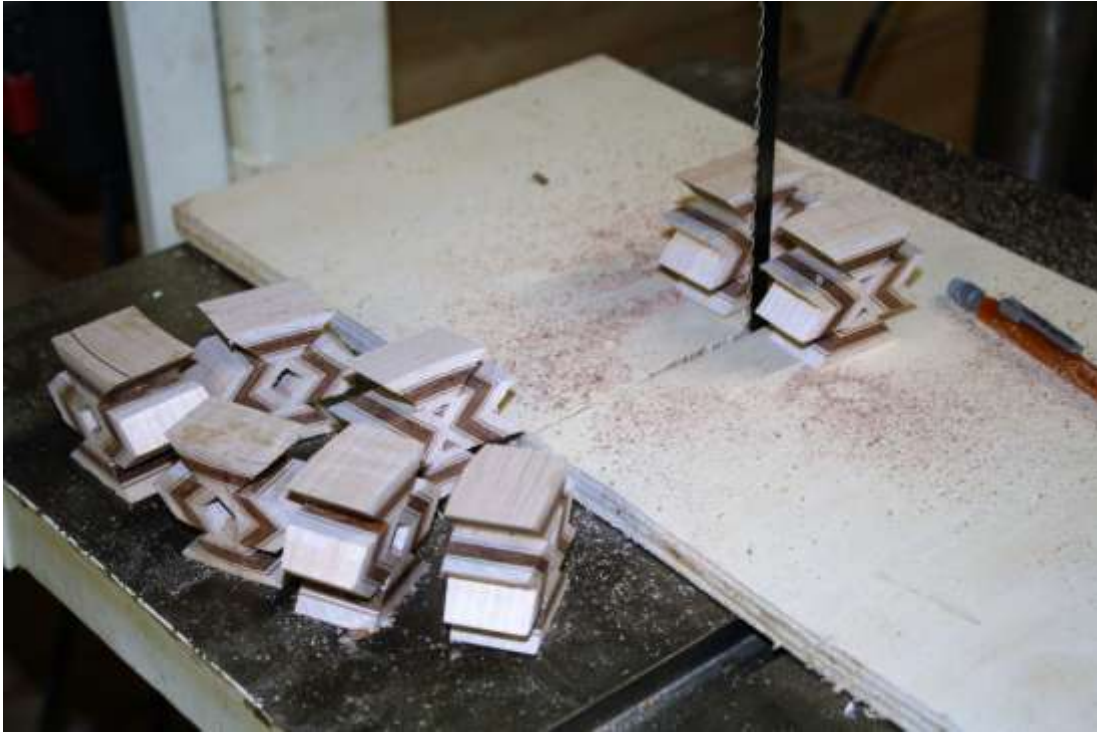
It's kinda hard to see in the photo but there's a line at the top of the piece and then one half way down that I marked freehand to estimate the middle of the segment. I then cut the piece in half following the arch I've drawn. This gives me two segments for the price of one. Each piece being about an inch wide.





Here are the two halves and below I have marked the rest of the pieces.





Here's a photo of all the little minions cut in half and ready to glue to the bottom half of the vessel.

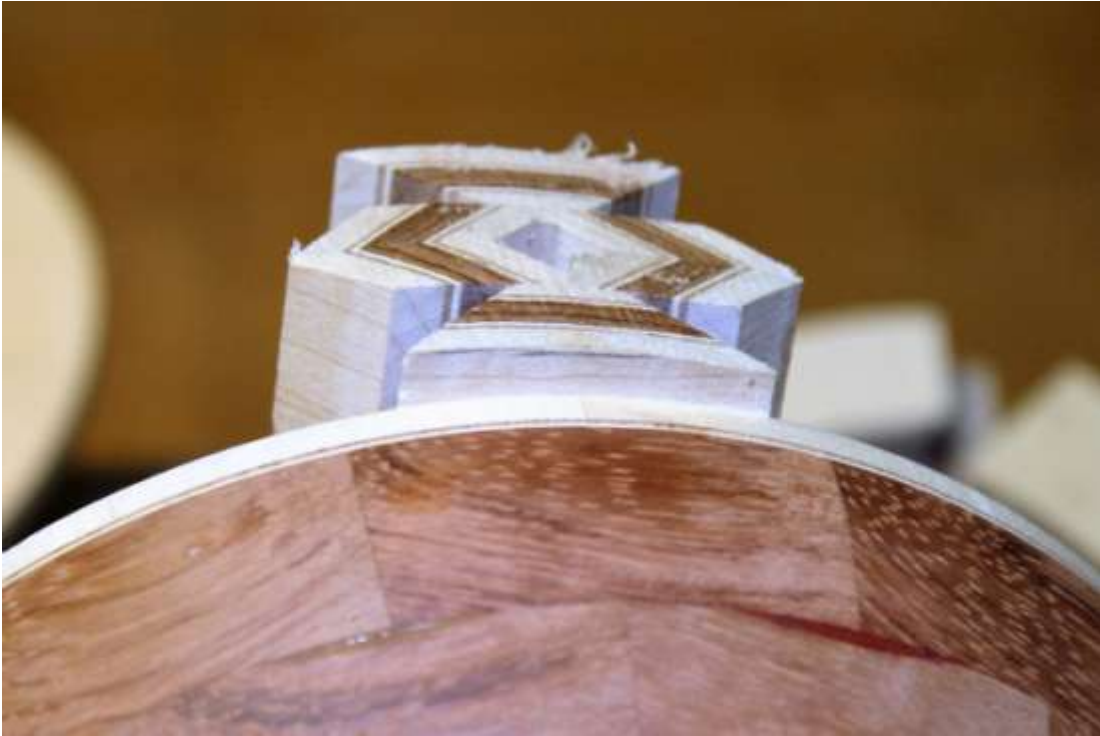


Before the next step I like to coat the sides only of the pieces with thin CA glue. This helps harden the edges and helps keep chipping from occurring when I turn.

The next step is to align the pieces on the vessel rim and see how they will be placed around the diameter.



This one worked out to have every other piece on a joint and the others between joints.



In the photo above you can see that I glued the segment just overlapping the edge of the vessel to accommodate for the curvature of the profile. Since I will be turning the wall thickness to under  $\frac{1}{4}$ " I still have plenty of thickness in my design.



Here are all of the pieces glued to the bottom of the vessel.

Now I will take a moment to tell you that I knew in advance that I would be turning this thing very fast. I also knew that if something were to happen (something bad that is), this would open up like a grenade. Just something to keep in mind.

Below shows me taking light cuts to make sure that all my segments are of equal heights. Very light shear cuts at a high speed-what fun!



Then a sanding block.





Here I have turned my profile to near final dimensions. These two halves are not yet glued together. They are just jammed between centers to get the form turned.

As you can tell this has great potential for failure. Fun.

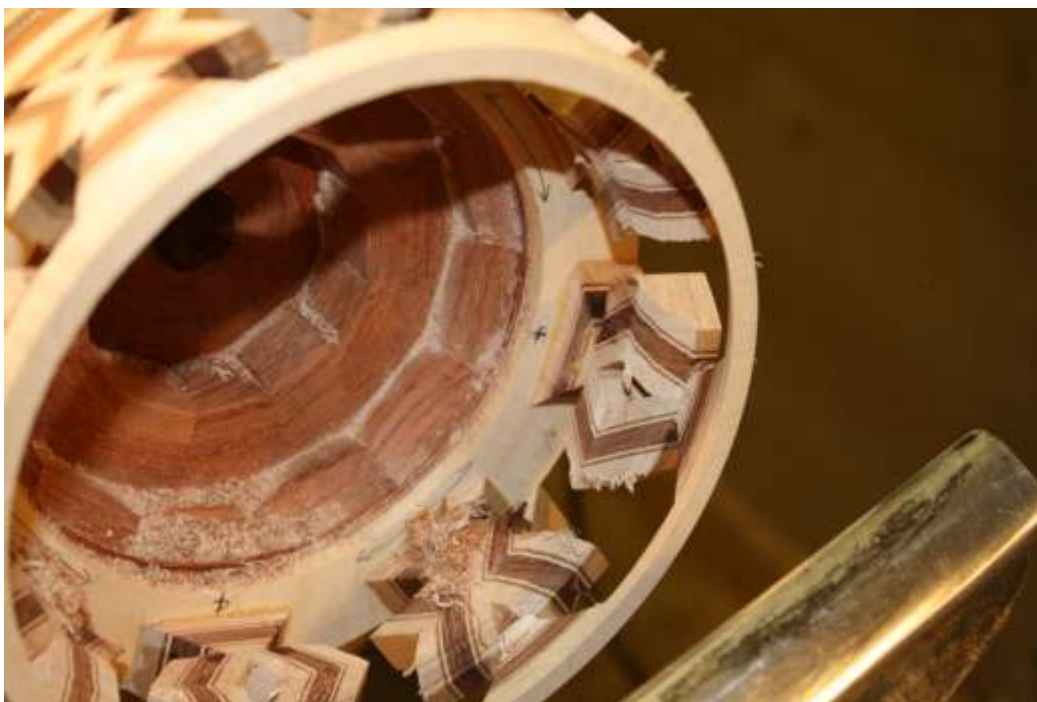


Here is the bottom half ready for turning the inside to final wall thickness.

Of course this wouldn't be a fair tutorial if I didn't show the whole story. I had only gone about a ¼" deep when I got cocky and lost concentration. This piece was easily reglued into place, but remember the line about the grenade. Luckily I am in front of the piece looking inside and the force threw this thing perpendicular to me.



So I got to thinkin-maybe I should have made the maple ring on top of this design to help steady and keep everything together. Below shows the ring added and turned the final thickness. This really helped boost my confidence.





Until it happened again-it's just that I had to make that little touch up cut. As you can see I was almost finished turning the design.



Now the hard part was finding the pieces (grenade). One piece was easy-it was stuck in the ceiling. Repairs were made and the search for the other piece led me to clean me shop-not fun!





Perfect camouflage.



I've only shown you these photos because it might happen to you and I wouldn't want you to get discouraged and quit. The pieces usually are small and glue right back into place and hopefully no one gets hurt.



The rest of the turning went uneventful. I used a 1/2" spindle gouge on the open design and an Easy Wood Tool on the solid bottom. Now you can sand and even put finish on the inside to make it look good.



You may need to hit the edges lightly with some sandpaper.



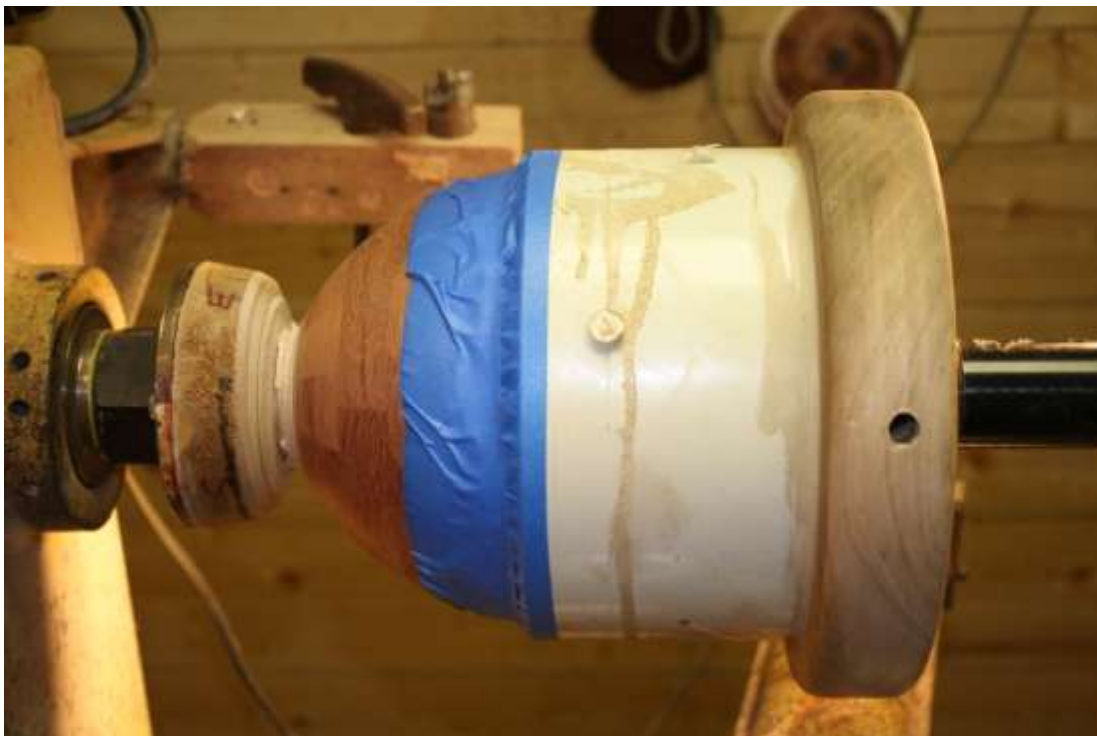
Now we can relax and just turn some good old solid wood. The top I've turned to final thickness and sanded and finished the side. Below are the two halves finally glued together. I was able to reach in between the segments and wipe away any glue on the inside. Now you can finish turning and sanding the outside.



The rim is gently parted off from the tenon. I started with a parting tool and finished with a Japanese pull saw. Be careful. It would not be good to break the piece after so much work.



After finishing the rim-with light cuts and sanding, I jammed the piece inside a large vacuum chuck. Just a PVC coupling attached to a block of maple with a threaded hole or faceplate. I've taped it good because obviously a vacuum wouldn't work on this piece.



The photo below shows the whole rig turned around on the lathe. This step helps me center and hold the vessel for finishing the bottom.



Again-I started off with a parting tool and gently finished with the saw.



Just light cuts and sanding should be all that's necessary to blend in the bottom.



Well, I hope I haven't discouraged you and have given you some thoughts on how to create a similar piece. If you have any questions please feel free to contact me.

Remember to be safe. You have to turn this thing kinda fast and take very light cuts with a sharp edged tool. I would also start out with a design that would be easier to turn-maybe only the diamond and 'X' designs. But if you're in for a challenge and your insurance is current-give it a try-just keep your face shield on.



## Parting photos and thoughts:

One thing I might try next time, is to wrap the design in masking tape after completing the outside profile. This may help stabilize the pieces and at least keep them from flying out if something were to happen.

Also keep in mind your profile. Keep the curvature throughout the design-don't make it flatten because it's harder to see.

I thought this was a fun photo op.



Someone will probably spray this with lacquer and become the next woodturning star!



Not much wood left to finish! Now that's fun!



Below I have taped the design for fear of hitting it while I turned the rest of the inside. Looking back I maybe should have taped the outside of the design while turning the inside of the design. That may have helped contain things.



Here's a photo of my  $\frac{1}{2}$ " spindle gouge. I use this for everything except the heavy cuts ( $\frac{5}{8}$ " bowl gouge) and the inside bottom (round Easy Wood Tool). The spindle gouge gives me great control and sharp clean cuts.