

Golf Vessel Process



Golf Vessel Presentation

I want to do something with a Golf Theme and I wanted to make it as big as my lathe could handle. They say if you can't make it perfect then make it big, so big it is for me.

The first thing I had to do was find some golf symbols that I could use as a starting point. They had to be symbols without many curves as straight cuts was a must for me.

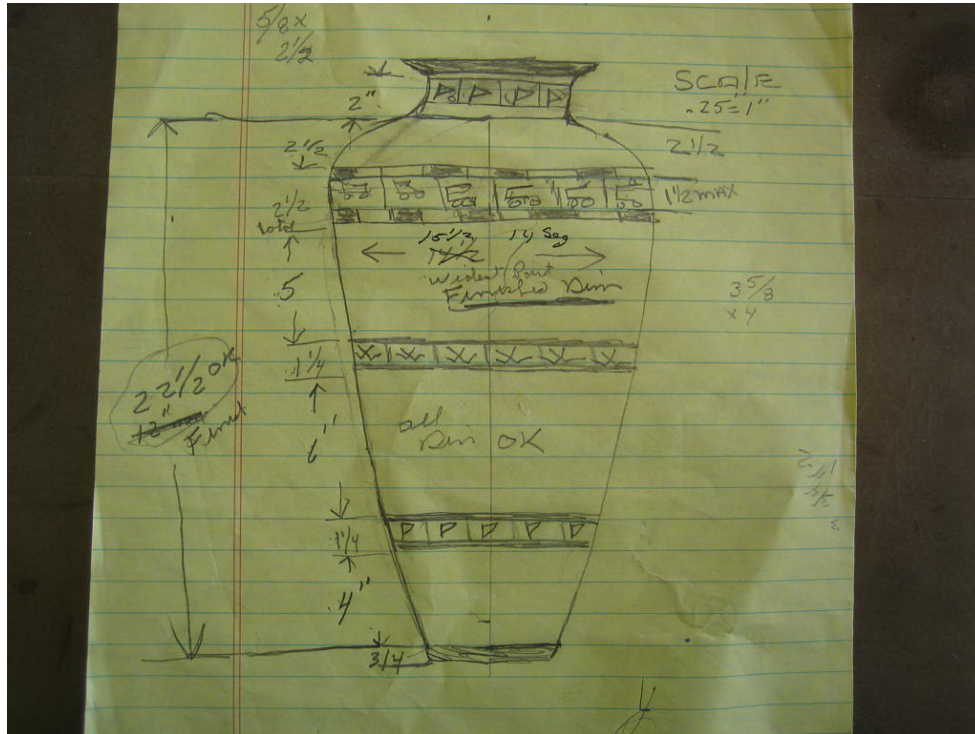
100: Golf cart I thought would work



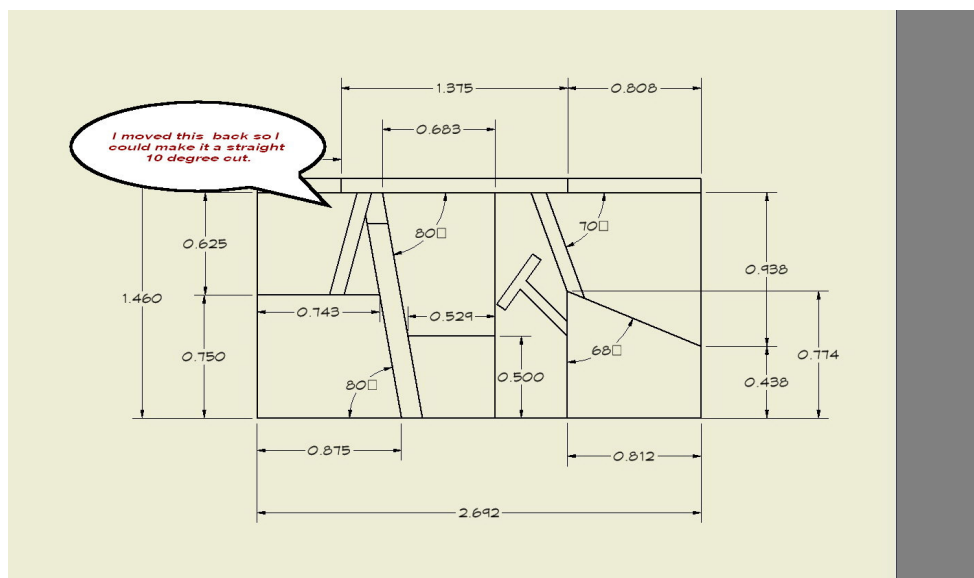
101: Clip art, I used for the neck Ring



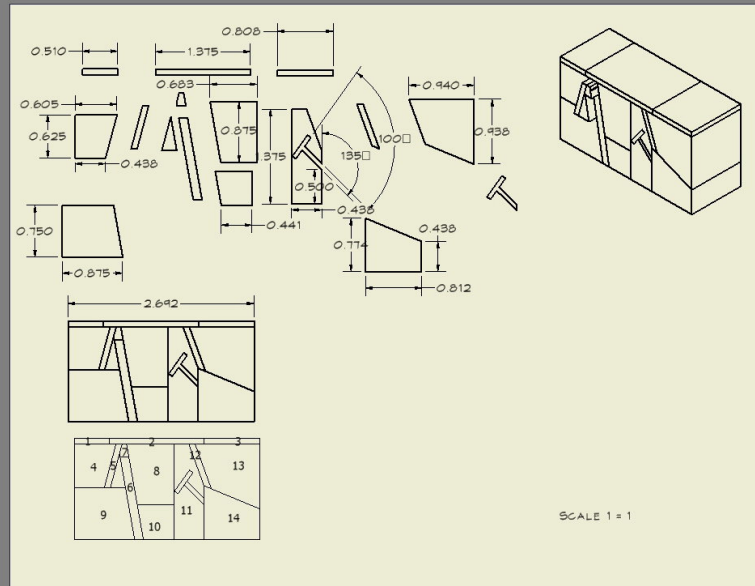
102: I sketched my ideas on paper first to get a general picture of where I was going.
I sized the golf cart symbol on the copier to what I thought would work about
2 3/4" wide



103: Next I laid it out in my Cad program using the measurements from the symbol picture. I moved the back roof support back a bit to make my life easier.



104: This is the block and parts actual size. A big help when actually making the parts.



105: I made up a practice block first and as you can see the nose was to short.



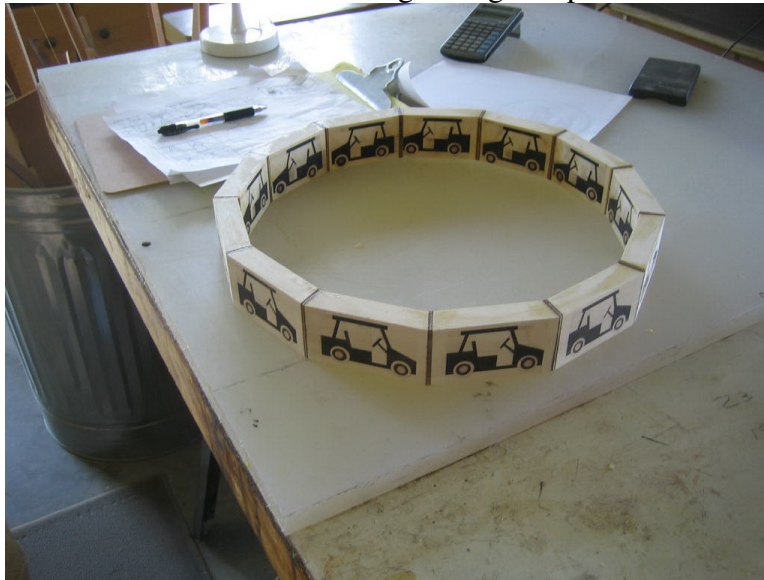
106: I sketched in what I thought it should be.



107: I make all my setups for cutting using these tools. To make the feature ring as big as possible I had to use 13 segments which is a cutting angle of 13.85 degrees and it needs to be close so you can glue it all up at once.



108: Feature ring after glue up



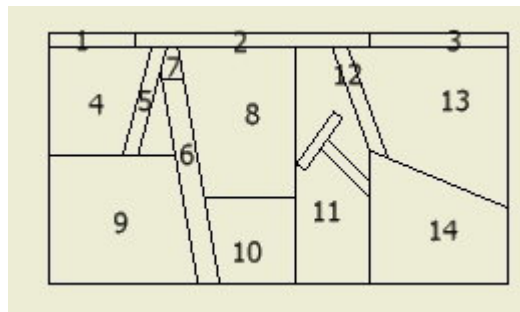
109: I make all my cuts using the Dubby cutoff sled except for the compound miter cuts.



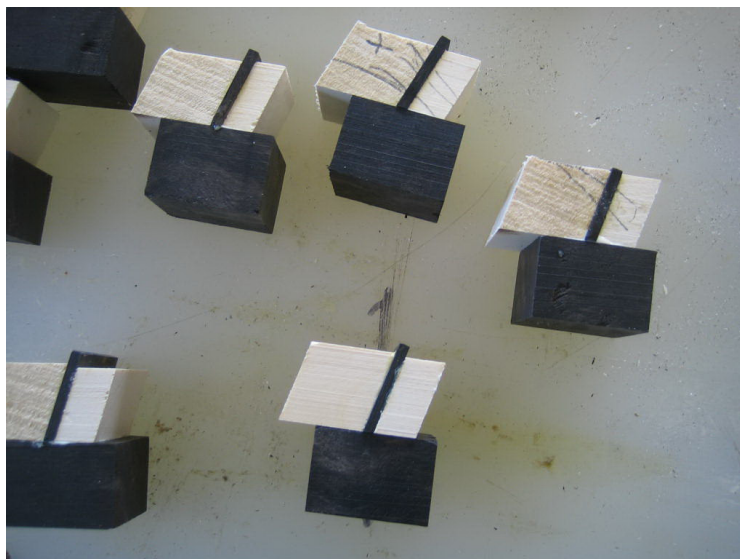
110: Another view of the Dubby



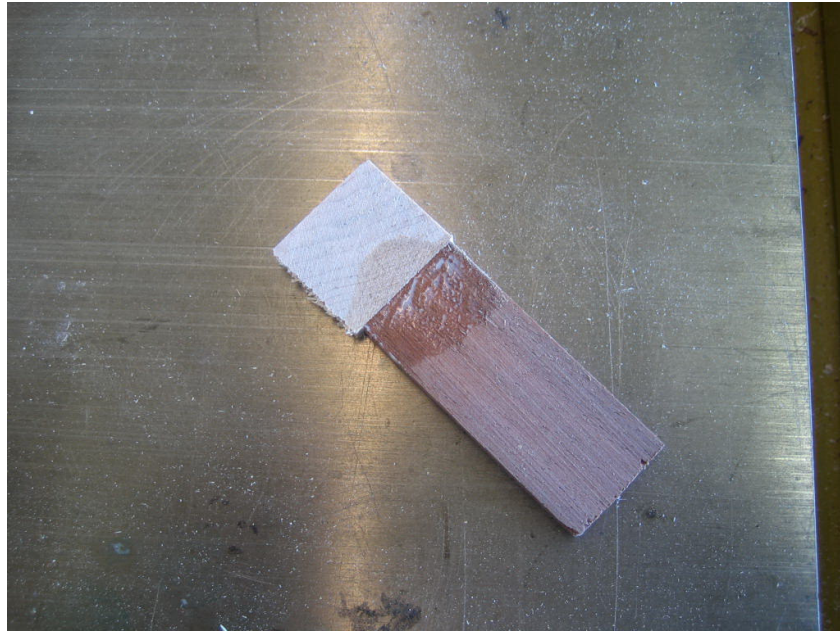
Showing drawing with parts numbered for assembly use



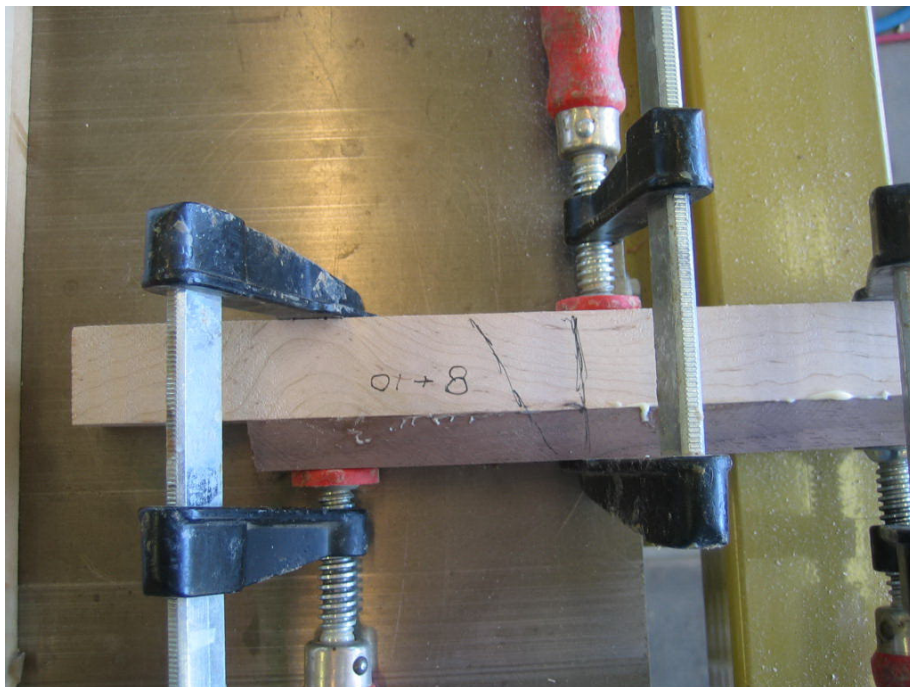
111: This is parts 4, 5, 5a and 9 glued up



112: This is the seat back glued up I took this when I was doing the sample block.



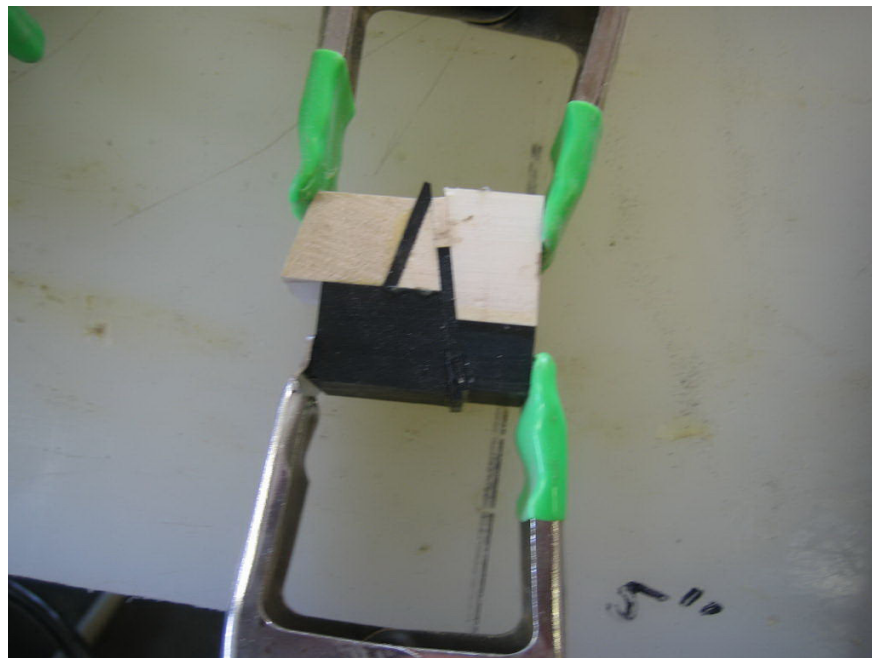
113: This is a strip I glued up for parts 8 & 10 I cut rectangular pieces off then cut the angle in a second setup.



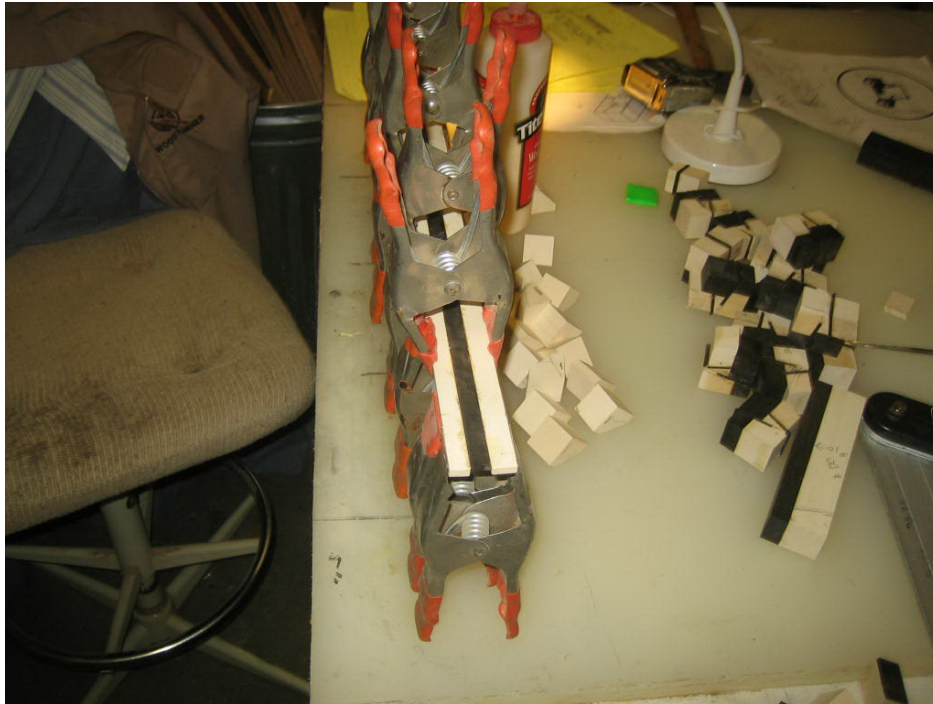
114: Cutting the angle on parts 8 & 10



115: 2 assemblies being glued together with the seat back in between.



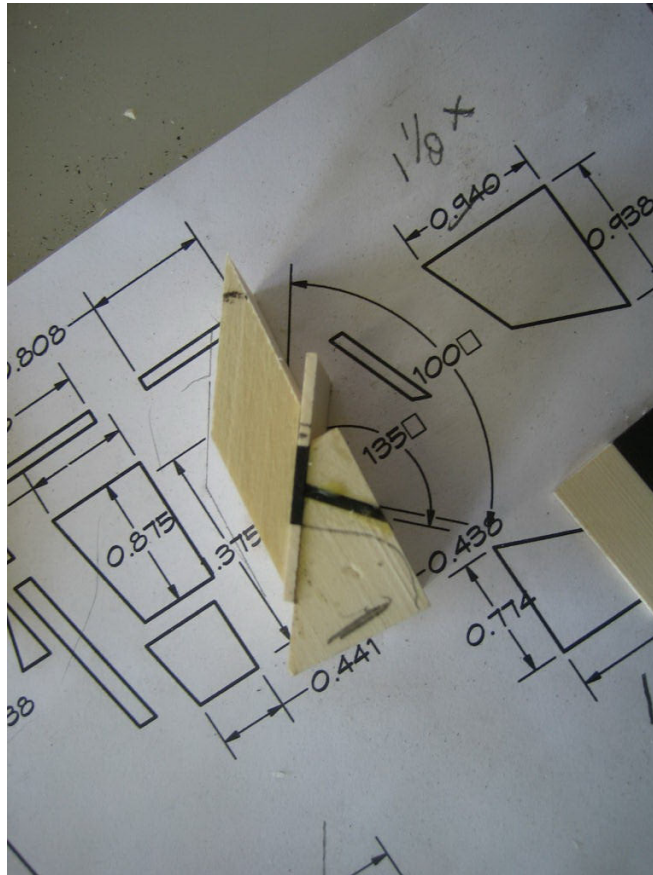
116: Glue up for Steering wheel



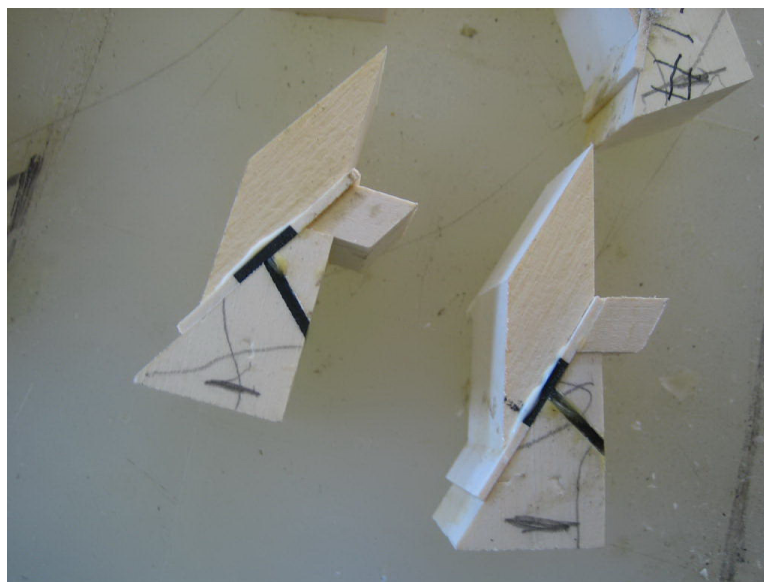
117: Glue up for steering column being trimmed.



118: Steering wheel assembly using full scale drawing for checking. I have a void where the part was to short.



119: Steering wheel assembly glued up including the void.



120: All steering wheel assemblies before trimming.



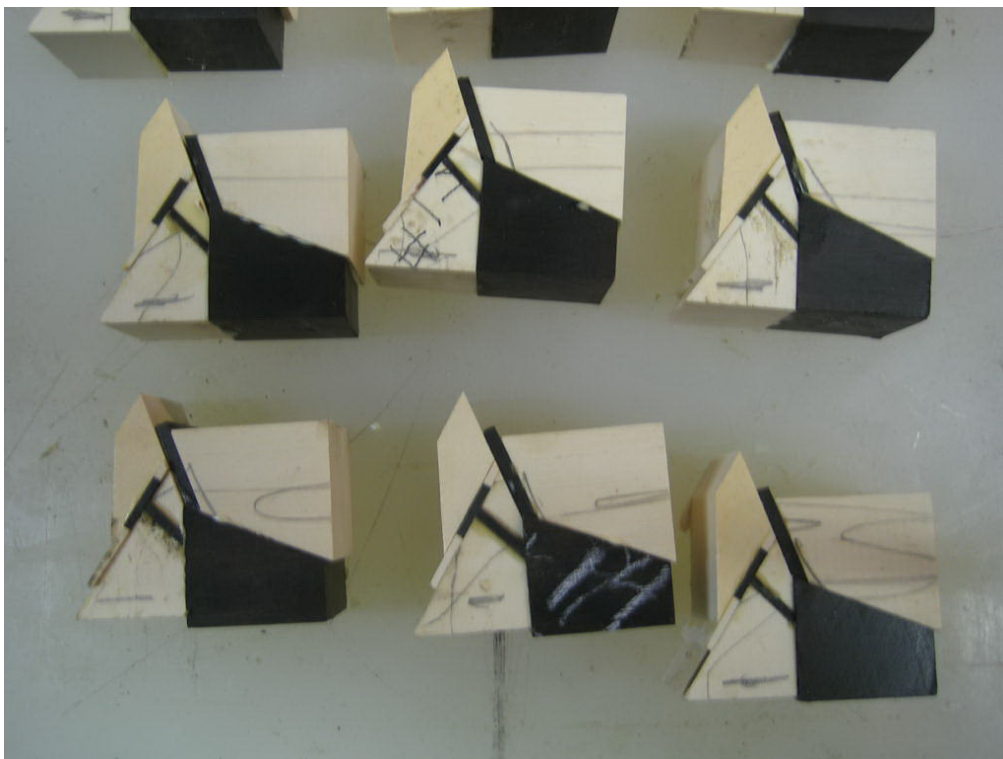
121: Trimming front angles on assembly the part off the sled is already trimmed



122: Steering wheel assemblyy glued to front sections. I glued up the 3 pieces all at the same time this made it fit better. All are held by hand for only a few seconds no clamps.



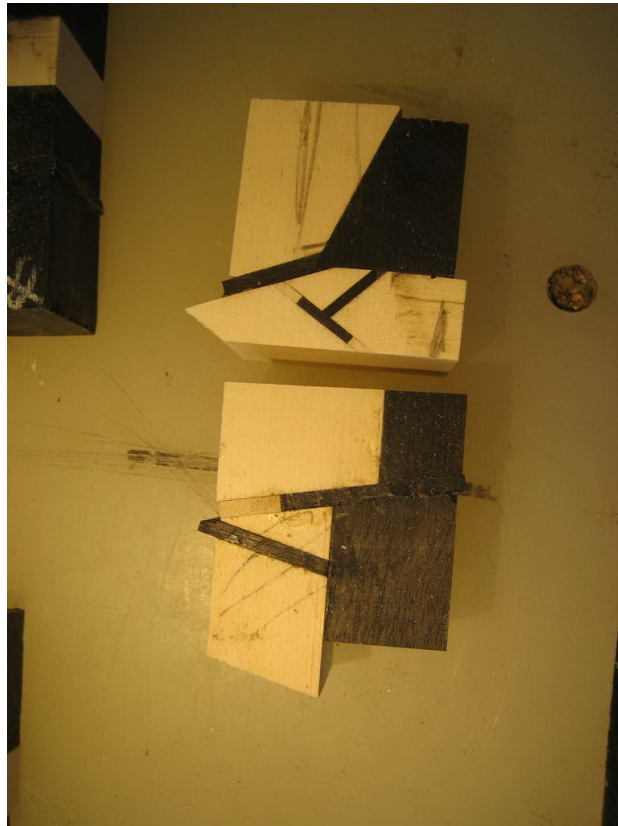
123: Close up of glue ups.



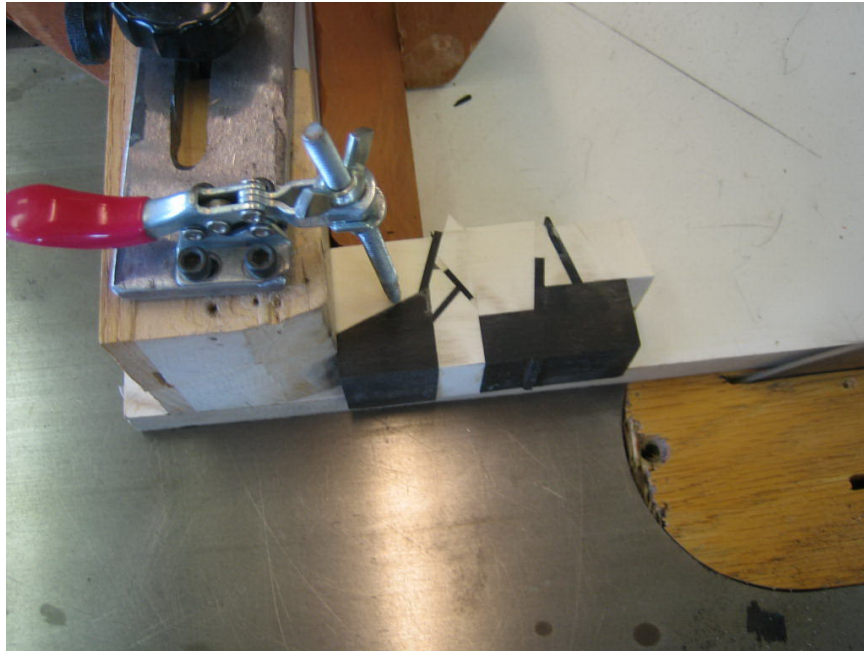
124: Trimming the front assembly straight to mate up with the back section



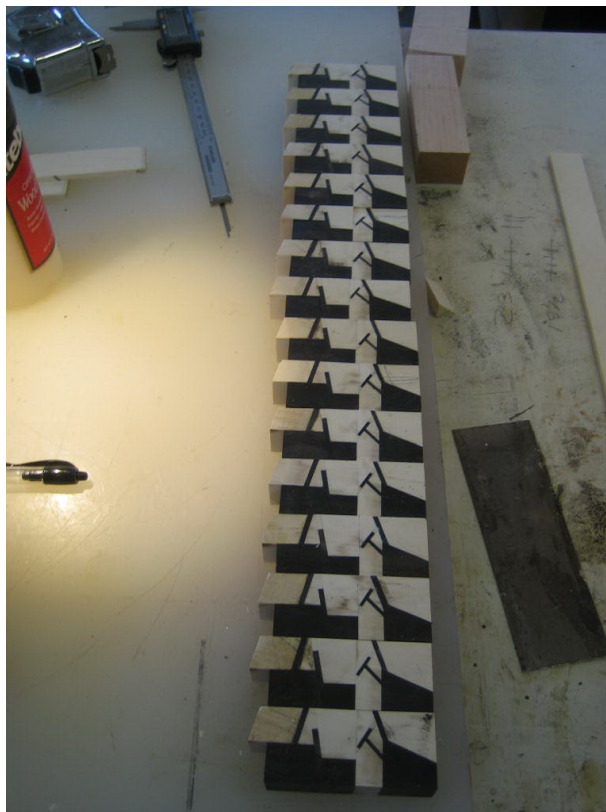
125: Front and back assembled ready to glue.



126: Trimming bottom straight. I use the fence to trim the tops and all are the same height.



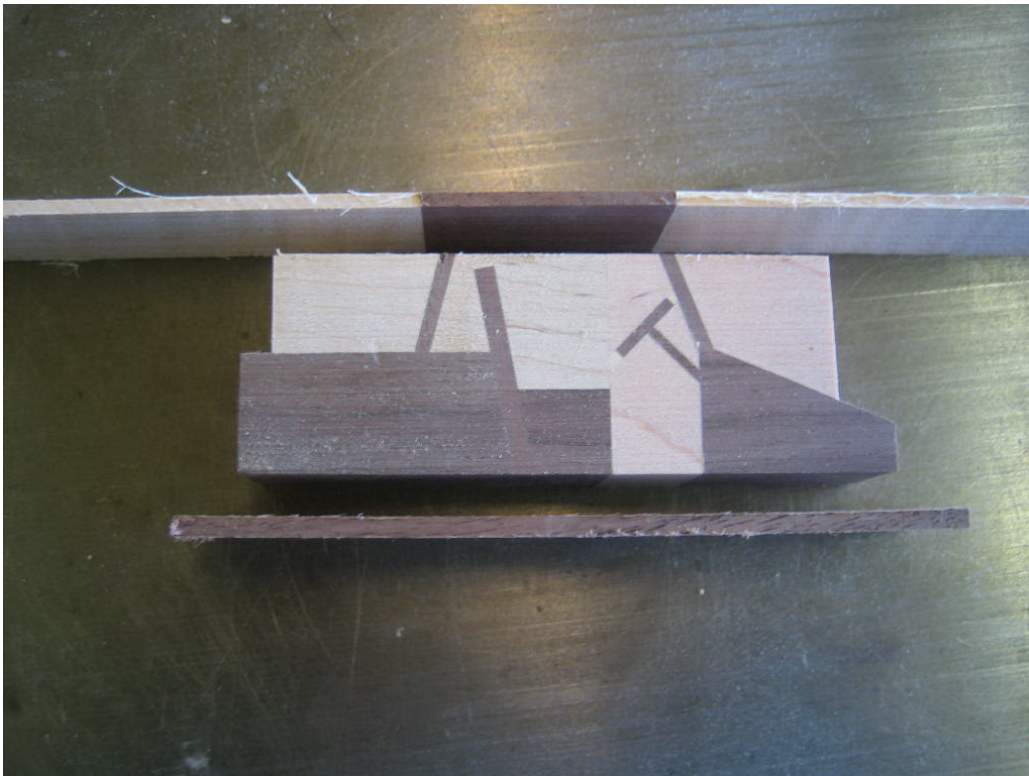
127: All trimmed top and bottom.



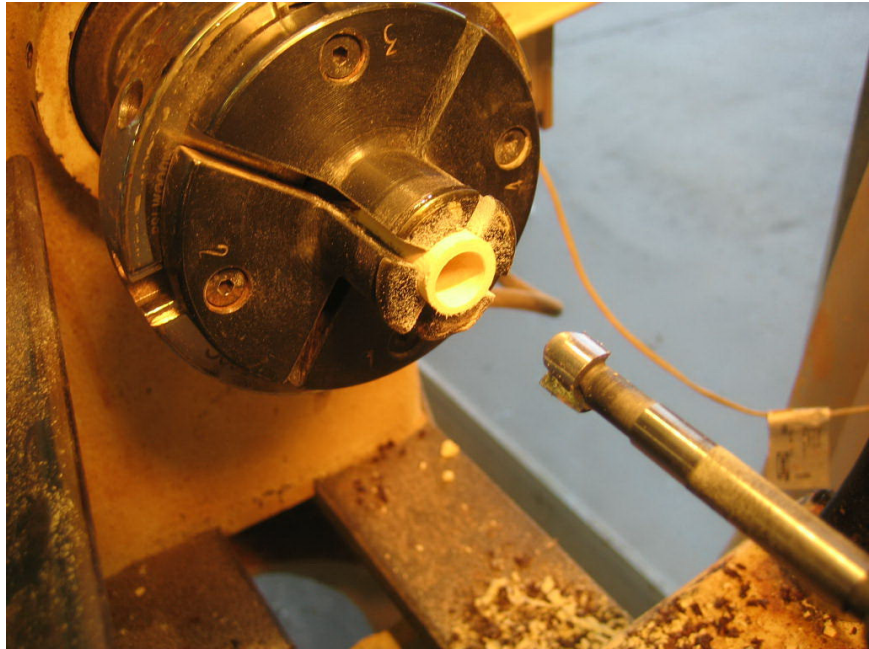
128: Glue up for roof. Notice the roof sections are cut off the end .



129: Roof and floorboard ready to be glued on. It not shown but I glued two more pieces of holly one on the top and one on the bottom then trimmed the ends square and glued on 2 more holly pieces on each end.



130: Turned 26 + Pieces of holly to 5/8" dia 1" long and drilled a 7/16" hole in center.



131: Turned 26 + pieced of Wenge to 7/16" Dia 1" long and drilled a 1/4" hole in center. The picture is not how I did it. I turned 1 1/4" in off the end of square stock then drilled the 1/4" hole and parted of 1" long. 26 times.



I used a 1/4" maple dowel for the center. Holly would have been much better. Next time.

Not Pictured

A: Drilled holes in block for wheels and glued in wheels.

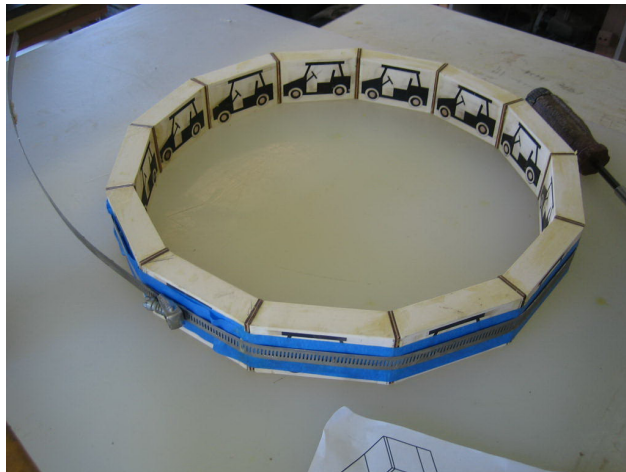
B: Sanded Blocks flat both sides on drum sander have to push through with a stick to keep them moving.

C: Trimmed top and bottom on tablesaw to be sure top and bottom are square to faces. This is important for when you cut the miter angles on the blocks.

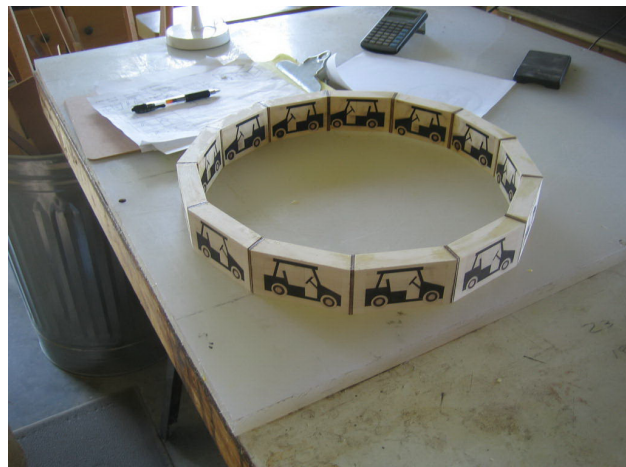
D: Cut all angled on ends. Make first cut on all blocks then make second cut check angle at this point. Could show how I use the angle box for this.

E: Glued up strips of walnut and maple for the dividers (2ea) .060 walnut and (1ea) .030 maple = .150 this needs to be considered when doing the feature ring designs.

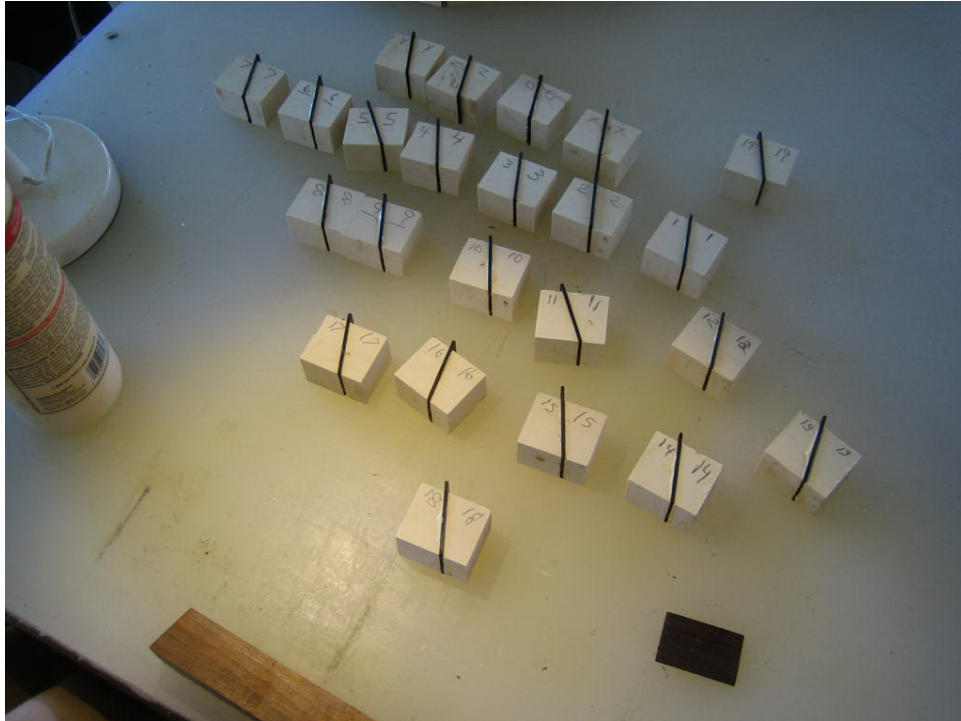
132: Glue up feature ring. Use band clamp.



133: Feature ring glued up



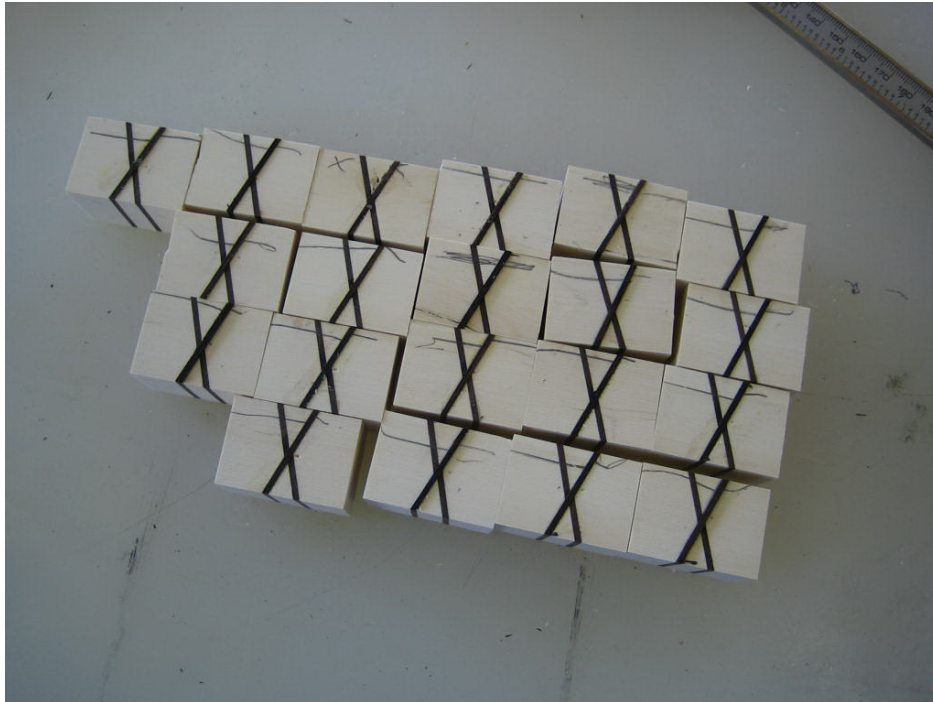
134: These are glue ups for the neck ring. Similar procedure as the main ring.



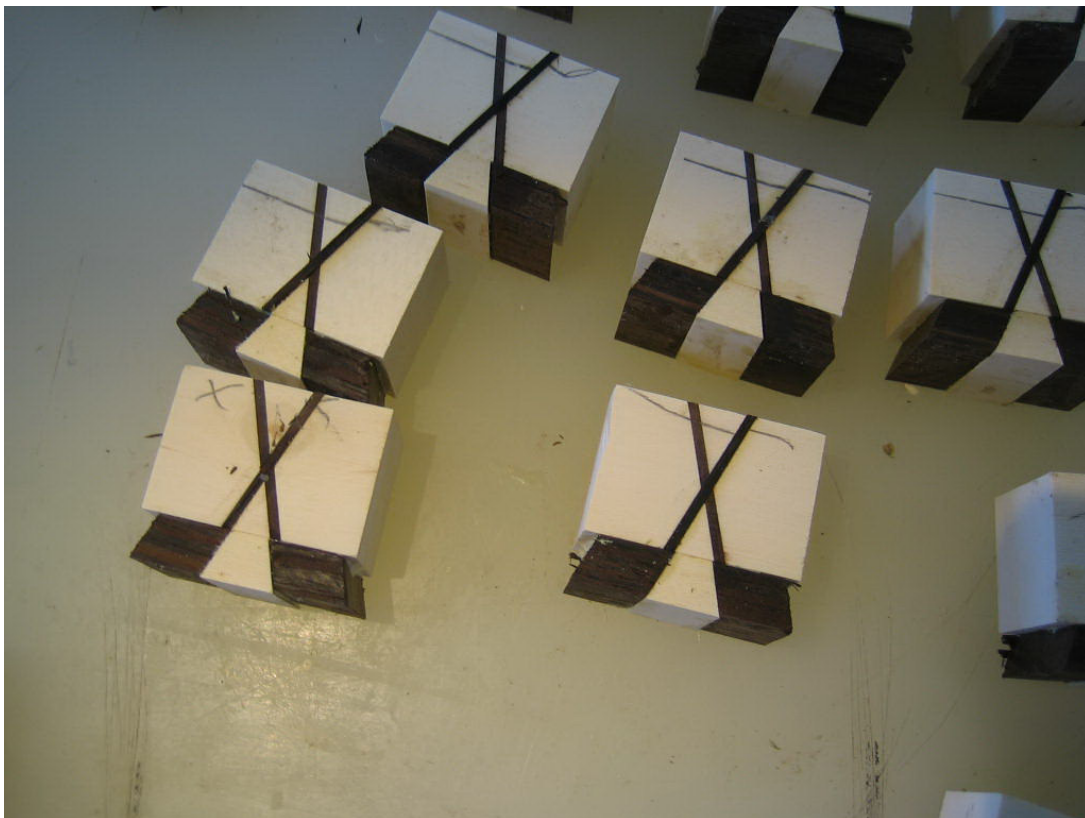
135: Making the second cut. This was the sample.



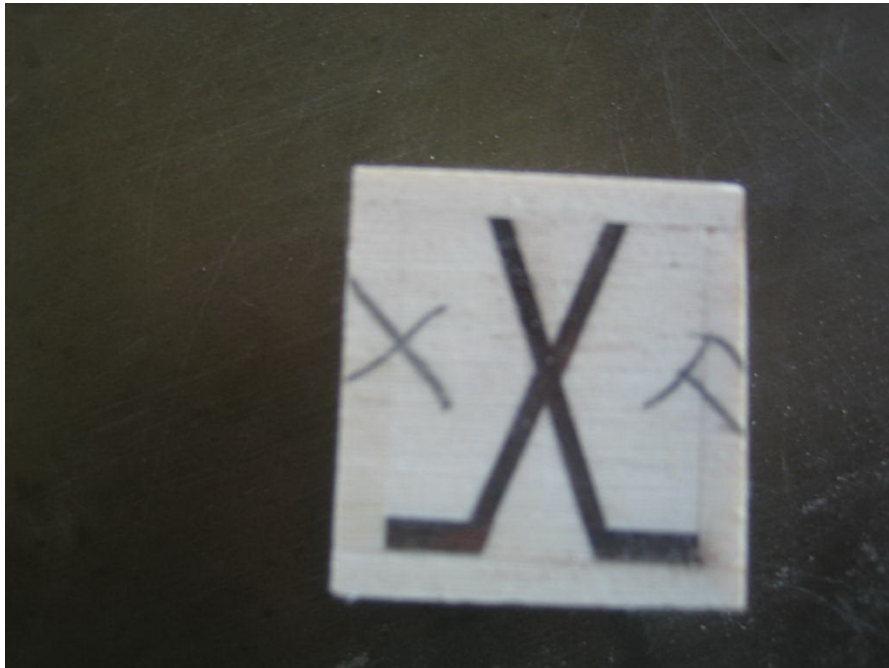
136: Club shafts without heads



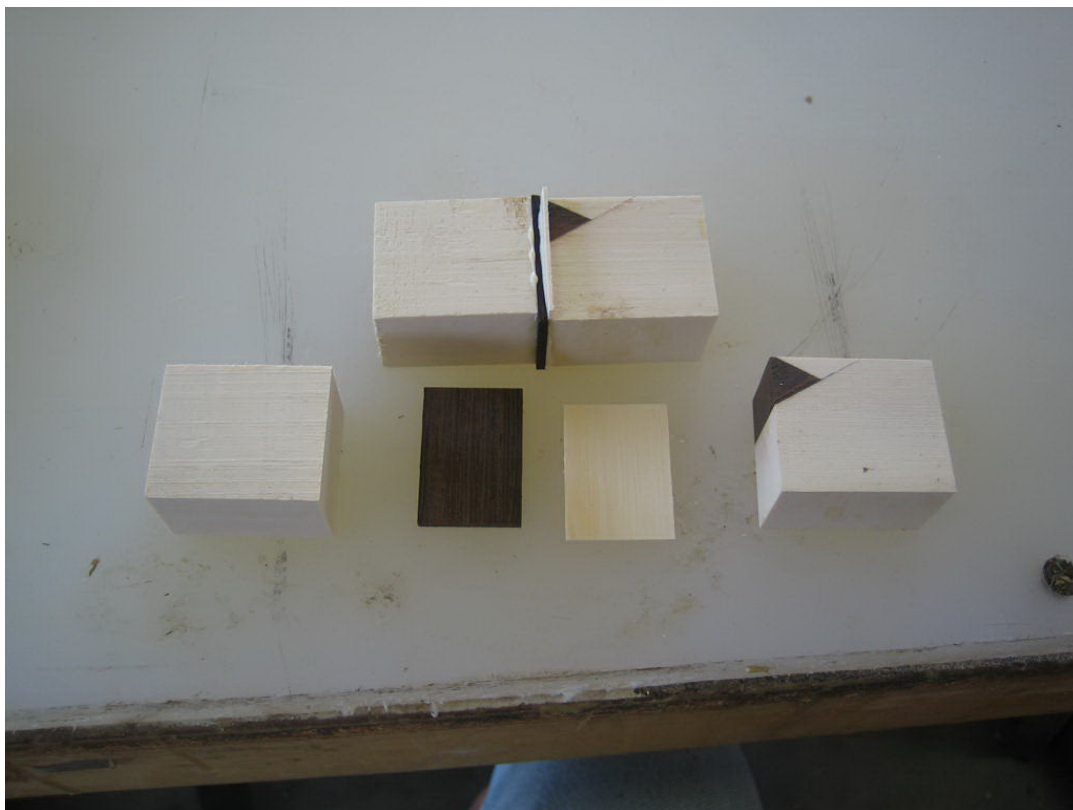
137: Club shafts with heads before trimming.



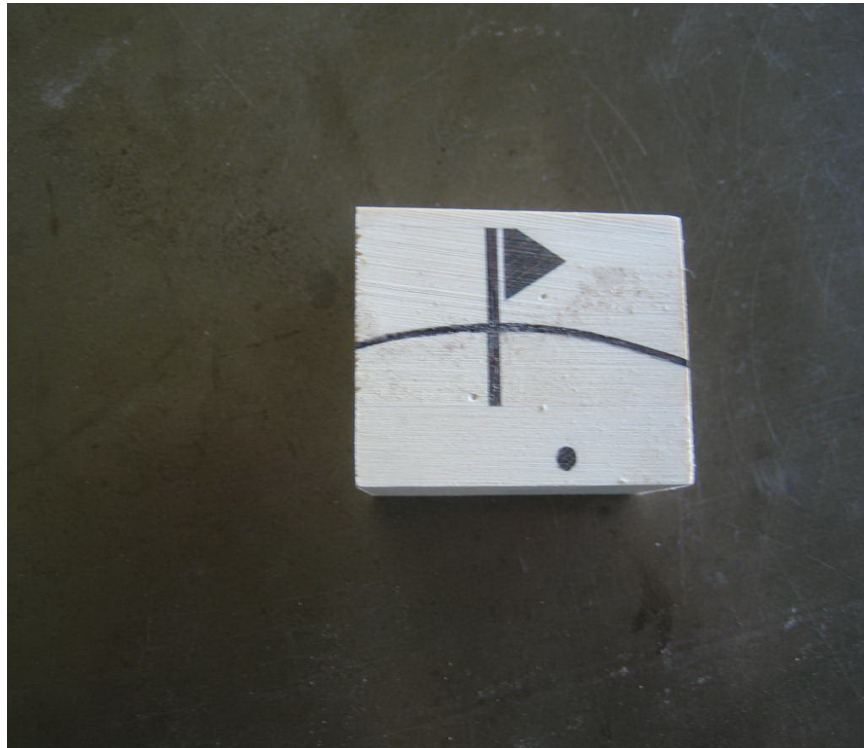
138: Finished crossed clubs block.



139: Flag and ball block



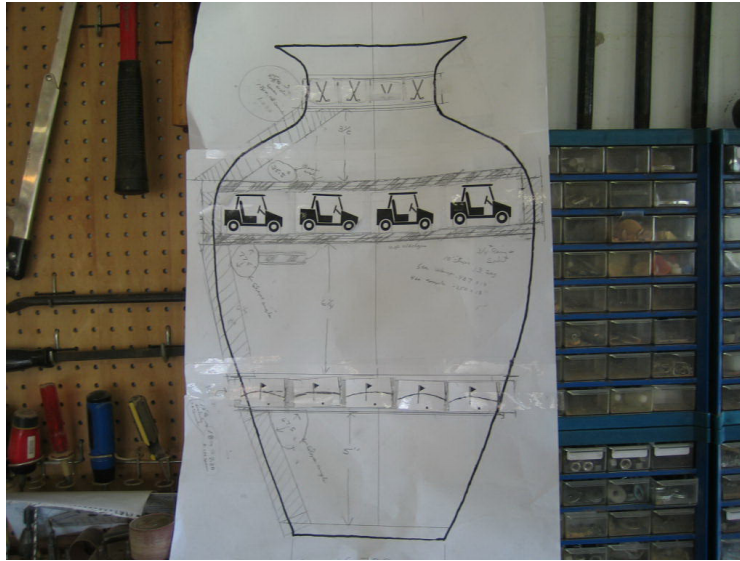
140: Turned 1/8" wenge dowels 1" long and glued in hole to represent ball. Made curved cut on band saw and glued in 1/16" piece.



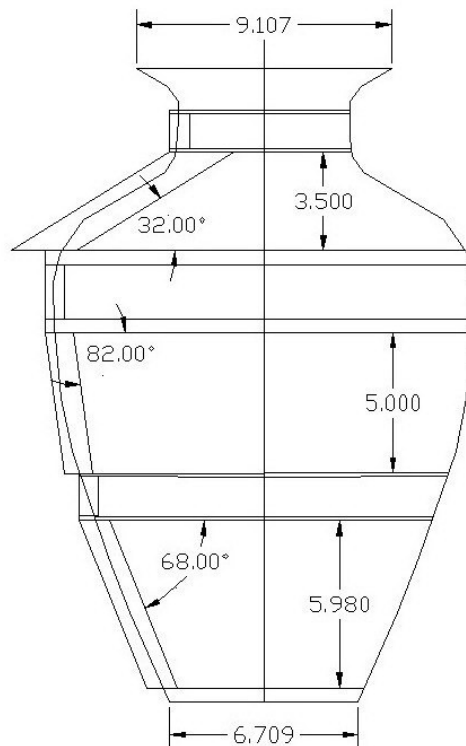
141: Glue up and angled cut for checker rings top and bottom of feature ring.



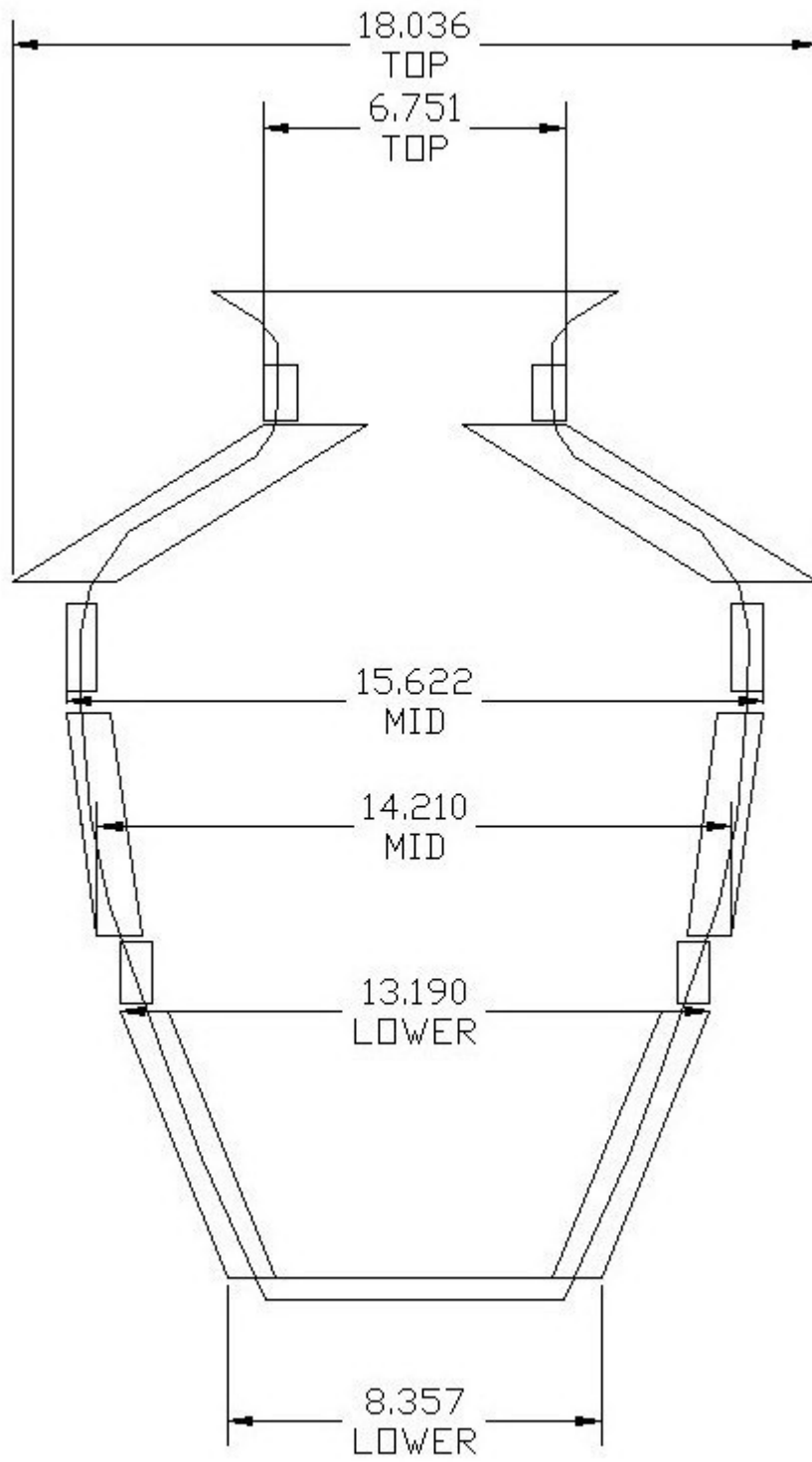
142: I got the final profile I was happy with using cad and use it to layout my compound miter pieces.



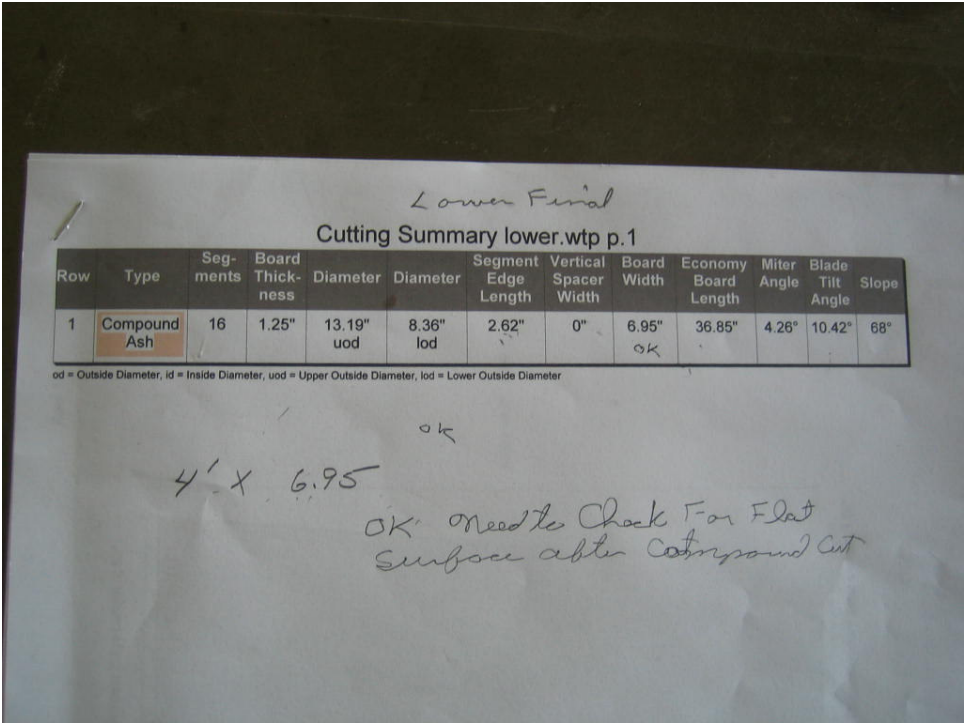
143: I drew lines and offset them parallel the same thickness as the wood I will be using I make sure there is enough to clean up on both sides when vessel is $\frac{1}{4}$ - $\frac{3}{8}$ thick. This drawing gives me the slope angles I need for making the segments in Woodturner Pro software.



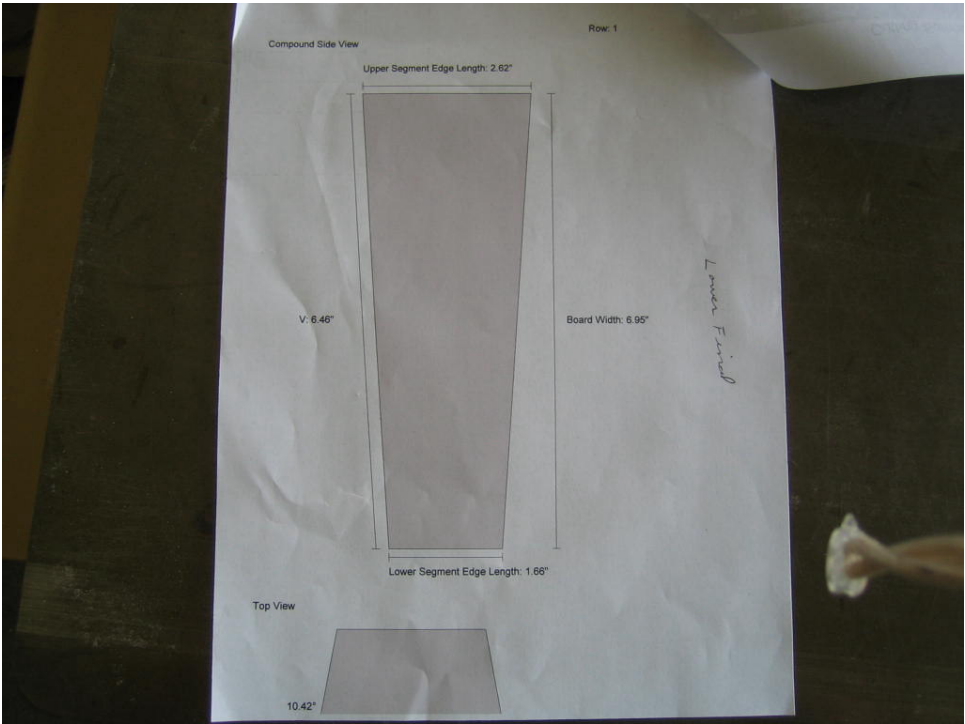
144: This drawing gives me the upper and lower diameters of each compound miter ring which I will use in Woodturner Pro software.



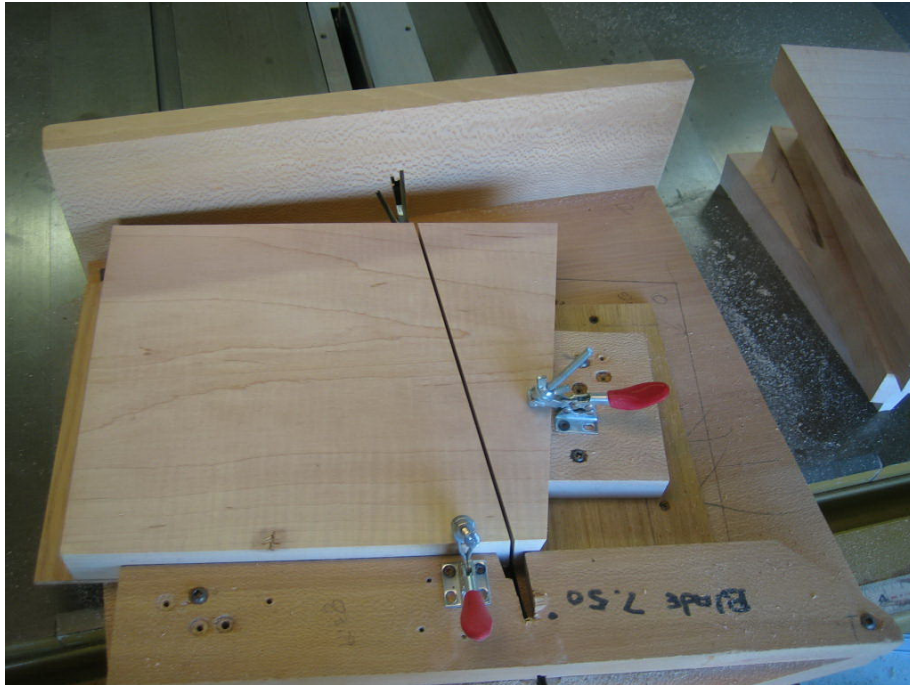
145: This is a printout from Woodturner Pro



146: Another printout.



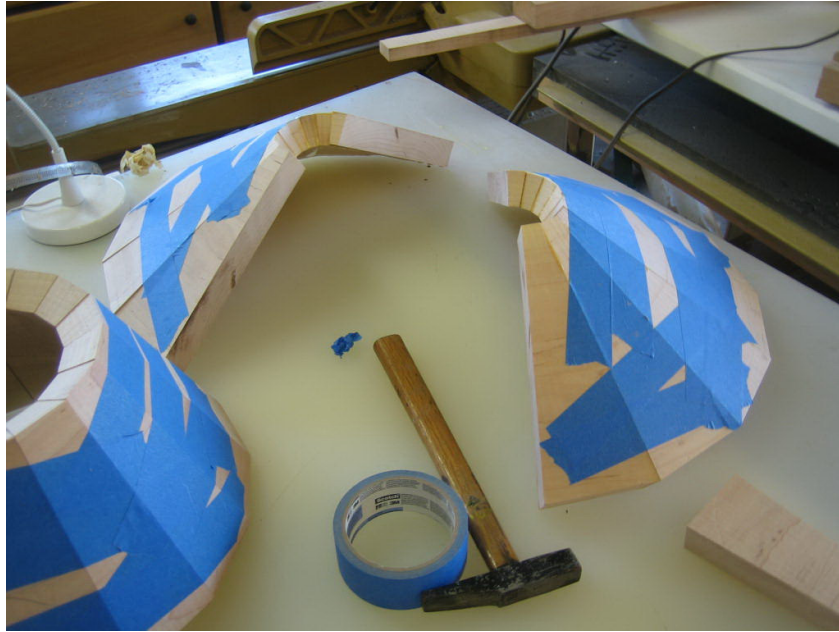
147: I do all my compound miter cuts on a sled. I cut manageable lengths to the proper width and flip cut them. When I glue up the ring I sort them to get the best grain match every other piece should match somewhat.



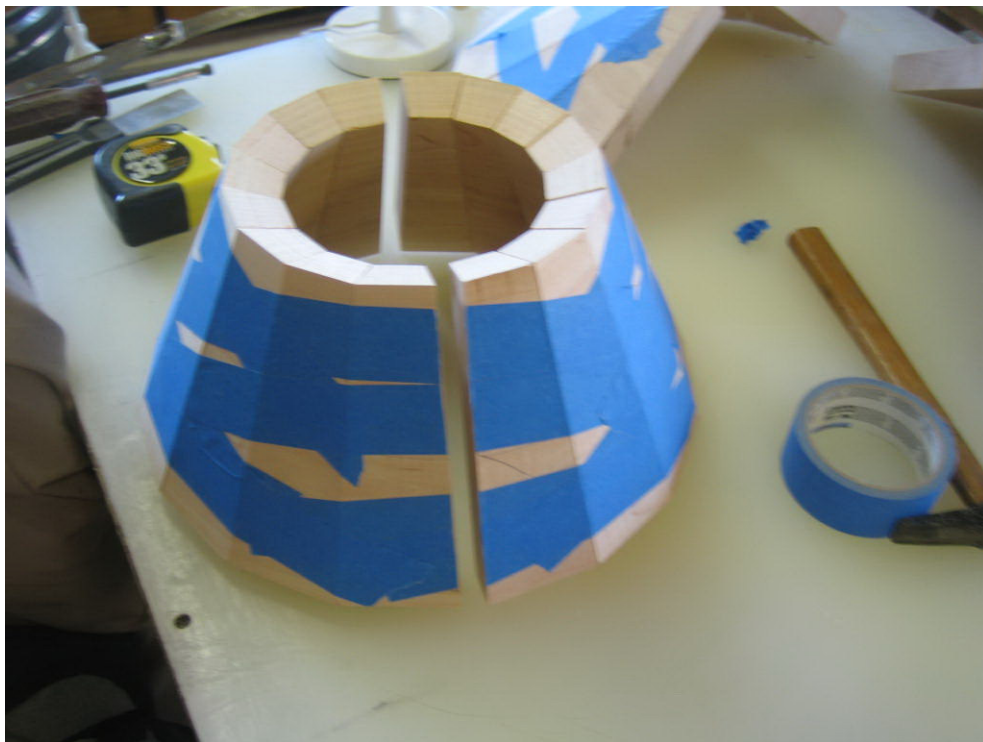
148: I always use these to set up my blade Tilt and sled miter angle.



149: I usually glue up the rings in half rings then lap sand them to fit. I check the full ring first and if there is a good way to clamp it and it fits I'll glue it up full ring. I was able to do this with the center ring as it was straight enough to use band clamps.



150: The Masking tape is all I use to clamp the other 2.



151: Rough parts stacked for visual



152: Top section trimmed on band saw to match feature ring.



153: Another look



154: Ring segment setup on lathe to turn ends flat.



155: Base Golf cart.



156: All spacer rings cut and sanded to the proper thickness Walnut .060 and Maple .030 I made up thick rings and sliced thin rings off them on the table saw.



157: These are the leftover rings after slicing the spacers off. In the future I will always make my rings in 16 segments instead of 6 is makes chances of not cleaning up on the inside to great. I got lazy and shouldn't have.

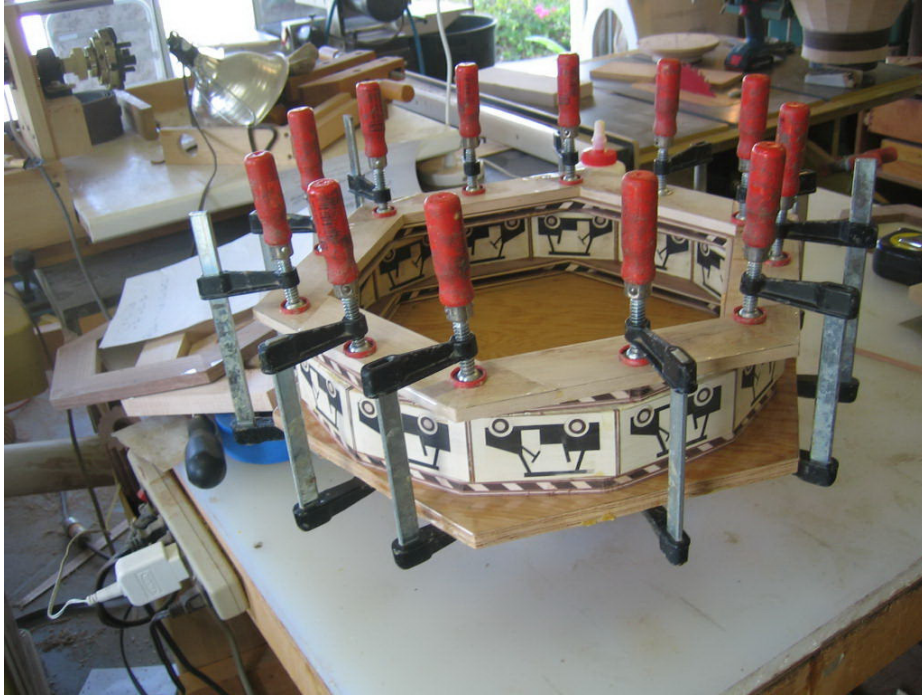


158: All the parts ready for glue up. Notice the base golf cart parts. Golf cart layer is only about 1/2" thick with 1" thick same material glued on and then a waste block.



Not shown, I glued up all the spacers which are 2 walnut with a maple in the middle. I then glued them to either side of the angled checker rings.

159: Gluing the rings on either side of the main feature ring. I did one at a time to keep alignment.



160: Top and Base assemblies with face frame on both.



161: Inside lower assy before turning.



162: Gluing top assy to top compound ring.



163: Gluing lower feature ring to base assembly. My clamp is a piece of Black Olive wood, its almost as heavy as the cement block.



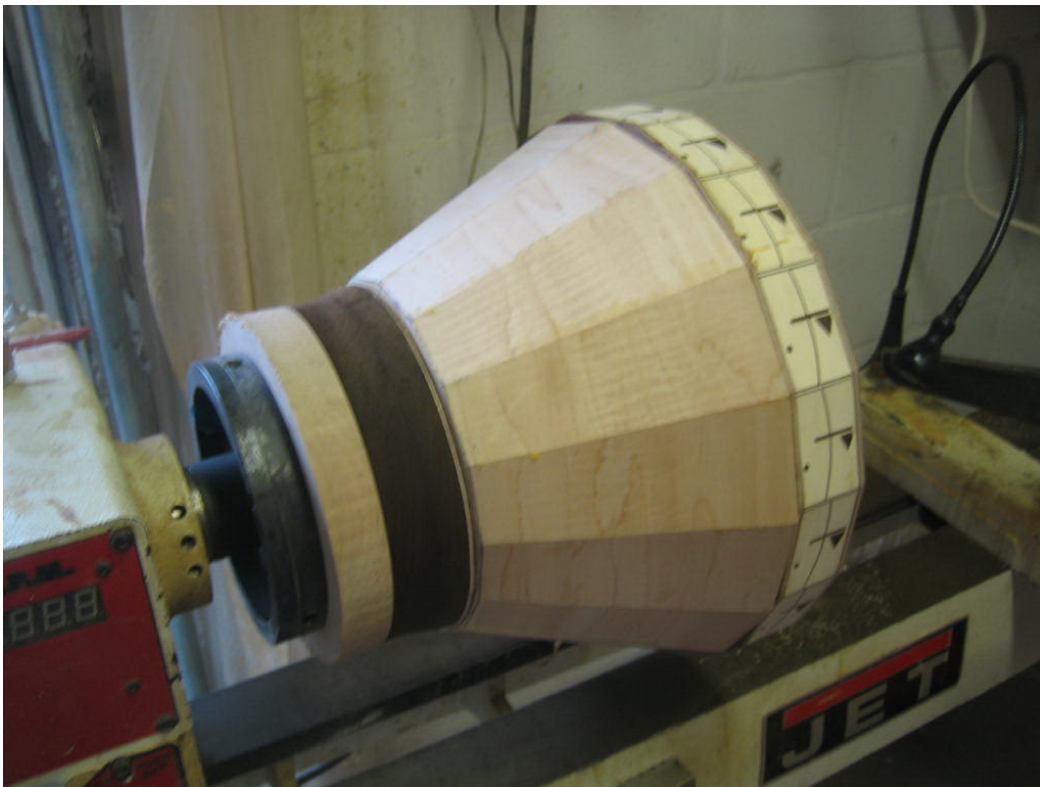
164: Gluing the top assembly to feature ring. I used the center section for clamping.



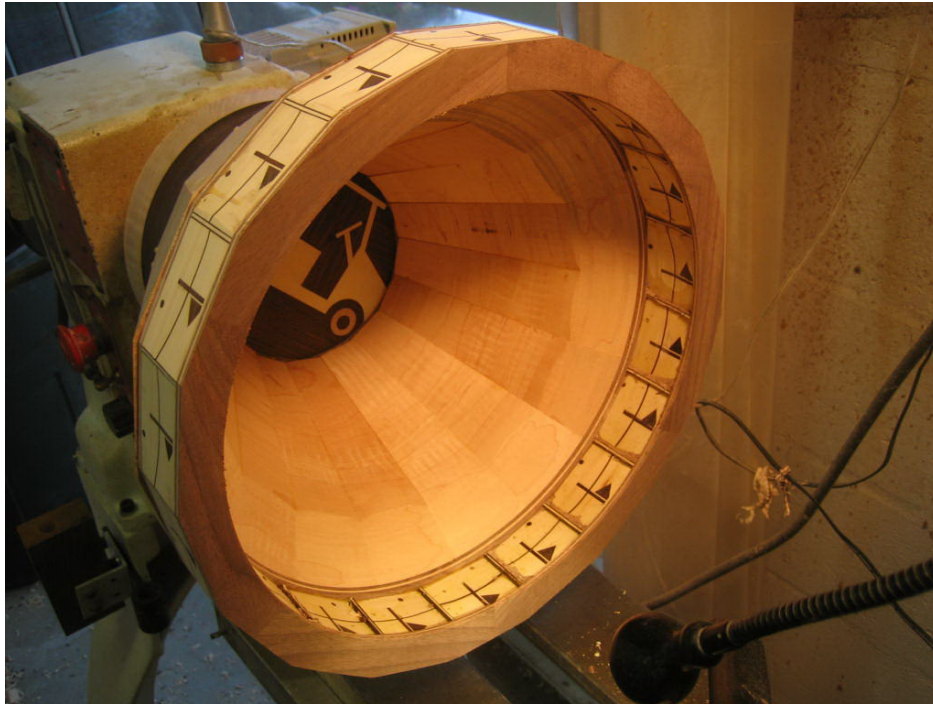
165: Top section ready for turning the inside.



166: Bottom section in lathe ready to turn inside



167: Bottom section Inside turned and finished.



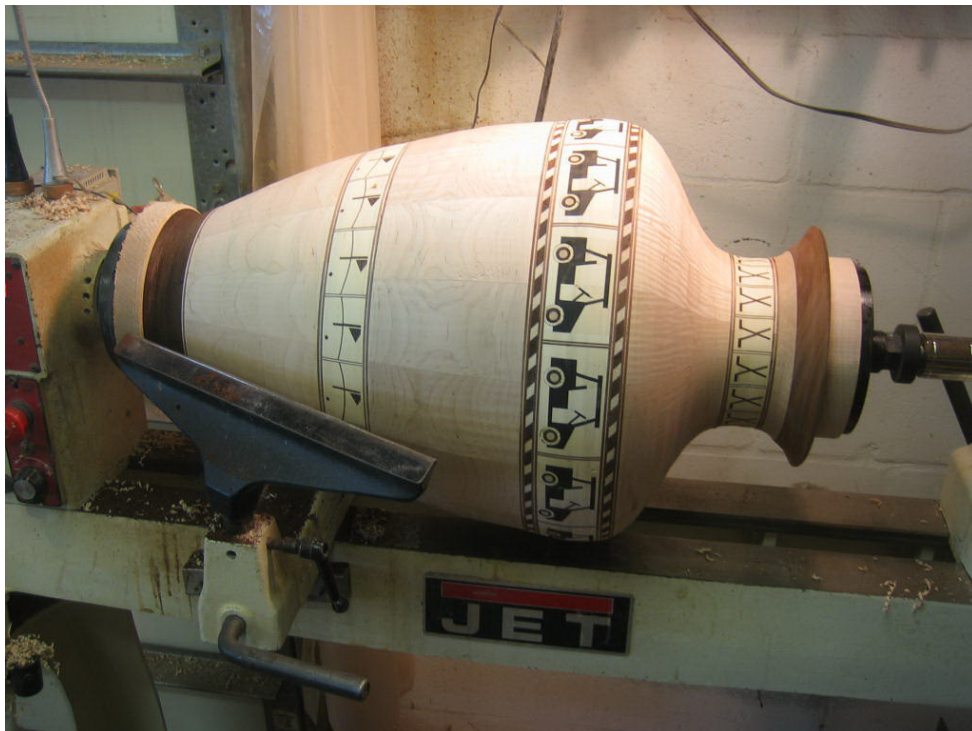
168: It is now down to 3 parts to assemble. I will double back tape the center section to the ends and put in the lathe to turn the outside profile.



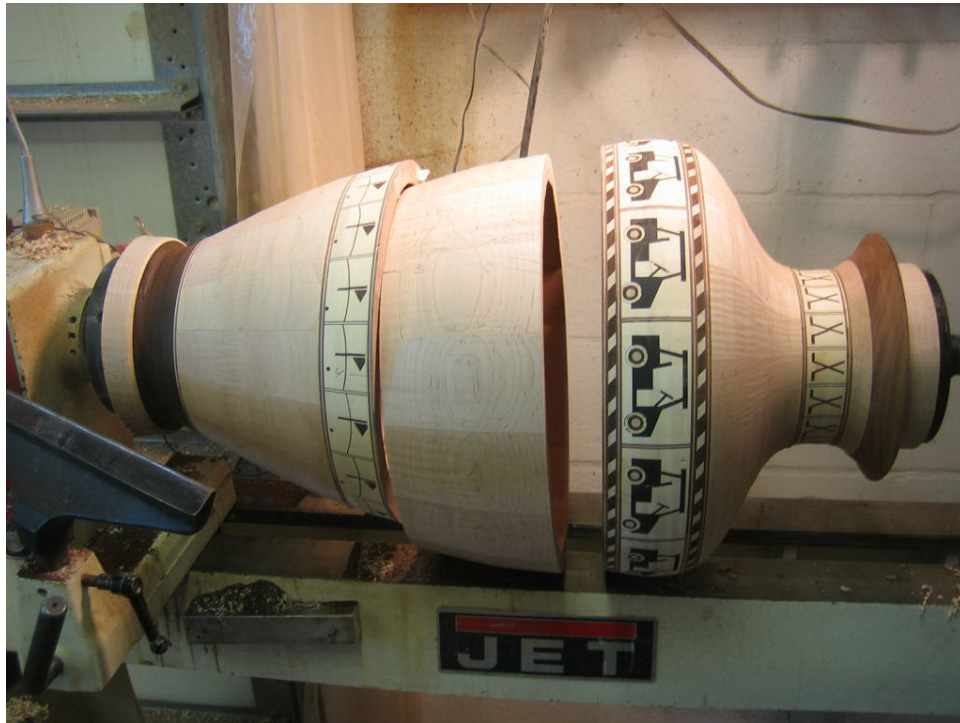
169: Part taped and ready to go on lathe



170: Outside profile turned close to final profile. Center section is still double backed taped in place



171: Center section loose I was easy to separate these just by cranking the tailstock back.



172: Lower section glued on, turned and finished inside.



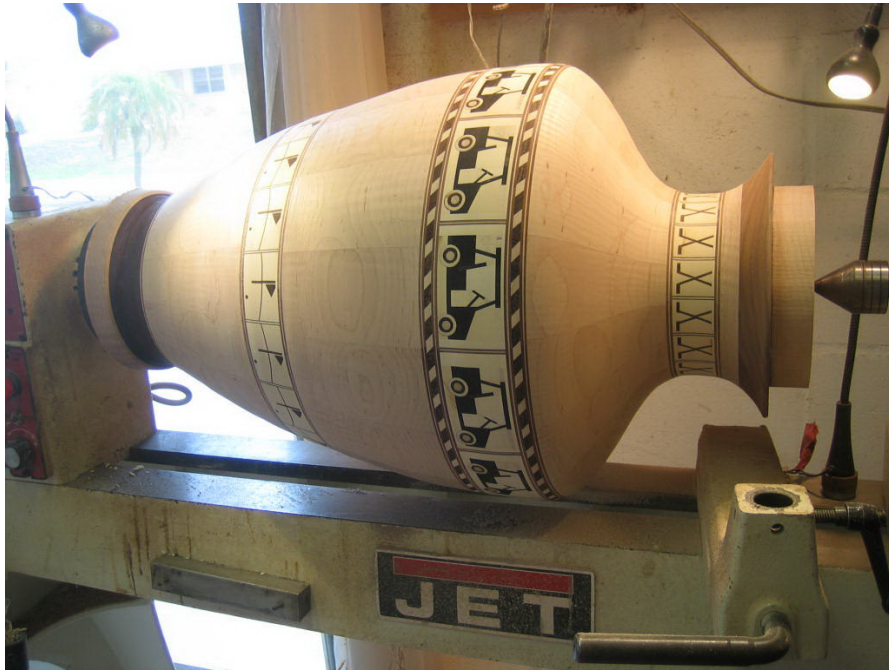
173: Inside look



174: Gluing lower section to upper section.



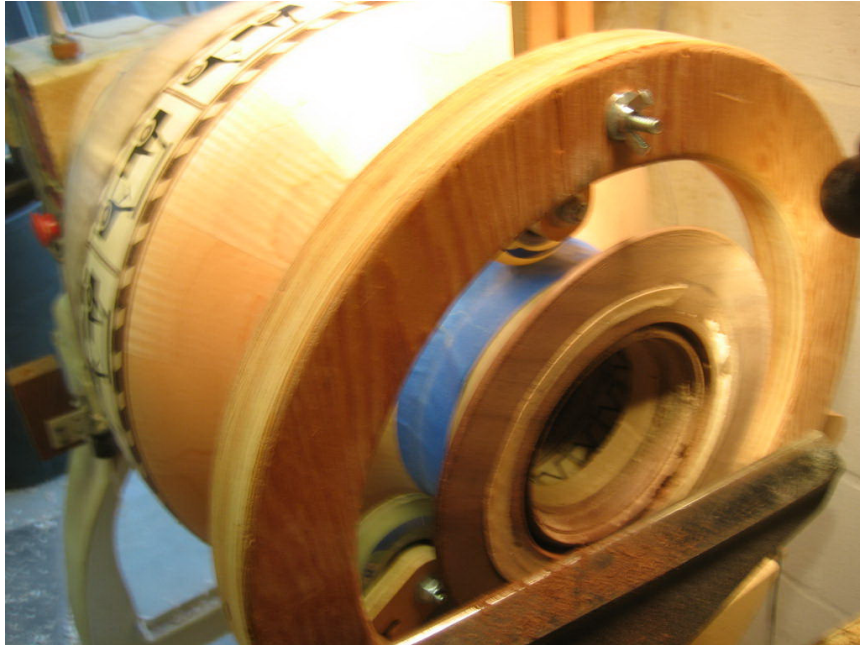
175: Back in lathe for final outside turning and sanding.



176: Removed tailstock and added Stabilizer to support the vessel while removing the waste block and opening up the neck area. I wrapped tape sticky side out a few times around the neck then more wraps to protect it from any marking from the wheels.



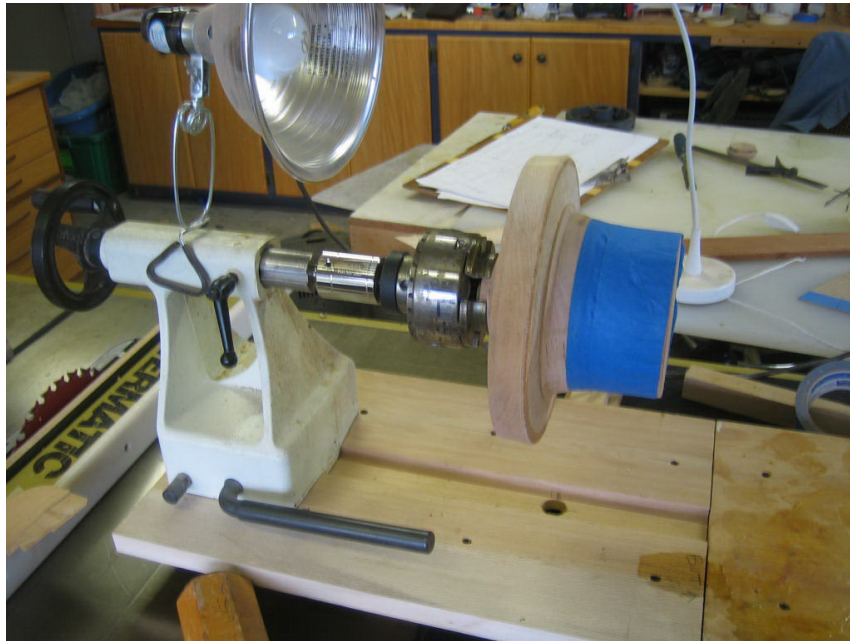
177: Waste block removed and neck area opened up. I finished turned the inside of the neck and used my hollowing system to blend in the last inside glue joint where the 2 halves went together. I also used a french curve scraper with a glove on to do some cleanup on the inside before sanding and finishing. The applied the finish to the inside while still on the lathe.



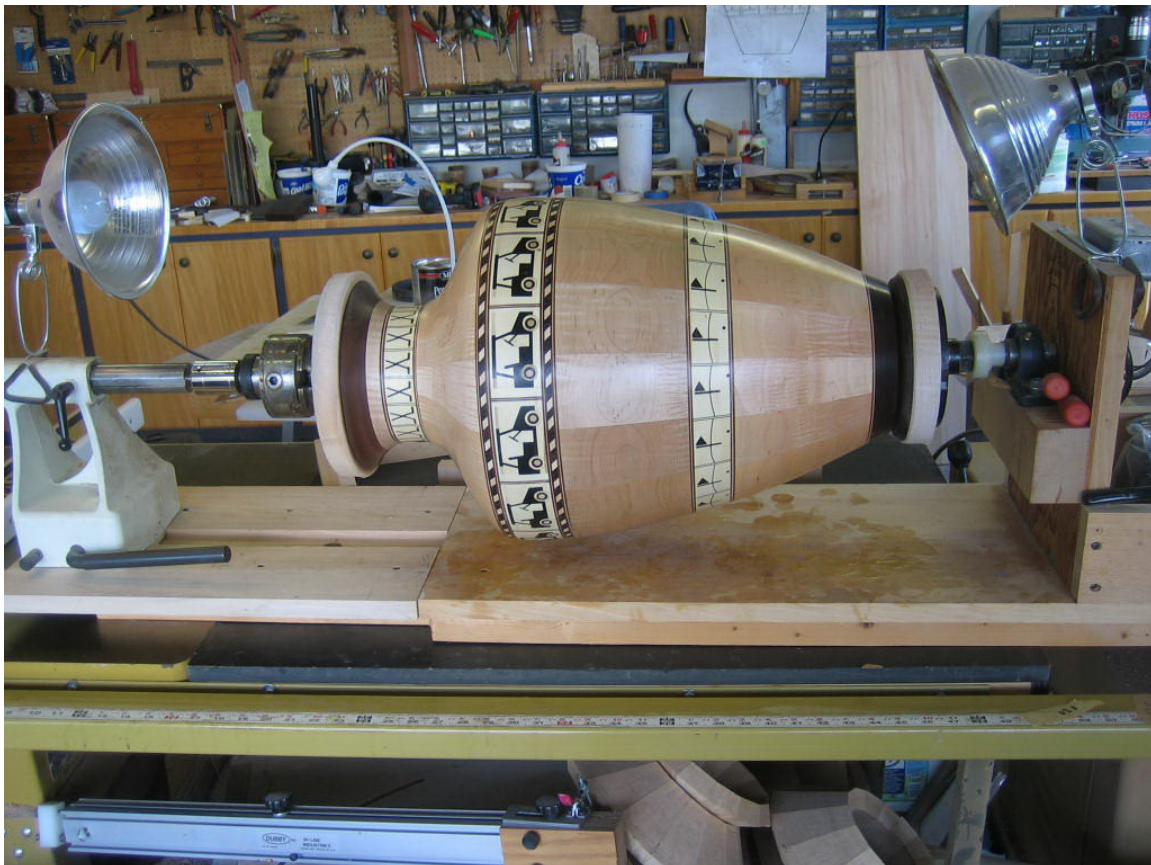
178: I had to add an extension to my slow turn finisher and used the tailstock from my lathe. This worked very well.



179: I made a jamb chuck and mounted it on a oneway adapter. So I could use my 4 jaw chuck in the tail stock.



180: Vessel Mounted in Slow turner.



Not Pictured

I used the jamb chuck from the slow turn finisher to reverse chuck the vessel on the lathe and turned off the bottom waste block and finish the bottom. Use the tail stock for support also and hand finished the small remaining nub.

181: Finished Vessel



182: An inside look.

