

# Small dizzy bowl project

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This project shows how to make a miniature dizzy bowl or box. It looks like a vortex bowl from board project but is made a little differently. I found the dizzy bowl part to be an easy project to make although I found the spindles to be a little trickier. The small ring box at top left I made without any kind of plan. I had the finished box in mind but just started cutting and gluing! It looked kinda odd when it was done and my wife suggested adding a finial which added just what it needed.

The second box came after watching a Cindy Drozda DVD on making finials. She is definitely the expert on that part so if you want help with finials, I would suggest buying her DVD or there are some good videos on the internet.

This project shows how to make the box at top right although you could adjust the process to make various objects, boxes, ornaments etc.



## Step1 – Drill blank

The basic lamination blank for this project can be made or bought. I bought mine from Penn State Industries, they are called Colorgrain and I think they are peppermill blanks. They sell a few different colour combinations. About 12" long 2.5" x 2.5". The first step is to drill a deep hole down the center maybe 1/4" or 5/16" in diameter. I drilled twice as deep as the box will be tall although this can be done in steps if you don't have a long enough drill bit. This hole will just be used for alignment when stacking the rings.



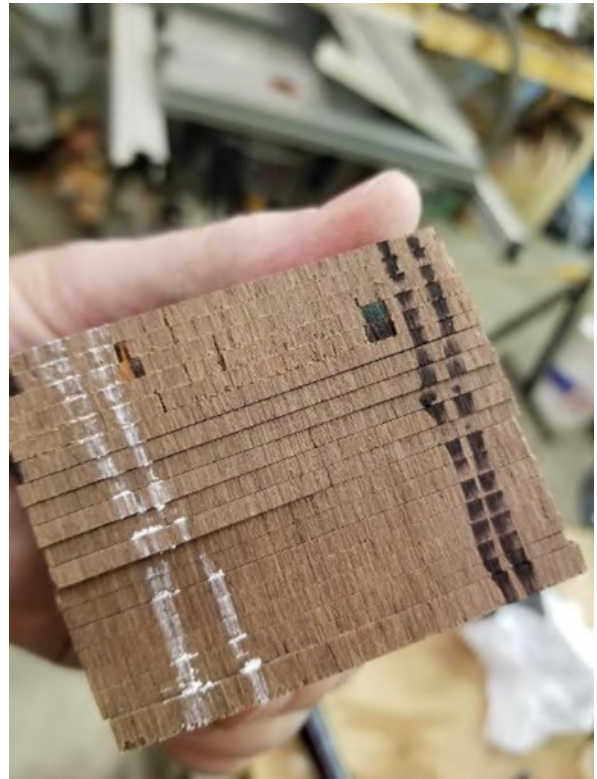
## Step 2 - Slice blank

I marked alignment lines on the blank before cutting – see picture below. I cut slices about 3mm (1/8") thick. Chop saw setup is typical for cutting segments with an end stop, feather board to help hold the blank. The small piece of shaped wood is just to hold the slice during the cutting while keeping your fingers away from the blade. I lost a couple of slices down the slot!

It's worth cutting a couple of extra slices and making the glue up a little longer than needed. I kept the slices in order to help keep the pattern correct and stacked them with marks aligned.



## Orientation marks





### Step3 – Make glue blocks

Here is my first glue block. The spigot is to give more clearance to turn the small bowl.

Note the small hole in the center, this is to give clearance for the live center which will be used to center the slices.

I'll need 2 of these glue blocks to make a full vessel shape. One for each half of the bowl.



### Step 4 – Glue on first slice

I used plenty of glue, putting glue on both sides of joint and rubbing them together while adding load from the tail stock. For the first slice the live center is applying the load as well as centering the slice.

Note that the glue (Titebond original) is oozing through the endgrain slice. I wiped off as much of this as possible.

I also sanded lightly between slices to remove any glue and to help flatten the slices for a better glue joint.



#### Step 5 – Glue on second slice

I left 20-30 mins for glue to dry between each slice. I had another project running on my big lathe to keep me busy!

A few things to note on the second slice. The orientation marks are in the same place (circled). The slice has also been rotated slightly to give the dizzy pattern. I just eyeballed this but it could be measured. I plan to rotate each slice the same small amount to give the pattern I like. This can be varied or the direction can be reversed at some point to give some “motion” to the pattern. You never quite know what it will look like until you turn the final shape.

The thin slices warped considerably with glue on just one side.

I think I could stack and glue a whole bunch of slices at once but I don’t want the extra stress!



#### 6 Clamps

This is how I clamped the second slice to fix the warping issue. Once again glue oozed through and I have cleaned it up.

Additional slices go on the same as the second one. I glued both sides of the joints to ensure a good joint. I sanded lightly between slices, locating with the center and adding as many clamps as I could.



## 7 – Flatten

After a few slices I noticed the stack was no longer flat due to the warping and clamping. I started to flatten between slices to help keep things on track. I didn't want to have to remove much material as the slices are so thin so I made sure to only clean up minimal to get the stack back on track. I'm used a negative rake scraper and then a sanding block.



Here is the final stack for the bottom half of the vessel. It is one layer thicker than I need just to give some margin for error!

Note the orientation marks are all in the right place and the slices are evenly rotated in the same direction.



#### 8 – Top half first piece

Here I have started the top half of the vessel. Note that I was stacking from the other end so I used the last slice from the pile, pile has been turned upside down to keep the slices in order.

Also note the orientation mark at bottom (circled). The orientation was now reversed as I built from the other end of the vessel.

I'm not sure what is going on with my waste glue block, it looks like maple with a segmented wenge ring glued on and then a yellowheart disc! It's obviously been used a few times before.

I used the live center to center the slice as before but then used a clamping block to help keep it flat.



#### 9 – Top half second piece

I held up the other stack to make sure the orientation marks are correct and the direction of rotation is correct.

The rest of the top half was stacked the same as before keeping an eye on the orientation marks. I flattened and sanded lightly between layers including after the final layer.



#### 10 – Rough turn outside

I fitted the base half to the headstock and held the top half in place with the tailstock live center. No glue at this point.

A bowl gouge was used to rough turn the blank round. Note the gap between the 2 halves, I didn't have something quite flat.



#### 11 – Fix the problem

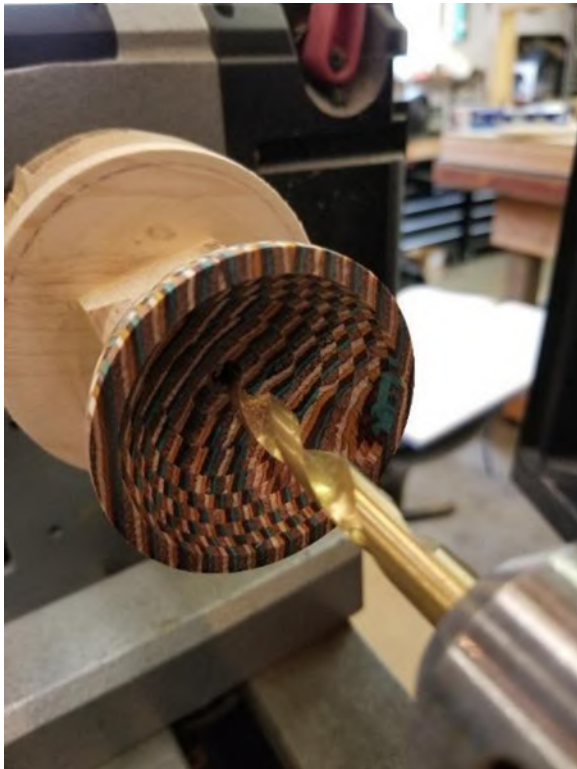
Rough turned to round and then I have cut a dish out of the middle to make it easier to turn and sand flat.



## 12 – Rough turn profile

Here I have rough turned the profile. The profile is the most important element of any turning in my opinion. You can make a fancy complicated feature ring with thousands of pieces and hundreds of hours of work but if the profile is wrong the finished piece will be severely compromised.

I can't finish my profile at this point because I need to leave plenty of wood connecting the halves to the glue blocks as I still need to hollow. Particularly on the base half, the profile is not right. I have a reverse curve (circled) to keep the joint to glue block solid. The profile will look better if this curve is continued right to the bottom. This will be corrected later.



## 13 – Hollow base and plug hole

I have rough hollowed out the base and need to drill out the hole to fit a small plug in the base. Usually I use a sanding jig to make my base plugs but this one is too small. I turned a small plug to fit.





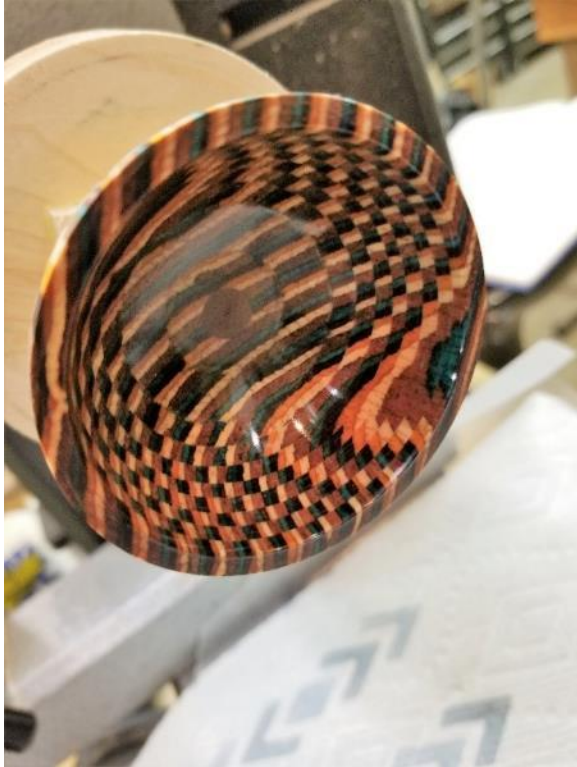
#### 14 – Turn plug for base

You could use a plug cutter to make the base plug but I couldn't find mine so I turned a small plug to fit. This is a spindle; a skew chisel makes short work of it. I sometimes put a very slight taper ~ 0.5 degrees to get a nice tight fit.



#### 15 – Finish hollowing

I continued to hollow out the inside. I was careful to leave enough wall thickness so that I could work on the outside form later. As mentioned before, perfect form is #1 priority so I sacrificed on wall thickness to ensure I could get the form right.



#### 16 - Sand and finish inside bowl

I'm not going to detail my finishing process here. Maybe I'll do a separate project page to cover that someday. I sanded and applied a CA finish. It's much easier to do this now rather than when the vessel is finished. I sanded the rim flat again and to remove any finish. This needed to be a good glue surface. I used 150 grit on this small bowl which left a nice surface with some key for the glue.



#### 17 - Rinse and repeat

I made the top half of the vessel the same way as the bottom except I didn't need to plug the hole. The hole in the top was drilled out to finished diameter at this point.

My wall thickness was about 3.5mm or a little over 1/8". It looked a little thick for this size bowl but I wanted to work more on the outside.



#### 18 – Glue halves together

I have glued the 2 halves together making sure the pattern is in the right place. I used Titebond original glue, I just applied a thin smear of glue on both surfaces. The halves are clamped using the tailstock with live center. I wanted to minimize glue squeeze out on the inside although I could still clean it up later if needed.



#### 19 – Perfect profile

I usually spend more time getting the profile just how I want it than doing anything else. This is the critical part, any other mistakes I can cover up but if the profile is wrong.....

I have cut the top glue block off enabling me to turn the top profile and afterwards turned down the base glue block to a small diameter so I can shape the rest of the vessel.

I'm going for a smooth continuous curve starting at top center and continuing all the way through the base. I rolled a straight edge around the profile to make sure there were no flat spots. Tiny adjustments to profile can make a big difference to visual appeal. I used negative rake scrapers of various shapes for the fine tuning.



## 20 – final turning

It is a good idea to check wall thickness to prevent an accident. It feels like I need a smaller caliper! At this point I also went in with a small hollowing tool to clean up the interior joint and the inside rim a little to get the wall thickness down. I had to touch up the inside finish afterwards.



## 21 – Sand and finish

Time to sand and finish the outside. I did this on the lathe before parting off. Afterwards I parted off carefully creating a tiny flat base. On this project I made a wine glass stem so the bottom surface of the vessel will match up to the top of the wine glass stem.



## 22 Prepare bottom

I drilled a shallow hole and turned a small flat on the bottom. I plan to glue the wine glass stem onto this using a small tenon. I cleaned up the hole diameter with a pointed scraper. I used a vacuum chuck to do this although a jamb chuck could be used.



## 23 – Make wine glass stem base

This will be the base piece for my wine glass stem. It was glued on a glue block. The center hole is for a tenon on the stem piece that will be glued in.



## 24 – Spindle blank

Here is the complete blank for the wine glass base. It was glued together and clamped with the tail stock.



## 25 – Turning the spindle

I rough turned the blank round with a bowl gouge. Then I turned a small tenon at the top of the spindle to match the hole in the bottom of the dizzy bowl. The gouge in the picture is a Cindy Drozda grind. It is pretty pointy compared to most spindle gouges and has swept back wings and the bevel has been ground back to leave a very short cutting edge. I'm still learning to use this. Key here was to complete the turning as I went along so that there was well supported material where I cut. I also rough sanded as I went along for the same reason. For this turning I'm kept the tail stock in place for the whole turning which helped to create support.



## 26 – Finish base spindle

I finished turning the base spindle. Again, form is critical so I spent plenty of time making sure I liked the curve at the base.

I sprayed the spindle black with an airbrush; a few of coats of India ink followed by a few coats of lacquer. It was then final sanded and polished.



## 27 – Final steps

The top spindle or finial is a similar process to the base. There are plenty of videos out on the internet or get a copy of one of Cindy Drozda's DVDs for good instruction on making these. I am definitely at the early part of the learning curve on these but they are fun to make and will test your skills with spindle tools.

I finished the bottom surface off the lathe. I decorated mine with zentangle and signed in the middle. I glued the base spindle on with epoxy, mostly because I turned the tenon too small and epoxy does a nice job of filling gaps!

The top was left free as a lid. This makes a box for smaller trinkets or an option would be to glue the top on to make an ornament. Partly it was left free so I can make a better one sometime! This finial looks a little too fat to me through the onion section and a slightly skinner one might look better.

Happy turning!