

Creating Vortex Bowls



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Common Design Errors

- ❖ Too many thick boards in the blank glue up
- ❖ Most well made pieces will have 80 or more laminations in the blank
- ❖ The more thin laminations the more dramatic the swirl effect will be
- ❖ Board slices from the blank too thick. (no more than 1/8" thick)
- ❖ Each layer not rotated enough (I use 3/8")

Some Design Thoughts

- ❖ I generally design the blank so each side of center is the same glue up sequence (This is not necessary just my preference)
- ❖ My preference for the bottom is to show the solid base not the solid ring #1
- ❖ This type bowl looks much better with a segmented lip of a dark wood
- ❖ The more color and thin strips used in the blank the better
- ❖ I like to use spectra ply since it adds color and saves cutting and glue-up time

Common Design Errors



This piece would have turned out much better if the laminations were significantly thinner. Additionally more color variation would have helped. I would have added a lip and foot of walnut to the piece.



The rings on this piece were not rotated enough to get a good vortex effect. However the colors were a pretty good choice.

Shapes Not limited to “V” Style Bowls



Photo courtesy of Tom Lohman



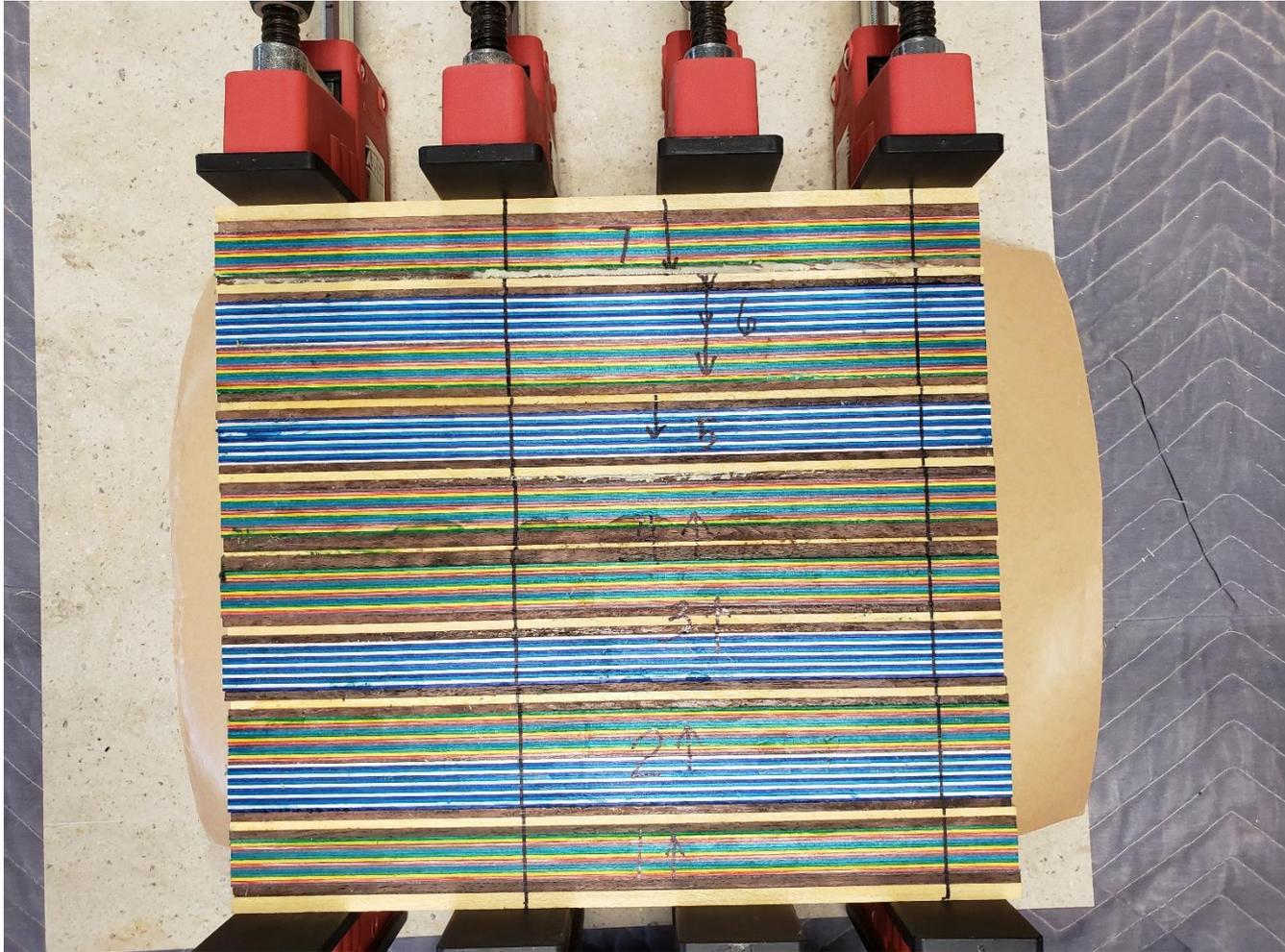
Photo courtesy of Peter Zivanic

Gluing And Clamping Small Groups

I typically use waste boards on each side of the boards being glued up. I feel that this helps distribute clamping pressure evenly.



Gluing And Clamping Small Groups Together



Flat Surfacing The Blank



Lamination Layout Of The Blank

12-3/8" X 12-3/8" X 2" thick

Counting the SpectraPly there are 165 laminations



Lamination Sequence Of The Blank

This sequence starts at the center working outward in both directions.

Center – 1/16 yellowheart
1/4 peruvian walnut
3/4 Confetti SpectraPly
3/16 peruvian walnut
1/8 yellowheart
1/8 peruvian walnut
3/4 Caribbean Wave SpectraPly
1/8 peruvian walnut
1/8 yellowheart
1/8 peruvian walnut
3/4 Confetti SpectraPly
3/4 Caribbean Wave SpectraPly
1/8 peruvian walnut
1/8 yellowheart
1/8 peruvian walnut
3/4 Confetti Spectraply
1/4 peruvian walnut
1/4 yellowheart

Note: This list does not include a solid base and segmented lip.

Slicing Off Boards 3/16" Thick



Sanding Boards To .125 Inch Thick



Ring Cut Sheet

This cut sheet was actually created by Tom Lohman.

It is based on a 12-1/4" diameter bowl consisting of 40 rings 1/8" thick.

In order to get 40 rings 6 boards will be required.

The boards are numbered 1 through 6.

When laying out the rings on the board it is easier to use the OR (Outside Radius) column.

From the cut sheet you can see that board 1 is for Rings 1, 7, 13, 19, 25, 31, and 37.

Ring #	ID	OD	OR	Board #
1	0	2.5	1.25	1
7	2.5	4	2	1
13	4	5.5	2.75	1
19	5.5	7	3.5	1
25	7	8.5	4.25	1
31	8.5	10	5	1
37	10	11.5	5.75	1
2	1.25	2.75	1.375	2
8	2.75	4.25	2.125	2
14	4.25	5.75	2.875	2
20	5.75	7.25	3.625	2
26	7.25	8.75	4.375	2
32	8.75	10.25	5.125	2
38	10.25	11.75	5.875	2
3	1.5	3	1.5	3
9	3	4.5	2.25	3
15	4.5	6	3	3
21	6	7.5	3.75	3
27	7.5	9	4.5	3
33	9	10.5	5.25	3
39	10.5	12	6	3
4	1.75	3.25	1.625	4
10	3.25	4.75	2.375	4
16	4.75	6.25	3.125	4
22	6.25	7.75	3.875	4
28	7.75	9.25	4.625	4
34	9.25	10.75	5.375	4
40	10.75	12.25	6.125	4
5	2	3.5	1.75	5
11	3.5	5	2.5	5
17	5	6.5	3.25	5
23	6.5	8	4	5
29	8	9.5	4.75	5
35	9.5	11	5.5	5
6	2.25	3.75	1.875	6
12	3.75	5.25	2.625	6
18	5.25	6.75	3.375	6
24	6.75	8.25	4.125	6
30	8.25	9.75	4.875	6
36	9.75	11.25	5.625	6

Layout Ring Radii

RING No.

Blade Access
Holes

1/8" Center Hole
For Pin

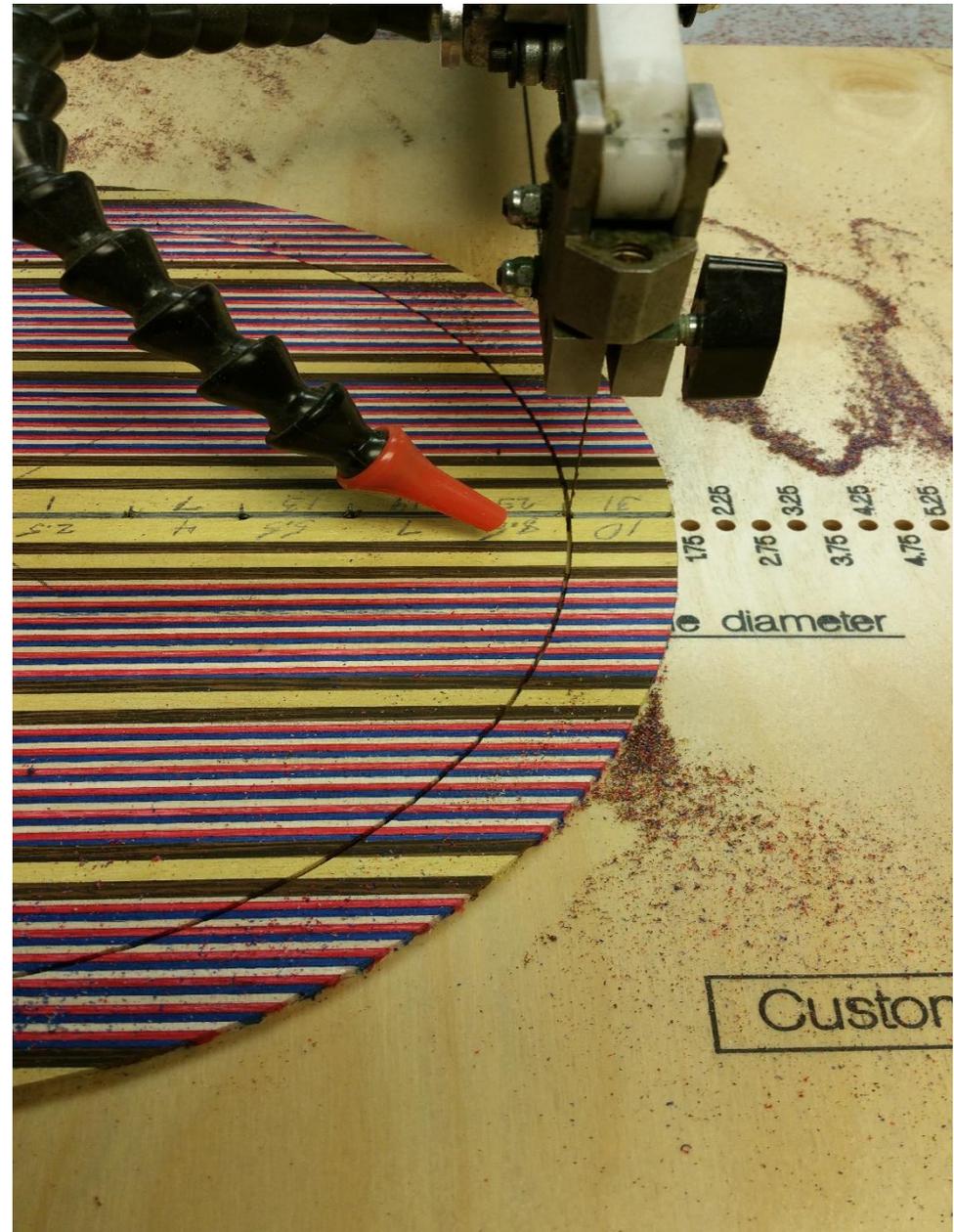


Layout Ring Radii

- ❖ Find the center of the board and mark the point with an awl.
- ❖ Using a ruler mark the radii (one half of the diameter) of each ring with an awl. This only has to be done on one side of center. There is no need to use a compass to draw circles.
- ❖ Drill a 1/8" hole in the center to accommodate the pin.
- ❖ Drill small blade access holes for each ring.
- ❖ Be certain to number each ring.
- ❖ Starting with the largest ring insert the scroll saw blade through the access hole.
- ❖ Insert the pin through the center hole of the board and into the appropriate diameter hole. Slowly rotate the board around the pin to cut the ring.

Cutting Rings On The Scroll Saw

- ❖ When cutting rings, start with the largest ring and work your way towards the smallest.
- ❖ Use a spiral type scroll saw blade to prevent blade drift.
- ❖ I prefer the “Pegas” brand blades, they seem to cut better and last longer. Typically I use a No. 2 spiral in either a 45 or 52 TPI blade. The 52 TPI cuts a little cleaner but will break faster than the 45.



Cutting Rings On Scroll Saw



- ❖ Blade is inserted through the access hole and the pin is inserted in the center hole and the appropriate diameter hole of the jig.
- ❖ If cut list is followed, the pin will go on the left side of the blade for boards 1, 3, 5. Boards 2, 4, 6 will be on the right.

Fuzz Removal Prior to Gluing

Prior to gluing up the ring it is a good idea to remove some of the fuzz from the under side of the ring. I use a flat sanding board with 100 grit paper. Put even pressure on the ring and slide it across the paper once or twice. Rotate the ring 90 deg. And repeat until one full revolution of the ring has been completed. Then blow off sanding dust.

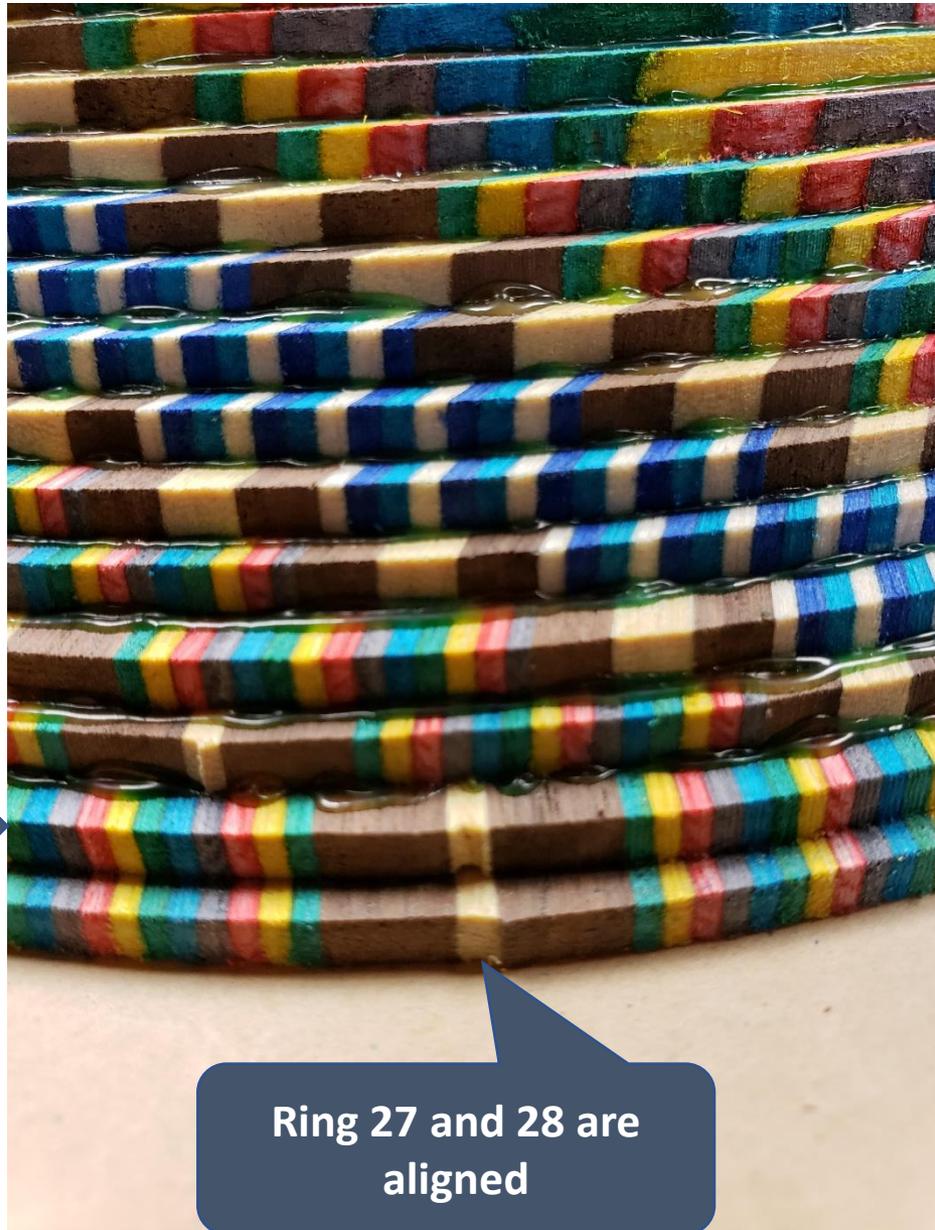


Flattening The Glued Rings

With the lathe running slow, use a sanding block to flatten the rings and remove any fuzz as they are glued up. After stacking and gluing 40 rings the piece may wobble if they are not flat. I use 100 grit for this process.



Stacking And Gluing Rings

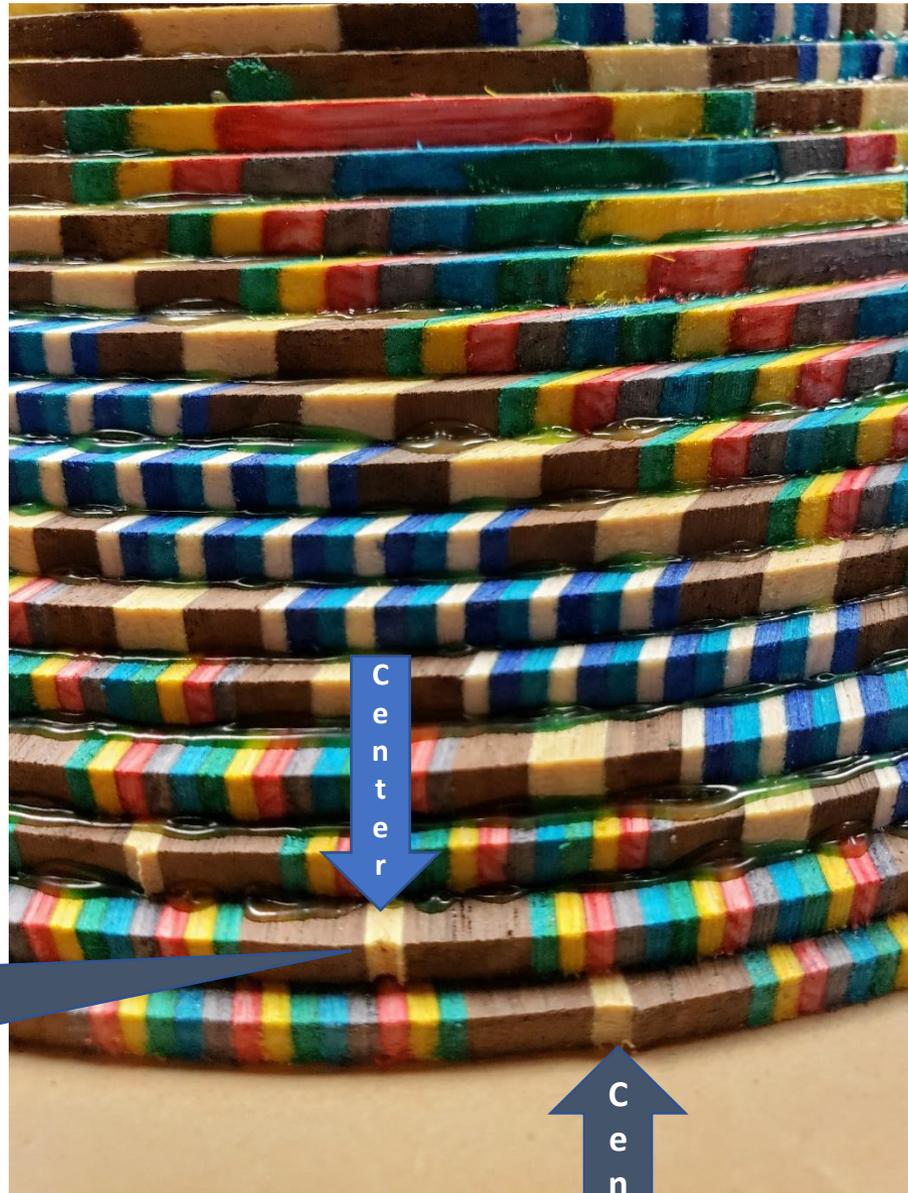


27

28

Ring 27 and 28 are
aligned

Offsetting Ring



The stack is rotated approx. 3/8" clockwise relative to ring 28

28

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Some Turning & Finishing Tips

- ❖ I prefer a sharp ½" bowl gouge
- ❖ Sharp tools and lite cuts are a necessity since any type plywood is notorious for chip out
- ❖ Spectra Ply dyes will bleed out while gluing but it will be removed when turned
- ❖ Final cuts are done with negative rake scrapers
- ❖ Sand away any pits left by chip out
- ❖ Be sure to remove all sanding dust prior to finishing
- ❖ Before finish is applied spray several coats of shellac as a sealer to prevent color bleed
- ❖ These bowls look better with a high build high gloss finish – I prefer:
 - MINWAX wipe on poly
 - Spray Lacquer
 - General Finishes Wood Turners Finish
- ❖ After curing for a week I wet sand with all grits of MicroMesh