JOHN BEAVER WAVE BOWL DEMO MARCH 2025

#1: GENERAL PRINCIPLES OF WAVE BOWL:

1) Top of bowl smaller than largest diameter; BIG BOWL #1
2) Look for grain which is centered in the bowl. BIG BOWL #1, #3
3) Grain for wave should go in same direction as bowl grain.
4) Apex of the curve on outside of bowl should be about 1/3 of the height of the bowl from the top. #1
5) Radius of the arc of the wave equals IE: 5" diameter bowl = 5" wave radius. On the cutting jig ; #1 BOWL = 6 ¾"
6) Wave should split 1/3 line evenly above and below 1/3 line. #2 BLOCK WAVE, #3 BLOCK STRAIGHT
7) Bandsaw blade ¼" 10/14 or 16/18 variable tooth without too much off set.

#2: Non-Bandsaw Jig Wave Bowls:

A) Square cube is best.
B) Cross grain is best (#3), better glue than end grain (#2)
C) Straight cut "wave", #3
D) Hand cut Wave #2
    1) Drill 2 ¼" holes for reassembly.
    2) Draw curve – cut on line.
    3) If irregular cut, smooth with sandpaper sheet/double side tape on one side, then switch sandpaper and tape to other side until bumps are smooth.
    4) Drill holes thru veneer bigger than ¼".
    5) Size veneer – heat (microwave – H2O) bent onto blank and clamp.
    6) Let cool and dry over night; loosen clamps a little.
    7) Glue and clamp.
E. Turn Bowl
F. Show #4 to #9; some may have been cut on bandsaw fig but used "veneer" as wave.

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#3: Show and explain bandsaw wave cutting jig:

#4: USES OF BEAVER JIG/SLED:

1) Cutting wave bowls, boxes
2) Cutting rims for cowboy/girl hats: **10, #11, #12**
3) Holding chuck with blank for cutting on bandsaw, hand cutting, sanding, texturing; **#13**
4) Cutting vertical cuts in end grain vase with wings; **#14**
5) Use sled only to make free hand cut shapes on bandsaw using chuck, may need to add larger table to bandsaw top
6) Use off lathe with laser pointer to see pattern of wave

#5: Bowl PREPARATION: recessed wave:

1) Chuck and turn outside bowl to finished size and sand finish. **#1**
2) Hollow inside leaving walls of bowl about ¾" thick
3) Use contour gauge (Home Depot) to make a profile of bowl inside
4) Transfer profile to 2 blocks about 3/4" x 1.5" thick and as long to reach from just short of the top to the bottom.
5) Cut profile on bandsaw test fit.
6) Look at grain pattern to find where the top of the wave will be. Make a mark on the top of the bowl and 180 degrees directly opposite side.

Glue blocks at marks with hot melt glue. Use an excess of glue

6: BOWL #2: #15

1) Drill ¼" hole into both profile blocks deeper than the bottom of the wave (drill press best).

2) Cut ¼” dowels to fit into holes about 1” longer than depth of the holds. Dowels should fit tight, but not so tight to be forced in or hard to get out.
3) Set bandsaw wave cutting jig to proper diameter of bowl.
4) Mount bowl on jig, set marks on side where slide will be to cut the wave.
5) Show use of laser pointer to show pattern on bowl
6) Mount jig on bandsaw.
7) Cut top wave line
8) Reposition slide forward to cut bottom of wave.
9) On the wave piece, mark with a mortise gauge or similar tool the thickness you wish the wave to be recessed about ¼” or so. Mark on both sides of the wave. This is the amount you will remove to make the wave recess. Keep the angle of the slope of the bowl on the ring as you remove material to recess the wave.

#7: BOWL #3: #16

1) Sand, stain, dye, paint – whatever you want to color the wave with on the outer surface making sure you don’t get any junk on the glue surface.
2) Test fit all pieces.
3) Glue wave to bottom piece of bowl – let dry at least one hour.
4) Glue top piece on wave. Let dry overnight.
5) Shape and Finish inside of bowl
6) Remove chuck and finish bottom.

#8: Show other Bowl/Boxes

#9: MATERIAL/TOOL LIST:

Bowl #1:

1) Tape measure

2) Ruler 6”
3) Pencil
4) Sharpie red and blue
5) Blue tape
6) Chalk
7) Contour gauge
8) Glue gun, hot melt
9) Safety glasses
10) Smock

BOWL #2:

1) Bandsaw and jig
2) Tape and marker
3) Marking gauge/pencil
4) Extension cord

BOWL #3:

1) Glue titebond III
2) Water bowl
3) Q-tips
4) Rag
5) Paper towels
6) Plastic straw cut at angle
7) One-way live center with large cone
8) Glue brush

BEAVER WAVE JIG: Jig

1) Chuck bolt, 2 washers, wood spacer
2) Chuck bolt wrench

3) 2 clamps with bandsaw wood blocks
4) 12” adjustable square for bowl alignment
5) 11mm wrench
6) Chalk for marking cuts
7) Laser apparatus for marking cuts
8) Blue tape
9) Red sharpie
10) Wedges to support bowl
11) Safety glasses
12) Smock
13) One-way live center with large cone

JOHN BEAVER WAVE BOWL DEMO:

https://youtu.be/bU2bMwWNdQw

1) Show and Explain Bandsaw wave cutting jig.
   A) Bottom board 3/4" x 14 x 18.5
   B) Make miter slot runner to fit miter slot in bandsaw good fit.
   C) Attach miter runner to bottom board approx. 8" from end of bottom board.
   D) Put on bandsaw and slide into blade cutting to center of board.
   E) Route a grove the length of the board in the center ½" wide x 1/8" deep on the bottom of the bottom board. This is for a toilet bolt.
   F) Drill a series of ¼" holes ½" apart 10" or as long as the widest bowl. You may make with a wave in it. Start the first hole ½" from the bandsaw blade cut in the #D. These holes must be in a straight line and perpendicular to the bandsaw cut.
   G) Sled Base – ¾ x 8" x 24
      a) Drill ¼" holes down the center ½" apart to 12". Then 1" apart to 21"
      b) Attach ¼" x 1.5" x 2.5" board/UHMW to side of sled base or Cut ¼ x ¼ miter grooves (rabbit)one inch from each side of the bottom of the sled and top of the sled base. Put a ¼" x 3'8" x 21" tenon in the base and glue in base so sled will slide on the tenon.
   H) Sled top structure:
      a) 90 degree upright chuck holder – ¾" x 8" x 12"

b) Cut slot 2” above bottom about 6” long, the width of a bolt the size of chuck head stock threaded shaft.
c) Cut a (1/2-3/4”) x ¾” dado into bottom inside of 90 degrees upright to screw/glue base into upright.
d) Add a ¾ x 4 ¼ x 8” stabilizing glue block to tail end of base – screw and glue
e) Route/dado a ½” deep x ¾” groove down the length on the bottom of the sled.

Hardware:

3 toilet bolts ¼ x 2 ¼
2 wing nuts
1 lock nut ¼
1 – ¼ washer
2 medium and 2 large washers
1 – 3” bolt size of headstock threaded shaft
2- washers to fit 3” bolt

JOHN BEAVER WAVE BOWL-RECESSED RING

1. Prepare bowl and shape and finish sand outside of bowl.
2. Make a small “v” groove ring in the top rim of the bowl, set inside the outside edge the distance you wish to recess the wave, about 3/16”-1/4”, depending on how thick you wish the finished bowl to be. Determine by looking at the grain direction, where the **top** of the wave arc is to be on the bowl and mark on the bowl and mark opposite side, 180 degrees from first mark.
3. Use contour gauge- make a profile on the inside of the bowl where the mark for the top of the wave is on the bowl. The profile should extend into the bowl well below the bottom of the wave cut.
4. Transfer the profile to a block of mdf or wood about ¾”x1 ½” and as long as will reach into the bowl well below the bottom of the wave cut.
5. Cut the profile on a band saw; check the fit and adjust fit so it is a pretty good fit with the top of the block even or slightly below the top edge of the bowl.
6. Make a profile using the mark on the opposite side of the bowl, transfer to a block, cut on band saw, fit and adjust.
7. Glue both blocks at respective marks with hot melt glue. Use an excess amount of glue.
8. Drill a ¼” hole in middle of each block, as parallel to each other as possible (drill press) deeper than the bottom cut of the wave.
9. Cut ¼” dowels to fit into the holes. Fit must be tight, but not so tight you must force them in. check that you can get dowels in and out of the holes without too much force.be.
10. Cut the wave a little wider than you would with the proud ring.

1. On the wave piece, mark with a mortise gauge or similar, the depth of the “v” groove you made on the rim on both sides of the ring. This is the amount you will remove to make the ring recessed. Keep the angle of the slope of the bowl on the ring as you remove the material to recess the ring wave.
2. Sand and stain, dye, paint, whatever, and place seal finish on the outer surface of the ring, making sure you don’t get any junk on the glue surface.
3. Test fit all pieces and glue the wave to the bottom piece and then to the top piece when the bottom is dry. Shape and finish the inside of the bowl and finish the bottom.
4. **DONE**