

Making a Simple Transitional Vessel (Solid Wood Body, Segmented Feature Ring)

Introduction:

Transitional vessels are built to highlight a beautiful wood and add a minimal of decoration through the use of a feature ring composed of segmented wood. While there are many different methods to construct this vessel, I have developed a simple, quick and easy procedure using two face plates, a One Way or Jet live center system and common tools available to most Woodturners.

The two face plate method allows the vessel to be formed as a whole unit, separated into two halves which are turned as bowls and then reunited into a completed vessel. Faceplates rather than chucks offer greater ability to keep the components in alignment even when removed from the lathe multiple times! It is important to note that the glue blocks are screwed to the face plates with high quality machine screws, not dry wall screws; also, the glue blocks themselves must be hardwood such as ash or maple not MDF, particle board or plywood all of which could delaminate and cause a severe accident.

Additional to this write up of the steps I have posted a slide show to my web site (www.jlroddgers.com) describing the same process in pictures. I suggest that you read this first and view the slides for further clarification. All else fails, send me an e-mail!

Here are the steps:

1. Select materials

The materials are usually selected from my scrap box both for the body and the segmented feature ring. The size of the body defines the size of the feature ring so this is the first step. I select a solid body, band saw it into rectangular stock and cut it into two parts – one for the bottom portion, one for the top portion. The bottom “half” should be about 80% and the top 20%. When the feature ring is built it will be the widest diameter of the vessel and fit within the Golden Mean design consideration.

Other components are also selected for the base (usually a darker wood), the neck (an end grain solid wood) of contrasting color or grain. The base is normally about 50% of the diameter of the body to be reduced later and the neck about 30-40% of the same diameter.

Veneers are also cut to the same outer dimensions to separate the color transitions from base to body to feature ring to top of body and to the neck. Dark veneers sharpen the transitions.

2. Design and build the feature ring

The feature ring is a segmented ring built from a decorative wood using veneers for spacers or thicker stock when appropriate. The ring I build is normally 12 segments since I have a cutting sled already built for this purpose. (See my article for “Building a 15° Cutting Sled” on my website, www.jlroddgers.com.) The segment edge length is determined from the Segment Edge Estimation table also posted on my website. I measure the diameter of the body and look up the

segment edge length needed. I estimate the thickness as this feature ring is in the center of curvature of the vessel and therefore has little curvature.

There are many articles and books on segmented construction so I will not repeat this material other than to say I build the ring in two halves. I cut, sand, and glue together segments 1-6 and 7-12 by clamping them in a hose clamp using two small dowels to separate the unglued segments. These dowels cause any minor cutting error to be accumulated at the dowel pivot point. After the glue dries the two half rings are sanded flat and glued together.

3. Prepare the faceplates

I've made this a separate step so I can discuss flattening the glue block and the wood as it is assembled. For the glue to hold well, the vessel to look good, and the assembly and turning to be safe, the glue surfaces must be flat.

I flatten the glue block attached to the face plate with either a deep-fluted gouge or a skew chisel laid on its side and worked as a negative rake scraper. When I think the surface is flat, I check it with a bright light and a known straight edge. No light shining through than it is flat. When I get close I use a sanding board with the lathe running at slow speed to finish flattening the block.

4. Prepare all components for assembly

The components including the feature ring must be sanded flat on one side. The opposite side is marked with the exact center to aid assembly.

5. Build the turning assemblies

Starting with one face plate the base is glued on and allowed to dry then flattened as in #4 above and readied for the next "layer." After the glue is tacked the assembly can be removed from the lathe and placed in another clamping device such as the drill press which I find to be an excellent glue press!

After the base section is glued and removed, the top can be built using the lathe as an alignment fixture.

When inserting a veneer between "layers" clamping pressure must always be applied until the glue is dry. Early removal of clamping pressure may allow the veneer to crinkle up and open the joint due to the accumulated moisture from the glue.

I install the feature ring as the last layer on the bottom assembly. This allows me to later make small height (thickness) adjustments in the top body if I cut it too long. My personal experience is to get the base about right but mis-estimate the top portion.

The last step in preparing the assemblies is to square off the top of each so they will align well in the next step.

6. Turn the exterior shape

The exterior is shaped with the base held in the headstock and the top supported by the Oneway live center system with its associated thread adaptor. The two halves are pressed together after

flattening the abutting surfaces. Now the shape can be turned and refined. Do not reduce the diameter of the base or neck section until the last step to allow for more strength during the hollowing step which follows.

I spend some time in achieving the shape I desire and no time in sanding the shaped exterior as that will be done later.

7. Hollow the interiors

Remove the tail stock and use your standard tools for hollowing out the interior of the base and top sections. I finish with a pass with a scraper to smooth the interior followed by a light sanding to 180 grit only. The interior is sealed with a quick coating of 3-lb cut of shellac.

After the sealer has dried, I true the edge, checking it with a straight edge and sanding it with a flattening stick.

8. Join the two halves

Here is where the One Way live center system pay for itself. The top portion of the vessel is screwed onto the tailstock/live center; the base section is attached to the headstock and the two sections glued together, normally with a sheet of veneer inserted. This gluing requires close alignment of the two sections which is accomplished with the One Way live center.

9. Part off the top section

After the glue dries, part off the top section from the live center support leaving the full vessel free to rotate from the base support. Complete the shaping of the top/neck sections carefully. I find that increasing the lathe speed and using a smaller, sharp tool makes the job easier.

10. Complete the vessel

Reduce the base to its final proportions. It has been helpful for me to add a small parting cut at the exact bottom of the vessel. This allows my eye to see the exact conformation of the base then I can correct any small shaping error before beginning the sanding and finishing steps.

I complete the finishing while the vessel is still attached to the face plate as this make the assembly easy to handle. I re-sand between each coat of finish with increasing grits and only use 4-0 steel wool between the last two coats of finish.

11. Part off and finish the base

The simplest way is to part off the vessel with a thin parting tool angled slightly toward the tailstock to create a small concave shape on the bottom.

If the vessel is larger and you feel unsure of “catching” the vessel, stop the lathe with a small tendon still remaining and saw through the final amount.

I then use a small carving tool to complete the tendon removal.

With a small disk sander mounted in the lathe or drill press, carefully sand the remaining center of the foot and add the finish.

How you have a completed vessel with a beautiful wood and just a little decoration from segmentation.

It is easy to see how you could add additional segmented rings near the base or neck area to further enhance the design or additional rings of veneers. Check out your scrap boxes for more project materials and get started again.

Good luck!