Salt and Pepper Shaker
Ron Browning
5/16/18

Wood:
2-2x2x6' pieces with contrasting color (dark and light)

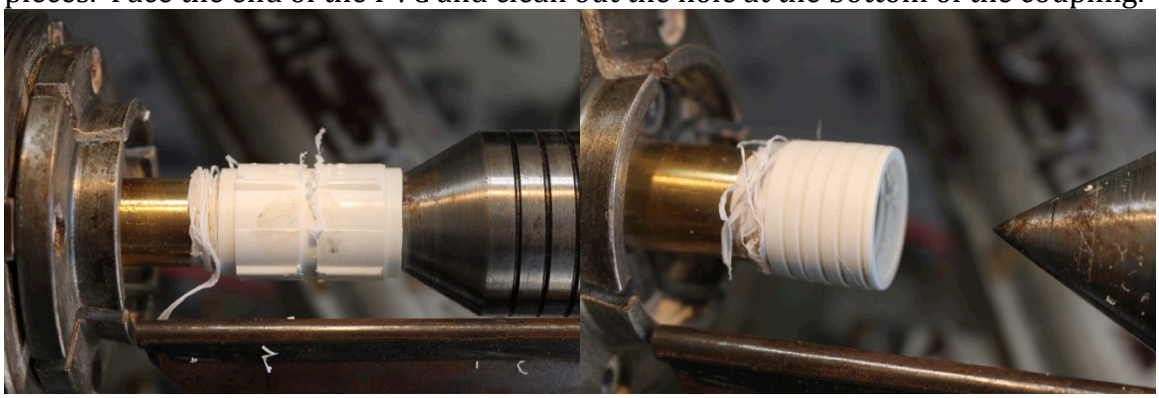
Hardware:
2' x 1/2" brass pipe nipple

PVC:
½" threaded coupling, 1/2" plastic box knockout plug (Lowes item # 102203; in the electrical section usually bottom shelf by the plastic electrical boxes)

Tools:
Parting tool, 3-corner point tool, spindle roughing gouge, spindle gouge, 1" Forstner bit, ¾" long or extended Forstner bit, 3/32" twist drill bit

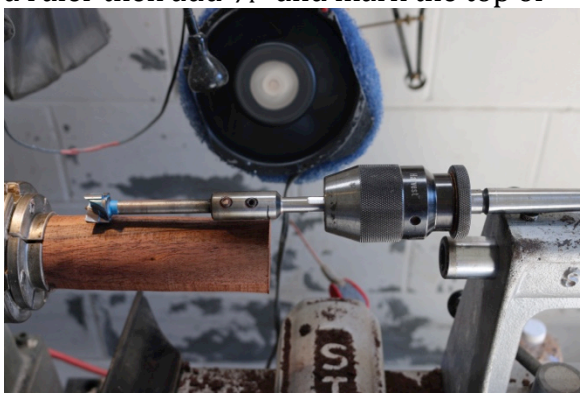
Directions for the brass pipe nipple re-chuck:
Clamp the brass pipe above the threads in the center of the chuck, where the woodworm screw drive center goes. Use the 60° live center to help center the pipe nipple to minimize runout.

Directions for the PVC insert:
Screw the PVC coupling onto the pipe nipple and turn the outside of the coupling to 1" diameter, put 4 "V" cuts into each end of the coupling then part into 2 identical pieces. Face the end of the PVC and clean out the hole at the bottom of the coupling.

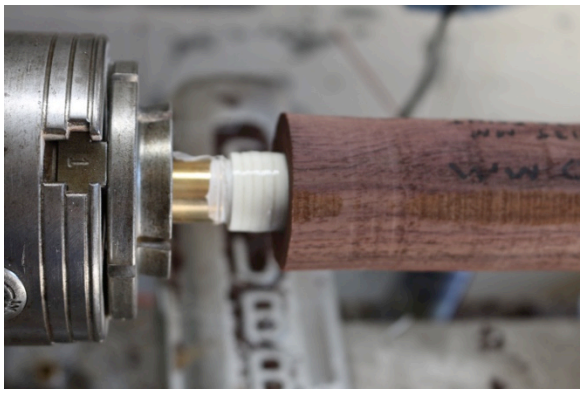


Directions for the shaker:
Put the wood between centers and turn down the outside to a 2" cylinder. Cut a tenon on one end and put it into your chuck. Drill a 1" hole to a depth of the previously turned PVC coupling. Mark the ¾" Forstner bit for depth then drill to depth. Mark the

depth of the hole using the Forstner bit as a ruler then add ¼" and mark the top of the shaker. Turn 3 "V" cuts inside the 1" hole then sand the inside of the hole to remove burs. Remove the wood from the chuck and replace with the pipe nipple re-chuck.



Mix up some 5-minute epoxy and coat the inside of the hole and outside of the coupling, use the lathe to push the wood onto the PVC coupling. I have found that some Teflon tape keeps me from gluing the PVC coupling to the brass nipple! The "V" groves act as keys to keep the coupling in place.



After the epoxy sets up you can then mark the wood for the saltshaker. I am using a simple design that uses the golden ratio. The golden ration can be found by:

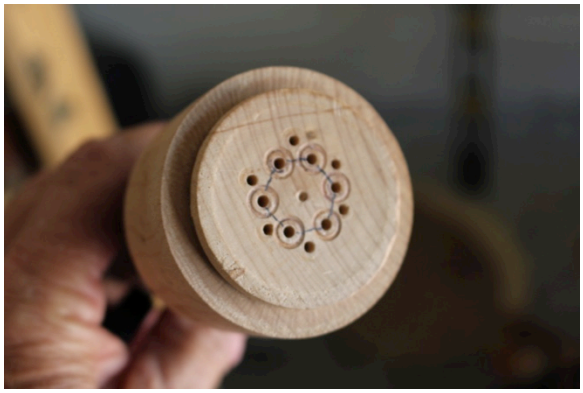
$((\sqrt{5}) + 1)/2 = 1.618033988749895\ldots$
Or you could just remember to use 1.618 and be close enough!

So my height is 140 mm, 140/1.618 = 86.5 mm is where the minimum diameter will be.

Max diameter is 46 mm and it is about 10 mm up from the bottom so the minimum diameter is: 46/1.618 = 28.5 mm which is at 86.5 mm. The wide area at the top is also about 10 mm down from the top.

My template has "V" cuts to allow me to quickly mark the measurements. I then use the parting tool to cut to the required depth. I have made 2 gages to allow me to quickly cut to depth for these areas, note I cut to depth of the top mark just above the line.

I have made a drilling jig that requires that I turn a taper on the waste area above the top, where the old tendon was originally cut. This takes a little time to get just right but lets me drill the holes quickly.



Once the holes are drilled then use the roughing gouge to remove the excess wood to depth then sand to 320-grit. Cut the curve of the top to within about ¼" with the spindle gouge. Finish sand as required to 320 grit. On dark wood that has open grain I fill the grain by using lacquer and wet sand with the 320 grit paper, working in about 1" overlapping sections. You will need to re-sand using the 320 grit paper. Apply a seal coat of varnish then use HUT wax to finish.

Finish by cutting the nib from the top and sand to 320-grit, dab a little lacquer on the fresh wood and finish with HUT wax.

Unscrew the shaker from the pipe nipple chuck and screw the plug into the bottom.

You may be wondering what that thing in the background is; it's my point of origin sanding dust catcher. 6" 120 VAC electronics cooling fan (www.skycraftsurplus.com) and a cut to fit furnace filter (Lowes item #552965). Cut the filter and sew with monofilament fishing line to make a round bag that you can tie to the fan. I am supporting it with Para cord and PVC pipe so that I can adjust

its location when I am sanding.