

## Jason Swanson Demo May 10, 2010

### Preparing a 48 section blank and turning a Peppermill

1. After the Wixey has been zeroed on the table saw surface, place it on the left side of the blade and angle the blade to 97.5 degrees. Setting the blade at this angle is 7.5 degrees from 90, and results in 24-segment ring to glue up.



2. To make certain that the angle of the blade isn't just a smidgen off, place the Wixey on the right side of the blade. It should now read 82.5 degrees. Make adjustments as necessary and double check on opposite side of blade until both angles are correct.



3. Place Zero clearance insert into throat of saw and place Wixey on table saw surface just to the left of the start of the kerf. Hit zero button to zero Wixey.



4. Now place Wixey directly to the right of the start of the kerf on the zero clearance throat plate. Adjust throat plate leveling screws as necessary.



5. Now that saw is set up and ready for use I like to spray the saw surface with topcoat to help keep things sliding smoothly.



6. Start with stock that is flat and true and around .875" thick x 14" long and joint one edge. Set fence in order to get a 7.5 degree rip through solid wood. After sawing this initial rip discard waste piece and flip board end for end.



7. Move fence to the left 3/16" plus 1/32" and make another rip cut.



8. After saw blade comes to a stop remove stave section, flip board end for end and repeat this process another 23 times.

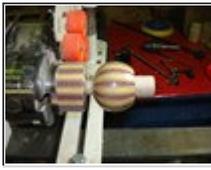


9. You will quickly realize that cutting multiple boards all starting from the same width is much more efficient. This is the result of about an hours worth of sawing.



<p>10. Tape 4 pieces of <math>\frac{3}{4}</math>" masking tape, each piece about 18" long sticky side up to the table saw surface. These pieces should be about 1 <math>\frac{1}{2}</math>" from the ends of a stave section and evenly spaced in the middle. After taping use a framing square against the rip fence and place the first segment on the tape.</p>	
<p>11. This particular glue up is using 12 segments each of Purpleheart and Yellowheart and (24) - .105" flat strips of Mahogany.</p>	
<p>12. After all segments and strips are on tapes, using an x-acto knife cut the tapes at the top side of the picture flush with the first segment. On the bottom side leave about 6 - 7" of tape and cut excess off. On end of these tapes fold over about a <math>\frac{1}{2}</math>" section onto itself, creating a handle.</p>	
<p>13. Do a dry fit up by rolling into a cylinder and roll tapes around cylinder. There should be no visible gaps in any of the segments. If there is continue the dry fit up with 6 radiator clamps and check again for gaps.</p>	
<p>14. Unroll cylinder and place back on flat surface. Lay out 6 radiator clamps, screwdriver or power drill with 5/16 socket, and glue bottle, preferably all on wax paper.</p>	
<p>15. Lay a bead of glue on each of the segments. I like to count the total number of pieces as I am gluing to prevent accidentally not gluing one. This particular glue up has a total of 48 pieces so I need to lay down 48 beads of glue.</p>	
<p>16. Slowly roll glue up back into a cylinder. You will notice quit a bit of resistance in closing the gap but working at it slowly it eventually does. When gap closes roll tapes back around cylinder.</p>	
<p>17. Place 6 radiator clamps equally spaced along length of cylinder and tighten.</p>	
<p>18. After glue dries removing clamps and masking tape and place cylinder between centers on lathe. True the glue up with roughing or spindle gauge to a smooth cylinder. Cut <math>\frac{3}{8}</math>" long tenons on each end of cylinder using a parting tool.</p>	
<p>19. While still between centers attach a spindle steady so that the wheels are about 3" - 4" in from the end. With lathe running, back off tailstock slowly and make sure to make certain that cylinder still runs true. Adjust as necessary.</p>	

<p>20. Begin drilling at low speed with a 1 1/16" Forstner bit.</p>	
<p>21. After using up all possible length of just the Forstner bit, attach a Forstner bit extension and drill as far as possible with extension.</p>	
<p>22. Drill another hole using a 1 5/8" forstner bit about 3/8" deep. Finish sand end and 1 5/8" hole to 600 grit conventional sandpaper, then sand through 12000 grit with Micro Mesh sandpaper.</p>	
<p>23. Bring tailstock back and back off the spindle steady. Turn Pepper Mill to desired shape and finish sand to 600 grit conventional sandpaper, then sand through 12000 grit Micro Mesh sandpaper.</p>	
<p>24. Part off main body of Pepper Mill leaving top piece in chuck. Place 1 1/16" Forstner bit back in tailstock and drill hole through top piece.</p>	
<p>25. Remove chuck from lathe or use another lathe and turn a 4 1/2" long piece of Hard Maple down to 1.0625".</p>	
<p>26. Another shot of Hard Maple between centers. It might take a test fit or 2 until proper fit is achieved.</p>	
<p>27. Remove from between centers and test fit into end of top piece. When happy with fit, apply glue to inside bore of top piece and press Hard Maple in.</p>	
<p>28. Using a 7/8" Forstner bit drill a hold into end of Hard Maple about 3/16" deep.</p>	
<p>29. Test fit aluminum disk in bore and drill pilot holes for screws using a 1/16" drill bit.</p>	
<p>30. Drill a 17/64" hole through Hard Maple.</p>	

<p>31. Bring up tailstock and finish turning the top of the top.</p>	
<p>32. Part top off and reverse chuck, grabbing the Hard Maple tenon and finish sand the top of the top. I like to turn a small flat to roughly match the diameter of the base on the decorative nut.</p>	
<p>33. Assemble grinder and spring to square rod. Drill 1/16" pilot holes for retainer piece screws into the main body.</p>	
<p>34. Before applying any oil or finish, do a trial assembly to make sure everything goes together properly.</p>	
<p>35. Apply 2 coats of Velvitoil 24 hours apart and let dry for 1 week. After 1 week buff with Beall 3-Buff System, add peppercorns and assemble. Congratulations you now have your very own 48 segment Pepper Mill!</p>	

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