THE BereaHardWoods CO.Inc
18745 Sheldon Road
Middleburg Heights, Ohio 44130
Toll Free 1-877-736-5487
Berea Hardwoods Co., Inc.

Round Top European Style Screw Cap Roller Ball and Fountain Pen(Berea #41788/R-*xxx*) Modified June 2008

Needed: Mandrel-B
Bushing-8B
Drill-V
Wood Size- 3/4" x 3/4"

Preparing the material blanks

1. Cut the wood the length of each brass tube giving a little extra length for the facing of the blank after the tubes have been glued in.
2. Drill each blank with the letter "V" drill bit.
3. Polish the brass tubes with sandpaper. This can be done by hand or on a power machine such as a belt sander. The purpose of the sanding is to clean off any oxidation and roughen the tube so that the glue will provide better adhesion.

4. Plug the ends of the tubes with the material of your choice. Some use base wax or Play Dough or even a slice of potato. Just push the ends of the tubes into a thin section of the material. This will form a plug to keep the glue from getting into the tube.
5. Clean the tube, after plugging, with acetone or alcohol on a rag.
6. Prepare your glue. I recommend 15-minute epoxy. Be sure to mix it thoroughly. (A Post-it Note Pad makes an excellent mixing place. When you are finished just tear it off and throw it away.) Polyurethanes or CA's can be used, but they each have their drawbacks.
7. Place some of the epoxy into the blank using a small piece of dowel or other small stick.
8. Roll the appropriate tube in the epoxy.
9. Insert the tube with a twisting motion until it is almost in the material blank. Then use the dowel to push it until the end is flush with the blank. Use the stick to rake off the excess glue even with the blank and the tube.
10. Push the brass tube through the blank until the other end is flush with the blank. Then rake the glue flush with that end. Now push the tube back into the blank until the tube is equidistant between both ends of the blank.
11. Move it aside for 60 minutes until the epoxy has had time to reach its maximum strength.
12. If you are using CA glue, the wait is much shorter. When using polyurethane the wait will be about 24 hours.
13. When the glue has cured, use a hobby knife to remove the plugs from the ends. It is also a good idea to clean the tubes with a brass gun cleaning brush to remove any glue that may have gotten into the tubes.
14. Using a barrel trimmer of the proper size, face off the ends of the blanks until you can just see bright brass. STOP facing at this point. Your pen's proper operation is dependent on having the proper length tubes. This facing operation can also be done with the proper jig and a disk or belt sander.

Turning the Blanks

1. Assemble the blanks on the mandrel with the right bushings in the right place. The right bushing can be found by comparing the diameter of the bushing to the piece of hardware that will be placed in that place. For instance, the bushing that is the same size as the clip will fit on the end of the blank that will eventually become the top of the cap.
2. Tighten the tailstock before tightening the blanks on the mandrel. This will center the mandrel first. Then tighten the nut that holds the blanks.

3. Turn the blanks to the desired contour making sure that the area next to the bushing is turned to the size of the adjacent bushing.
4. After turning the blank, sand the surface in progressive steps until you get to 400 or 500 grit.
5. After sanding with the 440 grit, stop the lathe and measure 1 7/8” from the cap clip end and mark. With a sharp parting tool cut a groove all the way to the brass tube on the cap center band end. This will receive the center band of your pen.
6. If a higher polish finish is desired continue sanding with Micro Mesh through 12000 grit.
7. Remove the blanks from the mandrel.

Assembling the Pen

Please refer to the Pen Parts Diagram on Page 1.

1. Press one of the reducers, they are both identical, into one end of one of the blanks.
2. Next press the center band onto the corresponding end of the other blank. If you are matching grain or pattern pay attention to the relationship of the center band and the pattern. I find it helpful to screw the center band onto the reducer and then place the blank with the exposed tube into it and turn the blank until the pattern matches. You can press this into place lightly. Remove the blank with the center band attached and finish the pressing operation of the center band.
3. Press the reducer onto the other end of the barrel tube. You can use the same technique here as with the first reducer to obtain a pattern match when the cap is posted.
4. Press the black receiver tube into the other reducer.
5. Drop in the spring with the small end up if making the roller ball.
6. Place the refill in the barrel if making the roller ball or install cartridge.
7. Screw on the nib.
8. Lay this assembly aside.
9. Press the brass clip bushing into the end of the tube opposite the center band. Note: The clip bushing has been modified to allow the finial to be screwed into either side of the bushing. Some people like to use the 'shouldered end' of the brass insert to keep the clip centered.
10. Install the clip and finial. A tiny drop of Lock-Tite, applied to the threads of the finial, will keep the finial from coming loose.
11. If the clip is loose seat the brass clip bushing a little deeper into the tube.
12. Place the cap on the pen and feel great about what you have made.
13. Add a drop of silcone lubricant onto the threads inside the centerband. This will provide a smoother feel when capping the pen.