

Berea Hardwoods Co., Inc.
Pen Instructions

Cushion Grip Ballpoint Pen (Berea #N0102/B-xxx)



Needed: Mandrel-B
Bushings-15B
Drill-O
Wood Size- 5/8" x 5/8"



Parts Diagram

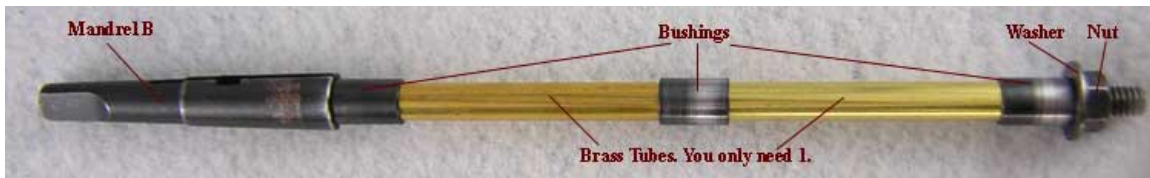
Preparing the Material Blank

The preparation of the material for this pen is a little different in that there is only one blank necessary for its completion. You may choose to turn 2 blanks at one time, or simply turn 1. There are 3 bushings included in the bushing set so that the turning of 2 blanks is possible. With that in mind, follow the instructions below. They are given for turning only 1 blank.

1. Cut the blanks 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 the blank with the letter "O" drill bit.
3. Polish the brass tube 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 the

- oxidation and roughen the tube so that the glue will have a better adhesion surface.
4. Plug the ends of the tube 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 tube 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. We recommend two part epoxy glue that is available in all hardware stores. Use a fast drying type, one hour or less. 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 and thick flexible 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 tube with a brass gun cleaning brush or a rolled up piece of sandpaper to remove any glue that may have gotten into the tube.
 14. Not cleaning out all glue from the tube is the most common cause of pen failure. **BE CERTAIN** that all dried glue is removed from inside the tube before proceeding.
 15. Using a barrel trimmer of the proper size, face off the ends of the blank 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.
 16. Not having the proper tube length is the #2 cause of pen failure. Sanding, on a disk sander, using a jig to hold the tube square with the disk, is a more sure way of getting the proper length. It should be tried if you have any doubt as to your abilities to square the material with the barrel trimmer.
 17. Another good method of squaring the ends of the blank is to turn the blank until it is just round. Using a miter gauge to maintain the blank perpendicular to the sanding disk, just touch the ends to the disk. Once the blanks are square and you can see the ends of the tubes brighten, then return the blanks to the mandrel and finish the turning until the desired contour is accomplished.

Turning the Material Blanks



1. Assemble the blanks on the mandrel using the 15B bushings. Selection of the bushings is easy since they are all the same size. Put any bushing in any position.
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. If a higher polish finish is desired continue sanding with Micro Mesh through 12000 grit.
6. Apply the finish of your choice and polish.
7. Remove the blanks from the mandrel.

Assemble the Pen

1. Press the nib into one end of the cushion grip.
2. Press the threaded center ring into the other end of the cushion grip.
3. Slide the clip onto the finial and press the finial into one end of the turned blank.
4. Slide the small chrome tube, this is the one with no threads in it, over the gold end of the clicker mechanism to cover the spring.
5. Now push this assembly into the open end of the turned blank. This will be the opposite end from where you pressed in the finial. It should be pushed in until the gold cap is exposed through the finial. You can use the refill to push this into place.
6. Press the threaded chrome insert into the end of the turned blank where you just pushed the clicker mechanism in. **BE EXTREMELY CAREFUL!** When you press in the chrome insert, make sure that you do not press against the gold clicker button. Drill a hole in a wooden block just large enough and deep enough to receive the gold button. This will place the pressing force on the finial shoulder. **IF YOU PRESS ON THE CLICKER BUTTON, YOU WILL DESTROY THE CLICKER MECHANISM!**
7. Slide the refill into the cushioned grip assembly, making sure the spring is in place.
8. Screw on the top of the pen and admire it.