Blank Preparation

**Note:** Your blank should be at least 3/4" square and 5" long.

1. Cut the blanks about 1/8" longer than the Brass Tubes to allow for “blow-out” or hole elongation. Maintain grain orientation of the two blanks for turning by placing an “x” on either side of the cut line.

2. Drill the shorter blank (which will contain the Upper Tube) with a 31/64" drill bit and the longer blank with a 13/32" drill bit at a speed of 900 to 1200 RPM.

3. Polish the Brass Tubes with 220 grit sandpaper to remove oxidation and roughen the Tubes for better adhesion. This can be done by hand or by chucking them in a drill press or portable hand drill.

4. Prepare to glue with medium CA (cyanoacrylate) glue or two-part fast drying epoxy.

5. Apply the glue to the outside of one Brass Tube, with a liberal amount around the end that is inserted first. Do not apply glue to the inside of the blank, as this will cause the glue to get inside the Brass Tube and ruin it.

6. Insert the Brass Tube with a twisting motion into the blank until the Tube is centered between both ends of the blank. Wipe off any excess glue on the ends of the blank. Allow the glue to dry. Glue the second Brass Tube using the same method.

7. Using a barrel trimmer, disk, or belt sander, trim the ends of the blanks until you can just see the bright brass ends of the Tubes. The faces of the ends must be perpendicular to the Brass Tubes and parallel with each other. It is imperative that the lengths of the trimmed blanks match the original lengths of the Brass Tubes and that the insides of the Brass Tubes are clean and free of any glue.

Turning the Blanks

1. Assemble the blanks on the mandrel with the bushings placed as shown in the picture above. Keep the grain orientation of the blanks in line when mounting. Each bushing has a step that is designed to be inserted into the Brass Tubes for stability while turning, as the inner diameter of the tubes is larger than the mandrel. **Note:** Either Wood Spacers or extra Bushings may be used to fill the extra space on the mandrel.

2. Tighten the tailstock and then tighten the mandrel nut that holds the blanks. Do not over-tighten the tailstock or mandrel nut as this may cause the mandrel to flex, causing the blanks to go out of round.

3. Turn the blanks to the desired shape, making sure that the surfaces next to the bushings are turned to the same diameter as the bushings.

4. After turning, sand the surfaces in progressive steps of 220, 400, 600, and 1000 grit. If a higher finish is desired, micromesh sandpaper may be used.

5. Apply the finish of choice and polish.

6. Remove the blanks from the mandrel, keeping the blank orientation and grain patterns in line.
Assembly

Read the assembly instructions completely before assembly.

1. Slide the Clip onto the Cap, then press the Cap assembly into one end of the Upper Tube. Make sure you choose the appropriate end of the tube to preserve the blanks’ pattern or grain orientation.

2. Press the Cap Connector (plastic end first) into the other end of the Upper Tube.

3. Assemble the two parts of the Tip Assembly and thread the Assembly into the Coupler (if pieces are not already together). Position the Smaller Trim Ring as shown in the picture above and slide it onto the Coupler.

4. Press the Coupler/Tip Assembly into the narrow end of the blank containing the Lower Tube.

5. Make sure the Larger Trim Ring is positioned on the Lower Cap as shown in the picture above, then press the stepped end of the Lower Cap into the other end of the Lower Tube.

6. Unscrew the Tip Assembly, insert the Ink Cartridge and thread the Tip Assembly back on.

7. To complete the pen, thread the two sections together.

Reordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Stock #</th>
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<tbody>
<tr>
<td>Chrome Ceres Jr. Rollerball Pen Kit</td>
<td>46098</td>
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<tr>
<td>7mm Mandrel “A” with #2 Morse Taper</td>
<td>43537</td>
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<tr>
<td>7mm Mandrel “A” with #1 Morse Taper</td>
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<td>Adjustable 7mm Mandrel “A”</td>
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<td>with #2 Morse Taper</td>
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<tr>
<td>Ceres Jr. Pen Bushing Set</td>
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<tr>
<td>13/32&quot; Drill Bit</td>
<td>36494</td>
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<tr>
<td>31/64&quot; Drill Bit</td>
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