



Polaris/Phoenix Pen Kits - Assembly Instructions

A. Cutting Blanks

Cut blanks length of the brass plus 1/8" extra on each side to allow for trimming. Starting with a solid 3/4" square blank free of checks or other defects will help ensure good results and enhance safety.

B. Drilling

Drill the blanks using a drill press and clamp or other suitable device suitable for securing the blank in an upright position to ensure stability throughout the drilling process. Ensure the blank is a true 90 degrees to the drill press table. Drill a 3/8" hole through the center of the blank.

C. Glue the Blanks

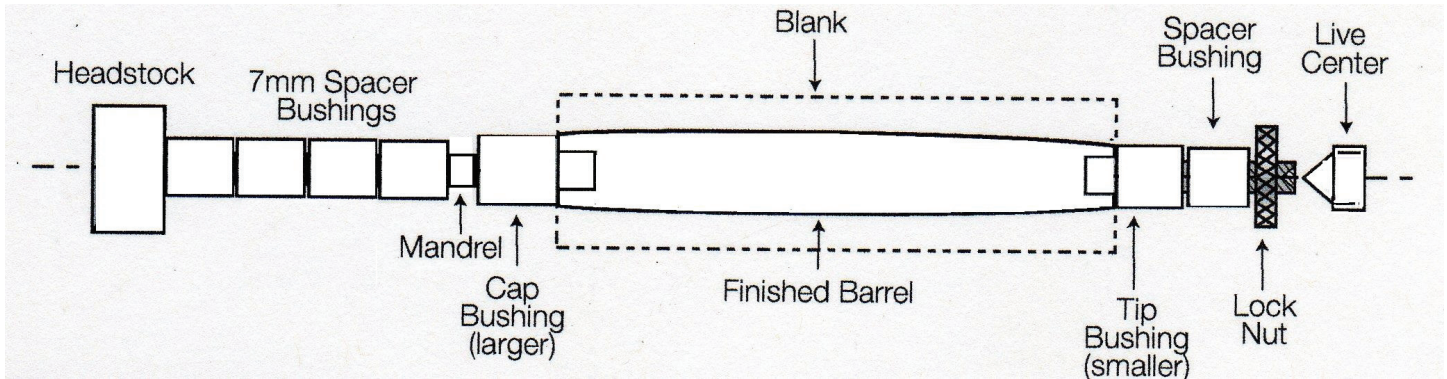
Lightly sand the exterior of each brass tube with fine sandpaper to ensure adhesion. Using a small cork or potato slice will help keep glue out of the inside of each tube during the process which will improve the ease at which components fit together. Using a good quality wood glue, polyurethane glue or Cyanoacrylate glue, coat the inside of the blank and then the brass tube with your glue of choice. Insert the tube fully into the blank, cork end first. Expel the cork and clean up any remain excess glue. Wait the required wait time for the selected glue as determined by the manufacturer.

D. Dress the Ends

Using a belt sander or barrel trimmer true the ends to an accurate 90 degrees and remove any excess wood until the brass is just revealed. Removing too much brass may hinder future assembly.

E. Turning the Blanks

Slide the bushings and the pen blank onto the mandrel in the order required, use the diagram to help line up the blanks and bushings.



After aligning the bushings and blank add additional spacer blanks as required. Thread the lock nut and hand tighten. The turning unit should now be secure on the mandrel. Slide the tail stock over and set in place next to the mandrel ensuring there is enough pressure to secure the mandrel (do not over tighten or the mandrel and live center could be damaged). Turn the blank down to the approximate diameter of the bushings and then sand the desired diameter. Use your judgment and create the design of your choice on all sections.

F. Sanding

Once the pen is turned to approximately 1/16" of the final diameter (more if wood is brittle or hard to turn) switch to sand paper and sand to the diameter of the bushings. Start with course 150 to 220 grit and work consecutively to finer diameter sandpaper, 400 to 600 grit or finer.

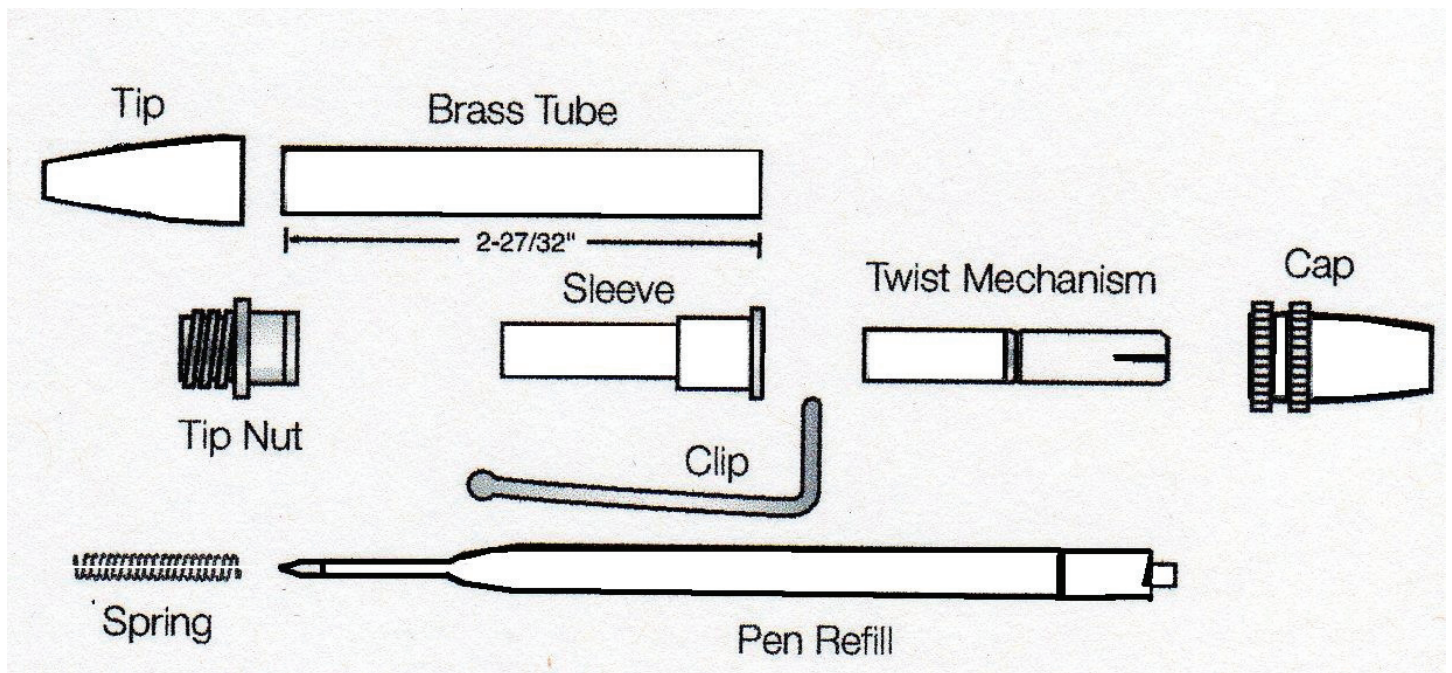
G. Finishing

Finish with your desired wax or friction polish. If using a polyurethane finish ensure not to weld the bushings to the blanks.

H. Assembly

Use a clamp or vice with wooden jaws to prevent damage to the pen components. A pen press is especially useful for pen assembly.

1. Press the tip-nut into the narrow end of the blank and press until the shoulder of the tip-nut just touches the blank.
2. Insert the sleeve into the clip opening and press into the opposite side of the pen blank.
3. Insert the transmission into the sleeve with the chrome end outward. Press until it stops which should leave approximately 3/4" sticking out.
4. Insert the refill and spring into the tip nut and screw on the tip until secure.
5. Add the end cap section and twist the pen to test the motion.
6. Congratulations, you have completed the Phoenix Pen!



If you have any problems, feel free to contact me at your convenience.