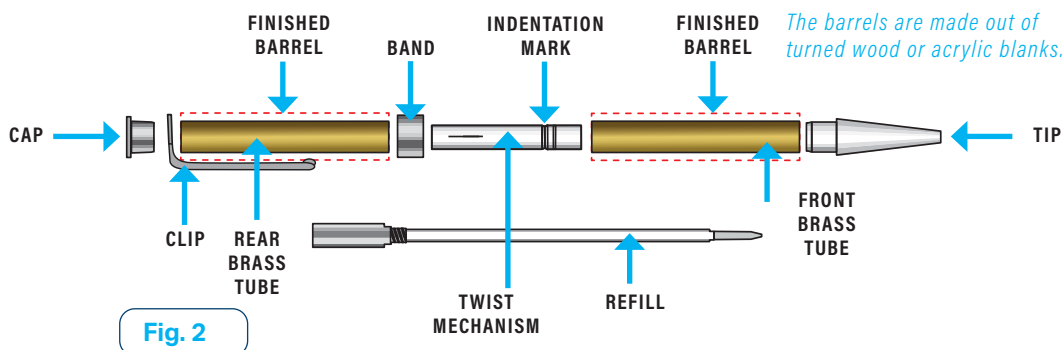


Ball Point Pen Kit Pen -1 Series INSTRUCTIONS



A. REQUIRED TOOLS AND ACCESSORIES

- 7 mm pen mandrel
- 3 piece bushing set, PKM-BUSH3
- 7 mm drill bit, PK-7MM
- 7 mm barrel trimmer
- 2 part epoxy glue or CA super glue (cyanoacrylate)
- Wood or acrylic blank, minimum size 9/16" x 5"
- Sanding and finishing supplies



B. PREPARING AND TURNING THE BLANKS

1. Cutting the wood or acrylic blanks

From 13 to 16 mm square stock, cut two blanks to the length of the brass tube plus approximately 2 mm. Grain should run lengthwise.

2. Drilling the blanks

Drill a 7 mm diameter centered hole lengthwise through each blank. Excessive pressure will cause the drill bit to wander and/or split the blank. Slow the feed rate and back the bit out repeatedly for chip removal.

3. Gluing the brass tubes into the blanks

Use epoxy or a gap filling cyanoacrylate. Spread the glue on the tube. Insert into the blank with a twisting motion to spread the glue evenly inside. Centre each tube lengthwise in the blank. Allow the glue to dry. Remove all glue residue from the tube.

4. Squaring the ends of the blanks

With a 7 mm barrel trimmer, turn away the excess wood to finish flush with the ends of the brass tube.

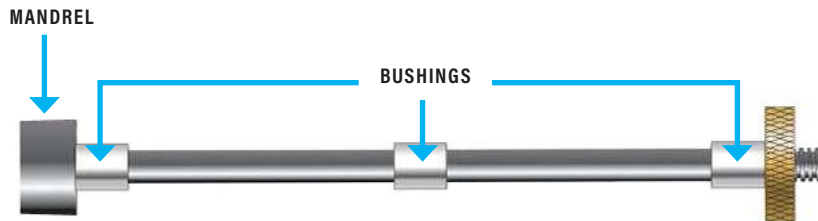


Fig. 3

5. Turning the blanks

- Place spacer bushings on the mandrel.
- Place one of the pen bushings onto the mandrel.
- Slide a blank, then another pen bushing.
- Follow with the second blank then the last pen bushing.
- Thread on the lock nut hand tight. Bring the tail stock snug with the mandrel (do not over tighten, it could damage the wood or acrylic blanks if it is too tight).
- Turn the blanks down to a diameter slightly larger than the bushings (about 9 mm). As you approach the final size be careful since the wood is only about 1 mm thick above the brass tube.

6. Sanding the blanks

As with any sanding, progress through a range of lower to higher grits of sand paper. Sand with blank spinning. Progress from 150 through to 600 grit paper.

7. Finishing

Try a finish of your choice but be careful with finishes such as polyurethane as there is a risk of the pen and mandrel parts sticking together. Some finishes can be applied with a rag whilst turning the barrel on the lathe.

8. Touching up

Take the pen barrels off the mandrel and lay them end to end to decide which set will look best when assembled. Remember, they will be around 4 mm apart due to the centre ring so minor differences won't show. If necessary, slightly sand the ends of the barrels to improve the fit during assembly and reapply the finish.

C. PEN ASSEMBLY

1. Line up the finished parts according to figure 2.
2. Press the tip into the front tube.
3. Press the twist mechanism into the opposite end of the same tube. Don't press too far in.
4. Slide the band over the exposed mechanism.
5. Press the cap into the clip then onto the rear tube (clip can be left off if desired).
6. Push the two halves together, aligning grain as desired. The pen is operated by twisting the halves in opposite directions to extend or retract point. Test the extension with the refill inserted. This pen uses Cross type refills.