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## Lancer Pen Kit Assembly Instructions

### REQUIRED ACCESSORIES

- 7mm Adjustable or Long Mandrel
- Live 60-degree Tailstock or Mandrel Saver
- Lancer (2-Piece) Bushing Set DKB-L200BU
- 27/64" Drill Bit
- Blank Size: Minimum 3/4" x 3/4" x 3
- Two Part Epoxy Glue or Thick CA (cyanoacrylate)
- 7mm Barrel Trimmer or Disc Sander
- Sandpaper: Standard and Micro Mesh
- Pen Press or Clamp
- Eye, Ear & Dust Mask Protection

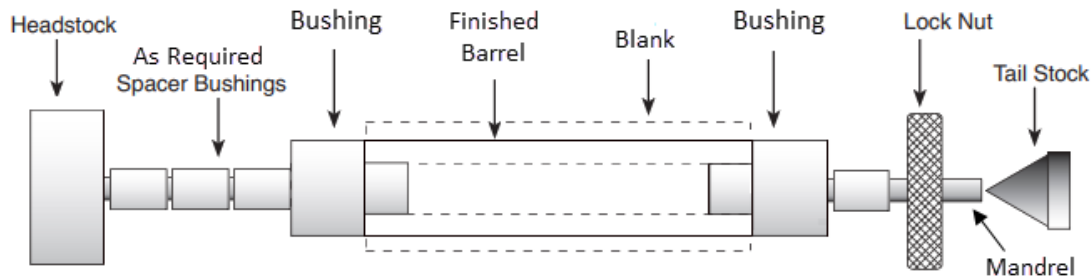


### PREPARING THE BLANK

- 1) To prepare the Blank for drilling, cut one section to the length of the Tube adding 1/4" for squaring off.
- 2) Mark the center of the Blanks end. This will determine the drilling location.
- 3) Drill Wood Blank at 2,000 – 3,000 rpm and Larger bits or Resins at 250 – 500 rpm. Drill the hole through the center of the Blank stopping an 1/8" short of the bit exiting the Blank. This will eliminate a Blank blow out.
- 4) Drill a centered 27/64" hole lengthwise through the Blank.  
Caution: Excessive pressure will cause the drill bit to wander and/or split the Blank. Slow the feed rate and back the Drill Bit out repeatedly for chip removal.
- 5) Trim away the small amount from the end of the Blank to expose the hole.
- 6) Roughen the length of the outside Brass Tube (2 - 1/4") with 220 grit sandpaper to clean off the oxidation. This provides better glue adhesion. Wipe the brass residue off the Brass Tube. Trial fit each Tube in the Blank before gluing.
- 7) To keep the glue from getting into the Tube, plug both ends of the Tube with a material of your choice. We recommend base plate wax. Push the Tube ends into a thin section of the material to seal each end. Wipe the residue left on the Brass Tube with acetone or alcohol on a clean dry towel.
- 8) Glue the Tube into the Blank. Put a liberal coating of glue on one Brass Tube. Working quickly, insert the Tube halfway into the Blank with a twisting motion to spread the glue evenly inside, then remove it from the Blank.
- 9) Put a little more glue on the Tube and insert it into the opposite end of the Blank. Align the Tube lengthwise just inside the Blank.
- 10) Once the Brass Tube is glued in place, set the Blank aside for a day or so to give the glue time to set completely.
- 11) When glue is cured, use a hobby knife to remove the plugs and glue from the ends.
- 12) Use a Barrel Trimmer or a power disc sander to trim the excess material flush with the ends of the Brass Tube. Trim the ends of the Blank until you can just see the bright Brass ends of the Tube. The trimmed ends must be 90 degrees flush to the ends of the Brass Tube. Do not trim past the end of the Tube.
- 13) The faces of the ends must be perpendicular to the Brass Tube and parallel with each other. It is imperative that the length of the trimmed Blank match the original length of the Brass Tube and that the insides of the Brass Tube are clean and free of any glue. Any excess glue left inside will split the Blank during assembly.

### TURNING THE BLANK

- 14) Mount a Bushing, (0.470 Dia.) the Blank and the other Bushing on the Mandrel.
- 15) Thread the knurled Lock Nut on to Pen Mandrel and hand tighten it to hold all the components in place.
- 16) Slide the Tail Stock up snugly against the Mandrel Shaft inserting the Live Tail Stock Center Point into the Mandrels end Dimple. If using a Mandrel Saver insert the Mandrel into its hole. Lock the Tail Stock in place. (Do not overtighten, it could damage the Mandrel). Excessive pressure may also crack the Blanks.
- 17) Using sharp tools, turn the Blank down to a diameter slightly larger than the Bushings. As you approach the final size, be cautious as the Blank may be very thin. (Turn it straight or to a profile of your choice.)

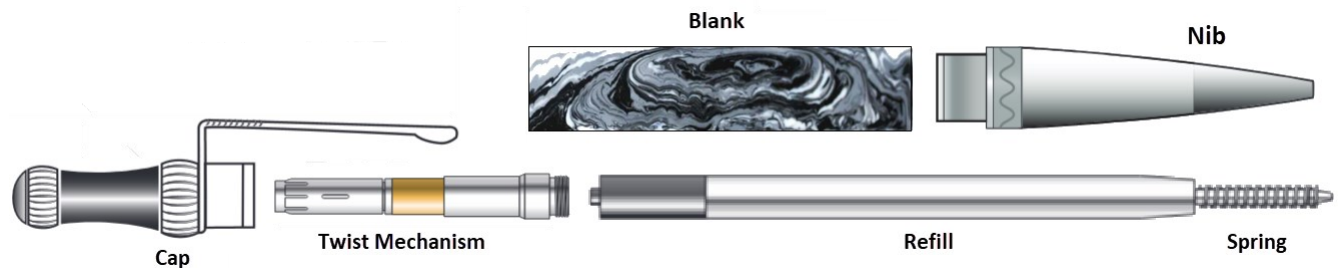


## FINISHING THE BLANK

- 18) Sand the Blank flush with the Bushing, gradually increasing the sandpaper grits.
- 19) Sand wood Blanks from 120 to 600 grit paper. For Resin Blanks continue sanding with Micro Mesh from 1,500 to 12,000 grit. Woods and Resins require different methods to achieve the best results.
- 20) Use a finish of your choice but be careful if using a CA or Polyurethane, etc. The Tube may stick to the Bushings, and Mandrel. Use Non-stick Finishing Bushings to eliminate the sticking, as finish is applied.
- 21) Remove the Blank from the Mandrel. If necessary, a light sanding of the ends on a sanding block to square the ends and improve the fit during assembly. Finish the ends of the Blank with thin CA to seal it.

## ASSEMBLING THE KIT

Layout the parts as shown below.



- 22) Press the Nib into one end of the Tube.
- 23) Pull the protective tip from the Refill point.
- 24) Slide the Spring onto the Refill and drop these, Spring end first, into the opposite end of the Tube.
- 25) Thread the Twist Mechanism into the Nib.
- 26) Press the Cap onto the Twist Mechanism.
- 27) Your pen is now ready to operate. Just twist the Cap from one position to another to extend or retract the Refill.

## Additional Information

- To change the Refill, remove the Cap, unthread the Twist Mechanism, remove the old Refill, replace with a new Refill, thread the Twist Mechanism back on and replace the Cap.