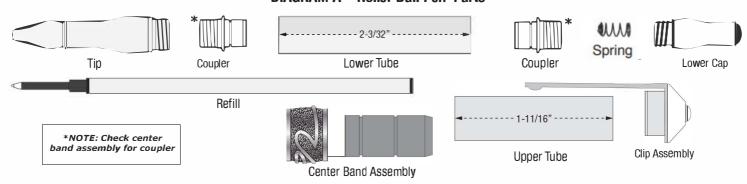


# DIAGRAM A • Roller Ball Pen Parts



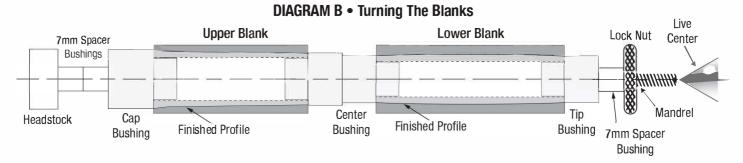
## PREPARING THE BLANKS

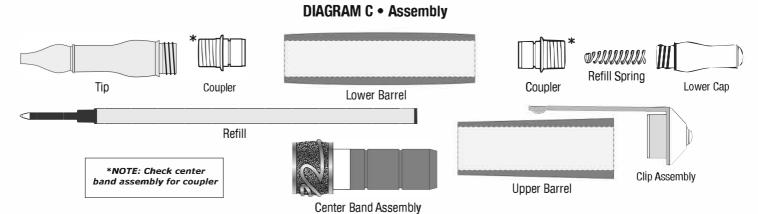
- Cut 3/4" or larger square blank to the length of the brass tube. Add 1/16" to the length for squaring off.
- Use .492" drill bit, drill a hole through the upper blank. Drill a 10.5mm hole through the lower blank.
- Apply glue to each tube and insert into the proper blank with a twisting motion to spread the glue evenly inside. Center the tube in each blank.
- When glue dries, trim each tube end. Use a 7mm barrel trimmer with the proper trimmer sleeve. Trim the wood blank flush to the brass tube.

#### TURNING THE BLANKS

- Place spacer bushings onto the mandrel shaft. Insert the lager end bushing, large end first. Follow with the upper blank.
- Place the center bushing, large diameter in first, follow with the lower blank. Insert the smaller diameter bushing, small end first. Insert spacer bushings to close the space to the threads. Mount the locknut hand tight. Bring the tail stock snug to the mandrel shaft. Lock in place. Lock the knurled nut hand tight. (Do not over tighten, it may damage the mandrel.)
- Turn the wood down to the profile design illustrated in **DIAGRAM** B.
- Sand the blanks down to match the diameter of the bushings.
- Finish the barrels with your choice of PSI Polish.

• Insta-cure (cyanoacrylate) glue or 2-part epoxy glue





## ASSEMBLY — Roller Ball Pen

- Line up parts according to **DIAGRAM C**.
- Press the the cap assembly into the wide end of the upper barrel.
- Slide and press the center band assembly into the opposite end of the upper barrel.
- Slide the ring onto the coupler (narrow diameter side in first) and press the coupler with ring into either end of the lower barrel.
- Repeat this process for the second coupler and slide the ring onto the coupler and press coupler assembly into the opposite end of the lower barrel.
- Screw the lower cap into the coupler and drop the refill spring—wide end in first—through the opening at the other end.
- Remove the protecting cover over the refill, insert refill into the opening at the wide end of the lower barrel, screw in the tip over the refill tip. The pen is ready to operate.
- The cap will post over the lower barrel when in use.

## **BUSHINGS and BARREL TRIMMER SLEEVES**

### DIAGRAM D • PKDBBUA

**#PKDBBUA** — BROADWELL Roller Ball/Fountain Pen Bushings

