European-Style Pen Kit 88K70.45

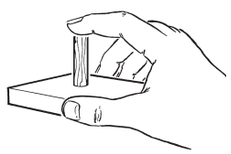
Requires standard "A" mandrel, European pen bushings (88K78.71), 7mm drill bit, and minimum 3/4″ square by 5″ long blank.

General Instructions

Cut the turning squares to length, center-drill each piece to accept a brass sleeve, and glue the brass sleeve into the turning blank. Mount the bushings and blanks on the mandrel and turn the blanks to size, using the bushings to gauge the proper diameter of the components to be turned.

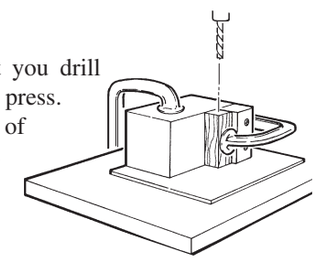
Cutting the Blanks to Length

When cutting the turning squares to length, cut the blank 1/32″ longer than the brass tubing. Once turned, the length can be sanded flush and square at either end, ensuring a seamless fit between the wood and the pen hardware.



You can make a small sanding jig from a 1 1/2″×1 1/2″×3/4″ square of wood with an accurately drilled hole matching the outside diameter of the wood components to ensure that the end is sanded squarely. You can also use a 7mm pen mill to square and trim the blank after gluing in the sleeve.

Drilling the Stock



It is strongly recommended that you drill your turning blanks on a drill press. Narrow squares do not leave a lot of room for error. A drill press vise or homemade jig to help keep your blanks centered and vertical is also a necessity.

You can use a standard twist bit; however, there is a chance that you will split the blank when the bit breaks through the bottom. You will not have this problem if you use a HSS lipped brad-point bit or a HSS parabolic-flute bit (which is ideal for use in dense hardwoods, epoxy-stabilized woods, acrylic acetate, or other challenging materials). Whichever bit you choose, withdraw the drill frequently to clear chips from the flutes.

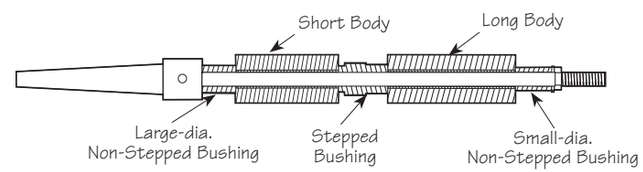
For exotic woods that have a more unstable moisture content, you can prevent cracking by first drilling a 1/8″ diameter hole. Let the wood blanks dry for about a week, then redrill with the size of drill required for the sleeves. Other turners prefer to drill the wood and insert the sleeves immediately on bringing the wood in the shop, since the thin walls are less likely to crack.

Gluing the Brass Sleeves

Use quick-setting epoxy, polyurethane or cyanoacrylate to glue the brass sleeves into the wood blanks. Spread a small amount of glue onto the outside of the brass sleeve and slide the sleeve into the wood. **Do not** put the glue into the hole in the wood because you will inevitably end up with glue inside the brass sleeve.

Turning the Bodies

Mount the large-diameter non-stepped bushing on the mandrel, then the short wood blank, the stepped bushing (with the wide center portion closest to the short blank), the long blank, and finally the small-diameter non-stepped bushing. Be sure that the bushings are a snug fit on the mandrel. If they have a bit of play, it could cause the brass sleeve to be slightly off center in the turned wood body. The fit can be corrected by shimming the mandrel. A full turn of cellophane tape (mending tape) will add just over 0.005″ to the mandrel diameter. This should be adequate, but if not, try two turns. (Full turns are necessary, as partial turns will cause eccentricity.) If the bushing will not go on over a single turn of tape, the fit is close enough. Aluminum foil makes finer shims, but is more difficult to use.



Clamp the wood in place by threading the nut onto the end of the mandrel only finger tight. Slide the tailstock in place and support the mandrel with light pressure of a live center.

Turn the blanks with any tool and at any speed you are comfortable with. Use the bushings as guides for the exact diameter that each end of the wood components should be. Turn the short blank to finished size using the center portion of the stepped bushing and the end bushing as references. Turn a 3/16″ tenon on the short blank using the shortest portion of the stepped bushing as a guide to tenon size. Turn the long blank to the dimensions of the longer portion of the stepped bushing and the end bushing. Check that the center ring fits on the tenon. Sand and finish the wood on the lathe.

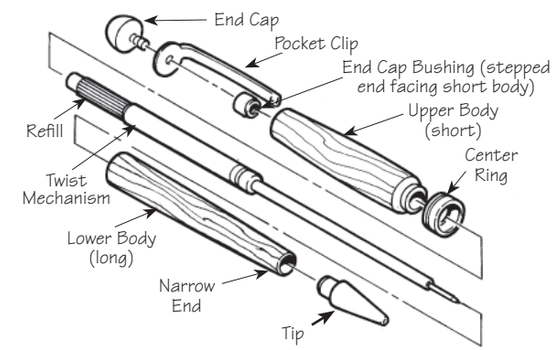
Assembly

The components press-fit together. Once the components are pressed together, it is almost impossible to take them apart. **Do not** try to dry fit the assembly before the wood is completely finished.

Assemble the pen as shown. Press the tip into the small-diameter end of the long blank. Press the twist mechanism into the other end of the long blank (the steel barrel should project about 13/16″). Insert the refill to check the proper projection of pen nib.

Use a drop of cyanoacrylate glue to secure the gold ring onto the tenon turned on the short blank. Glue so that the flat edge of the ring is against the blank.

Press the end cap bushing into the other end of the short blank, stepped end first. Place the pen clip onto the stud of the end cap and thread into place.



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