Metro Pen Kits

154679

Product #154679, 154680, 154681, 154682

5. Mandrel Preparation
Woodcraft’s new Pen and Pencil Maker’s Mandrel system allows you to turn a variety of small projects without requiring the purchase of a unique, special mandrel each time. The only item you will need to purchase to turn new projects is the specially designed bushing set for the project of your choice. The mandrel is provided with either a #1 Morse Taper (141468) or a #2 Morse Taper (141469). If you prefer to use the mandrel in a three jaw chuck, simply loosen the Morse Taper set screw and slide the Morse Taper off of the shaft. Now the mandrel shaft may be mounted directly in your three jaw chuck. With the bushing sets specified on the project instruction sheet, mount your wood blanks and bushings as depicted for each project. With the mandrel mounted in your lathe, slide a bushing onto the mandrel, followed by a wood blank and a second bushing or spacer as required, followed by the second wood blank if required. With the wood blanks installed on the mandrel, secure the wood blank/bushing assembly using the washer and retaining nut provided. Bring up a live center in the tailstock to support the threaded end of the mandrel. Do not over tighten the tailstock or the mandrel will flex and bend causing oval shaped turnings.

6. Turning Blanks
Place your tool rest parallel and as close as possible to the blank. Rotate the blank by hand to ensure it will not touch the tool rest when the lathe is turned on. Using a turning speed of approximately 1,000 RPM begin turning the blank to a diameter slightly larger than the bushings. You can work the stock down to just short of the desired design or diameter by carefully scraping or sanding.

7. Finishing the Blanks
Blanks can be finished like any other wood project. Using a fine grit sandpaper, sand the blank until it is flush with the bushing for parallel sided projects or until the desired profile is obtained for custom projects. Use a wood filler, if desired, to fill any grain openings in the blank. Final sanding with a wet/dry paper will create a blanket which is glass smooth. Tip: We have found that use of Micro Mesh sanding paper (145982) after wet/dry sanding creates a perfect, glass smooth finish.

8. Assembly
All parts should fit together as depicted in the parts diagram for each project. In some cases a pen press or machinists vise will be needed to completely press the parts together. Protect all plated parts from scratching by covering them with a cloth or thin pad before placing them in a vise. Proceed carefully, many of the kit components are delicate and uneven or excessive pressure will cause permanent damage.
1. Cutting Blanks
Cut two 3/4" x 3/4" blanks. The shortest blank (Cap) will need to be approximately 1 15/16" long while the longest blank (Body) will need to be approximately 2 1/2" long.

2. Drilling Blanks
Using a 15/32" bit bore a hole lengthwise through the center of the shortest blank (Cap). Next using a 25/64" bit bore a hole lengthwise through the center of the longest blank (Body).

3. Gluing Blanks to Tubes
See General Instructions for details.

4. Sanding Blanks to Length
See General Instructions for details.

5. Mandrel Preparation
This pen uses a four bushing set (#154684), three large shouldered bushings and one small shouldered bushings. Two of the three large shouldered bushings will have a larger step diameter, these will be for the short blank (Cap). The smaller stepped bushing will be for the longer blank (Body). Slide one of the two larger bushings with the larger diameter step onto the mandrel with the shoulder, or lip, facing the tailstock. Slide the shortest blank onto the mandrel and over the lip of the first bushing, followed by the second large bushing, lip first, making sure the lip slides inside the blank already on the mandrel. Place the last larger diameter bushing with the smaller step diameter bushings on the mandrel with the lip facing the tailstock, followed by the longer blank, and finally place the smallest bushing, lip end first. Make sure the lips of all the bushings are inside the respective tubes. Install the washer and the nut on the mandrel to secure the bushings/tubes. Do not over tighten the nut or damage to your mandrel may occur. If you are not using the Woodcraft Professional Mandrel you may have to make a wooden spacer to fill any gap on your mandrel between the bushings and blank assembly and threaded portion of your mandrel. Secure the bushings and blank assembly (and spacer if necessary) with the mandrel washer and nut.

6. Turning the Blanks
See General Instructions for details.

7. Finishing the Barrels
See General Instructions for details.

8. Assembly
Roller Ball Lower Barrel:
Begin by sliding Nib Decorative Ring (C) lip end first onto one of the two Nib Adapters (B) and press into the larger diameter end of the Lower Barrel (D). Next press End Cap (F) into the threaded end of the other Nib Adapter (B) then slide the Trim Ring (E) lip end first onto the other end of the Nib Adapter and press into the open end of the Lower Barrel (D). Slide the spring (large end first) into the open end of the Lower Barrel (D) followed by the Ink Refill (L), finish the assembly by threading Nib (A) into place.

Fountain Pen Lower Barrel:
Plug the pump (L) or ink cartridge (M) into the fountain pen nib (A), and screw assembly into the threaded body connector (B).

Upper Barrel (cap):
Slide the smaller diameter end of the Cap Thread Tube (H) into the Center Band Assembly (G) and press into one of the open ends of the Upper Barrel (I). Next slide the Clip (J) over the lip of the Finial (K) and press into the open end of the Upper Barrel (I).