



Teachers Pen

Product #149474

General Instructions

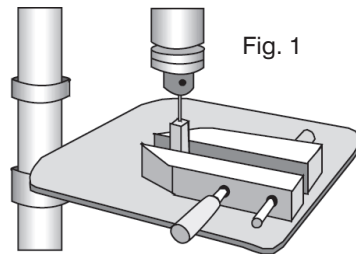
Whether you're a novice turner or a pro, you'll find these projects are all quick and easy to make. Using cut-offs and shorts, the type everyone saves but doesn't know what to do with, you'll find yourself making handsome, custom woodturning projects which are great for gifts or for sale. The following is general in nature, please refer to the instruction sheet on the opposite side for specific dimensions and sizes for your project.

1. Cutting Blanks

Cut wooden blanks to the size specified in the enclosed instructions. For your safety, be sure that the blanks are solid and have no holes, checks or other defects.

2. Drilling Blanks

Center and bore a hole through your stock as specified in the Project Instructions on the opposite side. The center of the blank can be located at the intersection of diagonal lines, drawn from opposite corners. All holes are easily drilled using a clamp and a drill press (**FIG. 1**). Before you start to drill be sure that your blank is at 90° to the drill press table. You may also chuck and drill the stock on your lathe.



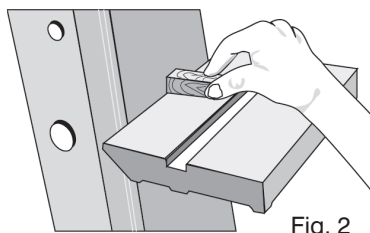
3. Gluing Blanks to Tubes

Rough the brass tube's surface with a fine grit sandpaper and use a quick drying CA type glue to secure the brass tubes into the blanks. Rotate the tube as you insert it to ensure maximum surface coverage of glue. If you find that CA glue is not providing adequate bonding, an alternative is any two part epoxy type glue.

4. Sanding Blanks to Length

Using a belt or disc sander, square the ends of the brass tube/wood blank. The blank should be flush with the brass tube on both ends. Care should be taken to not sand into the tubes (**FIG. 2**). If any excess glue remains inside the tubes it should be gently scraped out.

Tip: Excess glue can be scraped out using the threaded end of the mandrel when mounting the blanks for turning.



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 blank which is glass smooth. *Tip: We have found that use of Micro Mesh sanding paper (11L61) 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.



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1. Cutting Blanks

Cut three blanks $\frac{3}{4}$ " x $\frac{3}{4}$ ", and each slightly longer than the three provided brass tubes. One blank will be approximately $2\frac{3}{16}$ " long (pen center), the other two will be approximately $1\frac{3}{16}$ " long (pen ends).

2. Drilling Blanks

Using a 7mm bit drill a hole lengthwise through the center of all three blanks.

3. Gluing Blanks to Tubes

See General Instructions for details.

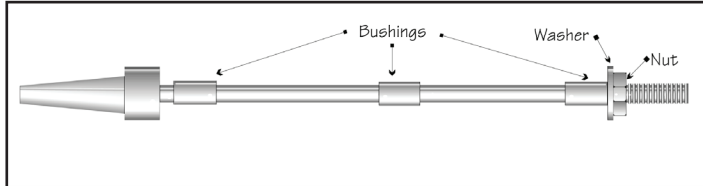
4. Sanding Blanks to Length

See General Instructions for details.

5. Mandrel Preparation

The blanks for this pen can be turned with three bushings but requires mounting the two smaller blanks and turning them to size, then mounting the longer blank and turning it to size. By adding another bushing (total of 4) you can turn the entire pen at one time.

If you are using a standard three bushing set mount the blanks and bushings on the lathe mandrel in the following order. Place a bushing on the mandrel, followed by one of the short blanks.



Slide a second bushing onto the mandrel, then the second short blank followed by the third bushing. If you are using a Woodcraft Professional Pen Mandrel adjust the mandrel to the correct length, if not you will need to make a spacer by drilling a 7mm hole in a piece of scrap wood to fill the unused portion of the mandrel. Secure the assembly with the mandrel nut and washer. Turn these blanks (see Step 6. Turning the Blanks), then mount the third longer blank on the mandrel in the following order. Place a bushing on the mandrel, followed by the longer blank, then a second bushing. If you are using a Woodcraft Professional Pen Mandrel adjust the mandrel to the correct length, if not you will need to make a spacer by drilling a 7mm hole in a piece of scrap wood to fill the unused portion of the mandrel.

If you are using four bushings mount the blanks and bushings on the lathe mandrel in the following order. Place a bushing on the mandrel, followed by one of the shorter blanks. Slide a second bushing onto the mandrel, then the longest blank followed by the third bushing. Slide the second shorter blank onto the mandrel, followed by the fourth bushing. Secure the assembly with the mandrel nut and washer.

6. Turning the Blanks

See General Instructions for details.

7. Finishing the Barrels

See General Instructions for details.

8. Assembly

All parts should be press fit with a Pen Press or machinist type vise. Protect all plated metal parts from scratches.

1. Press one of the Nibs (A) into either end of one of the shorter barrels (B).

2. Press one of the Twist Mechanisms (C) threaded end out, into the end opposite the Nib installed in the previous step, to the small indentation line. The fit of the twist mechanism is critical in determining the distance that the pen tip extends from the pen body. To ensure correct refill tip extension, the twist mechanism must be pressed into the barrel slightly past the beginning of the small indentation line (as opposed to just covering the indentation). When performing this step be sure that the twist mechanism is not seated too deeply or the refill tip will not retract fully into the pen body. Remember, the twist mechanism placement is a trial and error process and should be tested as you proceed to ensure proper depth of seating. If you proceed slowly, utilizing the illustration your pen will perform properly.

3. Insert a refill (D) into one of the refill guides (E), insert the refill into the Nib/Barrel/Twist Mechanism assembly and screw the Refill Guide into the threaded Twist Mechanism.

4. Repeat the first three steps to complete the opposite end of the pen.

5. Slide a Center Ring (F) over each of the Twist Mechanisms and push them into the center barrel (G).

Fully Twisted Position

