

Legacy “Euro Filigree” Pen Kit

Assembly Instructions

Available at www.thewoodturningstore.com

Description:

The “Euro Filigree” model is a step up from the Euro kit. It adds a filigree decoration, but also adds complexity in the turning process. The Euro pen is a replica of one of the world’s most recognizable pens. It is a popular item for pen turners who sell their pens.

The Euro model uses 7mm brass tubes of different lengths. The upper tube is 2 1/8” long. It is turned to a specific diameter so that it will fit inside the filigree detail. There is also a tenon which needs to be turned on the upper tube to fit the decorative band. The lower tube is 2 3/8” long. It is the same as a standard Euro pen and is usually turned to a taper from the center band to the tip.

The Euro model is available in a range of finishes (Gold, Silver, Gun Metal, etc). You can also customize your Euro pens with a wide variety of decorative pen clips and center bands.

Getting Started:

You will need the following accessories to make a Euro Filigree pen. Many of these accessories can be used with other pen kits. (All accessories are available at www.thewoodturningstore.com)

- 1 wood or acrylic blank, approximately 5 inches long x 5/8” x 5/8”
- 7mm drill bit
- Woodturning pen mandrel with 7mm rod
- Euro Filigree pen bushing set
- Pen barrel trimmer (7mm)
- Glue (CA, epoxy or polyurethane [Gorilla])
- Lathe, turning tools, sandpaper, pen finish
- Other items may be needed as desired



Parts of the Euro Filigree Pen Kit:



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Preparing the Blank for Turning:

- Start with your wood or acrylic blank and cut it in half so you have 2 pieces, one about 2 5/8” and the other about 2 1/38” in length. Mark the blank with “hash marks” at the cut line so you can keep the grain matched when you mount the blanks on the pen mandrel
- Using a 7mm twist drill, drill a hole through each blank. Be careful to drill slowly to avoid chipping and tearing the material. Also, it is highly recommended that you clamp the blank in a vise and use a drill press for the most accurate and straight hole. You could also mount each blank in a lathe chuck and drill the hole using your lathe
- Roughen the surface of each brass tube with steel wool or fine sandpaper. Using one of the glues mentioned previously, glue the brass tube into the blank. Twist the tube when inserting it into the blank to insure good glue coverage. Center the tube in the blank, make sure the tube is at least 1/16” - 1/8” inside the blank so you can trim the blank end cleanly.
- Use a pen barrel trimmer (7mm) to square the ends of the blank to the brass tube. This is an important step which will create a clean line between the turned blank and the metal components of the pen kit.
- Your blanks are now ready to be mounted on the lathe

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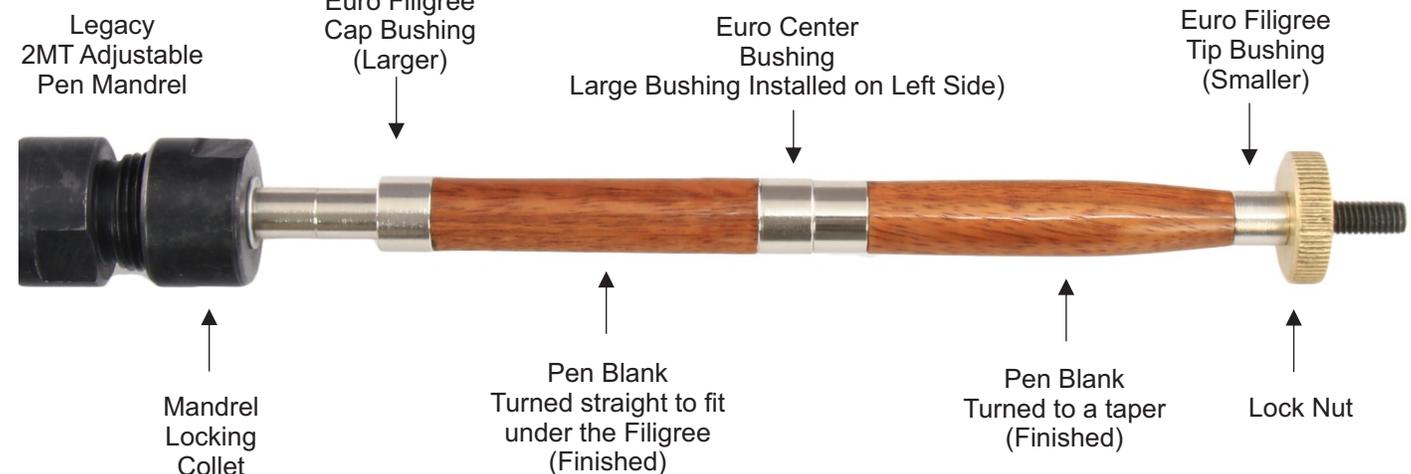
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Turning the blanks on the lathe - Step 1

- Use a pen turning mandrel with a 7mm shaft and Euro Filigree pen bushings (available at our store). The Euro Filigree bushing set has four bushings which can be seen in the diagram below.
- Mount the pen blanks on the mandrel as shown in the diagram below. Make sure that your “hash marks” are in the center which assures that the grain of your blank will match that of the original single piece blank. Adjust the mandrel shaft so that the lock nut will tighten down on the assembly of pen blanks and bushings. Hand tighten the nut.
- Put a live center in your lathe’s tailstock and bring it in to support the mandrel shaft and keep it stable while turning.
- Install the four bushing as shown in Step 1 below. Turn the upper blank as a straight cylinder, to the diameter of the bushings. As you turn the upper blank, you may want to check that the filigree fits snugly on your blank.
- Turn the lower blank to a gentle taper from the center bushing to the tip bushing.

STEP 1



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Turning the blanks on the lathe - Step 2

- When both blanks have been turned to the bushing diameters, it is time to turn a tenon on the lower section of the top tube.
- Remove the bushing for the lower part of the top tube and replace it with the bushing of the smaller diameter, which is the diameter of the tenon.
- Note that you may want to place a center band on the center bushing before you start turning. (You might want to keep a spare center band for this purpose because you may scratch it with your turning tools).
- On the top tube, measure 1 7/8” down from the top bushing. This is the length of the Filigree.
- Turn a tenon on your top blank to meet the 1 7/8” mark down from the cap. If you have put a spare center band on your bushings, you can test it for fit.

STEP 2



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Sanding, Polishing and Finishing the blank

- Most pens are finished to a high luster and finished with a durable coating of protective finish. Depending on your skill level and the material being used, you will need to sand with aluminum oxide paper of progressively finer grits, starting with a grit coarse enough to remove all tool marks and possibly shape the blank
- If you have turned your piece oversize or if it is rough, you can smooth and even shape your blank with 80-100 grit sandpaper. Use a high lathe speed (2000+ RPM) but be careful not to overheat your piece which could cause heat checking.
- Progress through finer and finer grits 120, 180, 240, 320, 400, 600, etc
- For acrylic materials you can use sandpaper up to 1000 grit then switch to micro mesh pads (up to 12000) and polishing cream to get a superior glossy finish.
- There are many finishes available for pens and you can experiment with what works best for you and the materials you use. Try to use a finish which will be durable and long lasting because the pen will be handled thousands of times and you want the finish to stay on and not be worn away (especially if you have sold the pen!)
- Remove the blanks from the pen mandrel and you are ready to assemble your pen.

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Assembly of the Finished Pen:



- Now that you have turned and finished the blanks into the upper and lower halves, you are ready to assemble your pen.
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- It is highly recommended that you use a vise or clamp to assemble the pen. It is essential that you press the parts together “straight”. If you press the parts together and they are not straight, they will not straighten as you continue to press. There are many commercially available pen presses which make the process simple and easy.
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- Before you press the parts together, lay out your blanks so that you recall how the grain originally matched.
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- Press the cap nut into the upper tube making sure the recessed end goes in first. Then screw the cap through the pen clip into the cap nut.
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- Install the filigree over the top tube.
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- Using a tiny amount of glue around the tenon, slide the center band onto the tenon and hold until the glue dries. The upper assembly is complete
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- For the lower tube, press the tip into the tapered end of the tube using a vise.
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- Next, press the twist mechanism into the other end of the lower tube, brass end first. This step is the most critical part of the assembly. Press the mechanism in slowly until you leave about 3/4” to 13/16” of the chrome part exposed. Then install the pen refill and test the pen. It should extend properly through the tip while still retracting fully. If it does not extend fully, remove the pen refill and press the mechanism a little further, just a little!! If you press too far, the pen will not retract back in to the pen body and you will have to disassemble the pen, which is not easy. BE CAREFUL on this step. The lower assembly is now finished.
- Push the two halves of the pen assembly together and your pen is complete!