Legacy “Magnet” Pen Kit

Assembly Instructions

Available at www.thewoodturningstore.com

Description:

The “Magnet” pen model is a variation of the Slimline pen, considered one of the most basic pen kits, and is a great starter kit for those new to pen turning. Sometimes called the “Refrigerator” pen because it is used when you need to have pen handy, as you might want to stick it on the refrigerator door.

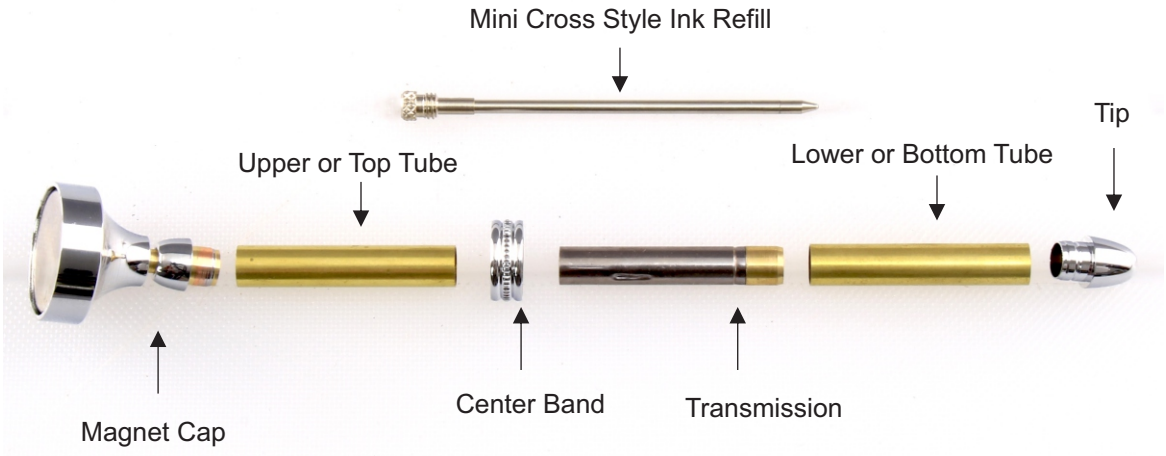
The Magnet pen uses 7mm brass tubes of equal length but much shorter than Slimline tubes. The tubes are 1 3/8” long. Also, in the basic pen form, the wood blank is turned in a gentle curve, wider at the band and narrowing to the tip and magnet ends.

Getting Started:

You will need the following accessories to make a Magnet 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 4 inches long x 5/8” x 5/8”
- 7mm drill bit
- Woodturning pen mandrel with 7mm rod
- Magnet 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 Magnet Pen Kit:



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Preparing the Blank for Turning:

- Start with your wood or acrylic bank and cut it in half so you have 2 pieces, each about 1 3/4” in length. Mark the blank with “hash marks” at the cut line 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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Turning the blanks on the lathe

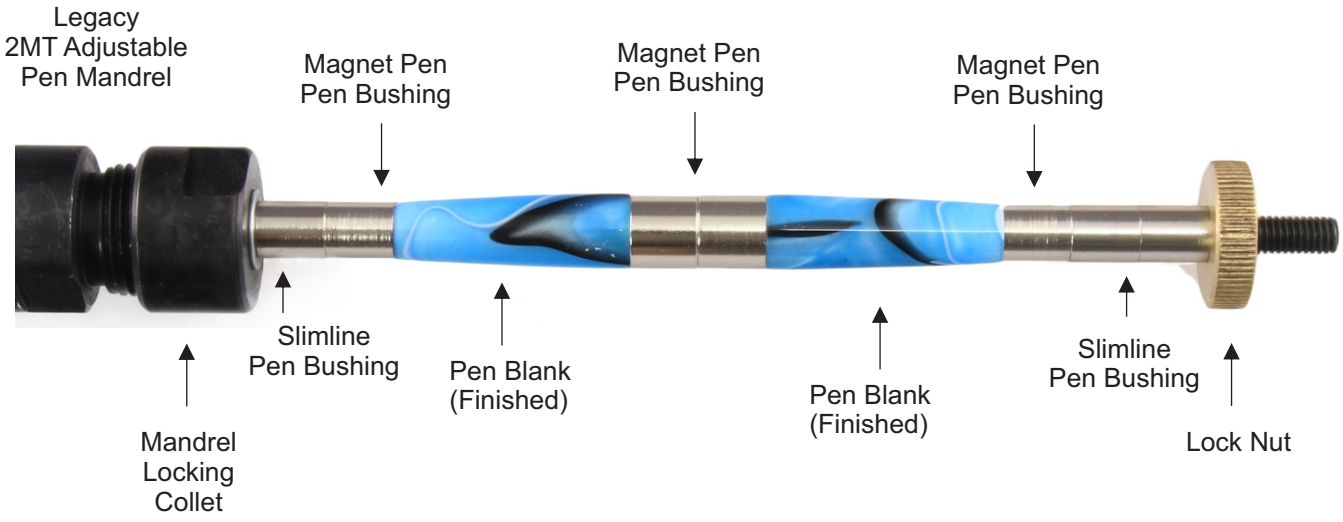
- Use a pen turning mandrel with a 7mm shaft and magnet pen bushings (available at our store). You will also want to use slimline bushings as spacers to space your blanks away from the mandrel. The magnet bushing kits uses the smaller diameter bushings at the ends and the wider bushing in the middle.

- 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.

- Using turning tools, turn the blanks to cylinders which are the diameter of the bushings.

- Note: Many turners prefer to turn the blank slightly oversize and then sand and polish the blank down to the exact size of the bushings.



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 your can use sandpaper up to 1000 grit than 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 to 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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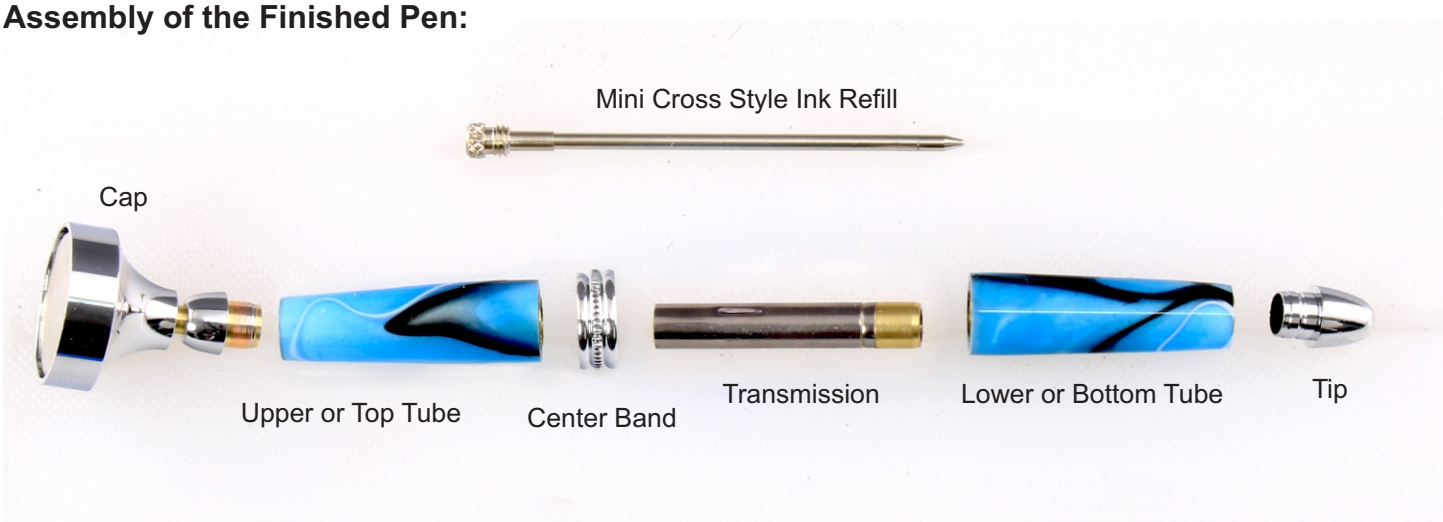
Assembly of the Finished Pen:



- Now that you have turned and finished the blanks into the upper and lower halves, you are ready to assemble your pen.

- 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.

- Before you press the parts together, lay out your blanks so that you recall how the grain originally matched.

- First, press the pen tip into the lower or front tube.

- 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 reach the indentation mark on the mechanism. The 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.

- Slide the ring band over the twist mechanism.

- The lower assembly is now finished.

- Press the magnet / cap on to the upper (rear) tube. Remember to watch for the original grain orientation.

- Push the two halves of the pen assembly together and your pen is complete!