

PROJECT PEN KITS



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AXMINSTER

woodturning

Axminster Woodturning Pen Turning Package 1MT

Code: 720780



WHAT'S REQUIRED

Bushing Set: **8.5mm O/D (as supplied with mandrel) (100793)**

Drill Bit Size:
7 mm

Minimum Blank Size:
16 mm x 16 mm x 112 mm

PREPARING THE BLANKS, HINTS & TIPS

Preparing a wooden or acrylic/polyester blank for a pen mandrel.

1. Cut a blank to the length of each tube plus approximately 2.5mm to allow for trimming and squaring off the ends.
2. Mark the centre on the end of the blank.
3. Using the recommended drill bit, drill a hole lengthwise through the blank.
4. Apply epoxy glue, Polyurethane glue or gap filling cyanoacrylate (super glue) to the tubes.
5. Insert the tube into the blank with a twisting motion to spread the glue evenly inside the hole.

6. Centre the tube lengthwise inside the blank.
7. Allow the adhesive to cure.
8. When cured, square the ends of the blank. Using a barrel trimmer with a guide matching the inner diameter of the tube or a universal pen blank squaring jig with a disc sander.
9. Take the excess material down flush with the ends of the brass tube. (do not trim beyond the length of the tube since this may interfere with operation of the mechanism and assembly).

Tips/Hints

- If using a wooden blank, draw a short pencil line lengthwise across the centre of the blank. This will help maintain grain alignment when mounting the blanks onto a mandrel.
- Excessive pressure may cause the drill bit to wander and/or split the blank. Slow the feed rate and back the drill bit out repeatedly for chip removal.
- Roughen the brass tube slightly with abrasive for better adhesion.
- Certain acrylic blanks are more transparent than others, especially lighter colors or blanks with light colored swirls. To avoid the risk of the brass tube showing through the pen blank, paint the tubes white or black before gluing them in.
- The barrel trimmer guide also cleans any adhesive that may have gotten inside of the tube.

TURNING THE BLANK, HINTS & TIPS

1. Mount the bushings and blanks onto a pen mandrel according to the diagram (If using a wooden blank, check the grain alignment).
2. Secure the bushings and blanks onto the mandrel.
3. Slide the tailstock with a live centre into place against the mandrel and lock in position. This is for support; only slight pressure is required.

4. Using sharp tools, turn the blanks down to become the Upper Pen Barrel and Lower Pen Barrel with profiles of your choice.
5. Turn the blanks very slightly oversize, then sand and polish the ends down to the same diameter as the bushings.
6. Using successively finer abrasives gradually sand and polish both Pen Barrels.

7. Finish both Pen Barrels with your preferred choice of polish.

Tips/Hints

- Don't be afraid to sharpen frequently especially when turning acrylics.



Continues over...

ASSEMBLY, HINTS & TIPS

1. Layout the parts according to diagram A, ensuring the turned Pen Barrels are the same orientation as when mounted on the mandrel.

Note: When removing the blanks from the mandrel, use a felt tip pen to mark the inside of each tube where they join to maintain the grain or pattern alignment.

2. Carefully align the Pen Tip with the bottom end of the lower Pen Barrel and press firmly together.

3. Press the Twist Mechanism, brass end first, into the opposite end of the lower Pen Barrel ONLY as far as the groove.

Note: Be very careful not to press the Twist Mechanism too far into the Pen Barrel as it cannot be pulled out.

4. To determine if the Twist Mechanism is at the correct depth. Insert the Refill into the barrel and screw fully into the Twist Mechanism.

5. Actuate the Twist Mechanism to expose the Refill's point. When properly fitted the point should be fully hidden when retracted and just the chamfered portion of the Refill visible when extended.

6. If the point does not extend far enough, remove the Refill and press the Twist Mechanism a little further into the tube.

7. Slide the Clip onto the Cap, do not try to force the Clip onto the Cap by hand it will seat fully when the Cap is pressed into the top end of the Upper Pen Barrel.

8. Slide the Centre Band over the Twist Mechanism.

9. Push (by hand) the Upper Pen Barrel over the exposed Twist Mechanism to complete the pen.

10. There is sufficient grip between the upper Pen Barrel and the Twist Mechanism to keep the upper Pen Barrel in place.

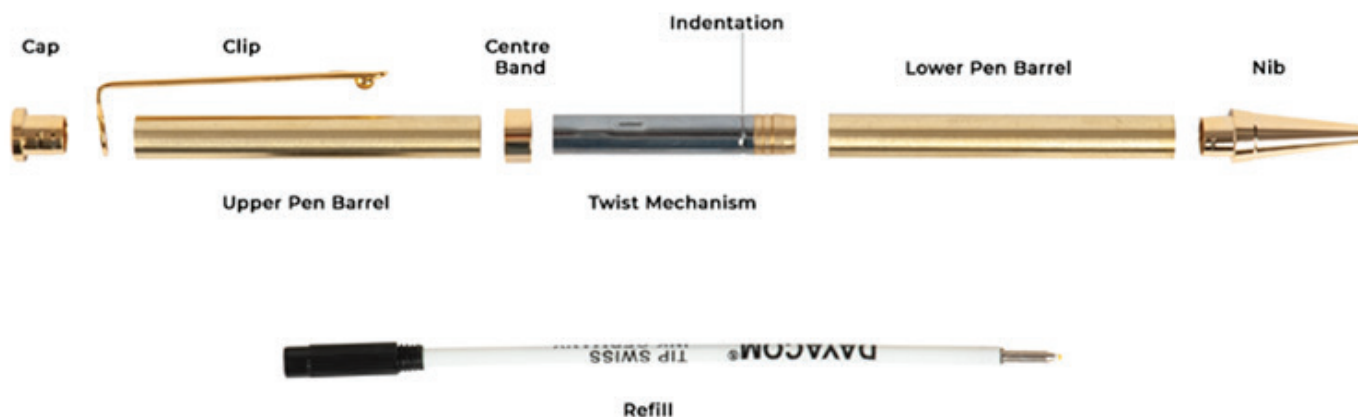
11. The Pen is operated by twisting the two halves in opposite directions to extend or retract the point.

12. To replace the refill: Pull the two halves apart and change the refill. Push back together.

Tips/Hints

- Use a woodworking vice, one handed bar clamp, arbor press or a dedicated pen press.
- Press parts together slowly and steadily
- When pressing the parts together, CHECK the parts are correctly aligned with each other and straight. If the part is crooked or misaligned, it will result in a poor fit or render the pen unuseable.
- When laying out your pen barrel with the parts, pay careful attention to keep the pen barrels in the same orientation as when on the mandrel. i.e. a pen barrel may have a "top" and "bottom", now is the time to be certain of the orientation.

DIAGRAM A



Visit the Knowledge blog 'How To Make A Pen' for hints, tips and videos
knowledge.axminstertools.com/pen-turning



Axminster Tools, Axminster, Devon, EX13 5PH
AXMINSTERTOOLS.COM