



Woodworking machinery at its best!

Instructions for Mini Key Ring Pen Kit



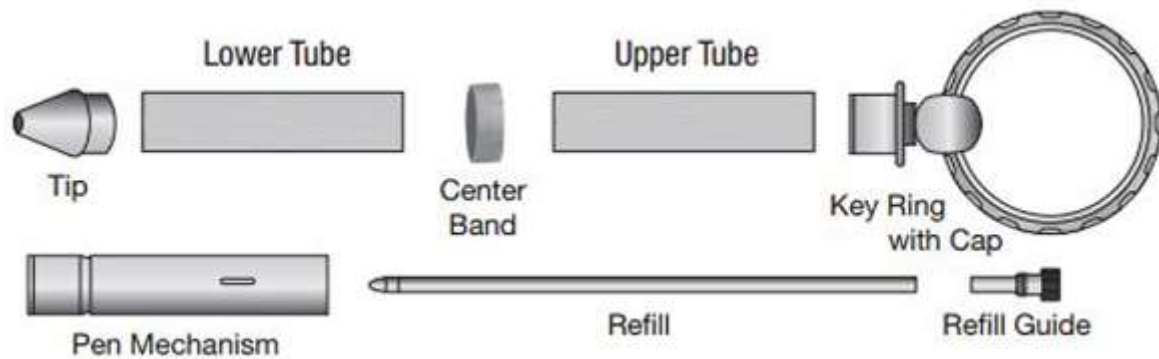
Kit Features

- A clever twist pen/key ring combination
- Available in Chrome or Gun Metal
- Overall length 82mm (3 1/4")
- Smooth operating twist action
- A perfect introduction to pen turning.
- No additional bushes required
- Uses refills PENMBR

Accessories Required

- 7mm Pen Mandrel (PM1MT or PM2MT)
- 7mm Drill Bit (PBD7)
- Barrel Trimmer with 7mm Shaft (PENBT)
- Adhesive – 2 Part Epoxy, Polyurethane or Medium Cyanoacrylate
- Blank of minimum size 19mm x 70mm (3/4" x 2 3/4")

Diagram 1 – The Parts included in the Kit



Preparing the Blank

Both brass tubes are identical

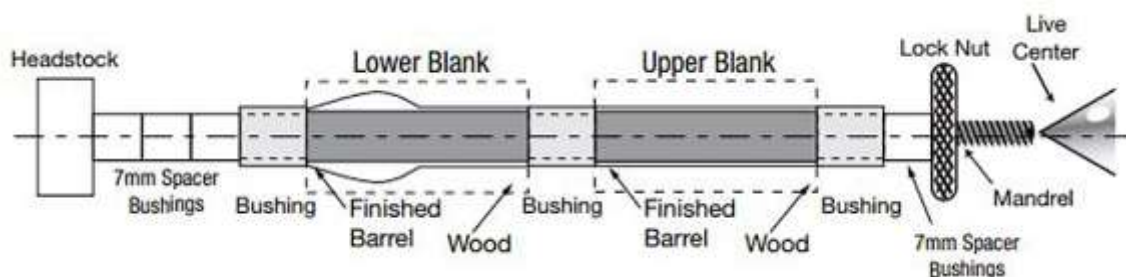
Step 1 – Cut the blank (wood or acrylic) to the length of the brass tubes plus a small amount (approx. 2mm) for trimming.

Step 2 – Drill a 7mm hole length wise through the blanks. Use a slow speed and avoid using excessive pressure as this could cause the drill to wander or the blank to crack. Back out the drill regularly to clear chips and prevent overheating.

Step 3 – Roughen the outside of the tubes with coarse (80g) abrasive. With your choice of epoxy, polyurethane or medium cyanoacrylate adhesive, cover the outside of the tubes and insert into the blanks using a twisting motion to ensure that the glue is evenly spread. If using a polyurethane glue, wet the inside of the blank before inserting the tube. Centre the tubes lengthwise and allow to dry. If using a translucent acrylic blank it is advisable to paint the inside of the bored hole or brass tube white as this will enhance its colour and prevent the tube being visible.

Step 4 – Using a Barrel Trimmer with 7mm shaft, square the ends of the blanks 90 degrees flush to the ends of the brass tubes. Alternatively this can be done using a disc/belt sander. Take care not to over trim the tubes/blanks as this will shorten the barrels and may affect the operation of the mechanism. Ensure that the inside of the tube is clear of dried glue. The use of a Tube Insertion Tool (PENTI) will minimise contact with the glue.

Diagram 2 – Mandrel Assembly



Step 5 – Mount the bushings and blank on the mandrel according to Diagram 2 and hand-tighten the lock/knurled nut to hold all components in place. If you plan to finish your pen with a varnish or CA, first apply a little paste wax polish to the bushings which will help prevent them from sticking. Slide the tailstock and live centre up to the mandrel & locate the point in the dimple in the end of the shaft. Lock in place and lightly tighten the quill to remove any play. Take care not to overtighten as this could bend the mandrel shaft.

Step 6 – Using sharp tools, turn down the blanks to a diameter slightly larger than the bushings. The profile of the barrels can be straight or shaped, but take care when making the final cuts as the material remaining could be less than 1mm thick.

Step 7 – Reduce the speed of the lathe and sand the barrels to the diameter of the bushings. Start with 150 grit abrasive, progressing through higher grades up to 400 or 600 grit. Always stop the lathe and sand along the length of the barrel before continuing to the next grade of abrasive. Abranet is the ideal abrasive as this does not clog.

Step 8 - A wood finish of your choice can then be applied. For a glass-like finish on acrylic, or wood with CA applied, continue sanding at a higher speed using Foam Backed Sanding Pads (PENSP) wet, through 1500,1800, 2400, 3200, 3600,4000, 6000, 8000 grits and up to 12000 grit.

Step 9 – Remove the barrels from the mandrel. Depending on the finish applied, it might be necessary to remove any overspill by lightly sanding the ends by gently twisting them on a piece of 120 grit abrasive placed on a flat surface.

Assembly

It is possible to assemble your pen using a suitably sized wood clamp, but this process is made much easier by using Pen Press Set (PP1MT or PP2MT) fitted to your lathe.

Step 10 – Line up and identify the finished parts according to Diagram 1.

Step 11 – Press the Cap into one end of the finished Upper Barrel. Thread the split /key ring through the eyelet of the cap.

Step 12 – Press the Tip into the finished Lower Barrel, ensuring that it is aligned as pressure is applied.

Step 13 – Press the short end of the mechanism into the other end of the Lower Barrel until the indentation mark just remains visible. Attach the refill to the Refill Guide and insert into the barrel and screw fully into the mechanism, twisting the mechanism to expose the nib. Just the chamfered end of the refill should be visible protruding from the tip. It might be necessary to press the mechanism further into the barrel to achieve this.

Step 14 – Place the Centre Band over the Mechanism followed by the Upper Barrel/Keyring which is a friction fit.

The pen is now ready to use – twist the lower barrel to expose the nib.

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