

# Vail Rollerball and Fountain Pen Kit



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“Vail Rollerball/Fountain Pen Kit Expanded Instructions”**

## **Tooling Needed:**

3/4" x 4.5" Blank  
Vail Bushing Set (4 Pieces)  
Standard "A" sized mandrel shaft.  
10.5mm or 27/64" Drill Bit (for Main Body)  
12.5mm or 1/2" Drill Bit (for Cap Body)  
7mm Pen Mill Pilot with 3/4" Cutter Head  
Vail Pen Mill Sleeve Set (2 Pieces)

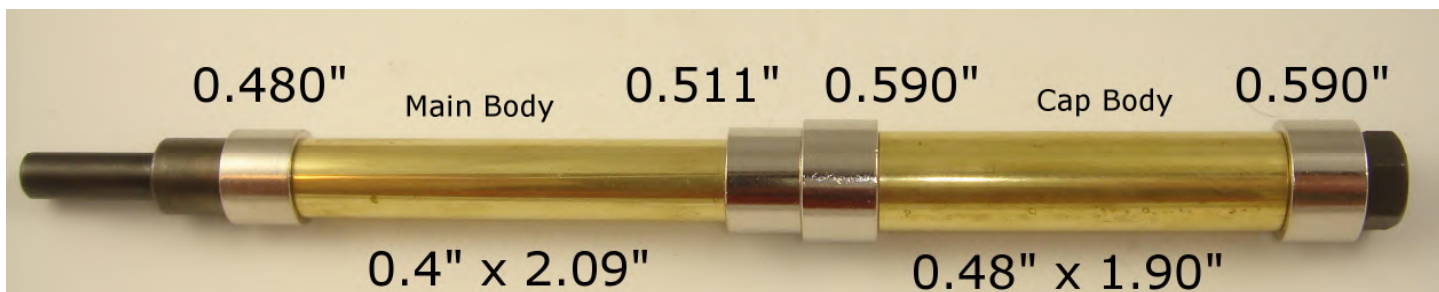
Vail Tooling and Kits  
available at:

[www.BearToothWoods.com/vail](http://www.BearToothWoods.com/vail)

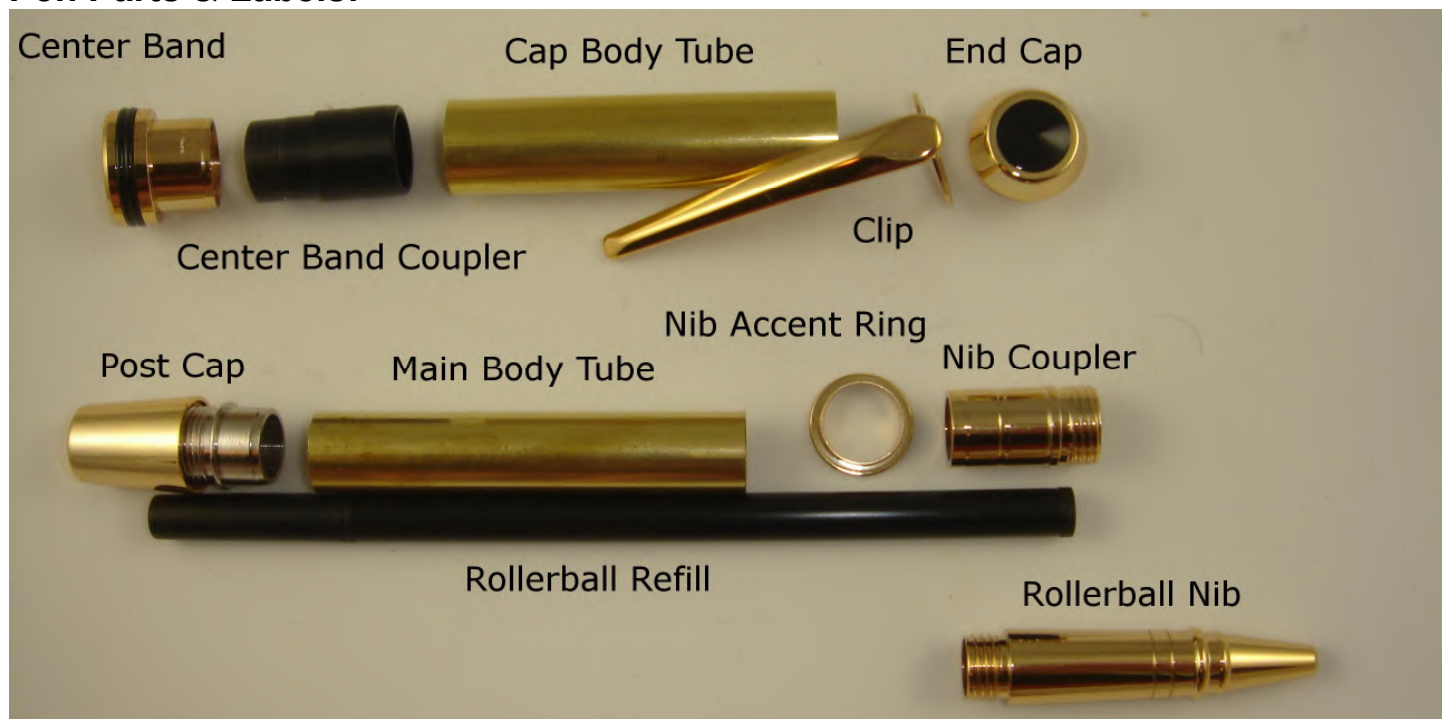
## **Blank Preparation & Turning:**

- 1) Cut the pen blank into two sections. The tube for the main body is 2.1" long. The tube for the cap body is 1.9" long. You may wish to cut the blanks longer to allow room for milling the ends.
- 2) Use the 10.5mm drill bit to drill a hole in the main body section. Use the 12.5mm drill bit to drill a hole in the cap body section. 27/64" and 1/2" drill bits may be used respectively and will result in a slightly looser fit which may be beneficial if you are going to paint the interior of the drilled blank.
- 3) Glue the longer main body tube into the main body section, and glue the shorter cap body tube into the cap body section. I use thick CA glue, but 2-part epoxy is also a good choice.
- 4) Use a 7mm Pen Mill Pilot Shaft with a 3/4" cutter head installed. Using the appropriate mill sleeves, mill each of the ends of the blanks up to the brass tube so they are the proper length and square to the brass tube. Be careful not to remove any of the brass tube as this can cause the blanks to be too short for proper assembly.
- 5) Assemble the bushings and pen blank sections on your mandrel according to the top image on the back side. This setup results in the post cap pointing towards the headstock and the end cap pointing towards the tailstock. The finished pen at the top of this page is orientated like the setup described below.

Turn the blanks to your desired shape using the bushings as a guide for final dimensions. Finish the blanks with your preferred finishing method.



## Pen Parts & Labels:



## Pen Assembly:

- 1) Press the **post cap** into the smallest diameter (0.480") end of the main body blank section. Screw the post cap tight.
- 2) Slide the **nib accent ring** onto the unthreaded end of the **nib coupler** with the flat side of the ring pointing away from the threads of the nib coupler. Press this assembly into the remaining open end of the main body blank section.
- 3) **Rollerball Only:** Place the **rollerball refill** into the main body. Screw the **rollerball nib** into the nib coupler.
- 4) **Fountain Pen Only:** Attach the **ink cartridge** to the nipple on the threaded end of the **fountain pen nib**. Screw the fountain pen nib into the nib coupler.
- 5) Press the small diameter end of the **center band coupler** into the small diameter opening of the **center band**.
- 6) If the blank has a pronounced grain, you can assure that the grain is lined up when the pen is closed by fully screwing the center band assembly onto the nib coupler of the main body, then align the grain of the two blanks and partially hand press the center band coupler into the cap body. Carefully unscrew the loosely joined center band/cap body and finish pressing the center band coupler into the cap body.
- 7) Align the **clip** in the position you desire and press the clip and **end cap** assembly into the remaining open end of the cap body. To protect the cap body during this step, consider using one of the plastic bags to form a barrier between the clip and the body.