

## Filling the Manual Injector

Remove the precision syringe from the clamping mechanisms of the manual injector (Figure 1). Twist the syringe to remove it from the luer fitting on the 3-way valve. Place tip of syringe in oil and draw the plunger all the way back to draw oil into the syringe. Hold syringe upright to allow any air bubbles to migrate to the tip. Press plunger to push air bubbles out of the tip. Position the 3-way valve knob to position **D** (Figure 2). Re-insert the syringe into the valve luer fitting. Depress the syringe plunger until it will fit into the plunger head clamp. When doing this, some oil will flow from the syringe into the top port of the 3-way valve.

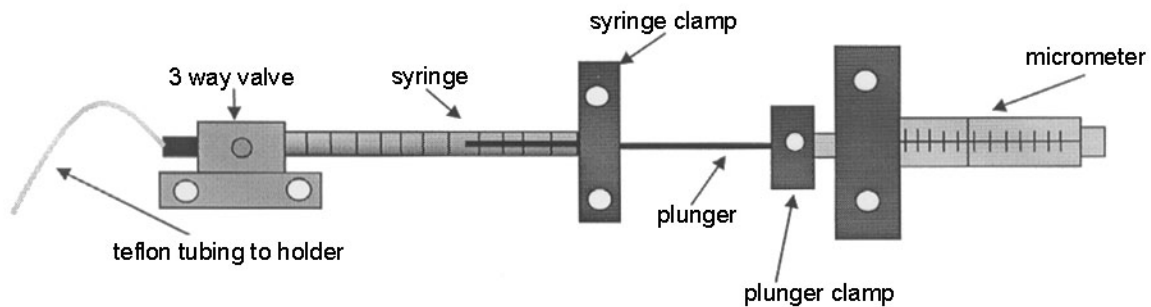


Figure 1. Top view of Manual Injector

Draw oil into a 10cc syringe and fit it into the top port of the 3-way valve. Turn the valve position knob to position **B**. Fill the injection tubing with oil by depressing the plunger of the 10cc syringe. Turn the valve knob to position **C**. You should now have a continuous oil path between the precision syringe and the injection tubing. Depress the plunger of the precision syringe by turning the micrometer. If you see any air bubbles visible in the tubing, turn the valve knob to position **B** and bleed the air bubbles out of the line by depressing the 10cc syringe.

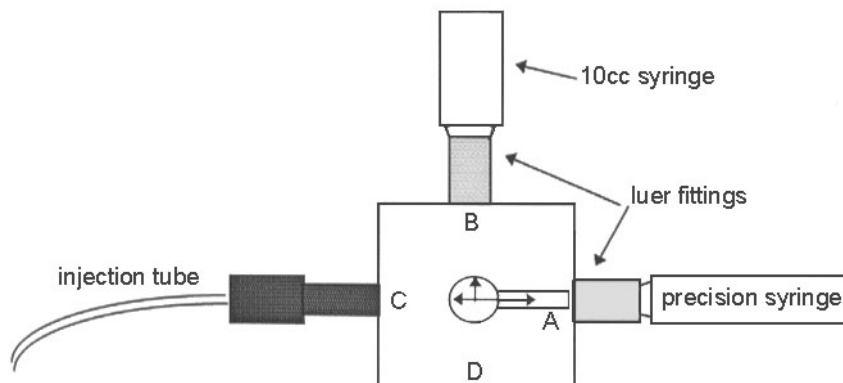


Figure 2. - Side view of 3-way valve assembly.

Insert filled precision syringe into luer fitting with valve knob in D position. Fill injection tubing with oil from 10cc syringe and knob in B position. Injections are performed with knob in C position.