

Raise the plunger thumbscrew (1), holding it up, insert the syringe plunger thumbpiece (3) into the T-slot in the plunger retainer. Lower the plunger retainer thumbscrew and tighten securely. Rotate the syringe clamp (6), 90 degrees, to hold the syringe (7) in place.

4. Set the plunger to its zero position by sliding the holder (8) up until it touches the needle, **then back it down about 1/64"** and tightening the two 4-40 socket head screws (4).
5. Verify that the needle (10) does not extend beyond the lower needle guide (11). Place your finger under the lower needle guide and check. The needle tip should not be felt. If the needle tip can be felt, the needle guide requires adjustment, consult factory.

## 4.2 Syringe Calibration

The syringe plunger must be properly calibrated to insure injection accuracy. The procedure is performed in the "Cobra Setup" section of the control program. Press the "Prog" key and select the "Cobra Setup" menu, press the Enter key and select the "Configuration" Menu line, press Enter. Now, with the down arrow key select "Vol Calib", press Enter. The "Syringe Setup" screen is now showing.

Manually adjust the plunger to zero (if required) by adjusting the holder up, until the syringe plunger touches the bottom of the syringe, then back it down about 1/64", tighten the two 4-40 socket head screws, press the Enter key.

The next screen adjusts the maximum stroke of the plunger. With the Left/Right arrow keys, move the plunger up, such that the end of the plunger is on the maximum graduation mark of the syringe installed. (Note, record the value show on the line "Volume" for future use). Press the Enter key. Next, using the Left/Right arrow keys, adjust the plunger stroke to the maximum position allowed on the syringe barrel. This is generally about 10% above the syringe volume. Press the Enter key.

NOTE: If the plunger motor "chatters", the syringe holder is set too high not allowing the plunger sensor to be reached. Loosen the two 4-40 socket head screws and slowly lower the holder until the motor stops chattering. The plunger sensor has now been homed. Look at the plunger to be sure it is at the "0" mark.

The plunger has now been set to the maximum graduation (100%) mark on the syringe scale. This will allow the software to properly calculate the sample and rinse volume parameters.

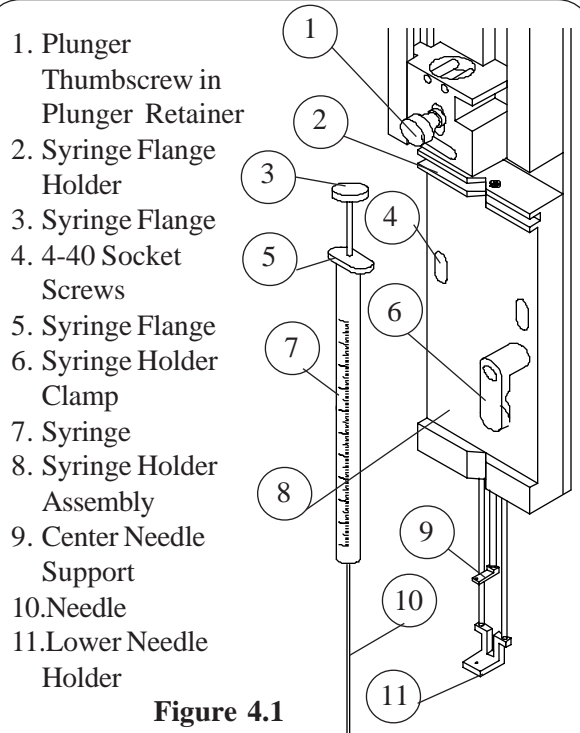


Figure 4.1

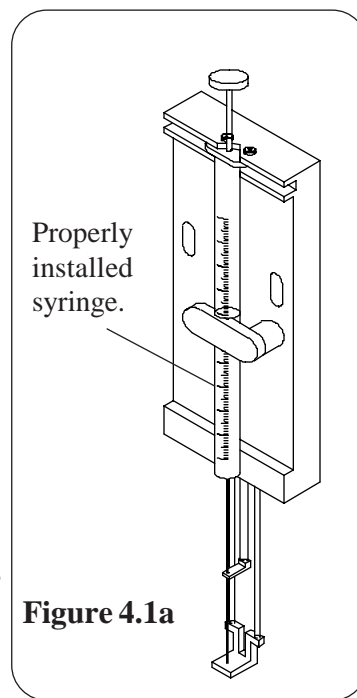


Figure 4.1a