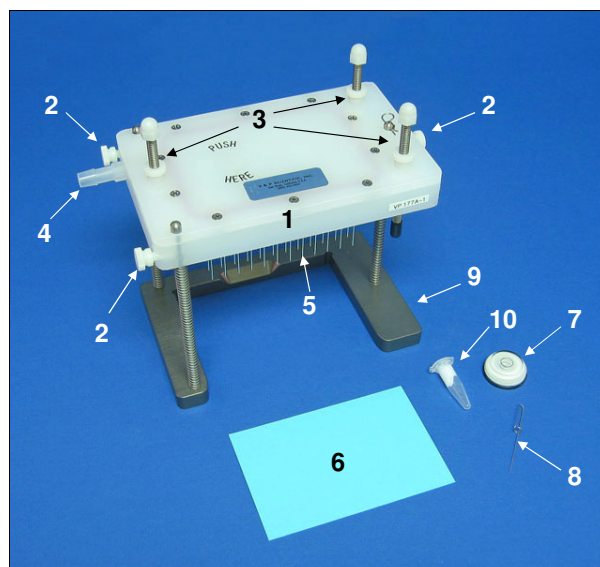
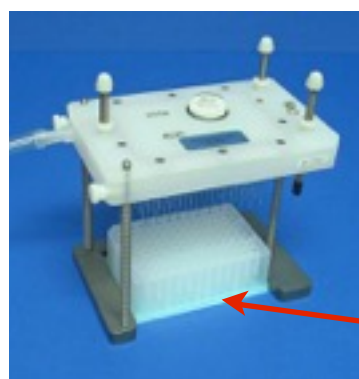


Setting up the 96-Well Aspirator



1 – Manifold	5 – Aspiration Tubes	9 – Manifold Base
2 – Thumb Screws for Z Height Adjustment	6 – Spacer	10 – Krytox Grease
3 – Z Height Set Screws with Lock Nut	7 – Bubble Level	
4 – Outlet Fitting for Tubing to Vacuum Trap	8 – Rapier for Cleaning Tubes	

1. Place the spacer under a microplate. Slide the spacer and microplate, under the VP 177A-1 (see picture below). **Note:** the spacer can be any height depending on how far into the wells the aspiration tubes need to go. You will need to empirically determine how much spacer you need based on the depth of your plate and the volume you want to remain after aspiration. Anything can be used as a spacer. It is needed to set the depth of the 96-well pins.



blue spacer and plate

- a. Make sure that the three Z height set screws are not set longer than the aspiration tubes.
- b. Loosen the three thumb screws and slide the manifold down until the tubes rest on the bottom of the wells of the microplate as in the figure below.



Metal Manifold Base

- c. Tighten the thumb screws to lock the manifold into place. Use the provided bubble level to ascertain that the manifold is level.
 - d. While in this down position, move the set screws so that the bottom of each screw touches the metal manifold base. Check the bubble level again and make adjustments if necessary. Lock the set screws into position by turning the lock nut on each screw so that they contact the top of the manifold.
 - e. Remove the microplate and spacer. Add one ml of water to each well to test how much liquid remains after aspiration (see below of operation of aspirator).
2. To operate the aspirator:
- a. With vacuum shut off valve in closed position, turn on vacuum. Press down on the Manifold with even pressure until the three pre-set Z height Set Screws (3) contact the base (9).
 - Either hold with hand or tighten Thumb Screws (2) to hold in place.
 - b. When sufficient vacuum has been created, open the shut off valve to allow the wells to be aspirated.
 - c. Remove the Manifold from the microplate after it has been aspirated by allowing it to spring back to starting position.
 - d. Close the vacuum shut off valve.
 - e. Replace the microplate with the next microplate to be aspirated.
3. To clean and store the aspirator:
- a. Drain the Manifold and aspirate three separate 100 ml aliquots of distilled water through the system. **DO NOT USE DE-IONIZED WATER**, as de-ionized water will corrode the stainless steel tubes.
 - b. Tip the system back and forth after each aliquot to ensure all water is aspirated from the manifold on each rinse.
 - c. Aspirate two separate 100 ml aliquots of alcohol (methanol, ethanol or isopropyl alcohol) through the Manifold. Tip the system back and forth to ensure all the alcohol is removed.
 - d. Pull air through the Manifold for 1- 2 minutes by leaving the vacuum on and shut off valve open.
 - e. Store in a clean dry area.
 - f. To autoclave, simply place the entire system into the autoclave. It is not necessary to remove any parts.

