

VP 177A-1 SERIES ASPIRATING MANIFOLD

CARE AND USE

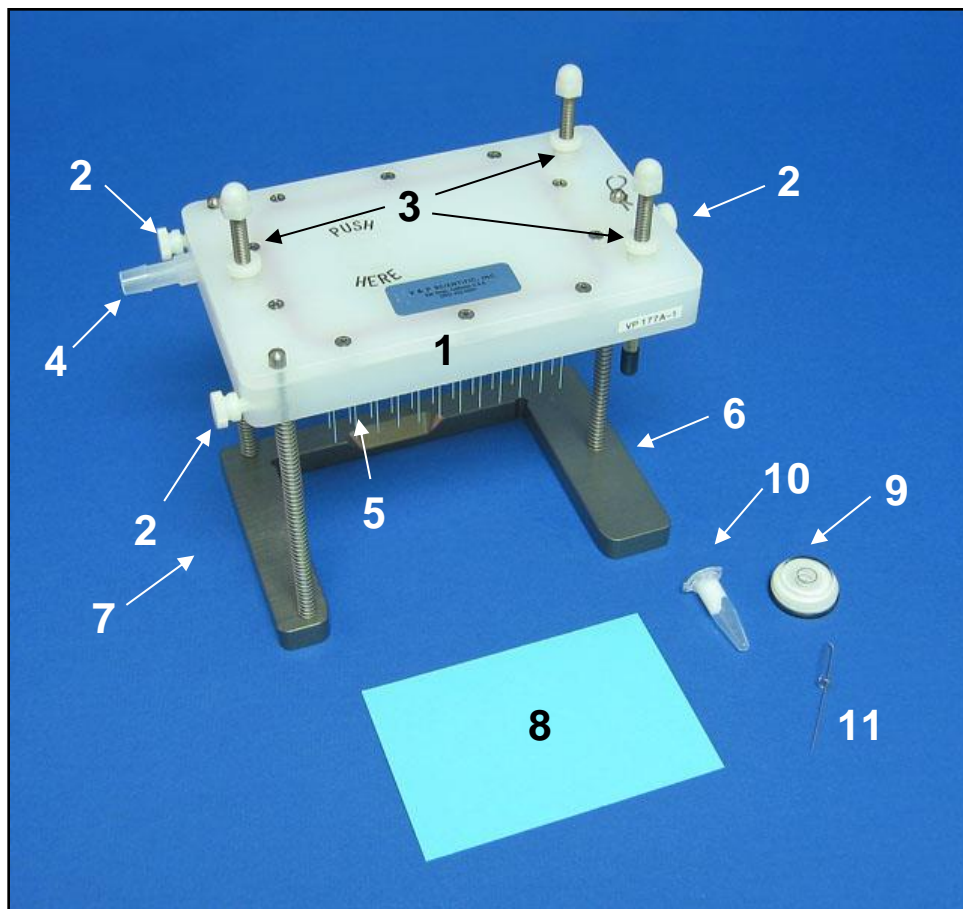


Figure 1. Parts of the VP 177A-1 Aspirating Manifold

PARTS GUIDE

| | | |
|---|----------------------|---|
| 1 – Manifold Body | 5 – Aspirating Tubes | 9 – Bubble Level |
| 2 – Thumb Screws for Holding Manifold in position | 6 – Manifold Base | 10 – Krytox Grease |
| 3 – Z Height Set Screws with Lock Nuts | 7 – Guide Rods | 11 – Rapier for cleaning Aspirating Tubes |
| 4 – Outlet Fitting for tubing to Vacuum Trap | 8 – Spacer | Vacuum Source with Trap (not included, not shown) |

Aspiration manifolds for entire microplate or rack of tubes:

VP 177A-1 ASPIRATION MANIFOLD, 96 Channel, 96 Well, Deep Well, or SLAS Tubes or Vials Rack, 19 Gauge, SS Tubes, 42mm Long, 9mm Spacing, Aluminum Slide-in Microplate Registration Feature

VP 177A-1-24 ASPIRATION MANIFOLD, 24 Channel, 24 Well, Deep Well Plate, or SLAS Tubes or Vials Rack, 19 Gauge, Stainless Steel Tubes, 42mm Long, 18mm Center Spacing, Aluminum Slide-in Microplate Registration Feature

VP 177A-1-40-16G ASPIRATION MANIFOLD, for 40 Position SBS Rack of Tubes, 16 Gauge Stainless Steel Tubes Center-To-Center Spacing 15.3mm (Column-To-Column) and 15.0mm (Row-To-Row), Adjustable Height, Aluminum Slide-in Microplate Registration Feature

IMPORTANT NOTE:

The Aspiring Manifold is chemically resistant to some common laboratory solvents (such as ethanol, methanol, isopropanol and DMSO) but not all (acetone or chloroform, for example). Please contact V&P Scientific if there are questions regarding chemical resistance of the Manifold to the liquid to be aspirated.

SETUP PART 1

Attaching Vacuum Source

1. Attach one end of a vacuum hose to the nozzle Outlet Fitting (4) on the Manifold (Figure 1) and other end to a shut-off valve (Figure 2). Place a vacuum trap to collect aspirated liquid between the shut-off valve and vacuum source. This vacuum source can be a pump or a central or "house" vacuum system.
2. Make sure all Aspiring Tubes are clear by aspirating distilled water (not deionized water*) from a microplate. If any Aspiring Tubes are clogged, use the Rapier (11) to clear them. See "Cleaning the System" section below for more details.

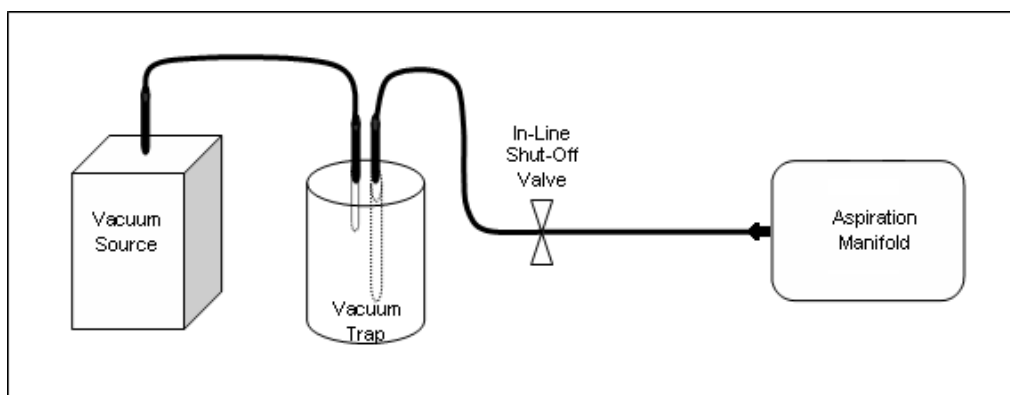


Figure 2. Manifold Setup: Connection to Vacuum Source

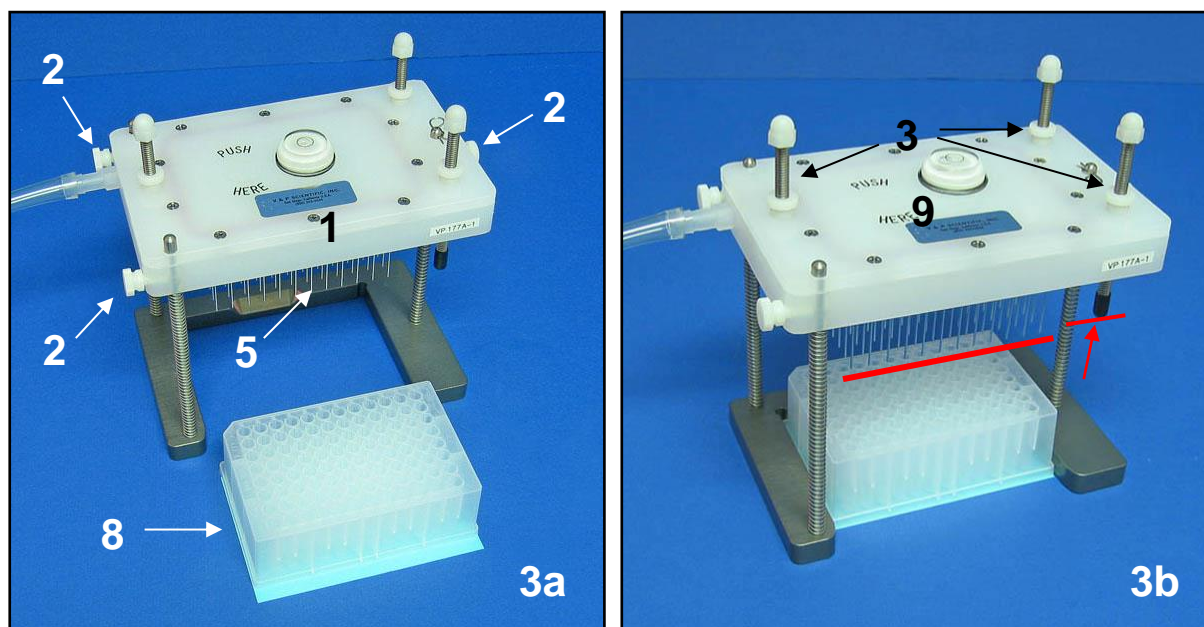
SETUP PART 2

Setting the Space between Aspirating Tubes and Bottom of Microplate Wells

1. Place the Spacer (8) under a microplate (Figure 3a). Slide the Spacer and microplate under the VP 177A-1 as in Figure 3b. Note: the Spacer can be any height depending on the desired distance between the bottom of the Aspirating Tubes (5) and the bottom of the wells.
2. Make sure the three Z Height Set Screws (3) are set so the exposed length below the Manifold Body is shorter than the Aspirating Tubes (5) (See Figure 3b, red lines and arrow).
3. Loosen the three Thumb Screws (2) and slide the Manifold Body down on the three Guide Rods (7) until the Aspirating Tubes (5) rest on the inside bottom of the microplate wells as in Figure 3c. Tighten the Thumb Screws to lock the Manifold Body into place. Use the provided Bubble Level (9) to determine if the Manifold Body is level and adjust if necessary.

Always use distilled H₂O and not deionized H₂O in all Manifold procedures. Long term exposure to deionized H₂O will corrode the stainless steel tubes.

4. With the Manifold Body (1) in the down position, adjust the Z Height Set Screws (3) until the bottom of each Screw touches the Manifold Base (6) (See red circles in Figure 3c). Check the Bubble Level (9) again and adjust if necessary. Lock the Z Height Set Screws (3) into position by turning the Lock Nut on each Screw until it contacts the top surface of the Manifold Body.
5. Loosen the three Thumb Screws (2), allow the Manifold Body (1) to spring back to its starting position above the microplate, and remove the microplate and Spacer (8). The VP 177A-1 is now configured so that the Aspirating Tubes (5) will be about 0.5 millimeters (mm) above the bottom of the wells during aspiration. For a greater separation, use a thicker spacer.



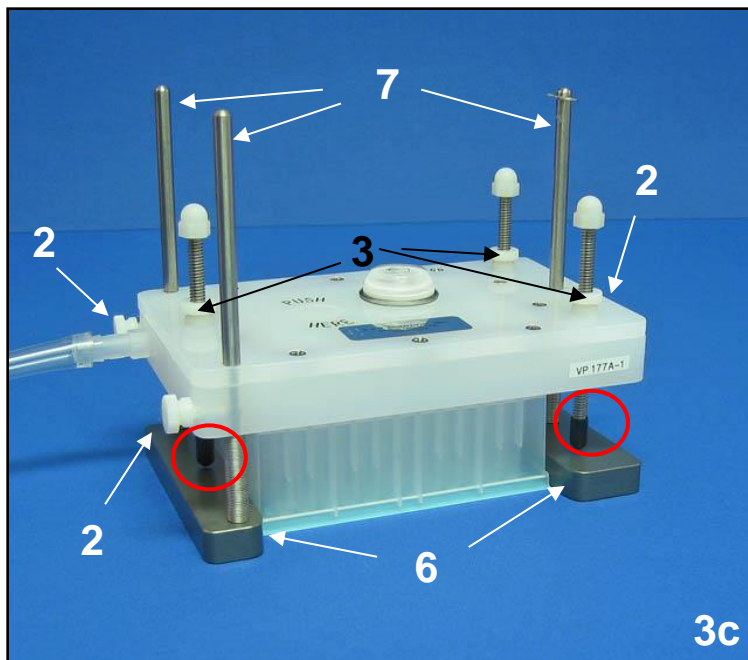


Figure 3(a-c). Use of Spacer in Manifold Setup Part 2

OPERATION

Aspirating Liquid from a Microplate

1. Make sure Manifold is set up as described in the Setup Section:
 - a. The Manifold is connected to a vacuum source through the Outlet Fitting (4) on the Body (Setup Part 1), with a vacuum trap in between to collect the aspirated liquid.
 - b. The Aspirating Tubes (5) are set for the desired Z height (Setup Part 2).
2. Place 96-well plate under the Aspirating Tubes (5) of the Manifold.
3. With vacuum shut-off valve in closed position, turn on vacuum. Press down on top of the Manifold body with even pressure until the three pre-set Z height Set Screws (3) contact the Manifold Base (6). Either hold with hand or tighten Thumb Screws (2) to hold in place. When sufficient vacuum has been created, open the shut off valve to allow the wells to be aspirated.
4. Remove the Manifold from the microplate after it has been aspirated by allowing it to spring back to starting position. Close the vacuum shut off valve.
5. Replace the microplate with the next microplate to be aspirated and repeat Steps 3 and 4 above.

CARE

Cleaning the System by Aspirating

1. Make sure Manifold is set up as described in the Setup Section:
 - a. The Manifold is connected to a vacuum source through the Outlet Fitting (4) on the Body, with a vacuum trap in between to collect the aspirated liquid (Setup Part 1).
 - b. The Aspirating Tubes (5) are set for the desired Z height (Setup Part 2).
2. Position a tip lid box or other suitable container filled with wash solution (distilled water* first, then 100% alcohol, for example, isopropanol, ethanol or methanol) under the Manifold.
3. 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. Either hold with hand or tighten Thumb Screws (2) to hold in place. When sufficient vacuum has been created, open the shut off valve to allow the liquid to be aspirated through Manifold.
4. Tip the Manifold toward the Outlet Fitting (4) to ensure all wash solution is removed from the Manifold by the vacuum.
5. Use the vacuum to aspirate 2-4 ~100ml volumes of each wash liquid. After the last wash of alcohol, pull air through the Manifold for 1- 2 minutes by leaving the vacuum on and in-line shut off valve open.

Always use distilled H₂O and not deionized H₂O in all Manifold procedures. Long term exposure to deionized H₂O will corrode the stainless steel Aspirating Tubes.

Storage

1. For short-term storage (for 1-2 hours depending on the volatility of the liquid), keep the tips of the stainless steel Aspirating Tubes (5) in the liquid being aspirated or distilled water (*not deionized water, see note above). This will prevent the liquid from evaporating and leaving material behind that might clog the Aspirating Tubes (5).
2. For long-term storage (more than 2 hours) clean the Manifold as described above for "Cleaning by Aspirating".
3. After cleaning, store in a clean dry area.

Sterilization

1. The Manifold can be sterilized by autoclaving. It is not necessary to remove any parts.
2. Alternatively the Manifold can be sterilized by wiping with a cloth dampened by a dilute bleach solution, followed by a sterile water wipe.

TROUBLESHOOTING

PROBLEM: Manifold body does not move easily up and down on guide rods.

SOLUTION: Use Krytox Grease (supplied) to lubricate guide rods.

PROBLEM: Not all wells are aspirating evenly

SOLUTIONS:

1. Use Rapier to clear tubes
2. Create a greater vacuum.
3. Move the microplate around while aspirating. If the Aspirating Tubes come into contact with the bottom of the wells, this can lead to incomplete aspiration. If problem persists, se-set Z height of the Aspirating Tubes as described in Setup Part 2.
4. Clean system by aspirating as described in Care Section on page 6.

TECHNICAL ASSISTANCE

If further technical assistance is required contact V&P Scientific, Inc. 858-455-0643 sales@vpsci.com

WARRANTY

V&P Scientific, Inc. warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for one year. This warranty begins from the date of delivery by V&P Scientific.

In the event this product fails under normal laboratory conditions within the specified period of time because of a defect in material or workmanship, V&P Scientific will, at its option, repair or replace the product. Damage to the product caused by user negligence is not covered.

This warranty is made in lieu of other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose. V&P Scientific shall not be liable for loss or damages arising from the use of these products nor for consequential damages of any kind.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Contact V&P Scientific for return authorization and shipping instructions.