V&P SCIENTIFIC, INC.
Innovators in Liquid Handling, Arraying and Mixing

TECHNICAL NOTE 118

Care and Use of the Slanted 96 Tube Aspiration Manifold for Magnetic Bead Washing

VP 178D, VP 381E, VP 771E-2, VP 771F

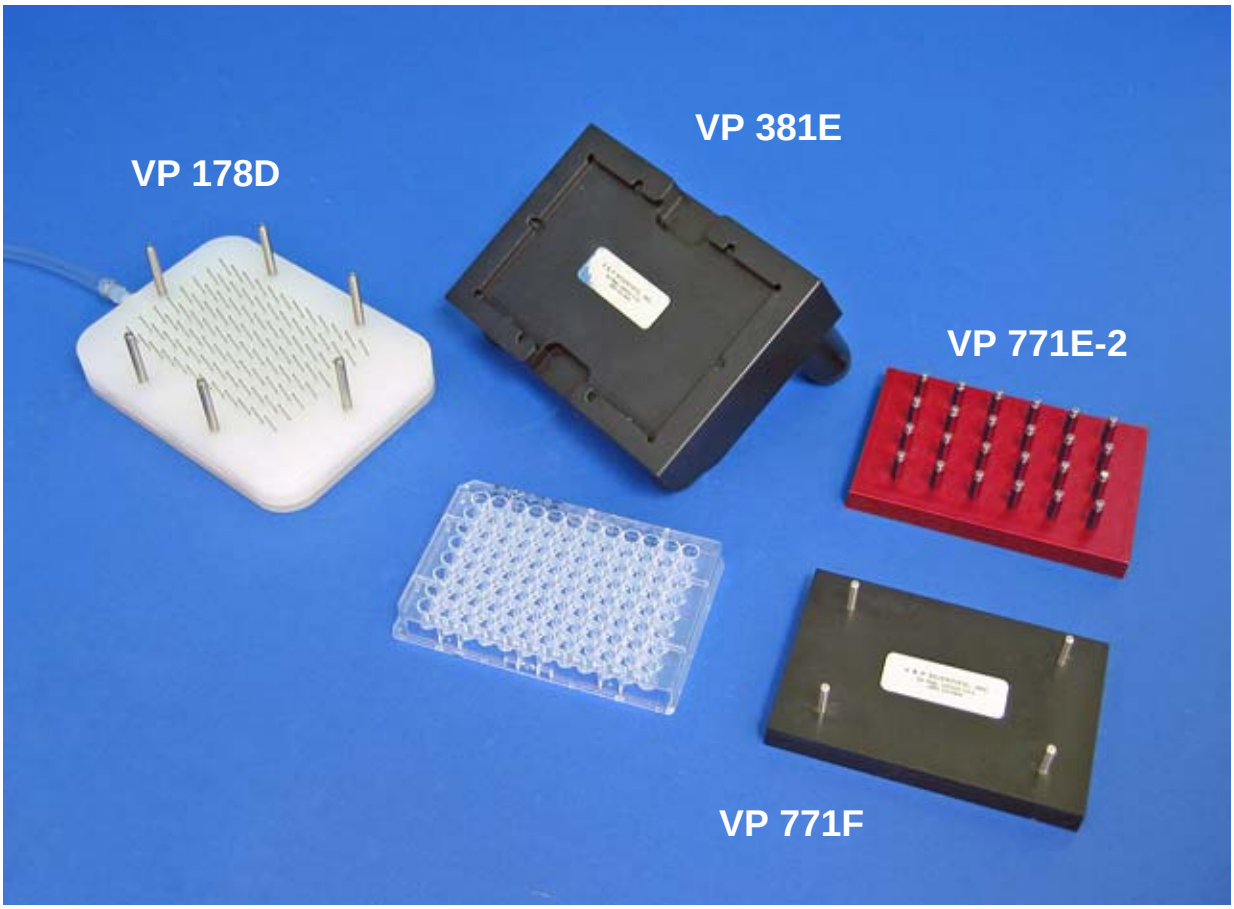


Figure 1. The VP 178D slant tube aspirator is designed to work in conjunction with the magnetic separation system VP 771E-2 and the VP 381E.

Set-up

1. Place red magnet-containing microplate support (VP 771E-2) into the registration ramp (VP 381E). Alternatively, use the non-magnetic support (VP 771F) to perform aspiration without magnetic bead separation.

2. Attach one end of a vacuum hose to the nozzle on the aspiration manifold (VP 178D) and other end to a valve connected to a vacuum source (see Figure 2 below).

9823 Pacific Heights Boulevard, Suite T, San Diego, CA 92121
(858) 455-0643 ● Fax: (858) 455-0703 ● email: sales@vp-scientific.com

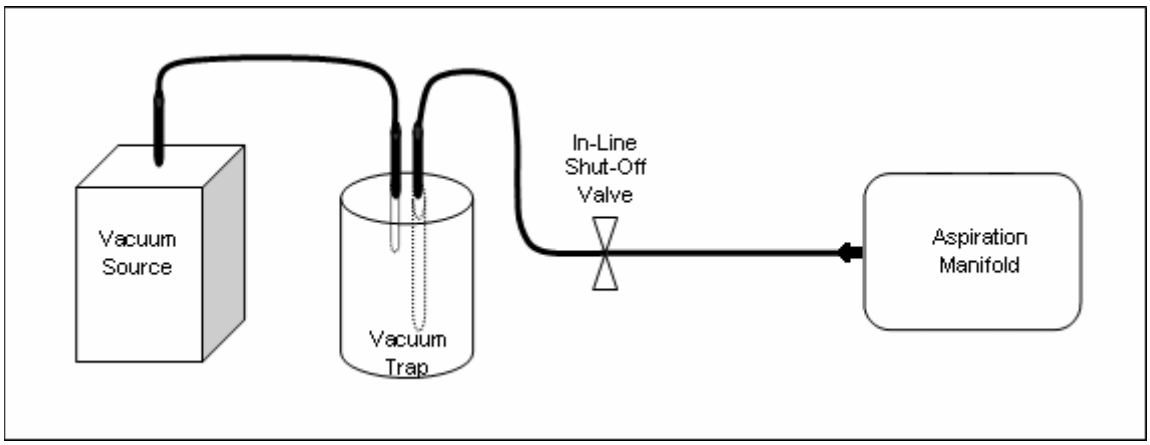


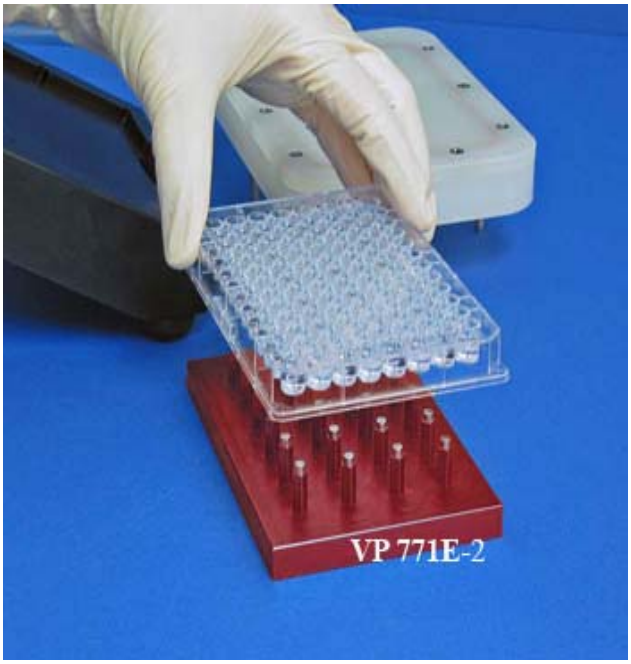
Figure 2. Connecting the Manifold to Vacuum System.

Operation

1. Make sure all tubes of the aspiration manifold (VP 178D) are clear by aspirating distilled water from a microplate. If tubes are clogged use the rapier (provided) to clean out the tubes.

2. Place the microplate containing magnetic bead solution onto magnetic separation pegs of the V P771E. Allow the beads to collect next to the magnets for a period of time appropriate to your application.

3. Place the VP 178D over the microplate. The guide pins on the aspiration manifold register to alignment holes on the registration ramp (VP 381E) so the tips of the slant tubes are positioned in the middle of the wells (Figure 3).



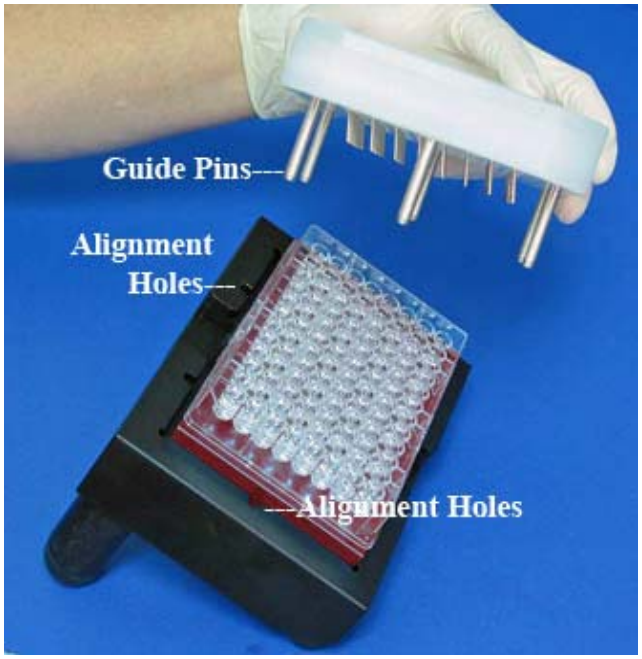


Figure 3. Placement of microplate onto VP 771E-2 and then VP 178D over microplate.

4. Once the slant tubes are near the bottom of the wells, push the magnetic separator and microplate up 3 mm with your thumb or finger as indicated in Figure 4. This places the tip of the slant tube in the corner of the lowest part of the well and away from the magnetically captured beads.

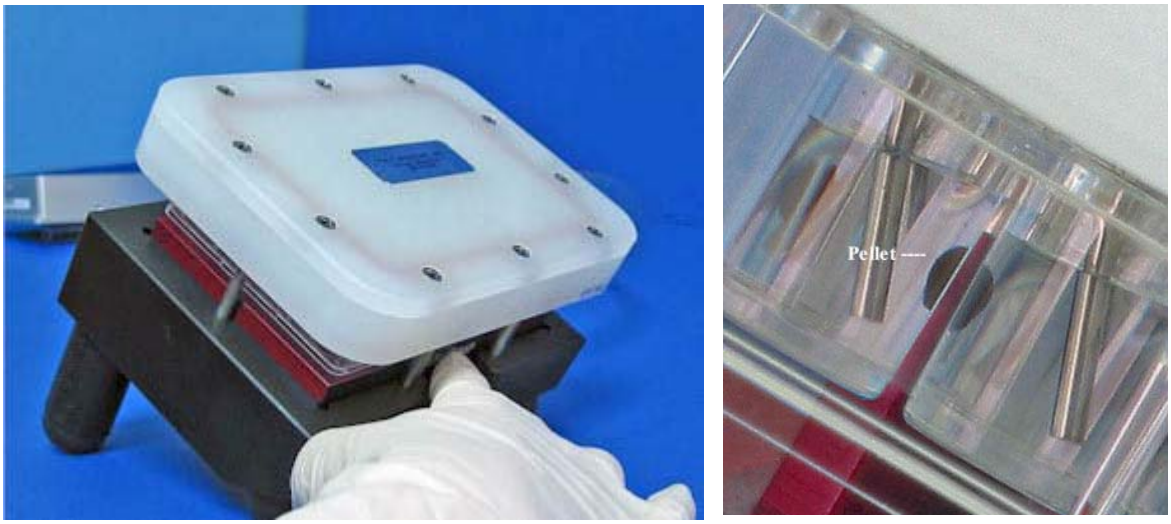


Figure 4. Adjustment of slant tube to lowest part of well.

5. When a great enough vacuum has been created, open the valve to allow the wells to be aspirated. Continue to hold magnetic separator and microplate in the optimal position throughout.

6. After all liquid has been aspirated, allow the magnetic separator and the microplate to return to the starting position by removing your thumb or finger. The slant tubes will move back to middle of the wells. Turn off the vacuum and then remove the VP 178D.

Storage

1. For short-term storage, keep the tips of the metal aspirate tubes in the liquid you are using in the plates or distilled water. This will prevent the liquid from drying and clogging the tubes.

2. For long-term storage, drain the manifold and aspirate three separate 100 ml distilled water aliquots through the system. DO NOT USE DE-IONIZED WATER, as de-ionized water will corrode the stainless steel tubes.

3. Tip the system back and forth after each aliquot to ensure all water is aspirated from the manifold on each rinse.

4. Aspirate two separate 50 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.

5. Store in a clean dry area.

6. The aspirator manifold can be sterilized by autoclaving.

Troubleshooting

PROBLEM: Not all wells being aspirated.

SOLUTIONS:

1. Use rapier to clear tubes.
2. Create a greater vacuum.
3. Wiggle VP 178D while aspirating. Sometimes the tubes may be touching the bottom of the wells, which leads to incorrect aspiration.
4. If wells are still not being aspirated, contact V&P Scientific for more technical assistance.