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

**TECHNICAL NOTE 124**

# Care and Use of the VP 546C or VP 546C-1 Fountain Wash Reservoir

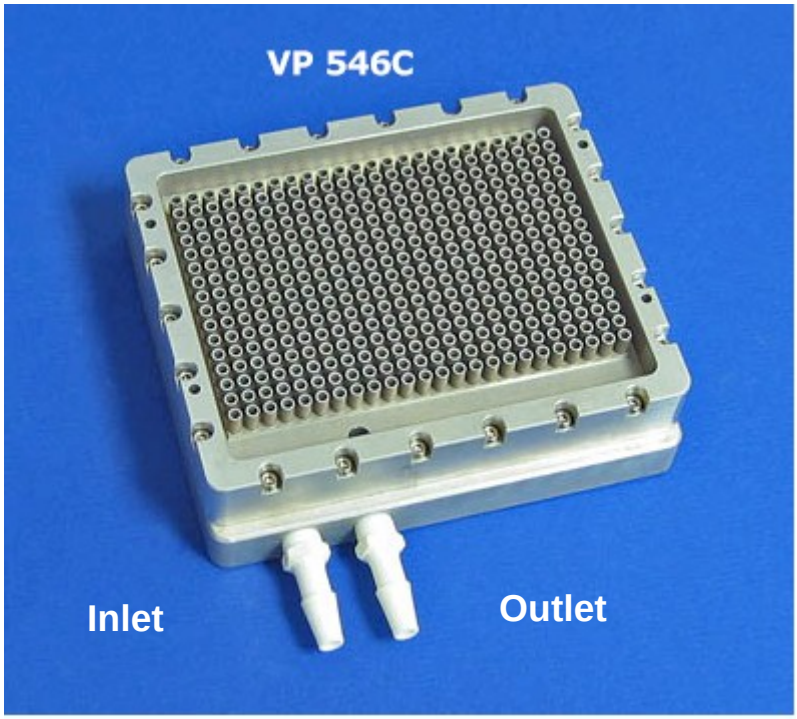


**Figure 1. The VP 546C with inlet and outlet hose barb fittings.**

## Parts Provided with Reservoir

1. Polypropylene inlet/outlet ports:
    a. Small Polypropylene Single-Barbed Tube Fitting: 1/8 NPT thread with 7/16” hex to barb for ¼” ID tubing (VP 1860-6)
    b. Large Polypropylene Single-Barbed Tube Fitting: 1/8"NPT thread to barb for 3/8" Tube ID (McMasterCarr 33415K206)
2. Single fountain aspiration device:
    a. Male Luer Slip to 200 series barb 3/32” (2.25mm) ID tubing (MTLS22)
    b. Female Luer lug style to classic series barb 1/8” (3mm) ID tubing (FTL30-6)
    c. Tygon tubing, 0.12” (3.1 mm) ID, hose barb 1/8” (3.2mm) (Masterflex 06409-16)
    d. Double-Barbed Tube Fitting Reducing Coupling: 5/16 to 5/32 barbs for 1/4" X 1/8" Tube ID (McMasterCarr 53415K118)
3. Disposable pin tool, 384 pin (Sample VP 248)
4. Cleaning rapier (V&P FP9 tube pin)

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## Parts Not Provided with Reservoir

1. Inlet tubing: Viton L/S tubing, 4.8 mm ID, from Masterflex (06412-25), hose barb 3/16 (4.8mm)
2. Outlet tubing: Viton L/S tubing, 7.9 mm ID, from Masterflex (06412-18), hose barb 3/8 (9.5mm)
3. Vacuum source with a trap and in-line filter
4. Peristaltic pump such as Masterflex MODEL 7550-20

## Set-up and Operation

1. Attach tubing to the inlet and outlet ports:
    a. Viton L/S tubing, 4.8 mm ID, from Masterflex (06412-25), hose barb 3/16 (4.8mm)
    b. Viton L/S tubing, 7.9 mm ID, from Masterflex (06412-18), hose barb 3/8 (9.5mm)

2. Set up Peristaltic Pump according to manufacturers instructions. Place inlet tubing into source container and outlet tubing into appropriate disposal container.

3. Attach the “single fountain aspiration device” to a vacuum source with a vacuum trap in between.

4. Begin pumping liquid to reservoir. Allow all fountains to fill and spill over.

5. Once liquid is moving out of the outlet begin process of removing air from the system. Lift corner of reservoir that is opposite the inlet/outlet about ¾” off the surface it is on. Maintaining the angle, gently tap the reservoir on the bench top while using the single fountain aspiration device to pull bubbles out through the fountain at the upper right corner. Note: Take care not to jam the aspiration device too forcefully into the fountain; they are made of aluminum and could become misshapen.

6. Note: Do not allow air to be introduced into tubing leading from source bottle to wash reservoir!!

7. Test that all the fountains are flowing freely: Place disposable pin tool into fountains as if washing it. After removing pin tool from fountains observe that all fountains are re-filling. Use single fountain aspiration device to pull bubbles out through fountains that are seen to be slow to re-fill after removing pin tool. (Tips: Run pump at a slower rate and use a flashlight to view the fountains.)

## Storage

1. For short-term storage, keep the Reservoir filled with the liquid being used. This will prevent the liquid from drying and clogging the tubes.

2. For long-term storage, drain the Reservoir and flow distilled water through the system. Use the disposable pin tool as in the set-up to cause the fountains to partially empty and then re-fill.

3. Then flush the reservoir with 100% alcohol (methanol, ethanol or isopropyl alcohol).

4. After alcohol flush, attach to a vacuum source and aspirate all liquid from reservoir. Allow vacuum to run for several minutes to completely dry the reservoir.

5. Store in a clean dry area.

## Troubleshooting

PROBLEM: Not all fountains re-fill after fluid is displaced by pin tool.

SOLUTIONS:

1. Pull air bubbles out with vacuum aspiration device.
2. Use rapier to clear holes at bottom of fountains. This involves taking the two halves of the reservoir apart and poking the holes from the underside of the top part. Proceed with caution when removing the screws, as the Allen wrench does not fit tightly in the cap head. The screws can be easily stripped. Also be careful of the thin gasket between the halves of the reservoir, taking note of its placement so that it is correctly replaced.
3. If still not functioning properly, contact V&P Scientific for additional technical assistance.