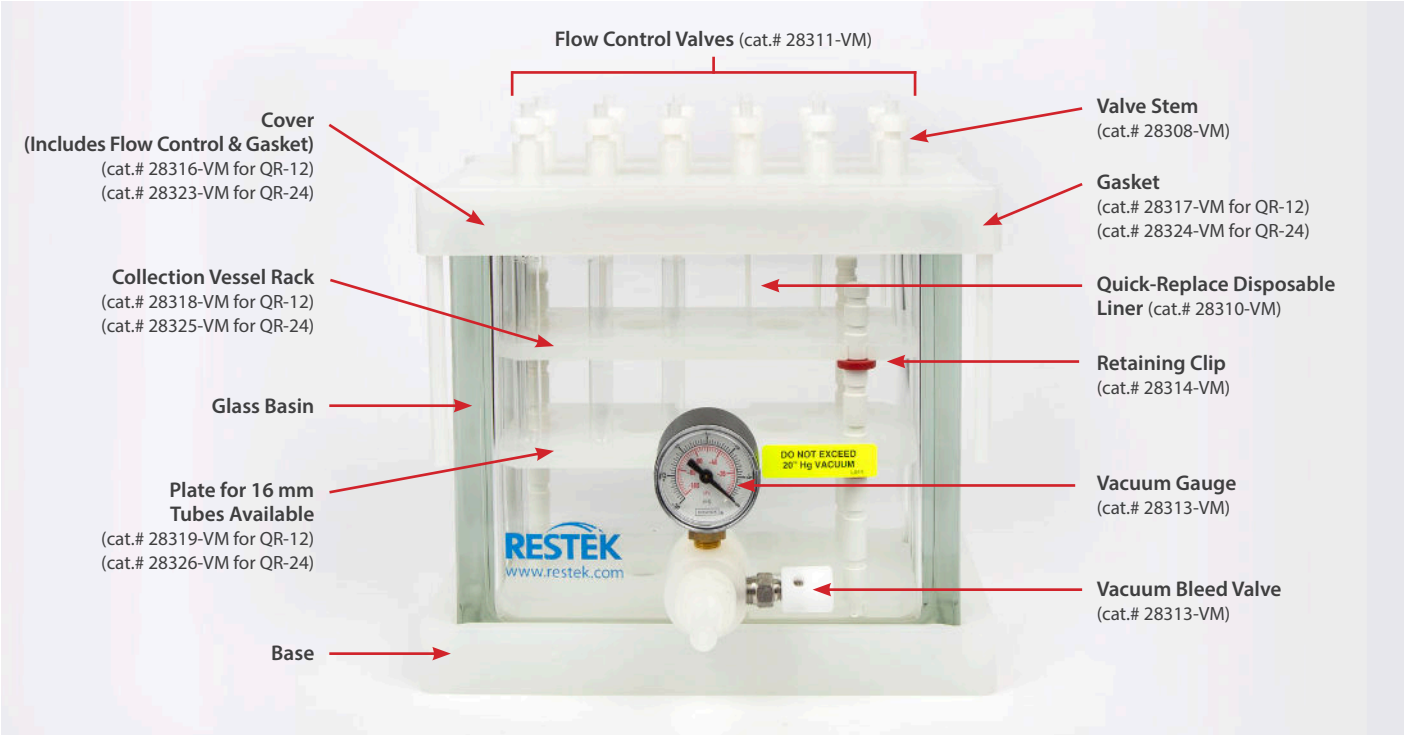
Resprep QR-12 and QR-24 Quick-Replace Vacuum Manifolds

cat.# 28298-VM, 28299-VM

Before You Start

- Familiarize yourself with the labeled components shown on the assembled manifold in Figure 1.
- Do not overtighten the flow control valves—this can damage the control mechanism. To maximize valve lifetime, valves that are not in use should still be fitted with a liner and fully closed.
- If using collection vessels with a small inside diameter (e.g., some 1 mL autosampler vials), use a slow solvent flow rate (e.g., 1 drop/second) to ensure that all liquid is recovered in the vessel.
- Note that the solvent levels in the sample collection vessels must not rise high enough to touch the ends of the liners or guides.
- Never allow the vacuum to go above 20" (50.8 cm) Hg. Exceeding this level may cause implosion and will void the warranty.

Figure 1: Resprep QR-12 and QR-24 Quick-Replace Vacuum Manifold



Assembling the Collection Vessel Rack

The collection vessel rack system will hold a wide range of collection vessels using an assembly of plates and retaining clips that can easily be reconfigured to accommodate different vessel types.

1. Select and position the plates to best accommodate your collection vessels. If test tubes are used as collection vessels, use a dimpled plate underneath them to center the tubes.
2. Align the three small holes in the plates with the three posts attached to the platform. Adjust the plate height so that the liners will be no further than 1 cm inside the collection vessels when the manifold cover is in place.
4. Secure the plates on the rack posts by attaching the retaining clips to the slots in the posts that are directly under the plate to be supported.
5. Place the collection vessels in the rack; then, place the rack in the manifold with the base cutout facing the vacuum gauge. Confirm that the liners do not extend more than 1 cm into the collection vessels when the manifold cover is in place.

Assembling the Manifold

Resprep Quick-Replace disposable valve liners reduce contamination between samples by providing a continuous sample flow path through the manifold that is easily replaced between samples. To maximize flow control valve lifetime, valves that are not in use should still be fitted with a liner and closed prior to sample extraction.

1. If using the optional stainless-steel liner guides, remove the manifold cover and attach a guide on the male luer fitting at the bottom of each flow control valve (Figure 2). The guides do not affect manifold performance, they simply prevent the liners from bending, making it easier to align them with collection vessels.
2. Ensure that all control valves are fully open by turning each valve top one complete turn counterclockwise.
3. Pick up a disposable valve liner by the tubing just below the hub and insert the end of the tubing into the hole in the center of a control valve stem. Slowly push the tubing all the way down through the flow control valve (Figure 3).

Warning: Pushing too hard or too quickly can cause the tubing to bend or kink, making insertion more difficult. Rotating the tubing between your thumb and index finger will make insertion easier.

4. Align the valve liner hub so that its side flanges fit into the matching oval slot on the top of the flow control valve stem. Press down on the top of the hub to seat the barb firmly in the control valve.
5. Close all valves by turning each one clockwise until completely closed.
6. Install an SPE cartridge into each flow control valve by grasping the valve top with one hand while inserting the male luer fitting of an SPE cartridge into the hub of the valve liner with the other hand. Holding the valve steady, press down on the SPE cartridge while turning in one direction to firmly seat the cartridge in the hub.

Figure 2: A Properly Installed Stainless-Steel Liner Guide

Figure 3: Disposable Resprep Quick-Replace valve liners provide a clean, continuous flow path that is easily replaced between samples to eliminate contamination.

Connecting the Manifold to a Vacuum

1. Install a liquid waste trap between the manifold vacuum chamber and the vacuum source by attaching a side arm flask with a hose.
2. Use vacuum tubing to connect the vacuum source to the trap and to connect the trap to the manifold.

Using the Manifold

Specific procedures vary by method and cartridge type. Consult your method or the SPE cartridge instructions for details on conditioning, washing, and eluting into collection vessels. The following steps are general instructions for controlling the flow of liquids through the manifold.

1. Put the manifold cover on the basin and open the vacuum bleed valve by turning it counterclockwise.
2. Liquids are typically added to the SPE cartridges with the flow control valves closed. Close each valve by turning it fully clockwise. To maintain proper vacuum, valves without SPE cartridges should also be closed during the extraction process.
3. Turn the vacuum on at the source.
4. Add solvent or sample to each SPE cartridge following your method's specifications or the instructions for the specific cartridge that you are using.
5. Partially open the flow control valve by rotating it 1/4 turn counterclockwise.
6. Slowly close the vacuum bleed valve until the gauge indicates the desired vacuum level. As the solvent level in each cartridge nears the packing bed, rotate the flow control valve clockwise, to slow the flow. When the solvent in a cartridge reaches the packing bed, fully close the flow control valve for that cartridge.

   Note: A dropwise flow usually is best, but rates up to 5 mL/min are acceptable. Do not exceed a vacuum of 20" (50.8 cm) Hg.
7. To stop flow and release the vacuum, open the vacuum bleed valve.
8. After final sample elution is complete, dilute, evaporate, or filter if necessary prior to analysis.

Removing Resprep Quick-Replace Valve Liners

1. Remove the manifold cover and use an adsorbent lab tissue to wipe the end of each liner and, if installed, stainless-steel tubing guide.
2. Replace the cover and open all flow control valves by turning them one full turn counterclockwise.
3. Grasp the top of each SPE cartridge and slowly pull straight up using a gentle rocking motion, but without twisting, until the liner hub is free of the valve seat. If the valve is properly opened, the PTFE tubing should remain attached to the hub, and the liner and hub can be removed as a unit. Occasionally, the tubing may pull free from the hub. In these cases, remove the tubing from below by pulling on it gently.
4. To install new Resprep Quick-Replace valve liners prior to the next sample, follow the instructions in the Assembling the Manifold section.

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