



About the Manifold

Vacuum Manifold

70147-3

Description

Novagen's Vacuum Manifold system for sample processing consists of a clear, rugged glass chamber to which a vacuum is applied, a chemical-resistant polypropylene lid, and a set of accessories for convenience in sample handling. The manifold is designed for consistent processing and elution of up to 12 samples simultaneously. Loading, washing, and elution steps can be performed rapidly, and all fractions can be collected in individual tubes because of the unique design of the rack used in the vacuum chamber. Fractions can be collected in either 1.5–2.0 ml tubes or in 15 ml conical tubes. Placement of the large reservoir in the glass chamber enables large volume collection of up to 1 liter.

The Vacuum Manifold can be used to draw a sample through any medium or column configured with compatible Luer-type fittings. The adjustable rack placed in the glass vacuum chamber will accommodate a variety of sample collection vessels. The manifold is ideal for use with Novagen's His•Bind® Quick Cartridges and Columns for rapid affinity purification of appropriate fusion proteins.

An external vacuum source controls the vacuum level (along with the pressure release valve); individual stopcocks for each port enable single column control. The rugged glass chamber and polypropylene lid are rate to withstand vacuum levels of up to 10 niches of Hg.

Components

The Vacuum Manifold comes with all of the components listed in the following table. Parts in the table are itemized for replacement orders only. Please contact technical service for pricing and availability.

| Description | No. of items | Cat. No. |
|--|--------------|----------|
| Glass Vacuum Chamber | 1 | 71306 |
| Vacuum Gauge/Valve Assembly | 1 | 71307 |
| Cover, Gasket, Legs for Cover, and 12 Stopcocks | 1 | 71305 |
| Teflon® Needles | 12 | 71309 |
| Collection Rack – shelves, legs, clips and posts | 1 | 71310 |
| Polypropylene Reservoir Liner | 1 | |
| Individual replacement parts | | |
| Gaskets | 2 | 71308 |
| Stopcocks | 12 | 71311 |
| Female Luer Fittings | 2 | 71312 |
| Male Luer Fittings | 2 | 71313 |
| Legs for Cover | 4 | 71314 |

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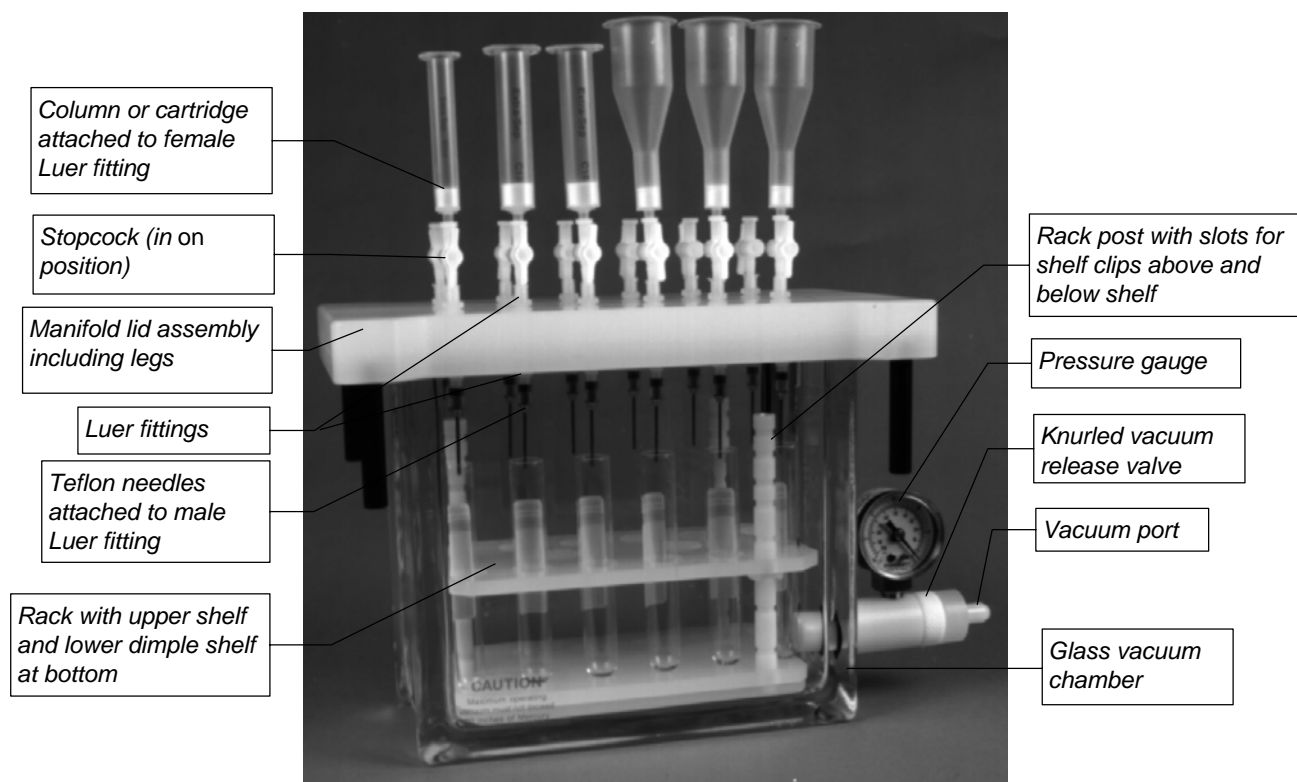
Vacuum Manifold Assembly

Assembling the lid, gasket, needle and stopcocks

Refer to Figure 1 for location of parts.

1. Screw the four black legs into the manifold lid.
2. Check to ensure that the white plastic lid gasket is flat and properly seated in the groove around the underside of the lid (not shown in Fig. 1).
3. Attach the Teflon[®] needles to the male Luer connection fittings on the underside of the manifold lid. Twist to attach.
4. Insert the stopcocks into the female Luer fittings on the topside of the lid.
5. Press lightly and rotate the valves slightly to ensure positive seating of the stopcock.

Figure 1. Manifold setup including lid assembly and rack.





Assembling the Collection Rack

1. Screw the three rack posts into the base plate of the platform (white posts with slots). See Fig. 1 for location of parts.
2. Select one or more of the shelves that best accommodates your collection vessel and application (see table below). Place the dimple shelf on the bottom of the rack to stabilize tubes, if necessary. If large volumes are being collected (up to 1 L), simply place the large reservoir inside the glass chamber instead of the rack.

| Tube Type | Shelf type |
|------------------------------|------------------|
| 15 ml Conical Screw Cap Tube | 16 mm Tube Shelf |
| 15 ml Culture Snap Cap Tube | 16 mm Tube Shelf |
| 6 ml Culture Snap Cap Tube | 13 mm Tube Shelf |
| 2 ml Cryo-vial | 13 mm Tube Shelf |
| 1.7 ml Screw Cap Microtube | Microtube Shelf |
| 2 ml Screw Cap Microtube | Microtube Shelf |
| 1.7 ml Snap Cap Microtube | Microtube Shelf |

3. Align the three holes in the shelf with the three posts attached to the base plate and lower the shelf to the correct height. Adjust shelf height so that the sample delivery needles attached to the manifold lid will be suspended inside the collection vessels when the lid is placed on the glass chamber.

Note: The upper half of the rack posts have slots to accommodate 2 clips close together (at 2 height positions): one to secure both the top and bottom sides of the shelf. When using this feature, the shelf will be held tightly in place and the larger holes in the middle of the shelf can be used as finger holes to remove the entire rack from the glass chamber without disturbing the collection tubes.

4. Secure the shelf on the rack posts by holding the tab and sliding the C-shaped support clips (shelf clips) into the slots in the posts directly under the shelf (and also above the shelf for convenience). Slide the tabs away from the outer edges of the rack.
5. Assemble your collection tubes in the rack and place the entire assembly into the glass chamber.
6. Center and then set the lid on the glass chamber. It is now ready for attachment of columns in the stopcocks.



Vacuum Manifold Operation

Proper use of this manifold requires a vacuum source capable of drawing a minimum of 3 inches of Hg and a maximum of 20 inches of Hg (gauge is calibrated in inches of mercury). Refer to Figure 1 for location of parts.

Important: Do not exceed a vacuum of 20 inches of Hg.

1. Connect a stop filter or liquid trap between the vacuum source and the manifold chamber vacuum port (use vacuum tubing).
2. Insert the collection rack or reservoir container into the glass chamber.
3. Align the needles in the lid with the collection tubes/liner and place the manifold lid onto the glass chamber. A snug fit indicates proper seating of the lid and seal.
4. Turn all stopcocks to the *off* position (horizontal).
5. Insert the male Luer end of the cartridges (matrix reservoir) into the female Luer stopcock. Twist the reservoir into the stopcock to ensure a proper connection.
6. Load the sample (or a portion of it) into the matrix reservoir.
7. Close the vacuum release valve (knurled ring adjacent to the vacuum gauge) and apply a vacuum. Monitor the amount of vacuum and adjust by *slowly* turning the release valve, if necessary.
8. Once the vacuum is stable, draw your samples through the matrix in the cartridges by slowly turning the stopcocks to the open, vertical, position.

Note: Good sample capture may depend on the rate at which the sample is drawn through the matrix. Viscosity of the sample and the mesh size of the matrix affect the flow rate.

9. When finished collecting samples, first stop the sample flow by turning the stopcock to the closed, horizontal, position. Then release the vacuum by slowly opening the vacuum release valve followed by turning off the vacuum source.

Cleaning and handling

Cleaning of the manifold should be done immediately following each use.

Important: Do not immerse the glass chamber in liquid or subject it to autoclaving. The vacuum gauge/valve assembly is not designed for immersion in water.

Remove the stopcocks and the Teflon[®] needles from the manifold lid by twisting them off of the Luer fittings. Rinse each with water. Make a 1% bleach solution and soak the needles and stopcocks for 10 minutes. Rinse again with water.

The lid, Luer fittings, needles, stopcocks, glass chamber and gauge/valve assembly are **NOT** autoclavable.

Normal use of the glass chamber requires only rinsing with water. Do not immerse the glass chamber in liquid. Periodic use of mild detergent and hand washing the chamber is acceptable. Invert the chamber to air dry.