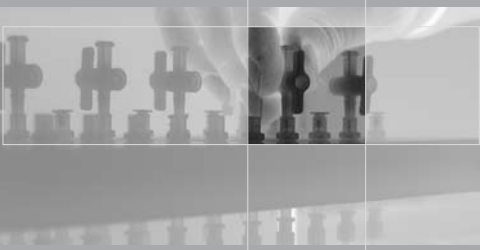
SPE VACUUM MANIFOLDS

Operating & Assembly Instructions



phenomenex®
…breaking with tradition™

NEW

SPE Tubes From Phenomenex

strata™

Tired of clogging and irreproducible SPE tubes? Try Strata solid phase extraction products manufactured by Phenomenex.

strata features an extremely narrow particle size range. When particle size distribution is well controlled, your sample and solvent will flow uniformly through the sorbent bed, maximizing sample-sorbent contact. The benefits are optimum flow rates and high recoveries. Tube-to-tube flow is also more consistent, making sample processing on vacuum manifolds and automated devices more reliable and less prone to clogging or drying out.

Over 25 different tests are performed on each batch of strata including tests for: purity, recovery, and flow. QC data obtained throughout the production process is documented to provide complete traceability. You can be confident the strata products you order 6 months, 1 year or 2 years from now will perform just like the strata products you order today.

Product Selection & Availability

strata tubes are constructed of ultra-pure medical grade polypropylene, Luer-tipped syringe barrels with 1, 3, and 6 mL reservoir volumes. Sorbent chemistries include a complete range of high performance non-polar, polar and ionic phases, both silica and polymer based in masses ranging from 30 to 1000 mg.

strata products are available through all Phenomenex offices and authorized distributors, for fast delivery anywhere in the world.

Please call for ordering information.

SPE Manifold Dimensions and Related Information

• The 12-Port manifold (AH0-6023) is 6 ½ inch tall by 8 inch long by 4 inch wide.*

• The 24-Port manifold (AH0-6024) is 6 ½ inch tall by 12 inch long by 4 inch wide.**

Both the 12- and 24-Port Manifolds above accommodate the following Test Tube sizes:

12 x 75 mm (5 to 6 mL capacity)
16 x 100 mm (14 to 15 mL capacity)
16 x 150 mm (23 to 24 mL capacity)

Tall-Boy™ 10-Position Vacuum Manifold

• The 10-Port manifold (AH0-7502) is 10 ½ inch tall by 12 inch long by 4 inch wide.

• The 10-position Tall-Boy vacuum manifold collection rack includes 4 plates: one base plate, one dimple plate, one small plate and one large plate and three riser bar legs, along with 12 manifold clips to support the plates. The assembly also includes 10 polypropylene needles, 10 stopcocks and 4 black legs to support the lid when taken off the glass block.

• Tall-Boy manifold racks are specifically designed for tubes of up to 19 mm in diameter (small plate) or up to 25 mm in diameter (large plate). The tubes can be as long as 150 mm tall. A 40 mL receiving tube will easily fit within the racking system.

** Note: The 12-position Collection Rack consists of 3 support posts, bottom plate, 13 mm plate, 16 mm plate, autosampler plate, volumetric plate, and 12 retaining clips.*

*** Note: The 24-position Collection Rack consists of 3 support posts, bottom plate, dimple plate, 13 mm plate, 16 mm plate, and 24 retaining clips.*

All Manifolds include: A vacuum-tight glass chamber, polypropylene lid with gasket, bleed valve and gauge, stopcock valves, collection racks and polypropylene needles.

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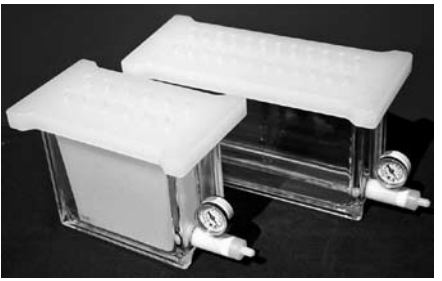
CAUTION: Do not operate this manifold without first reading and fully understanding the operating instructions.



INTRODUCTION

Phenomenex SPE vacuum manifolds are available in 10-, 12- and 24-position configurations. These manifolds permit convenient batch processing of SPE or sample filtration and help ensure consistent extraction and filtration results. The manifolds consist of a clear glass chamber and lid to which a vacuum is applied thereby drawing the sample through the SPE cartridge or filtration device. Adjustable racks placed in the glass vacuum chamber accommodate a variety of sample collection vessels and test tube configurations.

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MANIFOLD ASSEMBLY

figure 1

1. Lid Assembly:

A. Attach the four black legs to the underside of the manifold lid as shown in *(figure 1)*.

figure 2

B. Attach the needles to the male luer connection fittings on the underside of the lid as shown in *(figure 2)*.

figure 3

C. Firmly insert the stopcocks into the female luer fittings on top of the lid as shown in *(figure 3)*.

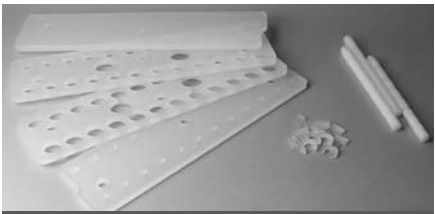


figure 4

2. Rack Assembly:

The rack assembly consists of a base, three attachment posts, a dimpled tube support platform and a upper rack with either 16 mm or 12 mm diameter holes. Select the upper rack with holes to match collection tube diameter.

Vertical adjustment of the dimpled support platform upon which the bottoms of the test tubes rest allows the user to configure the manifold for a wide range of collection tube heights.

figure 5

A. Lay the base onto a flat surface oriented so that the indentation is on the bottom right. Attach the three attachment posts to the base *(figure 5)*. Correct orientation of the indentation is necessary for the rack to clear the vacuum gauge assembly when placed inside the tank.

figure 6

B. Slide the dimpled support plate onto the posts by aligning the three holes in the plate with attachment posts. The indentation on the side of the support plate must match the indentation of the base *(figure 6)*.

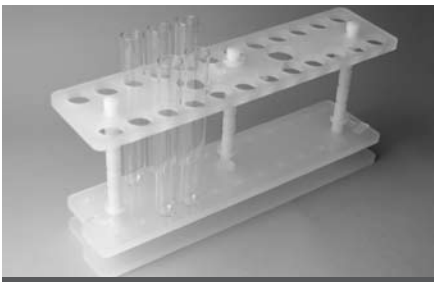


figure 7

C. Place the upper rack with the proper diameter holes onto the attachment posts as shown in *(figure 7)*.

figure 8

figure 9

D. Adjust the height of the dimpled support platform shelf so that the delivery needles in the manifold lid are a minimum of 5 mm inside the collection vessels *(figure 8)*. "C"- shaped support clips attach to the posts directly under the shelf allowing height adjustment *(figure 9)*.

E. To collect eluents, place rack loaded with test tubes into glass basin and carefully replace the lid.

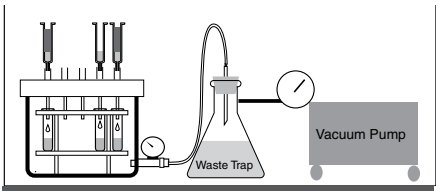


figure 10

VACUUM SOURCE AND WASTE TRAP

Installation of a liquid waste trap between the manifold and the vacuum source is highly recommended for the protection of the vacuum source and for collection and proper disposal of extraction waste solvents *(figure 10)*. Use $^{5}/_{16}$ inch (8 mm) ID thick wall vacuum tubing for connections between the pump, waste trap, and manifold. A high capacity, corrosion-resistant vacuum pump capable of generating a minimum vacuum of 10 inches of mercury is recommended.

MANIFOLD OPERATION

Caution: Vacuum should not exceed 20 inches of Mercury (68 kPa). Exceeding this vacuum will void the manifold warranty and may cause dangerous glass basin failure.

figure 11

A. Turn on vacuum to the system and using the knurled bleed valve ring located adjacent to the manifold vacuum gauge *(figure 11)* adjust the maximum vacuum level. The bleed valve ring also permits rapid vacuum release of the entire system. Most analysts find that 3 to 5 inches of vacuum is satisfactory for proper flow through the SPE columns.

figure 12

B. Individual cartridge flow rates are controlled by stopcocks or optional Teflon control valves. Stopcocks are fully open when the valve is in the vertical position and fully closed when in the horizontal position.

C. Individual stopcocks should be in the closed position prior to removal of the SPE column when under vacuum to prevent splashing of solvents.

D. Prior to removing the lid, it is important to completely bleed the vacuum from the manifold by opening the bleed valve ring *(figure 11)* or fully opening any unused stopcocks on the lid. Failure to do so may result in eluent splashing and sample cross contamination.

OPTIONAL ACCESSORIES

1. Teflon® Needles and Teflon Control Valves incorporating flow control are available. These are recommended for trace analysis requiring a plasticizer-free, inert fluid path.

2. Drying Attachment:

The drying attachment is used in conjunction with 12- and 24-Port Manifolds to concentrate samples that have been eluted from Solid Phase Extraction columns. They can also be used to dry packing beds in SPE columns prior to elution of the sample.

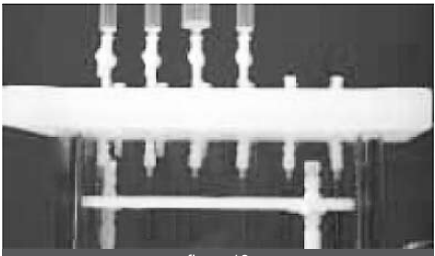


figure 13

3. Instructions To Dry Samples:

After the samples are collected in the receiving tubes inside the vacuum manifold, remove the lid and replace it with the drying attachment. Connect the drying attachment to an inert gas source by securing the tubing from the vacuum to the brass hose barb on the drying attachment. Gas then flows into each receiving tube to dry or concentrate the samples.

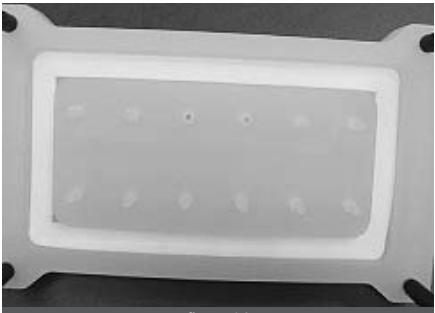


figure 14

Instructions To Dry Packing Beds

4. Leave the SPE tubes on the vacuum manifold lid:

Attach an adaptor to each tube to prevent outside air from entering the tube. Attach the drying attachment lid to the adaptors on the tube with the male luers of the drying attachment. The drying attachment will make a tight connection with the column adaptor by way of the male luers. Attach an inert gas source to the drying attachment by attaching the tubing from the vacuum to the brass hose barb on the drying attaching. By applying vacuum to the manifold, the inert gas will be pulled through the tubes and dry the packing beds prior to elution of your samples.

figure 15

5. Waste Container:

(12-position manifold only) An optional solvent-resistant polypropylene liner is available for the 12-position manifold which can collect solvent wastes generated during the SPE extraction. Using the waste liner can greatly simplify manifold clean-up and maintenance.

SPE Method Development Tools

Introducing the Strata™ Sample Preparation method Development Software

- Instantly develops specific SPE methods based on analyte details
- Provides accurate, fast, and simple method development
- Generates analyte specific SPE methods for traditional and high-throughput screening

AA0-7814 and AA0-7815

Sample Clean-up and Concentration

strata-X Method Development Kit for Clean up and Concentration of target analytes. Each kit contains the following (10) 200 mg/3 mL SPE tubes

- strata-X for polar and non-polar compounds
- strata-X-C for basic compounds
- strata-X-CW for strongly basic compounds
- strata-X-AW for strongly acidic compounds

strata-X Method Development Kit (KS0-7908)

ORDERING INFORMATION

Part No.	Replacement and Accessories	Unit
AH0-7502	10-Position Tall-Boy Vacuum Manifold, complete assembly[1]	ea
AH0-6023	12-Position Vacuum Manifold Set, complete assembly[2]	ea
AH0-6024	24-Position Vacuum Manifold Set, complete assembly[3]	ea

Part No.	Replacement and Accessories	Unit
AH0-7503	10-Position Glass Chamber	ea
AH0-6025	12-Position Glass Chamber	ea
AH0-6026	24-Position Glass Chamber	ea
AH0-7504	Cover, Gasket and 10 Stopcocks for 10-position Tall-Boy manifold	ea
AH0-6027	Cover, Gasket and 12 Stopcocks for 12-position manifold	ea
AH0-6028	Cover, Gasket and 24 Stopcocks for 24-position manifold	ea
AH0-6029	Gaskets for 12-position manifold	2/pk
AH0-6030	Gaskets for 24-position manifold	2/pk
AH0-6031	Vacuum Gauge, Valve and Glass Chamber for 12-position manifold	ea
AH0-6032	Vacuum Gauge, Valve and Glass Chamber for 24-position manifold	ea
AH0-6033	Manifold Needles, polypropylene	12/pk
AH0-6034	Manifold Needles, polypropylene	24/pk
AH0-6035	Manifold Needles, stainless steel	12/pk
AH0-6036	Manifold Needles, stainless steel	24/pk
AH0-6037	Collection Rack, including shelves, legs, clips and posts, for 12-position manifold	ea
AH0-6038	Collection Rack, including shelves, legs, clips and posts, for 24-position manifold	ea
AH0-6040	Plate for 13 mm Test Tube, for 12-position manifold	ea
AH0-6041	Plate for 13 mm Test Tube, for 24-position manifold	ea
AH0-6042	Plate for Volumetric Flask, for 12-position manifold	ea
AH0-6043	Plate for 16 mm Test Tube, for 12-position manifold	ea
AH0-6044	Plate for 16 mm Test Tube, for 24-position manifold	ea
AH0-6045	Plate for Autosampler Vial, for 12-position manifold	ea

ORDERING INFORMATION

Part No.	Replacement and Accessories	Unit
AH0-6046	Plate, Dimple, for 12-position manifold	ea
AH0-6047	Plate, Base, for 12-position manifold	ea
AH0-6048	Stopcocks, for 12-position manifold	12/pk
AH0-6049	Stopcocks, for 24-position manifold	24/pk
AH0-6050	Drying Attachment, for 12-position manifold	ea
AH0-6051	Drying Attachment, for 24-position manifold	ea
AH0-6052	12-Position Vacuum Waste Container, polyproplyene	10/pk
AH0-6053	Accessory, Female Luer Fittings	2/pk
AH0-6054	Accessory, Male Luer Fittings	2/pk
AH0-6055	Accessory, Support Posts for Rack	3/pk
AH0-6056	Accessory, Legs for Cover, black	4/pk
AH0-6057	Accessory, Vacuum Gauge and Valve Assembly	ea
AH0-6058	Accessory, Valve Assembly Only	ea
AH0-6059	Accessory, Vacuum Gauge Only	ea
AH0-6060	Accessory, Retaining Clips	12/pk
AH0-6061	Accessory, Vacuum Manifold Plugs	50/pk
AH0-6062	Accessory, Control Valve	25/pk
AH0-6063	Accessory, Control Valve	50/pk
AH0-6064	Accessory, Teflon Needles	100/pk
AH0-6065	Accessory, Teflon Needles	500/pk
AH0-7191	Accessory, Adaptor Caps for 1, 3 and 6 mL SPE tubes	15/pk
AH0-7378	Accessory, Adaptor Caps for 12 and 20 mL SPE tubes	5/pk
AH0-7379	Accessory, Adaptor Caps for 60 mL SPE tubes	5/pk

NOTES:

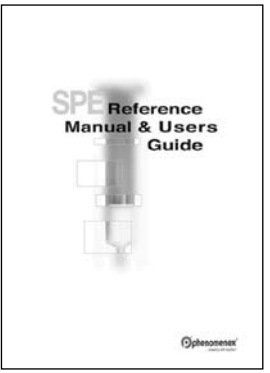
1. *The 10-position Tall-Boy Vacuum Manifold Collection Rack includes 4 plates: one base plate, one dimple plate, one small plate and one large plate and three riser legs, along with 12 manifold clips to support the plates. The assembly also includes 10 polypropylene needles, 10 stopcocks and 4 black legs to support the lid when taken off the glass block.*
2. *The 12-position Collection Rack consists of 3 support posts, bottom plate, 13 mm plate, 16 mm plate, autosampler plate, volumetric plate, and 12 retaining clips.*
3. *The 24-position Collection Rack consists of 3 support posts, bottom plate, dimple plate, 13 mm plate, 16 mm plate, and 24 retaining clips.*

SPE

Reference Manual & Users Guide

New from Phenomenex, an invaluable tool for the SPE novice and expert alike.
Includes:

- Protocols for reversed, normal phase and ion exchange extractions
- Method development & optimization tips
- Sorbent selection flowchart
- Troubleshooting guidelines



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