Welch®

Laboratory Vacuum Catalog
2005-2006

Vacuum Manifold (Schlenk Line)
Catalog Page 10

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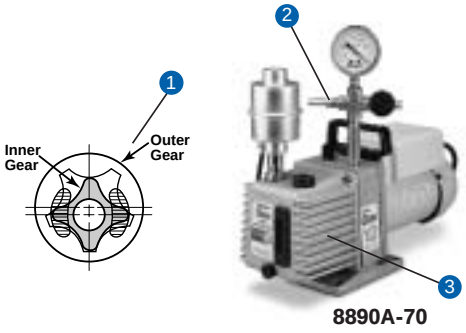
Vacuum Manifold (Schlenk Line)

The Right Pumping Capacity In A Compact Pump



8890A-70

"Did you know that excessive pumping capacity dramatically increases pump maintenance requirements?"

1. **Gear pumping mechanism very tolerant of vapors**
2. **Ultimate pressure <0.1 Torr(0.13 mbar) for final drying**
3. **Pumping capacity of 31 L/min for 4-6 stopcock manifolds**

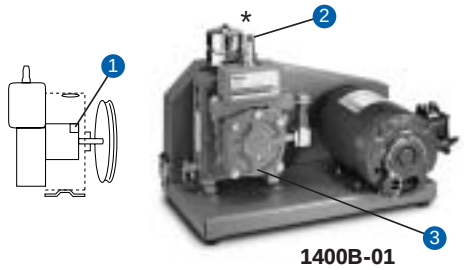
GEM® Vacuum System

The GEM vacuum system provides the vacuum pressure and pumping capacity for a large manifold handling 4 to 6 large drying tubes at once. The system comes with a vacuum gauge to indicate leak tightness of the manifold, a bleed valve to release vacuum without venting manifold, and an oil recycler. A foreline cold trap is always recommended for use on vacuum manifolds. If you use a higher capacity pump than needed, the condensed matter in the trap will be sublimed into the pump and recondensed, causing the pump to fail.

Cat. No.	Description[1.]
8890A-70	31 L/min, 0.1 Torr(0.13 mbar), 115V, 60Hz, 1 Ph with N. American 115V plug, CSA
8890C-72	Same as 8890A-70, except 26 L/min, wired for 230V, 50Hz with Cont. European (Schuko) plug, CE

Note: 1. See page 22 for more details.

The Most Durable At The Deepest Vacuum



1400B-01

1. **High contamination tolerance**
2. **Ultimate <0.001 Torr(0.0013 mbar)**
3. **Pumping capacity of 25 L/min for 4-6 stopcock manifolds**

*Optional exhaust filter, cat. no. 1417

DUOSEAL® & CHEMSTAR® Vacuum Systems

Belt-drive vacuum pumps are known for their ruggedness world-wide. These pumps have large oil reservoirs for their pumping capacity to dilute contaminates coupled with low pump RPM to reduce friction and wear. For pumping corrosive gases, a CHEMSTAR 1400N-01 with corrosion resistant components is commonly used. A foreline cold trap is always recommended for all belt-drive pumps with use on vacuum manifolds.

Cat. No.	Description[2.]
1400B-01	DUOSEAL, 25 L/min, 1 x 10^{-4} Torr(1.3 x 10^{-4} mbar), 115V, 60Hz, 1 Ph with N. American 115V plug
1400N-01	CHEMSTAR, 25 L/min, 1 x 10^{-4} Torr(1.3 x 10^{-4} mbar), 115V, 60Hz, 1 Ph with N. American 115V plug

Note: 2. See pages 24 & 26 for more details.

Application Note on Vacuum Manifolds

Vacuum manifolds are commonly used for the final drying of samples removed from a rotary evaporator. Organic solvents and/or acids left behind during the distillation process are removed over several hours or more depending on the sample size. A foreline cold trap (see page 32) is always recommended to minimize the ingestion of the solvents. An acid neutralization trap is also recommended between the cold trap and the pump when strong acids are present in the sample. When the drying is finished for the day, it is very important to either turn the pump off and remove/clean the trap or isolate the trap from pump using a valve. The reason for this is to prevent sublimination of condensed solids or vaporized liquids from the cold trap recondensing in the pump.

The use of large capacity pumps (greater than 40 L/min) on vacuum manifolds shorten the oil change interval. This occurs because the larger pump will accelerate the sublimation process. When a large capacity pump is used, it is common to see at the end of a drying run that no condensables are in the trap because the chemicals have been drawn into the pump. There is a common misperception that a pump with a large pumping capacity will shorten the drying time. Due to tubing restrictions in the manifold and stopcock, this is not the case. Drying time differences between a large and a small pump occur only when the manifold system is leaky! Leaky vacuum systems should be repaired.