

OIL-FREE VACUUM MANIFOLD PUMP



Model
Chemstar Dry

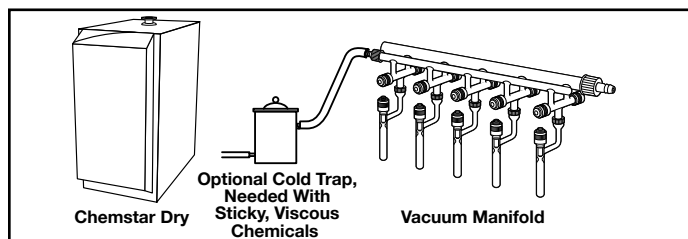
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- Oil-free
- Chemical resistant construction
- Self-cleaning feature

ChemStar® Dry vacuum system integrates a proprietary vacuum blower backed with a patented PTFE diaphragm pump. Software optimizes proprietary vacuum blower/PTFE diaphragm operation to allow plug and play operation. The result? The first chemical resistant dry pump alternative to oil-sealed pumps for Schlenk line eliminating oil-related maintenance work. Since the pumping system pulls a deep dry vacuum, there is no risk of oil-vapor backstreaming into your vacuum line to potentially contaminate the samples undergoing final drying.

Cold trapping is recommended to remove the risk of any sticky or viscous vapors condensing in the pump and building up over time shortening service interval. Avoid using PVC or silicone tubing for connections in your Schlenk line (see application note).

Cat. No.	Electrical	Ultimate Vacuum Pressure
2070B-01	115V, 60Hz, 1Ph	0.050 torr
2071B-01	115V, 60Hz, 1Ph	0.095 torr
2070C-02	230V, 50Hz, 1Ph with CE mark	0.090 mbar



TWO-STAGE ROTARY VANE VACUUM MANIFOLD PUMP



Model
CRVPro4

Specifications &
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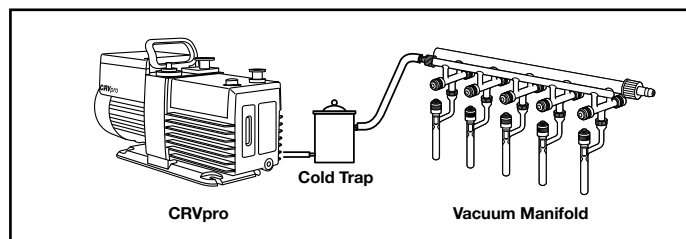
- Cool running to extend oil life
- Internal surface protection to resist corrosion
- Large oil capacity to dilute contaminants

CRVpro 4 direct-drive rotary vane pump is built for reliability to provide stable operation and long product lifespan with proper maintenance. The pumps are cool running due to enhanced air flow leading to pump running 10°C cooler than standard direct drive vane pumps. The lower temperature leads to reduced chemical activity within the pump and slows down rates of oil consumption.

Inside surface of the oil case has a PTFE coating and the outer surface of the pumping module has a black oxide coating. Both coatings act to slow metal corrosion and, when coupled with foreline traps, extend service interval.

The larger the oil capacity the more the dilution of chemical vapors that sublime from foreline cold trap into the pump oil. This minimizes the rates of oil breakdown and reduce chemical attacks within the pump.

A foreline cold trap with temperature of -80°C or lower is always recommended with vacuum manifold systems.



Application Note | No PVC or Silicone Tubing

Welch doesn't recommend the use of PVC and silicon vacuum tubing in Schlenk line set-ups due to their poor chemical resistance to many common organic solvents (in particular methylene chloride, DMF and chlorinated solvents) present in the samples undergoing drying. Welch has observed sticky, goeey substances forming in the pump (see image on right) consisting of leached plasticizer or chemically degraded PVC/silicon tubing. These by-products from chemical attack of PVC and silicon tubing are carried in the vapor stream and eventually condense in the pumps as a sticky substances. These sticky substances shorten the service life of vacuum pump. Welch has found that gum rubber, flexible stainless steel or PTFE flexible tubing are more resistant to organic solvents removed from samples.



Oil Free Deep Vacuum | Chemstar Dry



Model
2070



Model
2071



Model
2080

- Oil-free deep vacuum.
- Chemically resistant
- Plug and Play operation

ChemStar Dry vacuum system is an alternative to oil-sealed rotary vane pumps for chemical applications requiring a deep vacuum. The deep, oil-free vacuum is generated by a proprietary vacuum roots blower backed by a PTFE diaphragm pump. All major parts in contact with pumped vapor/gases are made of chemically resistant fluoroplastics or coated with a proprietary PTFE coating.

Pump speed across the entire operating pressure range - atmospheric to deep vacuum - is controlled using patented control software technology. The control software provides plug-and-play operation.

Service interval is extended by integrated self-cleaning function that purges condensed vapors in the pump at shut-down.

A foreline catchpot trap is recommended to prevent ingestion of liquids. A foreline cold trap is recommended to prevent sticky-substances from entering pump and to protect pump from flash evaporation applications (ie vacuum ovens) that generate high vapor load exceed pumping capacity.

Specifications

Model	2070	2071	2080
Free Air Displacement cfm(l/min) @ 2 torr (2.7 mbar)	6.9 (196)	6.9 (196)	12.4 (350)
Ult Vac. Pressure (torr (mbar) @60 Hz	0.05 (0.07)	0.095 (0.13)	0.04 (0.05)
Ult Vac. Pressure, torr (mbar) @50 Hz	0.07 (0.09)	—	0.04 (0.05)
Running Amps	3	3	3
Intake and Exhaust Connection	NW25	NW25	NW25
Weight, lb (kg)	50 (23)	50 (23)	88 (40)
Overall Dimensions, LxWxH, in (cm)	18 x 8 x 18 (46 x 22 x 47)	18 x 8 x 18 (46 x 22 x 47)	23 x 11 x 18 (57 x 27 x 45)
Ship Weight, lb (kg)	75 (34)	75 (34)	115 (52)
Shipping Carton Dimensions, LxWxH, in (cm)	26.5x 26.5 x 27(68 x 68 x 69)	26.5x 26.5 x 27 (68 x 68 x 69)	26.5x 26.5 x 27 (68 x 68 x 69)

Ordering Information

Wired for 115V, 60 Hz, 1 Ph, N American 115V Plug	2070B-01	2071B-01	2080B-01
Wired for 230V, 50 Hz, 1 Ph, Shucko and UK 230V Plugs	2070C-02	—	2080C-02
Wired for 230V, 60 Hz, 1 Ph, 230V NA plug	2070C-01	2071C-01	2080C-01

Applications

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Foreline Catchpot Trap



320018-01

Catchpot trap mounts directly on inlet of pump via NW25 flange connection. Properly maintained trap prevents ingestion of liquid by pump. Liquid ingestion will cause pump to fail.

CAT. No	Description
320018-01	NW25 Connections

Inlet/Exhaust Catchpot Replacement Jars



1415B



1415C

- Glass and plastic replacement jars.

Pump Model	KIT No.	Description
2025, 2026, 2027, 2028	1415B	Replacement Jars; Glass,
2561B-50, 2567B-50, 2581B-50, 2585B-50 2561C-50, 2567C-50, 2581C-50, 2585C-50	1415D	Replacement jar polypropylene
2522, 2546, 2534	1415C	Replacement jar polypropylene

Replacement Receivers for Aspiration Stations



1475K-20



828840

- Replacement receiver kits

Pump Model	KIT No.	Description
2511B-75, 2511C-75, 2515B-75, 2515C-75	1475K-20	Includes a 1.2 liter autoclavable receiver, 6ft. of tubing and two hydrophobic filters.
Biovac 106	828840	Replacement 5L glass receiver
Biovac 106	112523-7	Replacement 4L plastic receiver

Chemstar Dry



- One and two head diaphragm service kits
- Replacement diaphragm pump replacement kit
- Blower replacement kit

Pump Model	KIT No.	Description
2070, 2071, 2080	2047K-01	One Head Service Kit
	2047K-02	Two Head Service Kit
2070	2070K-50	Replacement diaphragm pump for CAT. No. 2070C-02
	2070K-60	Replacement diaphragm pump for CAT. No. 2070B-01, 2071B-01
2070, 2071, 2080	2700D-01	Replacement vacuum blower

Model 8917A-80 with Acid Neutralization & Oil Filtration



- Repair kits for pump
- Replacement Element for Oil Sump

Pump Model	KIT No.	Description
8917	8917K-04	Minor repair kit for 8917
	1420E-03	Replacement element oil sump

Diaphragm Pump Model 2019



- Diaphragm service and pump head rebuild kits

Pump Model	KIT No.	Description
2019	2019K-01	One-Head diaphragm service kit
	2019K-03	Pump head and rebuild kit
	2500K-04	Service kit for feet