

OUR PUMPS . . .

SAMPLE



FILTER



CIRCULATE

Barnant

Vacuum/Pressure Pumps

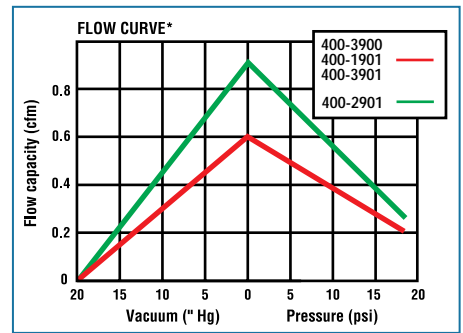
... a unique line of corrosion-resistant pumps.



Air Cadet® Vacuum/Pressure Pumps

Features:

- ▶ Compact size makes pumps ideal for portable applications.
- ▶ All-plastic, convoluted diaphragm design handles many vacuum/pressure applications and reduces stress, wear, and heat build-up.
- ▶ Unique cavity configuration minimizes dead space and air entrapment.
- ▶ Choose from single-head, dual-head, vacuum/pressure station, or hazardous-duty pump depending on your application.
- ▶ Pumps are available with standard 115 or 230 VAC motor; or a hazardous-duty, 115 VAC motor. Standard AC motors are service-free, brushless type with sealed ball bearings and thermal overload protection.



A

ISO9001
REGISTERED
SUPPLIER



CE



B

A Single-Head Pump

Single-head pump is economically priced and can handle many tough vacuum/pressure applications. Choose from two models to accommodate your electrical requirements.

What's included: thread tape made of Teflon® PTFE resin, two polyethylene 3/8" NPT(M) x 3/8" hose barb adapters, and a 6-ft, three-wire cord. The 115 VAC model includes a plug.

Note: Do not use metal fittings with any Air Cadet pump.

B Dual-Head Pump

Dual-head pump offers you increased capacity over the single-head Air Cadet pump. Use the two pump heads independently or connect them in series with 3/8" ID Tygon® vacuum tubing for up to 23" Hg vacuum.

What's included: thread tape made of Teflon PTFE resin, four polyethylene 3/8" NPT(M) x 3/8" hose barb adapters, and a 6-ft, three-wire cord with plug. **Note:** Do not use metal fittings with any Air Cadet pump.

Specifications & Ordering Information

Wetted parts

Models 400-1901, 400-1902, 400-2901, and 7530-65: Noryl® pump head, nitrile diaphragm, valves of Teflon PTFE resin, and polyethylene (PE) adapters

Models 400-3901 and 400-3902: Noryl pump head, nitrile diaphragm, valves of Teflon PTFE resin, vinyl tubing, stainless steel regulator, bronze/brass gauge, and PE adapters

Model 400-3900: Noryl pump head, Fluorel® diaphragm, valves of Teflon PTFE resin, and PE adapters

Port size: 3/8" hose barb

Maximum temperature: 95°F (35°C)

Duty cycle: 6-hour cycle for diaphragms; motors are continuous duty

Part number	Free-air capacity	Max vacuum	Max pressure	Motor type	Power	Amps	Noise rating	Dimensions (L x W x H)	Shpg wt lb (kg)
A Single-head pump									
400-1901	0.6 cfm (17.0 L/min)	20" Hg	18 psi	1/45 hp, TEFC	115 VAC, 60 Hz 230 VAC, 50 Hz	1.2 0.8	72 dB(A)	7 1/4" x 4" x 5 1/2"	7 (3.2)
400-1902	0.5 cfm (14.1 L/min)*								
B Dual-head pump									
400-2901	0.9 cfm (25.5 L/min) [†]	20" Hg	18 psi	1/45 hp, TEFC	115 VAC, 60 Hz 230 VAC, 50 Hz	1.7 6.0	76 dB(A)	10 1/2" x 4" x 5 1/2"	8 (3.7)
7530-65	0.8 cfm (22.6 L/min) [†]								
C Vacuum/pressure station									
400-3901	0.5 cfm (14.1 L/min)	20" Hg	18 psi	1/45 hp, TEFC	115 VAC, 60 Hz 230 VAC, 50 Hz	1.5 0.75	73 dB(A)	7 1/2" x 8" x 8 3/4"	12 (5.5)
400-3902	0.4 cfm (11.3 L/min)*								
D Vacuum/pressure pump with hazardous-duty motor									
400-3900	0.6 cfm (17.0 L/min)	20" Hg	18 psi	1/4 hp, TENV	115 VAC [‡] , 60 Hz	4.5	55 dB(A)	15" x 7 1/2" x 6 1/2"	33 (15.0)

*Total free-air capacity. Single-channel capacity is half this value.

[†]Split-phase

[‡]The 230 VAC, 50 Hz models have 5/6 the flow of the 115 VAC, 60 Hz models.

Fluorel—Reg TM Minnesota Mining and Manufacturing Co.
Dacron, Delrin, Teflon—Reg TM E. I. DuPont de Nemours & Co.
Valox—Reg TM General Electric Co.
Air Cadet—Reg TM Cole-Parmer Instrument Co.
Viton—Reg TM DuPont Dow Elastomers, L.L.C.

Noryl—Reg TM General Electric Co.
Tygon—Reg TM Norton Co.
Ryton—Reg TM Phillips Petroleum Co.
Teflon—Reg TM E. I. DuPont de Nemours and Company

C

CE

C Vacuum/Pressure Station

Vacuum/pressure station features a built-in bronze and brass vacuum/pressure gauge and stainless steel (SS) regulator. Use the auxiliary port to evacuate or pressurize two systems simultaneously. Station includes a 9" piece of vinyl tubing to connect pump to the regulator.

What's included: thread tape of Teflon PTFE resin, two polyethylene (PE) $\frac{3}{8}$ " NPT(M) x $\frac{3}{8}$ " hose barb adapters, one PE $\frac{1}{4}$ " NPT(M) x $\frac{3}{8}$ " hose barb adapter (for auxiliary port), and a 6-ft, three-wire cord. The 115 VAC model includes a plug. **Note:** Do not use metal fittings with any Air Cadet pump.

Accessories for Air Cadet Pumps

7395-20 Vacuum/pressure gauge connector kit, brass. Contains two PE adapters and one each of bushing, pipe tee, and adapter for pipe mount.

7395-40 Vacuum/pressure gauge connector kit, 316 stainless steel. Same contents as 7395-20 above.

7396-00 Filter kit. Includes brass hex bushing, elbow, nipple, and PE adapters.

7397-00 Flowmeter kit, 0.08 to 0.83 cm range. Acrylic body with SS float and built-in valve, brass fittings, Buna N O-ring, and PE adapters.

6601-02 Reinforced PVC tubing, $\frac{3}{8}$ " ID x $\frac{9}{16}$ " OD. Pack of 25 ft

Service Kits contain a Fluorel or nitrile diaphragm, Noryl pump head with two valves of Teflon PTFE resin, and two Noryl retainers. Use kit with Fluorel diaphragm for better chemical resistance; choose kit with nitrile diaphragm for long diaphragm life.

7530-04 Service kit with Fluorel diaphragm
401-0050 Service kit with nitrile diaphragm



RUNS DRY

D

UL NSF

D Pump with Hazardous-Duty Motor

Pump with hazardous-duty motor is ideal for applications using hazardous gases and volatile solvents. Pump features a $\frac{1}{4}$ -hp motor rated for Class 1, Group D and Class 2, Groups E, F, and G environments.

What's included: thread tape of Teflon PTFE resin; two polyethylene $\frac{3}{8}$ " NPT(M) x $\frac{3}{8}$ " hose barb adapters; and a 6-ft, three-wire cord with plug. **Note:** Do not use metal fittings with any Air Cadet pump.

Replacement Parts for Air Cadet Pumps

6450-40 Adapter for single- and dual-head pumps, and vacuum/pressure pump with hazardous-duty motor. PE, $\frac{3}{8}$ " NPT(M) x $\frac{3}{8}$ " hose barb. Pack of 10

6451-51 Elbow for vacuum/pressure station. PE, $\frac{3}{8}$ " NPT(M) x $\frac{3}{8}$ " hose barb. Pack of 10

6450-30 Adapter for vacuum/pressure station. PE, $\frac{1}{4}$ " NPT(M) x $\frac{3}{8}$ " hose barb. Pack of 10

7530-76 Pump head assembly, Noryl. Includes valves and retainers.

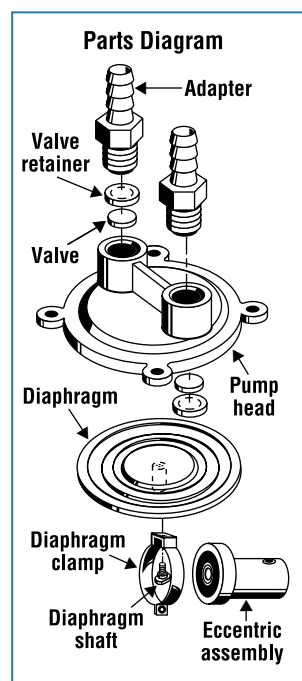
7530-77 Pump head assembly, Valox®. Includes valves and retainers. For continuous pressures greater than 14 psi.

7530-74 Diaphragm clamp assembly. Includes diaphragm, diaphragm clamp and shaft, and eccentric assembly.

7530-79 Diaphragm shaft

7530-08 Diaphragm of Dacron®-reinforced Viton®. For continuous pressures greater than 12 psi and longer service life.

7530-75 Eccentric assembly



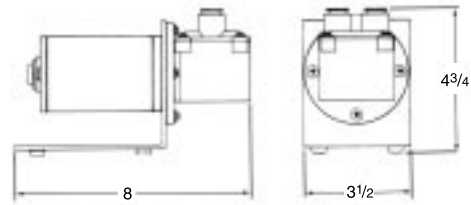
LOW-COST Vacuum/Pressure Pumps

Low-Cost Vacuum/Pressure Pumps Designed for OEM Applications with Attractive Quantity Discounts

For use in either high-flow or low-flow applications, these corrosion-resistant pumps offer vacuum to 20" Hg, pressure to 18 psig, free-air capacity of 1100 cu in./min, a small compact size and no oil to contaminate flow.



400-1941



400-1903



Features:

- ▶ Excellent vacuum pressure capability—continuous operation to 20" Hg or 18 psig pressure. Unique cavity configuration provides minimal air entrapment and dead space for high performance.
- ▶ Extended life diaphragm—convoluted design minimizes stress, wear and heat build-up. The output can be varied by changing the amount of the eccentric (factory set).
- ▶ Non-contaminating engineered plastic construction—gas contacts only the Noryl or Valox body, nitrile and Fluorel diaphragm and PTFE valves. All plastic head, no metal in contact with gas flow.
- ▶ Service-free motor—brushless motor with sealed ball bearings and thermal protection. UL recognized motor. No lubrication required.
- ▶ Pump motor equipped with 12" leads.
- ▶ Reliable—every pump is tested to ensure rated performance and long, trouble-free operation.
- ▶ Quiet—noise level is lower than most other pumps available.
- ▶ Excellent performance—economical to operate. Pump and motor are supplied as an integral unit.

Specifications & Ordering Information

Materials of construction

Models 400-1911 and -1912: Noryl pump head, Flourel diaphragm, PTFE valves and Noryl valve retainers

Models 400-1941 and -1942: Noryl pump head, nitrile diaphragm, PTFE valves and Noryl valve retainers

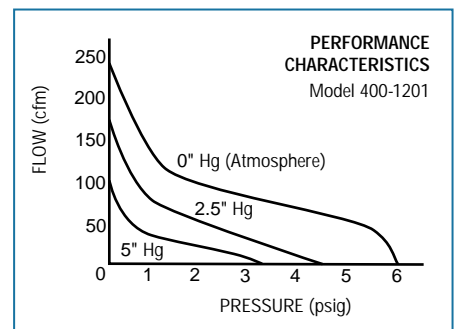
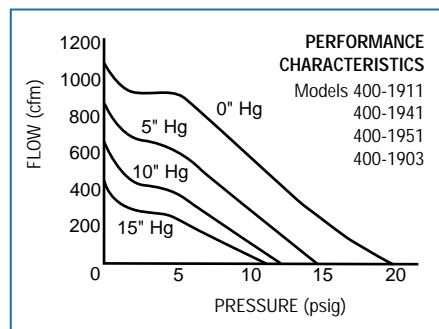
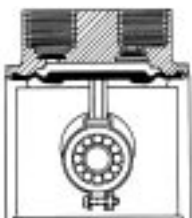
Models 400-1951 and -1952: Valox pump head, Dacron reinforced Viton diaphragm PTFE valves and Noryl valve retainers

Port size: 3/8" hose barb **Maximum temperature:** 95°F (35°C)

Duty cycle: 6-hour cycle for diaphragms; motors are continuous duty

Part number	Free-air cap. (cu in./min)	Max vacuum	Max pressure	Motor hp	Power	Amps	Dimensions (L x W x H)	Shpg wt lb (kg)
400-1201	225			1/45 hp @ 1550 rpm	115 VAC, 60 Hz	1.1	6 5/8" x 3 3/8" x 4"	6 (2.8)
400-1202	185	9" Hg	6 psig	1/45 hp @ 1300 rpm	230 VAC, 50 Hz	0.6	6 5/8" x 3 3/8" x 4"	6 (2.8)
400-1903	1100	18" Hg	15 psig	1/30 hp @ 1550 rpm	12 VDC	3	6 5/8" x 3 3/8" x 4"	6 (2.8)
400-1911								
400-1941	1100	20" Hg	18 psig	1/45 hp @ 1550 rpm	115 VAC, 60 Hz	1.1	6 5/8" x 3 3/8" x 4"	6 (2.8)
400-1951								
400-1912								
400-1942	900	20" Hg	18 psig	1/45 hp @ 1300 rpm	230 VAC, 50 Hz	0.6	6 5/8" x 3 3/8" x 4"	6 (2.8)
400-1952								

Cross Section of Pump Head



Vacuum/Pressure Station



Features:

- ▶ Vacuum to 21.3" Hg
- ▶ Pressure to 35 psi intermittent; 10 psi continuous
- ▶ Free-air capacity 0.39 cfm
- ▶ No vacuum oil required
- ▶ Quiet operation
- ▶ Portable with molded carrying handle
- ▶ On/off switch
- ▶ Low-friction piston service-free motor*
- ▶ UL and CSA listed for 115 VAC, 60 Hz model
- ▶ CE approved for 230 VAC, 50 Hz model
- ▶ Supplied with a 6-ft power cord. The 115 VAC model has a U.S. standard plug; the 230 VAC model has a European-style plug.
- ▶ Convenient power cord compartment
- ▶ Private label available

Note: Do not pump liquids or immerse pump. Avoid organic, basic and acidic vapors.

Did you know...

For every 1000 feet above sea level, listed maximum vacuum for your pump will be reduced by 1" Hg.

This pump is designed for portability and versatility with a tough, lightweight plastic housing and integral carrying handle. The long-wearing motor delivers performance characteristics suitable for a wide range of applications.

Specifications & Ordering Information

Wetted parts: glass-filled polyester piston cup retainer and head, Ryton® cylinder sleeve, Viton valves, PTFE piston cup, silicone tubing, and Delrin® fittings

Port size: ¼" hose barb

Motor: ½ hp, shaded-pole

Dimensions: 7½"L x 4½"W x 7½"H

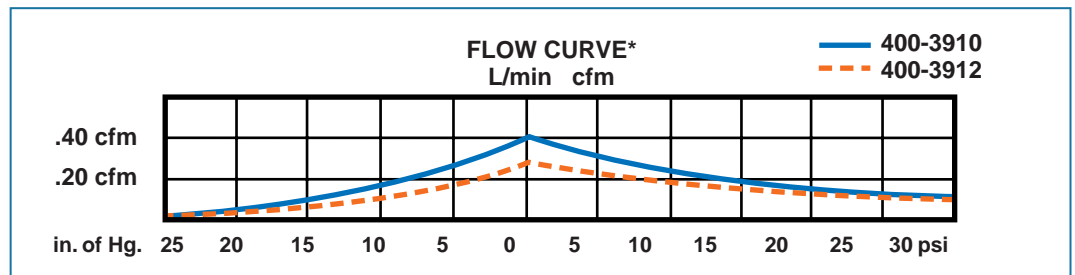
Part Number	Free-air capacity	Max vacuum	Max pressure	Max temp	Power VAC, Hz	Amps	Shpg wt lb (kg)
400-3910	0.39 cfm (11 L/min)	21.3" Hg	35 psi	104°F (40°C)	115, 60	1.6	5 (2.3)
400-3912	0.32 cfm (9.2 L/min) [†]				230, 50	0.8	

*Service life of motor 2000 - 3000 hours

[†]The 230 VAC, 50 Hz model has 5/6 the flow of the 115 VAC, 60 Hz model

Applications:

- Air/gas sampling
- Pressure/vacuum filtration
- Precious metal recovery
- Process control
- Suction units
- Analysis instrumentation
- Film making
- Environmental safety monitoring
- Aerating equipment
- Pneumatic controls



Vacuum/Pressure Conversion Table

Absolute vacuum				Relative vacuum	
torr/mm Hg	mbar	psia	atm	% vacuum	Hg
760	1013	14.696	1.0	0.0	0.0
750	1000	14.5	0.987	1.3	0.42
500	667	9.7	0.658	34	10.22
400	533	7.7	0.526	47	14.22
300	400	5.8	0.395	61	18.12
200	267	3.9	0.264	74	22.07
100	133.3	1.93	0.132	87	25.98
70	93.4	1.35	0.0921	90.8	27.16
50	66.7	0.97	0.0658	93.5	27.95
25.4	33.8	0.4912	0.034	96.6	28.92
10	13.33	0.193	0.0132	98.7	29.52
1	1.33	1.934 x 10 ⁻⁴	1.32 x 10 ⁻³	99.9	29.88
0.1	0.133	1.93 x 10 ⁻³	1.32 x 10 ⁻⁴	99.99	29.916
1 x 10 ⁻²	1.33 x 10 ⁻²	1.93 x 10 ⁻⁴	1.32 x 10 ⁻⁵	99.999	29.9196
1 x 10 ⁻³	1.33 x 10 ⁻³	1.93 x 10 ⁻⁵	1.32 x 10 ⁻⁶	99.9999	29.91996
1 x 10 ⁻⁴	1.33 x 10 ⁻⁴	1.93 x 10 ⁻⁶	1.32 x 10 ⁻⁷	-	29.91999



Applications:

Air/gas sampling

Pressure/vacuum filtration

Lab science stations

Pneumatic controls

Precious metal recovery

Process control

Nebulizers

Chromatography

Corrosive gases

Gas analyzers

Power burners

Suction units

Computer peripheral equipment

Circulating/aerating equipment

Analysis instrumentation

Optical equipment

Flame photometry

Environmental safety monitoring

Inhalation apparatus

PC board flux foamer

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