

# Selecting a Vacuum Pump

When choosing a vacuum pump you should first determine the level of vacuum/pressure required. Cole-Parmer offers a wide range of vacuum capabilities. Our vacuum pumps are organized into the following categories to help you select the proper pump for your application:

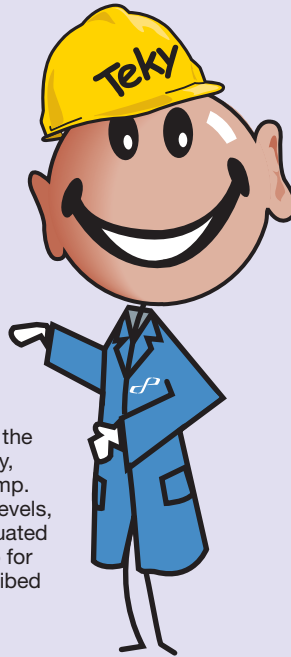
**Laboratory/Filtration Vacuum Pumps** are general and specific purpose pumps for applications in the laboratory or anywhere a low vacuum is needed. Most laboratory/filtration pumps have vacuum and pressure capabilities.

**Rough Vacuum Pumps** supply vacuum for laboratory and industrial applications requiring a level of vacuum less than  $10^{-3}$  Torr.

**High Vacuum Pumps** are used in many applications requiring vacuums higher than  $10^{-3}$  Torr.

Second, the free air capacity must be determined—the larger the free air capacity, the faster it will evacuate the chamber. Finally, consider whether you need a lubricated or non-lubricated pump. Lubricated pumps provide higher capacities, higher vacuum levels, and lower noise, but can contaminate the system being evacuated and require more maintenance. Select a non-lubricated pump for vacuum in a clean system and low maintenance. Icons (described at right) denote pumps as dry, water-based, or oil lubricated.

Accessories are an important part of every pumping system. An inlet filter protects your pump from dust and contamination. When using an oil-lubricated pump, an exhaust filter keeps your work area free of oil mist. Traps prevent condensable vapors from damaging the inside of your pump. Regulators are often used with vacuum or pressure gauges to control system pressure.



## Vacuum Pump Icons

Look for these icons to quickly identify which pumps are dry, water-based, or oil-lubricated.



**Dry Pumps** (non-lubricated) provide a clean vacuum over the entire vacuum range. They require little maintenance and don't generate any waste materials. However, dry pumps have a higher initial cost. Common dry pumps include diaphragm, piston, scroll, and turbomolecular pumps.



**Water-Based Pumps** provide a rough vacuum at low initial cost with minimum maintenance. These pumps are corrosion resistant. However, they are not suitable for water vapor sensitive systems. The disposal of contaminated water is another concern with these pumps. Common water-based pumps include water aspirator pumps.

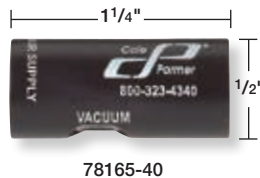


**Oil-Lubricated Pumps** provide high pumping speeds and a wide range of ultimate vacuum at a reasonable price. However, the pumps require routine maintenance and oil changes. The oil may contaminate your vacuum. The pumps also require inlet and outlet filters to protect the pump and the environment. Common oil-lubricated pumps include rotary vane pumps and gear pumps.

## Cole-Parmer® Venturi Vacuum Pumps No electrical power or lubricant needed

- No moving parts ensure long life with low maintenance
- No batteries or electrical connections—  
intrinsically safe
- Place pumps close to your application for fast response and minimal vacuum loss

These pumps take advantage of the venturi effect—as a stream of compressed air exits a constricted orifice the resulting pressure drop draws air through a vacuum port. Powered by compressed air only; the pneumatic vacuum switch is the brain behind the system that constantly monitors and controls the vacuum level. Eliminates the constant air loss and noise of most venturi vacuum pumps. The vacuum switch is adjustable from 0 to 30" Hg with a hysteresis of 3" Hg.



Free-air capacity cfm (L/min)	Maximum vacuum " Hg (Torr)	Air input at 80 psi cfm (L/min)	Wetted parts	Noise† rating	Port sizes		Catalog number	Price	Replacement silencers	
					Air supply	Vacuum			Catalog number	Price
<b>Venturi vacuum pumps</b>										
0.3 (8.5)	27.0 (685.8)	0.75 (21.2)	Anodized aluminum body, brass venturi, and Buna N seals	55 dB(A)	#10–32	#10–32	<a href="#">GY-78165-40†</a>		—	
0.5 (14.2)	28.0 (711.2)	0.8 (22.7)		68 dB(A)					<a href="#">GY-78165-50</a>	
1.2 (34.0)	28.0 (711.2)	1.8 (51.0)		72 dB(A)	1/4" NPT(F)	1/8" NPT(F)	<a href="#">GY-78165-10</a>		<a href="#">GY-78165-52</a>	
3.2 (90.6)		4.8 (136)		68 dB(A)	1/4" NPT(F)	1/8" NPT(F)	<a href="#">GY-78165-20</a>		<a href="#">GY-78165-52</a>	
1.2 (34.0)	29.5 (749.3)	4.9 (139)		68 dB(A)	1/4" NPT(F)	1/8" NPT(F)	<a href="#">GY-78165-30</a>		<a href="#">GY-78165-54</a>	
<b>Air Saver Venturi vacuum pumps</b>										
1.2 (34.0)	28.0 (711.2)	1.8 (51.0)	Anodized aluminum body, brass venturi, and Buna N seals	72 dB(A)	1/4" NPT(F)	1/8" NPT(F)	<a href="#">GY-78165-61</a>		<a href="#">GY-78165-52</a>	
3.2 (90.6)	28.0 (711.2)	4.8 (136)							<a href="#">GY-78165-71</a>	

†When air is flowing.

‡Does not include silencer.

[GY-79160-00](#) Filter/regulator, 5 µm. Ports are 1/4" NPT(F)

US Toll-free: 800-323-4340

• Outside the US: 847-549-7600

• [www.coleparmer.com](http://www.coleparmer.com)

Canada 800-363-5900 • India 91-22-6139-4444 • UK 0500-345-300

**Cole-Parmer®** 1035

## Vacuum Pumps

### Cole-Parmer® Air Admiral® Vacuum/Pressure Pumps Take it wherever you need it

- Economical pump serves as pressure or vacuum source with an excellent price-to-performance ratio
- Low-friction piston runs cool and quiet for a long service life with consistent performance

This pump is designed for portability and versatility with a tough, lightweight plastic housing and integral carrying handle.

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



#### Specifications

**Wetted parts:** glass-filled polyester piston cup retainer and head, PPS cylinder sleeve, valves of Viton® fluoroelastomer, PTFE piston cup, silicone tubing, acetal fittings

Free-air capacity cfm (L/min)	Maximum vacuum	Maximum pressure	Maximum temperature	Port sizes (vacuum/pressure)	Motor hp	Noise rating	Power (VAC, Hz)	Catalog number	Price
0.37 (10.5) 0.31 (8.8)	20" Hg (508 Torr)	33 psi (2.28 bar)	104°F (40°C)	1/4" hose barb	1/25	57 dB(A) at 3 ft (1 m)	115, 60	<a href="#">GY-79202-00</a>	
230, 50							<a href="#">GY-79202-05</a>		

#### Accessories

[GY-06413-20](#) Tygon® vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 ft (3 m)

### Cole-Parmer® Portable Dual-Channel Water-Jet Aspirator Pump No more pulsations

- Built-in circulating pump and water tank make these units portable and eliminate water waste
- Simple to operate—just fill the tank and turn on the pump
- Circulating pump continuously forces water across a set of venturies—operation is quiet, clean and efficient

Pump features two metal venturi aspiration jets to create the vacuum with a built-in check valve to prevent backflow of water into system. Tank features a drain port and spigot for easy water changes. Order optional vacuum gauge/regulator to monitor and control vacuum level.



#### Specifications

**Wetted parts:** nickel-coated brass, polypropylene, silicone, and stainless steel  
**Tank size:** 9.5 L

**What's included:** tank, aspiration pump, tank closure, and power cord.

Free-air capacity cfm (L/min)	Max vacuum " Hg (Torr)	Noise rating	Port size	Power (VAC, Hz)	Catalog number	Price
0.6 (18)	29.5 (10)	60 dB(A)	8-mm hose barb	115, 50/60	<a href="#">GY-35031-00</a>	
				230, 50/60	<a href="#">GY-35031-10</a>	

#### Accessories

- [GY-35031-60](#) Replacement vacuum cooling coil
- [GY-35031-70](#) Replacement vacuum filters. Pack of 5
- [GY-35031-72](#) Replacement vacuum filters. Pack of 10
- [GY-35031-74](#) Replacement vacuum aspirator, stainless steel



#### Teky's Tips



#### Watch Your Temperature

Aspirator pump vacuum is dependent on water vapor pressure; which, in turn, is a function of temperature. The lower the water temperature, the lower the potential vacuum.

# Cole-Parmer® Air Cadet® Vacuum/Pressure Pumps

## Get better results with minimal dead space

- Minimizes dead space and air entrapment with unique cavity configuration
- No maintenance needed—AC motors are brushless with sealed ball bearings
- Worry-free pumping with reduced stress, wear, and heat buildup



### A–B. Single- and Dual-Head Pumps

- Handle tough applications easily
- Increase your capacity with dual-head models independently pumping or connected in series
- Easy shut-off with power switch on all models except 07532-65

**What's included:** PTFE thread tape and polyethylene 3/8" NPT(M) x 3/8" hose barb adapters.

### C. Vacuum/Pressure Stations

- Increase productivity—evacuate or pressurize two systems simultaneously with auxiliary port
- Get control with built-in bronze and brass gauge and stainless steel regulator

**What's included:** PTFE thread tape, two polyethylene 3/8" NPT(M) x 3/8" hose barb adapters, and one polyethylene 1/4" NPT(M) x 3/8" hose barb adapter (for auxiliary port).

### D. OEM Vacuum/Pressure Pumps

- Get long, reliable operation—continuous operation up to 18 psi for 4000 service hours
- Provides pumping with minimal stress and heat buildup

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Free-air capacity cfm (LPM)	Max vacuum " Hg (Torr)	Max pressure psi (bar)	Wetted parts	Noise rating	Port size	Power	Catalog number	Price
<b>A. Single-head pumps</b>								
0.54 (15.5)	20 (508)	18 (1.24)	Noryl® pump head, FKM diaphragm, PTFE valves, and polyethylene (PE) adapters	72 dB(A)	3/8" hose barb	115 VAC, 60 Hz	<a href="#">GY-07532-40</a>	
0.45 (13)						230 VAC, 50 Hz	<a href="#">GY-07532-45</a>	
<b>B. Dual-head pumps</b>								
1.1 (31) <sup>†</sup>	20 (508)	18 (1.24)	Noryl pump head, FKM diaphragm, PTFE valves, and PE adapters	76 dB(A)	3/8" hose barb	115 VAC, 60 Hz	<a href="#">GY-07532-60</a>	
0.91 (26) <sup>†</sup>						230 VAC, 50 Hz	<a href="#">GY-07532-65<sup>‡</sup></a>	
<b>C. Vacuum/pressure stations</b>								
0.5 (14.1)	20 (508)	18 (1.24)	FKM diaphragm, SS regulator, bronze/brass gauge, and PE adapters	73 dB(A)	3/8" hose barb	115 VAC, 60 Hz	<a href="#">GY-07532-80</a>	
0.4 (11.3)						230 VAC, 50 Hz	<a href="#">GY-07532-85</a>	
<b>D. OEM vacuum/pressure pumps</b>								
0.6 (17)	20 (508)	18 (1.24)	Noryl pump head, FKM diaphragm, PTFE valves	72 dB(A)	3/8" NPT(F)	115 VAC	<a href="#">GY-07530-85</a>	
	18 (457.2)	15 (1.03)	Noryl pump head, FKM diaphragm, PTFE valves, and PE adapters			12 VDC	<a href="#">GY-07532-25</a>	

<sup>†</sup>Total free-air capacity. Single-channel capacity is half this value. <sup>‡</sup>Power switch not available on 230 VAC models. **Note:** Do not use metal fittings with any Air Cadet pump.

### Accessories

[GY-07395-20 Vacuum/pressure gauge connector kit](#), brass. Contains two PE adapters and one each of bushing, pipe tee, and adapter for pipe mount

**Service Kit** contains a nitrile diaphragm, Noryl pump head with two valves of PTFE resin, and two Noryl retainers. Nitrile diaphragm ensures long diaphragm life.

[GY-07530-06 Service kit](#)

### Replacement Parts

[GY-07530-77 Pump head assembly](#), Valox®. Includes valves and retainers. For continuous pressures greater than 14 psi

[GY-07530-71 Diaphragm clamp assembly](#); includes, diaphragm clamp and shaft, and eccentric assembly

[GY-07530-79 Diaphragm shaft](#)

[GY-07530-75 Eccentric assembly](#)

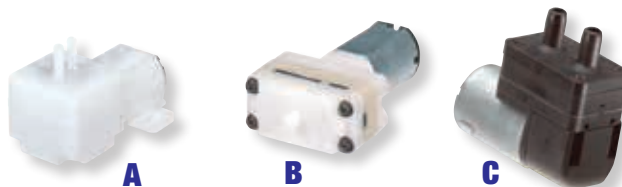
[GY-08270-33 Thread sealer tape](#) of PTFE resin. Each roll measures 260"L x 1/2"W. Pack of 10 rolls

# Compact Vacuum Pumps

## Complete your OEM application

### A–B. Miniature OEM Vacuum/Pressure Pumps

These pumps will achieve a vacuum level of 5.9" Hg or pressure up to 6.8 psi. Use for lab applications where only a small amount of pressure or vacuum is needed—ideal for low-pressure aeration.



### C. Micro-Boxer Diaphragm Pumps

This latest advance in technology reaches a previously unexplored size-to-performance ratio. The miniature pump comes with a coreless DC motor for extra long life. Diaphragm and valves are made of silicone.



### D. Single-Head Miniature Diaphragm Pumps

These brushless DC motor driven pumps are designed to handle air and gases. The compact design utilizes technologies that allow it to operate harder, hotter, quieter and longer than other existing pump designs. They offer multiple component configurations, allowing them to be used for either vacuum or pressure operation.

### E. Cole-Parmer® Air Cadet® Diaphragm Pumps

Vacuum/pressure pumps have excellent vacuum/pressure capabilities with continuous operation up to 20" Hg or 18 psi. Long-life convoluted diaphragm minimizes stress and heat build-up. The head is made of non-contaminating plastics, Noryl® body, nitrile diaphragm, and PTFE valves.



### F. Oil-Free Rotary Vane Pumps

These pumps require little maintenance and reduce risk of contamination. Ideal for use in low-pressure or high-capacity applications. Pumps include vacuum gauge, filter, carrying handle, and a 6-ft (1.8-m) cord (115 VAC models have a US standard plug).

### G. Oiled Rotary Vane Pump

Centrifugal force holds woven linen vanes against finely polished cast-iron body interior for a vacuum-tight seal—the self-adjusting vanes automatically compensate for wear. Pumps include separate vacuum and pressure gauges, vacuum and pressure regulators, oil trap, air filter, carrying handle, and a 6-ft (1.8-m), three-wire cord (115 VAC models have a three-prong plug and a two-prong adapter with ground wire).



### H. Variable-Speed Pumps

Enable easy vacuum system integration. Ultimate pressure down to 2.0 Torr (29.85" of Hg). Standard duty (79600-71) and chemical duty (79600-72) versions, analog or PWM control.



Free air capacity cfm (L/min)	Max vacuum " Hg (Torr)	Max pressure psi (bar)	Temp range	Service life (hrs)	Power connection	Noise rating	Port size	Power	Amps	Dimensions (L x W x H)	Catalog number	Price
<b>A. Vacuum/pressure pumps</b>												
0.01 (0.4)	5.9 (149.9)	6.8 (0.47)	41 to 113°F (5 to 45°C)	150	Solder tabs	65 dB(A)	3-mm barb	3 or 6 VDC	0.45	1 5/8" x 1 1/16" x 1/2"	<a href="#">GY-79600-02</a>	
0.04 (1)							4.5-mm barb					
<b>B. Pressure pumps</b>												
0.02 (0.5)	—	5.8 (0.4)	41 to 113°F (5 to 45°C)	150	Solder tabs	65 dB(A)	3-mm barb	3 VDC	0.3	1 1/4" x 3/4" x 5/16"	<a href="#">GY-79600-06</a>	
0.04 (1)									0.46			
<b>C. Micro-boxer diaphragm pumps</b>												
0.05 (1.4)	14.2 (360.7)	8.1 (0.56)	−4 to 113°F (−20 to 45°C)	12,000	Solder tabs	65 dB(A)	2.8-mm tubing ID	6 VDC 12 VDC	43 mA 22 mA	1 1/2" x 5/8" x 1 1/2"	<a href="#">GY-79600-14</a>	
											<a href="#">GY-79600-16</a>	
<b>D. Single-head miniature diaphragm pumps</b>												
0.05 (1.5)	12 (304.8)	10 (0.69)	41 to 158°F (5 to 70°C)	20,000	Pigtails	—	1/8" barb	12 VBLDC	0.195	2 1/8" x 1 1/8" x 2 1/8"	<a href="#">GY-79600-21</a>	
0.05 (1.5)	12 (304.8)	10 (0.69)						24 VBLDC	0.11		<a href="#">GY-79600-22</a>	
0.09 (2.5)	16 (406.4)	20 (1.38)						12 VBLDC	0.35		<a href="#">GY-79600-23</a>	
0.09 (2.5)	16 (406.4)	20 (1.38)						24 VBLDC	0.175		<a href="#">GY-79600-24</a>	
<b>E. Cole-Parmer Air Cadet vacuum/pressure diaphragm pumps</b>												
0.6 (17)	20 (508)	18 (1.24)	41 to 95°F (5 to 35°C)	4000	Pigtail	72 dB(A)	3/8" NPT(F)	115 VAC	1.2	7 1/4" x 4" x 5 1/2"	<a href="#">GY-07530-85</a>	
	18 (457.2)	15 (1.03)						12 VDC	4		8" x 4" x 5 1/2"	
<b>F. Oil-free rotary vane pumps</b>												
4.7 (133)	26 (660.4)	10 (0.69) cont.	40 to 100°F (4 to 38°C)	10,000	Standard plug	72 dB(A)	1/4" NPT(F)	115 VAC, 50/60 Hz	7	11 5/8" x 5 5/8" x 6 9/16"	<a href="#">GY-07055-60</a>	
3.99 (113)		15 (1.03) inter.						220 VAC, 50/60 Hz	2.8		<a href="#">GY-07055-65</a>	
<b>G. Oiled rotary vane pumps</b>												
4.48 (127)	26.5 (673.1)	10 (0.69) cont.	40 to 100°F (4 to 38°C)	14,000	Standard plug	72 dB(A)	1/4" NPT(F)	115 VAC, 50/60 Hz	2.2	18" x 9" x 11"	<a href="#">GY-07055-04</a>	
3.74 (106)	25 (635)	15 (1.03) inter.						220 VAC, 50/60 Hz	0.9		<a href="#">GY-07055-35</a>	
<b>H. Variable-speed pumps</b>												
1.6 (43)	29.85 (2)	—	40 to 105°F (5 to 40°C)	6000	2-pin connector	61 dB(A)	1/4" NPT	24 VDC	3.5	9 1/2" x 4 3/4" x 6 1/8"	<a href="#">GY-79600-71</a>	
		—									<a href="#">GY-79600-72</a>	

# Standard-Duty Dry Vacuum Piston Pumps

## Great for filtering, aspirating, degassing, and desiccating

- Oil free for life science applications
- Water trap prevents liquid from being drawn into the pump
- Muffler provides quiet operation

Use the convenient gauge and control knob to adjust vacuum level. Single-head models also provide pressure. Avoid using pump with organic, acidic, or basic vapors.

**What's included:** gauge, control knob, water trap, carrying handle, suction cup feet, on/off switch, two 1/4" barbed fittings, and a 6-ft (1.8-m) cord (115 VAC models come with a standard US plug; 230 VAC models come with a European (Schuko) plug).

**Service kits include** all components commonly required for refurbishment.



79204-70

79204-00

CE  
230 VAC models only  
RUNS DRY

Free-air capacity cfm (L/min)	Ultimate† vacuum	Maximum pressure	Wetted parts	Motor hp	Noise rating	Port size (tube ID)	Power (VAC, Hz)	Catalog number	Price	Service kits	
										Catalog number	Price
<b>Single-head pumps</b>											
0.76 (22)	26.0" Hg (100 Torr)	100 psig (6.89 bar)	Aluminum (treated for corrosion resistance), SS, and PTFE	1/8	62 dB(A)	1/4"	115, 60	<a href="#">GY-79204-00</a>		<a href="#">GY-79204-01</a>	
0.67 (19)							230, 50	<a href="#">GY-79204-05</a>			
1.20 (34)	27.2" Hg (70 Torr)	50 psig (3.45 bar)		1/8		1/4"	115, 60	<a href="#">GY-79204-10</a>	<a href="#">GY-79204-11</a>		
0.99 (28)							230, 50	<a href="#">GY-79204-15</a>			
1.60 (45)	27.6" Hg (60 Torr)	100 psig (6.89 bar)		1/4		1/4"	115, 60	<a href="#">GY-79204-20</a>	<a href="#">GY-79204-21</a>		
1.34 (38)							230, 50	<a href="#">GY-79204-25</a>			
<b>Dual-head pumps</b>											
2.1 (60)	29.8" Hg (5 Torr)	—	Aluminum (treated for corrosion resistance), SS, and PTFE	1/3	58 dB(A)	3/8"	115, 60	<a href="#">GY-79204-30</a>		<a href="#">GY-79204-31</a>	
1.8 (50)							230, 50	<a href="#">GY-79204-35</a>			
7.1 (201)	27.6" Hg (60 Torr)	—		1/3		3/8"	115, 60	<a href="#">GY-79204-70</a>	<a href="#">GY-79204-51</a>		
5.9 (168)							230, 50	<a href="#">GY-79204-75</a>			

†Ultimate total vacuum

[GY-06414-20](#) Tygon® DEHP-free vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 ft (3.0 m)

# Filtration Pumps

## Great for vacuum filtration, blotting, and solid phase extraction

- Lightweight but rugged design minimizes downtime for repairs
- No wetted metal parts in the pump head for corrosion protection
- Corrosion-resistant materials meet your demanding applications

An exclusive multiport valve design tolerates occasional liquids drawn into the vacuum system. All wetted materials are made of chemical resistant resins including PPS, PTFE, and Kalrez®. Order a pump (78164-60, -62, or -64) with a high-quality, smoothly dampened brass vacuum/pressure gauge and a bleeder valve to have precise control of the vacuum system.



78164-64

78164-40

CE  
230 VAC models only  
RUNS DRY

Head configuration	Free-air capacity cfm (L/min)	Max vacuum " Hg (Torr)	Max pressure psi (bar)	Wetted materials	Motor hp	Port size	Power (VAC)	Catalog number	Price
Single head	0.4 (11.5)	24.4 (218)	30 (2.07)	Ryton® PPS, PTFE, Kalrez	1/10	1/4" hose barb	115	<a href="#">GY-78164-40</a>	
	0.4 (11.5)	22.9 (180)	30 (2.07)	Ryton® PPS, EDPM				<a href="#">GY-78164-42</a>	
	0.45 (13)	27.0 (75)	30 (2.07)	Ryton® PPS, PTFE, Viton				<a href="#">GY-78164-44</a>	
Dual head/Series	0.6 (16)	29.4 (15)	7.4 (0.51)	Ryton® PPS, PTFE, Kalrez	1/8	1/4" hose barb	115	<a href="#">GY-78164-46</a>	
Dual head/Parallel	1.1 (30)	25.3 (120)	7.4 (0.51)	Ryton® PPS, PTFE, Kalrez				<a href="#">GY-78164-48</a>	
Single head	0.19 (5.5)	25.3 (120)	35 (2.41)	Ryton® PPS, PTFE, Kalrez	1/12	1/4" hose barb	115	<a href="#">GY-78164-60</a> ‡	
	0.45 (13)	27.0 (75)	30 (2.07)	Ryton® PPS, PTFE, Viton	1/10	1/4" hose barb	115	<a href="#">GY-78164-62</a> ‡	
Dual head/series	0.6 (16)	29.4 (15)	7.4 (0.51)	Ryton® PPS, PTFE, Kalrez	1/12	1/4" hose barb	115	<a href="#">GY-78164-64</a> ‡	

‡Pump includes 6-mm hose barbs

‡Pump comes with vacuum gauge and regulator.

## Vacuum Pumps

### High-Capacity Vacuum/Pressure Pumps Won't get overloaded

- Shaded-pole fan-cooled motor has thermal overload switch to protect your pump system
- Heads on pumps 07061-60 and -05 are connected in parallel for higher capacity; heads on 07061-11 and -13 are connected in series for greater vacuum
- Select pumps with or without gauges, regulators, and valves
- Free-air capacities up to 2.2 cfm (62.3 L/min)

**What's included:** 6-ft (1.8-m), three-wire cord (US standard plug on 115 VAC models). Models 07061-11 and -13 include a filter/muffler.



07061-40

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Pump head configuration	Free-air capacity cfm (L/min)	Max vacuum	Max pressure	Wetted parts	Motor hp	Port size	Noise rating	Power (VAC, Hz)	Catalog number	Price
<b>Pump without gauges or regulators</b> (order regulators separately below; order gauges with 1/4" NPT(M) connections online)										
Single	1.1 (31.2)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel®, and Nomex®	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">GY-07061-21</a>	
	1.0 (28.3)	24.0" Hg						220/240, 50		
<b>Pumps with gauges, regulators, and adjustable relief valve</b>										
Single	1.1 (31.2)	25.5" Hg	60 psi (4.14 bar)	Aluminum, stainless steel, Nordel, and Nomex	1/8	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">GY-07061-40</a>	
	1.0 (28.3)	24.0" Hg						220/240, 50		
Dual/parallel	2.2 (62.3)	25.5" Hg	60 psi (4.14 bar)		1/4			115, 60	<a href="#">GY-07061-60</a>	
	1.8 (51.0)	24.0" Hg						220, 50		
<b>Pump with vacuum gauge only</b>										
Dual/series	1.15 (32.5)	29.0" Hg	—	Aluminum, stainless steel, Nordel, and Nomex	1/4	1/4" NPT(F), 3/8" hose barb on gauges	68 dB(A)	115, 60	<a href="#">GY-07061-11</a>	
	0.85 (24.0)	28.0" Hg						220, 50		

[GY-07061-32](#) Pressure regulator assembly for pumps 07061-21 and -22

[GY-07061-30](#) Vacuum regulator assembly for pumps 07061-21 and -22

[GY-07061-01](#) Service kit for all pumps

[GY-07061-03](#) Service kit for dual-head pumps. Pumps 07061-60, -05, -11, and -13 also require kit 07061-01 at left.

[GY-07061-06](#) Diaphragm for all models, neoprene/nylon

[GY-07061-04](#) Replacement diaphragm for all models, Nordel/Nomex

### PTFE-Coated Vacuum/Pressure Pumps Won't give in to chemicals

- Ideal for tough mid-level vacuum applications
- Lightweight aluminum construction and compact size make pumps ideal for benchtop applications such as vacuum filtration
- Low vibration operation is smooth with balanced eccentrics
- Pumps with gauges and regulators give more control of your vacuum/pressure applications

**What's included:** 6-ft (1.8-m) power cord with built-in switch (the 115 VAC models have grounded plug, 220 VAC and 12 VDC models have stripped ends).



79200-00



Free-air capacity cfm (L/min)	Max vacuum " Hg (Torr)	Max pressure psi (bar)	Wetted parts	Motor hp	Noise rating	Port size	Power	Catalog number	Price	
<b>Pumps with gauges and regulators</b>										
0.75 (21.2)	23.2 (589.3)	25 (1.72)	PTFE and stainless steel	1/20	65 dB(A)	1/8" NPT(F)	115 VAC, 60 Hz	<a href="#">GY-79200-00</a>		
0.55 (15.6)	22.0 (558.8)	20 (1.38)					220 VAC, 50 Hz			<a href="#">GY-79200-05</a>
1.20 (33.6)	22.9 (581.7)	20 (1.38)					12 VDC			<a href="#">GY-79200-10</a>
<b>Pumps without gauges and regulators</b>										
0.75 (21.2)	23.2 (589.3)	25 (1.72)	PTFE and stainless steel	1/20	65 dB(A)	1/8" NPT(F)	115 VAC, 60 Hz	<a href="#">GY-79200-30</a>		
0.55 (15.6)	22.0 (558.8)	20 (1.38)					220 VAC, 50 Hz			<a href="#">GY-79200-35</a>
1.20 (33.6)	22.9 (581.7)	20 (1.38)					12 VDC			<a href="#">GY-79200-40</a>

## Corrosion-Resistant and Solid PTFE Vacuum Pumps

### Virtually no maintenance required

- Quiet, reliable pumps with excellent chemical compatibility

Compact pumps can be used in even the smallest locations and with aggressive solvents without the risk of damaging the pump. Pumps are ready to use within minutes of receiving and require little maintenance. Two pump heads connected in parallel will double the pumping capacity while two heads connected in series will increase the vacuum level the pump can achieve.

**A. Corrosion-Resistant Vacuum/Pressure Pumps** feature PVDF-coated aluminum, stainless steel (SS), or Ryton® PPS heads with PTFE, Kalrez®, or stainless steel valves.

**B. Solid-PTFE Head Vacuum/Pressure Pumps** feature solid-PTFE pump heads and Kalrez valves and seals to provide excellent protection against the most aggressive solvent vapors. Structured diaphragm and multiport umbrella valves increase pump life and reliability.



**B**  
Single-stage pump

CE  
230 VAC models only  
RUNS DRY

Head configurations	Free-air capacity cfm (L/min)	Max vacuum " Hg (Torr)	Max psi	Wetted parts	Port size NPT(F)	115 VAC, 60 Hz models		230 VAC, 50 Hz models	
						Catalog number	Price	Catalog number	Price
<b>A. Corrosion-resistant pumps (not shown)</b>									
Single	0.19 (5.5)	25.2" (120)	35	PTFE, Ryton® PPS	1/8"†	<a href="#">GY-07056-61</a>		<a href="#">GY-07056-66</a>	
Single	1.1 (30)	27" (74)	60	PTFE, PVDF	1/4"	<a href="#">GY-07056-32</a>		<a href="#">GY-07056-33</a>	
Single						<a href="#">GY-07056-30</a>		<a href="#">GY-07056-31</a>	
Dual/series	1.1 (30)	29.5" (11)	—	PTFE, PVDF	1/4"	<a href="#">GY-07056-37</a>		<a href="#">GY-07056-38</a>	
<b>B. Solid PTFE head pumps</b>									
Single	0.35 (10)	27" (74)	15	PTFE, Kalrez	3/8"†	<a href="#">GY-78162-00</a>		<a href="#">GY-78162-05</a>	
Dual/series	0.35 (10)	29.7" (6)				<a href="#">GY-78160-00</a>		<a href="#">GY-78160-05</a>	
Single	0.71 (20)	27" (74)	15	PTFE, Kalrez	3/8"†	<a href="#">GY-78162-10</a>		<a href="#">GY-78162-15</a>	
Dual/series	0.71 (20)	29.7" (6)				<a href="#">GY-78160-10</a>		<a href="#">GY-78160-15</a>	
Dual/parallel	2.3 (65)	27.7" (56)	15	PTFE, Kalrez	3/8"†	<a href="#">GY-78160-30</a>		<a href="#">GY-78160-35</a>	

†Pumps include 6-mm hose barbs. †Pumps include 10-mm hose barbs.

## Vacuum Pumps

### Maintenance free—no need to oil

- All wetted surfaces are PTFE / fluorinated
- Chemical duty for a wide range of lab applications

Dryfast pumps provide affordable vacuum for applications generating chemically aggressive fumes. Vacuum levels available down to 2 Torr, with free-air flow up to 70 L/min. Use the Advanced Vapor Management (AVM) control to fine-tune your vacuum application and prolong diaphragm life by purging ingested fumes through the pump.

#### Choose by Application:

**For Rotary Evaporation**, select a 2 Torr model for fast evaporation of DMF, a 9 Torr model for mid-range (~100°C) boiling solvents, or the 40 Torr model for volatile solvents like DCM.

**For Filtration**, model 79205-16/-19 provides vacuum for up to 3 funnels; select high-flow (70 L/min) model 79206-20/-25 for up to 8 filtering stations.

**For Vacuum Ovens**, select the high-flow 2 Torr model 79206-50/-55 for ovens <2 ft<sup>3</sup>; select high flow (70 L/min) model 79206-20/-25 for larger ovens.



CE  
115 VAC 230 VAC models only models only  
RUNS DRY

Free-air capacity cfm (L/min)†	Max vacuum, " Hg (Torr)	Wetted parts	Motor hp	Noise rating, dB(A)	Port size	115 VAC, 60 Hz models		230 VAC, 50 Hz models	
						Catalog number	Price	Catalog number	Price
0.9 (25)	28.3 (40)	PTFE, perfluoroelastomer	1/10	61	1/4" barb	<a href="#">GY-79205-16</a>		<a href="#">GY-79205-19</a>	
2.5 (70)	28.7 (30)		1/5			<a href="#">GY-79206-20</a>		<a href="#">GY-79206-25</a>	
1.2 (35)	29.6 (9)		1/5			<a href="#">GY-79206-30</a>		<a href="#">GY-79206-35</a>	
0.9 (25)	29.6 (9)		1/5			<a href="#">GY-79206-40</a>		<a href="#">GY-79206-45</a>	
1.2 (35)	29.85 (2)		1/5			<a href="#">GY-79206-50</a>		<a href="#">GY-79206-55</a>	
0.9 (25)	29.85 (2)		1/5			<a href="#">GY-79206-60</a>		<a href="#">GY-79206-65</a>	

†For 50 Hz, multiply free-air capacity x %.

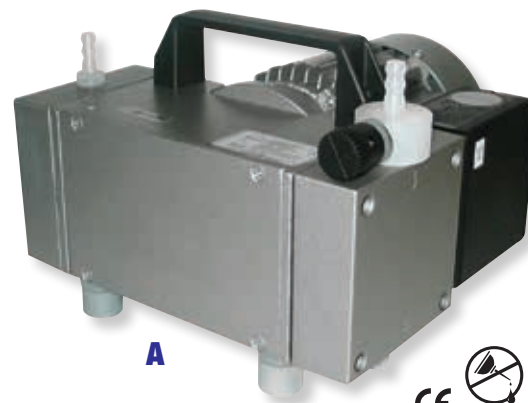
## Vacuum Pumps

### Cole-Parmer® Air Cadet® PRO™ Vacuum Pumps

Get thousands of hours of worry-free operation

- Great for filtration, degassing or vacuum drying
- At 37 dB(A), it's quieter than a conversation!

*Air Cadet®*



Designed for general laboratory applications, pumps have gas ballast for purging of any contaminants that may condense in the pump head. For demanding applications requiring solvents or corrosive chemicals, use the chemical-duty Air Cadet PRO.

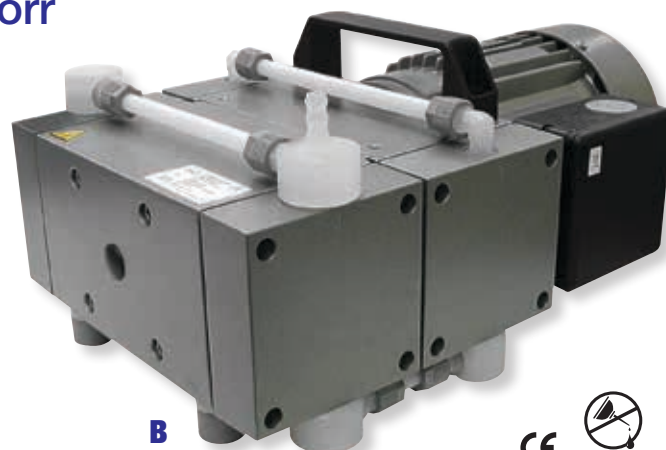
Free-air capacity†	Max vacuum	Wetted Parts	Motor hp	Port size	Noise rating	Power (VAC, Hz)	Catalog number	Price
<b>A. Standard Air Cadet PRO vacuum pumps</b>								
0.6 cfm (17 L/min)	29.8" Hg (757 Torr)	Viton®, aluminum, polyamide, and PVC	1/12	5/16" hose barb	44 dB(A)	115, 60	<a href="#">GY-07530-13</a>	
							220, 50	<a href="#">GY-07530-46</a>
1.4 cfm (38 L/min)	29.8" Hg (757 Torr)		1/4	5/16" hose barb	44 dB(A)	115, 60	<a href="#">GY-07530-14</a>	
						220, 50	<a href="#">GY-07530-47</a>	
<b>B. Chemical-duty Air Cadet PRO vacuum pumps</b>								
0.5 cfm (13 L/min)	27.8" Hg (706 Torr)	PTFE, Kalrez®, and ETFE	1/20	5/16" hose barb	37 dB(A)	115, 60	<a href="#">GY-07530-22</a>	
							220, 50	<a href="#">GY-07530-55</a>
0.6 cfm (17 L/min)	29.8" Hg (757 Torr)		1/12	5/16" hose barb	44 dB(A)	115, 60	<a href="#">GY-07530-23</a>	
						220, 50	<a href="#">GY-07530-56</a>	
1.4 cfm (38 L/min)	29.8" Hg (757 Torr)		1/4	5/16" hose barb	44 dB(A)	115, 60	<a href="#">GY-07530-24</a>	
						220, 50	<a href="#">GY-07530-57</a>	

## High-Capacity Diaphragm Pumps

Get clean vacuum as low as 1.5 Torr

- Unique flat diaphragm design reduces wear and tear for longer service life and increased lab efficiency
- Very quiet operation at 44 dB(A)

Choose a chemical-resistant pump if solvents or corrosive gases will come into contact with the pump. Gas ballast, which allows purging of any condensed gases in the pump, is standard on all models. Protect your pump with an inlet filter for particulates or use a cold trap for condensable vapor; see pages 1047-1048 for vacuum pump accessories.



Free-air capacity† cfm (L/min)	Max vacuum	Wetted Parts	Motor hp	Noise rating	Port size	Power (VAC, Hz)	Catalog number	Price
<b>A. General-purpose diaphragm pumps</b>								
2.6 (75)	29.94" Hg (1.5 Torr)	Viton®, aluminum, polyamide, and PVC	1/4	44 dB(A)	8-mm hose barb	115, 60	<a href="#">GY-78500-61</a>	
4.9 (138)	29.94" Hg (1.5 Torr)			1/4	48 dB(A)	NW 16 flange	230, 50	<a href="#">GY-78500-72</a>
7.1 (200)	29.8" Hg (6 Torr)			1/4	48 dB(A)	NW 16 flange	115, 60	<a href="#">GY-78500-67</a>
						230, 50	<a href="#">GY-78500-77</a>	
<b>B. Chemical-resistant diaphragm pumps</b>								
2.6 (75)	29.94" Hg (1.5 Torr)	PTFE, Kalrez®, and ETFE resins	1/4	44 dB(A)	8-mm hose barb	115, 60	<a href="#">GY-78500-81</a>	
4.9 (138)	29.94" Hg (1.5 Torr)			1/4	48 dB(A)	NW 16 flange	230, 50	<a href="#">GY-78500-91</a>
						115, 60	<a href="#">GY-78500-83</a>	
					230, 50	<a href="#">GY-78500-93</a>		
7.1 (200)	29.8" Hg (6 Torr)		1/4	48 dB(A)	NW 16 flange	115, 60	<a href="#">GY-78500-87</a>	
						230, 50	<a href="#">GY-78500-97</a>	

†Free-air capacity will be reduced by 5/6 at 50 Hz.

## Diaphragm Vacuum Pumps

### Minimize additional noise

- Quiet operation—all models are rated at or below 45 dB(A)
- Ideal for vacuum/pressure filtration, cryogenics, and distillation
- Pumps are designed for high reliability and provide a nearly maintenance-free service life

These oilless diaphragm pumps provide excellent free air-capacity resulting in better ultimate vacuum even with gas ballast. Drive mechanism powers the pumps with less noise and vibration.

Order a 79103-series pump for general-purpose applications; select a 79104-series pump with chemical-resistant wetted parts for highly corrosive applications. Choose a model with a gas ballast valve when working with condensable gases.



A



No. of stages	Free-air capacity cfm (L/min)	Max vacuum with gas ballast	Max temperature	Wetted parts	Port size	Noise level	120 VAC, 50/60 Hz models		230 VAC, 50 Hz models	
							Catalog number	Price	Catalog number	Price
<b>A. General-purpose diaphragm pumps</b>										
1	2.6 (73)	52 mbar (70 Torr)	104°F (40°C)	Viton®, aluminum, polyamide, and PVC	10-mm hose barb	45 dB(A) or less	<a href="#">GY-79103-60</a>		<a href="#">GY-79103-61</a>	
1	4.8 (135)	52 mbar (70 Torr)	104°F (40°C)				<a href="#">GY-79103-62</a>		<a href="#">GY-79103-63</a>	
2	1.4 (40)	5 mbar (7 Torr)	104°F (40°C)				<a href="#">GY-79103-64</a>		<a href="#">GY-79103-65</a>	
2	1.5 (42)	4 mbar (2.5 Torr)	104°F (40°C)				<a href="#">GY-79103-66</a>		<a href="#">GY-79103-67</a>	
3	2.5 (72)	0.75 mbar (1 Torr)	104°F (40°C)				<a href="#">GY-79103-68</a>		<a href="#">GY-79103-69</a>	
2	1.4 (40)	0.5 mbar (0.4 Torr)	104°F (40°C)				<a href="#">GY-79103-70</a>		<a href="#">GY-79103-71</a>	
<b>B. Chemical-resistant diaphragm pumps (not shown)</b>										
1	2.6 (73)	52 mbar (70 Torr)	104°F (40°C)	PTFE, Kalrez, and ETFE resins	10-mm hose barb	45 dB(A) or less	<a href="#">GY-79104-60</a>		<a href="#">GY-79104-61</a>	
1	4.7 (133)	52 mbar (70 Torr)	104°F (40°C)				<a href="#">GY-79104-62</a>		<a href="#">GY-79104-63</a>	
2	1.4 (40)	5 mbar (7 Torr)	104°F (40°C)				<a href="#">GY-79104-64</a>		<a href="#">GY-79104-65</a>	
3	2.2 (63)	1 mbar (1.5 Torr)	104°F (40°C)				<a href="#">GY-79104-66</a>		<a href="#">GY-79104-67</a>	

## Self-Adjusting Vacuum System

### Set it and walk away

- No need to continually monitor operation
- Reduce evaporation time by up to 30%
- Minimizes bumping and foaming by automatically regulating vacuum to changing conditions
- Complete system takes up less space with built-in solvent recovery system and controller
- Low maintenance—runs up to 15,000 hours before servicing
- Quiet operation for minimal interruptions

**NEW**

This diaphragm vacuum pump has a corrosion-resistant flow path and integrated gas ballast, with vacuum pressures down to 2 mbar (1.5 Torr). Incorporated controller features a graphic interface and allows for quick manual adjustments. No need to reprogram—save up to ten user-defined multistep programs. RS-232 port allows for computerized control of pump programs, settings, and process validation.

**What's included:** oil-free pump, digital vacuum controller with integral solvent recovery system, and power cord.



Number of stages	Free-air capacity cfm (L/min)	Max vacuum with gas ballast	Wetted parts	Noise level	Port size	Power	Catalog number	Price
3	1.2 (34)	4 mbar (3 Torr)	PTFE, ETFE (carbon fiber reinforced), FFKM	42 dB	Inlet: 6- to 10-mm hose barb Outlet: 8- to 10-mm hose barb	120 VAC, 50/60 Hz 230 VAC, 50/60 Hz	<a href="#">GY-79110-40</a> <a href="#">GY-79110-42</a>	

## Vacuum Pumps

### Cole-Parmer® Rotary Vane Vacuum Pumps Eliminate oil in vacuum chamber

- Portable direct-driven high vacuum pumps
- Convenient inlet barb connection accepts two different tubing IDs
- Gas ballast valve inhibits condensation of vapors—close for high-vacuum applications, open for applications with moist vapors

Isolation valve activates on power loss to prevent oil suckback and isolate vacuum chamber. Time-specific warning tag alerts you to change oil.

**What's included:** user-activated tag to encourage appropriate oil change interval, 3-ft rubber vacuum hose, ISO-to-hose adapter kit, and 1 quart of premium vacuum pump oil.



Free-air capacity cfm (L/min)	Max vacuum mbar (Torr)	Wetted parts	Motor hp	Noise rating	Inlet barb tubing ID	Oil capacity oz (L)	Power (VAC, Hz)	Catalog number	Price
1.8 (51)	2.6 x 10 <sup>-3</sup> (2 x 10 <sup>-3</sup> )	Cast iron, stainless steel, aluminum, fluoroelastomers	1/4	50 to 55 dB, depending on model	3/16" and 7/16"	12 (0.4)	115, 60	<a href="#">GY-79203-00</a>	
1.5 (43)							230, 50	<a href="#">GY-79203-05</a>	
2.6 (70)	1.3 x 10 <sup>-4</sup> (1 x 10 <sup>-4</sup> )		1/2		7/16" and 13/16"	25 (0.9)	115, 60 / 230, 50	<a href="#">GY-79203-10</a>	
3.8 (108)								<a href="#">GY-79203-20</a>	
6.1 (173)	3 x 10 <sup>-4</sup> (4 x 10 <sup>-4</sup> )		3/4		7/16" and 13/16"	21 (0.8)	115, 60 / 230, 50	<a href="#">GY-79203-30</a>	
7.7 (218)								<a href="#">GY-79203-40</a>	
11.3 (320)	4 x 10 <sup>-4</sup> (5 x 10 <sup>-4</sup> )	3/4	7/16" and 13/16"	32 (1.2)	115, 60	<a href="#">GY-79203-50</a>			
9.3 (263)						<a href="#">GY-79203-55</a>			

### Economical Rotary Vane Vacuum Pumps Get minimal vibration

- Compact design ideal for portable applications
- Dual voltage
- Isolation valve and gas ballast protect pump and system

Lightweight design and rugged construction lend themselves to even the most demanding environments. Dual-stage pumps feature two pump units connected in series which are driven from the same shaft to create vacuum levels as low as 5 x 10<sup>-2</sup> Torr.

Large finned die-cast aluminum oil reservoir extends time between oil changes and helps limit overheating. All models have an isolation valve to prevent oil suck back into the system, angled low profile oil drain for fast and complete oil changes, and large sight glass on oil reservoir to monitor oil level and condition. Center-balanced handle makes transportation easy and clean with no risk of oil spills.



07164-62



07164-30



230 VAC only

Free-air capacity	Max vacuum Torr	Factory micron rating	Wetted parts	Motor hp	Inlet	Power		Oil capacity	Catalog number	Price
						VAC	Hz			
5 cfm (42 L/min)	5 x 10 <sup>-2</sup>	38	Aluminum	1/4	1/4" x 3/8" flare and 1/2" male ACMC	110	60	4.7 oz	<a href="#">GY-07164-30</a>	
5 cfm (42 L/min)	5 x 10 <sup>-2</sup>	38		1/4		220	60	4.7 oz	<a href="#">GY-07164-32</a>	
6 cfm (170 L/min)	1.5 x 10 <sup>-2</sup>	15		1/4		110/220	50/60	32 oz	<a href="#">GY-07164-52</a>	
8 cfm (228 L/min)	1.5 x 10 <sup>-2</sup>	15		3/4		110/220	50/60	31.3 oz	<a href="#">GY-07164-62</a>	
12 cfm (339 L/min)	1.5 x 10 <sup>-2</sup>	15		3/4		110/220	50/60	27.7 oz	<a href="#">GY-07164-72</a>	

[GY-07061-30](#) Aluminum vacuum regulator, 0 to 30" Hg, 2 cfm capacity

[GY-00910-10](#) Brass vacuum regulator, 0 to 29" Hg, 2.47 cfm capacity

[GY-79754-10](#) Silicone vacuum pump fluid, 500 mL

[GY-79754-12](#) Silicone vacuum pump fluid, 1 gallon

## Direct-Drive, Rotary Vane Vacuum Pumps

### No need to purchase both single- and dual-stage pumps!

- Positive pressure oil system ensures proper lubrication and prevents oil starvation at high gas loads
- Fast-acting inlet valve protects internal components against oil and air contamination if the pump stops while under vacuum
- Three-position gas ballast valve limits internal condensation—use pump when condensable vapors are present

Dual-mode pumps offer a choice of high-vacuum (HV) mode or high-throughput (HT) mode in one pump. Set the pump to HV mode with gas ballast off for use with electron microscopes or mass spectrometers; set it to HT mode with gas ballast fully open for use with gel dryers, vacuum ovens, or rotary evaporators.

**What's included:** vacuum oil. Pumps do not include a power cord.



Free-air capacity	Max vacuum mbar (Torr)		Wetted parts	Motor hp	Noise rating (at 50 Hz)	Port size	Oil capacity	Power (50/60 Hz)	Catalog number	Price
	Without ballast	With ballast								
2.3 cfm (65 L/min)	0.2 (1.5 x 10 <sup>-3</sup> )	0.12 (9 x 10 <sup>-2</sup> )	Cast-iron, stainless steel, aluminum, fluoroelastomers	1/2	48 dB(A)	NW 25	24 oz (0.7 L)	115/230 VAC	<a href="#">GY-79303-00</a>	
3.5 cfm (99 L/min)	0.2 (1.5 x 10 <sup>-3</sup> )	0.1 (7.5 x 10 <sup>-2</sup> )		<a href="#">GY-79303-10</a>						
5.9 cfm (167 L/min)	0.2 (1.5 x 10 <sup>-3</sup> )	0.6 (4.5 x 10 <sup>-2</sup> )		<a href="#">GY-79303-20</a>						
8.6 cfm (243 L/min)	0.2 (1.5 x 10 <sup>-3</sup> )	0.6 (4.5 x 10 <sup>-2</sup> )		<a href="#">GY-79303-30</a>						

#### Accessories

Service kits include springs, seals, gaskets, O-rings, filters, valves, and washers. Replace every 15,000 hours. Oil mist filter and return kit directs oil back into your pump reducing oil changes and maintenance time.

For pump models	Catalog number	Price
<b>Service kits</b>		
79303-series	<a href="#">GY-79303-02</a>	
<b>Oil mist filter and return kit</b>		
79303-00, -10, -20	<a href="#">GY-79303-60</a>	
79303-30	<a href="#">GY-79303-61</a>	

## High-Vacuum Pumps for Corrosive Gases

### Won't corrode

- Corrosion-resistant parts—ideal for pumping corrosive gases such as Cl<sub>2</sub>, HBr, F<sub>3</sub>CCO<sub>2</sub>H, and HOAC
- Pumps draw clean oil from top of oil reservoir, not from the bottom as do direct-drive pumps
- Lower pump speed (less than 580 rpm) results in less wear, cooler operation, and longer service life
- Bubbler tube in the oil reservoir allows nitrogen gas purging, resulting in lower operating temperature, reduced corrosion rate, and extended pump oil life

**What's included:** clamp, centering ring, NW flange to hose barb fitting, pump oil, and instruction manual containing an applications booklet.



High-vacuum pump 79201-00—engineered for corrosion resistance and long service life



Free-air capacity	Max vacuum mbar (Torr)		Wetted parts	Motor hp	Noise level	Inlet/outlet ports <sup>‡</sup>	Oil capacity	Power (VAC, Hz)	Catalog number	Price
	Without ballast	With ballast								
0.9 cfm (25.5 L/min)	0.004 (3.0 x 10 <sup>-3</sup> )	0.04 (3.0 x 10 <sup>-2</sup> )	Viton® fluoroelastomer, PTFE black grade S, chemical-resistant cast iron, stainless steel, and nickel-plated or anodized steel	1/3	59 dB(A)	NW 16 flange (7/16" OD hose barb)	19.8 oz (0.59 L)	115, 60	<a href="#">GY-79201-00</a>	
5.6 cfm (158 L/min)	0.004 (3.0 x 10 <sup>-3</sup> )	0.04 (3.0 x 10 <sup>-2</sup> )		NW 25 flange (13/16" OD hose barb)		115, 60		<a href="#">GY-79201-05</a>		
10.6 cfm (300 L/min)	0.004 (3.0 x 10 <sup>-3</sup> )	0.04 (3.0 x 10 <sup>-2</sup> )		NW 25 flange (13/16" OD hose barb)		230, 50	<a href="#">GY-79201-10</a>			
				80 oz (2.4 L)		115, 60	<a href="#">GY-79201-15</a>			
				1					<a href="#">GY-79201-20</a>	

<sup>‡</sup>Pumps include NW flange to hose barb adapters.

#### Accessories

[GY-79201-72](#) Gold vacuum oil, one gallon

**Acid Neutralization Traps and Alkaline Elements.** Use the trap with alkaline element to neutralize hydrous acids.

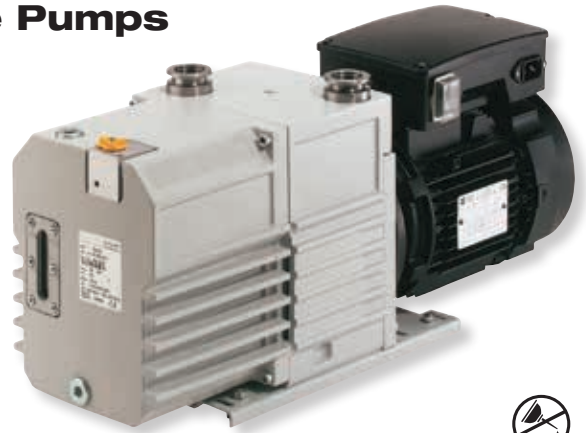
For pump models	Acid neutralization traps			Elements	
	Cat. no.	Dimensions	Price	Cat. no.	Price
79201-00, -05	<a href="#">GY-79201-60</a>	8"W x 9"H		<a href="#">GY-79201-61</a>	
79201-10, -15, -20	<a href="#">GY-79201-62</a>	8"W x 13"H		<a href="#">GY-79201-63</a>	

### Magnetically Coupled Rotary Vane Pumps

#### No oil leaks in your system

- High pumping speeds
- Safety valve seals the pump during power loss
- Easy to service, low maintenance

Magnetically coupled drive shaft eliminates oil leaks. Dual mode pump with gas ballast allows for vacuum settings for many different applications.



Free-air capacity <sup>‡</sup>	Max vacuum " Hg (Torr)		Wetted Parts	Motor hp	Port size	Oil capacity	Power	Catalog number	Price
	Without ballast	With ballast					VAC (50/60 Hz)		
3.5 cfm (99 L/min)	1.5 x 10 <sup>-4</sup> (3.7 x 10 <sup>-3</sup> )	5.9 x 10 <sup>-4</sup> (1.5 x 10 <sup>-2</sup> )	Cast-iron, stainless steel, aluminum, fluoroelastomers	1/2	NW 16	25 oz (0.75 L)	115	<a href="#">GY-79500-20</a>	
7.1 cfm (201 L/min)	1.5 x 10 <sup>-4</sup> (3.7 x 10 <sup>-3</sup> )	3.0 x 10 <sup>-4</sup> (7.5 x 10 <sup>-3</sup> )		3/8	NW 25	34 oz (1.0 L)	115	<a href="#">GY-79500-30</a>	
14.1 cfm (400 L/min)	1.5 x 10 <sup>-4</sup> (3.7 x 10 <sup>-3</sup> )	3.0 x 10 <sup>-4</sup> (7.5 x 10 <sup>-3</sup> )		3/4	NW 25	40 oz (1.2 L)	230	<a href="#">GY-79500-35</a>	
							115	<a href="#">GY-79500-40</a>	
							230	<a href="#">GY-79500-45</a>	

<sup>‡</sup>Free-air capacity will be reduced by 5/6 at 50 Hz.

- [GY-79500-26](#) Oil mist filter for 79500-20, -25
- [GY-79500-36](#) Oil mist filter for 79500-30, -35
- [GY-79500-46](#) Oil mist filter for 79500-40, -45

- [GY-79500-48](#) Replacement filter element for 79500-46
- [GY-79500-47](#) Oil return adapter for 79500-26, -36, -46; returns oil mist back into the reservoir
- [GY-79500-49](#) Replacement oil

### Turbomolecular Pump Systems

#### Achieve vacuum down to 7.5 x 10<sup>-8</sup> Torr

- Ready to go, simply connect to your system
- Modular, easy to maintain
- Integrated turbo controller

Choose a diaphragm backing pump for an oil-free system. To control vacuum levels, order vacuum gauge and cable to connect to system controller. For a description of turbo molecular technology, contact your local dealer.



Free-air capacity cfm (L/min)	Max vacuum " Hg (Torr)	Port size	Compression ratio	Backing pump		Power (50/60 Hz)	Catalog number	Price
				Type	Speed (N <sub>2</sub> )			
1.16 (33)	3.0 x 10 <sup>-4</sup> (7.5 x 10 <sup>-8</sup> )	ISO-KF 40	>1011	Diaphragm	1.1 m <sup>3</sup> /hr	115/230 VAC	<a href="#">GY-79500-50</a>	
2.1 (60)		ISO-K 63					<a href="#">GY-79500-55</a>	

- [GY-79500-67](#) Vacuum gauge; measures from 1000 to 3.75 x 10<sup>-9</sup> mm Hg. Viton<sup>®</sup> seals. Requires cable 79500-68 at right

- [GY-79500-68](#) Cable for 79500-67; required to connect gauge to system
- [GY-79500-69](#) Inlet screen for 79500-50



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## Hand-Operated Vacuum Pumps

### Easily test for pressure leaks

- Pumps are sealed and self-lubricated for a long, maintenance-free life
- Vacuum gauge is graduated in both centimeters and inches of mercury
- Built-in trigger enables you to release vacuum without disconnecting the pump

Measure pressure and vacuum with models 79301-01 and 79301-11. Model 79301-21 does not include gauge.



#### Specifications

**Wetted parts:** zinc alloy or PVC with Santoprene® and Buna N  
**Port size:** 1/4" ID tubing

Max vacuum	Max pressure†	Body material	mL/stroke	Catalog number	Price
25" Hg (635 Torr)	15 psi (1.03 bar)	Zinc alloy	15	<a href="#">GY-79301-01</a>	
	12 psi (0.83 bar)	PVC	16	<a href="#">GY-79301-11</a>	
	—	PVC	35	<a href="#">GY-79301-21‡</a>	

†NPT fittings can be used with NPS threads. ‡Does not include vacuum gauge.

[GY-79301-62](#) Repair kit for pump 79301-01

[GY-79301-63](#) Repair kit for pump 79301-11

[GY-79301-64](#) Repair kit for pump 79301-21

[GY-06414-20](#) Tygon® DEHP-free vacuum tubing, 1/4" ID x 5/8" OD. Pack of 10 feet



Zinc alloy pump 79301-01 is perfect for rugged applications.

PVC pump 79301-11 is lightweight and easy to handle.

## Inlet Traps

### Protect your vacuum pump against damage from contaminants

#### A. Inlet Foreline Trap

Trap prevents back migration of rotary pump oil vapor into your inlet jet. Product includes activated alumina.

Max flow	Temp range	Ports	Wetted parts	Dimensions	Catalog number	Price
20 cfm	32 to 122°F	NW 25	Aluminum, Viton®	3 1/4" dia x 5 1/8" L	<a href="#">GY-79302-20</a>	

[GY-79302-21](#) Replacement element for trap 79302-20

#### B. Inlet Condensate Trap

Trap protects pumps from harmful vapors.

Ports	Capacity	Wetted parts	Dimensions	Catalog number	Price
NW 25	1.84 L	Aluminum, glass, Viton	6 3/4" dia x 8 1/4" L	<a href="#">GY-79302-00</a>	

#### C. Stainless Steel and Glass Cold Traps

Easy to clean—remove from the vacuum pump and clean at the end of each day to prevent trapped oil vapors from damaging the pump. Dry ice traps have a removable 3-qt well for dry ice/alcohol slurry. Glass cold traps are used with Dewar flasks and ice/liquid N<sub>2</sub>.

Low temp	Connections	Capacity	Dia	H	Catalog number	Price
<b>316 SS dry ice cold trap, 12 hour refrigerant hold time (hours with no load)</b>						
110°F (-79°C)	1/2" OD straight tube	3 qt	10"	8 1/4"	<a href="#">GY-79209-30</a>	
<b>Glass cold traps</b>						
-324°F (-198°C)	10 mm	40 mL	1 1/8"	7 7/8"	<a href="#">GY-34530-30</a>	
	16 mm	70 mL	1 1/2"	9 7/8"	<a href="#">GY-34530-34</a>	



### Teky's Tips

**Bigger is not better!**

Oversizing a pump for trapped applications will lead to sublimation of condensed vapor out of the cold trap and into the pump. These conditions shorten the oil life and degrade pump performance.



## Vacuum Pumps

### Vacuum Grease

#### Maintain tighter seals

Vacuum grease 79751-30 is ideal for general applications. Hydrocarbon vacuum grease 79751-36 is for 4-Ball Extreme Pressure tests.

Volume oz (g)	Maximum temperature	Catalog number	Price
5.3 (150)	500°F (260°C)	<a href="#">GY-79751-30</a>	
3.5 (99)	392°F (200°C)	<a href="#">GY-79751-36</a>	



### Cole-Parmer® Vacuum Pump Oil

#### Get good performance and long pump life

CP 500 is a high-viscosity, general-purpose oil. Use CP 19 in direct drive pumps to resist gum formation and oxidation. CP 20 exhibits a low vapor pressure and resists oxidation and thermal degradation—ideal for mechanical vacuum pumps. All have a specific gravity of 0.86 g/mL.



Type (viscosity)	Vapor pressure at 25°C	Volume	Catalog number	Price
CP 500 (56 cSt)	<math>10^{-6}</math> Torr	1 qt (946 mL)	<a href="#">GY-79755-00</a>	
		1 gal. (3785 mL)	<a href="#">GY-79755-02</a>	
CP 19 (54 cSt)	$3 \times 10^{-5}$ Torr	1 qt (946 mL)	<a href="#">GY-79755-10</a>	
		1 gal. (3785 mL)	<a href="#">GY-79755-12</a>	
CP 20 (58 cSt)	$3 \times 10^{-6}$ Torr	1 qt (946 mL)	<a href="#">GY-79755-20</a>	
		1 gal. (3785 mL)	<a href="#">GY-79755-22</a>	

## Vacuum Regulators

### Monitor and control vacuum and pressure

– Each regulator includes a gauge



Range	Capacity	Ports (inlet; outlet)	Wetted parts	Catalog number	Price
0 to 30" Hg	2 cfm	1/4" NPT(M); 1/4" hose barb	Aluminum, brass	<a href="#">GY-07061-30</a>	
0 to 29" Hg	2.47 cfm	1/8" NPT(F); 1/8" NPT(F)	Brass	<a href="#">GY-00910-10</a>	

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## Co-Seals, Centering Rings, Tubing, and Clamps

### Co-Seals and Centering Rings

Polymer support and nitrile O-rings withstand up to  $10^{-7}$  Torr (mm Hg). Temperature range of coseal is 14 to 176°F (-10 to 80°C). Temperature range of centering rings is 14 to 212°F (-10 to 100°C).



Flange size	Catalog number	Price
<b>Co-seals</b>		
NW 10/16	<a href="#">GY-31402-60</a>	
NW 20/25	<a href="#">GY-31402-62</a>	
<b>Centering rings</b>		
NW 16	<a href="#">GY-31402-70</a>	
NW 25	<a href="#">GY-31402-72</a>	
63 ISO-K	<a href="#">GY-31401-82</a>	
100 ISO-K	<a href="#">GY-31401-84</a>	

### Tubing

321 SS tubing with butt-welded seam that eliminates leaks. Choose NW 16 or NW 25 flanges. NW 16 has 3/4" ID; NW 25 has 1" ID.



Flange size	Length	Catalog number	Price
NW 16	10"	<a href="#">GY-79752-31</a>	
	20"	<a href="#">GY-79752-32</a>	
	40"	<a href="#">GY-79752-33</a>	
NW 25	10"	<a href="#">GY-79752-41</a>	
	20"	<a href="#">GY-79752-42</a>	
	40"	<a href="#">GY-79752-43</a>	

### Clamps

Clamps are constructed of 316 SS, PTFE, Viton® fluoroelastomer, aluminum, and Perbunan®. Temperature range is from 14 to 212°F (-10 to 100°C).



Flange size	Catalog number	Price
NW 10/16	<a href="#">GY-31400-40</a>	
NW 20/25	<a href="#">GY-31400-42</a>	
NW 32/40	<a href="#">GY-31400-44</a>	
ISO-K	<a href="#">GY-31400-46</a>	