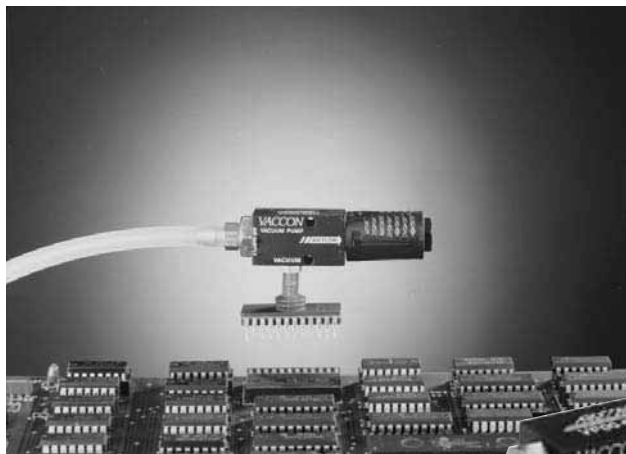


Miniature Venturi Vacuum Pump with Silencer

Fastvac Mini Series: VP00



VP00-60H picks and places IC chips on circuit boards



VP00-60H Standard Pump

Ideal Applications:

- Small part pick and place
- Integrated circuit handling
- Small vessel evacuation
- Sampling for liquid and gas analysis

Features/Benefits

- High productivity – powerful vacuum up to 28"Hg [948mbar]
- Mounts Easily – square body, compact and lightweight
- Fast Response – installs close to vacuum point
- Efficient – minimal air consumption
- Reliable – operates trouble free:
 - ~ Straight-through design, non-clogging
 - ~ No moving parts to wear or clog
 - ~ No flap valves to stick open
 - ~ No maintenance
 - ~ No downtime

Standard Pump:

The VP00 Fastvac Mini Series air-powered venturi vacuum pumps are highly efficient, capable of reaching 28"Hg [948mbar], and dirt tolerant. The VP00s use minimal compressed air and include a silencer for quiet operation. Lightweight and compact, they easily mount close to the vacuum point for fast response.

Performance Level Designations:

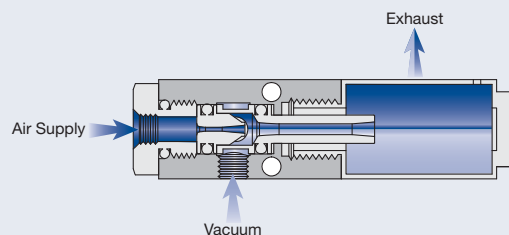
"M" 0-20"Hg, [0 to 677mbar] for medium vacuum/high flow applications
 "H" 0-28"Hg, [0 to 948mbar] for high vacuum/standard flow applications

Pump Options:

- Factory installed miniature vacuum switches or sensors for reliable part detection
- ST2 (straight-through) silencer allows ingested debris to exit the pump without clogging
- G port threads for metric machines – an "I" prefix designates products with metric threads
- Choice of operating pressures to meet machine and factory air supply (80 PSI [5.5BAR] standard, 60 PSI [4.0BAR] optional).

Principles of Operation:

Vacuum is produced by forcing compressed air through a limiting orifice (nozzle). As the air exits the orifice, it expands, increasing in velocity to supersonic speed before entering the venturi section (diffuser). This creates a vacuum at the vacuum inlet port, located between the nozzle and diffuser. The nozzle and diffuser combine to create a venturi vacuum cartridge.



Eliminate the Guesswork: Contact Us!

Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

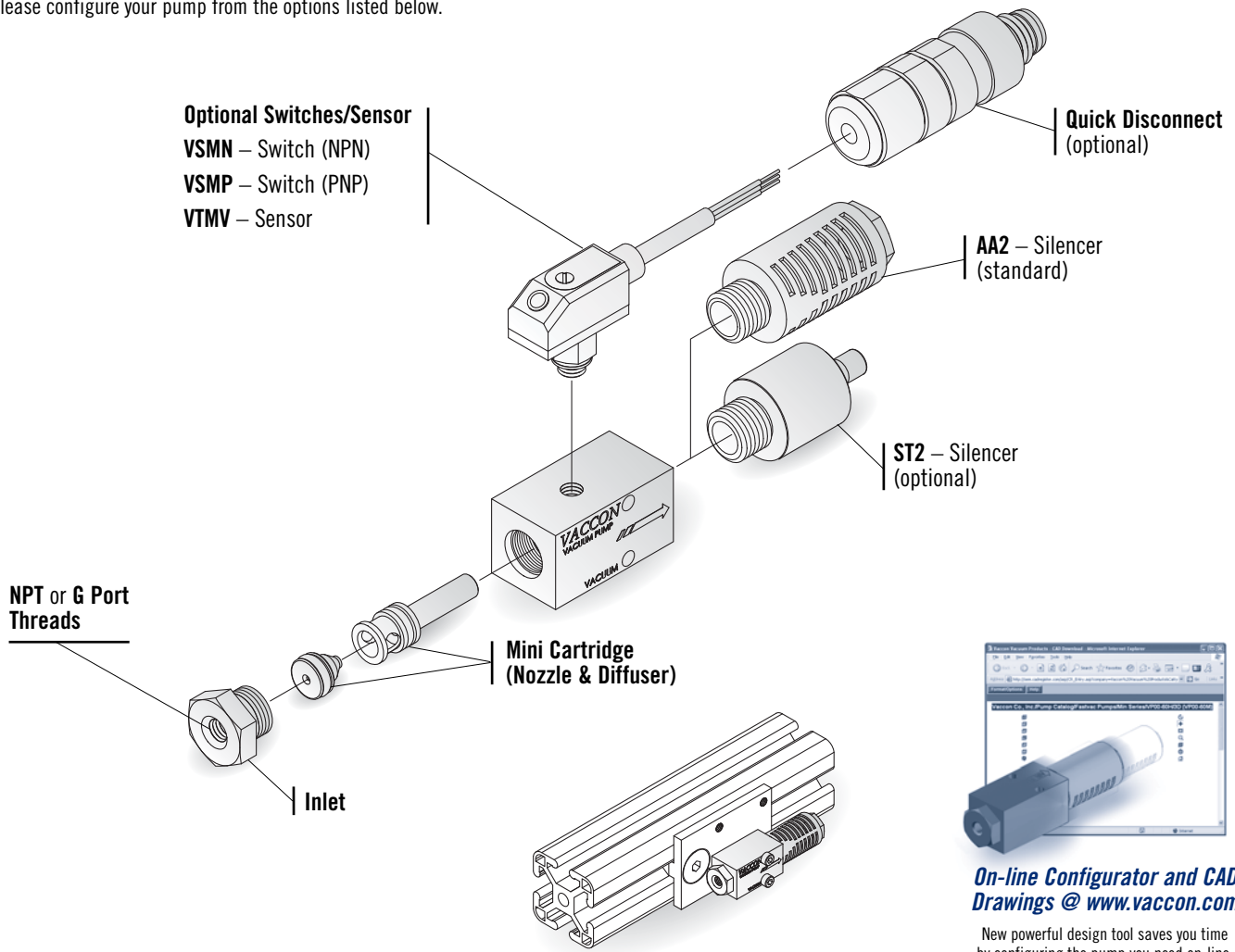
To download a complete set of drawings in 13 different CAD formats, please visit our website at www.vaccon.com

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email engineering@vaccon.com

Modular Venturi Vacuum Pumps

VP00-60 (M, H) Fastvac Mini Series Configurations and Options:

All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.



VP00 pumps are Fractional and Metric T-Slot compatible. See EOAT Section.



On-line Configurator and CAD Drawings @ www.vaccon.com

New powerful design tool saves you time by configuring the pump you need on-line. When complete, simply download the CAD drawing in any one of 13 different CAD formats and insert it right into your design.

Get the pump you need, in the format you like!

How to Specify:

VP00-60 H - 60 - ST2 - VSMP

P/N	Thread
VP00-60	NPT
I-VP00-60	G Port

P/N	Max. Vac Level
M	20"Hg [677mbar]
H	28"Hg [948mbar]

P/N	Operating Pressure
	80 PSI [5.5 BAR] (Std)
60	60 PSI [4.0 BAR]

P/N	Switch/Sensor
	None (Standard)
VSMN	Switch - NPN
VSMP	Switch - PNP
VTMV	Sensor - 0-5VDC Output
VSMN-QD	Switch w/Quick Disconnect
VSMP-QD	Switch w/Quick Disconnect
VTMV-QD	Sensor w/Quick Disconnect

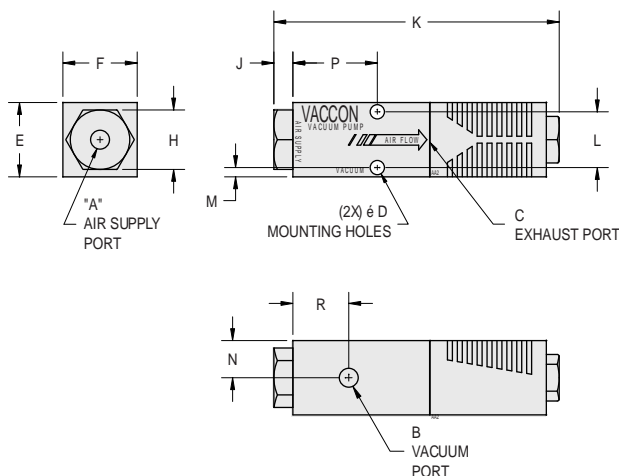
P/N	Silencer
	AA2 - Closed End (Standard)
-ST2	Straight-Through

For complete Performance Data, see page 148.

Standard Pump: VP00-60 (M or H)



VP00-60H with AA2 silencer.



Specifications:

Weight 0.86 oz [24.3g]
Noise Level 58dB

Model #	Imperial Dimensions (in.)													
VP00 w/AA2	A	B	C	D	E	F	H	J	K	L	M	N	P	R
	10-32 F	10-32 F	1/8 NPT F	0.12	0.63	0.63	0.49	0.16	2.40	0.47	0.08	0.31	0.71	0.47
Model #	Metric Dimensions (mm)													
I-VP00 w/AA2	A	B	C	D	E	F	H	J	K	L	M	N	P	R
	M5	M5	G 1/8	3.0	15.9	15.9	12.4	4.1	61.0	11.9	2.0	7.9	18.0	11.9

VP00 Pump Standard Specifications:

- Pump Material:** Anodized Aluminum (For silencer material, see pages 233-235)
- Cartridge Material:** Nylon, Buna-N O-ring (Other material available, see page 7)
- Medium:** Filtered (50 Micron) un-lubricated, non-corrosive dry gases
- Operating Temperature:** 30°F~250°F [-34°~121°C]
- Operating Pressure:** 80 PSI [5.5 BAR] standard or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

VP00 Operating and Installation Instructions:

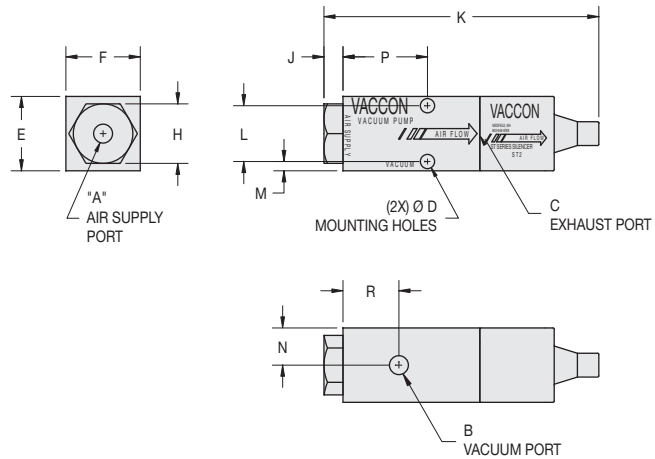
- Supply Line:** Min. 5/32" [4mm], 1/4" O.D. [6mm] tube preferred for supply lines exceeding 3' [1M]
- Control Valve:** 3 way/2 position (faster part release), minimum orifice – 0.062" diameter [1.57mm]
- Vacuum Line:** 1/4" [6mm] tube preferred, for short runs 5/32" [4mm] may be used
- Vacuum Line Filtration:** Typically filters are not required, if desired Vaccon recommends – VF125LPM. See page 282.
- Mounting:** Mounting holes accept 4-40 or M3 screws

Modular Venturi Vacuum Pumps

VP00-60 (M or H) Pump - Optional Silencer: ST2



VP00-60H with ST2 silencer.



Specifications:

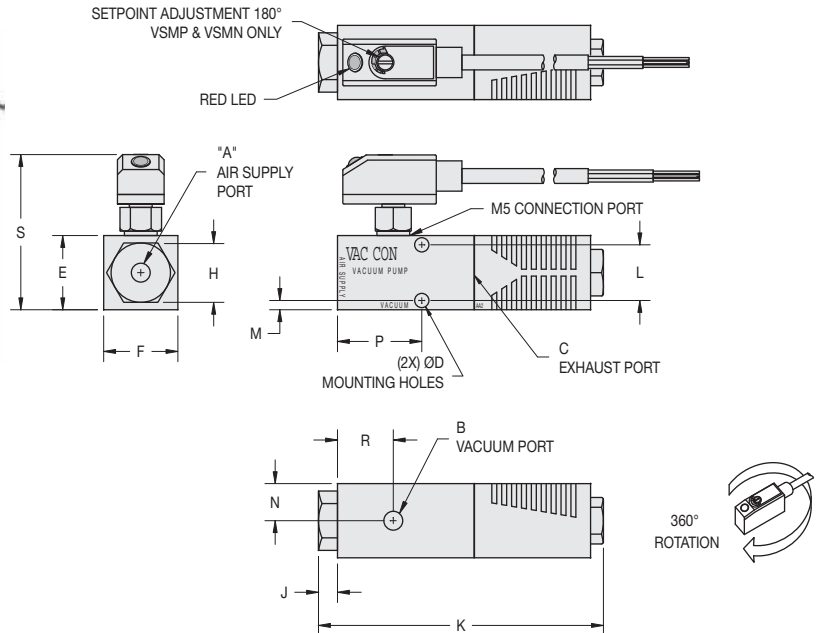
Weight 0.92 oz [26g]
Noise Level 68dB

Model #	Imperial Dimensions (in.)													
VP00 w/ST2	A	B	C	D	E	F	H	J	K	L	M	N	P	R
	10-32 F	10-32 F	1/8 NPT F	0.12	0.63	0.63	0.49	0.16	2.40	0.47	0.08	0.31	0.71	0.47
Model #	Metric Dimensions (mm)													
I-VP00 w/ST2	A	B	C	D	E	F	H	J	K	L	M	N	P	R
	M5	M5	G 1/8	3.0	15.9	15.9	12.4	4.1	61.0	11.9	2.0	7.9	18.0	11.9

VP00-60 (M or H) Pump – Optional Switch/Sensor: VSMP, VSMN or VTMV



VP00-60H with VSMP switch. QD - Quick Disconnect available. See page 323 for QD.



Specifications:

Weight 1.8 oz [51g]
Noise Level 58dB

Model #	Imperial Dimensions (in.)														
VP00 w/Switch or Sensor	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S
	10-32 F	10-32 F	1/8 NPT F	0.12	0.63	0.63	0.49	0.16	2.40	0.47	0.08	0.31	0.71	0.47	1.31
Model #	Metric Dimensions (mm)														
I-VP00 w/Switch or Sensor	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S
	M5	M5	G 1/8	3.0	15.9	15.9	12.4	4.1	61.0	11.9	2.0	7.9	18.0	11.9	33.2

Performance Data for Mini Series Pumps & Cartridges

For Pump Models: VP00, VP01, VP01QR, VPOX, and Manifolds

M-Series Pumps for Medium Vacuum Applications

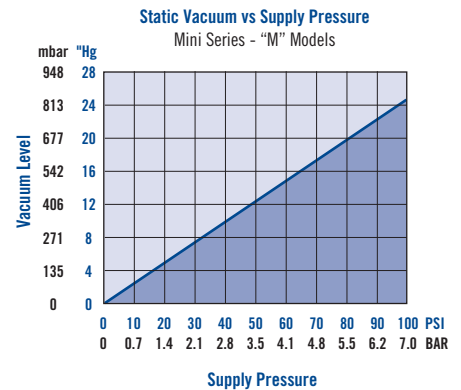
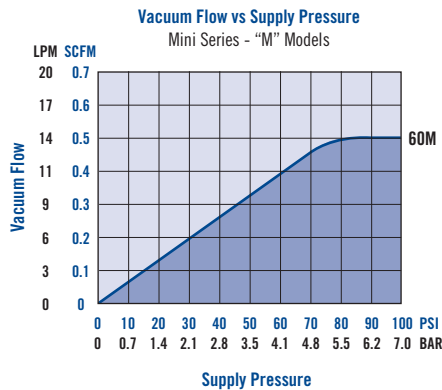
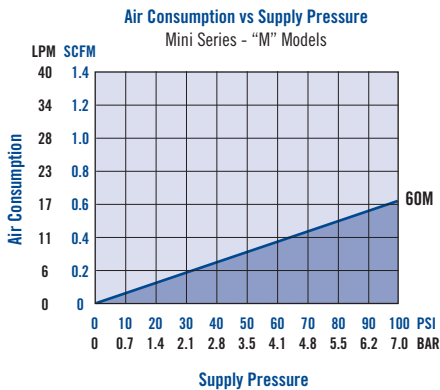
M is for “Medium” vacuum levels up to 20" Hg [677mbar] for applications involving porous materials (cardboard, wood, masonry, baked goods, textiles).

Model #	Air Consumption SCFM	Imperial - Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)							
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	20"Hg
CM60M	0.50	0.50	0.40	0.30	0.22	0.15	0.08	0.03	0.00
		Evacuation Time in Seconds based on 1 Cu. Ft. Volume/"Hg							
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	20"Hg
		0.00	12.50	25.10	43.90	68.60	99.30	153.70	227.00

Model #	Air Consumption L/min	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)							
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	677mbar
CM60M	14.2	0.0	11.3	8.5	6.2	4.2	2.3	0.8	0.0
		Evacuation Time in Seconds based on 1 Liter Volume / mbar							
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	677mbar
		0.0	0.4	0.9	1.6	2.4	3.5	5.4	8.0

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5BAR]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4 BAR] etc. The values shown in the performance chart will remain the same for all operating pressures.

Note 2: Evacuation speed is linear with volume, a 2 cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.



Performance Data for Mini Series Pumps & Cartridges

For Pump Models: VP00, VP01, VP01QR, VPOX, and Manifolds

H-Series Pumps for High Vacuum Applications

H is for “High” vacuum levels up to 28" Hg [948mbar] for applications involving non-porous materials (steel, plastic, glass, etc.). The high vacuum level provides high vacuum force for lifting heavy materials and holding them securely.

Model #	Air Consumption SCFM	Imperial - Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)										
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hr	24"Hg	27"Hg	28"Hg
CM60H	0.80	0.50	0.38	0.32	0.30	0.27	0.23	0.20	0.13	0.05	0.02	0.00
		Evacuation Time in Seconds based on 1 Cu. Ft. Volume/"Hg										
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg	928"Hg
		0.00	15.00	29.80	50.60	74.50	102.80	135.90	183.20	245.90	410.20	790.80

Model #	Air Consumption L/min	Metric - Vacuum Flow (L/min) vs. Vacuum Level (mbar)										
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
CM60H	22.7	14.2	10.8	9.1	8.5	7.6	6.5	5.7	3.7	1.4	0.6	0.0
		Evacuation Time in Seconds based on 1 Liter Volume/mbar										
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
		0.00	0.5	1.1	1.8	2.6	3.6	4.8	6.5	8.7	14.5	27.9

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5BAR]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4 BAR] etc. The values shown in the performance chart will remain the same for all operating pressures.

Note 2: Evacuation speed is linear with volume, a 2 cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.

