

Miniature Venturi Vacuum Pump with Solenoid Operated Vacuum and Blow-off

Fastvac Mini Series: VP01QR-60



VP01QR-60H/24VDC

Standard Pump:

VP01QR Fastvac Mini Series are solenoid-controlled miniature venturi vacuum pumps that feature a second solenoid to control blow-off air for rapid part release.

The integral suck and blow circuit design provides instantaneous response for high speed assembly and pick and place applications. The blow-off is at line pressure, and is internally plumbed so that only one air and vacuum line is required.

The compact, lightweight, dirt tolerant pump can be placed directly at the point of use. No filters are required.

Add a Vaccon ultra-miniature vacuum switch or sensor for a vacuum achieved/part present signal.

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

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

Ideal Applications:

Small part pick and place for applications requiring accurate part placement:

- Automated assembly
- Robotics
- Material handling

Features/Benefits:

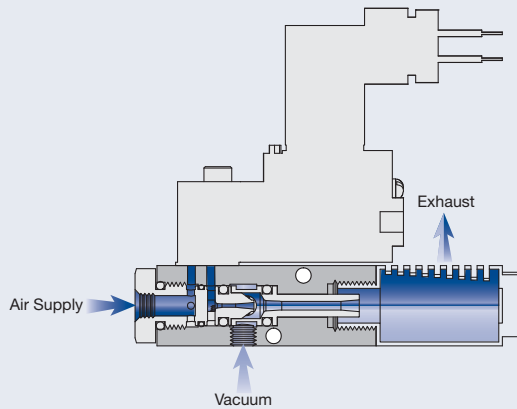
- Precise control – individual electrical connections let you control the vacuum and the blow-off duration time
- Fast response – no delay due to long plumbing lines; installs close to vacuum point
- Instantaneous vacuum as needed – minimal air consumption
- Productivity – fast part release with high cycle rates up to 4800/min
- Accurate part positioning from positive vacuum and rapid blow-off
- Easy installation – modular design speeds installation and minimizes assembly
- Reliable, trouble-free operation
 - ~ No moving parts to wear
 - ~ No maintenance
 - ~ No downtime

Pump Options:

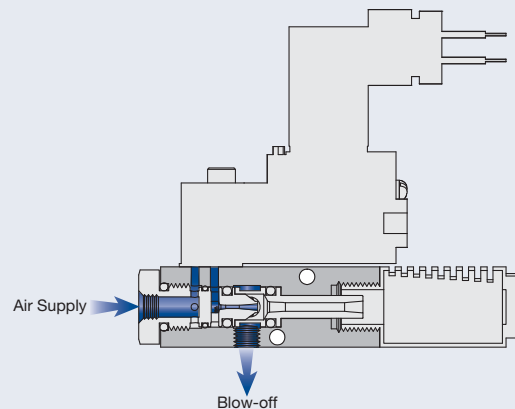
- Choice of valve voltage – 24vDC or 110vAC
- Factory-installed miniature vacuum switches or sensors for reliable part detection
- ST2 (straight-through) silencer that allows ingested debris to exit the pump without clogging
- G port threads for metric machines – an “I” prefix designates products with metric threads
- Choice of operating pressures to meet machine and factory air supply 80 PSI [5.5 BAR] standard, 60 PSI [4.0 BAR] optional.

Modular Venturi Vacuum Pumps with Solenoid-Operated Vacuum and Blow-Off

Principles of Operation: VP01QR-60



Compressed air is supplied to both N.C. solenoid valves simultaneously. To create vacuum, energize the first solenoid valve to allow the compressed air to flow to the miniature venturi cartridge resulting in instant vacuum at the vacuum port.



To release the part, de-energize the vacuum solenoid while energizing the blow-off solenoid. Because the blow-off air is at line pressure, a very powerful blow-off will be created.

VP01QR Standard Pump Specifications:

Body Material:	Anodized Aluminum (For silencer material, see pages 233-236)
Cartridge Material:	Nylon, Buna-N (Other materials available, see page 7)
Medium:	Filtered (50 Micron) un-lubricated, non-corrosive dry gases
Operating Temperature:	0°~122° F [-18°~65°C]
Operating Pressure:	80 PSI [5.5 BAR] standard or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

3-Way Mini Valve Specifications

Valve Type:	Integral 3-way solenoid, 24vDC or 110vAC, Normally closed
Valve Body Material:	Electroless nickel plated, 430 F Stainless Steel, Anodized Aluminum
Valve Seal Material:	Buna-N, Neoprene
Valve Operating Pressure:	Up to 100 PSI [7 BAR]
Average Life:	100 million cycles
Power Consumption:	2.5 watts
Response Time:	6 milliseconds
Cycle Rate:	80 cycles/second
Electrical Connection:	9.4 mm, 2 pole + 1 ground, #43650 Din Connector with 22 AWG, 2' flying leads
Manual Override:	Yes, non-locking, spring return

VP01QR Operating and Installation Instructions:

Operating Pressure:	80 PSI [5.5 BAR]. Set regulator to 80 PSI (or pre-designated pressure) when pump is operating
Supply Line:	1/4" O.D. [6mm] tube recommended
Vacuum Line:	1/4" O.D. [6mm] tube recommended
Vacuum Line Filtration:	Typically filters are not required, if desired Vaccon recommends – VF125LPM. See page 282.
Mounting Holes:	Mounting holes accept #4-40 [M3] screws

Modular Venturi Vacuum Pumps with Solenoid-Operated Vacuum and Blow-Off

VP01QR Mini Series Configurations and Options:

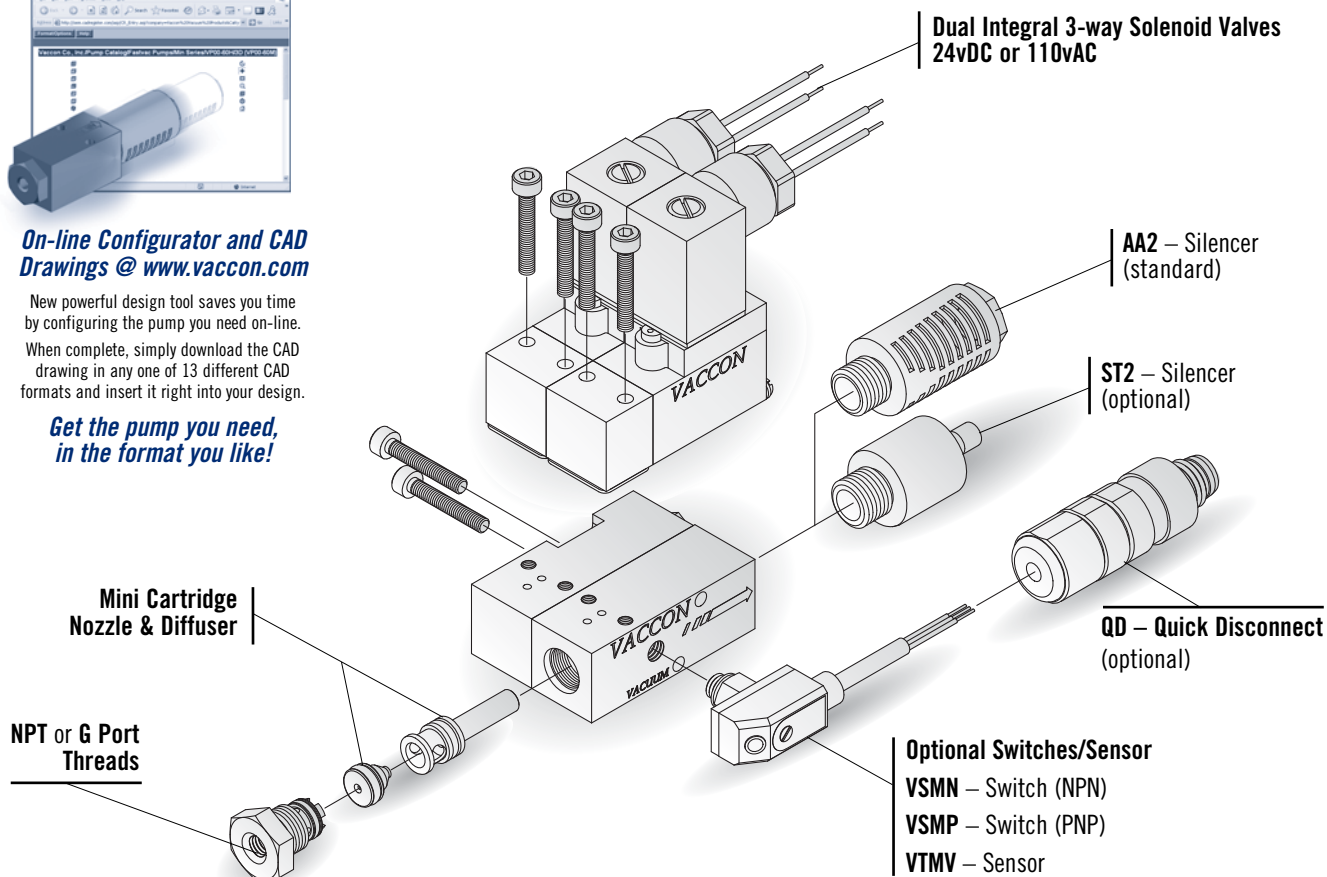
All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.



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:

VP01QR-60 H - 110vAC - 60 - ST2 - VSMP

P/N	Thread
VP01QR-60	NPT
I-VP01QR-60	G-Port

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

P/N	Voltage
24vDC	24vDC
110vAC	110vAC

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

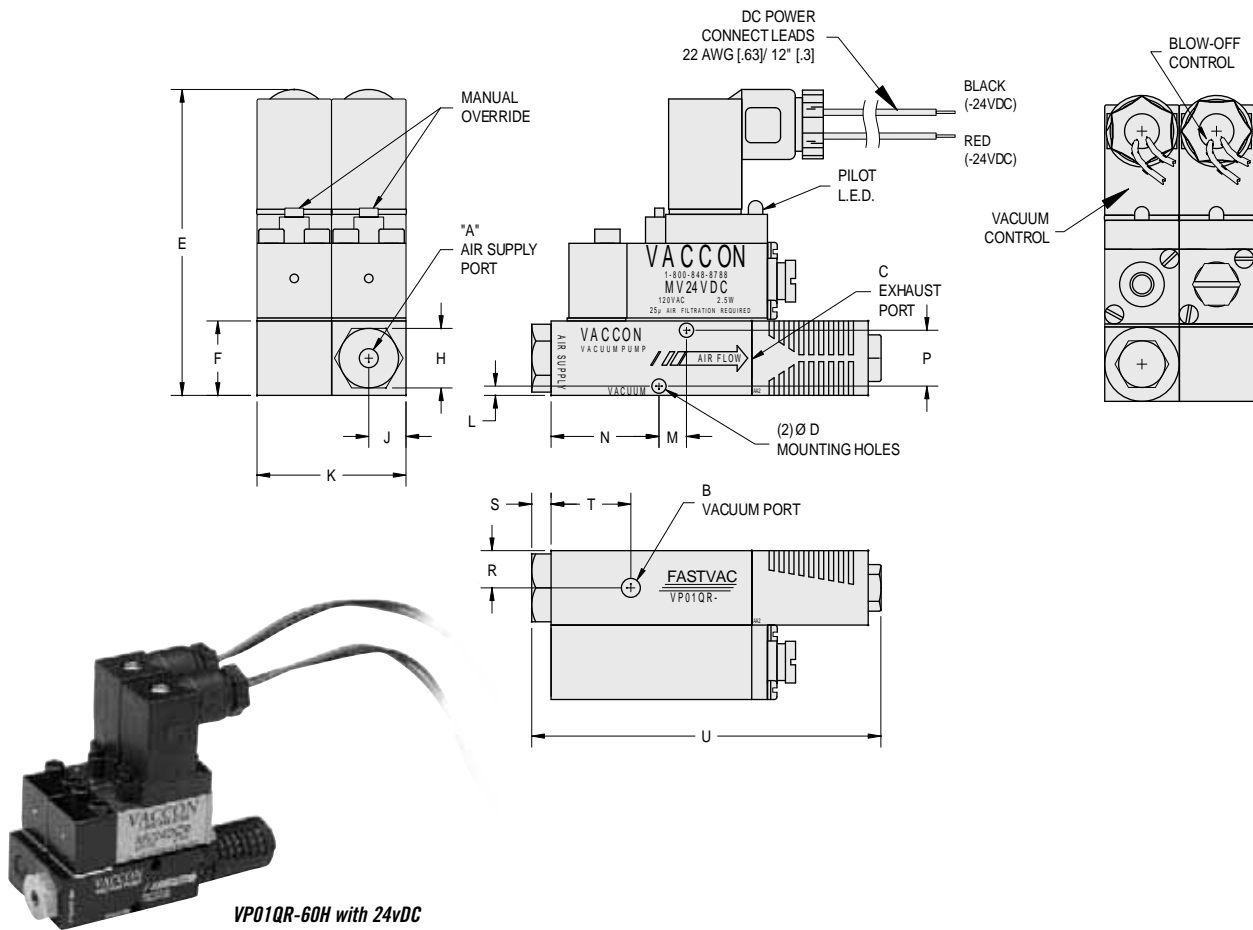
P/N	Silencer
AA2	Closed End (Standard)
ST2	Straight Through

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

For complete Performance Data, see page 150.

Modular Venturi Vacuum Pumps with Solenoid-Operated Vacuum and Blow-Off

Standard Pump: VP01QR-60 (M or H)/(24vDC or 110vAC)



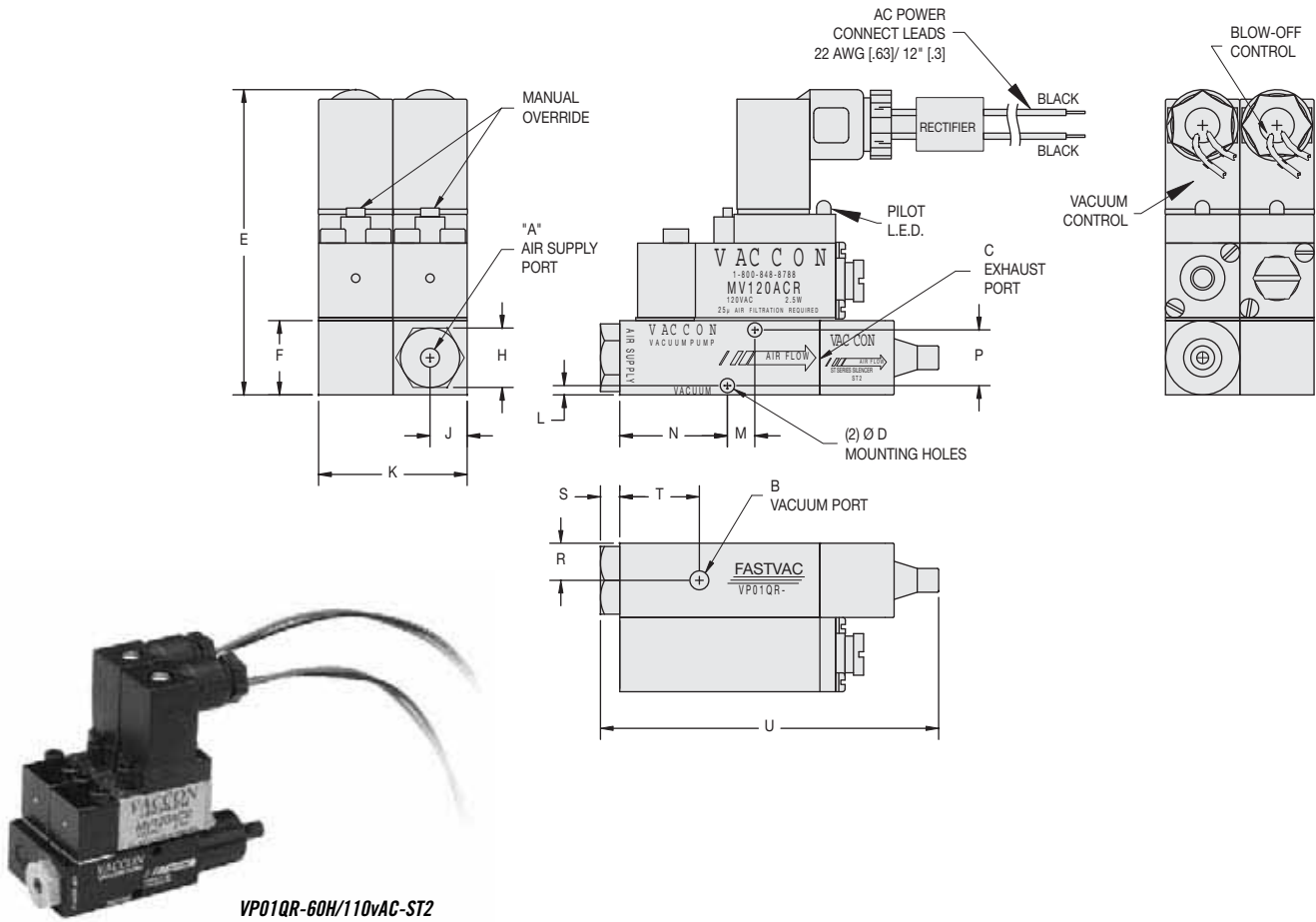
Specifications:

Weight: 7.5 oz [212g]
 Noise Level: 58 dB

Model #	Imperial Dimensions (in.)																
	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
VP01QR w/AA2	10-32 F	10-32 F	1/8 NPT	0.12	2.57	0.63	0.50	0.31	1.25	0.08	0.23	0.91	0.47	0.31	0.16	0.67	2.93
Model #	Metric Dimensions (mm)																
	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
I-VP01QR w/AA2	M5	M5	G 1/8	3.05	65.25	15.88	12.70	7.94	31.78	1.98	5.87	23.01	11.91	7.9	4.13	17.02	74.52

Modular Venturi Vacuum Pumps with Solenoid-Operated Vacuum and Blow-Off

Standard Pump: VP01QR-60 (M or H)/(24vDC or 110vAC): Optional Silencer: ST2



Specifications:

Weight: 7.6 oz [216g]
Noise Level: 68 dB

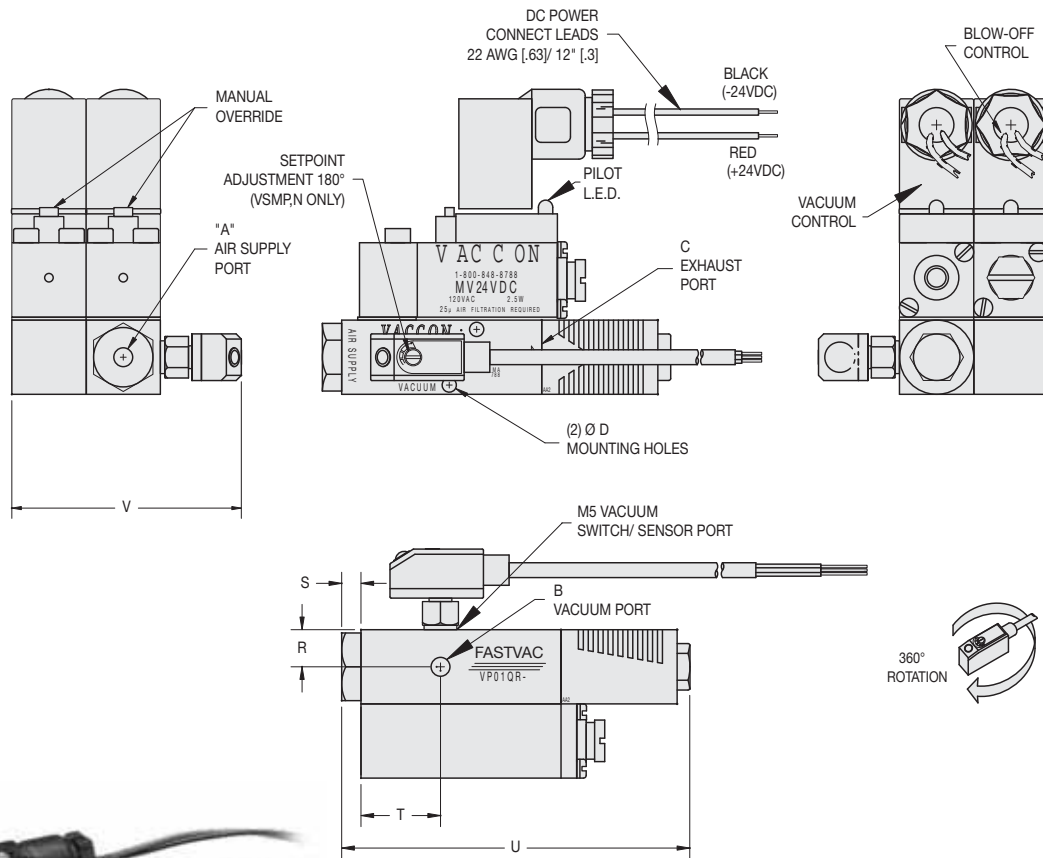
Model #	Imperial Dimensions (in.)																
	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
VP01QR w/ST2	10-32 F	10-32 F	1/8 NPT	0.12	2.57	0.63	0.50	0.31	1.25	0.08	0.23	0.91	0.47	0.31	0.16	0.67	2.85
Model #	Metric Dimensions (mm)																
	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
I-VP01QR w/ST2	M5	M5	G 1/8	3.05	65.25	15.88	12.70	7.94	31.78	1.98	5.87	23.01	11.91	7.9	4.13	17.02	72.33

Vacuum Pumps - Solenoid Operated Vacuum & Blow-off

Modular Venturi Vacuum Pumps with Solenoid-Operated Vacuum and Blow-Off

Standard Pump: VP01QR-60 (M or H)/(24vDC or 110vAC): Optional Ultra Mini Switch/Sensor

Vacuum Pumps - Solenoid Operated Vacuum & Blow-off



VP01QR-60H with 24vDC and VSMP switch

Specifications:

Weight: 9.4 oz [266g]
Noise Level: 58 dB

Model #	Imperial Dimensions (in.)																
VP01QR w/ Switch or Sensor	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
	10-32 F	10-32 F	1/8 NPT	0.12	2.57	0.63	0.50	0.31	1.25	0.08	0.23	0.91	0.47	0.31	0.16	0.67	2.93
Model #	Metric Dimensions (mm)																
I-VP01QR w/ Switch or Sensor	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
	M5	M5	G 1/8	3.05	65.25	15.88	12.70	7.94	31.78	1.98	5.87	23.01	11.91	7.9	4.13	17.02	74.52