

# Miniature Venturi Vacuum Pump with 3-way Integral Solenoid Valve and Silencer

## Fastvac Mini Series: VP01-60



VP01-60H/24vDC-ST2

### Standard Pump:

VP01 Fastvac Mini Series pumps are solenoid-controlled miniature venturi vacuum pumps that generate vacuum only when needed, minimizing compressed air consumption. The integral solenoid valve provides instantaneous response for high speed assembly and pick and place applications.

Lightweight and compact, VP01 pumps are placed directly at the point of use to eliminate plumbing between components and to ensure high cycle rates for increased productivity. Extremely dirt tolerant, filters are not 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

### Ideal Applications:

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

- Automated assembly
- Robotics
- Material Handling

### Features/Benefits:

- High productivity – Cycle rates up to 4800/min for fast part release
- Minimal air consumption – provides instantaneous vacuum as needed
- Reliable part detection – factory-installed miniature vacuum switches or sensors
- Fast Response – installs close to vacuum point – no delay due to long plumbing lines
- Easy installation – modular design speeds installation and minimizes assembly
- Reliable, trouble-free operation
  - ~ No moving parts to wear
  - ~ Straight-through design, non-clogging
  - ~ 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

### 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.

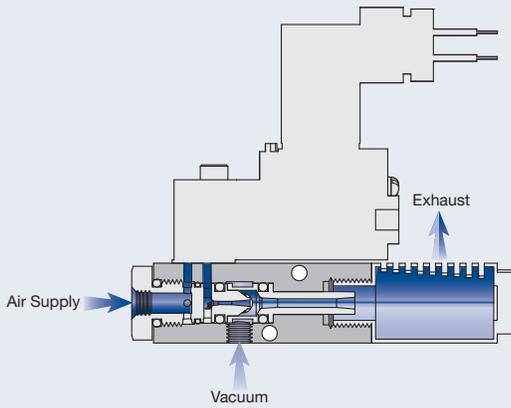
To download a complete set of drawings in 13 different CAD formats, please visit our website at [www.vaccon.com](http://www.vaccon.com)

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

# Modular Venturi Vacuum Pumps - Solenoid Operated

## Principles of Operation: VP01-60

To create vacuum, supply compressed air to a N.C. solenoid valve and energize the valve. Compressed air flows to the miniature venturi cartridge producing instant vacuum at the vacuum port. To release the part, de-energize the solenoid valve. The flow of air to the venturi stops instantly, and the rush of incoming atmospheric air breaks the vacuum.



## VP01 Standard Pump Specifications:

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

## 3-Way Pilot Valve Specifications

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

## VP01 Operating and Installation Instructions:

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

## VP01 Fastvac Mini Series Configurations and Options:

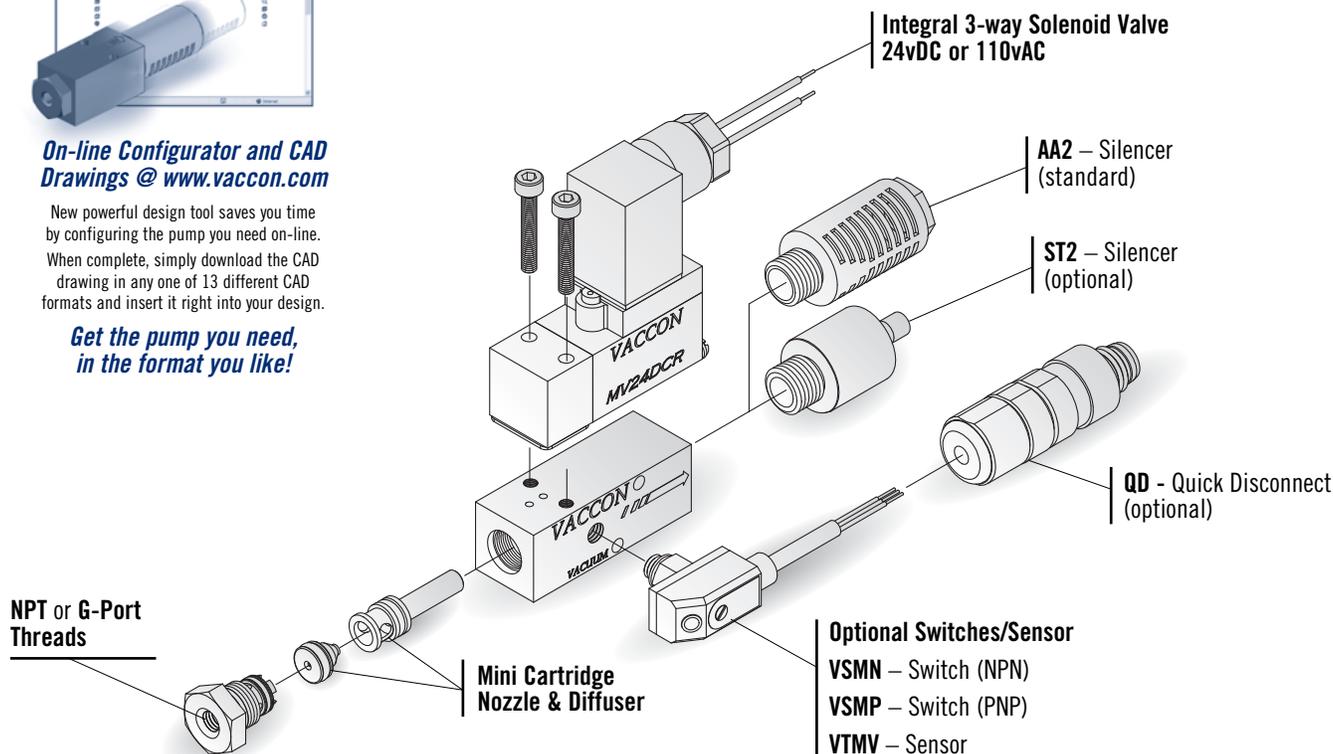
All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.



### On-line Configurator and CAD Drawings @ [www.vaccon.com](http://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:

**VP01-60 - H - 24vDC - 60 - ST2 - VTMV**

P/N	Thread
VP01-60	NPT
I-VP01-60	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]

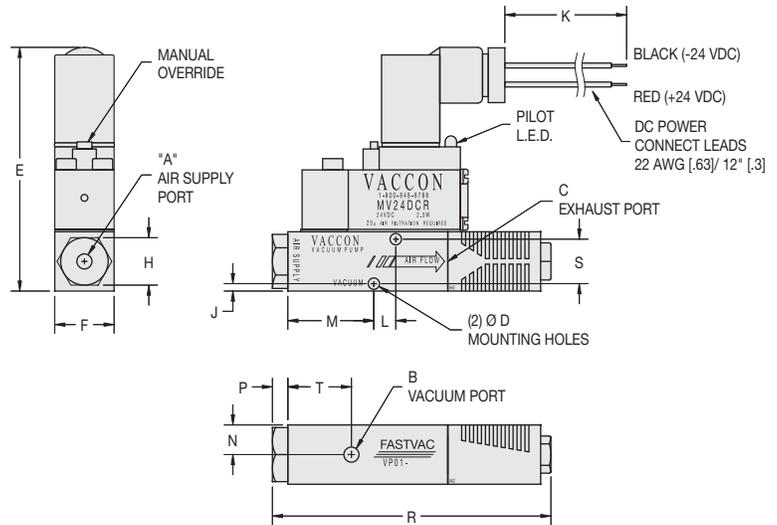
For complete Performance Data, see page 148.

# Modular Venturi Vacuum Pumps - Solenoid Operated

## Standard Pump: VP01-60 (M or H)/24vDC or 110vAC



VP01-60H with AA2 silencer and 24vDC valve



**Specifications:**

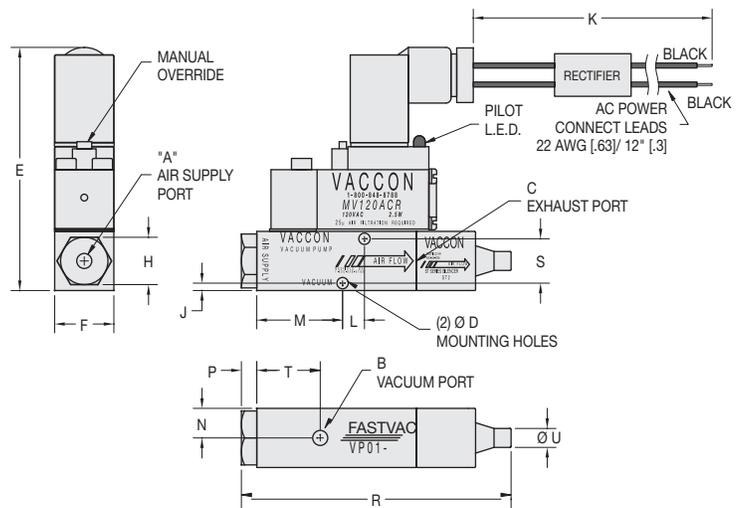
**Weight:** 3.7 oz [106g]  
**Noise Level:** 58 dB

Model #	Imperial Dimensions (in.)															
VP01 w/AA2 & 24vDC	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T
	10-32 F	10-32 F	1/8 NPT F	0.12	2.57	0.63	0.50	0.08	12.0	0.23	0.91	0.31	0.16	2.93	0.47	0.67
Model #	Metric Dimensions (mm)															
I-VP01 w/AA2 & 24vDC	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T
	M5	M5	G 1/8	3.0	65.3	15.9	12.7	2.0	304.8	5.9	23.0	7.9	4.1	74.5	11.9	17.0

## VP01-60 (M or H)/24vDC or 110vAC - Optional Silencer: ST2



VP01-60H with ST2 silencer and 110vAC valve



**Specifications:**

**Weight:** 3.8 oz [108g]  
**Noise Level:** 70 dB

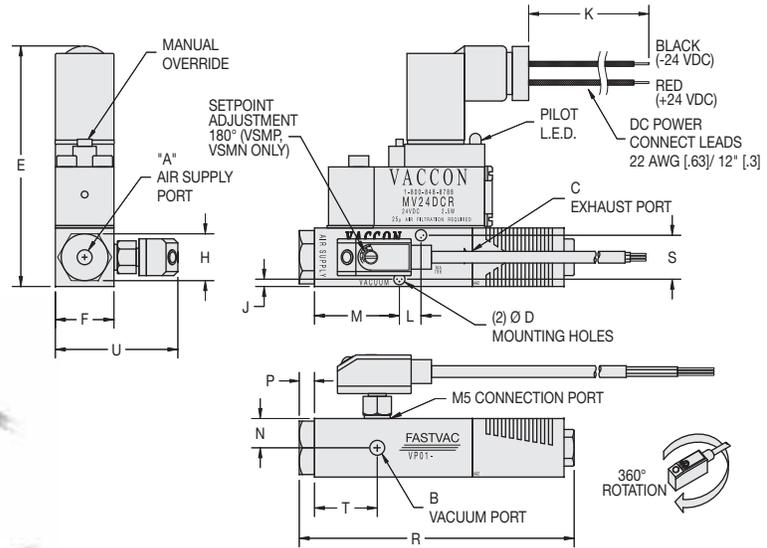
Model #	Imperial Dimensions (in.)																
VP01 w/ST2 & 110vAC	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
	10-32 F	10-32 F	1/8 NPT F	0.12	2.57	0.63	0.50	0.08	12.0	0.23	0.91	0.31	0.16	2.85	0.47	0.67	0.20
Model #	Metric Dimensions (mm)																
I-VP01 w/ST2 & 110vAC	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U
	M5	M5	G 1/8	3.0	65.3	15.9	12.7	2.0	304.8	5.9	23.0	7.9	4.1	72.4	11.9	17.0	5.1

Vacuum Pumps - Solenoid Operated

## VP01-60 (M or H)/24vDC or 110vAC – Optional Ultra Mini Switch/Sensor



VP01-60H/24vDC with VSMP switch



**Specifications:**

**Weight:** 4.6 oz [133g]  
**Noise Level:** 58 dB

Model #	Imperial Dimensions (in.)																
VP01 w/24vDC 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 F	0.12	2.57	0.63	0.50	0.08	12.0	0.23	0.91	0.31	0.16	2.93	0.47	0.67	1.31
Model #	Metric Dimensions (mm)																
I-VP01 w/24vDC 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	3.0	65.3	15.9	12.7	2.0	304.8	5.9	23.0	7.9	4.1	74.5	11.9	17.0	33.2