

## Modular Venturi Vacuum pumps Mid Series

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ACCELERATING AUTOMATION  
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# Min Series Venturi Vacuum Pump with Solenoid Operated Vacuum and Blow-off

## VP01QRBV



VP01QRBV-AA2

### Ideal Applications:

Small part pick & 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
- Easy installation – modular design speeds installation and minimizes assembly
- Reliable, trouble-free operation:
  - ~ No moving parts to wear
  - ~ No maintenance
  - ~ No downtime

### Standard Pump:

VP01QRBV Min Series are solenoid-controlled miniature venturi vacuum pumps that feature a second solenoid to control blow-off air for rapid part release.

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

This compact, lightweight, dirt tolerant pump can be placed directly at the point of use. No vacuum 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

### Pump Options:

- Factory-installed miniature vacuum switches or sensors with quick disconnect 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 [4.1 bar] optional.

### Eliminate the Guesswork: Contact Us!

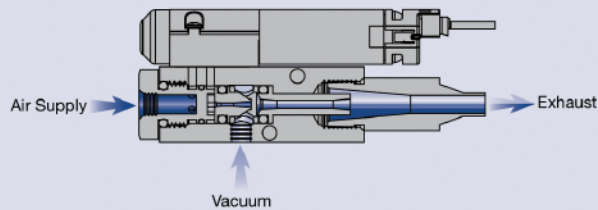
Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

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

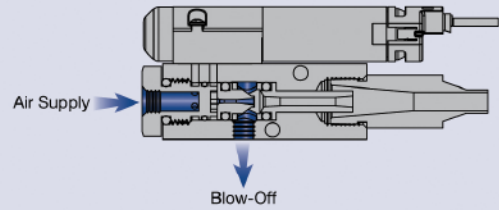
For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)



## Principles of Operation: VP01QRBV



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.

## VP01QRBV Standard Pump Specifications:

<b>Body Material:</b>	Anodized Aluminum (For silencer material, see page 244 - 248)
<b>Cartridge Material:</b>	Nylon, Buna-N (Other materials available, see page 8)
<b>Medium:</b>	Filtered (50 Micron) un-lubricated, non-corrosive dry gases
<b>Operating Temperature:</b>	0° to ~122° F [-18° to ~65°C]
<b>Operating Pressure:</b>	80 PSI [5.5 bar] standard or 60 PSI [4.1 bar] – Consult Factory for other operating pressures

## 3-Way Valve Specifications:

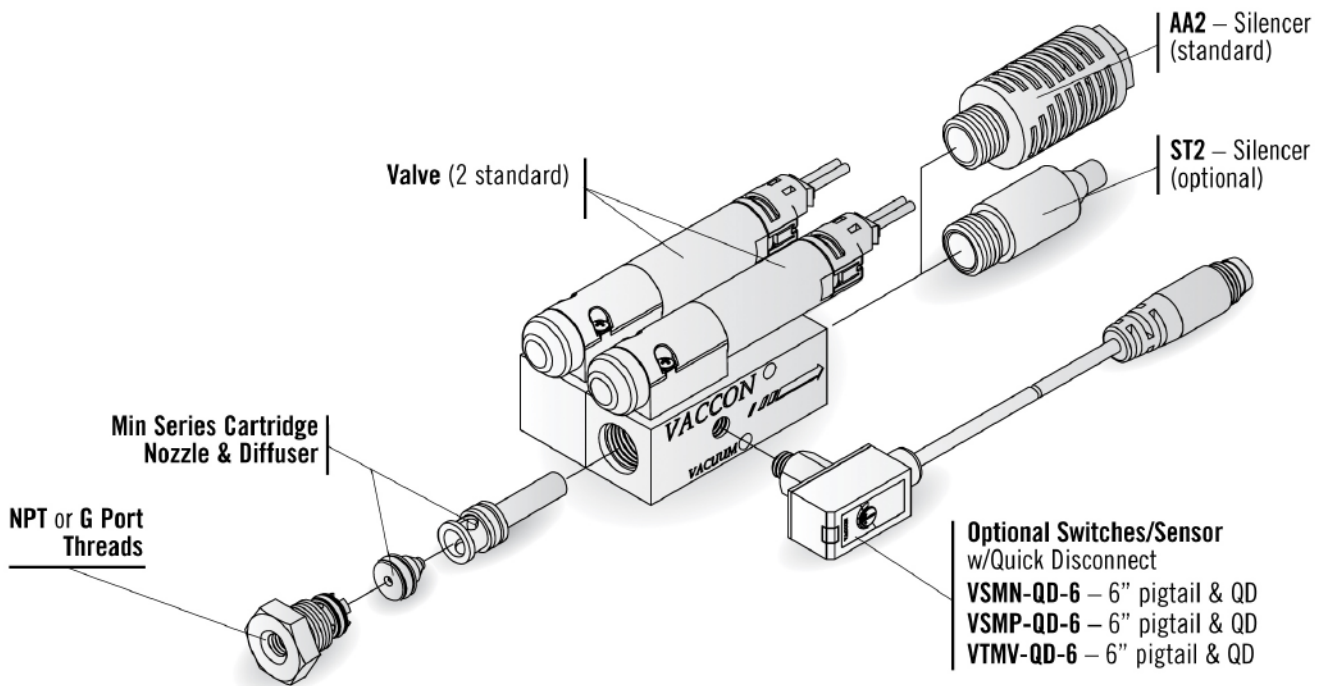
<b>Valve Type:</b>	Base Mounted 3-Way, Solenoid Valve, Normally closed
<b>Valve Body Material:</b>	Brass, Aluminum, Buna-N
<b>Valve Operating Pressure:</b>	Vacuum to 120 PSI [-1 to 8 bar]
<b>Electrical:</b>	24 VDC [-15% to +10% Nominal]
<b>Power Consumption:</b>	4 watts
<b>Response Time:</b>	6 milliseconds
<b>Cycle Rate:</b>	80 cycles/second
<b>Average Life:</b>	100 million cycles
<b>Electrical Connection:</b>	Fixed leads, 24 AWG, 18" [457.2mm]
<b>LED Indicator:</b>	Yes
<b>Manual Override:</b>	Yes, non-locking, spring return

## VP01QRBV Operating and Installation Requirements:

<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 vacuum filters are not required. If desired, Vaccon recommends – VF125LPM. See page 254.
<b>Mounting Holes:</b>	Mounting holes accept #4-40 [M3] screws

## VP01QRBV Min 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.



## How to Specify:

**VP01QRBV-60 H-60-ST2-VSMP-QD-6**

### P/N Imperial Thread

VP01QRBV-60 NPT

### P/N Metric Thread

I-VP01QRBV-60 G Port

### P/N Max. Vac Level

M 20"Hg [677 mbar]

H 28"Hg [948 mbar]

### P/N Operating Pressure

80 PSI [5.5 bar] (Std)

60 60 PSI [4.0 bar]

### P/N Switch/Sensor

None (Standard)

VSMN-QD-6 Switch – NPN with QD

VSMP-QD-6 Switch – PNP with QD

VTMV-QD-6 Sensor – 1-5VDC Output w/QD

### P/N Silencer

AA2 – Closed End (Standard)

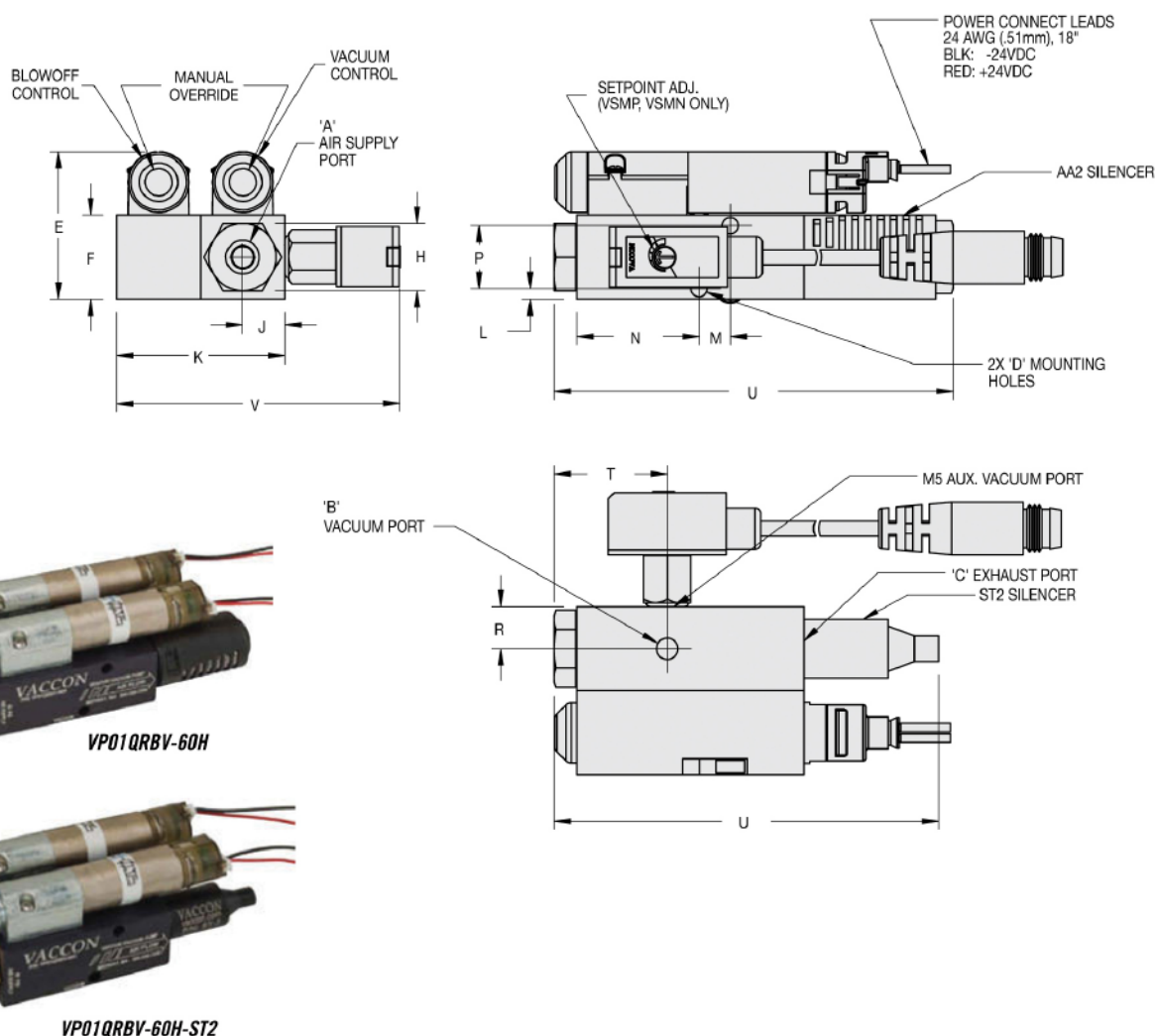
ST2 Straight-Through

*\*Note: Normally Open pump configuration available - consult factory.*

For complete Performance Data, see page 47.

# Modular Venturi Vacuum Pumps w/ Solenoid Operated Vacuum & Blow

## Standard Pump: VP01QRBV-60 (M or H)



### Specifications:

**Weight:** 4.59 oz [130.0g]  
**Noise Level:** 58 dB

Model #	Imperial Dimensions (in.)																	
VP01QRBV	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V
W AA2	10-32	10-32	1/8 NPT F	0.12	1.10	0.63	0.50	0.31	1.25	0.08	0.23	0.91	0.47	0.31	0.17	0.84	2.96	1.99
W ST2																	2.86	
w VSMP-QD-6/ VTMV-QD-6																	N/A	
Model #	Metric Dimensions (mm)																	
I-VP01QRBV	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V
W AA2	M5	M5	G 1/8	3.05	27.94	16.00	12.70	7.87	31.75	2.03	5.84	23.01	11.94	7.87	4.32	21.34	75.18	50.43
W ST2																	72.64	
w VSMP-QD-6/ VTMV-QD-6																	N/A	

# Mid Series Venturi Vacuum Pump with Solenoid Operated Vacuum and Blow-off

## VP35



VP35-100M

### Ideal Applications:

Pick & 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.
- Instantaneous vacuum as needed – minimal air consumption
- High Productivity – fast part release with cycle rates up to 2700/min
- Accurate part positioning from positive vacuum and rapid blow-off
- Easy installation – modular design speeds installation and minimizes assembly
- Fast response – no delay due to long plumbing lines; installs close to vacuum point
- Reliable, trouble-free operation:
  - ~ No moving parts to wear
  - ~ No maintenance
  - ~ No downtime

### Standard Pump:

VP35 Mid Series are solenoid-controlled venturi vacuum pumps that feature a second solenoid to control blow-off air for rapid part release. VP35 pumps generate vacuum only when needed, minimizing compressed air consumption.

Design flexibility is further increased with our interchangeable venturi cartridge system. Choosing from 11 different venturi cartridges, designers optimize performance to meet their needs.

Lightweight and compact, VP35 pumps are placed at the point of use to eliminate plumbing between components and to ensure high cycle rates for increased productivity. Dirt tolerant, vacuum filters are not required. Push-to-connect air supply and vacuum lines save space and assembly time.

### Performance Level Designations:

“L” 0-10”Hg, [0 to 339mbar] for low vacuum/high flow applications

“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](http://www.vaccon.com)

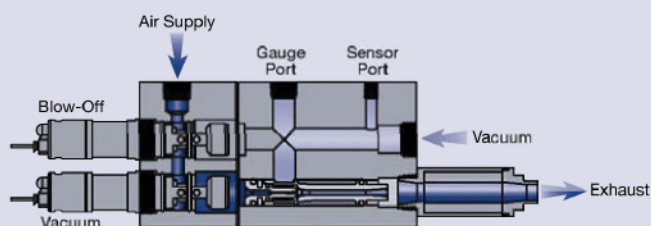
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### Pump Options:

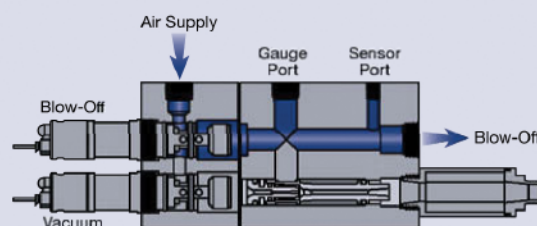
- Interchangeable venturi cartridges – 11 different performance levels
- Factory-installed miniature vacuum switches or sensors with quick disconnect for reliable part detection
- ST4 (straight-through) silencer that allows ingested debris to pass through pump without clogging or STAA4 hybrid silencer for ultra quiet operation
- Choice of operating pressures to meet machine and factory air supply 80 PSI [5.5 bar] standard, 60 PSI [4.1 bar] optional.



## Principles of Operation: VP35



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 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.

## VP35 Standard Pump Specifications:

<b>Body Material:</b>	Anodized Aluminum, Buna-N, Brass, Acetal (For silencer material, see page 244 - 248)
<b>Cartridge Material:</b>	Nylon, Buna-N (Other materials available, see page 8)
<b>Medium:</b>	Filtered (50 Micron) un-lubricated, non-corrosive dry gases
<b>Operating Temperature:</b>	-23° to ~122° F [-5° to ~50°C]
<b>Operating Pressure:</b>	80 PSI [5.5 bar] or 60 PSI [4.1 bar] – Consult Factory for other operating pressures

## 2-Way Valve Specifications:

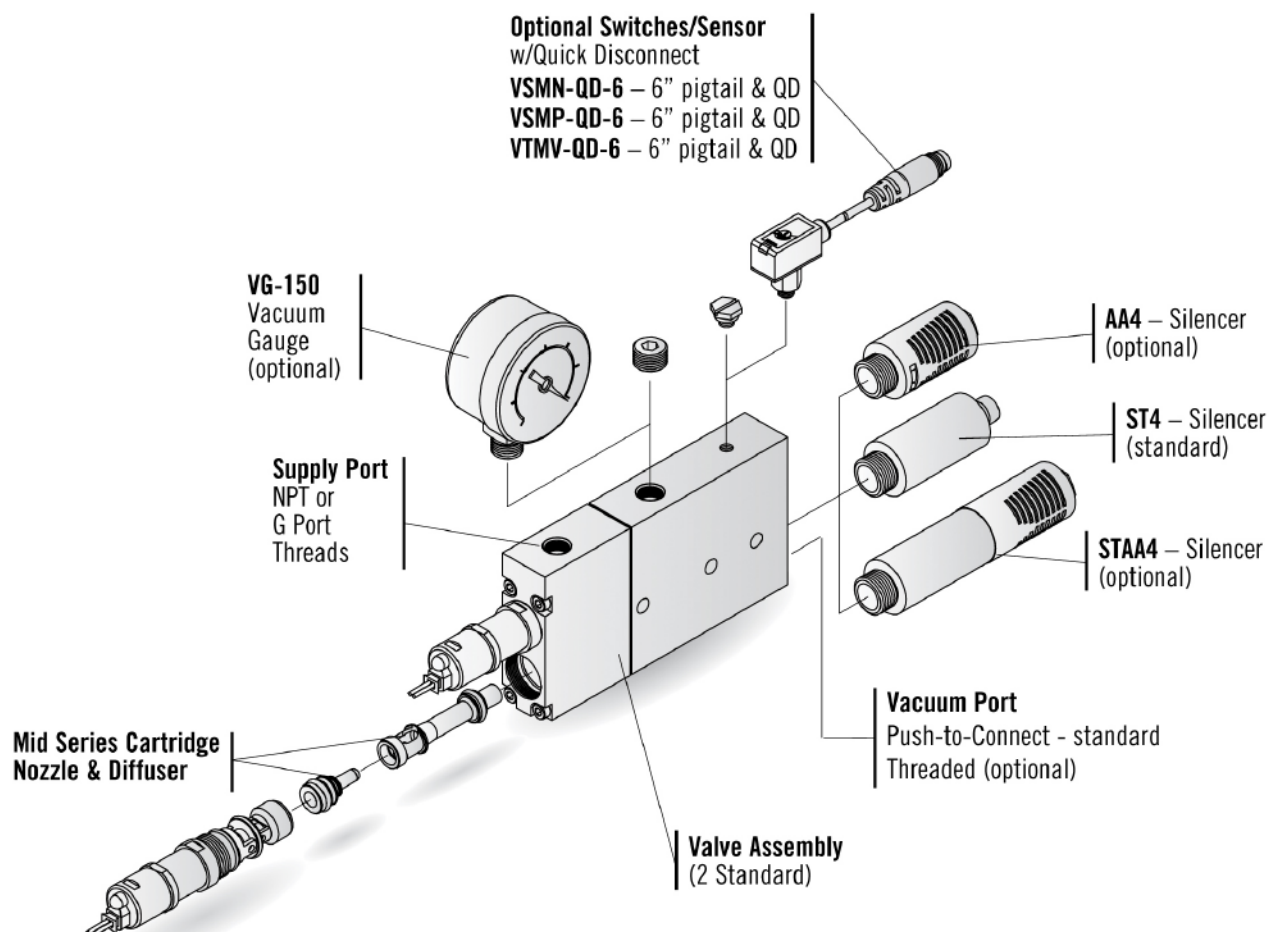
<b>Valve Type:</b>	Axial 2-Way Solenoid Valve, Normally closed
<b>Valve Body Material:</b>	Brass, Aluminum, Buna-N
<b>Valve Operating Pressure:</b>	Vacuum to 120 PSI [-1 to 8 bar]
<b>Electrical:</b>	24 VDC [-15% to +10% Nominal]
<b>Power Consumption:</b>	4 watts
<b>Response Time:</b>	6 milliseconds
<b>Cycle Rate:</b>	80 cycles/second
<b>Average Life:</b>	100 million cycles or better
<b>Electrical Connection:</b>	2 Pin Connector with 24 AWG, 18" leads [457.2mm]
<b>LED Indicator:</b>	Yes

## VP35 Operating and Installation Requirements:

<b>Cartridge size:</b>	<b>C60 (M, H) and C90 (L, M, H)</b>	<b>C100 (L, M, H) and C150 (L, M, H)</b>
<b>Supply Line:</b>	1/4" O.D. [6mm] tube recommended	3/8" O.D. [10mm] tube recommended
<b>Vacuum Line:</b>	3/8" O.D. [10mm] tube recommended	3/8" O.D. [10mm] tube recommended
<b>Vacuum Line Filtration:</b>	Typically vacuum filters are not required. If desired, Vaccon recommends – VF250F. See page 254.	
<b>Mounting Holes:</b>	Mounting holes accept 10-32 [M5] screws	

## VP35 Mid 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.



## How to Specify:

P/N	Imperial Thread
VP35	NPT
P/N	Metric Thread
I-VP35	G Port
P/N	Max. Flow Level
60	(N/A in L)
90	
100	
150	
P/N	Max. Vac Level
L	10"Hg [339 mbar] (N/A in 60 Series)
M	20"Hg [677 mbar]
H	28"Hg [948 mbar]
P/N	Operating Pressure
60	80 PSI [5.5 bar] (Std) 60 PSI [4.0 bar]

**VP35 - 60 H - 60 - VSMP-QD-6**

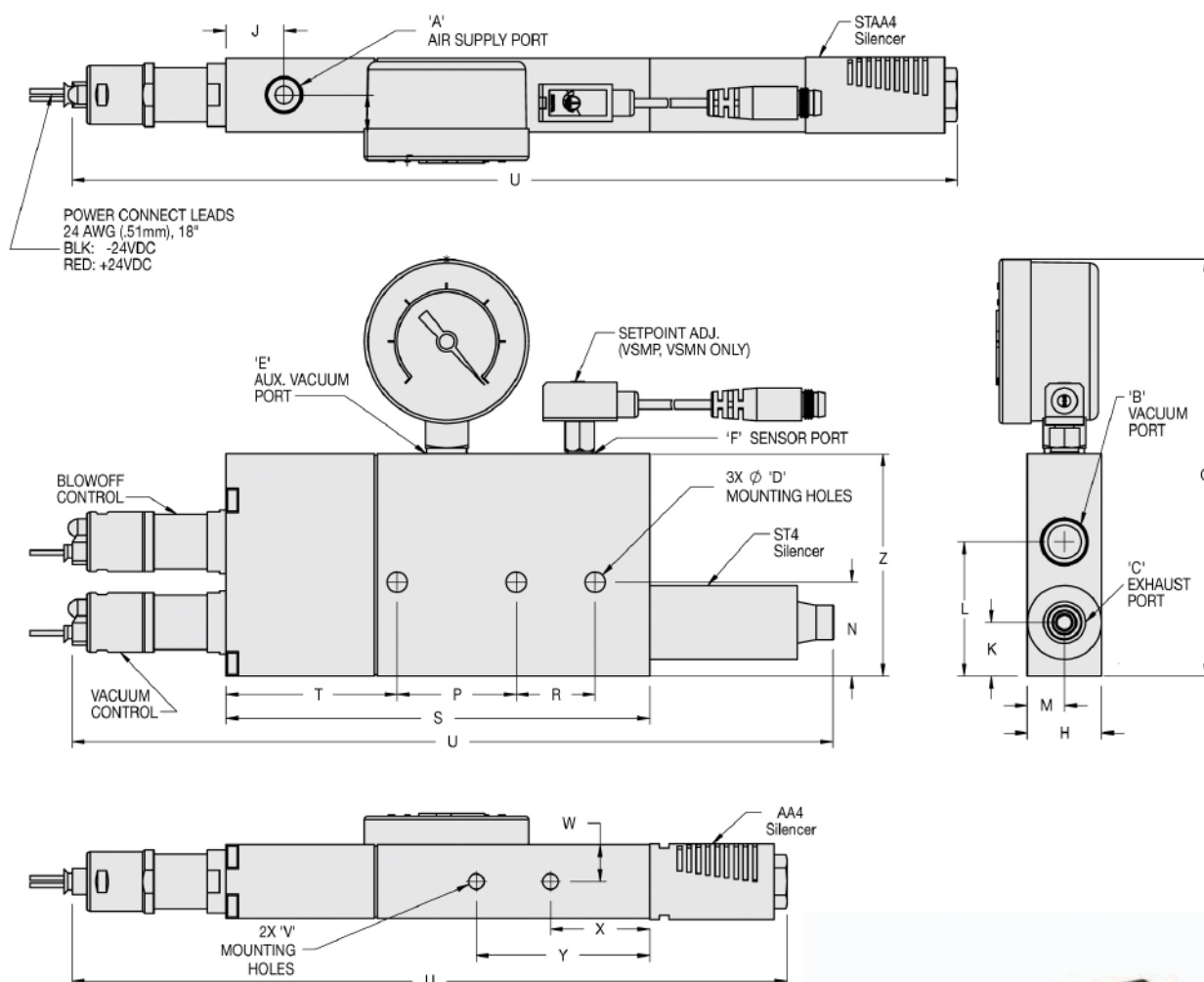
P/N	Vacuum Port
1	PTC Standard (3/8"/10mm) Threated (1/4" NPT/G1/4)
P/N	Switch/Sensor
	None (Standard)
VSMN-QD-6	Switch – NPN with QD
VSMP-QD-6	Switch – PNP with QD
VTMV-QD-6	Sensor – 1-5VDC Output w/QD
P/N	Silencer
	ST4 - Straight-Through (Std)
AA4	Closed-End
STAA4	Hybrid
P/N	Vacuum Gauge
VG-150	Vaccon does not recommend shipping gauges attached to pumps. Please specify as a separate line item.

For complete Performance Data, see page 94.



# Modular Venturi Vacuum Pumps w/ Solenoid Operated Vacuum & Blow-Off – Mid Series

## Standard Pump: VP35-(60, 90, 100, 150) (L, M, H)

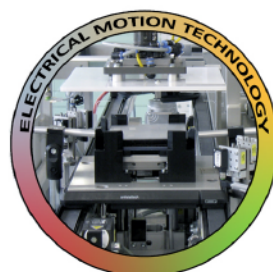
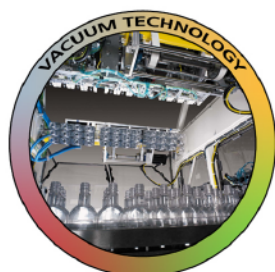


VP35-100M with ST-4 Silencer

### Specifications:

**Weight:** 11.5 oz [328g]  
**Noise Level:** 66 dB

Model #	Imperial Dimensions (in.)																						
VP35	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z
w/AA4	1/8 NPT F	1/4 NPT F	1/4 NPT F	0.21	1/8 NPT F	M5	4.24	0.75	0.59	0.54	1.36	0.38	0.95	1.20	0.80	4.28	1.70	7.22	10-32	0.38	1.00	1.75	2.25
w/ST4																		7.68					
w/STAA4																		8.94					
Model #	Metric Dimensions (mm)																						
VP35	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y	Z
w/AA4	G 1/8	G 1/4	1/4 NPT F	5.3	G 1/8	M5	107.7	19.1	15.0	13.7	34.5	9.6	24.1	30.5	20.3	108.7	43.2	183.4	M5	20.7	54.4	95.2	57.2
w/ST4																		195.1					
w/STAA4																		227.1					



***Vous avez l'idée, nous la concrétisons.  
Wij verheugen ons op uw aanvraag.  
We look forward to your application.***



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