

Mid Series Venturi Vacuum Pump with Pneumatic Blow-off and Silencer

Fastbreak Mid Series: VP1X & VP1X-ADJ



Standard Pump:

VP1X & VP1X-ADJ air-powered venturi vacuum pumps are trusted for accurate part placement and rapid part release. The reliable Fastbreak Mid Series provides both vacuum and blow-off in one pump, using only one compressed air line. No electricity required.

The integrated pneumatic high-speed blow off on the VP1X pump provides a fixed-duration blow off, based on the volume of the housing. With the VP1X-ADJ adjustable vacuum pump, you can control the intensity of the blow-off using one fingertip adjustment knob. (Customer-supplied directional control valve with exhaust required.)

For applications where you need to control the duration of the blow-off, please see VP30QR Series on page 135.

For applications where you need a solenoid operated pump with a pneumatic blow-off, please see VP2XV on page 105.

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:

- Pick and place applications requiring accurate part placement and rapid part release:
 - ~ Palletizing
 - ~ Packaging machines
 - ~ High speed labeling machines
 - ~ Sheet feeders
 - ~ Robotic end effectors
 - ~ Automated assembly

Features/Benefits:

- Fast Response – compact, lightweight, and installs close to vacuum point
- Trouble free operation:
 - ~ Straight-through design, non-clogging
 - ~ No moving parts to wear
 - ~ No flap valves to stick open
 - ~ Automatically cleans vacuum lines
 - ~ No downtime
- High productivity – rapid part release, cycle rates up to 900/min
- Modular design – add vacuum sensors and solenoid valves to create a complete vacuum system
- Multiple functions from just one PLC output – requires fewer outputs, less costly, easy to program
- Reliable part detection – factory installed miniature vacuum switches or sensors

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

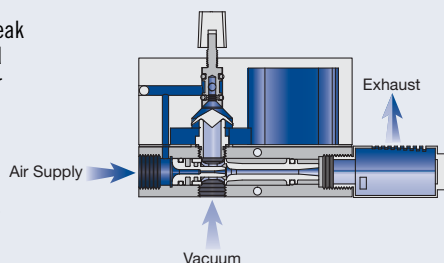
Pump Options:

- ADJ version allows the user to set the intensity of the blow-off from no blow-off to full blow-off
- Interchangeable venturi cartridges – 11 different performance levels
- Factory-installed miniature vacuum switches or sensors for reliable part detection
- Silencers – ST4 (straight-through) silencer won't clog, or STAA4 silencers for ultra quiet operation
- 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 [4.0 BAR] optional

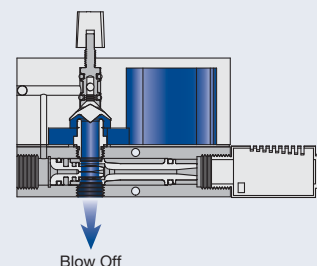
Principles of Operation: VP1X & VP1X-ADJ

Fastbreak pumps provide both suction and blow-off with a single supply of compressed air controlled by a solenoid valve.

Utilizing quick exhaust valve technology, Fastbreak pumps store compressed air in the upper chamber while simultaneously generating vacuum. The quick exhaust diaphragm seals the compressed air chamber from the suction line.



When the part is to be released, the solenoid valve* is de-energized. The vacuum stops and the rapid drop in pressure shifts the quick exhaust diaphragm into the up position allowing the store compressed air to vent into the vacuum line.



When handling small and lightweight parts, choose the adjustable version (-ADJ) shown above to control the blow-off intensity.

***Note:** The (customer supplied) solenoid valve controlling the compressed air to the Fastbreak pump must vent to atmosphere for the quick exhaust valve to actuate properly.

VP1X and VP1X-ADJ Standard Pump Specifications:

Body Material:	Anodized Aluminum, Nebar, Brass, Buna-N, Vinyl, Nylon, Alloy Steel (For silencer material, see pagex 233-237)
Cartridge Material:	Nylon, Buna-N O-ring (Other materials available, see page 7)
Medium:	Filtered (50 Micron) un-lubricated, non-corrosive dry gases
Operating Temperature:	+32°~125° F [0°~52°C]
Operating Pressure:	80 PSI [5.5 BAR] standard or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures
Cycle Rates:	Up to 900/min
Blow-off Response Time:	Instantaneous
Orientation:	Any position
Blow-off Duration:	100 milliseconds (based on system design)

VP1X and VP1X-ADJ Operating and Installation Instructions:

Cartridge size:	C60 (M, H) and C90 (L, M, H)	C100 (L, M, H) and C150 (L, M, H)
Supply Line:	1/4" O.D. [6mm] tube recommended	3/8" O.D. [10mm] tube recommended
Vacuum Line:	1/4" O.D. [6mm] tube recommended	3/8" O.D. [10mm] tube recommended
Vacuum Line Filtration:	Typically filters are not required, if desired Vaccon recommends – VF-125LPM – See page 282	Typically filters are not required, if desired Vaccon recommends – VF-250F – See page 282
Control Valve:	3 way/2 position, minimum orifice - 0.125" ID [3mm]	
Mounting Holes:	Mounting holes accept 4-40 [M3] screws	

VP1X & VP1X-ADJ Fastbreak Mid Series Configurations and Options:

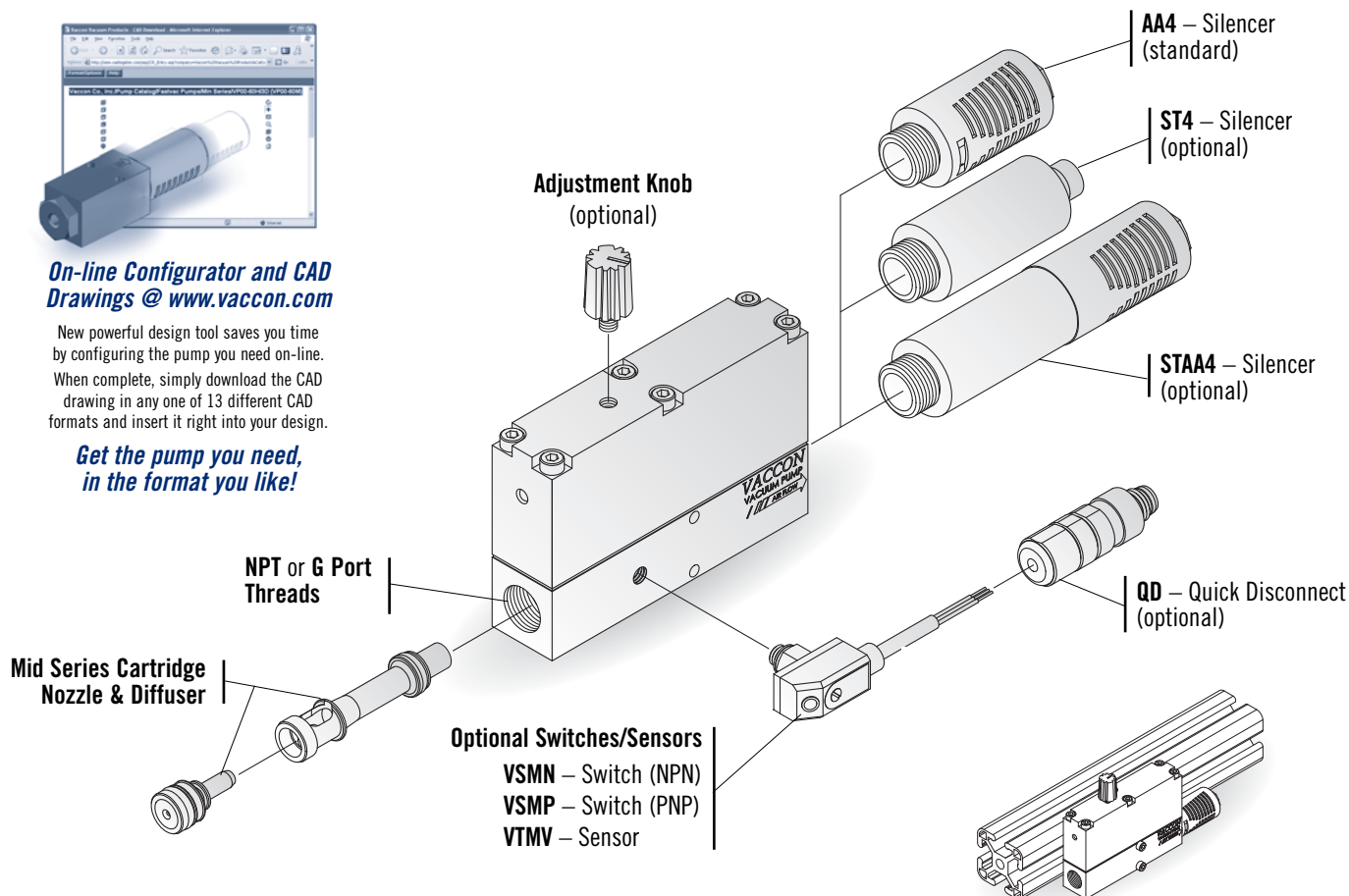
All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.



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:

VP1X - 60 H - - ADJ - ST4 -

P/N	Thread
VP1X	NPT
I-VP1X	G Port
P/N	Max. Flow Level
-60	
-90	
-100	
-150	
P/N	Max. Vac Level
L	10"Hg [339mbar]
M	20"Hg [677mbar]
H	28"Hg [948mbar]
P/N	Operating Pressure
	80 PSI [5.5 BAR] (Std)
-60	60 PSI [4.0 BAR]

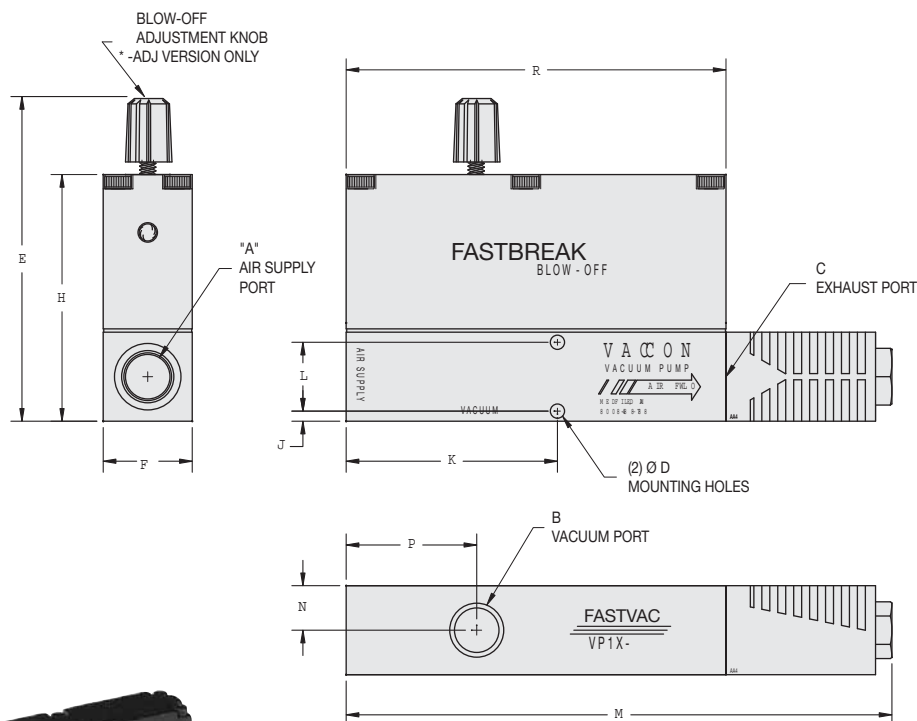
P/N	Switch/Sensor
	None (Standard)
VSMN	Switch – NPN
VSMP	Switch – PNP
VTMV	Sensor – 0-5VDC Output
VSMN-QD	Switch w/Quick Disconnect
VSMP-QD	Switch w/Quick Disconnect
VTMV-QD	Sensor w/Quick Disconnect
P/N	Silencer
	AA4 Closed End (Standard)
ST4	Straight-through
STAA4	Hybrid
P/N	Adjustable Blow-off
	Not Adjustable (Standard)
ADJ	Adjustable Blow-off

VP1X pumps are Fractional and Metric T-slot compatible. See EDAT Section.

For complete Performance Data, see page 150.

Modular Venturi Vacuum Pumps with Pneumatic Blow-Off

Standard: VP1X - (60, 90, 100, 150) (L, M or H) (-ADJ) Pump



VP1X-90H-ADJ with AA4



VP1X-60M with AA4

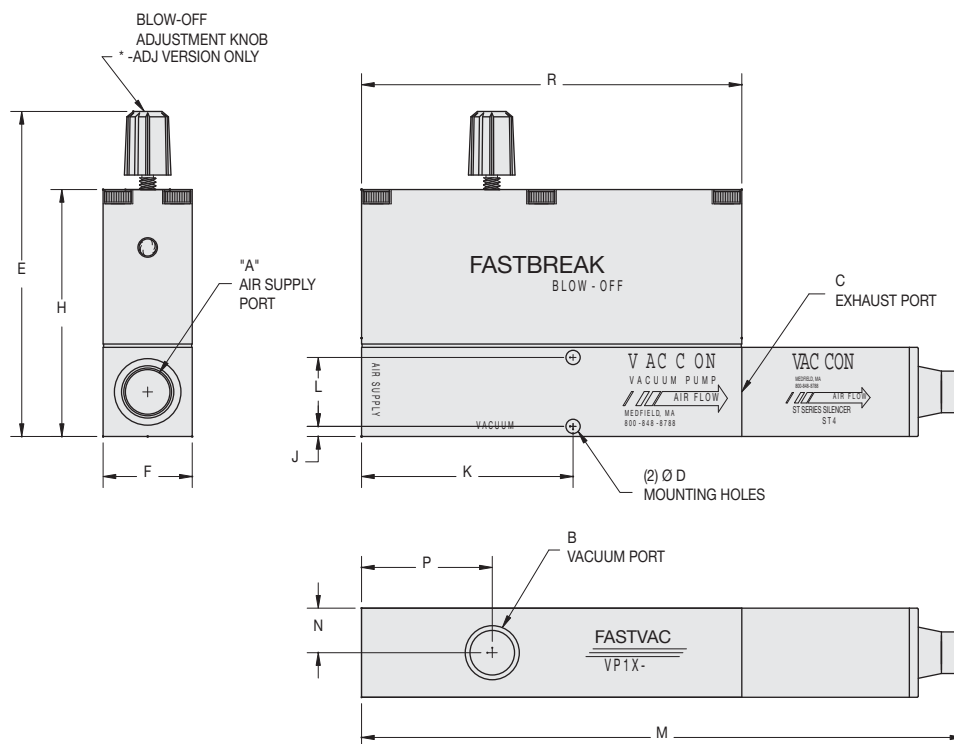
Specifications:

Weight 5.7 oz [162g]
Noise Level 64 dB

Model #	Imperial Dimensions (in.)													
VP1X (ADJ) w/AA4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R
	1/4 NPT F	1/4 NPT F	1/4 NPT F	0.12	2.74	0.75	2.08	0.09	1.78	0.58	4.60	0.38	1.10	3.20
Model #	Metric Dimensions s (mm)													
I-VP1X (ADJ) w/AA4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R
	G 1/4	G 1/8	G 1/4	3.0	69.5	19.1	52.8	2.2	45.2	14.7	116.8	9.5	27.9	81.3

*-ADJ Version Only

VP1X - (60, 90, 100, 150) (L, M or H) (-ADJ) Pump - Optional Silencer: ST4



Specifications:

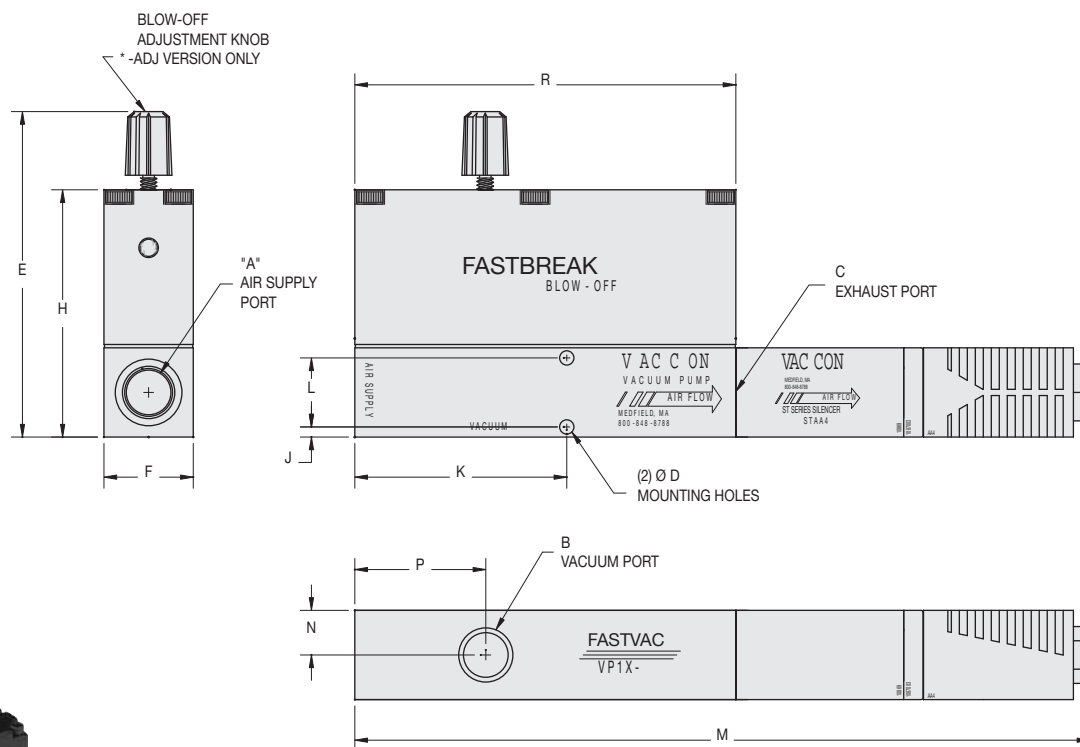
Weight 5.8 oz [165g]
Noise Level 66 dB

Model #	Imperial Dimensions (in.)													
VP1X (ADJ) w/ST4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R
	1/4 NPT F	1/8 NPT F	1/4 NPT F	0.12	2.74	0.75	2.08	0.09	1.78	0.58	5.06	0.38	1.10	3.20
Model #	Metric Dimensions (mm)													
I-VP1X (ADJ) w/ST4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R
	G 1/4	G 1/8	G 1/4	3.0	69.5	19.1	52.8	2.2	45.2	14.7	128.5	9.5	27.9	81.3

*-ADJ Version Only

Modular Venturi Vacuum Pumps with Pneumatic Blow-Off

VP1X - (60, 90, 100, 150) (L, M or H) (-ADJ) Pump - Optional Silencer: STAA4



VP1X-60M-ADJ with STAA4 Silencer



VP1X-90M with STAA4 Silencer

Specifications:

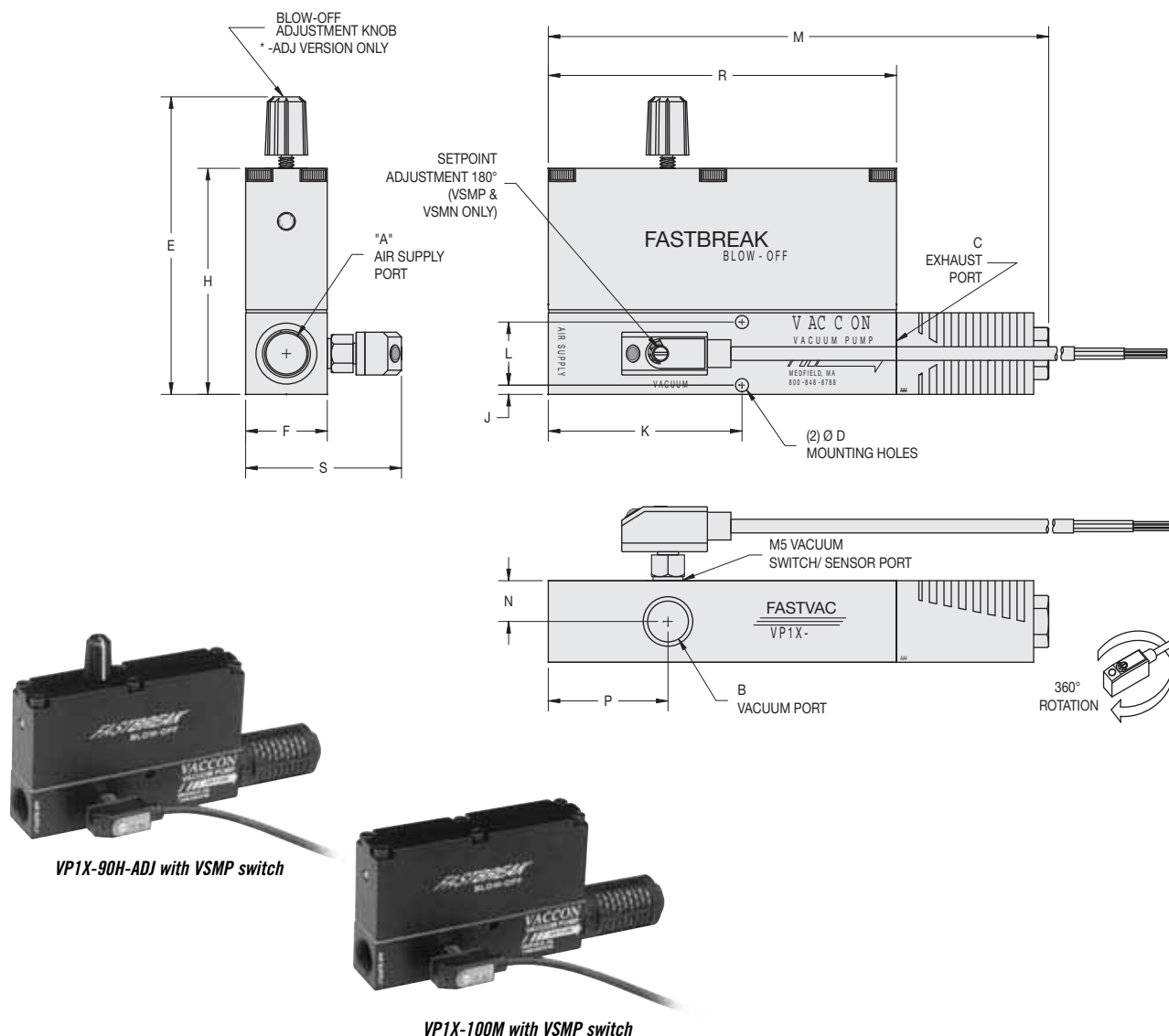
Weight 6.0 oz [170g]
Noise Level 58 dB

Model #	Imperial Dimensions (in.)													
VP1X (ADJ) w/STAA4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R
	1/4 NPT F	1/8 NPT F	1/4 NPT F	0.12	2.74	0.75	2.08	0.09	1.78	0.58	6.17	0.38	1.10	3.20
Model #	Metric Dimensions (mm)													
I-VP1X (ADJ) w/STAA4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R
	G 1/4	G 1/8	G 1/4	3.0	69.5	19.1	52.8	2.2	45.2	14.7	156.8	9.5	27.9	81.3

*-ADJ Version Only

Modular Venturi Vacuum Pumps with Pneumatic Blow-Off

VP1X - (60, 90, 100, 150) (L, M or H) (-ADJ) Pump - Optional Switch/Sensor: VSMP or VSMN or VTMV



Specifications:

Weight	6.6 oz [188g]
Noise Level	64 dB

Model #	Imperial Dimensions (in.)														
VP1X (ADJ) w/VSMP	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S
	1/4 NPT F	1/8 NPT F	1/4 NPT F	0.12	2.74	0.75	2.08	0.09	1.78	0.58	4.60	0.38	1.10	3.20	1.4
Model #	Metric Dimensions s (mm)														
I-VP1X (ADJ) w/VSMP	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S
	G 1/4	G 1/8	G 1/4	3.0	69.5	19.1	52.8	2.2	45.2	14.7	116.8	9.5	27.9	81.3	36.4

*-ADJ Version Only