

Miniature Venturi Vacuum Pump with Pneumatic Blow-off and Silencer

Fastbreak Mini Series: VPOX & VPOX-ADJ



VPOX-60H Fastbreak blow-off pump with vacuum cup, spring leveler assembly for rapid part release



VPOX-60H

Standard Pump:

VPOX & VPOX-ADJ air-powered venturi vacuum pumps are trusted for accurate part placement and rapid part release. The reliable Fastbreak Mini 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 VPOX pump provides a fixed-duration blow off, based on the volume of the housing. With the VPOX-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 VP01QR Series on page 129.

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:

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

- ~ Integrated circuits
- ~ 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:

“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

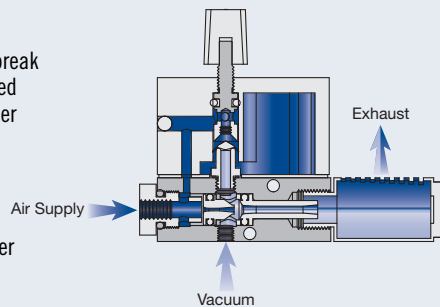
Pump Options:

- ADJ version allows the user to set the intensity of the blow-off from no blow-off to full blow-off
- 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 [5.5BAR] standard, 60 PSI [4.0 BAR] optional

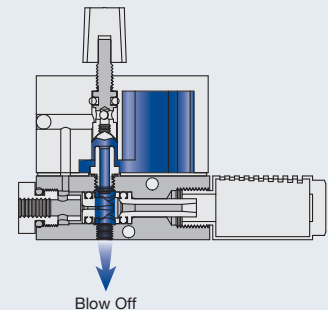
Principles of Operation: VPOX, VPOX-ADJ

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.



To release the part, 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.

VPOX and VPOX-ADJ Standard Pump Specifications:

Body Material:	Anodized Aluminum, Nebar, Brass, Buna-N, Vinyl, Nylon, Alloy Steel (For silencer material, see pages 233-236)
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)

VPOX and VPOX-ADJ Operating and Installation Instructions:

Cartidge Size:	CM60 (M or H)
Supply Line:	Min. 5/32 [4mm], Preferred 1/4" O.D. [6mm] tube for supply lines exceeding 3' (1M)
Control Valve:	3-way/2 position – minimum orifice - 0.093" [2.5mm]
Vacuum Line:	Preferred 1/4" [6mm] 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 Holes:	Mounting holes accept 4-40 [M3] screws

VPOX & VPOX-ADJ: Fastbreak Mini Series Configurations and Options:

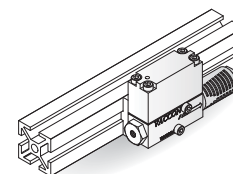
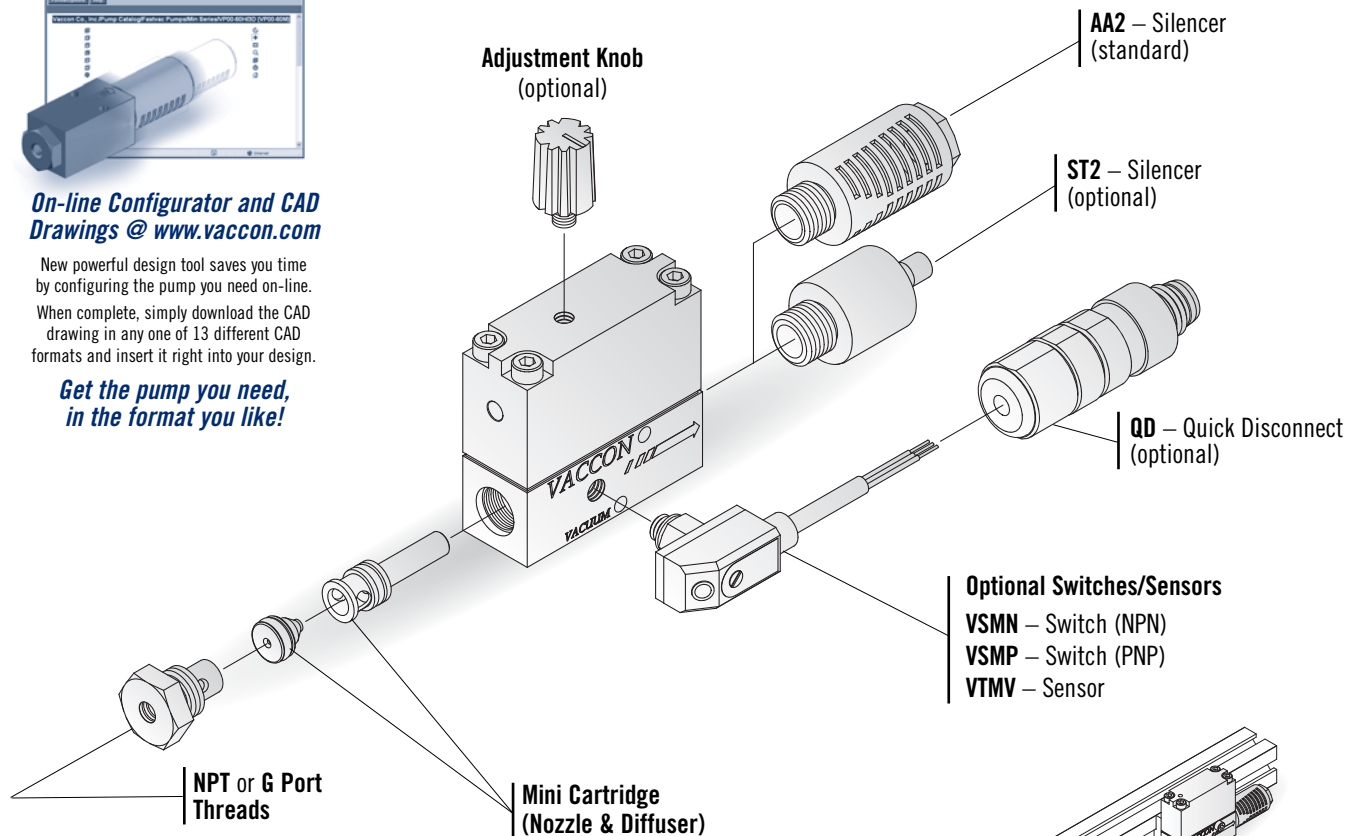
All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.



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!



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

How to Specify:

VPOX - 60 H - - ADJ - ST2 -

P/N	Thread
VPOX	NPT
I-VPOX	G Port

P/N	Max. Flow Level
-60	Standard

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

P/N	Operating Pressure
	80 PSI (Standard)
-60	60 PSI

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

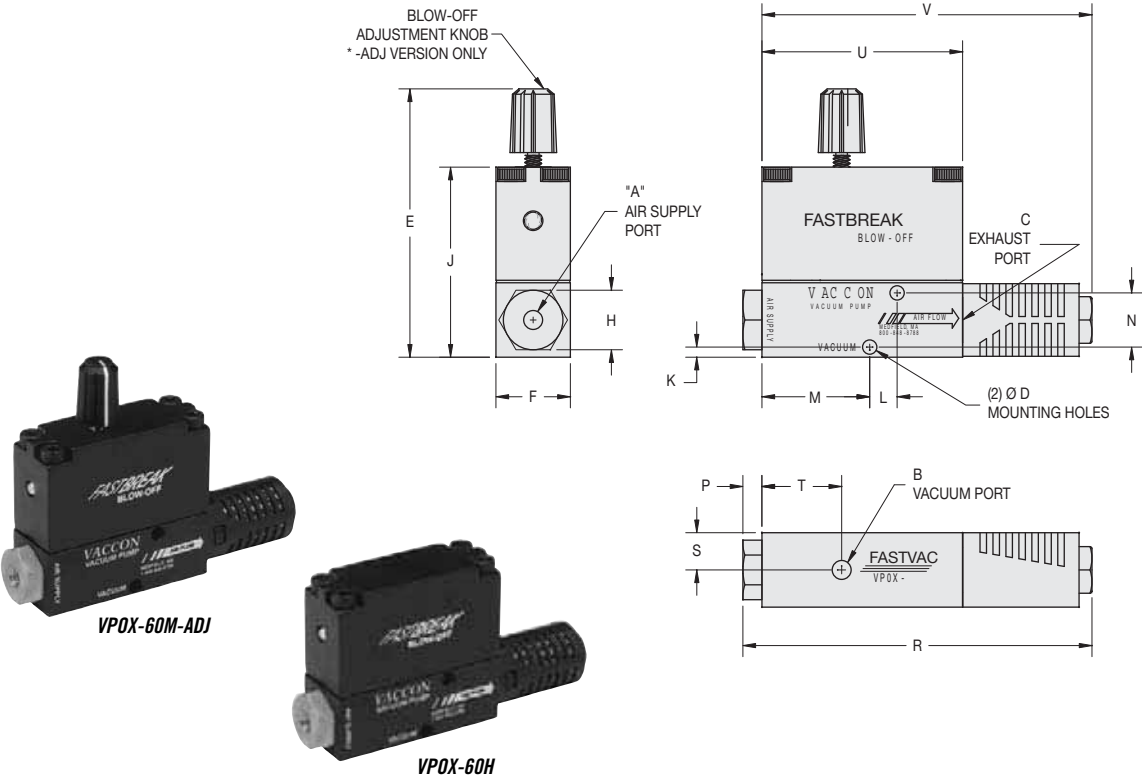
P/N	Silencer
	AA2 Closed End (Standard)
-ST2	Straight-Through

P/N	Adjustable Blow-Off
	Not Adjustable (Standard)
ADJ	Adjustable Blow-off

For complete Performance Data, see page 148.

Modular Venturi Vacuum Pumps with Pneumatic Blow-Off

Standard: VPOX-60 (M, H) - (ADJ) Pump



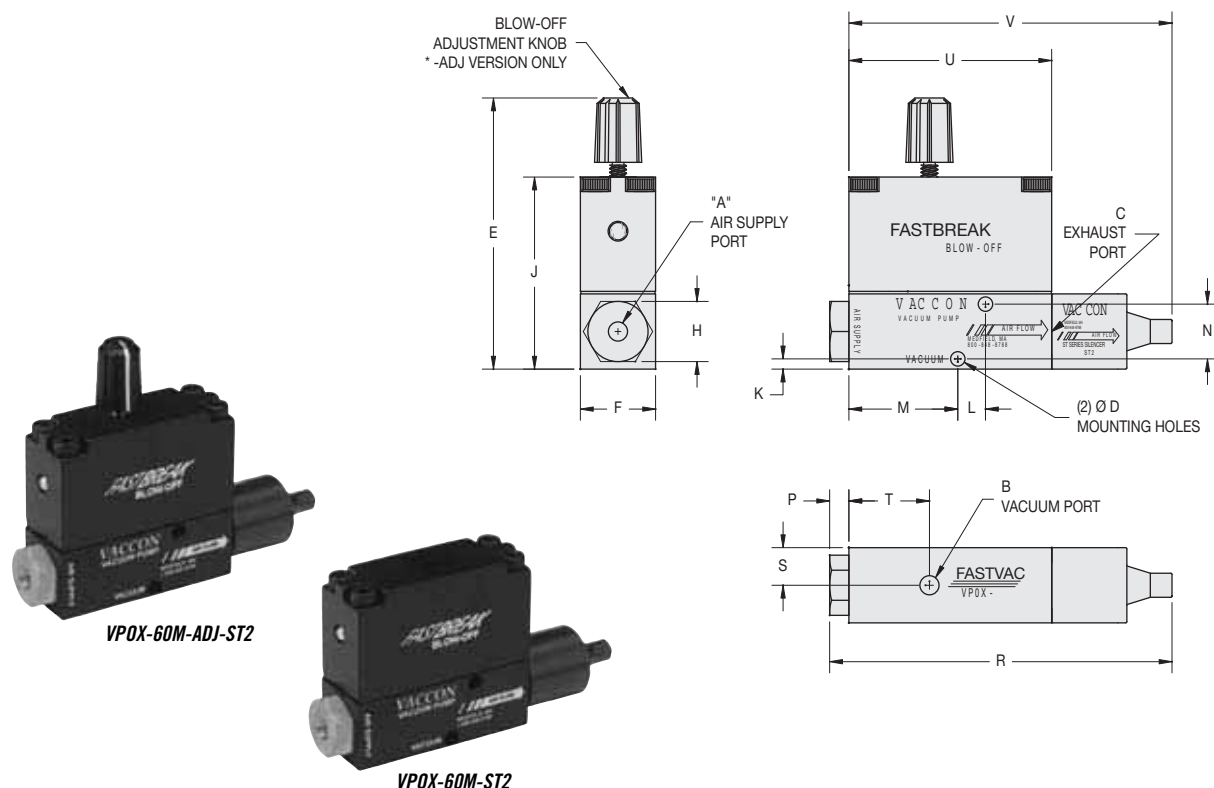
Specifications:

Weight 2.6 oz [74g]
Noise Level 68 dB

Model #	Imperial Dimensions (in.)																	
VPOX (ADJ) w/AA4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S	T	U	V
	10-32	10-32	1/8 NPT F	0.12	2.25	0.63	0.50	1.60	0.09	0.23	0.91	0.46	0.16	2.93	0.31	0.67	1.69	2.77
Model #	Metric Dimensions (mm)																	
I-VPOX (ADJ) w/AA4	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S	T	U	V
	M5	M5	G 1/8	3.0	57.2	15.9	12.7	40.5	2.2	5.8	23.0	11.6	4.1	74.5	7.9	17.0	42.8	70.4

*-ADJ Version Only

VPOX-60 (M, H) - (ADJ) Pump - Optional Silencer: ST2



Specifications:

Weight 2.7 oz [76g]
Noise Level 68 dB

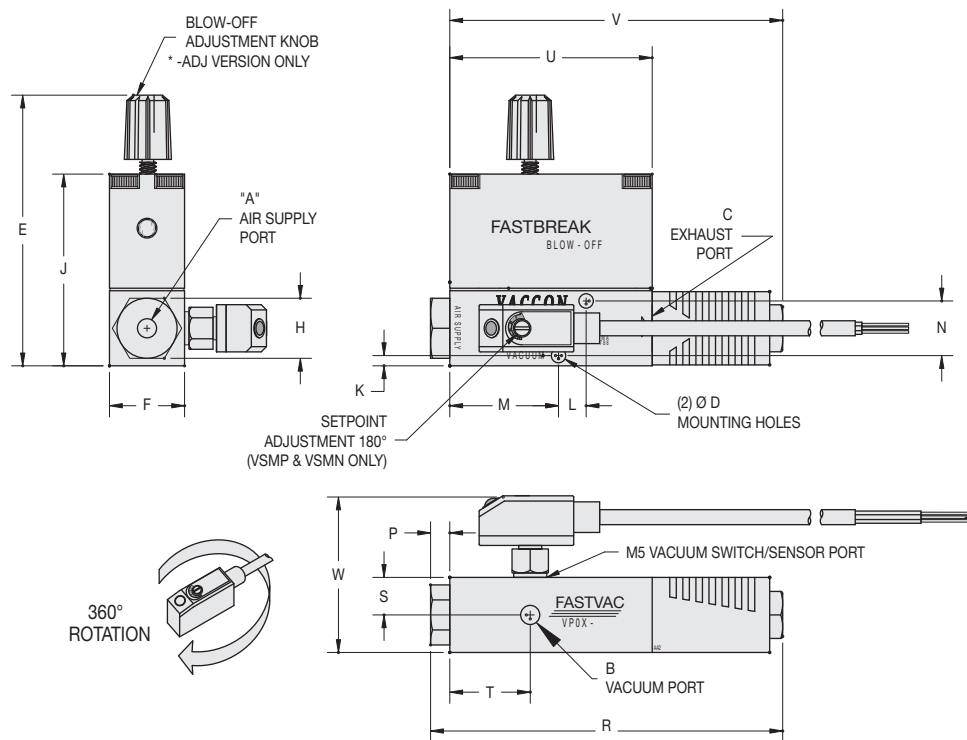
Model #	Imperial Dimensions (in.)																	
VPOX-(ADJ) - ST2	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S	T	U	V
	10-32	10-32	1/8 NPT F	0.12	2.25	0.63	0.50	1.60	0.09	0.23	0.91	0.46	0.16	2.85	0.31	0.67	1.69	2.69
Model #	Metric Dimensions (mm)																	
I-VPOX-(ADJ)-ST2	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S	T	U	V
	M5	M5	G 1/8	3.0	57.2	15.9	12.7	40.5	2.2	5.8	23.0	11.6	4.1	72.3	7.9	17.0	42.8	68.2

*-ADJ Version Only

Modular Venturi Vacuum Pumps with Pneumatic Blow-Off

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

Vacuum Pumps - Pneumatic Blow-off



VPOX-60H-ADJ-VSMP



VPOX-60H-VSMP

Specifications:

Weight 3.5 oz [99g]
Noise Level 68 dB

Model #	Imperial Dimensions (in.)																		
VPOX (ADJ)-VSMP	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S	T	U	V	W
	10-32	10-32	1/8 NPT F	0.12	2.25	0.63	0.50	1.60	0.09	0.23	0.91	0.46	0.16	2.93	0.31	0.67	1.69	2.77	1.31
Model #	Metric Dimensions (mm)																		
I-VPOX (ADJ)-VSMP	A	B	C	D	E*	F	H	J	K	L	M	N	P	R	S	T	U	V	W
	M5	M5	G 1/8	3.0	57.2	15.9	12.7	40.5	2.2	5.8	23.0	11.6	4.1	74.5	7.9	17.0	42.8	70.4	33.2

*-ADJ Version Only