

Miniature Venturi Vacuum Pump with Pneumatic Blow-off and Silencer

Fastbreak Min Series: VPOX & VPOX-ADJ



VPOX-60H-ADJ Fastbreak pump with adjustable blow-off controls speed of packaging application.



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 Min 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 VP01QRBV Series on page 2.9.

Ideal Applications:

Small part pick & 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
- 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:

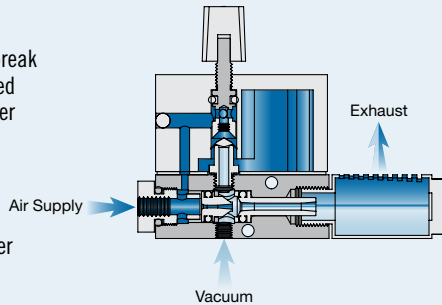
- ADJ version allows the user to set the intensity of the blow-off from no blow-off to full blow-off
- Miniature vacuum switches or sensors with quick disconnect
- ST2 (straight-through) silencer that allows ingested debris to exit the pump without clogging
- G port threads for metric machines – an “I” 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

Modular Venturi Vacuum Pumps w/ Pneumatic Blow-off – Min Series

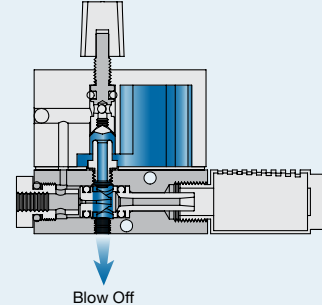
Principles of Operation: VPOX, VPOX-ADJ

Fastbreak pumps provide both suction and blow-off with a single supply of compressed air controlled by a pneumatic 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, de-activate the air supply. The vacuum stops and the rapid drop in pressure shifts the quick exhaust diaphragm into the up position allowing the stored 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 13.3-5)
Cartridge Material:	Nylon, Buna-N O-ring, (Other materials available, see pages 1.4-6)
Medium:	Filtered (50 Micron) unlubricated, non-corrosive dry gases
Operating Temperature:	+32° to ~125° F [0° to ~52°C]
Operating Pressure:	80 PSI [5.5 bar] standard or 60 PSI [4.1 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 Requirements:

Cartridge 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 vacuum filters are not required. If desired, Vaccon recommends – VF125LPM. See page 13.12
Mounting Holes:	Mounting holes accept 4-40 [M3] screws

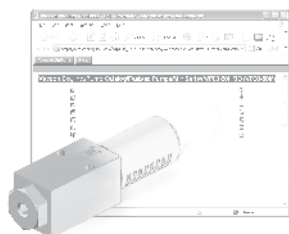
Replacement Diaphragm Kit - P/N VPOX-RDK:



Kit contains 1 each of:
Gasket, diaphragm, release fitting
and seal

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

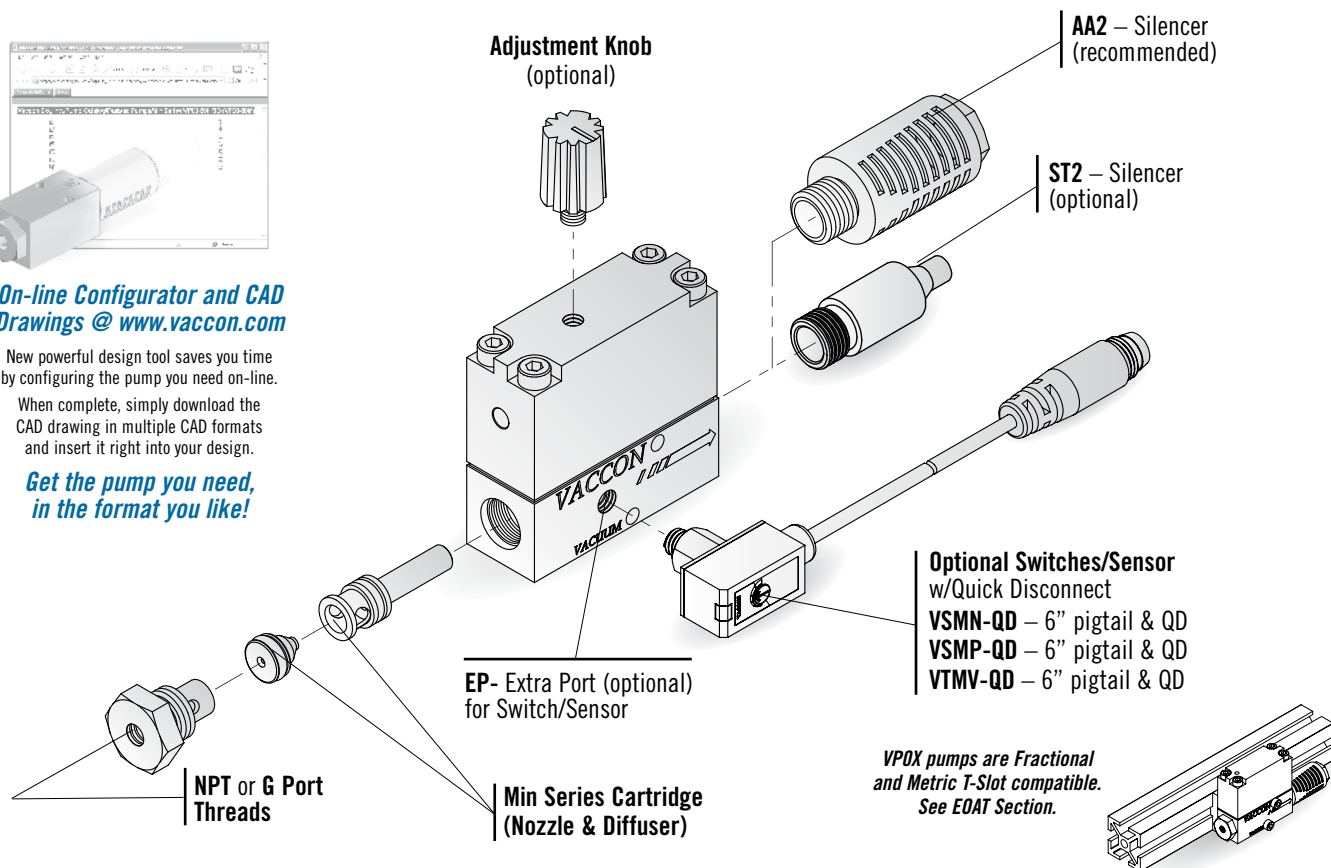
All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.



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 multiple CAD formats and insert it right into your design.

Get the pump you need, in the format you like!



How to Specify:

VPOX - 60 H - - ADJ - - ST2 -

P/N	Imperial Thread
VPOX	NPT
P/N	Metric Thread
I-VPOX	G Port
P/N	Max. Flow Level
60	Standard
P/N	Max. Vac Level
M	20"Hg [677 mbar]
H	28"Hg [948 mbar]
P/N	Operating Pressure
60	80 PSI (Standard)
	60 PSI

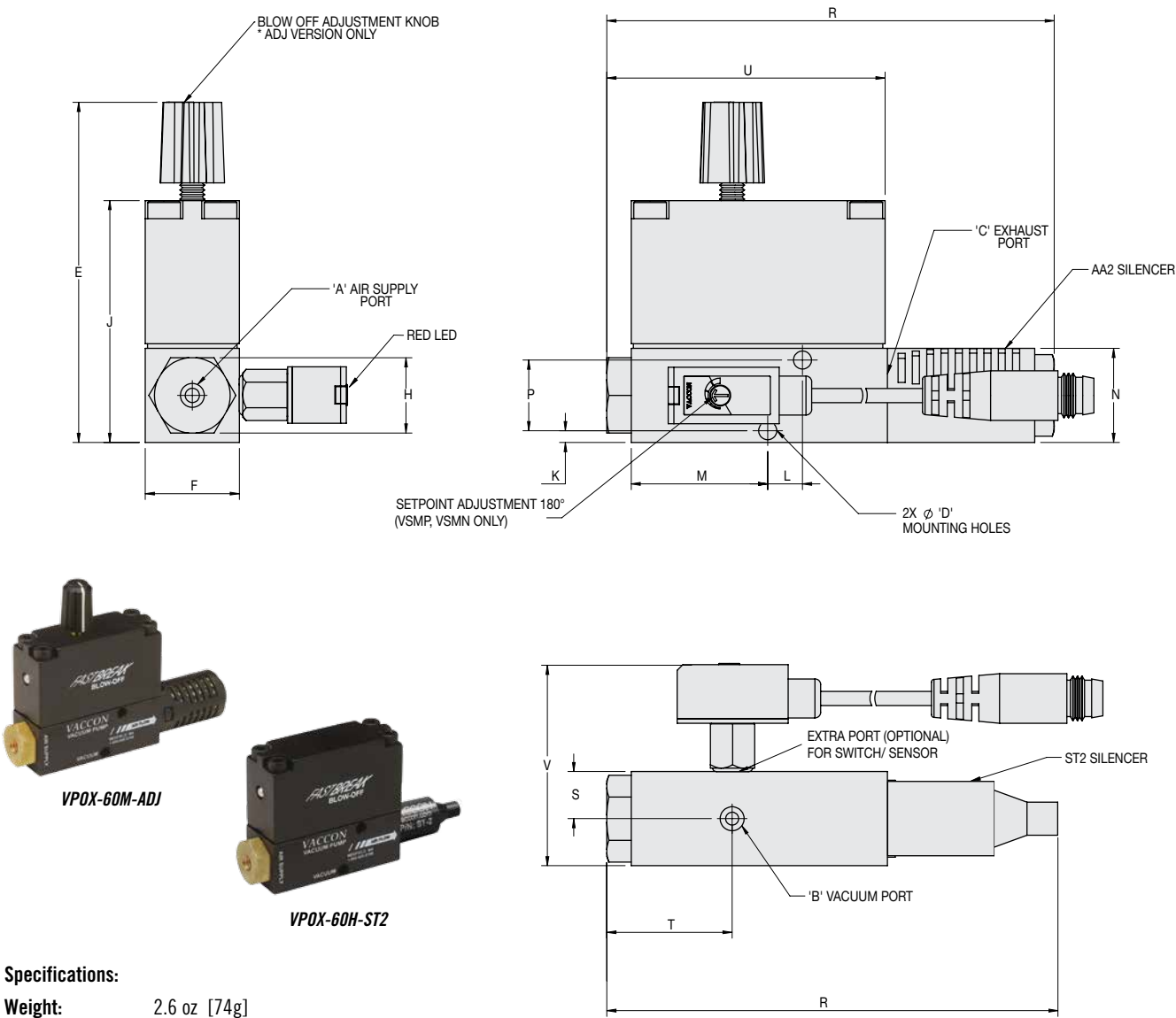
P/N	Switch/Sensor
	None (Standard)
VSMN-QD-6	Switch – NPN with QD
VSMP-QD-6	Switch – PNP with QD
VTMV-QD-6	Sensor – 1-5VDC Output w/QD
P/N	Silencer
	AA2 – Closed End (recommended)
ST2	Straight-Through
P/N	Extra Port
EP	Extra Port (Optional) for Switch/ Sensor
P/N	Adjustable Blow-Off
	Not Adjustable (Standard)
ADJ	Adjustable Blow-off

P/N	Diaphragm Kit for VPOX
VPOX-RDK	Gasket, diaphragm, release fitting & seal

For complete Performance Data, see pages 2.17-18

Modular Venturi Vacuum Pumps w/ Pneumatic Blow-off – Min Series

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



Specifications:

Weight: 2.6 oz [74g]
Noise Level: 68 dB

Model #	Imperial Dimensions (in.)																
VPOX w/	A	B	C	D	E*	F	J	K	L	M	N	P	R	S	T	U	V
AA2	10-32	10-32	1/8 NPT F	0.12	2.26	0.63	1.61	0.078	0.23	0.91	0.63	0.47	2.97	0.31	0.83	1.85	1.36
ST2													2.90				
VSMN(P)-QD-6/ VTMV-QD-6													N/A				
Model #	Metric Dimensions (mm)																
I-VPOX w/	A	B	C	D	E*	F	J	K	L	M	N	P	R	S	T	U	V
AA2	M5	M5	G 1/8	3.0	57.40	16.00	40.89	1.9812	5.84	23.11	15.88	11.91	75.44	7.87	21.08	46.99	34.53
ST2													73.66				
VSMN(P)-QD-6/ VTMV-QD-6													N/A				

*-ADJ Version Only