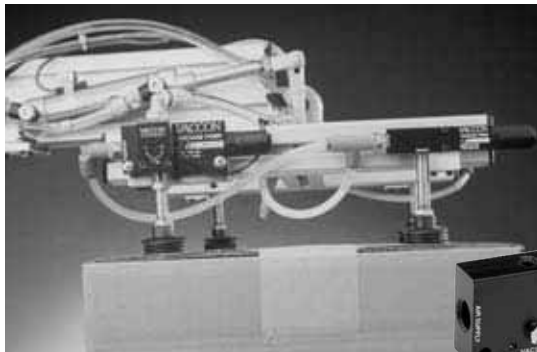


Mid-size Venturi Vacuum Pump with Interchangeable Cartridges and Silencer

Fastvac Mid Series: VP20



VP20-90M pump with SX-5 switch monitors presence of box. No filters required.



VP20-150H with optional ports for vacuum gauge and sensor/switch

Standard Pump:

VP20 Fastvac Mid Series air-powered venturi vacuum pumps are the most commonly used pumps for pick and place applications due to their ease of mounting and the variety of options and accessories available.

Vaccon Mid Series vacuum pumps provide maximum design versatility: designers specify only the features necessary for their specific application. Vaccon's interchangeable venturi cartridge system enhances manufacturing flexibility, enabling designers to choose the vacuum level, vacuum flow, evacuation speed and air consumption based on any one of 11 venturi cartridges.

Performance Level Designations:

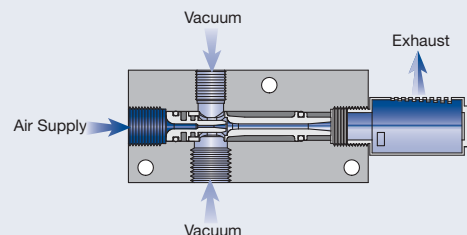
"L" 0-10"Hg [0 to 339mbar] for low vacuum/high flow applications

"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

Principles of Operation:

Vacuum is produced by forcing compressed air through a limiting orifice (nozzle). As the air exits the orifice, it expands, increasing in velocity to supersonic speed before entering the venturi section (diffuser). This creates a vacuum at the vacuum inlet port, located between the nozzle and diffuser. The nozzle and diffuser combine to create a venturi vacuum cartridge.



Ideal Applications:

- Pick and place small or medium size objects
- End-of-Arm-Tooling/Robotic systems
- Packaging
- Bag/box opening
- Vessel evacuation
- Vacuum clamping/holding fixtures

Features/Benefits

- Customize your pump performance with interchangeable venturi cartridges
- Safe operation – high flow, overcomes leakage providing a strong holding force
- Mounts easily – square body, compact and lightweight
- High productivity – powerful vacuum up to 28"Hg [948mbar]
- Fast response – installs close to vacuum point
- Reliable – operates trouble free:
 - ~ Straight-through design, non-clogging
 - ~ No moving parts to wear or clog
 - ~ No flap valves to stick open
 - ~ No maintenance
 - ~ No downtime

Pump Options:

- Interchangeable venturi cartridges – 11 different performance levels
- Vacuum sensors/switches provide electrical signal for vacuum achieved/part present, will interface with PLC's and computerized control systems, optional quick disconnects available
- Vacuum gauges – provides visual monitoring, helpful when setting vacuum sensor and troubleshooting
- Silencers – ST4 (straight-through) silencer won't clog. 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 [5.5 BAR] standard, 60 PSI [4.0 BAR] option)

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.

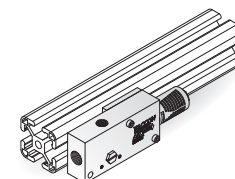
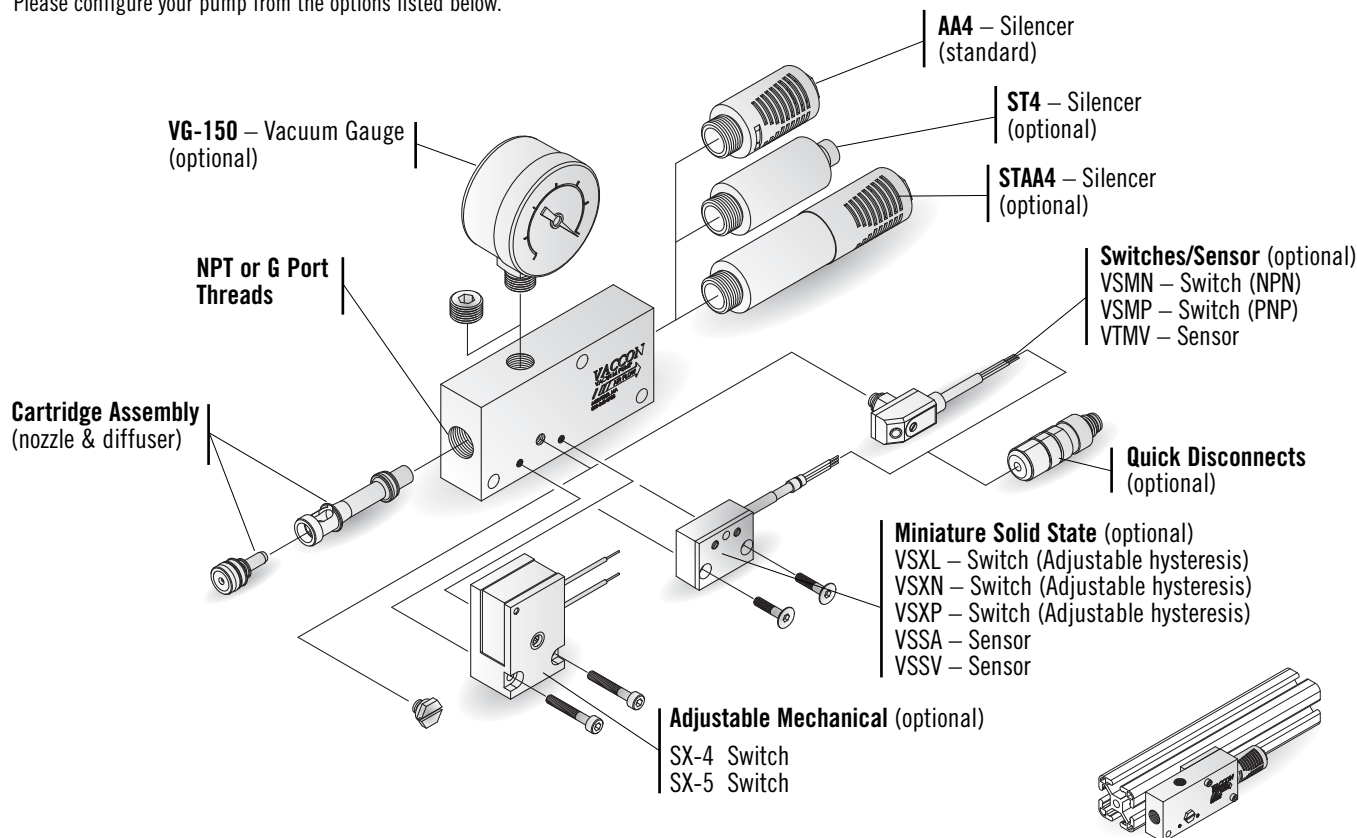
To download a complete set of drawings in 13 different CAD formats, please visit our website at www.vaccon.com

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email engineering@vaccon.com

Modular Venturi Vacuum Pumps

VP20- (60, 90, 100, 150) (L, M, H) Fastvac 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.



VP20 pumps are Fractional and Metric T-Slot compatible. See EOAT Section.

How to Specify:

VP20 - 60 H - 60 - ST4 - VSMP-QD

P/N	Thread
VP20	NPT
I-VP20	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	Vacuum Gauge
VG-150	Vaccon does not recommend shipping gauges attached to pumps. Please specify as a separate line item.

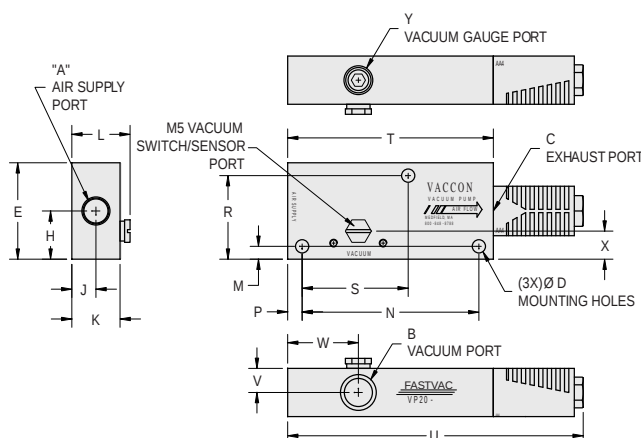
P/N	Switch/Sensor	w/Quick Disconnect
	None (Standard)	
VSMN	Switch – NPN	-QD
VSMP	Switch – PNP	-QD
VTMV	Sensor – 0-5VDC Output	-QD
VSSA	Sensor – 4-20mA Output	-QD
VSSV	Sensor – 0-5VDC Output	-QD
VSXL	Switch – Sinking	-QD
VSXN	Switch – Sinking	-QD
VSXP	Switch – Sourcing	-QD
SX-4	Switch – 2-14.8"Hg	N/A
SX-5	Switch – 7.4-30"Hg	N/A
P/N	Silencer	
	AA4 - Closed End (Standard)	
ST4	Straight-Through	
STAA4	Hybrid	

For complete Performance Data, see page 150.

Standard Pump: VP20 - (60, 90, 100, 150) (L, M, H)



Standard VP20-90H with AA4 silencer.



Specifications:

Weight: 5.1 oz [146g]
Noise Level: 64dB

Model #	Imperial Dimensions (in.)																				
VP20 w/AA4	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	1/4 NPT F	1/4 NPT F	1/4 NPT F	0.21	1.5	N/A	0.75	0.38	0.75	0.91	0.20	2.75	0.23	1.20	1.65	3.20	4.60	0.38	1.10	0.44	1/8 NPT F
Model #	Metric Dimensions (mm)																				
I-VP20 w/AA4	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	G 1/4	G 1/4	G 1/4	5.2	38.1	N/A	19.1	9.5	19.1	23.0	5.1	69.9	5.7	30.5	41.9	81.3	116.8	9.5	27.9	11.1	G 1/8

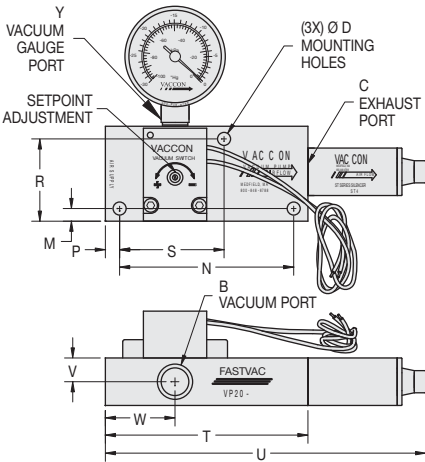
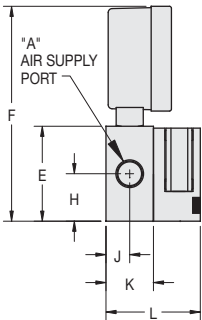
VP20 Pump Standard Specifications:

Pump Material: Anodized Aluminum (For silencer material, see pages 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: -30°~250° F [-34°~121°C]
Operating Pressure: 80 PSI [5.5 BAR] standard or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

VP20 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 – VF125LPM. See page 282.
Control Valve: 3 way/2 position (faster part release), minimum orifice – 0.125 ID [3mm]
Mounting Holes: Mounting holes accept 10-32 or M5 screws

VP20 - (60, 90, 100, 150) (L, M, H) Optional ST4 Silencer, SX Switch and VG-150 Vacuum Gauge



VP20-60M with VG-150 vacuum gauge, ST4 silencer, and SX-4 vacuum switch.

Specifications:

Weight: 8.4 oz [238g]
Noise Level: 66dB

Model #	Imperial Dimensions (in.)																				
VP20-ST4, VG150, SX Switch	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	1/4 NPT F	1/4 NPT F	1/4 NPT F	0.21	1.50	3.40	0.75	0.38	0.75	1.49	0.20	2.75	0.23	1.20	1.65	3.20	5.06	0.38	1.10	N/A	1/8 NPT F
Model #	Metric Dimensions (mm)																				
I-VP20-ST4, VG150, SX Switch	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	G 1/4	G 1/4	G 1/4	5.2	38.1	86.2	19.1	9.5	19.1	37.8	5.1	69.9	5.7	30.5	41.9	81.3	128.5	9.5	27.9	N/A	G 1/8

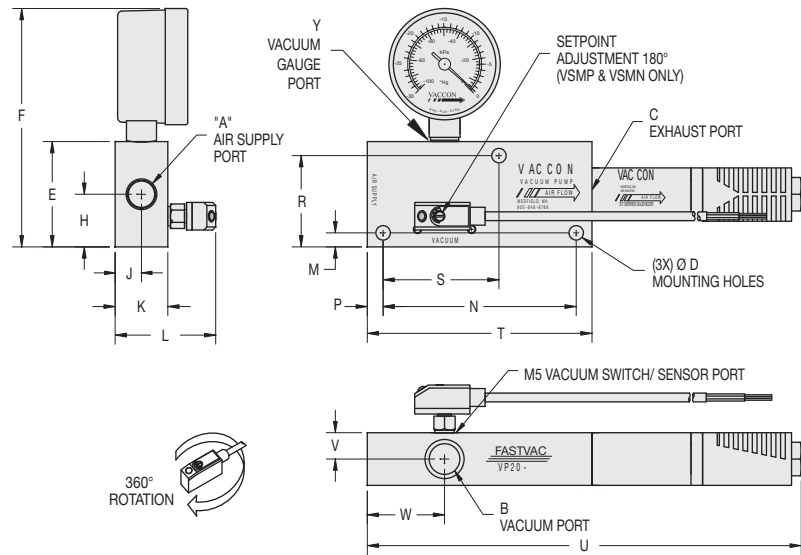
VP20 - (60, 90, 100, 150) (L, M, H) Optional STAA4 Silencer, Ultra-Mini Switch/Sensor and VG-150 Vacuum Gauge



VP20-100M with STAA4 silencer, VSMP ultra-mini switch, and a VG-150 vacuum gauge.

Specifications:

Weight: 8.0 oz [227g]
Noise Level: 68dB



Model #	Imperial Dimensions (in.)																				
VP20-STAA4, VG150, Ultra-Mini Switch	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	1/4 NPT F	1/4 NPT F	1/4 NPT F	0.21	1.50	3.40	0.75	0.38	0.75	1.43	0.20	2.75	0.23	1.20	1.65	3.20	6.18	0.38	1.10	N/A	1/8 NPT F
Model #	Metric Dimensions (mm)																				
I-VP20-STAA4, VG150, Ultra-Mini Switch	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	G 1/4	G 1/4	G 1/4	5.2	38.1	86.2	19.1	19.5	19.1	36.4	5.1	69.9	5.7	30.5	41.9	81.3	157.0	9.5	27.9	N/A	G 1/8

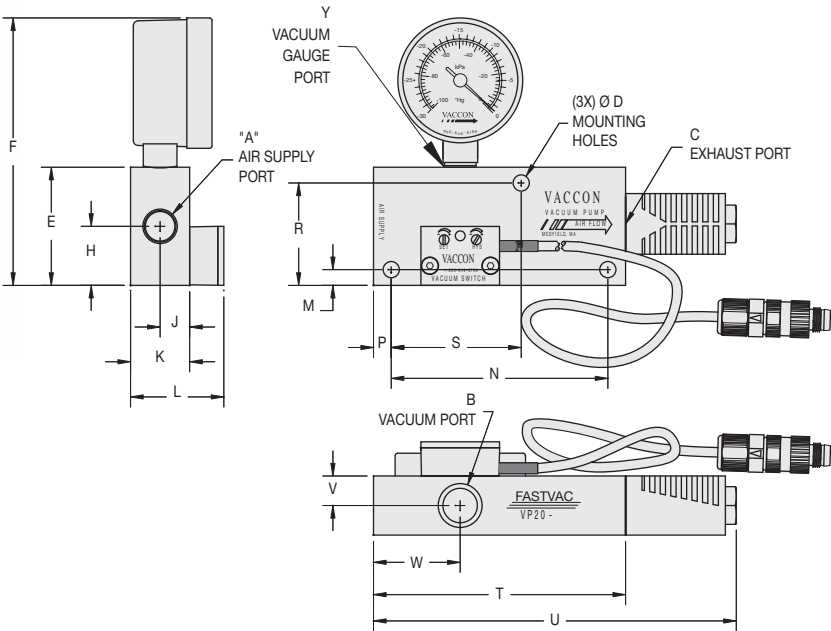
Modular Venturi Vacuum Pumps

VP20 - (60, 90, 100, 150) (L, M, H) Optional Solid State Sensor/Switch, Quick Disconnect and VG-150 Vacuum Gauge



VP20-150H with AA4 silencer, VSXN vacuum sensor, VG-150 vacuum guage, and QD8-3M Quick Disconnect.

Specifications:
Weight: 7.8 oz [220g]
Noise Level: 68dB



Model #	Imperial Dimensions (in.)																				
VP20-AA4, MiniSwitch-QD VG150	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	1/4 NPT F	1/4 NPT F	1/4 NPT F	0.21	1.50	3.40	0.75	0.38	0.75	1.18	0.20	2.75	0.23	1.20	1.65	3.20	4.61	0.38	1.10	N/A	1/8 NPT F
Model #	Metric Dimensions (mm)																				
I-VP20-AA4, MiniSwitch-QD VG150	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S	T	U	V	W	X	Y
	G 1/4	G 1/4	G 1/4	5.2	38.1	86.2	19.1	9.5	19.1	30.1	5.1	69.9	5.7	30.5	41.9	81.3	117.0	9.5	27.9	N/A	G 1/8