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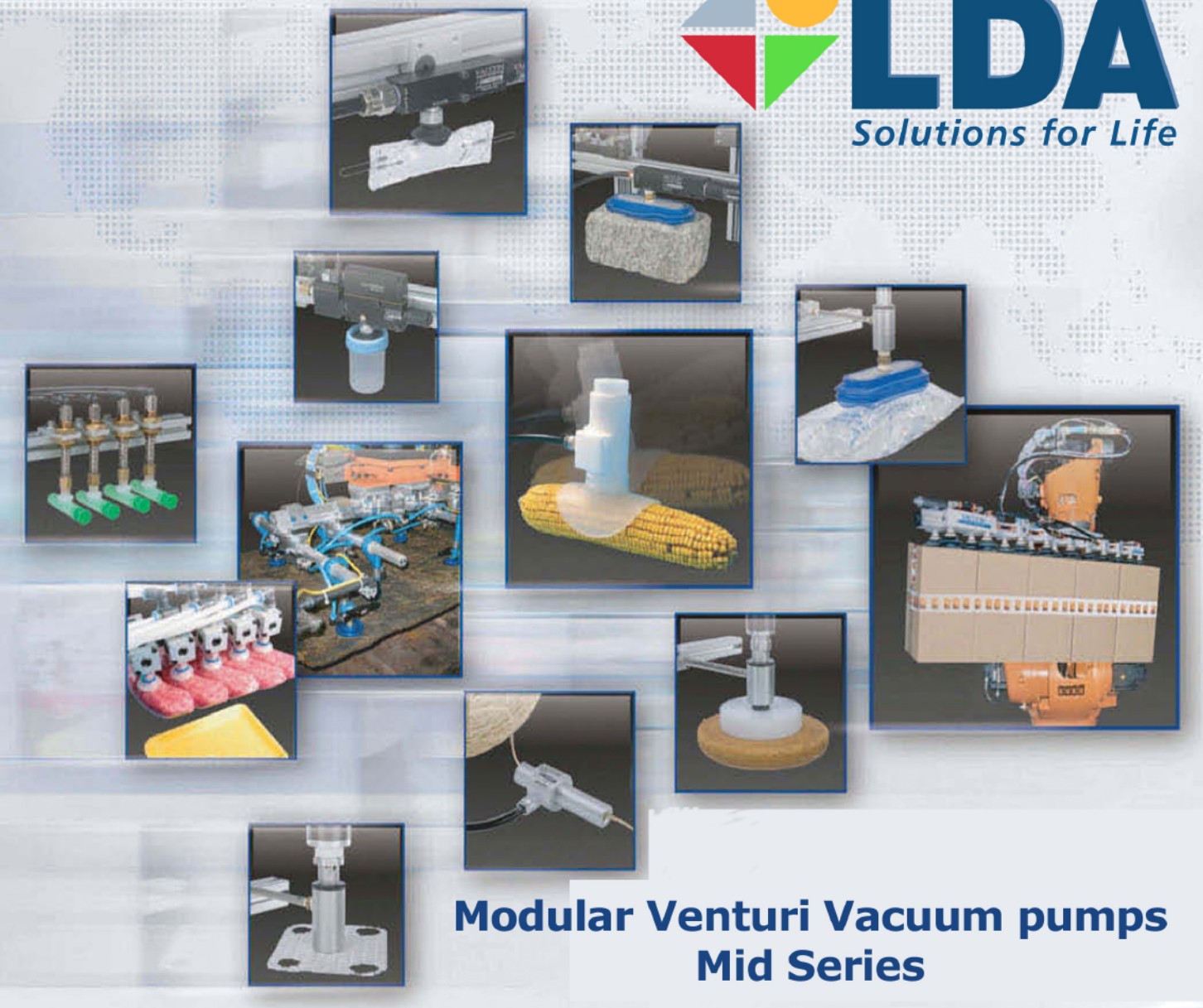


Modular Venturi Vacuum pumps
Mid Series

VACCON
VACUUM PRODUCTS

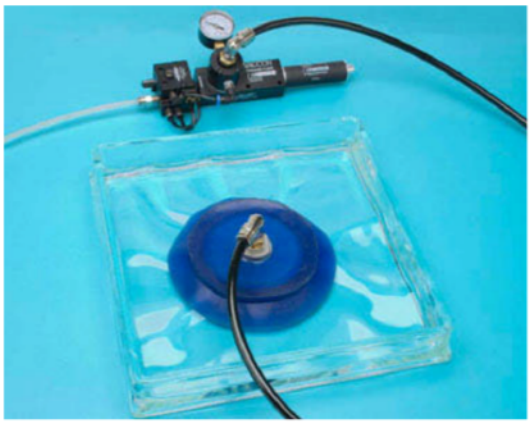
www.vaccon.com

ACCELERATING AUTOMATION
WITH VACUUM TECHNOLOGY

VP Pumps with Air Saver Technology

On-Demand Vacuum – Saves Air – Safe Operation

VP20-AS



Air Saver pumps safely handle non-porous products i.e. glass handling operations

VP20-100H-AS

Ideal Applications:

- Pick & place
- Press transfer lines – load and unload
- Vacuum clamping and chucking
- Vacuum bagging
- Vessel evacuation
- Vacuum forming

Features/Benefits:

- Powerful vacuum up to 28"Hg [948mbar] – rapid evacuation
- Energy efficient – compressed air on only when needed, automatic shut-off
- Intrinsically safe to operate – all pneumatic – no electricity required
- High vacuum flows provide dependable vacuum holding force
- Reliable – trouble-free operation:
  - ~ No moving parts to wear or clog
  - ~ No maintenance
  - ~ No downtime
  - ~ Quiet

Standard Pump:

Vaccon's Air Saver Pumps are an all-pneumatic system that minimizes compressed air usage by creating, monitoring and maintaining vacuum for safe energy efficient operations.

For pick & place applications handling non-porous materials, the Air Saver pumps will maintain a strong holding force, conserve compressed air, and hold the part even if the compressed air supply is interrupted providing an extra level of safety when handling large loads.

For vessel evacuation applications such as wood and composite clamping, Air Saver pumps maintain vacuum for long periods of time and only consume compressed air to overcome system leaks resulting in 90% air savings.

The system includes a venturi vacuum pump, vacuum check valve, air piloted air valve and an all-pneumatic vacuum switch. The switch is adjustable from 0 to 28"Hg [948mbar] and the hysteresis is 3"Hg [102mbar].

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:

- Interchangeable venturi cartridges – 8 different performance levels – VP20-AS only
- 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] 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**

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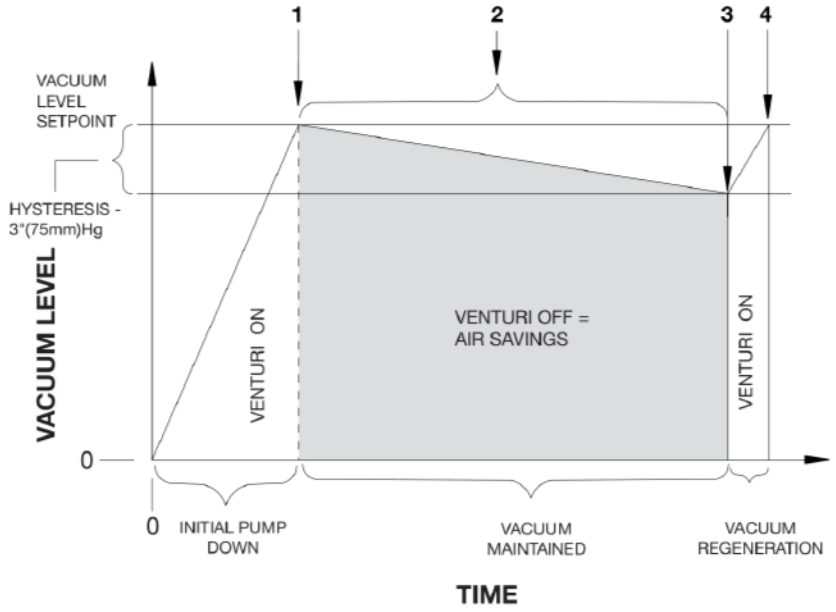
Principles of Operation: Air Saver Pumps

The pneumatic vacuum switch is the brain within the Air Saver system. It constantly monitors and controls the vacuum level as required based on customer specifications. Minimizing leaks in plumbing lines and connections extends the "venturi off" cycle and maximizes air savings. Below is a brief overview of the air saver cycle.

Determine the maximum vacuum level desired, then adjust the switch to the vacuum level setpoint.

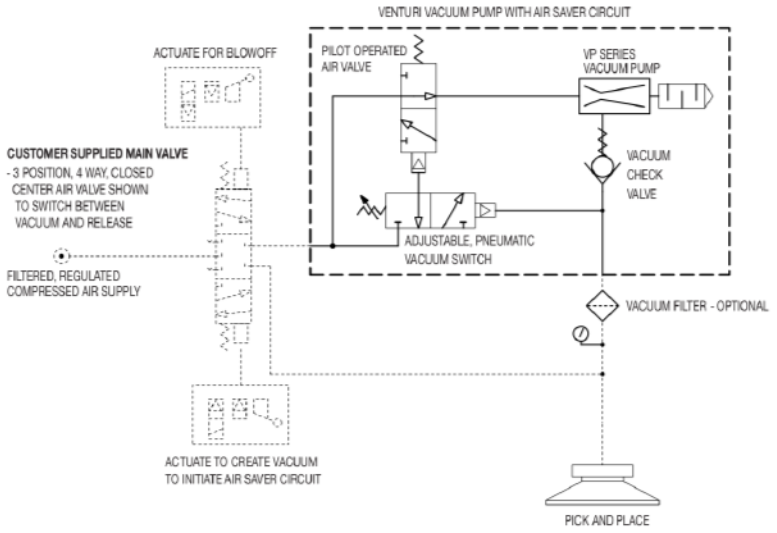
1. Once the vacuum level set-point is reached, the switch turns the pump off, stopping the flow of air to the venturi – air savings.
2. The integral check valve maintains the vacuum level.
3. Should there be a leak and the vacuum level decrease (Hysteresis 3"Hg [102mbar]), the pneumatic switch automatically re-energizes the venturi to bring the system back to the pre-set vacuum level set-point.
4. Then the switch de-energizes the venturi pump, (stopping the flow of air to the venturi – air savings) and the air saving cycle starts again.



Although compressed air savings will vary by application and system design, typically Vaccon Air Saver pumps will achieve a 90% energy cost savings.

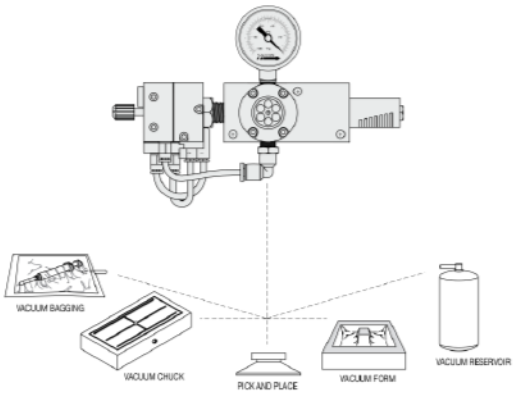
Vaccon Air Saver Circuit for Pick & Place/Part Release Applications

System Schematic with 3 Position Closed Center 4 Way Valve



Design Tip: For applications requiring a gentle part-release, cycle the blow-off valve for a short duration time. For applications requiring a rapid blow-off, cycle the valve for a longer duration.

Sizing an Air Saver Pump



To select a pump:

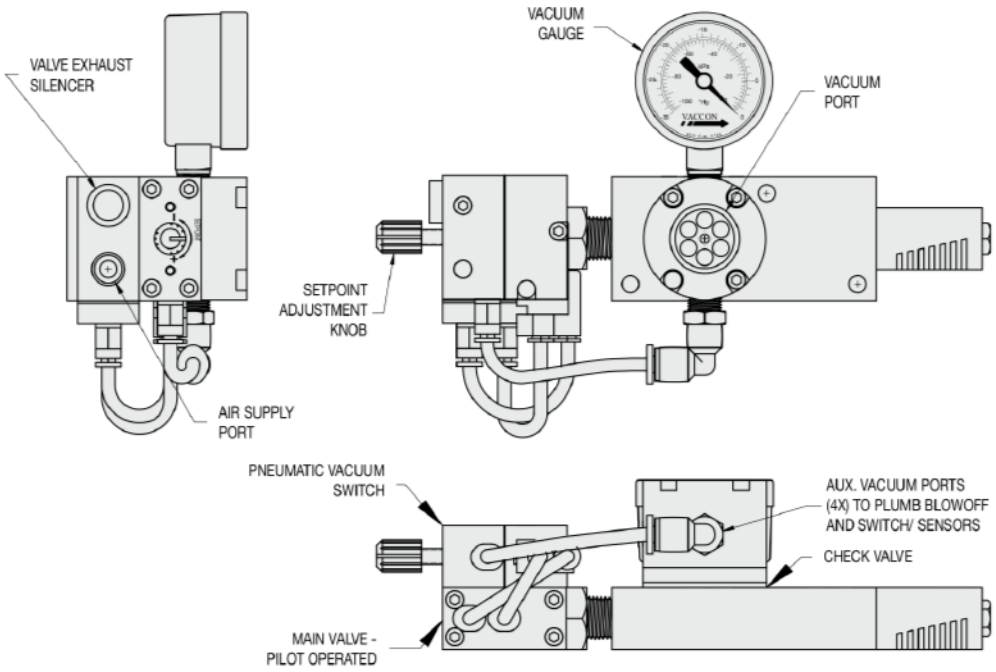
1. Determine the desired evacuation time (speed)
2. Calculate the total volume of air to be evacuated in the system including vacuum lines, vessel/cavity size, cups, etc.
3. Determine the desired vacuum level, "Hg/mbar

   Application ex.: Evacuate 2 cu.ft. of air in 1 minute (60 sec) at a vacuum level of 21"Hg

   Formula: Time (60 sec)/Cu. ft (2) = 30 seconds per cu.ft. (evacuation speed)

Consult pump Performance Data beginning on page 94. Under the evacuation time chart, look for 21" Hg and find the evacuation time that is closest to 30 seconds. In this example, a VP80-200H would be the best model with an evacuation time of 20 seconds.

Standard Air Saver Circuit Schematic: VP20-AS Pump Shown



All Air-Saver Pumps pumps are Fractional and Metric T-Slot compatible.

How to Specify:

VP20 - 100 - H - ▢ - AS

P/N	Imperial Thread
VP20	NPT

P/N	Metric Thread
I-VP20	G Port

P/N	Max. Flow Level
60	(VP20 only)
90	(VP20 only)
100	(VP20 only)
150	(VP20 only)

P/N	Operating Pressure
	80 PSI [5.5 bar] (Standard)
60	60 PSI [4.1 bar]

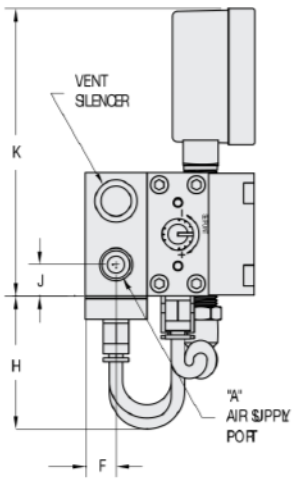
P/N	Max. Vac Level
M	20"Hg [677 mbar]
H	28"Hg [948 mbar]

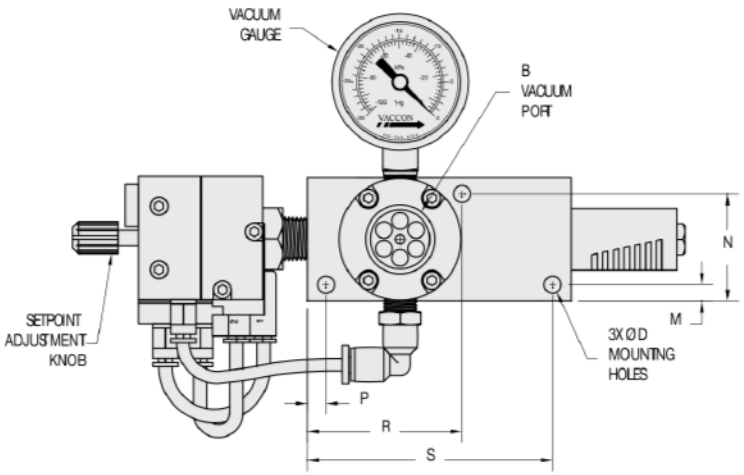
For complete Performance Data, see page 94.

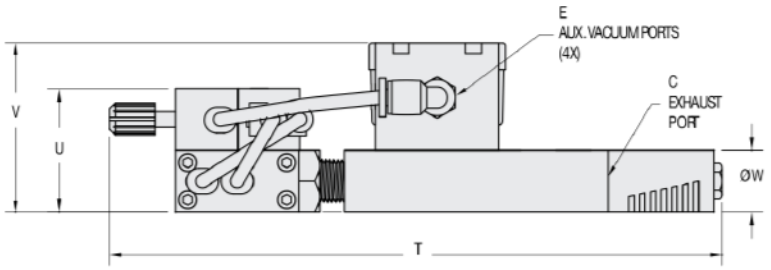
Standard: VP20-(60, 90, 100, 150) (M, H) -AS Pump

Specifications:

Weight: 15 oz [425g]
Noise Level: 64 dB







VP20-100H-AS

Model #	Imperial Dimensions (in.)																	
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W
VP20-AS	1/8 NPT F	1/2 NPT F	1/4 NPT F	0.21	1/8 NPT F	0.38	1.62	0.34	3.49	0.20	1.30	0.23	1.88	2.95	7.43	1.47	2.05	0.75
Model #	**Metric Dimensions (mm)**																	
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W
I-VP20-AS	G 1/8	G 1/2	G 1/4	5.2	G 1/8	9.6	41.1	8.6	88.6	5.1	33.0	5.7	47.6	74.9	188.7	37.3	52.1	19.1

Air Saver Pump Standard Specifications:

Pump Body Material: Anodized Aluminum (For silencer material, see page 244 - 248)
Cartridge Material: VP20- Nylon, Buna-N O-Ring
Medium: Filtered (100 Micron) un-lubricated, non-corrosive dry gases
Operating Temperature: -30° to ~250° F [-34° to ~121°C]
Operating Pressure: 80 PSI [5.5 bar] standard or 60 PSI [4.1 bar] – Consult Factory for other operating pressures

Air Saver Operating and Installation Requirements:

Supply Line & Vacuum Line-VP20: 60 & 90 Cartridges = 1/4" O.D. [6mm] tube recommended
100 & 150 Cartridges= 3/8" O.D. [8mm] tube recommended

Vacuum Line Filtration: Typically vacuum filters are not required. If desired, Vaccon recommends - VF250LPM or VF250F (see page 254).

Mounting Holes: Mounting holes accept 10-32 [M5] screws

Performance Data for Mid Series Pumps

For Pump Models: VP10, VP10-MP, VP1X, VP20, VP20BV, VP20-MP, VP20BV-MP, VP2X, VP2XBV, VP35, VP50 and Manifolds

L-Series Venturis – Low Vacuum Applications

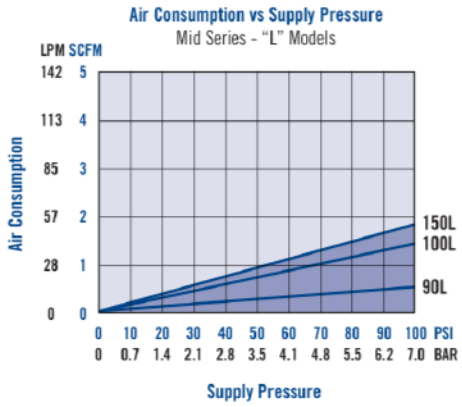
L is for "Low" vacuum levels up to 10"Hg [339 mbar] for applications handling delicate parts, thin walled materials and for process control.

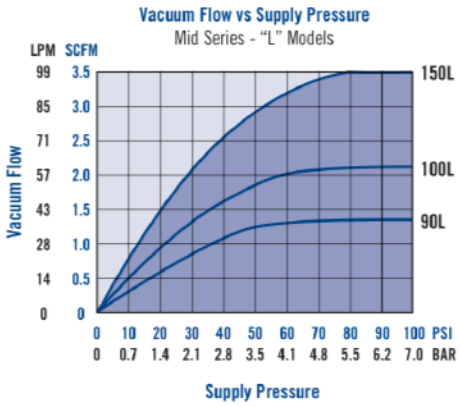
Model #	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)				
		0"Hg	3"Hg	6"Hg	9"Hg	10"Hg
90L	0.50	1.30	1.10	0.70	0.20	0.00
100L	1.40	2.10	1.60	1.10	0.50	0.00
150L	1.80	3.50	2.50	1.90	0.70	0.00
Model #		**Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg**				
		0"Hg	3"Hg	6"Hg	9"Hg	10"Hg
90L		0.00	3.26	7.93	18.65	39.63
100L		0.00	2.33	4.66	10.88	24.00
150L		0.00	1.54	4.36	10.77	22.83

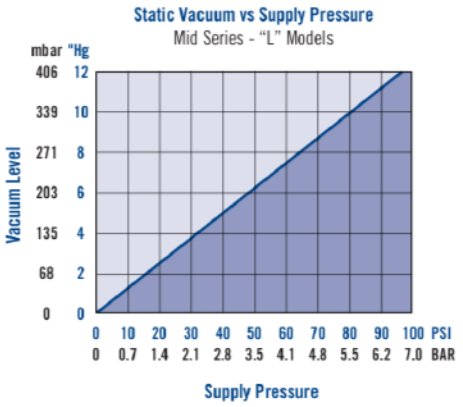
Model #	Air Consumption L/min	Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar)				
		0 mbar	102 mbar	203 mbar	305 mbar	339 mbar
90L	14.2	36.8	31.1	19.8	5.7	0.0
100L	39.6	59.5	45.3	31.1	14.2	0.0
150L	51.0	99.1	70.8	53.8	19.8	0.0
Model #		**Evacuation Time in Seconds based on 1 Liter Volume/mbar**				
		0 mbar	102 mbar	203 mbar	305 mbar	339 mbar
90L		0.0	0.1	0.3	0.7	1.4
100L		0.0	0.1	0.2	0.4	0.9
150L		0.0	0.1	0.2	0.4	0.8

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

Note 2: Evacuation speed is linear with volume, a two cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.







Performance Data for Mid Series Pumps

For Pump Models: VP10, VP10-MP, VP20, VP20BV, VP20-AS, VP20-MP, VP20BV-MP, VP2X, VP2XBV, VP35, VP50 and Manifolds

M-Series Venturis –Medium Vacuum Applications

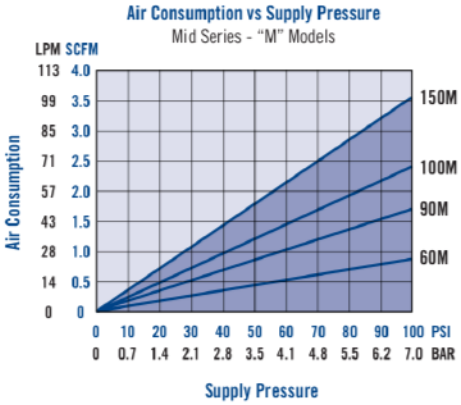
M is for "Medium" vacuum levels up to 20"Hg [677 mbar] for applications involving porous materials (cardboard, wood, masonry, baked goods, textiles.)

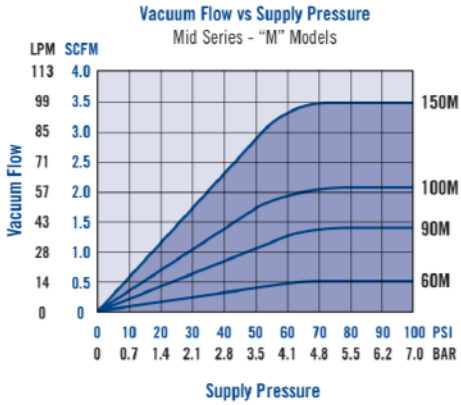
Model #	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)							
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	20"Hg
60M	0.50	0.50	0.40	0.30	0.22	0.15	0.08	0.03	0.00
90M	1.40	1.40	1.25	1.20	1.05	0.85	0.65	0.25	0.00
100M	1.80	2.10	2.00	185	1.75	1.60	1.25	0.80	0.00
150M	2.80	3.50	3.20	2.95	2.75	2.50	1.80	0.95	0.00
Model #		Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg							
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	20"Hg
60M		0.00	12.50	25.10	43.90	68.60	99.30	153.70	227.00
90M		0.00	3.75	7.20	12.40	19.10	29.90	52.00	104.00
100M		0.00	2.65	5.80	9.90	16.20	22.90	36.20	56.60
150M		0.00	1.35	3.20	5.20	7.70	11.80	23.40	52.00

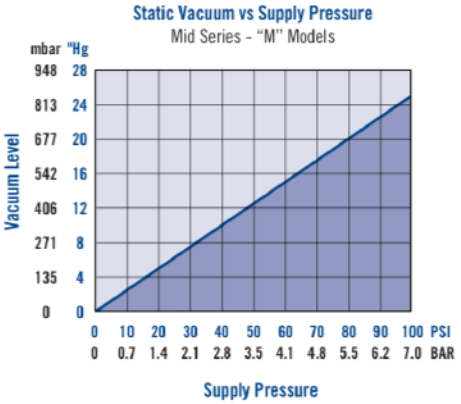
Model #	Air Consumption L/min	Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar)							
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	677 mbar
60M	14.2	14.2	11.3	8.5	6.2	4.2	2.3	0.8	0.0
90M	39.6	39.6	35.4	34.0	29.7	24.1	18.4	7.1	0.0
100M	51.0	59.5	56.6	52.4	49.6	45.3	35.4	22.7	0.0
150M	79.3	99.1	90.6	83.5	77.9	70.8	51.0	26.9	0.0
Model #		Evacuation Time in Seconds based on 1 Liter Volume/mbar							
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	677 mbar
60M		0.0	0.4	0.9	1.6	2.4	3.5	5.4	8.0
90M		0.0	0.1	0.3	0.4	0.7	1.1	1.8	3.7
100M		0.0	0.1	0.2	0.3	0.6	0.8	1.3	2.0
150M		0.0	0.0	0.1	0.2	0.3	0.4	0.8	1.8

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

Note 2: Evacuation speed is linear with volume, a two cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.







Performance Data for Mid Series Pumps

For Pump Models: VP10, VP10-MP, VP1X, VP20, VP20BV, VP20-AS, VP20-MP, VP20BV-MP, VP2X, VP2XBV, VP35, VP50, and Manifolds

H-Series Venturis – High Vacuum Applications

H is for "High" vacuum levels up to 28"Hg [948 mbar] for applications involving non-porous materials (steel, plastic, glass, etc.)
The High vacuum level provides high vacuum force for lifting heavy materials and holding them securely.

Model #	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)										
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27 Hg	28"Hg
60H	0.80	0.50	0.38	0.32	0.30	0.27	0.23	0.20	0.13	0.05	0.02	0.00
90H	1.80	1.20	1.00	0.95	0.90	0.85	0.75	0.70	0.52	0.47	0.20	0.00
100H	2.80	2.00	1.85	1.75	1.57	1.40	1.25	1.05	0.84	0.70	0.35	0.00
150H	4.80	3.20	2.80	2.50	2.30	2.00	1.60	1.40	1.20	0.80	0.50	0.00
Model #		Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg										
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg	28"Hg
60H		0.00	15.00	29.80	50.60	74.50	102.80	135.90	183.20	245.90	410.20	790.80
90H		0.00	6.50	12.30	18.90	32.50	47.00	65.40	92.20	130.00	222.20	281.30
100H		0.00	2.70	6.50	11.20	17.50	25.80	38.40	55.20	79.20	166.70	251.80
150H		0.00	2.30	3.80	6.50	10.20	14.20	21.30	44.90	55.00	81.00	125.00

Model #	Air Consumption L/min	Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar)										
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
60H	22.7	14.2	10.8	9.1	8.5	7.6	6.5	5.7	3.7	1.4	0.6	0.0
90H	51.0	34.0	28.3	26.9	25.5	24.1	21.2	19.8	14.7	13.3	5.7	0.0
100H	79.3	56.6	52.4	49.6	44.5	39.6	35.4	29.7	23.8	19.8	9.9	0.0
150H	135.9	90.6	79.3	70.8	65.1	56.6	45.3	39.6	34.0	22.7	14.2	0.0
Model #		Evacuation Time in Seconds based on 1 Liter Volume/mbar										
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
60H		0.0	0.5	1.1	1.8	2.6	3.6	4.8	6.5	8.7	14.5	27.9
90H		0.0	0.2	0.4	0.7	1.1	1.7	2.3	3.3	4.6	7.8	9.9
100H		0.0	0.1	0.2	0.4	0.6	0.9	1.4	1.9	2.8	5.9	8.9
150H		0.0	0.1	0.1	0.2	0.4	0.5	0.8	1.6	1.9	2.9	4.4

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

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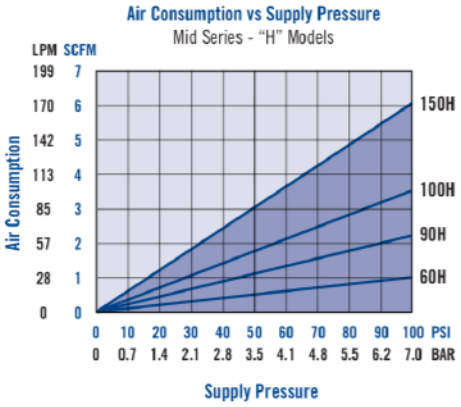
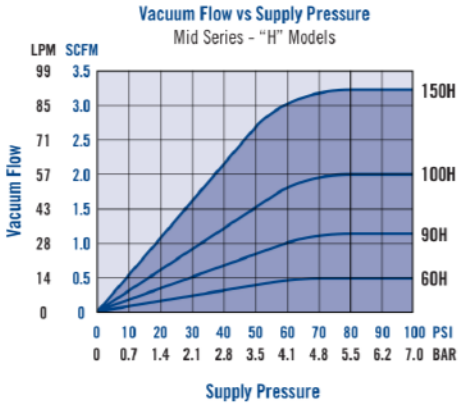
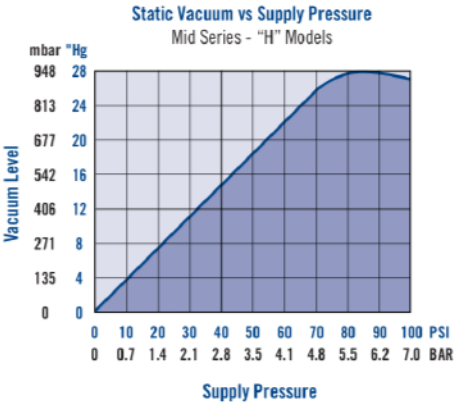


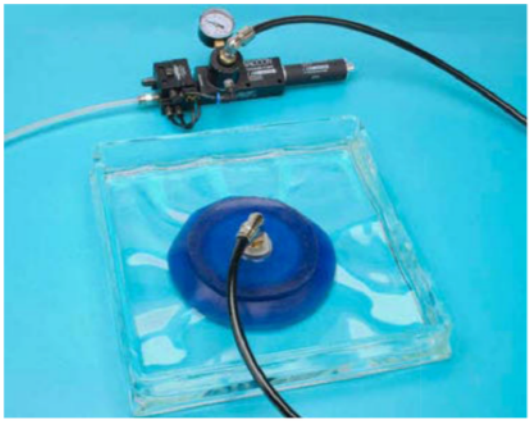




Vacuum Pumps with Air Saver Technology

On-Demand Vacuum – Saves Air – Safe Operation

Max Series: VP80-200/250-AS, VP90-300/350-AS



Air Saver pumps safely handle non-porous products i.e. glass handling operations

VP80-200H-AS

Ideal Applications:

- Pick & place
- Press transfer lines – load and unload
- Vacuum clamping and chucking
- Vacuum bagging
- Vessel evacuation
- Vacuum forming

Features/Benefits:

- Powerful vacuum up to 28"Hg [948mbar] – rapid evacuation
- Energy efficient – compressed air on only when needed, automatic shut-off
- Intrinsically safe to operate – all pneumatic – no electricity required
- High vacuum flows provide dependable vacuum holding force
- Reliable – trouble-free operation:
  - ~ No moving parts to wear or clog
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  - ~ No downtime
  - ~ Quiet

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For pick and place applications handling non-porous materials, the Air Saver pumps will maintain a strong holding force, conserve compressed air, and hold the part even if the compressed air supply is interrupted providing an extra level of safety when handling large loads.

For vessel evacuation applications such as wood and composite clamping, Air Saver pumps maintain vacuum for long periods of time and only consume compressed air to overcome system leaks resulting in 90% air savings.

The system includes a venturi vacuum pump, vacuum check valve, air piloted air valve and all-pneumatic vacuum switch. The switch is adjustable from 0 to 28"Hg [948mbar] and the hysteresis is 3"Hg [102mbar].

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:

- 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] 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**

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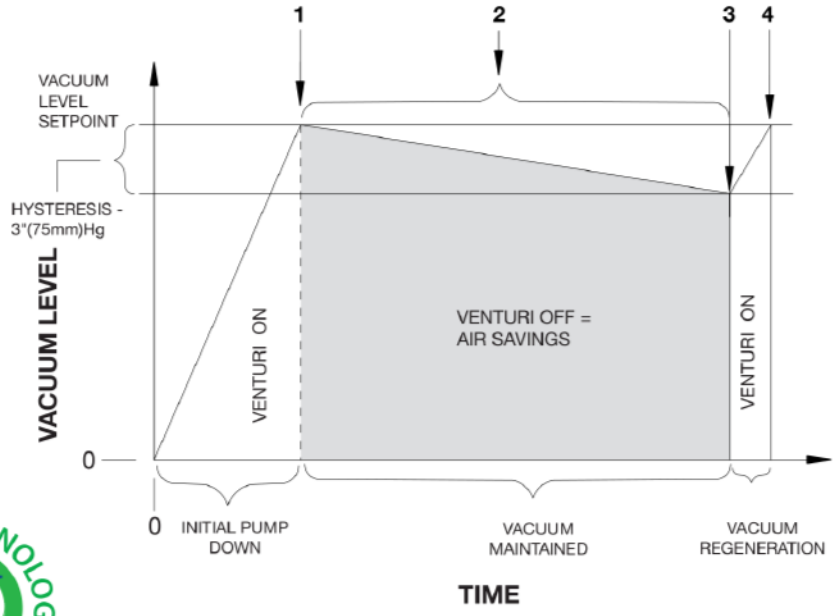
Principles of Operation: Air Saver Pumps

The pneumatic vacuum switch is the brain within the Air Saver system. It constantly monitors and controls the vacuum level as required based on customer specifications. Minimizing leaks in plumbing lines and connections extends the "venturi off" cycle and maximizes air savings. Below is a brief overview of the air saver cycle.

Determine the maximum vacuum level desired, then adjust the switch to the vacuum level setpoint.

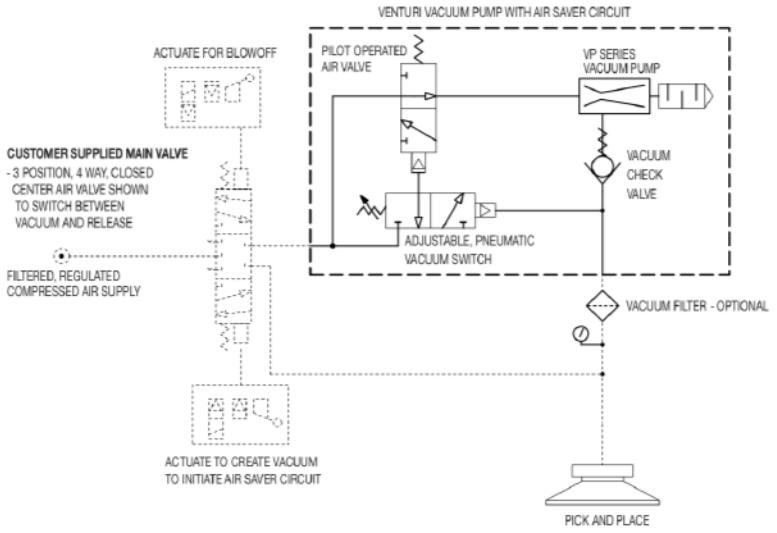
1. Once the vacuum level set-point is reached, the switch turns the pump off, stopping the flow of air to the venturi – air savings.
2. The integral check valve maintains the vacuum level.
3. Should there be a leak and the vacuum level decrease (Hysteresis 3"Hg [102mbar]), the pneumatic switch automatically re-energizes the venturi to bring the system back to the pre-set vacuum level set-point.
4. Then the switch de-energizes the venturi pump, (stopping the flow of air to the venturi – air savings) and the air saving cycle starts again.



Although compressed air savings will vary by application and system design, typically Vaccon Air Saver pumps will achieve a 90% energy cost savings.

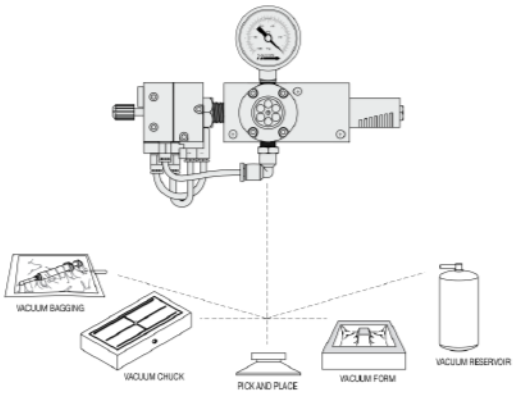
Vaccon Air Saver Circuit for Pick & Place/Part Release Applications

System Schematic with 3 Position Closed Center 4 Way Valve



Design Tip: For applications requiring a gentle part-release, cycle the blow-off valve for a short duration time. For applications requiring a rapid blow-off, cycle the valve for a longer duration.

Sizing an Air Saver Pump



To select a pump:

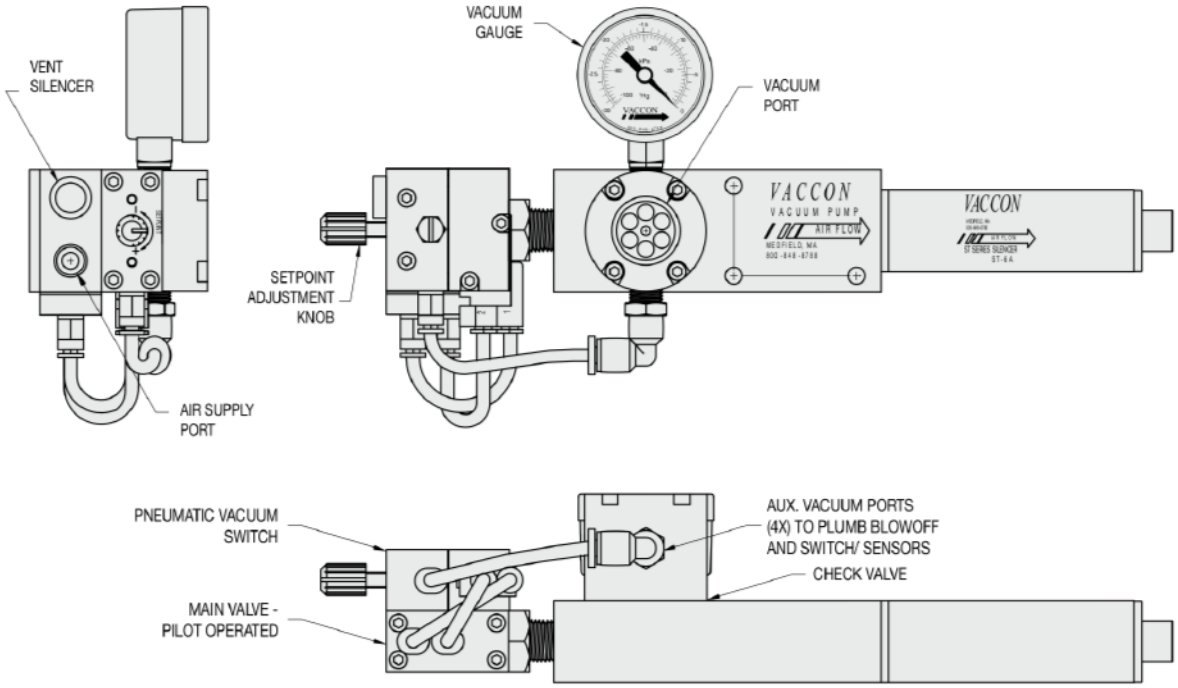
1. Determine the desired evacuation time (speed)
2. Calculate the total volume of air to be evacuated in the system including vacuum lines, vessel/cavity size, cups, etc.
3. Determine the desired vacuum level, "Hg/mbar

   Application ex.: Evacuate 2 cu.ft. of air in 1 minute (60 sec) at a vacuum level of 21"Hg

   Formula: Time (60 sec)/Cu. ft (2) = 30 seconds per cu.ft. (evacuation speed)

Consult pump Performance Data beginning on page 136. Under the evacuation time chart, look for 21" Hg and find the evacuation time that is closest to 30 seconds. In this example, a VP80-200H would be the best model with an evacuation time of 20 seconds.

Standard Air Saver Circuit Schematic: VP80-AS Pump Shown



All Air-Saver Pumps pumps are Fractional and Metric T-Slot compatible.

How to Specify:

VP80 - 200 - H - ___ - AS

P/N	Imperial Thread
VP80	NPT
VP90	NPT

P/N	Metric Thread
I-VP80	G Port
I-VP90	G Port

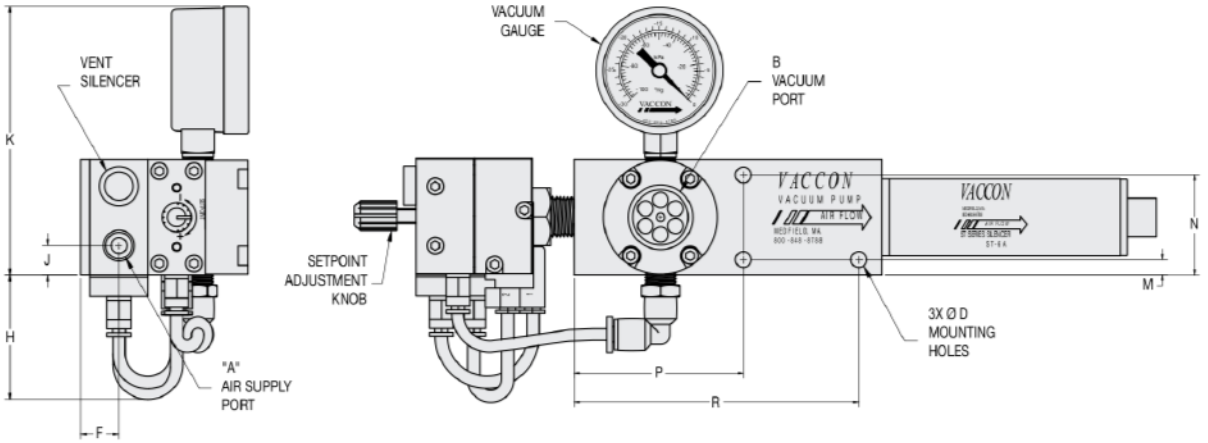
P/N	Max. Flow Level	
200	(VP80 only)	
250	(VP80 only)	
300	(VP90 only)	
350	(VP90 only)	80 PSI only

P/N	Operating Pressure
	80 PSI [5.5 bar] (Standard)
60	60 PSI [4.1 bar]

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

For complete Performance Data, see page 136.

VP80-200 (M, H)-AS Pump



VP80-200H-AS

Specifications:

Weight: 1 lb 5 oz [595g]
Noise Level: 72 dB

Model #	Imperial Dimensions (in.)																	
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W
VP80-200-AS	1/8 NPT F	1/2 NPT F	3/8 NPT F	0.21	1/8 NPT F	0.50	1.62	0.34	3.49	0.20	1.30	2.20	3.70	N/A	10.41	1.60	2.30	1.00
Model #	**Metric Dimensions (mm)**																	
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W
I-VP80-200-AS	G 1/8	G 1/2	G 3/8	5.2	G 1/8	12.7	41.1	8.6	88.6	5.1	33.0	55.9	94.0	N/A	264.5	40.6	58.4	25.4

Air Saver Pump Standard Specifications:

Pump Body Material: Anodized Aluminum (For silencer material, see page 244 - 248)
Cartridge Material: VP80's & 90's – Aluminum
Medium: Filtered (100 Micron) un-lubricated, non-corrosive dry gases
Operating Temperature: -30° to ~250° F [-34° to ~121°C]
Operating Pressure: 80 PSI [5.5 bar] standard or 60 PSI [4.1 bar] – Consult Factory for other operating pressures

Air Saver Operating and Installation Requirements:

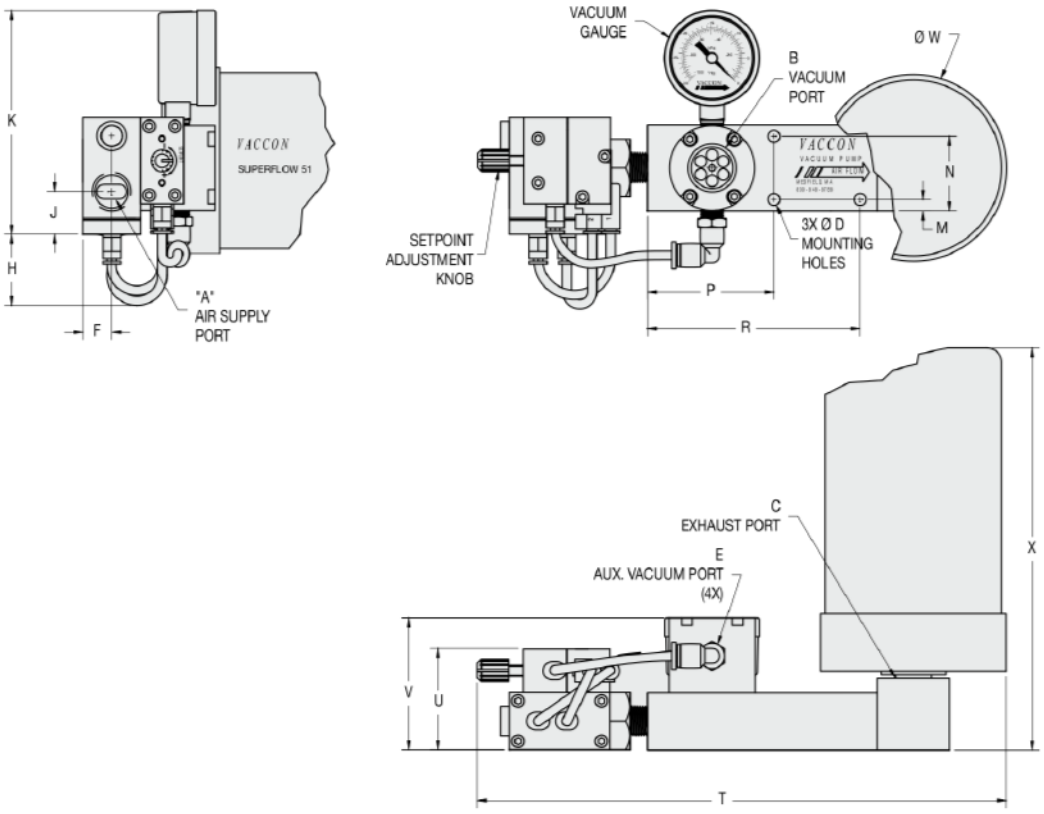
Supply Line & Vacuum Line – VP80: 80-200 = 3/8" O.D. [10mm] tube preferred
80-250 = 1/2" O.D. [12mm] tube preferred

VP90: 90-300 & 90-350 Cartridges – minimum = 1/2" O.D. [12mm] tube preferred

Vacuum Line Filtration: Typically vacuum filters are not required. If desired, Vaccon recommends (see page 254):
VP80's = VF375F
VP90's = VF500F

Mounting Holes: Mounting holes accept 10-32 [M5] screws

Standard VP80-250 (M, H)-AS Pump



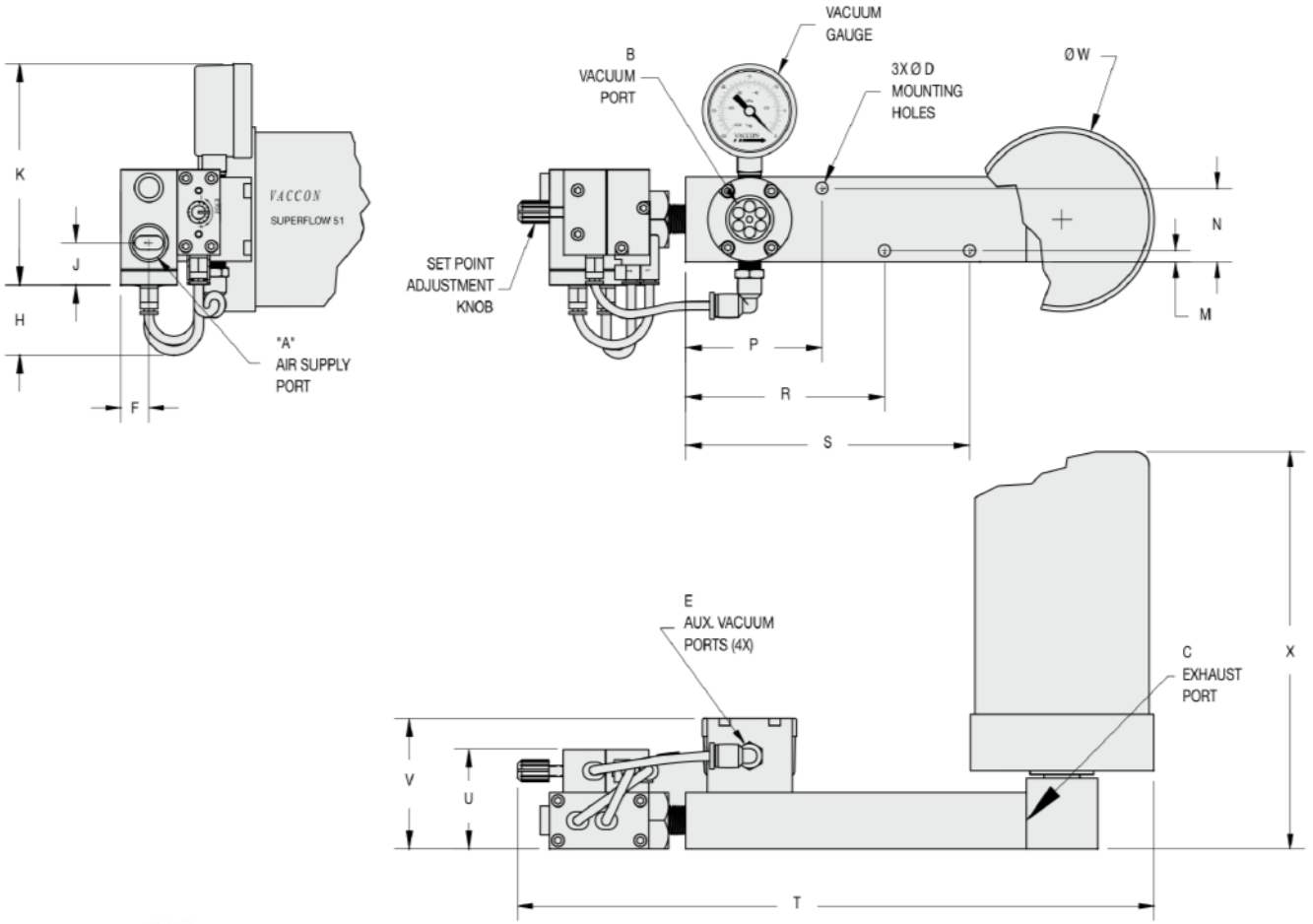
VP80-250H-AS

Specifications:

Weight: 2 lb 4 oz [1021g]
Noise Level: 73 dB

Model #	Imperial Dimensions (in.)																		
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W	X
VP80-250-AS	3/8 NPT F	1/2 NPT F	1/2 NPT F	0.21	1/8 NPT F	0.50	1.26	0.74	3.90	0.20	1.30	2.20	3.70	N/A	9.20	1.72	2.30	3.23	7.00
Model #	**Metric Dimensions (mm)**																		
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W	X
I-VP80-250-AS	G 3/8	G 1/2	G 1/2	5.2	G 1/8	12.7	32.0	18.9	99.0	5.1	33.0	55.9	94.0	N/A	233.7	43.7	58.4	82.0	177.8

Standard: VP90-300 or 350 (M, H)-AS Pump



VP90-350H-AS

Specifications:

Weight: 2 lb 9 oz [1162g]
Noise Level: 73 dB

Model #	Imperial Dimensions (in.)																	
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W	X
VP90-300/350-AS	3/8 NPT F	1/2 NPT F	1/2 NPT F	0.21	1/8 NPT F	0.50	1.24	0.74	3.90	0.20	1.30	2.40	3.50	5.00	11.20	1.72	2.30	3.23	7.00
Model #	**Metric Dimensions (mm)**																	
	A	B	C	D	E	F	H	J	K	M	N	P	R	S	T	U	V	W	X
I-VP90-300/350-AS	G 3/8	G 1/2	G 1/2	5.2	G 1/8	12.7	31.4	18.9	99.0	5.1	33.0	61.0	88.9	127.0	284.5	43.7	58.4	82.0	177.8

Performance Data for Max Series Pumps & Cartridges

For Pump Models: VP80, VP80BV, VP8X, VP8XBV, VP8XV, VP80-AS, VP80-MP, VP80BV-MP, VP90, VP90-AS, VP90-MP, and Manifolds

L-Series Venturis – Low Vacuum Applications

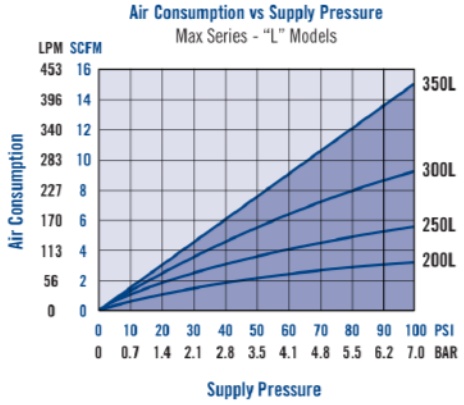
L is for "Low" vacuum levels up to 10"Hg [339 mbar] for applications handling delicate parts, thin walled materials and for process control.

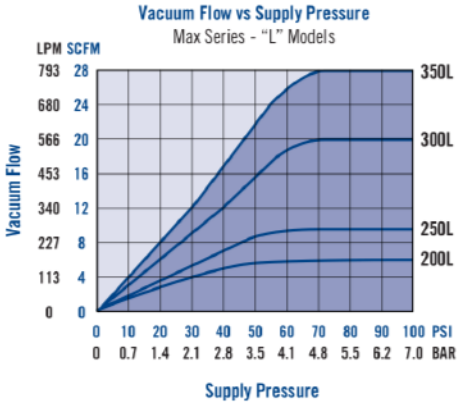
Model #	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)				
		0"Hg	3"Hg	6"Hg	9"Hg	10"Hg
200L	2.80	6.00	5.80	4.30	1.70	0.00
250L	4.80	9.50	7.90	5.70	2.20	0.00
300L	7.80	20.00	14.00	9.50	3.50	0.00
350L	12.50	28.00	18.00	12.30	4.50	0.00
Model #		Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg				
		0"Hg	3"Hg	6"Hg	9"Hg	10"Hg
200L		0.00	0.77	2.05	4.62	13.34
250L		0.00	0.52	1.28	3.08	7.95
300L		0.00	0.26	0.77	1.80	4.10
350L		0.00	0.00	0.52	1.28	2.82

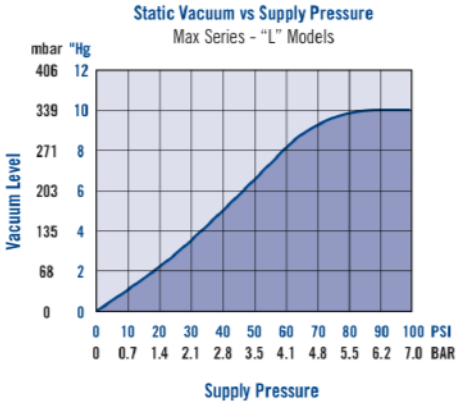
Model #	Air Consumption L/min	Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar)				
		0 mbar	102 mbar	203 mbar	305 mbar	339 mbar
200L	79.3	169.9	164.2	121.8	48.1	0.0
250L	135.9	269.0	223.7	161.4	62.3	0.0
300L	220.9	566.3	396.4	269.0	99.1	0.0
350L	354.0	792.9	509.7	348.3	127.4	0.0
Model #		Evacuation Time in Seconds based on 1 Liter Volume/mbar				
		0 mbar	102 mbar	203 mbar	305 mbar	339 mbar
200L		0.0	0.0	0.1	0.2	0.5
250L		0.0	0.0	0.0	0.1	0.3
300L		0.0	0.0	0.0	0.1	0.1
350L		0.0	0.0	0.0	0.0	0.1

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

Note 2: Evacuation speed is linear with volume, a two cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.







Performance Data for Max Series Pumps & Cartridges

For Pump Models: VP80, VP80BV, VP8X, VP8XBV, VP8XV, VP80-AS, VP80-MP, VP80BV-MP, VP90, VP90-AS, VP90-MP, VP92* and Manifolds

M-Series Venturis – Medium Vacuum Applications

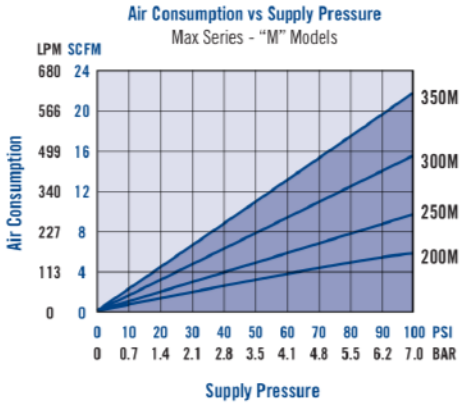
M is for "Medium" vacuum levels up to 20"Hg [667 mbar] for applications involving porous materials (cardboard, wood, masonry, baked goods, textiles)
***NOTE:** VP92 Performance Levels: 200M, 200H, and 250M only.

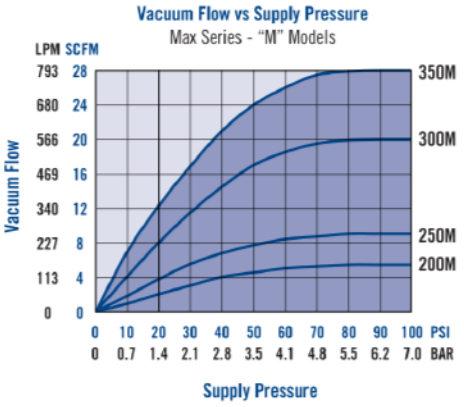
Model #	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)							
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	20"Hg
200M	4.80	6.00	5.30	4.90	4.00	3.50	2.50	1.10	0.00
250M	7.80	9.50	9.20	8.30	7.00	4.70	3.40	2.20	0.00
300M	12.50	20.00	19.00	16.30	13.80	8.10	5.50	3.30	0.00
350M	22.00	28.00	24.00	19.40	16.80	14.50	11.20	4.80	0.00
Model #		**Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg**							
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	20"Hg
200M		0.00	0.75	1.90	3.20	5.30	8.70	17.10	42.60
250M		0.00	0.45	1.10	2.40	3.80	6.00	9.70	15.40
300M		0.00	0.00	0.00	1.10	1.80	2.70	4.60	8.70
350M		0.00	0.00	0.00	1.00	1.50	2.10	4.30	8.40

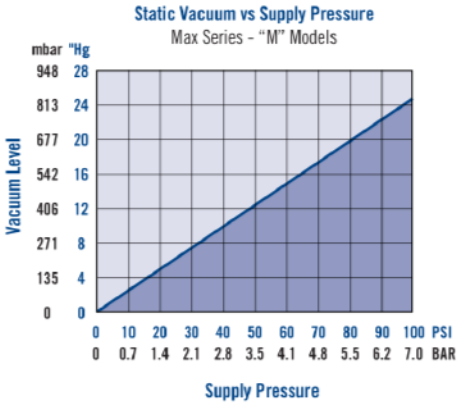
Model #	Air Consumption L/min	Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar)							
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	677 mbar
200M	135.9	169.9	150.1	138.8	113.3	99.1	70.8	31.1	0.0
250M	220.9	269.0	260.5	235.0	198.2	133.1	96.3	62.3	0.0
300M	354.0	566.3	538.0	461.6	390.8	229.4	155.7	93.4	0.0
350M	623.0	792.9	679.6	549.3	475.7	410.6	317.1	135.9	0.0
Model #		**Evacuation Time in Seconds based on 1 Liter Volume/mbar**							
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	677 mbar
200M		0.0	0.0	0.1	0.1	0.2	0.3	0.6	1.5
250M		0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5
300M		0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3
350M		0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3

Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

Note 2: Evacuation speed is linear with volume, a two cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.







Performance Data for Max Series Pumps & Cartridges

For Pump Models: VP80, VP80BV, VP8X, VP8XBV, VP8XV, VP80-AS, VP80-MP, VP80BV-MP, VP90, VP90-AS, VP90-MP, VP92* and Manifolds

H-Series Venturis – High Vacuum Applications

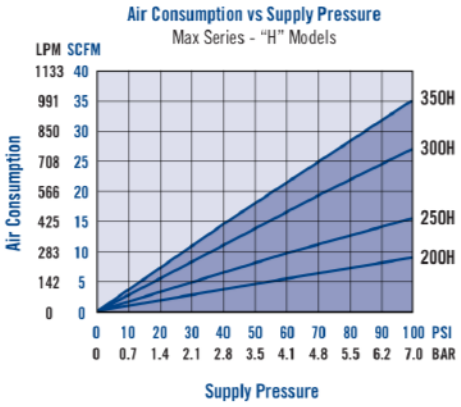
H is for "High" vacuum levels up to 28"Hg [948mbar] for applications involving non-porous materials (steel. plastic, glass, etc.)
The high vacuum level provides high vacuum force for lifting heavy materials and holding them securely.
***NOTE:** VP92 Performance Levels: 200M, 200H, and 250M only.

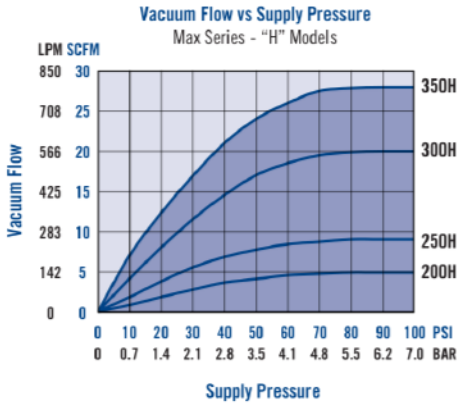
Model #	Air Consumption SCFM	Imperial – Vacuum Flow (SCFM) vs. Vacuum Level ("Hg)										
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg	28"Hg
200H	7.80	5.40	4.70	3.85	3.30	3.00	2.60	2.10	1.60	1.20	0.60	0.00
250H	12.50	9.00	8.50	7.85	7.00	6.50	5.30	3.90	2.50	1.80	0.90	0.00
300H	22.00	20.00	17.00	14.00	12.70	12.00	10.00	7.40	4.90	2.70	1.30	0.00
350H	28.00	28.00	22.00	18.70	15.90	14.50	11.80	8.10	5.70	4.50	2.25	0.00
Model #		Evacuation Time in Seconds based on 1 Cubic Foot Volume/"Hg										
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg	28"Hg
200H		0.00	1.20	2.10	3.40	5.20	7.70	11.50	20.00	33.50	62.60	98.10
250H		0.00	0.75	1.30	2.20	3.50	5.60	9.10	17.40	30.10	56.00	76.00
300H		0.00	0.00	0.80	1.20	2.00	2.80	3.90	5.90	11.10	32.70	60.00
350H		0.00	0.00	0.00	1.20	1.90	2.30	3.40	5.30	8.80	26.00	44.00

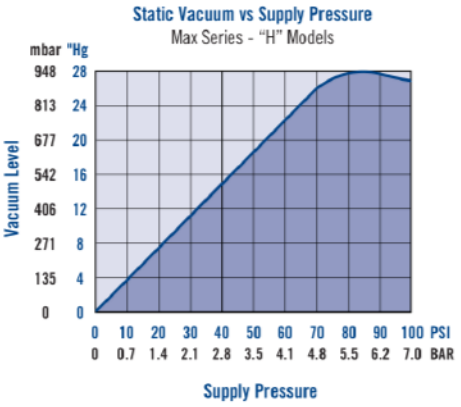
Model #	Air Consumption L/min	Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar)									
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	814 mbar	914 mbar	948 mbar
200H	220.9	152.9	133.1	109.0	93.4	85.0	73.6	59.5	45.3	34.0	17.0	0.0
250H	354.0	254.9	240.7	222.3	198.2	184.1	150.1	110.4	70.8	51.0	25.5	0.0
300H	623.0	566.3	481.4	396.4	359.6	339.8	238.2	209.5	138.8	76.5	36.8	0.0
350H	792.9	792.9	623.0	529.5	450.2	410.6	334.1	229.4	161.4	127.4	63.7	0.0
Model #		Evacuation Time in Seconds based on 1 Liter Volume/mbar										
		0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	814 mbar	914 mbar	948 mbar
200H		0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.7	1.2	2.2	3.5
250H		0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.6	1.1	2.0	2.7
300H		0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.4	1.2	2.1
350H		0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.9	1.6

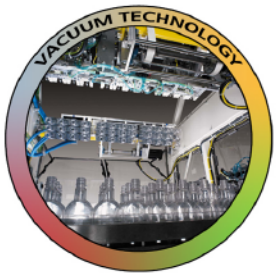
Note 1: Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.

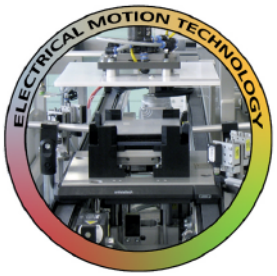
Note 2: Evacuation speed is linear with volume, a two cu. ft. volume will take twice as long to evacuate as a one cu. ft. volume.











Vous avez l'idée, nous la concrétisons.

Wij verheugen ons op uw aanvraag.

We look forward to your application.

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