

## Modular Venturi Vacuum pumps Mid Series

**VACCON**  
/// VACUUM PRODUCTS

[www.vaccon.com](http://www.vaccon.com)

**ACCELERATING AUTOMATION  
WITH VACUUM TECHNOLOGY**

# Mid Series Segmented Vacuum Manifolds

## VMBV



*Flexible automation – Four, six station manifolds control an End-of-Arm Tool that configures different zones of cups to handle a wide variety of stamped metal parts. No tool change required.*



**VMBV3A-90H-1-0-0-0**

### Ideal Applications:

- Pick & place
- Robotic assembly
- Material handling

### Features/Benefits:

- Precise control – control both the vacuum and the blow-off duration time
- Fast response – no delay due to long plumbing lines; installs close to vacuum point
- Instantaneous vacuum as needed – minimal air consumption
- High productivity – cycle rates up to 2700/min
- Reliable, trouble-free operation:
  - ~ No moving parts to wear
  - ~ No flap valves to stick open
  - ~ No downtime
  - ~ No filters required

### Standard Manifolds:

The VMBV Mid Series Segmented Vacuum Manifolds are individual vacuum pump segments with a common air supply that provides independent vacuum to multiple locations.

Segments can be individually configured or they can all be the same. All segments offer integral NC solenoid control for vacuum creation. For added functionality, specify a valve for blow-off and a vacuum switch/sensor for part present/vacuum achieved feedback.

Design flexibility is further increased with our interchangeable venturi cartridge system that allows designers to optimize performance by choosing from 11 venturi cartridges. (see page 8)

Large internal flow paths allow ingested debris to pass through the segments without clogging. Push-to-connect air supply and vacuum lines save space and assembly time.

### 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

### Segmented Manifold Options:

- Interchangeable Venturi cartridges – 11 different performance levels
- Miniature vacuum switches/sensors with quick disconnect for reliable part detection
- On-board integral control valves – 24vDC
- Choice of operating pressures to meet machine and factory air supply 80 PSI [5.5 BAR] standard, 60 PSI [4.0 BAR] optional

### 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](http://www.vaccon.com)

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

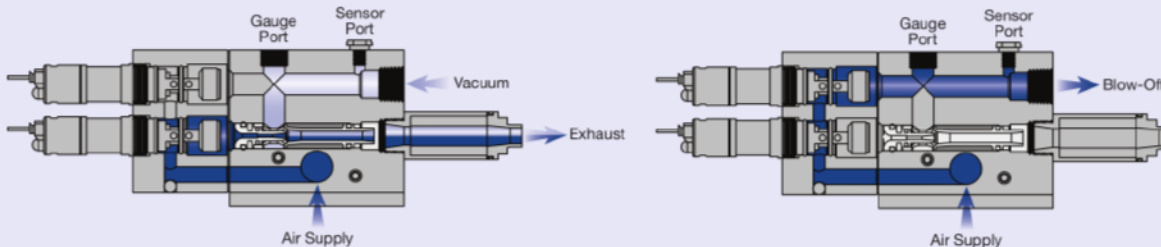




## Principles of Operation: VMBV

Compressed air is supplied to both N.C. solenoid valves simultaneously (if outfitted with blow-off function). To create vacuum, energize the first solenoid valve to allow the compressed air to flow to the venturi cartridge resulting in instant vacuum at the vacuum port.

To release the part, de-energize the vacuum solenoid while energizing the blow-off solenoid. Because the blow-off air is at line pressure a very powerful blow-off will be created.



**Note:** Each segment of the manifold operates independently, but uses a common air supply located on the standoff on both ends of the assembly. Both air supply ports may be used if the number of pump segments requires more volume.

## VMBV Manifold Segment Standard Specifications:

<b>Body Material:</b>	Anodized Aluminum, Buna-N, Brass, Acetal (For silencer material, see page 266)
<b>Cartridge Material:</b>	Nylon, Buna-N (Other materials available, see page 8)
<b>Medium:</b>	Filtered (50 Micron) un-lubricated, non-corrosive dry gases
<b>Operating Temperature:</b>	-23°~122° F [-5°~50°C]
<b>Operating Pressure:</b>	80 PSI [5.5 BAR] or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

## 2-Way Pilot Valve Specifications:

<b>Valve Type:</b>	Integral 2-way solenoid, 24vdc, Normally closed
<b>Valve Body Material:</b>	Copper, Nylon, Stainless Steel
<b>Valve Seal Material:</b>	Buna-N
<b>Valve Operating Pressure:</b>	0 to 100 PSI [0 to 7 BAR]
<b>Average Life:</b>	50 million cycles
<b>Power Consumption:</b>	4 watts
<b>Response Time:</b>	8 milliseconds
<b>Cycle Rate:</b>	45 cycles per second
<b>Electrical Connection:</b>	2 pole plug-in cable with 24 AWG, 3' [1M] flying leads
<b>Manual Override:</b>	Yes, non-locking, spring return

## VMBV Operating and Installation Requirements:

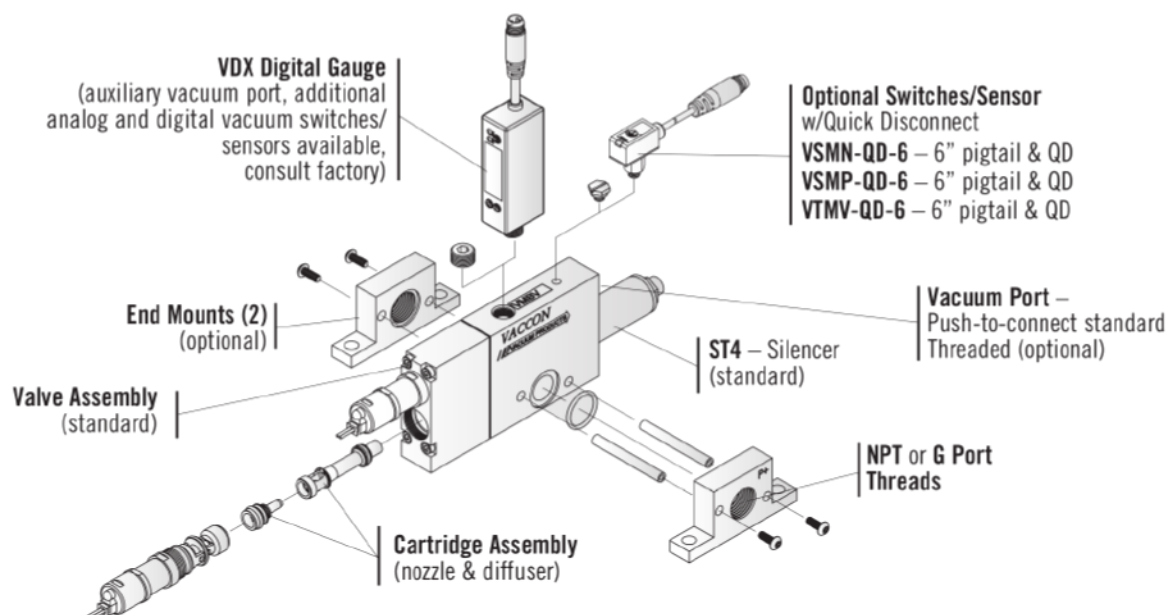
<b>Cartridge size:</b>	<b>C60 (M, H) and C90 (L, M, H)</b>	<b>C100 (L, M, H) and C150 (L, M, H)</b>
<b>Supply Line:</b>	1/4" O.D. [6mm] tube recommended	3/8" O.D. [10mm] tube recommended
<b>Vacuum Line:</b>	3/8" O.D. [10mm] tube recommended	3/8" O.D. [10mm] tube recommended
<b>Vacuum Line Filtration:</b>	Typically vacuum filters are not required. If desired, Vaccon recommends – VF250F. See page 278.	
<b>Mounting Holes:</b>	Mounting holes accept 10-32 [M5] screws	



# Modular Venturi Vacuum Pumps – Mid Series

## VMBV Segmented Manifold 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.



### How to specify segments with the same options:

To order a 5 station manifold with all segments configured the same, specify the total number of segments first and then the letter "A" for "all the same."

Segment 1: **VMBV 5 A - 60 H - 0 - 0 - 0 - 0**

### How to specify segments with different options:

Segment numbers are left to right when facing the vacuum port. Please see next page.

To order a 3-station manifold with different configurations, specify the total number of segments after "VMBV" and then list each line separately.

How to Specify: Segment 1: **VMBV3 - 1 - 60 H - 0 - 1 - A - 0**  
 Segment 2: **VMBV3 - 2 - 90 M - 0 - 1 - A - 0**  
 Segment 3: **VMBV3 - 3 - 100 H - 0 - 1 - A - 0**

P/N	Imperial Thread
VMBV	NPT
P/N	Metric Thread
I-VMBV	G Port
P/N	Segments
(1-10) A	Total number of segments, followed by "A" – all segments the same.
1	Segment 1
2	Segment 2
3	Segment 3
P/N	Max. Flow Level
-60	(Not Available in L)
-90	
-100	
-150	

P/N	Vacuum Ports
0	PTC Standard (3/8"/10mm)
1	Threaded (1/4"/G1/4)
P/N	Switch/Sensor
0	None (Standard)
A	VSMN-QD-6 – Switch NPN
B	VSMP-QD-6 – Switch PNP
C	VTMV-QD-6 – Sensor 1-5VDC Output
P/N	Blow-off
0	None (Standard)
1	Full
P/N	Operating Pressure
0	80 PSI [5.5 BAR] (Standard)
1	60 PSI [4.0 BAR]
P/N	Max. Vac Level
L	10"Hg [339mbar]
M	20"Hg [677mbar]
H	28"Hg [948mbar]

For complete Performance Data, see page 102.



# Modular Venturi Vacuum Pumps – Mid Series

## Standard Manifold: VMBV - # – (60, 90, 100, 150) (L, M, H)

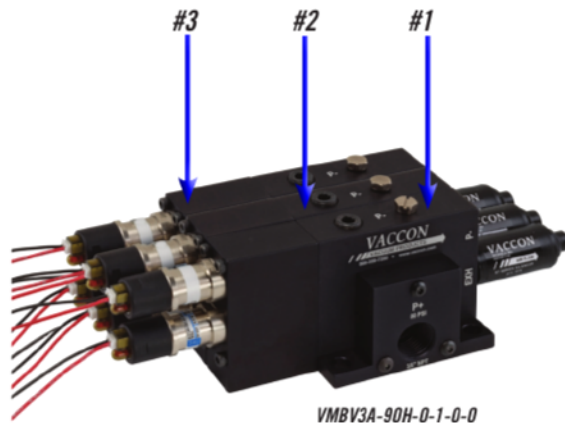
### Example:

#### 3 Station Manifold – VMBV with options:

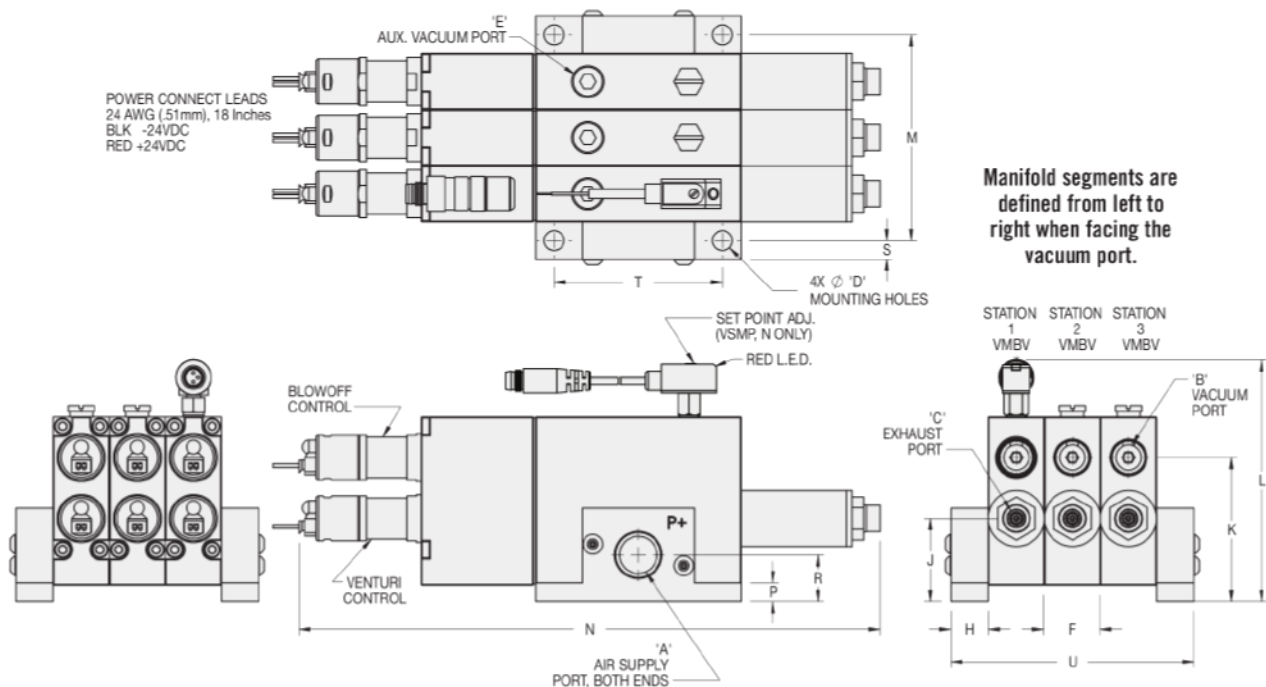
Segment 3 includes blow-off/no sensor/PTC

Segment 2 includes blow-off/no sensor/PTC

Segment 1 includes blow-off/no sensor/PTC



VMBV3A-90H-0-1-0-0



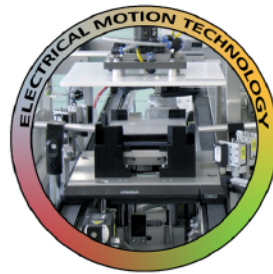
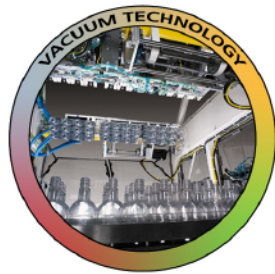
### Specifications:

Segment Weight	15.5 oz [424g]
End Mounts	1.4 oz[40g]
Noise Level	68 dB

Model #	Imperial Dimensions (in.)															
	A	B*	C	D	E	F	H	J	K	L	M	N	P	R	S	T
VMBV	3/8 NPT F	3/8" PTC	1/4 NPT F	0.27	1/8 NPT F	0.75	0.50	1.11	1.93	3.26	2.75	7.77	0.25	0.63	0.25	2.25
Model #	Metric Dimensions (mm)															
	A	B*	C	D	E	F	H	J	K	L	M	N	P	R	S	T
I-VMBV	G 3/8	10mm PTC	G 1/4	6.86	G 1/8	19.05	12.70	28.19	49.02	82.79	69.85	197.36	6.35	16.00	6.35	57.15

\*PTC – Push-to-connect fitting is standard. Consult factory for 1/4" NPT (G 1/4) threads.





***Vous avez l'idée, nous la concrétisons.  
Wij verheugen ons op uw aanvraag.  
We look forward to your application.***



**LDA Belgium**

Hoge Buizen 53  
1980 Eppegem  
Belgium

Tel. +32 (0)2-266 13 13

Mail: [LDA@LDA.be](mailto:LDA@LDA.be)

[www.LDA.be](http://www.LDA.be)