

Unlike standard venturi vacuum pumps where the vacuum port is 90° from the supply port, Vaccon's inline venturi vacuum pumps feature an air-supply port and vacuum port on the same axis to consolidate space.



## VPI Series – Inline Pump

VPI-90H pumps vertically mount to robotic arms to create single or densely populated arrays of pump/cup combinations to accommodate and lift products of any size, shape, or weight.

See Page ..... **7.2**



## New! I-MPVG Series – Miniature Plastic Vacuum Generators

Vaccon's I-MPVG Series of miniature plastic vacuum generators are economical, compact, lightweight, and offer high performance up to 27.0" Hg [918mbar]. These inline venturi pumps are the same size as the air supply and vacuum lines allowing installation in the tightest spaces and closest to the point of use for fast response time.

See Page ..... **7.5**



## New! VPIA-60H-DEL Series – Inline Venturi Vacuum Pump w/ Atmospheric Release

Vaccon's VPIA Series of inline venturi vacuum pumps feature a fast acting, quick release for pick & place applications. Ideal for handling round, oval delicate or fragile objects, VPIA pumps go from vacuum to atmosphere with an instant release, not a slow bleed, for faster operations. Made of FDA approved Acetal.

See Page ..... **7.8**

# Inline Venturi Vacuum Pump

## VPI-90H Pump



*VPI-90H densely populated robotic arm with vacuum cups for material handling applications*



*VPI-90H-VTMV-QD-6*

### Ideal Applications:

- Pick & place
- Bottling
- Packaging
- Palletizing
- Robotic/End-of-Arm tooling

### Features/Benefits:

- High performance – powerful vacuum up to 24”Hg [813mbar]
- Push-to-connect air supply fitting
- Allows multi-populated boards – dense formations
- Fast response – installs close to vacuum point
- Efficient – minimal air consumption
- Easy to install – compact & lightweight, simple mounting, saves plumbing
- Safe operation – no electricity needed at the pump
- Reliable, trouble-free operation:
  - ~ No moving parts to wear
  - ~ No flap valves to stick open
  - ~ No maintenance
  - ~ No downtime

### Standard Pump:

Unlike standard venturi vacuum pumps where the vacuum port is 90° from the supply port, Vaccon’s air-powered VPI-90H inline venturi vacuum pumps feature an air supply port and vacuum port on the same axis to consolidate space.

VPI-90H pumps vertically mount to robotic arms to create single or densely populated arrays of pump/cup combinations to accommodate and lift products of any size, shape, or weight.

Internal threads on the vacuum port enable vacuum cups to connect directly to the pump while the external threads attach directly to the end-of-arm tool. VPI-90H’s feature an additional vacuum port for a vacuum switch/sensor to ensure accurate part detection or for a connection to an externally supplied blow-off.

### Performance Level Designations:

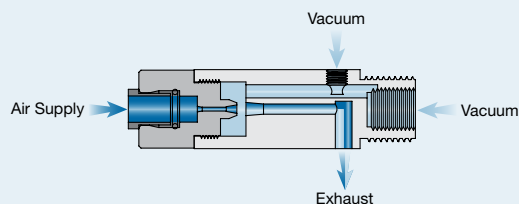
“H” 0-24”Hg, [0 to 813mbar] for high vacuum/standard flow applications

### Pump Options:

- Choice of operating pressures to meet machine and factory air requirements (80 PSI [5.5 bar] standard, 60 PSI [4.1 bar] optional).
- Auxiliary port for optional vacuum sensor or switch with quick disconnect
- Auxiliary port for optional externally supplied blow-off
- Optional jam nut for ease of mounting

### 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 diffuser. This creates a vacuum at the vacuum inlet port located between the nozzle and diffuser. Combined, the nozzle and diffuser create a venturi vacuum cartridge.



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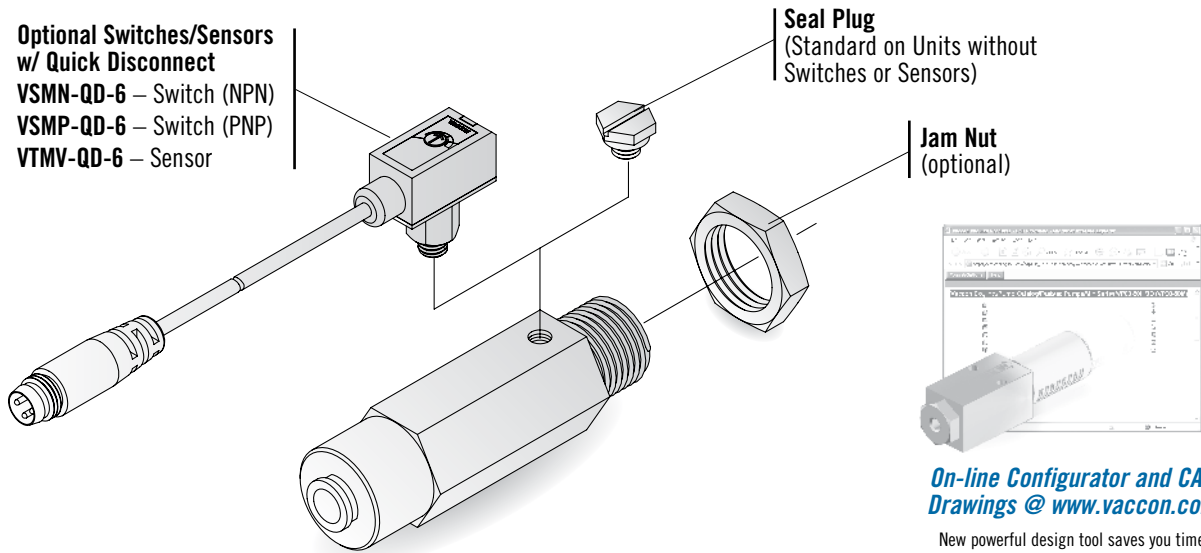
Vacuum technology isn’t an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

To download a complete set of drawings in multiple 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)

## VPI-90H 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](http://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!*

## How to Specify:

**VPI-90H - 60 - JN - VSMP-QD-6**

P/N	Thread	Max Vac Level
VPI-90H	NPT	24"Hg [813mbar]

P/N	Operating Pressure
80	80 PSI [5.5 bar] (Standard)
60	60 PSI [4.0 bar]

P/N	Jam Nut
None	None (Standard)
JN	Jam Nut

P/N	Switch/Sensor
None	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

For complete Performance Data, see pages 3.54 – Equivalent to a VP10-90H up to 24"Hg [847mbar]

## VPI-90H Inline Pump Standard Specifications:

<b>Pump Material:</b>	Anodized Aluminum Buna-N O-ring, Nylon
<b>Medium:</b>	Filtered (50 Micron) unlubricated, non-corrosive dry gases
<b>Operating Temperature:</b>	-30° to ~250° F [-34° to ~121°C]
<b>Operating Pressure:</b>	80 PSI [5.5 bar] or 60 PSI [4.1 bar] – Consult Factory for other operating pressures

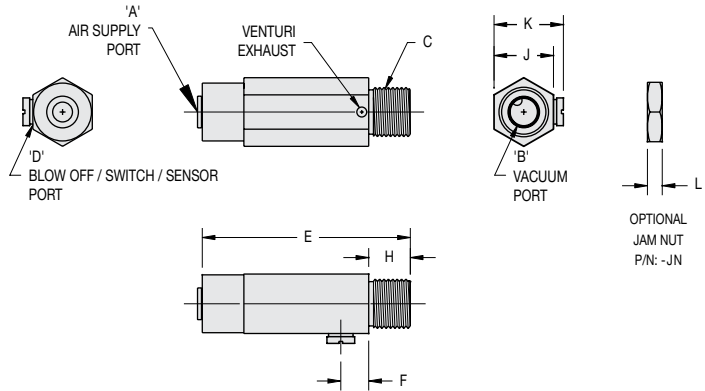
## VPI-90H Inline Pump Operating and Installation Requirements:

<b>Supply Line:</b>	Preferred 1/4" OD tubing [6mm]
<b>Control Valve:</b>	3-way/2 position (faster part release) – minimum orifice - 0.125" [3mm]
<b>Vacuum Line:</b>	Preferred 1/4" OD tubing [6mm]
<b>Vacuum Line Filtration:</b>	Typically filters are not required; if desired Vaccon recommends – VF125LPM. See page 13.12.
<b>Mounting:</b>	5/8-18 male thread (optional jam nut – P/N: -JN)

## Standard Pump: VPI-90H Inline Venturi Vacuum Pump



VPI-90H



**Specifications:**

**Segment Weight:** 1.7 oz [48g]  
**Noise Level:** 76 dB

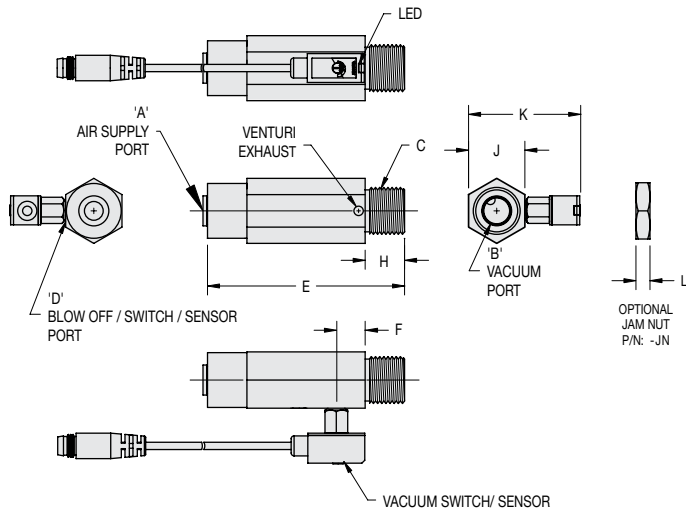
Model #	Imperial Dimensions (in.)									
VPI-90H	A	B	C	D	E	F	H	J	K	L
	1/4 PTC	1/8 NPT F	5/8-18 UNF	M5	2.63	0.32	0.53	0.75	0.91	0.19

Consult factory for metric availability.

## VPI-90H with Optional Sensor/Switch (VSMN, VSMP, VTMV)



VPI-90H with VSMP-QD-6 vacuum switch.



**Specifications:**

**Segment Weight:** 2.7 oz [76.5g]  
**Noise Level:** 76 dB

Model #	Imperial Dimensions (in.)									
VPI-90H (VSMN, VSMP, VTMV)	A	B	C	D	E	F	H	J	K	L
	1/4 PTC	1/8 NPT F	5/8-18 UNF	M5	2.63	0.32	0.53	0.75	1.50	0.19

Consult factory for metric availability.

# New! Miniature Plastic Vacuum Generators

## I-MPVG Series



Compact I-MPVG Series pumps install easily in tight spaces

### Ideal Applications:

- Pick & Place of small to medium sized parts
- Packaging
- Robotic End-of-Arm Tooling
- Vacuum clamping / holding fixtures
- Vessel evacuation
- Gas sampling for analysis
- Leak testing

### Features/Benefits:

- Lightweight and compact for easy point-of-use installation
- Integrated mounting holes
- Built-in silencers
- Push-to-connect fittings [6mm] speed installation
- Fast response – installs close to vacuum point
- Efficient – minimal air consumption
- Safe operation – no electricity needed at the pump
- Reliable – operates trouble-free:
  - ~ No moving parts to wear or clog
  - ~ No flap valves to stick open
  - ~ No maintenance
  - ~ No downtime

### Standard Pump:

Vaccon's I-MPVG Series of miniature plastic vacuum generators are economical, compact, lightweight, and offer high performance up to 27.0"Hg [918 mbar].

The I-MPVG-B has a more traditional style with a 90° vacuum port. In-line venturi pumps are virtually the same size as the air supply and vacuum lines allowing installation in the tightest spaces and closest to the point of use for fast response time.

Our single-stage plastic pumps have no moving parts and are dirt tolerant providing reliable, maintenance-free operations.

The I-MPVG-B and I-MPVG-T models contain a built-in silencer. All I-MPVG Series pumps are metric only and have push-to-connect fittings for quick and easy assembly.

### Performance Level Designations:

**I-MPVG-B** models 27.1"Hg [918mbar] for high vacuum / standard flow applications

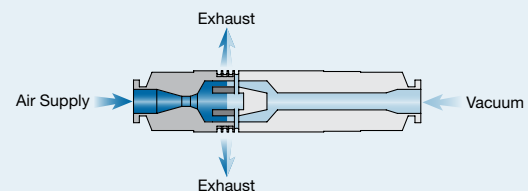
**I-MPVG-T & I-MPVG-I** models 26.8"Hg [908mbar] for high vacuum / standard flow applications

### Pump Options:

- 4 different models (metric thread only)
- Up to 27.1"Hg [918 mbar] vacuum level
- Up to 1.3 SCFM [38 LPM] vacuum flow
- 2 different vacuum flow levels for I-MPVG-B and I-MPVG-I models
- Integral mounting holes (I-MPVG-B and I-MPVG-T models)
- I-MPVG-I-18M vacuum port has G 1/8 threads for installation on End-of-Arm tool or panel mounting

### 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 diffuser. This creates a vacuum at the vacuum inlet port located between the nozzle and diffuser. Combined, the nozzle and diffuser create a venturi vacuum cartridge.



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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.





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

## How to Specify:

To order I-MPVG Series pumps, select from the models below. Refer to the performance data chart below to select the desired vacuum flow.

### I-MPVG Series Performance Chart

Model #		Air Consumption	Maximum Vacuum	Maximum Vacuum Flow
		SCFM / LPM	"Hg / mbar	SCFM / LPM
	I-MPVG-B-55H	0.80 / 22.6	27.1 / 918	0.45 / 12.70
	I-MPVG-B-95H	2.45 / 69.4	27.1 / 918	1.34 / 37.94
	I-MPVG-T-85H	1.60 / 45.3	26.8 / 908	0.99 / 28.00
	I-MPVG-I-35H	0.40 / 11.3	26.8 / 908	0.25 / 7.10
	I-MPVG-I-85H	1.60 / 45.3	26.8 / 908	0.99 / 28.00
	I-MPVG-I-35H-18M	0.40 / 11.3	26.8 / 908	0.25 / 7.10
	I-MPVG-I-85H-18M	1.60 / 45.3	26.8 / 908	0.99 / 28.00

### I-MPVG Inline Pump Standard Specifications:

- Pump Material:** Nylon body, Nickel plated brass fittings
- Medium:** Filtered (50 micron) unlubricated, non-corrosive dry gases
- Operating Temperature:** 32 to 120 °F [0 to 99 °C]
- Operating Pressure:** 72 PSI [5.0 bar]

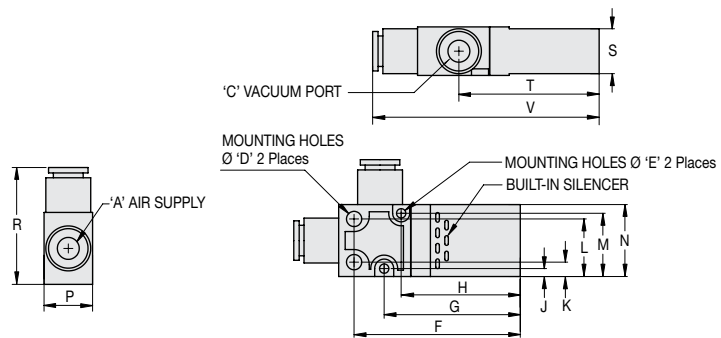
### I-MPVG Inline Pump Operating and Installation Requirements:

- Supply Line:** 6 mm O.D. tubing
- Vacuum Line:** 6 mm O.D. tubing
- Exhaust Line:** 8 mm O.D. (I-MPVG-T model only)
- Vacuum Line Filtration:** Typically filters are not required; if desired Vaccon recommends – VF125LPM. See page 13.12
- Please Note:** I-MPVG models are not available for Vaccon's 30 Day Test & Evaluation Program, have no warranty and are not returnable.

### I-MPVG-B- (55, 95) (H)



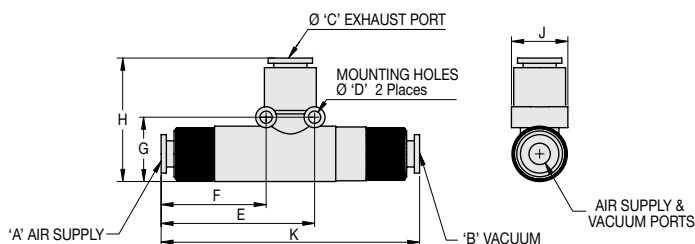
- Specifications:**
- Weight:** I-MPVG-B-55H 0.64 oz [18g]  
I-MPVG-B-95H 1.92 oz [55g]
- Noise Level:** 74 dB



Model #	Imperial Dimensions (in.)																
	A	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V
I-MPVG-B-55H	6 mm PTC	6 mm PTC	0.17	0.10	1.82	1.49	1.30	0.09	0.16	0.63	0.69	0.79	0.53	1.28	0.49	1.54	2.48
I-MPVG-B-95H	6 mm PTC	6 mm PTC	0.17	0.10	1.82	1.49	1.30	0.09	0.16	0.63	0.69	0.79	0.53	1.28	0.49	1.54	2.48
Model #	Metric Dimensions (mm)																
	A	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	V
I-MPVG-B-55H	6 mm PTC	6 mm PTC	4.0	3.0	46.0	38.0	33.0	2.0	4.0	16.0	18.0	20.0	14.0	33.0	13.0	39.0	63.0
I-MPVG-B-95H	6 mm PTC	6 mm PTC	4.0	3.0	46.0	38.0	33.0	2.0	4.0	16.0	18.0	20.0	14.0	33.0	13.0	39.0	63.0

**Note:** Performance Charts represent average performance data. For reference only.

## I-MPVG-T-85 (H)

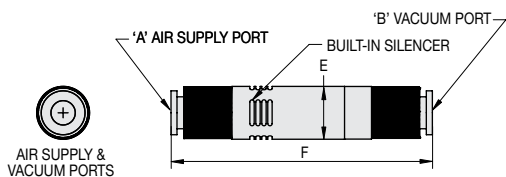


**Specifications:**

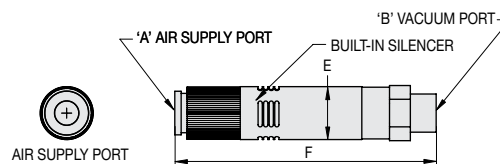
**Weight:** I-MPVG-T-85H 1.52 oz [44g]  
**Noise Level:** N/A: Exhaust is vented

Model #	Imperial Dimensions (in.)									
	A	B	C	D	E	F	G	H	J	K
I-MPVG-T-85H	6 mm PTC	6 mm PTC	8 mm PTC	0.14	1.73	1.18	0.73	1.39	0.59	2.91
Model #	Metric Dimensions (mm)									
	A	B	C	D	E	F	G	H	J	K
I-MPVG-T-85H	6 mm PTC	6 mm PTC	8mm PTC	3.5	43.9	30.1	18.4	35.4	15.0	74.0

## I-MPVG-I- (35, 85) (H)



I-MPVG-I



I-MPVG-I-18M

**Specifications:**

**Weight:** I-MPVG-I-35H 0.88 oz [22g]  
 I-MPVG-I-85H 1.36 oz [38g]  
**Noise Level:** 74 dB

Model #	Imperial Dimensions (in.)			
	A	B	E	F
I-MPVG-I-35H	6 mm PTC	6 mm PTC	0.52	2.58
I-MPVG-I-85H			0.62	2.91
Model #	Metric Dimensions (mm)			
	A	B	E	F
I-MPVG-I-35H	6 mm PTC	6 mm PTC	13.0	66.0
I-MPVG-I-85H			16.0	74.0

**Specifications:**

**Weight:** I-MPVG-I-35H-18M 0.88 oz [22g]  
 I-MPVG-I-85H-18M 1.36 oz [38g]  
**Noise Level:** 74 dB

Model #	Imperial Dimensions (in.)			
	A	B	E	F
I-MPVG-I-35H-18M	6 mm PTC	G 1/8	0.52	2.58
I-MPVG-I-85H-18M			0.62	2.91
Model #	Metric Dimensions (mm)			
	A	B	E	F
I-MPVG-I-35H-18M	6 mm PTC	G 1/8	13.0	66.0
I-MPVG-I-85H-18M			16.0	74.0

## New! Inline Venturi Vacuum Pump w/ Atmospheric Release

### VPIA-60H-DEL



VPIA-60H-DEL and VCC-E-034-SR Egg Cup pick & place of fragile eggs.



Food Grade Silicone Cups:  
VCC-E-034-S, VCC-E-034-SR  
and VCC-E-037-SR.

*Integrated cup is key. Instant but soft release vs. slow bleed. Ideal for pick & place of fragile curved surfaces like lightbulbs, eggs and ceramics.*

#### Ideal Applications:

- Pick & place of small lightweight objects
- Packaging
- Glass
- Optical
- Semiconductor
- Vacuum Holding
- Transfer Operations
- Curved Surfaces
- Beverage - Bottle Handling
- Pharmaceutical
- Food Processing
- Medical

#### Features/Benefits:

- All pneumatic – no electricity required
- FDA approved Acetal
- Quick release without hard blow-off
- Safe handling of fragile objects
- Integral vacuum fitting
- Quiet operation
- Compact & lightweight
- Efficient – minimal air consumption
- Powerful vacuum up to 25" Hg [846mbar]
- Low operating pressure - 45 PSI [3.0 bar]

#### Standard Pump:

Vaccon's VPIA Series of inline venturi vacuum pumps feature a fast-acting, quick release for pick & place applications. Ideal for handling round, oval, delicate or fragile objects, VPIA pumps go from vacuum to atmosphere with an instant release - not a slow bleed - for faster operations.

With an integral fitting and the proper cup selection, the VPIA Series pumps transform manual labor processes into automated assembly, yielding higher productivity and improved quality.

Made of FDA approved white Acetal, the VPIA vacuum pumps are safe for food processing, medical and pharmaceutical applications. VPIA pumps operate at 45 PSI.

#### Performance Level Designations:

"H" 0-25"Hg, [0 to 846mbar] for high vacuum/standard flow applications

#### Pump Options:

- 3 Sizes of FDA approved silicone cups:  
VCC-E-034-S, VCC-E-034-SR, VCC-E-037-SR

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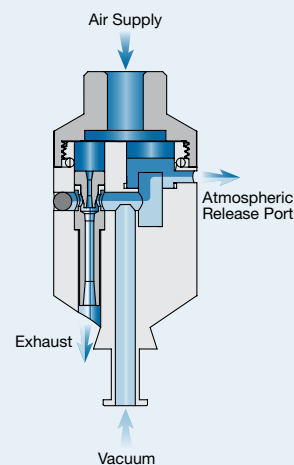
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#### Principles of Operation:

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 diffuser. This creates a vacuum at the vacuum inlet port located between the nozzle and diffuser. Combined, the nozzle and diffuser create a venturi vacuum cartridge.





## How to Specify: VPIA-60H-DEL



### VPIA-60H-DEL Inline Venturi Vacuum Pump w/ Atmospheric Release Standard Specifications:

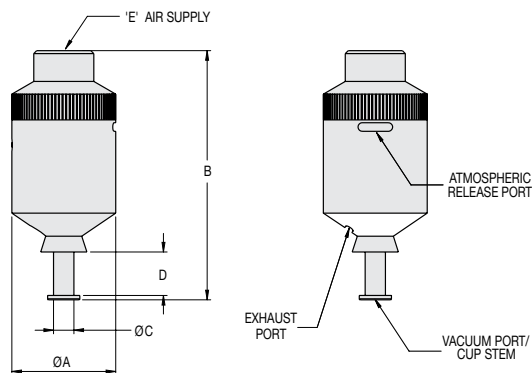
- Pump Material:** White Acetal body, brass cartridge, Buna-N seals
- Medium:** Filtered (50 micron) unlubricated, non-corrosive dry gases
- Operating Temperature:** 32 to 120 °F [0 to 99 °C]
- Operating Pressure:** 45 PSI [3.0 bar]
- Air Supply Port:** 10-32 Female press fitting for tubing
- Vacuum Port:** 0.35 diameter barb

*Performance is equivalent to a VP10-60H. See Mid Series Performance Data on Page 3.54*



#### Specifications:

- Weight:** VPIA-60H-DEL 1.36 oz [38g]
- Noise Level:** 78 dB



Model #	Imperial Dimensions (in.)				
	A	B	C	D	E
VPIA-60H-DEL	1.13	2.70	0.22	0.47	#10-32
	Metric Dimensions (mm)				
	28.7	68.7	5.6	11.9	#10-32