

# Ultra-Mini Cylindrical Venturi Vacuum Pumps

## Ultra-Mini J Series: JS-40UM



*JS-40UM generates 27"Hg and weighs less than 1 oz*



*Ultra-mini pump for drip control in dispensing applications*

### Standard Pump:

The JS-40UM (Ultra-Mini) cylindrical venturi vacuum pump is the smallest complete venturi vacuum pump that Vaccon offers. Incredibly compact and powerful – it measures the size of your finger tip and generates up to 27"Hg [914mbar]. Lightweight, quiet and cool operating, JS-40UM pumps are ideal for confined spaces, where they can be mounted in-line near the point of use for rapid response.

The single-stage design allows ingested contaminants to flow through the pump without clogging ensuring continuous operation. Constructed of a single material, with no seals or moving parts, J Series pumps are virtually indestructible. They can be manufactured in a variety of materials, making them ideal for use in adverse operating conditions.

J Series pumps provide a constant vacuum flow, rather than a fluctuating flow typically associated with diaphragm pumps. They operate with an instantaneous response in pulsed applications or on a continuous basis.

J Series pumps can be powered by alternate media (gases, liquids) etc. For liquid powered pumps please see our JW series on page 183.

### Ideal Applications:

- Gas sampling and analysis
- Leak testing
- Portion/ drip control (suck-back) for dispensing liquids
- Liquid transfer
- Pick and place for small, non porous parts
- Small vessel evacuation
- Used as vacuum source for vacuum pencil kit (see page 271)

### Features/Benefits

- High performance - powerful vacuum up to 27"Hg [914mbar]
- Lightweight – less than 1 oz. [28.3g]
- Compact – 1.25" x .56"OD [31.75mm x 14.22 mm OD]
- Input pressure from 5 PSI [0.34BAR]
- Fast response – Mounts in-line, and installs close to vacuum point – no delay due to long plumbing lines
- Efficient – Minimal air consumption, provides instantaneous vacuum as needed
- Safe operation – No electricity needed
- Reliable, trouble-free operation
  - ~ No moving parts to wear
  - ~ No flap valves to stick open
  - ~ No maintenance
  - ~ No downtime

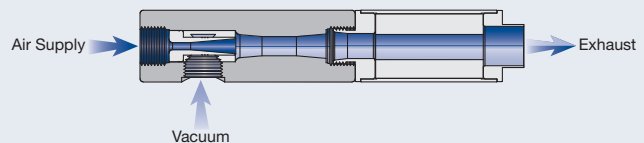
### Pump Options:

- Optional Silencer: VCF2-1032M
- Choice of operating pressures to meet machine and factory air supply 80 PSI [5.5BAR] standard, 60 PSI [4.0 BAR] optional
- G port threads for metric machines – an "I" prefix designates products with metric threads
- For chemical compatibility requirements, high temperature, food, medical and caustic applications, custom materials are available including stainless steel, PEEK, Delrin,™ Teflon,™ PVC.

Vacuum Pumps - Cylindrical

### 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.



### 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.

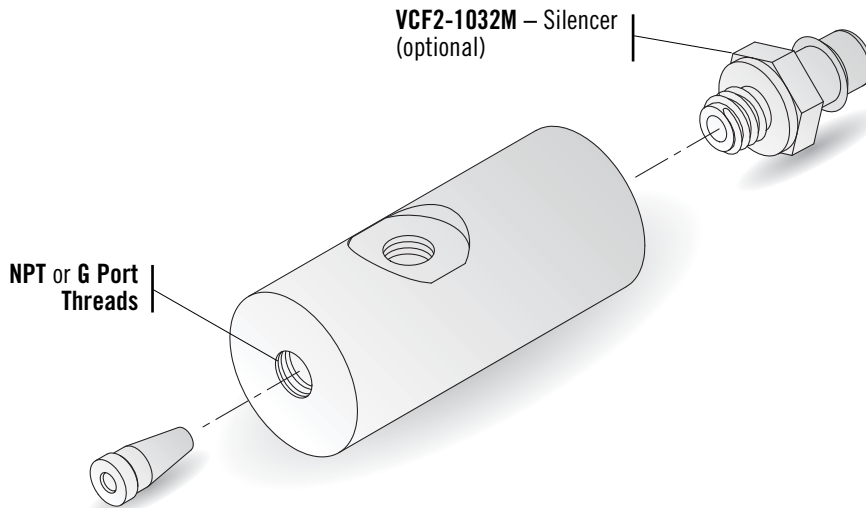
To download a complete set of drawings in 13 different CAD formats, please visit our website at [www.vaccon.com](http://www.vaccon.com)

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

# Cylindrical Venturi Vacuum Pumps

## JS-40UM (Ultra Mini) Vacuum Pump – 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:

#### JS-40UM – 60 – VCF2 – 303

P/N	Thread	Max. Vac Level
JS-40UM	NPT	27"Hg [914mbar]
I-JS-40UM	G Port	27"Hg [914mbar]

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

P/N	Material
	Anodized Aluminum
303	303 Stainless Steel
304	304 Stainless Steel
316	316 Stainless Steel
316L	316 Low Carbon Stainless
PVC	PVC
TEF	PTFE
PK	PEEK
DEL	Acetal

P/N	Silencer*
	No Silencer (Standard)
VCF2	VCF2-1032M (Straight-through)

For complete Performance Data, see page 164.

\*Vaccon strongly recommends the use of silencers on all pumps except where the exhaust is plumbed away.

### JS-40UM Pump Standard Specifications:

- Pump Material:** Anodized Aluminum (Silencer material – Brass)
- Medium:** Filtered (50 Micron) un-lubricated, non-corrosive dry gases
- Operating Temperature:** -100°F~400°F [-73°~204°C] (without silencer)
- Operating Pressure:** 80 PSI [5.5 BAR] or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

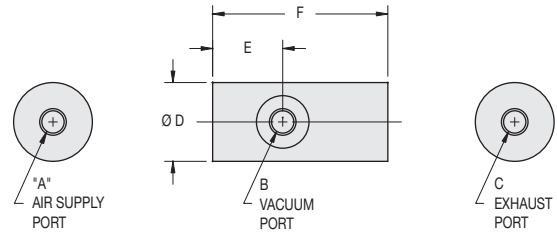
### JS-40UM Pump Operating & Installation Instructions:

- Supply and Vacuum Lines:** Min. 5/32" [4mm], 1/4" O.D. [6mm] tube preferred for supply lines exceeding 3' [1M]
- Vacuum Line Filtration:** Not required

## Standard Pump: JS-40UM



Standard JS-40UM without silencer.



**Specifications:**

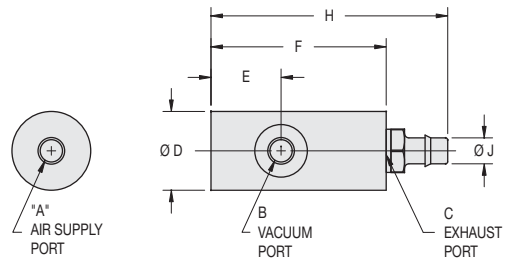
**Weight** 0.3 oz [8.5g]  
**Noise Level** 58 dB

Model #	Imperial Dimensions (in.)					
	A	B	C	D	E	F
JS-40UM	10-32F	10-32F	10-32F	0.56	0.50	1.25
Model #	Metric Dimensions (mm)					
	A	B	C	D	E	F
I-JS-40UM	M5	M5	M5	14.3	12.7	31.8

## JS-40UM: Optional Silencer: VCF2-1032M



JS-40UM-VCF2



**Specifications:**

**Weight** 0.4 oz [9.6g]  
**Noise Level** 54 dB

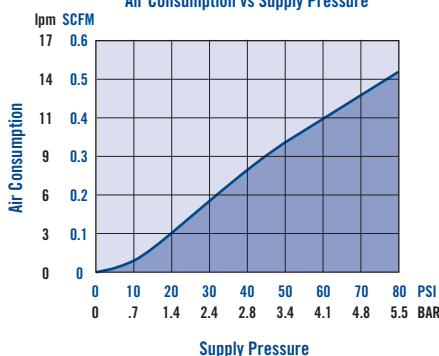
Model #	Imperial Dimensions (in.)							
	A	B	C	D	E	F	H	J
JS-40UM-VCF2	10-32F	10-32F	10-32F	0.56	0.50	1.25	1.69	0.19
Model #	Metric Dimensions (mm)							
	A	B	C	D	E	F	H	J
I-JS-40UM-VCF2	M5	M5	M5	14.3	12.7	31.8	42.9	4.7

## Performance Data – JS-40UM Imperial and Metric

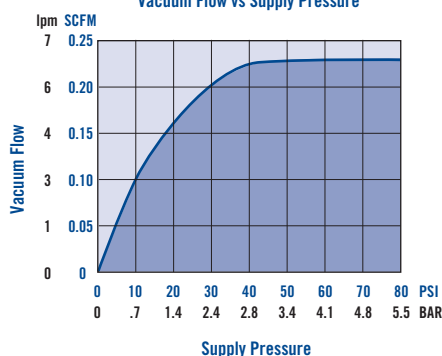
Model #	Air Consumption (SCFM) @ 80 PSI	Imperial - Vacuum Flow (SCFM) vs Vacuum Level ("Hg) @ 80 PSI									
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg
JS-40UM	0.52	0.23	0.20	0.17	0.15	0.13	0.10	0.08	0.05	0.03	0.00
		Imperial - Evacuation Time (Seconds) Based on 1 cu. ft. Volume ("Hg)									
		0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg
		0.00	24.80	54.40	89.50	130.30	178.30	240.40	334.50	516.70	1028.00

Model #	Air Consumption L/min	Metric - Vacuum Flow (L/min) vs Vacuum Level (mbar)									
		0mbar	102mbar	203mbar	305mbar	406mbar	508mbar	609mbar	711mbar	813mbar	914mbar
I-JS-40UM	14.7	6.5	5.7	4.8	4.2	3.7	2.8	2.3	1.4	0.8	0.0
		Metric - Evacuation Time (Seconds) Based on 1 liter Volume (mbar)									
		0mbar	102mbar	203mbar	305mbar	406mbar	508mbar	609mbar	711mbar	813mbar	914mbar
		0.0	0.9	1.9	3.2	4.6	6.3	8.5	11.8	18.2	36.3

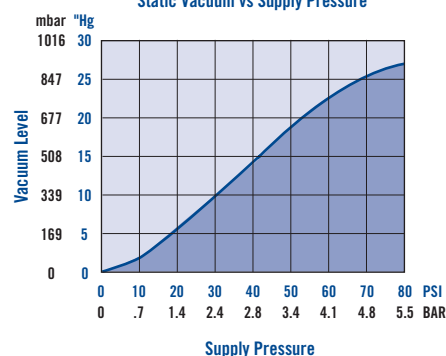
Air Consumption vs Supply Pressure



Vacuum Flow vs Supply Pressure



Static Vacuum vs Supply Pressure



**Note 1:** Standard operating pressure for Vaccon pumps is 80 PSI. Pumps can be factory modified to run at other operating pressures i.e. 60 PSI, 50PSI etc. The values shown on the performance chart will remain the same for all operating pressures.

**Note 2:** Evacuation speed is linear with volume i.e. a 2 cu. ft volume will take twice as long to evacuate as a 1 cu ft. volume.