

Venturi Vacuum Cartridge Assemblies

Vaccon's venturi vacuum cartridges are the heart of the modular venturi vacuum pump. these cartridges are ideal for OEM's requiring custom vacuum applications. Vaccon's venturi vacuum cartridges are available in lightweight plastic or aluminum/brass for use in harsh environment. Cartridges can be custom made in any material for use in extreme environments.



Mini Series Cartridge and Mid Series Cartridge

Venturi Vacuum Cartridges are used on all Modular Venturi Vacuum Pumps. Stand-alone cartridges are used in field interchanges and are ideal in many OEM applications.

See Page **8**



Venturi Vacuum Cartridges

for Vaccon Pumps & OEM Equipment

For Mini and Mid Series VP Pumps



Standard Cartridges:

Vaccon offers 13 different single-stage venturi vacuum cartridges for the Mini and Mid Series vacuum pumps and manifolds. Ideally suited for machine designers, venturi cartridges easily fit into OEM cavities creating an unrecognizable (proprietary) vacuum source. "Vaccon Cartridges - The Power Inside."

Vacuum cartridges are a combination of interchangeable nozzles and diffusers that enable you to optimize pump performance based on desired vacuum level, vacuum flow, evacuation speed and air consumption. If the product changes in size, porosity, or weight, you can refit the existing equipment with a different cartridge by simply swapping the entire cartridge, or just the nozzle or diffuser.

Changing cartridges can be performed in a matter of seconds, in the field with minimal downtime. Mid Series cartridges are color-coded based on performance characteristics for easy visual identification.

Performance Level Designations:

"L" 0-10"Hg, [0 to 339mbar] for low vacuum/high flow applications (not available for Mini Series)

"M" 0-20"Hg, [0 to 677mbar] for medium vacuum/high flow applications

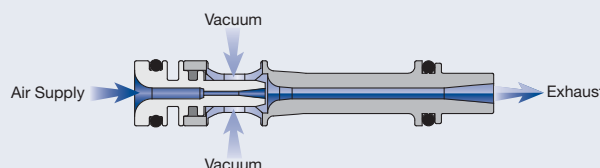
"H" 0-28"Hg, [0 to 948mbar] for high vacuum/standard flow applications

Cartridge Options:

- Choice of operating pressures to meet machine and factory air supply 80 PSI [5.5BAR] standard, 60 PSI [4.0 BAR] optional
- For chemical compatibility requirements, food or medical applications, custom materials and sizes are available including stainless steel (303, 304, 316, 316L), PVC, PEEK, Teflon®, Delrin® and more.

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.



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.

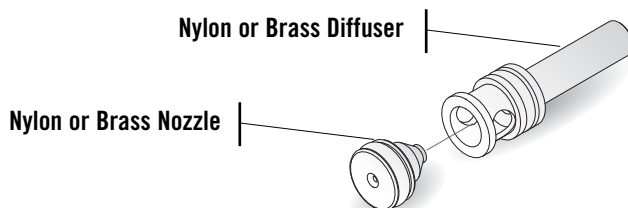
To download a complete set of drawings in 13 different CAD formats, please visit our website at www.vaccon.com

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

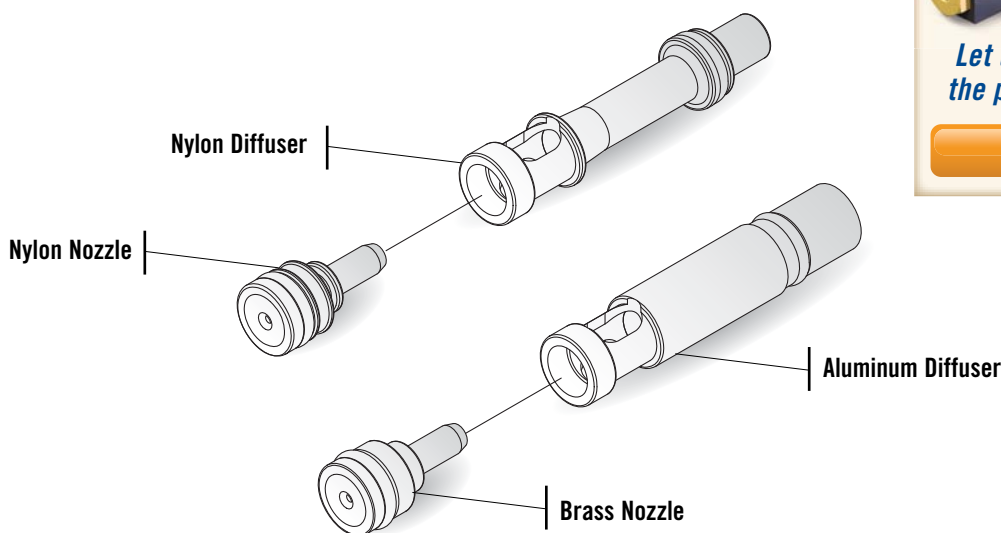
Venturi Vacuum Cartridges (Mini and Mid Series) Configurations and Options:

All Vaccon cartridges offer a variety of options and accessories to meet your specific requirements. Please configure your cartridge from the options listed below.

CM60 – Mini Series Cartridge = Nozzle & Diffuser with Buna N O-rings



C – Mid Series Cartridge = Nozzle & Diffuser with Buna N O-rings



- **Configure Products**
- **2D & 3D CAD Files**
- **Purchase On-line**



*Let us help you get
the pump you need:*

[Click Here](#)

How to Specify:

		Mini Cartridges			
		CM60	- H -	PL -	60
		Mid Cartridges			
		C	- 60 -	H -	PL - 60
P/N	Pump Style				
CM60	Mini Cartridge (M or H only)				
C	Mid Series Cartridges				
P/N	Max. Flow Level				
60	Mid Series Only				
90	Mid Series Only				
100	Mid Series Only				
150	Mid Series Only				
P/N	Operating Pressure				
80	PSI [5.5BAR] - Standard				
60	PSI [4.0BAR]				
P/N	Material Selection				
PL	Nylon - Standard				
	Aluminum/Brass - Option				
P/N	Max. Vac Level				
L	10"Hg [339mbar]				
M	20"Hg [677mbar]				
H	28"Hg [948mbar]				

For complete Performance Data, see page 14.



Mini Venturi Cartridges: CM60 (M or H)



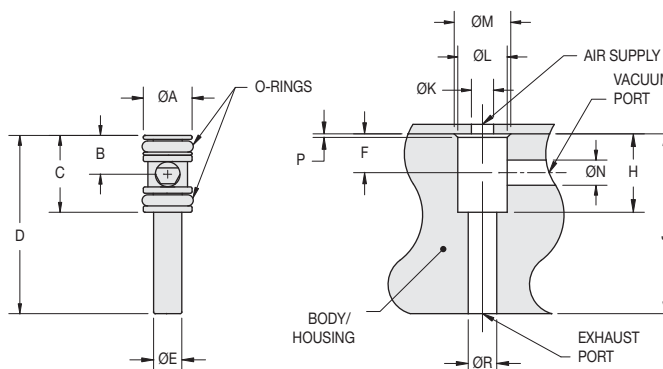
Part Number: CM60H-PL

Standard Material: Nylon-Black
Weight: 0.03 oz [0.8g]



Part Number: CM60H

Optional Material: Brass
Weight: 0.17 oz [4.7g]



Mini Cartridge dimensions are the same for nylon and brass

Mini Cartridge housing

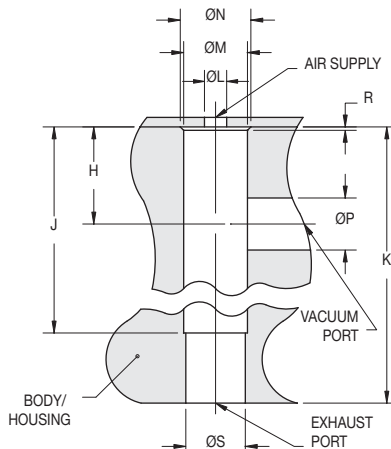
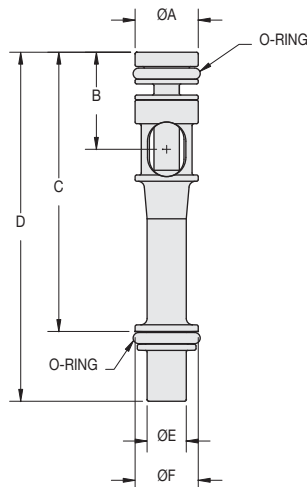
Model #	Imperial Dimensions (in.)													
	A	B	C	D	E	F	H	J	K	L	M	N	P	R
CM60 (M, H) -PL	0.312	0.25	0.49	1.13	0.17									
CM60 (M, H)	0.312	0.25	0.49	1.13	0.17									
Housing						0.25	0.50	1.14	0.14	0.312	0.36	0.16	0.02	0.18
Model #	Metric Dimensions (mm)													
	A	B	C	D	E	F	H	J	K	L	M	N	P	R
CM60 (M, H) -PL	7.92	6.2	12.3	28.6	4.3									
CM60 (M, H)	7.92	6.2	12.3	28.6	4.3									
Housing						6.2	12.6	28.8	3.6	7.92	9.1	4.0	0.6	4.6

(CM60) Mini Venturi Cartridge Specifications:

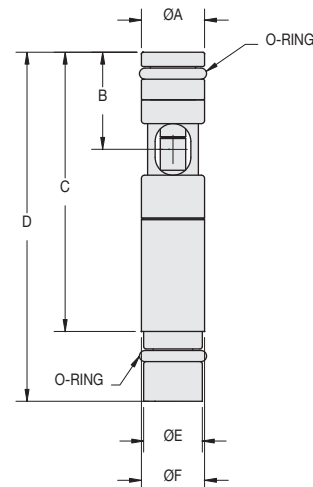
Cartridge Material: Standard: Nylon & Buna-N O-rings
Optional Materials: Brass & Buna-N O-rings, Stainless Steel, PVC, Peek, Teflon®, Delrin®
 Consult factory for availability
Medium: Filtered (50 Micron) un-lubricated, non-corrosive dry gases
Operating Temperature: -30°~250°F [-34°~121°C]
Operating Pressure: 80 PSI [5.5 BAR] or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

(CM60) Mini Venturi Cartridge Operating and Installation Instructions:

Supply Line: Min. 5/32" [4mm], 1/4" O.D. [6mm] tube preferred for supply lines exceeding 3' [1M]
Control Valve: 3 way (faster part release), minimum orifice - 0.062" diameter [1.57mm]
Vacuum Line: 1/4" [6mm] tube preferred, for short runs 5/32" [4mm] may be used
Vacuum Line Filtration: Typically filters are not required, if desired Vaccon recommends – VF125LPM. See Page 291.

Mid Venturi Cartridges C (60, 90, 100, 150) (L, M, H)


*Cartridge housing for both
nylon and metal cartridges*



Part Number: C60, 90, 100, 150 (L, M, H) -PL

Standard Material: Nylon

Weight: 0.08 oz [2.3 g]

Part Number: C60, 90, 100, 150 (L, M, H)

Optional Material: Aluminum/Brass

Weight: 0.47 oz [13.2 g]

Model #	Imperial Dimensions (in.)														
	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S
Nylon Cartridges - PL	0.402	0.61	1.76	2.20	0.25	0.402									
Metal Cartridges	0.402	0.61	1.76	2.20	0.37	0.402									
Housing							0.61	1.78	2.21	0.14	0.402	0.45	0.33	0.02	0.375
Model #	Metric Dimensions (mm)														
	A	B	C	D	E	F	H	J	K	L	M	N	P	R	S
Nylon Cartridges - PL	10.21	15.5	44.7	55.9	6.3	10.21									
Metal Cartridges	10.21	15.6	44.7	55.9	9.4	10.21									
Housing							15.5	45.1	56.1	3.6	10.21	11.3	8.3	0.5	9.53

(C) Mid Series Cartridge Specifications:

Cartridge Material: Standard: Nylon, Buna-N O-rings

Optional Materials: Brass & Aluminum & Buna-N O-rings, Stainless Steel, PVC, Peek, Teflon®, Delrin®
Consult factory for availability

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] or 60 PSI [4.0 BAR] – Consult Factory for other operating pressures

(C) Mid Series Cartridge 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

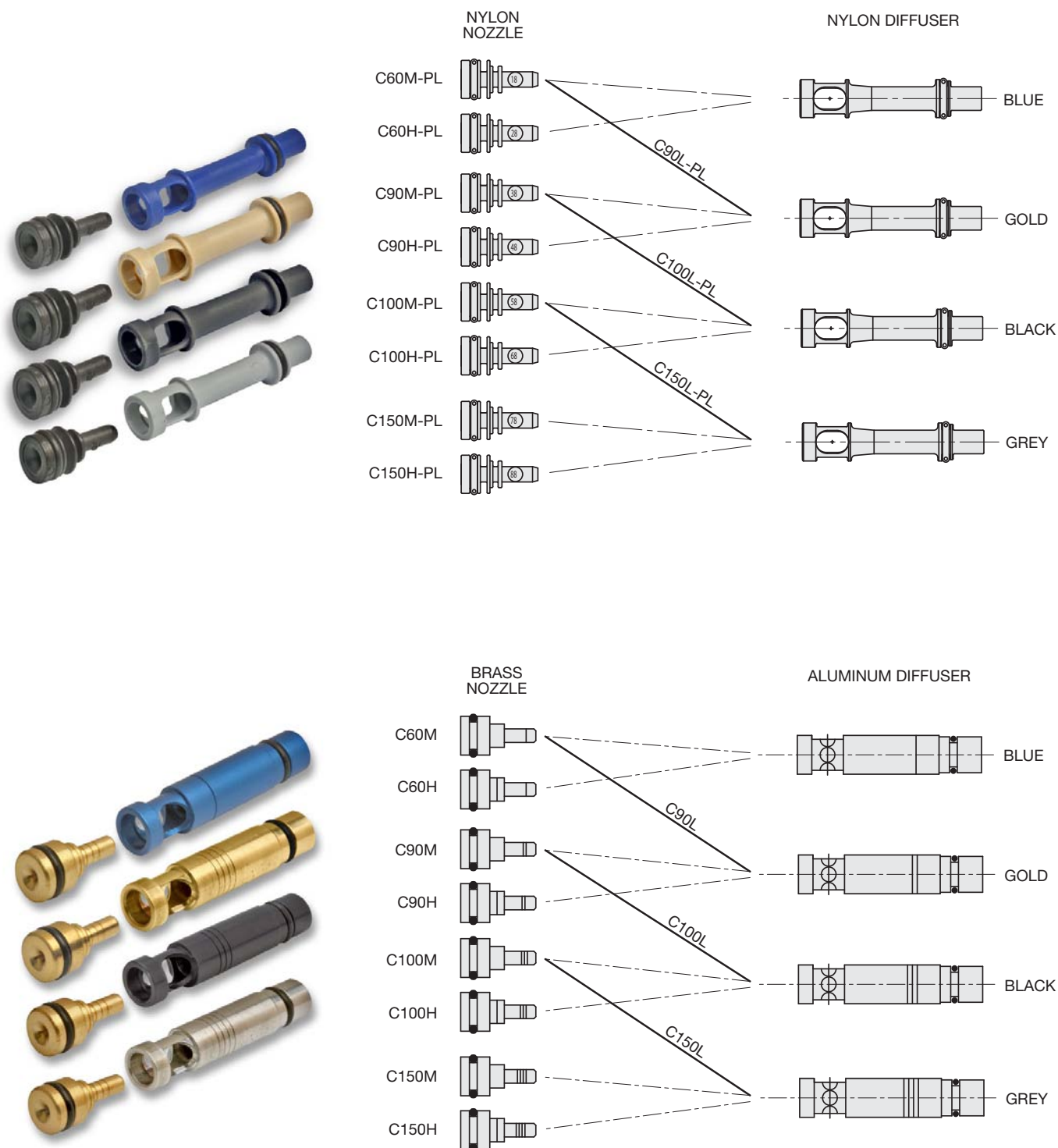
Vacuum Line: 1/4" O.D. [6mm] tube recommended

3/8" O.D. [10mm] tube recommended

Vacuum Line Filtration: Typically filters are not required, if desired Vaccon recommends – VF125LPM. See Page 291.



Mid Series Cartridge Identification Chart



Custom Venturi Vacuum Cartridges

Ideal for OEM engineers and designers

Creative Engineering • Precision Manufacturing • Extensive Application Experience

When off the shelf doesn't work, Vaccon's engineering expertise and manufacturing capabilities can provide custom solutions to your specifications. Whether it's as simple as modifying a standard product, or more complex requiring new products with precise tolerances, or special materials, Vaccon has the solution.

Custom materials available: Brass, Stainless Steel, PVC, Peek, Teflon®, Delrin® - consult factory.

Custom Cartridge: C350H-303 Stainless Steel

The C350H cartridge supplies the equivalent performance as VP90-350H or JS-350 vacuum pump. Designed to fit in a custom cavity. Other performance levels available. See Mid and Max Series Performance Data for options.

Common Applications:

- High temperature
- Caustic gas applications – smoke stack analysis
- Air testing
- Food processing
- Pharmaceutical
- Corrosive chemical processing



*Top: Custom made C350H-303 stainless steel venturi cartridge 5.375" L x 1" dia.
 Bottom: Standard Mid Series C150H aluminum/brass cartridge is 2.2" L x 0.40" dia.
 Both cartridges generate up to 28"Hg.*

Custom Mini Cartridges in Nylon or Brass

Mini cartridges are available in nylon or brass and can reach up to 28"Hg. Designed to fit in a custom cavity. Other performance levels available. See Mini Series Performance Data for options.

Common Applications:

- Medical – disposable applications
- Electronic
- Air monitoring
- Gas/liquid sampling
- Pick and place of small items



*Top: Standard CM60 Mini Cartridge 1.13" L x 0.31" dia.
 Bottom: Custom CM60 Mini Cartridge 1.06" L x 0.24" dia.*