

Leading Designer/Manufacturer of Air-Operated Vacuum Generator Technology

"We Will Build You A Vacuum Source..."

Flexibility of Design, Perfect for OEM Applications

With high tech design, precision manufacturing, and quality testing, we can easily and economically change configuration, material, connections and performance to meet your exact specifications. Air-Vac offers four basic pump designs (AV, TD, MF, UV), with each providing a unique advantage.

50 Years Specializing in Air-Operated Vacuum Generator Technology. Air-Vac has designed and manufactured a broad range of vacuum pumps because there are advantages to each design and one design is not suitable for every application.

Vacuum applications fall into the following categories:

Vacuum Force Generators

AV, AVR, RAV, MF & UV Models: Used for applications where the primary concern is the development of a high vacuum level and is measured in inches of mercury ("Hg).



Used with vacuum cups in pick-and-place applications. For removing air or gases from process vessels, chambers, tanks or other closed systems. Vacuum handling and positioning of parts, leak testing of various systems, vacuum forming of sheet metal or plastic parts, and labeling, packaging and paper feeding machinery.



<u>The UV "Ultra-Vac" design provides near</u> <u>perfect vacuum of 29.7"Hg.</u> Used to evacuate chambers, degas liquids and in other processes requiring vacuum levels of 1/4"Hg absolute (8 Torr). Used as a first stage pump in applications requiring high vacuum reducing operating time of expensive high vacuum pumping systems.

Corrosion Resistant Stainless Steel Generators

HAVRSS, HAVSS & TDSS Models: Used in a variety of industries and applications including: transport of abrassive materials, used in food processing because they withstand the aggressive chemicals used in sanitary wash downs. Having no electrical connections, they can be easily installed in hazardous explosion-proof areas, and used in high temperature applications.

Vacuum Flow Generators

TD & TDRH Models: Used where the primary concern is the induced flow of atmospheric air and relatively low vacuum levels. Pumps are designed for dynamic performance and are measured in cubic feet per minute (scfm).



In addition, the straight through vacuum passage allows material to pass directly through the generator with no reduction of vacuum flow. Ideal for transporting or conveying solid materials in-line, vacuum removal of machined chips and loose scrap in fabricating dies, venturi wipes for wire drying, thread removal in textile machinery, air sampling in gas analyzing systems, and mixing of liquids and gases.

The exhaust flow is a combination of compressed air and vacuum flow and can be used in various applications including: drying and air cooling systems, fluttering and handling of paper, opening bags and cartons, and air blowing systems for removal of parts, scrap or foreign matter.



The AV <u>Single Stage Design</u> is two piece construction, manufactured from aluminum and brass. It produces vacuum levels up to 27.5"Hg.

How Does It Work?

Compressed air flows through a small circular opening to generate a high velocity. This air expands, resulting in decreased pressure to provide vacuum levels up to 27.5"Hg. The vacuum port is perpendicular to the air supply.



- AVR Series are small and easy to install with a vacuum flow to 1.7 scfm
- AV Series are intermediate in size with a vacuum flow to 6.8 scfm
- RAV Series are larger in size with a higher vacuum flow up to 18.2 scfm



- HAV Series are manufactured from chemically resistant 316 stainless steel and are maintenance-free. Virtually indestructable from corrosive atmosphere and high temperature applications. They produce vacuum levels up to 27.5"Hg.
- HAVRSS Series provides a vacuum flow to 1.7 scfm
- HAVSS Series provides a vacuum flow to 6.8 scfm.



IAV and ITD Small Vacuum Sleeves become an integral part of your product with installations close to where the vacuum is required.



- No need to change the shape of your product. The vacuum sleeve fits directly into a machined cavity.
- Installation requires machining a simple cavity for accepting the inserts.
- O-rings are used for sealing vacuum and compressed air passages.
- Simply push in the vacuum inserts and install a retaining plate.

IAV models generate vacuum levels up to 27.5"Hg with a vacuum flow to 4.3 scfm and are available in brass.

ITD models provide a straight through vacuum passage ("A" diameter) and are available in steel. They generate vacuum levels up to 24.5"Hg with vacuum flow to 11.5 scfm.

Model No.	Model No.	Sp	ecificatio	ons
Brass	SS 316	Vac level	Vac flow	Air used
		Hg	scfm	scfm

"H" versions produce <u>HIGH</u> vacuum levels. Vacuum Flow Rates to 12.5 scfm.

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AVR038H	HAVR038HSS	27.5	.16	.31
AVR046H	N/A	27.5	.25	.41
AVR062H	HAVR062HSS	27.5	.42	.82
AVR093H	HAVR093HSS	27.5	1.0	1.9
AVR112H	HAVR112HSS	27.5	1.4	2.3
AV116H	HAV116HSS	27.5	1.7	2.7
AV147H	HAV147HSS	27.5	2.8	4.3
AV191H	HAV191HSS	27.5	4.3	8.1
AV250H	HAV250HSS	27.5	6.8	11.4
RAV328H	N/A	27.5	11.1	18.9
RAV375H	N/A	27.5	12.5	26.5

"M" versions produce <u>MEDIUM</u> vacuum levels. Vacuum Flow Rates to 18.2 scfm, *but with substantially lower rates of air consumption than the "H" versions.*

AVR062M	HAVR062MSS	20.0	.53	.54
AVR093M	HAVR093MSS	18.0	1.23	1.0
AVR112M	HAVR112MSS	18.0	1.7	1.4
AV147M	HAV147MSS	18.0	3.1	2.7
AV191M	HAV191MSS	18.0	5.2	4.3
AV250M	HAV250MSS	21.0	5.6	6.9
RAV328M	N/A	21.0	14.8	18.0
RAV375M	N/A	21.0	18.2	20.5

Available are "L" versions that produce <u>LOW</u> vacuum levels with substantially lower rates of air consumption. Contact Air-Vac and indicate required "Hg level, vacuum flow and operating pressure. Models easily configurable.

Supply pressure: 75 psig

For more info visit airvacpumps.com

Model	*	Sp	ecificati	ons	Flange	Body	Overall
	A dia.	Vac level	Vac flow	Air used	dia.	dia.	lenght
		Hg	scfm	scfm	inches	inches	inches
IAV093		27.5	1.0	1.9	.437	.312	1.50
IAV116		27.5	1.7	2.7	.625	.437	1.87
IAV147		27.5	2.7	4.3	.625	.437	2.125
IAV191		27.5	4.3	7.5	.625	.437	2.28
ITD147	.147	24.2	2.3	4.9	.437	.312	1.25
ITD209	.209	24.8	4.7	8.1	.625	.437	1.94
ITD261	.261	24.8	7.9	13	.625	.437	2.125
ITD320	.320	24.7	11.5	18	.750	.532	2.19

For machining specifications visit airvacpumps.com

Body dia



The TD <u>Single Stage Design</u> was primarily designed to provide a straight through vacuum passage to allow the transport of solid material with no reduction of vacuum flow.



Three different TD Series are available with straight through vacuum passages.

- TD110 through TD320 units provide high, medium, and low vacuum levels with flow rates up to 11.3 scfm.
- TD110SS through TD500SS are made from chemically resistant 316 stainless steel. They provide vacuum levels up to 24.5"Hg with flow rates up to 33.0 scfm.
- TDRH380L through TDRH2000L provide low vacuum levels but high vacuum flows up to 128 scfm.



The UV Ultra Vac Design provides near perfect vacuum of 29.7"Hg.

How Does It Work?

The UV vacuum generator uses two venturies acting in tandem to generate very deep levels of vacuum. Compressed air flows into the two venturies. The exhaust from the smaller one is directed into the vacuum chamber of the larger venturi, which directs the entire flow of air into the atmosphere. Since the smaller venturi exhausts into a pressure chamber that is lower than atmospheric, it can attain a vacuum level not attainable by a conventional single stage vacuum generator.



Exhaust

Used to evacuate chambers, degas liquids and in other processes requiring vacuum levels of 1/4"Hg absolute (8Torr). Also used as the first stage pump in applications requiring high vacuum reducing operating time of expensive high vacuum pumping systems.

Model No.	Model No.	"A" dia.	S _I Vac level	pecificati Vac flow	ons Air used
			Hg	scfm	scfm

"H" versions produce <u>HIGH</u> vacuum levels. Vacuum Flow Rates to 10.9 scfm.

TD110H	TD110HSS	9/64"	24.5	2.3	4.2
TD190H	TD190HSS	3/16"	24.5	4.2	7.4
TD260H	TD260HSS	1/4"	24.5	7.6	13.0
TD320H	N/A	5/16"	24.5	10.9	22.5

"M" versions produce <u>MEDIUM</u> vacuum levels. Vacuum Flow Rates to 33.0 scfm, *but with substantially lower rates of air consumption than the "H" versions.*

TD190M	TD190MSS	3/16"	18.0	4.8	5.5
TD260M	TD260MSS	1/4"	17.0	8.3	7.6
TD320M	N/A	5/16"	15.0	11.3	13.7
TDRH380M	TD380MSS	3/8"	17.0	17.6	20.0
TDRH440M	N/A	7/16"	15.0	22.5	23.5
TDRH500M	TD500MSS	1/2"	15.0	33.0	29.7

"L" versions produce <u>LOW</u> vacuum levels using low air consumption, *but have large vacuum flow capability. Vacuum Flow Rates to 128 scfm.*

TD190L	N/A	3/16"	9.5	4.1	2.9	
TD260L	N/A	1/4"	9.0	6.8	4.3	
TD320L	N/A	5/16"	7.2	10.1	7.9	
TDRH380L	N/A	3/8"	7.5	12.5	9.4	
TDRH440L	N/A	7/16"	7.5	18.6	12	
TDRH500L	N/A	1/2"	8.0	29.7	16	
TDRH750L	N/A	3/4"	4.1	43	19.7	
TDRH1000L	N/A	1"	3.7	57	33	
TDRH1250L	N/A	1 1/4"	2.7	76	37.3	
TDRH1500L	N/A	1 1/2"	2.3	95	50	
TDRH1750L	N/A	1 3/4"	2.1	115	60	
TDRH2000L	N/A	2"	2.0	128	72	
Supply pressure: 75 psig						

Model No.	Specifications Vac Vac Air level flow used					
	Hg	scfm	scfm			
Multiple Venturi pump generates a vacuum level of 29.7"Hg.						
UV143H	29.7	1.3	4.2			
Supply pressure: 80 psig						



The MF Multi Stage Design provides high initial vacuum flow for fast evacuation. Multiple vacuum chambers insure minimum air consumption, providing low operating costs.

How Does It Work?

Energy from a single flow of high velocity air is used to maximum efficiency. Flow is forced through three venturi sections. Vacuum is created in three separate chambers. A common vacuum manifold connects to the three vacuum chambers. The result is high vacuum flow with low air consumption and fast evacuation.



Air Supply Exhaust

MFL Series - "H60" and "M" versions produce HIGH vacuum levels (27.2"Hg) and vacuum flow rates to 19.5 scfm. The "VF" version produces MEDIUM vacuum levels and flow rates to 15.2 scfm, but with substantially lower rates of air consumption than the "H60" and "M" versions.

MFP Series - "H" version produces HIGH vacuum levels (27.2"Hg) and vacuum flow rates to 6.0 scfm. The "M" version produces MEDIUM vacuum levels and flow rates to 5.3 scfm, but with substantially lower rates of air consumption than the "H" version.



Also available are "L" version generators that produce LOW vacuum levels with substantially lower rates of air consumption. Contact Air-Vac and indicate required "Hg level, vacuum flow and operating pressure. Models are easily configurable.

Custom Shape Vacuum Generators and Vacuum Inserts

The flexibility of single stage vacuum generator technology is used with high tech design and precision manufacturing to build custom shaped vacuum generators to vour specifications.

- Custom shapes incorporated as an integral part of your product:
 - designed smaller in size to fit into the tightest locations
 - changing configuration is easy and economical
 - small, lightweight and installed close to the where the vacuum is required.
- Specific vacuum performance to meet your requirements:
 - minimize air usage
 - set to your exact pressure
- Special fittings and materials:
 - fittings for air supply, vacuum and exhaust
 - sleeves can use o-rings or press fits when assembling to seal vacuum and compressed air passages
 - any machinable material
 - anodized aluminum in various colors
 - electropolishing for stainless steel, etc.
 - private labeling



Model No. Specifications Vac ac Air used level flow Hg scfm scfm MFL147H60 27.2 13.3 4.3 **MFL187M** 27.2 19.5 7.5 MFL147VF 18.0 12 2.5 MFL187VF 18.0 15.2 3.9 MFPM062H 27.2 2.3 .79 **MFPM076H** 1.2 27.2 3.3 27.2 4.9 MFPM093H 1.9 MFPM104H 27.2 6.0 2.4 MFPM062M 18.5 2.1 .50 **MFPM076M** 18.5 3.1 .78 MFPM093M 19.5 4.2 1.2 MFPM104M 19.5 5.3 1.5 Supply pressure for MFL147 is 60 psig, all others are 75 psig.

For additional information on all vacuum generators, please visit airvacpumps.com

- Time in seconds to evacuate 1 cubic foot to vacuum levels
 Complete model dimensions

Leading Designer/Manufacturer of **OEM Air-Operated Vacuum Generators**

• Over 50 years design experience, precision CNC manufacturing, and the ability to accurately measure vacuum performance allows us to easily provide special purpose vacuum generators.

• Air-Vac's primary design objective is to achieve maximum vacuum with minimum consumption of compressed air.

• Every vacuum generator is tested upon completion to insure that it meets performance specifications.

Flexibility of Design

• Our "Flexibility of Design" strategy includes the ability to produce a generator with exactly the performance you want.

• Multiple vacuum levels are available to insure the lowest possible air usage.

• Our designers and manufacturing engineers are available to discuss specific applications and assist in selecting the proper vacuum generator.

Contact Air-Vac or your local Distributor



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