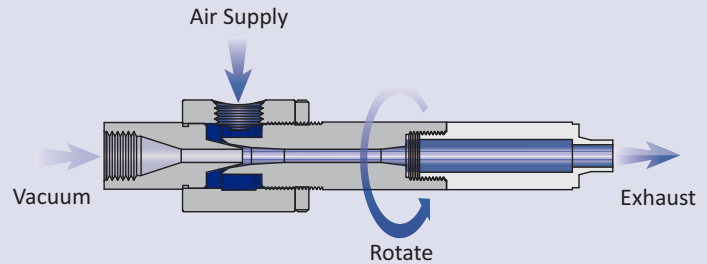


Principles of Operation

Changing the annular gap between the venturi nozzle and the diffuser varies the performance of the VDF pump. Rotating the diffuser section counter clockwise enlarges the opening, allowing more compressed air to flow through the pump and thereby increasing both the vacuum flow and the vacuum level. Likewise, rotating the diffuser section clockwise reduces the opening, allowing less compressed air to flow through the pump and thereby decreasing both the vacuum flow and the vacuum level. The result is a variable vacuum pump—adjustable to meet your exact application requirements.



Operating and Installation Instructions:

1. Loosen jam nut counter-clockwise and rotate exhaust body clockwise until closed; jam nut should be loose on exhaust body.
2. Attach air line to air supply port. Attach vacuum line or attach vacuum cup to vacuum port. See chart on the next page for the minimum recommended sizes.
3. Turn on compressed air. VDF will generate vacuum flow immediately.
4. Rotate exhaust body counter-clockwise to the desired vacuum level or vacuum flow using rotation charts on the next page – charts are based on 80 PSI [5.5 bar] and 60 PSI [4.1 bar]. Pumps will achieve maximum vacuum levels at any pressure above 50 PSI [3.4 bar] (a pressure regulator is not required).
5. After setting desired vacuum level, tighten the jam nut by rotating clockwise.



Notes:

Maximum vacuum flow is achieved at 15" Hg – further rotation will increase the vacuum level, while the flow remains constant

For the VDF 375 and larger models, it may be necessary to turn the compressed air off while making adjustments to relieve pressure on the threads to make rotation easier.

“Preset” VDF's are permanently locked at the factory at a customer specified vacuum level and are not adjustable.

VDF Model	Maximum Vacuum Flow (SCFM)	Air Consumption (SCFM)	Maximum Vacuum Flow (LPM)	Air Consumption (LPM)
VDF 100	2.0	1.3	56.6	36.8
VDF 150	3.2	2.4	90.6	68.0
VDF 200	6.0	4.7	169.9	133.1
VDF 250	10.0	8.3	283.2	235.1
VDF 375	30.0	17.0	849.6	481.4
VDF 500	60.0	28.0	1699.2	793.0
VDF 750	120.0	44.0	3398.4	1246.1

Operating / Installation Instructions: VDF Series Variable Vacuum / Variable Flow Pump

VDF Variable Vacuum/Flow Series: Port Thread and Minimum Recommended Tubing

VDF Model	Supply Port Threads	Recommended Air Supply Line (outer diameter)	Vacuum Port Thread	Recommended Vacuum Line (outer diameter)
VDF 100	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
VDF 150	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
VDF 200	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
VDF 250	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
VDF 375	3/8 NPT	1/2" [12 mm]	1/2 NPT	5/8" [16 mm]
VDF 500	3/8 NPT	1/2" [12 mm] I.D	1/2 NPT	3/4" [18 mm] I.D
VDF 750	1/2 NPT	3/4" [18 mm] I.D	3/4 NPT	1" [25 mm] I.D

Notes: Tubing size based on 0.062" [1/16", 1.5 mm] wall polyethylene and polyurethane tubing
The VDF 500 and 750 models specify inner diameter air supply and vacuum line tubing
Vaccon discourages the use of quick disconnect fittings on all connections

VDF Variable Vacuum/Flow Series: Pump Body Rotation Values for Required Vacuum Levels

VDF Model	Degrees of Rotation To Achieve Vacuum Level ("Hg) @ 80 PSI									
	0"	3"	6"	9"	12"	15"	18"	21"	24"	25"
VDF 100	0	30	60	100	115	120	125	130	134	135
VDF 150	0	80	90	105	120	135	145	150	160	165
VDF 200	0	90	105	120	150	160	170	175	185	190
VDF 250	0	100	140	180	195	210	250	275	340	355
VDF 375	0	60	90	100	125	155	180	195	220	230
VDF 500	0	80	130	170	200	260	340	390	460	490
VDF 750	0	95	170	260	350	450	540	630	710	730

VDF Model	Degrees of Rotation vs Vacuum Level ("Hg) @ 60 PSI									
	0"	3"	6"	9"	12"	15"	18"	21"	24"	25"
VDF 100	0	60	70	80	90	110	120	140	160	170
VDF 150	0	90	100	110	120	130	145	165	190	195
VDF 200	0	100	135	165	175	185	200	215	235	240
VDF 250	0	145	180	205	260	320	370	440	510	530
VDF 375	0	65	90	115	165	190	210	255	290	300
VDF 500	0	100	170	190	260	360	420	480	560	600
VDF 750	0	145	260	350	475	610	730	1080	1370	1440

Note: Values in these tables are degrees of counterclockwise rotation from the pump closed position. Values are approximate.
For example, A VDF 200 to be set at 21" Hg at 80 PSI would be rotated approximately 175 degrees from the closed position, and a VDF 750 to be set at 9" Hg at 60 PSI would be rotated approximately 260 degrees from the closed position.