



NVDF Series

Variable Vacuum / Flow Pump

Installation & Maintenance Instructions

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Installation & Maintenance Instructions
NVDF Series Variable Vacuum / Flow Pump

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. NVDF 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 NVDF-37 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” models are permanently locked at the factory at a customer specified vacuum level and are not adjustable.

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

NVDF Model	Supply Port Threads	Recommended Air Supply Line (outer diameter)	Vacuum Port Thread	Recommended Vacuum Line (outer diameter)
NVDF-10	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
NVDF-15	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
NVDF-20	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
NVDF-25	1/8 NPT	3/8" [10 mm]	1/4 NPT	3/8" [10 mm]
NVDF-37	3/8 NPT	1/2" [12 mm]	1/2 NPT	5/8" [16 mm]
NVDF-50	3/8 NPT	1/2" [12 mm] I.D	1/2 NPT	3/4" [18 mm] I.D
NVDF-75	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 NVDF-50 and 75 models specify inner diameter air supply and vacuum line tubing IMI Norgren discourages the use of quick disconnect fittings on all connections

NVDF Variable Vacuum / Flow Series: Pump body Rotation Values for Required Vacuum Levels

NVDF Model	Degrees of Rotation To Achieve Vacuum Level ("Hg) @ 80 PSI									
	0"	3"	6"	9"	12"	15"	18"	21"	24"	25"
NVDF-10	0	30	60	100	115	120	125	130	134	135
NVDF-15	0	80	90	105	120	135	145	150	160	165
NVDF-20	0	90	105	120	150	160	170	175	185	190
NVDF-25	0	100	140	180	195	210	250	275	340	355
NVDF-37	0	60	90	100	125	155	180	195	220	230
NVDF-50	0	80	130	170	200	260	340	390	460	490
NVDF-75	0	95	170	260	350	450	540	630	710	730

NVDF Model	Degrees of Rotation vs Vacuum Level ("Hg) @ 60 PSI									
	0"	3"	6"	9"	12"	15"	18"	21"	24"	25"
NVDF-10	0	60	70	80	90	110	120	140	160	170
NVDF-15	0	90	100	110	120	130	145	165	190	195
NVDF-20	0	100	135	165	175	185	200	215	235	240
NVDF-25	0	145	180	205	260	320	370	440	510	530
NVDF-37	0	65	90	115	165	190	210	255	290	300
NVDF-50	0	100	170	190	260	360	420	480	560	600
NVDF-75	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 NVDF-20 to be set at 21" Hg at 80 PSI would be rotated approximately 175 degrees from the closed position, and a NVDF-75 to be set at 9" Hg at 60 PSI would be rotated approximately 260 degrees from the closed position.

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Warning

These products are intended for use in industrial systems only. Do not use these products where pressures and temperatures can exceed those listed under Specifications.

Before using these products with fluids other than those specified, for nonindustrial applications, life-support systems, or other applications not within published specifications, consult Norgren.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure modes.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided. System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products. System designers should also provide for all OSHA requirements including Title 29 CFR 1910.147 Lockout/Tagout.

It should be recognized that warnings are valid for any product, regardless of manufacturer, and are not restricted to products manufactured by Norgren. Norgren's reputation for product quality and performance is well established. We feel we have the additional obligation to provide information or warnings to customers to assist them in applying our products in a reasonable and safe manner.

Warranty

Items sold by Norgren are warranted to be free from defects in materials and workmanship for a period of two year from the date of manufacture, provided said items are used according to Norgren's recommended usages. Norgren's liability is limited to the repair of, refund of purchase price paid for, or replacement in kind of, at Norgren's sole option, any items proved defective, provided the allegedly defective items are returned to Norgren prepaid. The warranties expressed above are in lieu of and exclusive of all other warranties. There are no other warranties, expressed or implied, except as stated herein.

 **WARNING:** Cancer and Reproductive Harm - www.p65warnings.ca.gov.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.

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