



NCDF Series Air Amplifier Pump

Installation & Maintenance Instructions

Engineering
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Solutions



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. See chart on the next page for the minimum recommended sizes.
3. 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 and 60 PSI. Pumps will achieve maximum vacuum levels at any pressure above 50 PSI.
4. After setting desired vacuum level, tighten the jam nut by rotating clockwise. For the NCDF 150 and 200 which have additional set screws for locking the jam nut, tighten the set screws evenly in a circular pattern.
5. Attach vacuum line to vacuum port. See chart on the next page for the minimum recommended sizes.
6. Attach NCDF pump to your mounting hardware, extrusion, end-of-arm-tool, etc., if needed.
7. Turn on compressed air, regulated at the recommended pressure. NCDF will generate vacuum flow immediately.

NCDF Air Amplifier Series: Port Thread and Minimum Recommended Tubing Sizes

NCDF Model	Supply Port Threads	Recommended Air Supply Line (inner diameter)	Vacuum Port Threads	Line Size Using Vacuum Port Thread	Line Size Using Barb on Vacuum Port
NCDF 20	1/8 NPT	1/4" [6 mm]	N/A	N/A	N/A
NCDF 20H	1/8 NPT	1/4" [6 mm]	3/8 NPT	3/8" [10 mm]	1 1/4" [32 mm]
NCDF 37H	1/8 NPT	1/4" [6 mm]	3/8 NPT	1/2" [12 mm]	1 1/4" [32 mm]
NCDF 50H	1/4 NPT	3/8" [10 mm]	1/2 NPT	3/4" [18 mm]	1 1/2" [38 mm]
NCDF 75H	1/4 NPT	3/8" [10 mm]	1 NPT	1" [25 mm]	2" [50 mm]
NCDF 100H	1/4 NPT	3/8" [10 mm]	1 1/4 NPT	1 1/4" [32 mm]	2 1/4" [56 mm]
NCDF 150H	3/8 NPT	3/8" [10 mm]	2 NPT	2" [50 mm]	2 3/4" [68 mm]
NCDF 200H	3/8 NPT	3/8" [10 mm]	2 1/2 NPT	2 1/2" [62 mm]	3" [76 mm]

Notes: Tubing size based on 0.062" [1/16", 1.5 mm] wall polyethylene and polyurethane tubing IMI Norgren discourages the use of quick disconnect fittings on all connections

NCDF Air Amplifier Series: Pump Body Rotation Values for Required Vacuum Levels

NCDF Model	Degrees of Rotation to Achieve Required Vacuum Level (“Gg) @ 80 PSI							
	0”	3”	6”	9”	12”	15”		
NCDF20H	0°	10°	25°	50°				
	0”	1”	2”	3”	4”	5”	6”	7”
NCDF37H	0°	30°	60°	90°	135°	180°		
NCDF50H	0°	10°	20°	30°	40°	55°	70°	100°
NCDF75H	0°	5°	10°	20°	40°	60°		
NCDF100H	0°	10°	15°	25°	40°	60°		
NCDF150H	0°	30°	75°	120°				
	0”	0.2”	0.4”	0.6”	0.8”	1”		
NCDF200H	0°	15°	40°	70°	80°	90°		

NCDF Model	Degrees of Rotation to Achieve Required Vacuum Level (“Gg) @ 60 PSI							
	0”	3”	6”	9”	12”	15”		
NCDF20H	0°	10°	30°	90°				
	0”	1”	2”	3”	4”	5”	6”	7”
NCDF37H	0°	30°	60°	90°	160°	240°		
NCDF50H	0°	15°	30°	45°	60°	85°	110°	160°
NCDF75H	0°	10°	15°	25°	50°	70°		
NCDF100H	0°	15°	20°	35°	55°	85°		
NCDF150H	0°	45°	105°	180°				
	0”	0.2”	0.4”	0.6”	0.8”	1”		
NCDF200H	0°	20°	45°	80°	90°	105°		

Note: Values in these tables are degrees of counterclockwise rotation from the pump closed position. For example, a NCDF 20H to be set at 6" Hg at 80 PSI would be rotated approximately 25 degrees from the closed position, and a NCDF 75H to be set at 4" Hg at 60 PSI would be rotated approximately 50 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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