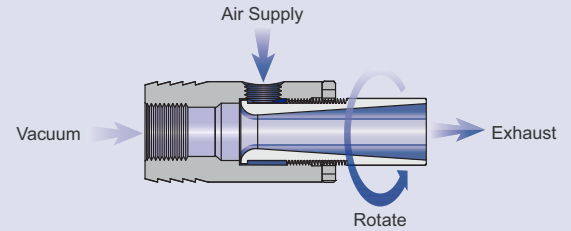


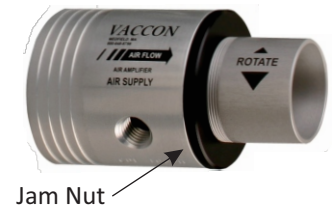
Principles of Operation

CDF pumps operate on the “Coanda Effect” where a small volume of compressed air is converted into a large flow of ambient air. Compressed air is emitted from an annular gap and passes over a curved surface into the throat of the unit. As the air passes over this curved surface, similar to an airfoil, a low pressure area is created inducing ambient air to flow into the throat with the compressed air.

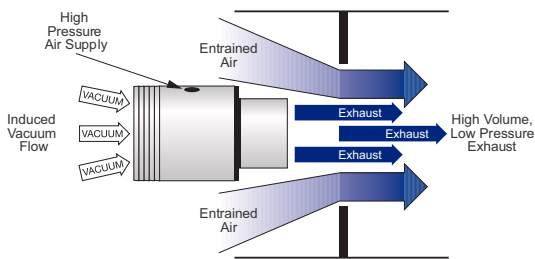


Installation Instructions:

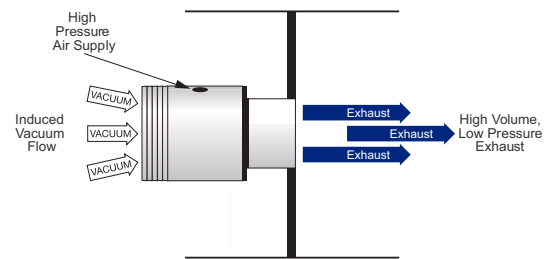
1. Loosen jam nut counter-clockwise and rotate exhaust body clockwise until closed; jam nut should be loose on exhaust body.
2. Attach air line to air supply port. See chart on the next page for the minimum recommended sizes.
3. Rotate exhaust body counter-clockwise to the desired vacuum level or vacuum 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 CDF 1500 and 2000 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 CDF pump to your mounting hardware, extrusion, end-of-arm-tool, etc., if needed.
7. Turn on compressed air, regulated at the recommended pressure. CDF will generate vacuum flow immediately.



Additional Information: Unducted vs. Ducted Flow



Unducted Flow: The amplification ratio of the CDF Series is greatly increased when the output from the amplifier is open to the atmosphere allowing the high speed air flow exiting the amplifier to draw in surrounding air to create greater flow with amplification ratios up to 40:1 (output:input). Total output flow is the combination of entrained air, induced air and compressed air.



Ducted Flow: When the exhaust side of the amplifier has a duct attached, it cannot draw air in from its surroundings. Therefore, amplification is only created by the internal vacuum created at the suction port. Total output flow is the combination of induced flow and compressed air.

Operating / Installation Instructions: CDF Series Air Amplifier Pump

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

CDF 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
CDF 100	1/8 NPT	1/4" [6 mm]	N/A	N/A	N/A
CDF 200	1/8 NPT	1/4" [6 mm]	N/A	N/A	N/A
CDF 200H	1/8 NPT	1/4" [6 mm]	3/8 NPT	3/8" [10 mm]	1 1/4" [32 mm]
CDF 375H	1/8 NPT	1/4" [6 mm]	3/8 NPT	1/2" [12 mm]	1 1/4" [32 mm]
CDF 500H	1/4 NPT	3/8" [10 mm]	1/2 NPT	3/4" [18 mm]	1 1/2" [38 mm]
CDF 750H	1/4 NPT	3/8" [10 mm]	1 NPT	1" [25 mm]	2" [50 mm]
CDF 1000H	1/4 NPT	3/8" [10 mm]	1 1/4 NPT	1 1/4" [32 mm]	2 1/4" [56 mm]
CDF 1500H	3/8 NPT	3/8" [10 mm]	2 NPT	2" [50 mm]	2 3/4" [68 mm]
CDF 2000H	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
Vaccon discourages the use of quick disconnect fittings on all connections

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

CDF Model	Degrees of Rotation To Achieve Required Vacuum Level ("Hg) @ 80 PSI							
	0"	3"	6"	9"	12"	15"		
CDF 100	0°	8°	14°	24°	30°	38°		
CDF 200H	0°	10°	25°	50°				
	0"	1"	2"	3"	4"	5"	6"	7"
CDF 375H	0°	30°	60°	90°	135°	180°		
CDF 500H	0°	10°	20°	30°	40°	55°	70°	100°
CDF 750H	0°	5°	10°	20°	40°	60°		
CDF 1000H	0°	10°	15°	25°	40°	60°		
CDF 1500H	0°	30°	75°	120°				
	0"	0.2"	0.4"	0.6"	0.8"	1"		
CDF 2000H	0°	15°	40°	70°	80°	90°		

CDF Model	Degrees of Rotation To Achieve Required Vacuum Level ("Hg) @ 60 PSI							
	0"	3"	6"	9"	12"	15"		
CDF 100	0°	10°	20°	28°	36°	50°		
CDF 200H	0°	10°	30°	90°				
	0"	1"	2"	3"	4"	5"	6"	7"
CDF 375H	0°	30°	60°	90°	160°	240°		
CDF 500H	0°	15°	30°	45°	60°	85°	110°	160°
CDF 750H	0°	10°	15°	25°	50°	70°		
CDF 1000H	0°	15°	20°	35°	55°	85°		
CDF 1500H	0°	45°	105°	180°				
	0"	0.2"	0.4"	0.6"	0.8"	1"		
CDF 2000H	0°	20°	45°	80°	90°	105°		

Note: Values in these tables are degrees of counterclockwise rotation from the pump closed position.

For example, A CDF 200H to be set at 6" Hg at 80 PSI would be rotated approximately 25 degrees from the closed position, and a CDF 750H to be set at 4" Hg at 60 PSI would be rotated approximately 50 degrees from the closed position.