Blower: High Output Flow

The CDF Series air amplifiers generate high output flow using a small volume of compressed air. This efficient use of air makes CDF air amplifiers a cost-effective alternative to electric blowers or raw compressed air.

Material Handling: High Vacuum Flow

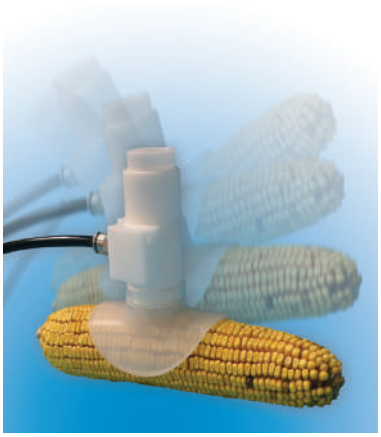
CDF Series air amplifiers generate high vacuum flow, overcoming leaks inherent in handling porous objects such as foam or fabric. With or without a vacuum cup, CDF air amplifiers will safely transfer irregular shaped items. Vaccon designs and manufactures rigid cups, for use with the CDF Series air amplifiers in specialty materials such as UHMW polyethylene, Teflon®, and Delrin™.

See Page..... **182**

Special Material Handling: High Flow/High Flex Assembly

CDF 750HFM Series vacuum pumps are a modified design of our standard air amplifiers offering the same high vacuum flow and performance capabilities with the added features of an integral High Flex vacuum cup assembly and special mounting configurations for end of arm tooling. Provides a soft touch with a strong grip.

See Page..... **192**



Adjustable Air Amplifiers/ Blowers

CDF Series

Air Amplifier - Blower: *High Output Flow*

The CDF Series air amplifiers generate high output flow using a small volume of compressed air. This efficient use of air makes CDF air amplifiers a cost-effective alternative to electric blowers or raw compressed air.

CDF 500H dries bottles, cans or other containers after filling or washing

CDF 750H removes fumes, air, smoke or mist from cabinets, storage lockers or other enclosures.

Ideal Applications:

- Inflation & Deflation
- Pick & place of porous materials
- Drying
- Cooling
- Air bearing
- Fume evacuation
- Material handling of irregular/flexible surfaces
- Bag or pouch opening

Features and Benefits:

- Field adjustable for individual applications
- High performance – 40:1 amplification ratio
- Holds porous materials securely
- Easy to install – compact & lightweight
- Efficient – Instant response, minimal energy required
- Safe operation
  - ~ No electricity needed at the pump
  - ~ No heat generated
  - ~ Control output pressure, no bursting
- Reliable, durable, trouble-free operation:
  - ~ Ideal for adverse operating conditions
  - ~ No moving parts to wear
  - ~ Straight-through design, non-clogging
  - ~ No downtime

Air Amplifier - Material Handling: *High Vacuum Flow*

CDF Series air amplifiers generate high vacuum flow, overcoming leaks inherent in handling porous objects such as foam or fabric. With or without a vacuum cup, CDF air amplifiers will safely transfer irregular shaped items. For more on material handling, see next page.

Overcomes leaks from wrinkled or flexible materials

Handle irregular surfaces, foam and other porous materials

Standard Adjustable Air Amplifiers:

To meet a wide range of applications, air velocity and air flow are field adjustable to compensate for the pressure level supplied. CDF air amplifiers can achieve amplification ratios as high as 40:1 (output to input)

The CDF air amplifier's straight-through design allows dirt and debris to pass through without clogging providing maintenance-free operation.

Vaccon air amplifiers are energy efficient, unlike regenerative blowers that must run continuously. A solenoid valve may be incorporated for instant on/ off control so that CDF's are only on when air is needed.

Air Amplifier Options:

- 10 Standard models (bores from 1/8" [3mm] to 2" [50mm]
- EPT – Exhaust Port Threads – factory installed – for ease of mounting and fixed plumbing systems
- ST Silencers – straight through silencers won't clog
- G Port or metric threads – products with an "I" prefix designates metric threads
- Variable operating pressures: for maximum performance, Vaccon recommends pressures above 50 PSI [3.5 bar]
- For chemical compatibility, heat and environmental requirements, food and medical applications, custom materials are available: stainless steel, Delrin®, Teflon®, PVC, and more. Consult factory.

Eliminate the Guesswork: Contact Us!

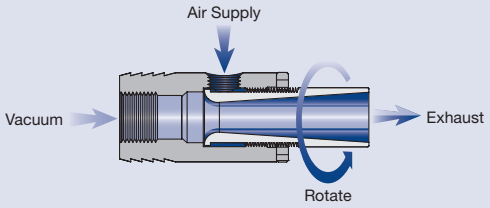
Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

To download a complete set of drawings in 13 different CAD formats, please visit our website at **www.vaccon.com**

For more information or technical assistance, please call **508-359-7200** or **800-848-8788** or email **engineering@vaccon.com**

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.



Adjustable Air Amplifier - Material Handling

Vaccon Air Amplifiers easily and safely handle porous objects that many consider too challenging to handle with vacuum. Applications include automating sheet feeders, assembly and palletizers, conveyor transfer and packaging of such products as:

- **Egg crate sheets of foam or felt**
- **IV bags**
- **Perforated metal**
- **Fan scrolls**
- **Circuit boards**
- **Freshly baked cakes or pastries**
- **Frozen foods**

Producing low vacuum and high flow, CDF's handle crumbly, delicate products like birthday cakes with a soft touch and without leaving an impression on the surface.

Silencers are not required when using the output flow for cooling, drying, or fume extraction, however they are highly recommended for material handling applications.

Two installation options; simply connect to the vacuum port via the internal NPT threads or slip a hose over the barbs featured on the O.D. You can use CDF Air Amplifiers with and without a vacuum cup.

Handle felt mats with the use of the UH Series rigid cup

Remove cakes from a conveyor and place in box without damage

CDF Series Air Amplifiers Standard Specifications:

Body Material:	Anodized Aluminum Standard (For silencer material - see page 245)
Medium:	Filtered (50 Micron) un-lubricated, non-corrosive dry gases
Operating Temperature:	-100° to ~ 400° F [-73° to ~204°C] without silencer
Operating Pressure:	Variable – For maximum performance Vaccon recommends 50 PSI [3.5 bar] and above

CDF Series Air Amplifiers Operating and Installation Requirements:

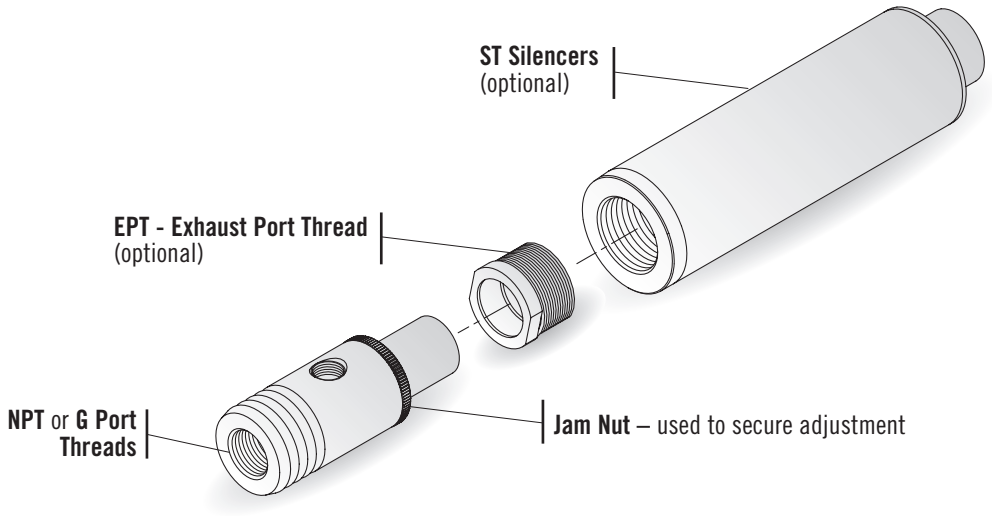
Model:	CDF 100, 200, 200H, 375H	CDF 500H, 750H 1000H, 1500H, 2000H
Supply Line:	1/4" I.D. [4mm] tube recommended	3/8" I.D. [10mm] tube recommended
Control Valve:	Minimum orifice 0.125"	Minimum orifice 0.250"

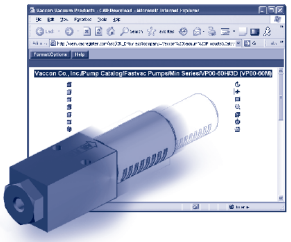
Replace your high air consumption air guns with a Vaccon CDF Air Amplifier.

GREEN TECHNOLOGY

CDF Series Configurations and Options:

Please configure your Air Amplifier from the options listed below.





On-line Configurator and CAD Drawings @ www.vaccon.com

New powerful design tool saves you time by configuring the pump you need on-line.

When complete, simply download the CAD drawing in any one of 13 different CAD formats and insert it right into your design.

Get the pump you need, in the format you like!

How to Specify:

CDF 500 H - EPT100 - ST16FC -

P/N	Vacuum & Air Supply Imperial Port Threads	All Exhaust Port Threads are NPT**	Silencer***
CDF 100	NPT	EPT25	ST4AX
CDF 200	NPT	EPT25	ST4AX
CDF 200H	NPT	EPT25	ST4AX
CDF 375H	NPT	EPT38	ST6BX
CDF 500H	NPT	EPT100	ST16FC
CDF 750H	NPT	EPT107	ST16FC
CDF 1000H	NPT	EPT125	ST24FC
CDF 1500H	NPT	EPT200	N/A
CDF 1500H	NPT	Not required	ST2020
CDF 2000H	NPT	N/A	N/A

P/N	Vacuum & Air Supply Metric Port Threads	All Exhaust Port Threads are NPT**	Silencer***
I-CDF 100	G Port	EPT25	ST4AX
I-CDF 200	G Port	EPT25	ST4AX
I-CDF 200H	G Port	EPT25	ST4AX
I-CDF 375H	G Port	EPT38	ST6BX
I-CDF 500H	G Port	EPT100	ST16FC
I-CDF 750H	G Port	EPT107	ST16FC
I-CDF 1000H	G Port	EPT125	ST24FC
I-CDF 1500H	G Port	EPT200	N/A
I-CDF 1500H	G Port	Not required	ST2020
I-CDF 2000H	G Port	N/A	N/A

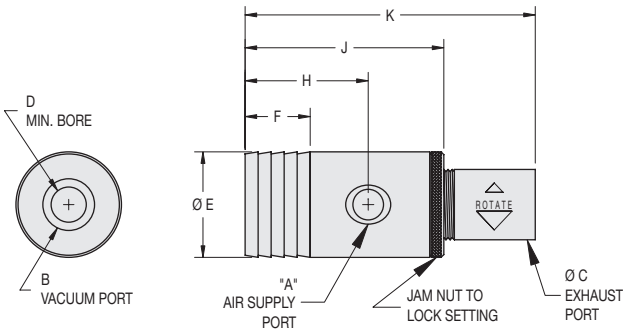
P/N	Material
	Anodized Aluminum (Std)
303	303 Stainless Steel*
304	304 Stainless Steel
316	316 Stainless Steel
316L	316 Low Carbon Stainless
PVC	PVC
DEL	Delrin - Acetel

*CDF 750 and larger not available in 303 stainless steel

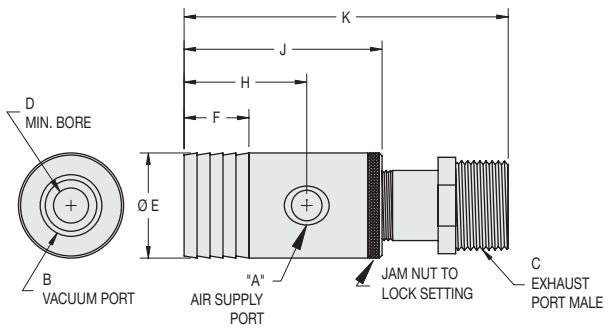
Note 1: **EPT (Exhaust Port Thread) must be factory installed.
Note 2: ***EPT required to attach silencer.

For complete Performance Data, see page 187.

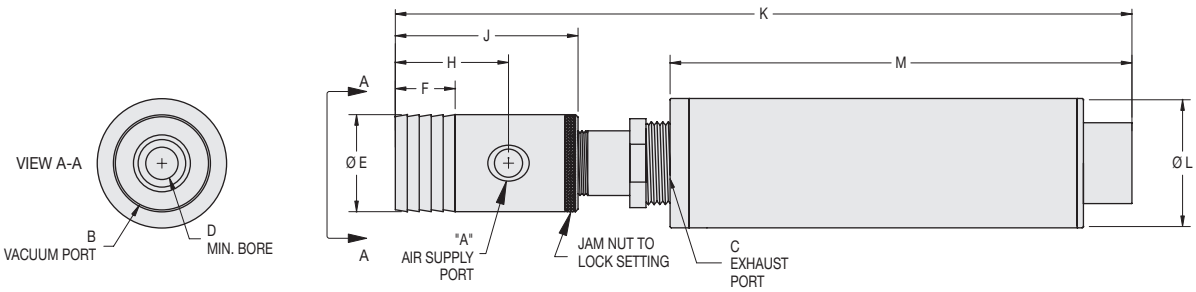
Standard Pump Dimensions: CDF Series (CDF 500H shown is representative sample of all CDF's)



CDF 500H



CDF 500H-EPT100



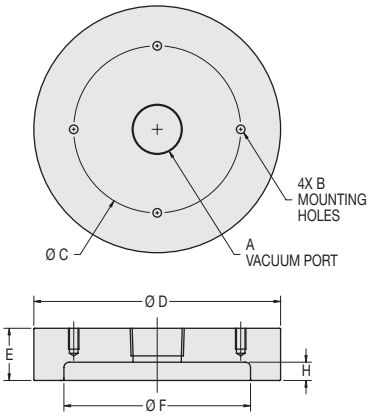
CDF 500H-EPT100-ST16FC

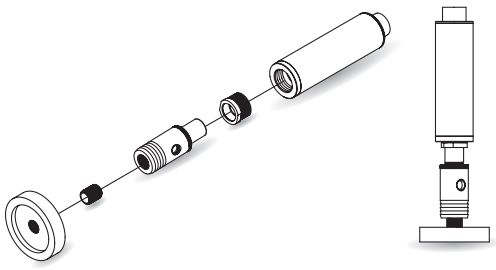
Model #	CDF Series – Imperial Dimensions (in.)											
	A	B	C	D	E	F	H	J	K	L	M	Weight
CDF 100	1/8 NPT F	–	0.56	0.14	1.25	–	0.44	1.13	2.00	–	–	3.2 oz
CDF 100-EPT25	1/8 NPT F	–	1/4 NPT	0.14	1.25	–	0.44	1.13	2.10	–	–	3.2 oz
CDF 100-EPT25-ST4AX	1/8 NPT F	–	1/4 NPT	0.14	1.25	–	0.44	1.13	5.40	1.00	3.57	3.7 oz
CDF 200	1/8 NPT F	–	0.56	0.25	1.25	–	0.44	1.13	2.00	–	–	2.1 oz
CDF 200-EPT25	1/8 NPT F	–	1/4 NPT	0.25	1.25	–	0.44	1.13	2.10	–	–	2.1 oz
CDF 200-EPT25-ST4AX	1/8 NPT F	–	1/4 NPT	0.25	1.25		0.44	1.13	5.40	1.00	3.57	3.7 oz
CDF 200H	1/8 NPT F	3/8 NPT F	0.56	0.25	1.25	0.76	1.21	1.87	2.85	–	–	3.1 oz
CDF 200H-EPT25	1/8 NPT F	3/8 NPT F	1/4 NPT	0.25	1.25	0.76	1.21	1.87	2.85	–	–	3.1 oz
CDF 200H-EPT25-ST4AX	1/8 NPT F	3/8 NPT F	1/4 NPT	0.25	1.25	0.76	1.21	1.87	6.15	1.00	3.57	5.2 oz
CDF 375H	1/8 NPT F	3/8 NPT F	0.69	0.38	1.25	0.76	1.21	1.87	2.85	–	–	3.1 oz
CDF 375H-EPT38	1/8 NPT F	3/8 NPT F	3/8 NPT	0.38	1.25	0.76	1.21	1.87	2.85	–	–	3.1 oz
CDF 375H-EPT38-ST6BX	1/8 NPT F	3/8 NPT F	3/8 NPT	0.38	1.25	0.76	1.21	1.87	7.43	1.25	4.80	6.3 oz
CDF 500H	1/4 NPT F	1/2 NPT F	0.99	0.50	1.49	0.93	1.75	2.83	4.13	–	–	6.3 oz
CDF 500H-EPT100	1/4 NPT F	1/2 NPT F	1 NPT	0.50	1.49	0.93	1.75	2.83	4.63	–	–	7.3 oz
CDF 500H-EPT100-ST16FC	1/4 NPT F	1/2 NPT F	1 NPT	0.50	1.49	0.93	1.75	2.83	11.39	2.00	7.12	14.9 oz
CDF 750H	1/4 NPT F	1 NPT F	1.23	0.75	1.97	0.93	1.75	2.83	4.13	–	–	10.1 oz
CDF 750H-EPT107	1/4 NPT F	1 NPT F	1 NPT	0.75	1.97	0.93	1.75	2.83	5.02	–	–	10.9 oz
CDF 750H-EPT107-ST16FC	1/4 NPT F	1 NPT F	1 NPT	0.75	1.97	0.93	1.75	2.83	11.70	2.00	7.12	1 lb 2 oz
CDF 1000H	1/4 NPT F	1 1/4 NPT F	1.48	1.00	2.22	0.93	1.75	2.83	4.13	–	–	11.5 oz
CDF 1000H-EPT125	1/4 NPT F	1 1/4 NPT F	1 1/2 NPT	1.00	2.22	0.93	1.75	2.83	4.64	–	–	13.2 oz
CDF 1000H-EPT125-ST24F	1/4 NPT F	1 1/4 NPT F	1 1/2 NPT	1.00	2.22	0.93	1.75	2.83	12.00	2.00	7.85	1 lb 5 oz
CDF 1500H	3/8 NPT F	2 NPT F	1.99	1.50	2.72	0.93	1.75	2.83	4.13	–	–	13.3 oz
CDF 1500H-EPT200	3/8 NPT F	2 NPT F	2 NPT	1.50	2.72	0.93	1.75	2.83	4.76	–	–	1 lb
CDF 1500H-ST2020	3/8 NPT F	2 NPT F	Slip fit	1.50	2.72	0.93	1.75	2.83	17.00	3.46	13.62	1 lb 8 oz
CDF 2000H	3/8 NPT F	2 1/2 NPT F	2.49	2.00	3.22	0.93	1.75	2.83	4.13	–	–	1 lb 0.5 oz

Model #	CDF Series – Metric (mm.)											
	A	B	C	D	E	F	H	J	K	L	M	Weight
I-CDF 100	G 1/8	–	14.2	3.6	31.8	–	11.2	28.7	50.8	–	–	91 grams
I-CDF 100-EPT25	G 1/8	–	1/4 NPT	3.6	31.8	–	11.2	28.7	53.3	–	–	91 grams
I-CDF 100-EPT25-ST4AX	G 1/8	–	1/4 NPT	3.6	31.8	–	11.2	28.7	137.2	25.4	90.7	105 grams
I-CDF 200	G 1/8	–	14.2	6.4	31.8	–	11.2	28.7	50.8	–	–	60 grams
I-CDF 200-EPT25	G 1/8	–	1/4 NPT	6.4	31.8	–	11.2	28.7	53.3	–	–	60 grams
I-CDF 200-EPT25-ST4AX	G 1/8	–	1/4 NPT	6.4	31.8		11.2	28.7	137.2	25.4	90.7	105 grams
I-CDF 200H	G 1/8	G 3/8	14.2	6.4	31.8	19.3	30.7	47.5	72.4	–	–	88 grams
I-CDF 200H-EPT25	G 1/8	G 3/8	1/4 NPT	6.4	31.8	19.3	30.7	47.5	72.4	–	–	88 grams
I-CDF 200H-EPT25-ST4AX	G 1/8	G 3/8	1/4 NPT	6.4	31.8	19.3	30.7	47.5	156.2	25.4	90.7	147 grams
I-CDF 375H	G 1/8	G 3/8	17.5	9.5	31.8	19.3	30.7	47.5	72.4	–	–	88 grams
I-CDF 375H-EPT38	G 1/8	G 3/8	3/8 NPT	9.5	31.8	19.3	30.7	47.5	72.4	–	–	88 grams
I-CDF 375H-EPT38-ST6BX	G 1/8	G 3/8	3/8 NPT	9.5	31.8	19.3	30.7	47.5	188.7	31.8	121.9	179 grams
I-CDF 500H	G 1/4	G 1/2	25.1	12.7	37.8	23.6	44.5	71.9	104.9	–	–	179 grams
I-CDF 500H-EPT100	G 1/4	G 1/2	1 NPT	12.7	37.8	23.6	44.5	71.9	117.6	–	–	207 grams
I-CDF 500H-EPT100-ST16FC	G 1/4	G 1/2	1 NPT	12.7	37.8	23.6	44.5	71.9	289.3	50.8	180.8	422 grams
I-CDF 750H	G 1/4	G 1	31.2	19.1	50.0	23.6	44.5	71.9	104.9	–	–	286 grams
I-CDF 750H-EPT107	G 1/4	G 1	1 NPT	19.1	50.0	23.6	44.5	71.9	127.5	–	–	309 grams
I-CDF 750H-EPT107-ST16FC	G 1/4	G 1	1 NPT	19.1	50.0	23.6	44.5	71.9	297.2	50.8	180.8	519 grams
I-CDF 1000H	G 1/4	G 1 1/4	37.6	25.4	56.4	23.6	44.5	71.9	104.9	–	–	326 grams
I-CDF 1000H-EPT125	G 1/4	G 1 1/4	1 1/2 NPT	25.4	56.4	23.6	44.5	71.9	117.9	–	–	374 grams
I-CDF 1000H-EPT125-ST24F	G 1/4	G 1 1/4	1 1/2 NPT	25.4	56.4	23.6	44.5	71.9	304.8	50.8	199.4	595 grams
I-CDF 1500H	G 3/8	G 2	50.5	38.1	69.1	23.6	44.5	71.9	104.9	–	–	377 grams
I-CDF 1500H-EPT200	G 3/8	G 2	G2	38.1	69.1	23.6	44.5	71.9	120.9	–	–	454 grams
I-CDF 1500H-ST2020	G 3/8	G 2	Slip fit	38.1	69.1	23.6	44.5	71.9	431.8	87.9	345.9	692 grams
I-CDF 2000H	G 3/8	G 2 1/2	63.2	50.8	81.8	23.6	44.5	71.9	104.9	–	–	468 grams

UH Series Cups: Material Handling Applications

Material: UHMW





CDF Assembly with UH Cup and attachment

UH Series Cups	Imperial Dimensions (in.)							
	A	B	C	D	E	F	H	Weight
VC-UH6-16	1 NPT	1/4-20 x .50 deep	4.00	5.91	1.25	4.47	0.44	14.8 oz
VC-UH6-16-TL	1 NPT	1/4-20 x .50 deep	4.00	5.91	1.25	5.60	0.44	12.2 oz
	Metric Dimensions (mm)							
	A	B	C	D	E	F	H	Weight
I-VC-UH6-16	G 1	M6 X 1.0 x 12mm deep	101.6	150.1	31.8	113.5	11.2	420 grams
I- VC-UH6-16-TL	G 1	M6 X 1.0 x 12mm deep	101.6	150.1	31.8	142.2	11.2	346 grams

CDF Series Performance Data & Graphs for Ducted Flow

CDF Performance Data – Imperial			
Model #	**Maximum Vacuum Level – "Hg**	**Maximum Vacuum Flow – SCFM**	**Maximum Exhaust Output – SCFM**
CDF 100	15	4	6
CDF 200	9	12	16
CDF 200H	9	12	16
CDF 375H	8	28	36
CDF 500H	7	55	70
CDF 750H	5	110	140
CDF 1000H	3	130	180
CDF 1500H	3	250	300
CDF 2000H	1	330	390
CDF Performance Data – Metric			
Model #	**Maximum Vacuum Level – mbar**	**Maximum Vacuum Flow – lpm**	**Maximum Exhaust Output – lpm**
I-CDF 100	508	113	170
I-CDF 200	305	340	453
I-CDF 200H	305	340	453
I-CDF 375H	271	793	1019
I-CDF 500H	237	1557	1982
I-CDF 750H	169	3115	3964
I-CDF 1000H	102	3681	5097
I-CDF 1500H	102	7079	8495
I-CDF 2000H	34	9345	11044

Consult individual performance data charts for air consumption values at desired operation position.

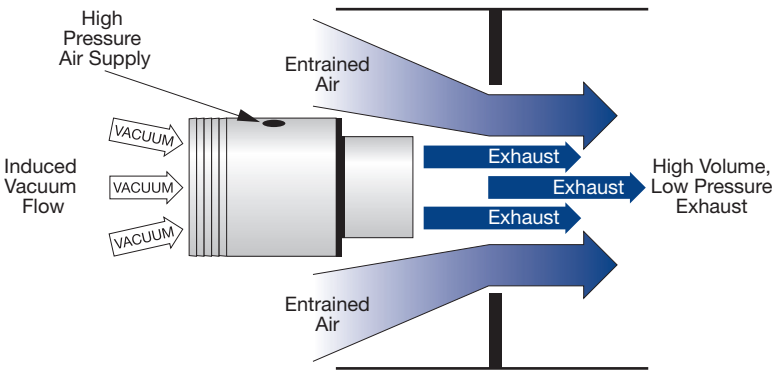
Unducted Flow vs Ducted Flow

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 entrain surrounding air to create a greater flow with amplification ratios up to 40:1. Total output flow is the combination of entrained air, induced air and compressed air.

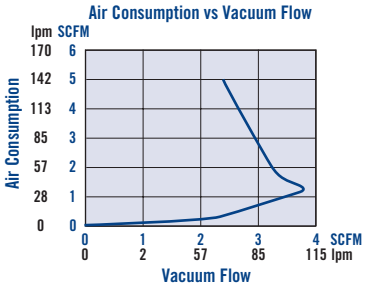
Ducted Flow

When the exhaust side of the amplifier has a duct attached to it, 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.

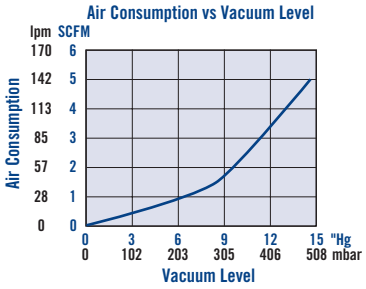


CDF 100 Series

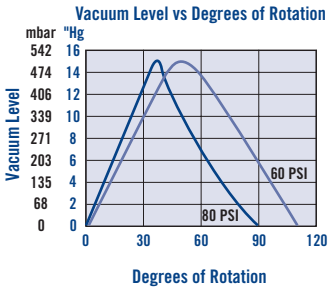
CDF 100



CDF 100-EPT25

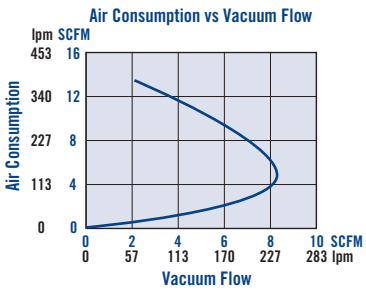


CDF 100-EPT25-ST4AX

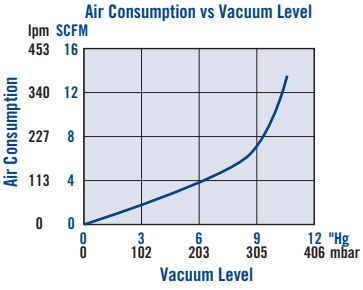


CDF 200 & 200H Series

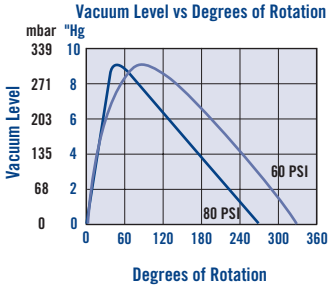
CDF 200 *CDF 200H*



CDF 200-EPT25 *CDF 200H-EPT25*

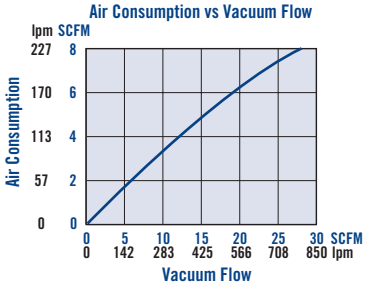


CDF 200-EPT25-ST4AX *CDF 200H-EPT25-ST4AX*

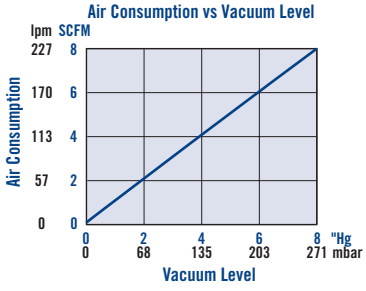


CDF 375H Series

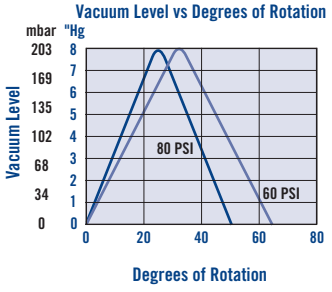
CDF 375H



CDF 375H-EPT38

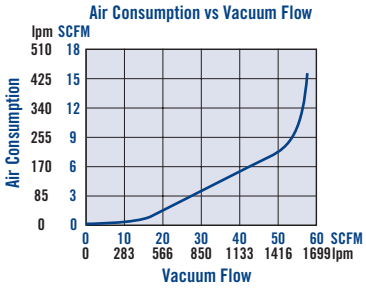


CDF 375H-EPT38-ST6BX

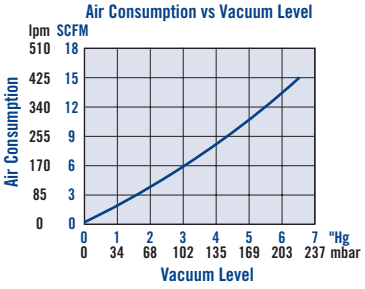


CDF 500H Series

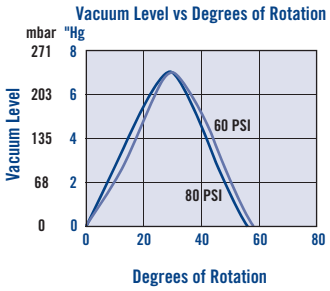
CDF 500H



CDF 500H-EPT100

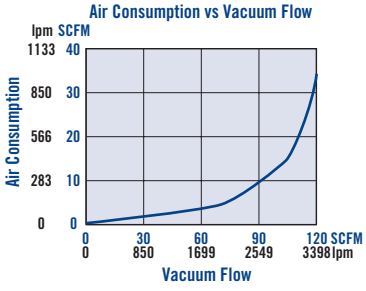


CDF 500H-EPT100-ST16FC

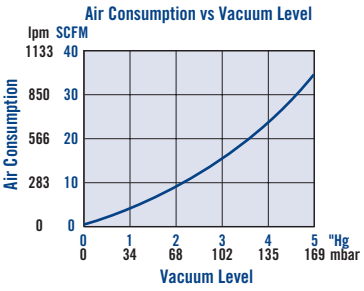


CDF 750H Series

CDF 750H



CDF 750H-EPT107



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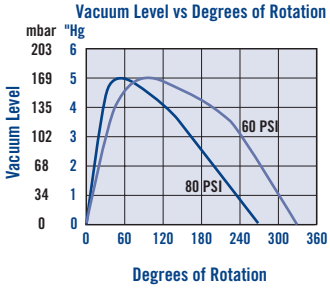
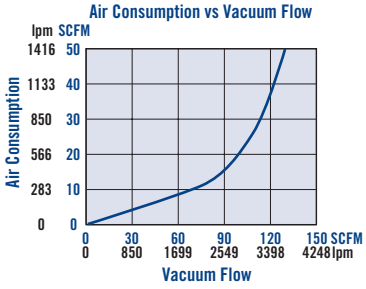
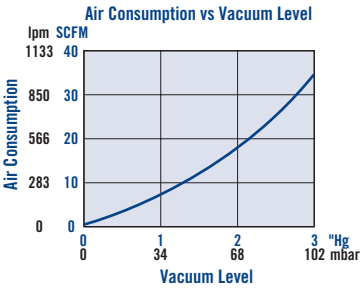


CDF 1000H Series

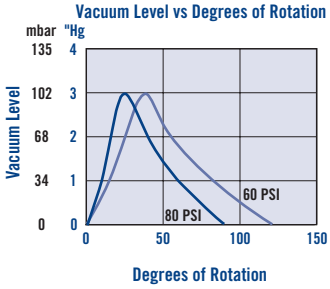
CDF 1000H



CDF 1000H-EPT125

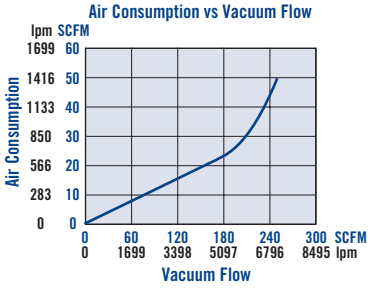


CDF 1000H-EPT125-ST24FC

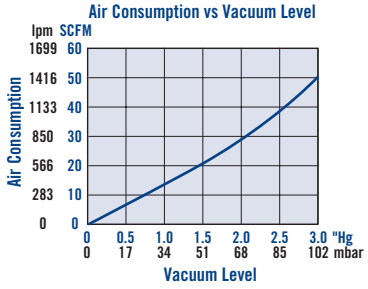


CDF 1500H Series

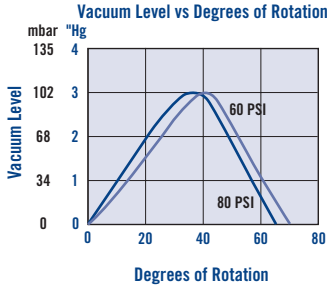
CDF 1500H



CDF 1500H-EPT200

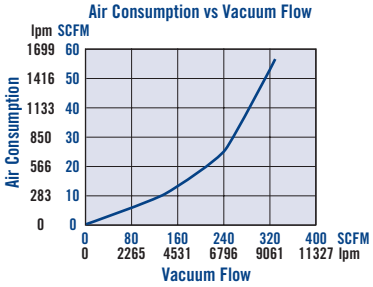


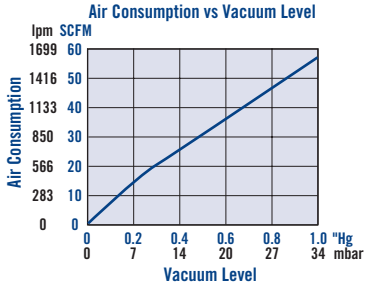
CDF 1500H-ST2020

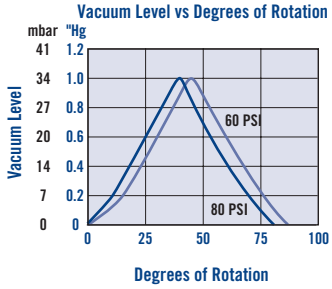


CDF 2000H Series

CDF 2000H







CDF Series – Noise Levels at 80 PSI					
Model #	Silencer Options				
		With Silencer		Without Silencer	
	Silencer #	Open Flow	Sealed Vacuum	Open Flow	Sealed Vacuum
CDF 100 - EPT25	ST4AX	76db	74db	88db	88db
CDF 200 - EPT25	ST4AX	86db	78db	98db	94db
CDF 200H - EPT25	ST4AX	86db	78db	98db	94db
CDF 375H - EPT38	ST6BX	74db	70db	78db	84db
CDF 500H - EPT100	ST16FC	72db	78db	84db	96db
CDF 750H - EPT107	ST16FC	78db	80db	86db	96db
CDF 1000H - EPT125	ST24F	80db	82db	86db	96db
CDF 1500H	ST2020	80db	82db	86db	96db
CDF 2000H	N/A	N/A	N/A	88db	94db

Custom Air Amplifiers – CDF Series

Ideal for OEM engineers and designers

Creative Engineering • Precision Manufacturing • Extensive Application Experience

When off the shelf doesn't work, Vaccon's engineering expertise and manufacturing capabilities can provide custom solutions to your specifications.

Whether it's as simple as modifying a standard product, or more complex requiring new products with specific features, or special materials, Vaccon has the solution.

Specialty Materials:

303, 304, 316 and 316L Stainless steel, PVC, PTFE, Acetal, PEEK and more. For chemical compatibility requirements, high temperature, food, medical and caustic applications, custom materials are available including stainless steel, PEEK, Delrin,™ Teflon,™ PVC.

PVC for chemical resistance.

Stainless Steel for high temperatures or caustic materials.

CDF-750-PM:

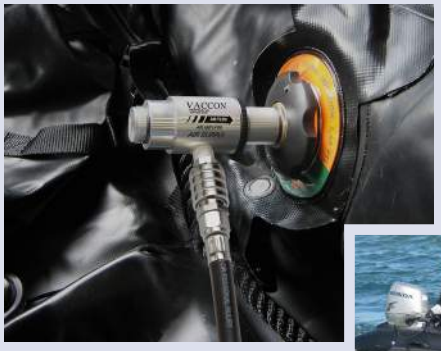
Panel mount thread for easy mounting and installation.

Custom Products:

Custom CDF with O-rings (not shown) is part of a sub-assembly incorporated into another piece of equipment for compact design. No external plumbing required.

Custom products for Inflation/Deflation Applications:

Inherent design features in the CDF Series air amplifiers prevents over inflation (bursting), making them the ideal solution for safe inflation and deflation operations.



Custom CDF air amplifier for safe, rapid inflation and deflation of inflatables for marine operations

Custom CDF inflates and deflates dunnage bags to protect loads during shipment.

When size, shape, material and performance matter, it's Vaccon Vacuum Pumps.