



C. Emery Nelson, Inc.

INDUSTRIAL AND POWER PLANT EQUIPMENT

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CycloBlower® Industrial Series

Positive Displacement Blowers
& Vacuum Pumps



GD
GARDNER DENVER™

Experience Proven Results™



50 Years of Proven Results

The Gardner Denver CycloBlower Industrial Series offers significant advantages:

- Efficiency
- Quality
- Durability
- The CycloBlower Industrial Series delivers:
 - Pressure to 20 psig
 - Dry Vacuum to 17 inHg
 - Wet Vacuum to 24 inHg
 - Airflow to 6700 cfm

Efficient, Shock-Free Compression

- Helical screw rotors generate a balanced compression cycle
- Providing a smooth and steady discharge, eliminating the sudden release of trapped pockets of air into the line
- Contoured inlet and discharge ports minimize turbulence



Model 7CDL14P

Dependable Quality

- Superior and consistent quality can be found in every CycloBlower as a result of:
 - Continual investment in the training of world-class manufacturing personnel
 - Quality inspections throughout the entire manufacturing process
- Compact design utilizing optimum performance materials
- Reduced vibrations result in longer service of critical blower components

High Capacity

- Industry unique rotor profile and accurately maintained tolerances allow the CycloBlower to be operated at high speeds for increased capacity

Clean Air/Gas Delivery

- Contact-less rotors removes the need for lubrication within the compression chamber
- Outboard position of rotor bearings allows atmospheric venting between the compression chamber and the bearings and gears
- Prevents gear and bearing lubricants from contaminating the compression chamber for clean air/gas delivery

Installation Flexibility

- Units can be powered by various types of drives including electric motors, constant or variable, gasoline and diesel engines, or steam turbines
- May be connected through a variable frequency drive (VFD), V-belt, or direct drive

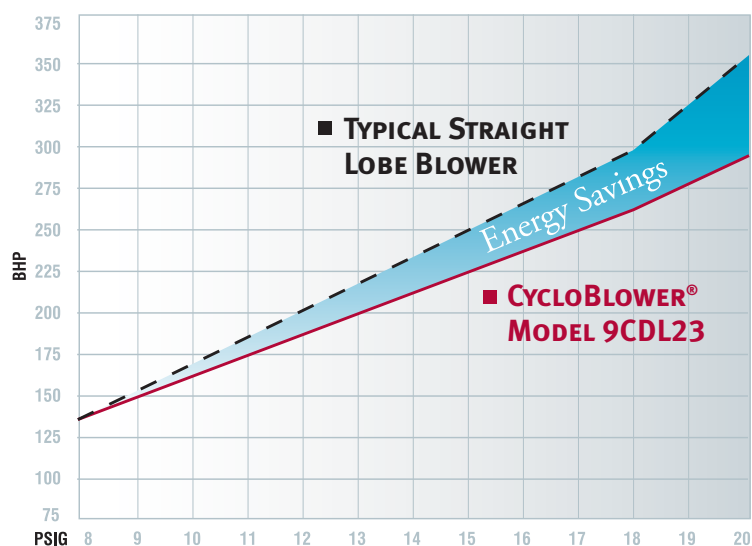
Low Installation Cost

- A special foundation is not required
- CycloBlower requires a minimum of floor space
- Remanufactured units available

The Efficiency Leader

High Efficiency for Improved Energy Savings

Brake Horsepower Requirement Comparison



In many comparable applications, the CycloBlower operates more efficiently than other straight-lobe blowers. By requiring less brake horsepower, BHP, energy operating costs can be realized and reduced.

TOP CHART shows a comparison of the BHP for a typical straight-lobe blower versus a CycloBlower 9CDL23. The CycloBlower requires less BHP to produce 3,000 CFM at pressures from 8 to 20 PSIG.

Annual Energy Cost Savings

PSI	Bhp Requirement For 3,000 CFM		Assuming Motor/Drive Efficiency = .90 Cost/Kwh = \$.09	
	Typical Straight Lobe	Cycloblower 9CDL23	Percent Bhp Reduction	Annual Estimated Savings
8	130	125	3.8%	\$ 3,257
9	145	140	3.4%	\$ 3,257
10	162	154	4.9%	\$ 5,212
11	180	167	7.2%	\$ 8,469
12	195	180	7.7%	\$ 9,772
13	212	195	8.0%	\$ 11,075
14	230	210	8.7%	\$ 13,029
15	245	222	9.4%	\$ 14,983
16	260	235	10.0%	\$ 16,286
17	276	249	10.5%	\$ 17,589
18	294	264	11.6%	\$ 19,544
19	340	278	18.0%	\$ 40,390
20	360	291	19.1%	\$ 44,950

BOTTOM CHART translates the resulting BHP comparison reduction into annual energy cost savings. Calculations are based on the cost of providing 3,000 CFM of air for 8,736 hours, approximately 1 year, of operation assuming motor/drive efficiency = .90, and energy cost per kilowatt-hour = \$0.09.

Unique CycloBlower Design Features

Optimum Efficiency, Proven Results

The CycloBlower stands out as the premium PD blower/vacuum pump in the market. The meshing of two helical lobe rotors synchronized by timing gears provides controlled compression of air for unmatched efficiency and shock-free discharge. State-of-the-art manufacturing techniques, improved assembly methods, and enhanced internal clearances allow the CycloBlower to operate at higher operating speeds for increased flow capacities. For optimal performance, we recommend AEON® PD and AEON® PD-XD (Extreme Duty for high ambient and/or high discharge temperatures) lubricants.



Critical Component Inspections = Quality Products

Rotors — Helical four-flute gate rotor and two-lobe main rotor are milled from high tensile strength ductile iron, stress relieved and dynamically balanced.

Housing — One piece, high strength housing resists deflection to retain accurate running tolerances between rotors. Contoured porting provides smooth air flow.

Bearings — Anti-friction bearings carry the shaft loads in all models. CycloBlowers use pairs of angular contact ball bearings on the discharge end and cylindrical roller bearings or single-row ball bearings on the gear end. (Not standard on 3CDL models.)

Timing Gears — Synchronization of rotors is through a pair of helical timing gears. Precision alloy steel gears provide quiet, accurate operation.

Air/Gas Seals — Labyrinth-type shaft seals provide a minimum of controlled leakage of air or gas. Purged labyrinth seals or mechanical seals are available with units handling gas, where leakage cannot be tolerated. (Mechanical seals not available on 3CDL and A5CDL models.)

Dual-Splash Lubrication — Gears and bearings are lubricated by a splash oil system. (Not standard on A5CDL models.)

Oil Seals — All CycloBlowers are fitted with proprietary bearing isolator seals. Our unique design developed in partnership with Inpro/Seal offers outstanding performance and longevity. (Not available on the 3CDL and A5CDL models.)



Inpro Seals



INPRO/SEAL®
A DOVER COMPANY

Delivering clean, oil-free air to a wide range of global applications

INDUSTRIAL PROCESSING

Recovery Air of Gas
 Combustion Air
 Air Drying
 Air Flotation and Sliding
 Blow-off Systems/Drying/Can Drying
 Carbon Black
 Coal Gasification
 Coke Oven Gas
 Gas Boosting
 Vacuum Systems
 Air Knife Stripping

WATER TREATMENT

Pond Aeration, Municipal or Industrial
 Wastewater Treatment
 Aeration
 Air Scouring
 Digester Gas Boosters
 Filter Backwashing

PARTICULATE HANDLING

Clean Rooms
 Clean-Up
 Pneumatic Conveying
 Dry Bulk
 Fly Ash
 Source Capture

Dimensional Data

Model	L	W	H	Size & Type Ports	WT
3CDL5	19 $\frac{1}{8}$	10 $\frac{1}{2}$	11 $\frac{1}{2}$	2.5" NPT, Both Ports	165
3CDL8	22 $\frac{1}{8}$	10 $\frac{1}{2}$	11 $\frac{1}{2}$	3" NPT, Both Ports	185
A5CDL5	19 $\frac{1}{4}$	15	15 $\frac{1}{4}$	3" NPT, Both Ports	237
A5CDL9	23 $\frac{1}{4}$	15	15 $\frac{1}{4}$	5" Flange, 10" OD, Both Ports	310
A5CDL13	27 $\frac{1}{4}$	15	15 $\frac{1}{4}$	5" Flange, 10" OD, Both Ports	361
5CDL5	28 $\frac{3}{4}$	15	15 $\frac{1}{4}$	3" Flange, 7.5" OD, Both Ports	372
5CDL9	32 $\frac{3}{4}$	15	15 $\frac{1}{4}$	5" Flange, 10" OD, Both Ports	441
5CDL13	36 $\frac{3}{4}$	15	15 $\frac{1}{4}$	5" Flange, 10" OD, Both Ports	500
7CDL11	36 $\frac{1}{2}$	20 $\frac{1}{2}$	19 $\frac{3}{4}$	8" Flange, 13.5" OD, Both Ports	867
7CDL14	39 $\frac{1}{2}$	20 $\frac{1}{2}$	19 $\frac{3}{4}$	8" Flange, 13.5" OD, Both Ports	911
7CDL17	42 $\frac{1}{2}$	20 $\frac{1}{2}$	19 $\frac{3}{4}$	8" Flange, 13.5" OD, Both Ports	1016
9CDL13	40 $\frac{3}{8}$	25 $\frac{3}{4}$	23	8" Flange, 13.5" OD, Both Ports	1500
9CDL18	44 $\frac{1}{2}$	25 $\frac{3}{4}$	23	Inlet – 10" Flange, 16" OD Discharge – 8" Flange, 13.5" OD	1673
9CDL23	49 $\frac{1}{2}$	25 $\frac{3}{4}$	23	Inlet – 10" Flange, 16" OD Discharge – 8" Flange, 13.5" OD	1843
11CDL23	53	33	29	Inlet – 14" Flange, 21" OD Discharge – 12" Flange, 19" OD	3150
11CDL27	57	33	29	Inlet – 14" Flange, 21" OD Discharge – 12" Flange, 19" OD	3340
11CDL31	61	33	29	Inlet – 14" Flange, 21" OD Discharge – 12" Flange, 19" OD	3530

Dimensions shown in inches. Weights are in pounds and approximate.



CycloBlower—
Industry unique rotor profile

CycloBlower Performance Data

Blower Model	Speed RPM	Pressure												Vacuum								
		5 PSIG		9 PSIG		12 PSIG		15 PSIG		18 PSIG		20 PSIG		8 inHg		12 inHg		16 inHg		17 inHg		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	
3CDL5	1000	62	1.8	48	3.2	38	4.1	26	5.5					56	1.8							
	1500	108	3.4	94	5.6	84	7.0	74	9.0					105	2.9	92	3.8					
	2000	153	5.0	104	8.0	131	10.0	121	12.4	111	14.5			155	4.0	142	5.4	125	6.8			
	2500	198	6.7	186	10.4	178	13.0	168	15.8	159	18.5			206	5.1	192	7.0	175	8.9			
	3000	243	8.4	232	12.6	225	16.0	216	19.2	207	22.5			254	6.2	241	8.6	223	10.9			
3500	289	10.0	278	15.0	272	18.9	264	22.6	256	26.5			304	7.3	292	10.2	273	13.0				
3CDL8	1000	85	2.6	61	4.9	53	6.5	42	8.7					80	2.4							
	1500	152	4.5	144	7.9	134	10.5	120	13.1					155	3.9	135	5.3					
	2000	220	6.5	200	11.0	188	14.2	175	17.5	160	20.8			228	5.4	208	7.4	188	9.4			
	2500	287	8.5	265	14.0	256	18.0	242	21.8	228	26.0			304	7.0	284	9.3	262	12.0			
	3000	355	10.5	332	17.0	322	22.0	311	26.3	296	31.4			378	8.5	358	11.2	338	14.4			
3500	422	12.3	400	20.1	388	25.6	378	30.6	362	36.6			452	9.9	432	13.2	412	16.8				
A5CDL5	1500	97	3.5	78	6.0									108	3.0	90	4.1					
	2000	143	4.5	124	8.0	112	10.0							158	3.9	141	5.3					
	2500	190	6.5	171	10.5	159	13.5							210	4.9	193	6.6					
	3000	238	8.0	218	13.2	205	17.0							261	6.2	244	8.1					
	3500	283	10.1	265	16.0	252	20.2							312	7.6	296	10.0					
4000	330	12.5	312	18.5	298	24.0							362	9.1	347	11.7						
A5CDL9	1500	180	6.5	150	12.0									163	4.6	125	6.6					
	2000	267	8.5	237	15.0	220	19.0							258	6.1	220	8.5					
	2500	355	10.5	325	17.5	307	23.0							355	7.7	315	11.1					
	3000	442	12.5	412	21.0	394	27.5							450	10.2	411	13.4					
	3500	530	15.0	500	25.0	482	32.0							545	10.8	506	15.6					
4000	617	18.0	587	30.0	570	38.0							640	12.5	600	17.9						
A5CDL13	1500	250	8.0	219	14.0	194	19.0							230	6.0	180	9.0					
	2000	375	11.5	343	19.2	319	25.5							350	8.9	300	12.2					
	2500	500	15.0	468	24.5	444	32.0							470	11.5	422	15.8					
	3000	625	18.5	593	30.0	569	39.0							593	14.5	543	19.2					
	3500	750	22.2	718	36.0	694	46.5							712	17.3	665	22.6					
4000	875	27.5	843	43.0	819	54.0							835	20.0	785	26.1						
5CDL5	1500	97	3.5	78	6.0									108	3.0	90	4.1					
	2000	143	4.5	124	8.0	112	10.0							158	3.9	141	5.3	124	7.2			
	2500	190	6.5	171	10.5	159	13.5	149	17.0					210	4.9	193	6.6	176	8.8	174	9.2	
	3000	238	8.0	218	13.2	205	17.0	195	20.8					261	6.2	244	8.1	228	10.4	225	11.0	
	3500	283	10.1	265	16.0	252	20.2	240	24.8	226	28.7			312	7.6	296	10.0	281	12.3	276	12.9	
4000	330	12.5	312	18.5	298	24.0	285	29.0	267	33.4	263	37.1	362	9.1	347	11.7	333	14.3	327	14.8		
4500	376	14.9	359	22.5	345	27.6	332	33.4	319	38.2	310	42.7	414	11.0	398	13.7	382	16.3	378	17.0		
5000	423	17.7	405	26.2	392	31.5	379	38.0	365	43.1	356	48.5	465	13.0	449	15.8	433	18.4	429	19.3		
5CDL9	1500	180	6.0	150	12.0									165	4.7	130	6.6	82	9.4			
	2000	267	8.0	237	15.0	220	19.0							260	6.0	223	8.9	175	12.5			
	2500	355	10.2	325	17.5	307	23.0	290	28.5					355	7.5	315	11.1	272	15.5			
	3000	442	12.5	412	21.0	394	27.5	380	34.0	365	40.0	348	44.9	450	9.1	412	13.4	367	18.5	359	19.9	
	3500	530	15.0	500	25.0	482	32.0	465	40.0	450	45.0	436	52.4	545	10.6	504	15.6	462	21.5	454	23.1	
4000	617	18.0	587	30.0	570	38.0	550	46.0	540	53.0	524	60.6	640	12.2	600	17.9	558	24.5	549	26.4		
4500	705	21.1	680	34.3	661	44.2	643	54.3	624	63.4	611	69.3	736	13.8	695	20.2	655	27.9	645	29.7		
5000	793	24.2	768	39.3	749	50.5	730	62.6	712	72.8	699	78.6	831	15.3	791	22.5	750	30.8	740	32.9		
5CDL13	1500	250	8.0	219	14.0	194	19.0							230	6.0	180	9.0	122	11.3			
	2000	375	11.5	343	19.2	319	25.5	300	32.0					350	8.9	300	12.2	245	15.4			
	2500	500	15.0	468	24.5	444	32.0	425	40.0					470	11.5	422	15.8	370	20.0			
	3000	625	18.5	593	30.0	569	39.0	550	48.0	525	58.0	510	62.5	593	14.5	543	19.2	495	24.0	482	25.2	
	3500	750	22.5	718	36.0	694	46.5	675	56.0	650	66.0	635	72.4	712	17.3	665	22.6	620	28.0	604	29.2	
4000	875	27.5	843	43.0	819	54.0	800	64.0	775	74.0	760	82.2	835	20.0	760	26.1	745	32.0	726	33.4		
4500	996	33.1	966	49.6	944	62.0	922	71.1	900	82.8	885	91.7	962	23.0	911	29.9	861	36.3	848	37.7		
5000	1121	39.3	1091	56.4	1069	70.1	1047	78.2	1024	92.3	1009	101.3	1084	25.9	1033	33.5	982	40.4	970	42.0		

Genuine Gardner Denver Parts and Lubricants

- Maintain the Gardner Denver performance advantage and reliability with Genuine GD Replacement Parts
- Protect your Gardner Denver investment with AEON® PD lubricants formulated for all blowers in demanding applications
- Now available AEON® PD-XD specifically designed for high ambient and/or high discharge temperature conditions



Quality Promise

- Gardner Denver industrial blowers are manufactured under rigid ISO 9001 quality standards
- All models are exhaustively tested to meet the highest performance standards for unequaled service life under the most severe operating conditions

Gardner Denver Redefines the Perception of Remanufactured

Reman (rē man´) n. *A Gardner Denver positive displacement blower expertly assembled from genuine remanufactured and new parts*

- Must pass a full-load, hot run test before shipment
- Standard new product warranty included
- The final word when repair or replacement is required



CycloBlower rotors are precision ground using state of the art milling technology.



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Gardner Denver

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