



Helical Screw Blowers/ Vacuum Pumps

INDUSTRIAL
XP SERIES



Model 5CDL13



Model 7CDL17



Model 11CDL31

CycloBlower® XP Series offers 20 psig continuous pressure and 17” Hg continuous vacuum.

Clean Air/Gas Delivery – Since the rotors do not touch each other or the housing, lubrication is not required within the compression chamber. The outboard position of rotor bearings allows atmospheric venting between the compression chamber and the bearings and gears. This prevents gear and bearing lubricants from contaminating the compression chamber and the air or gas.

Efficient, Shock-Free Compression – The screw-type, cycloidal 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.

High Capacity-Low Weight – Compact design, selection of optimum performance parts and materials, and accurately maintained tolerances allow the CycloBlower XP to be operated at high speeds, increasing capacity for relatively low unit weight. Direct or step-up drive permits the use of less expensive standard motors.

Installation Flexibility – Units may be driven by any normal source of power that provides adequate speed and horsepower. The capacity of each model covers a broad range of pressure and air delivery. CycloBlower XP models can be powered by various types of drives including electric motors, constant or variable, gasoline and diesel engines, or steam turbine, and may be connected through a speed regulating mechanism, V-belt, or direct drive.

Dependable, Long-Life Service – With two rotating parts that do not touch, wear within the compression chamber is eliminated. The CycloBlower XP design does not require valves and other reciprocating parts that are subject to wear.

Low Installation Cost – A special foundation is not required, and CycloBlower XP units require a minimum of floor space.



Model 9CDL23

CycloBlower XP Overview

- 75 to 6700 cfm
- Pressures to 20 psig
- Dry vacuum to 17” Hg



CycloBlower® XP Industrial 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
- Numerous OEM
Applications

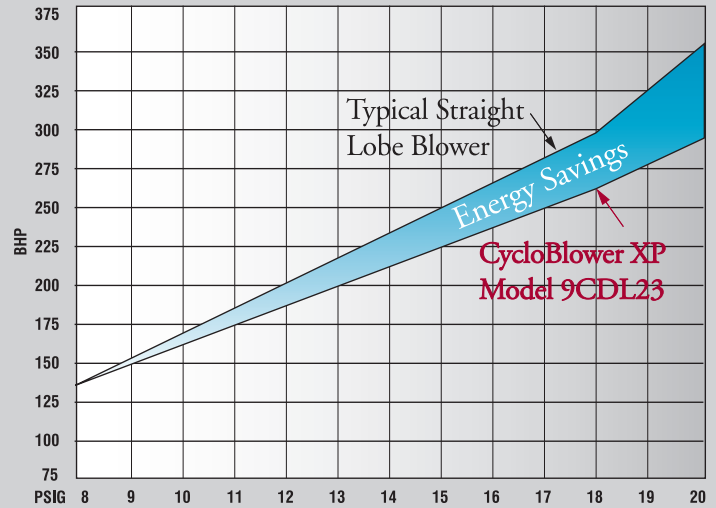
WATER TREATMENT

- Pond Aeration,
Municipal or Industrial
- Wastewater Treatment
- Aeration
- Air Scouring
- Digester Gas Boosters
- Filter Backwashing
- Clean Rooms
- Clean-Up
- Pneumatic Conveying
- Dry Bulk
- Fly Ash
- Source Capture

PARTICULATE HANDLING

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

BRAKE HORSEPOWER REQUIREMENT COMPARISON



CycloBlower Performance Specifications

BLOWER MODEL	SPEED RPM	PRESSURE												VACUUM								DIMENSIONS-BARE BLOWER (INCHES)				WT. LBS.						
		5 PSIG		9 PSIG		12 PSIG		15 PSIG		18 PSIG		20 PSIG		8" Hg		12" Hg		16" Hg		17" Hg		L	W	H	SIZE AND TYPE PORTS							
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP							
5CDL5	1500	97	3.5	78	6.0									108	3.0	90	4.1									28 3/4	15	15 1/4	3" Flange 7.5" O.D. Both Ports	372		
	2000	143	4.5	124	8.0									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	30.7	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	37.1	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						32 3/4	15	15 1/4	5" Flange 10" O.D. Both Ports	441			
	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						36 3/4	15	15 1/4	5" Flange 10" O.D. Both Ports	500			
	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												
7CDL11	1100	330	10.0	275	18.0	240	25.0							335	8.0	275	12.0	215	16.0					36 1/2	20 1/2	19 3/4	8" Flange 13.5" O.D. Both Ports	867				
	1600	540	16.5	485	28.0	455	37.0							555	12.0	495	18.0	425	24.0													
	2100	760	22.5	705	38.0	670	49.0	640	59.0	620	72.0	584	78.5	780	17.5	720	24.0	645	32.0	633	33.4											
	2600	980	28.0	920	48.0	890	61.0	855	75.0	835	91.0	801	97.8	1010	22.5	940	30.0	865	39.0	858	42.8											
	3100	1200	35.0	1140	59.0	1110	75.0	1080	91.0	1050	110.0	1019	118.9	1230	26.0	1165	36.0	1085	47.0	1082	52.1											
	3600	1410	42.0	1360	70.0	1325	89.0	1290	108.0	1260	130.0	1237	141.7	1455	30.0	1385	43.0	1310	56.0	1306	60.8											
4000	1591	48.5	1543	78.7	1507	100.0	1471	121.0	1435	144.9	1411	160.4	1633	35.1	1567	48.3	1501	63.8	1485	67.5												
7CDL14	1100	430	16.0	380	24.0	350	30.0							440	10.0	385	14.0	320	18.0					39 1/2	20 1/2	19 3/4	8" Flange 13.5" O.D. Both Ports	911				
	1600	700	20.0	650	33.0	620	44.0	595	55.0					735	15.0	675	22.0	615	27.0	599	29.1											
	2100	975	27.0	925	44.0	895	58.0	865	72.0	815	85.0	804	94.0	1030	22.0	970	29.0	910	37.0	893	39.2											
	2600	1250	35.0	1200	57.0	1170	75.0	1140	91.0	1090	107.0	1078	119.8	1325	26.0	1265	37.5	1205	47.0	1187	49.1											
	3100	1530	44.0	1470	70.0	1450	90.0	1420	110.0	1370	130.0	1353	144.2	1615	32.0	1560	44.0	1500	56.0	1481	58.9											
	3600	1800	53.0	1750	84.0	1720	107.0	1695	130.0	1650	152.0	1627	167.2	1900	38.0	1850	52.5	1790	66.0	1775	68.8											
4000	2023	61.9	1976	96.3	1941	120.8	1905	141.5	1870	170.8	1847	185.9	2145	42.4	2085	58.4	2025	73.4	2010	76.7												
7CDL17	1100	490	15.0	410	25.0	370	30.0							525	12.0	450	16.0	375	22.0					42 1/2	20 1/2	19 3/4	8" Flange 13.5" O.D. Both Ports	1016				
	1600	810	22.0	740	39.0	695	48.0							870	18.0	800	24.0	720	32.0	722	34.4											
	2100	1140	30.0	1070	53.0	1025	68.0	985	84.0	950	98.0	918	112.4	1225	24.0	1160	32.0	1075	42.0	1078	45.2											
	2600	1460	40.0	1400	67.0	1355	86.0	1320	106.0	1285	124.0	1247	138.5	1590	31.0	1520	41.0	1430	52.0	1434	55.9											
	3100	1795	51.0	1730	81.0	1690	105.0	1650	128.0	1625	150.0	1576	163.1	1930	40.0	18																

High Efficiency for Improved Energy Savings

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

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

RIGHT 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 efficiency = .90, and energy cost per kilowatt-hour = \$.07.

ANNUAL ENERGY COST SAVINGS

PSI	BHP REQUIREMENT FOR 3,000 CFM		ASSUMING MOTOR EFFICIENCY = .90 COST/KWH = \$.07	
	TYPICAL STRAIGHT LOBE	CYCLOBLOWER XP MODEL 9CDL23	PERCENT BHP REDUCTION	ANNUAL ESTIMATED SAVINGS
8	130	125	3.8%	\$ 2,534
9	145	140	3.4%	\$ 2,534
10	162	154	4.9%	\$ 4,055
11	180	167	7.2%	\$ 6,590
12	195	180	7.7%	\$ 7,604
13	212	195	8.0%	\$ 8,617
14	230	210	8.7%	\$ 10,138
15	245	222	9.4%	\$ 11,659
16	260	235	10.0%	\$ 12,673
17	276	249	10.5%	\$ 13,686
18	294	264	11.6%	\$ 15,207
19	340	278	18.0%	\$ 31,429
20	360	291	19.1%	\$ 34,977

BLOWER MODEL	SPEED RPM	P R E S S U R E												V A C U U M								D I M E N S I O N S - B A R E B L O W E R					
		5 PSIG		9 PSIG		12 PSIG		15 PSIG		18 PSIG		20 PSIG		8" Hg		12" Hg		16" Hg		17" Hg		(INCHES)			WT. LBS.		
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	L	W	H		SIZE AND TYPE PORTS	
9CDL13	1200	825	23.0	740	40.0	690	52.0							790	20.0	730	27.0					40 3/8	25 3/4	23	8" Flange	1500	
	1500	1075	30.0	990	51.0	950	67.0	910	82.0					1055	25.0	990	34.0	900	42.0	896	42.6				13.5" O.D.		
	1800	1330	40.0	1250	63.0	1210	82.0	1170	100.0	1130	120.0	1099	132.4	1320	30.0	1250	41.0	1160	51.0	1133	52.2				Both Ports		
	2100	1580	49.0	1510	76.0	1470	99.0	1430	120.0	1395	144.0	1358	155.7	1580	37.0	1510	48.0	1420	61.0	1397	63.0						
	2400	1835	60.0	1770	91.0	1730	117.0	1690	141.0	1660	167.0	1616	180.7	1850	44.0	1770	58.0	1675	72.0	1661	74.9						
	2700	2090	76.0	2025	110.0	1990	138.0	1955	164.0	1920	190.0	1875	206.6	2110	55.0	2030	69.0	1935	85.0	1925	87.5						
3000	2363	89.5	2302	128.0	2256	159.5	2211	187.9	2165	212.1	2134	234.3	2389	64.5	2300	80.0	2211	96.6	2189	100.9							
9CDL18	1200	1130	32.0	1020	52.0	960	70.0	920	85.0					1170	25.0	1100	36.0	1030	47.0	1027	52.2	44 1/2	25 3/4	23	Inlet	1673	
	1500	1480	42.0	1385	69.0	1325	89.0	1280	106.0					1530	32.0	1460	44.0	1390	57.0	1389	61.3				10" Flange		
	1800	1840	52.0	1750	85.0	1690	110.0	1640	130.0	1600	152.0	1557	175.3	1890	39.0	1830	53.0	1760	68.0	1750	72.3				16" O.D.		
	2100	2195	63.0	2110	101.0	2060	131.0	2010	155.0	1965	184.0	1916	208.4	2250	48.0	2190	63.0	2130	80.0	2112	85.1				Discharge		
	2400	2550	77.0	2465	120.0	2420	152.0	2370	182.0	2330	216.0	2275	241.7	2610	60.0	2550	76.0	2495	94.0	2473	99.9				8" Flange		
	2700	2900	95.0	2820	140.0	2780	175.0	2740	216.0	2690	255.0	2634	277.2	2965	77.0	2910	95.0	2855	113.0	2835	117.1				13.5" O.D.		
3000	3273	110.9	3199	160.5	3142	200.4	3086	249.9	3030	293.7	2993	317.6	3340	95.9	3276	114.9	3212	132.7	3196	136.9							
9CDL23	1200	1370	42.0	1220	70.0	1150	85.0	1070	95.0					1380	32.0	1275	43.0	1150	54.0	1097	54.2	49 1/2	25 3/4	23	Inlet	1843	
	1500	1810	56.0	1680	88.0	1620	107.0	1550	125.0	1460	150.0	1420	169.0	1850	42.0	1730	55.0	1600	69.0	1563	72.2				10" Flange		
	1800	2270	70.0	2150	107.0	2090	133.0	2020	156.0	1930	185.0	1882	203.6	2320	51.0	2200	67.0	2060	86.0	2028	90.4				16" O.D.		
	2100	2720	85.0	2610	127.0	2560	159.0	2500	187.0	2410	222.0	2345	238.6	2780	61.0	2650	79.0	2510	102.0	2494	108.7				Discharge		
	2400	3180	97.0	3080	147.0	3040	185.0	2980	218.0	2890	257.0	2807	275.1	3250	70.0	3110	92.0	2970	118.0	2959	126.7				8" Flange		
	2700	3630	110.0	3550	166.0	3500	210.0	3450	250.0	3360	295.0	3269	313.1	3720	80.0	3570	104.0	3410	134.0	3425	144.6				13.5" O.D.		
3000	4110	124.6	4009	186.4	3933	232.9	3857	271.8	3782	323.5	3731	350.5	4173	89.5	4047	115.9	3922	152.1	3890	162.4							
11CDL23	800	1600	50.0	1420	80.0	1380	100.0	1280	118.0	1220	140.0			1500	35.0	1325	50.0	1160	63.0			53	33	29	Inlet	3150	
	1100	2330	60.0	2160	105.0	2060	130.0	2000	160.0	1900	190.0	1803	213.6	2250	49.0	2070	68.0	1880	86.0	1816	87.0				14" Flange		
	1400	3065	85.0	2900	140.0	2810	175.0	2700	215.0	2600	250.0	2523	279.6	2990	70.0	2800	92.0	2625	114.0	2562	114.0				21" O.D.		
	1700	3800	115.0	3630	175.0	3520	220.0	3400	265.0	3300	315.0	3243	348.8	3720	94.0	3540	120.0	3340	143.0	3309	144.8				Discharge		
	2000	4530	145.0	4360	215.0	4240	270.0	4120	320.0	4000	375.0	3963	416.2	4480	122.0	4280	148.0	4080	175.0	4055	178.1				12" Flange		
	2200	4988	171.6	4843	240.6	4734	303.1	4625	362.5	4516	425.4	4443	461.2	4974	139.8	4787	169.3	4599	193.9	4552	200.9				19" O.D.		
11CDL27	800	1760	50.0	1580	85.0	1440	115.0	1320	140.0					1725	40.0	1515	57.0	1310	74.0			57	33	29	Inlet	3340	
	1100	2600	75.0	2400	120.0	2280	160.0	2160	190.0	2040	230.0	1951	249.6	2590	57.0	2390	78.0	2190	99.0	2121	106.3				14" Flange		
	1400	3440	103.0	3240	155.0	3120	205.0	3000	250.0	2880	290.0	2791	322.7	3460	81.0	3260	106.0	3060	132.0	2989	137.0				21" O.D.		
	1700	4280	135.0	4080	200.0	3960	255.0	3840	310.0	3700	360.0	3630	402.2	4340	108.0	4130	137.0	3920	165.0	3856	170.1				Discharge		
	2000	5120	170.0	4920	250.0	4800	315.0	4680	380.0	4560	440.0	4469	484.2	5200	140.0	4990	168.0	4780	197.0	4724	203.9				12" Flange		
	2200	5677	197.2	5504	285.5	5374	357.2	5245	420.6	5115	496.9	5029	539.3	5762	161.5	5558	187.9	5353	218.2	5302	226.2				19" O.D.		
11CDL31	800	2020	60.0	1825	95.0	1700	125.0	1575	155.0	1450	185.0			2100	45.0	1900	62.0	1700	80.0	1677	83.4	61	33	29	Inlet	3530	
	1100	3000	80.0	2800	135.0	2690	170.0	2565	210.0	2440	250.0	2342	272.7	3040	65.0	2825	88.0	2610	108.0	2589	111.0				14" Flange		
	1400	3990	110.0	3780	175.0	3680	225.0	3555	275.0	3430	325.0	3327	352.4	3920	89.0	3720	117.0	3550	140.0	3501	143.8				21" O.D.		
	1700	4975	140.0	4770	225.0	4670	285.0	4550	345.0	4420	405.0	4312	445.1	4820	115.0	4645	147.0	4450	174.0	4413	181.6				Discharge		
	2000	5950	180.0	5760	280.0	5660	355.0	5550	430.0	5420	500.0	5297	547.2	5720	145.0	5550	180.0	5360	213.0	5324	223.5				12" Flange		
	2200	6611	201.8	6436	320.6	6304	403.2	6173	484.5	6042	559.3	5954	619.4	6333	169.1	6155	208.7	5977	244.1	5932	253.2				19" O.D.		

Performance data for air at standard conditions: sea level, 14.7 PSIA. 68°F Inlet temperature, 36% relative humidity. Contact Gardner Denver Blower Division for wet vacuum applications to 24" Hg.



The new CycloBlower® XP is a compact, helical lobe, axial flow, positive displacement blower/vacuum pump capable of up to 20 psig continuous pressure and 17" Hg dry continuous vacuum. The CycloBlower XP combines the most efficient rotor techniques with other features that provide benefits not found in other blower designs. The meshing of two screw-type rotors synchronized by timing gears provides controlled compression of air for maximum efficiency and shock-free discharge. As a result of improved manufacturing systems, assembly methods, and internal clearances, the new CycloBlower XP series allows higher operating speeds

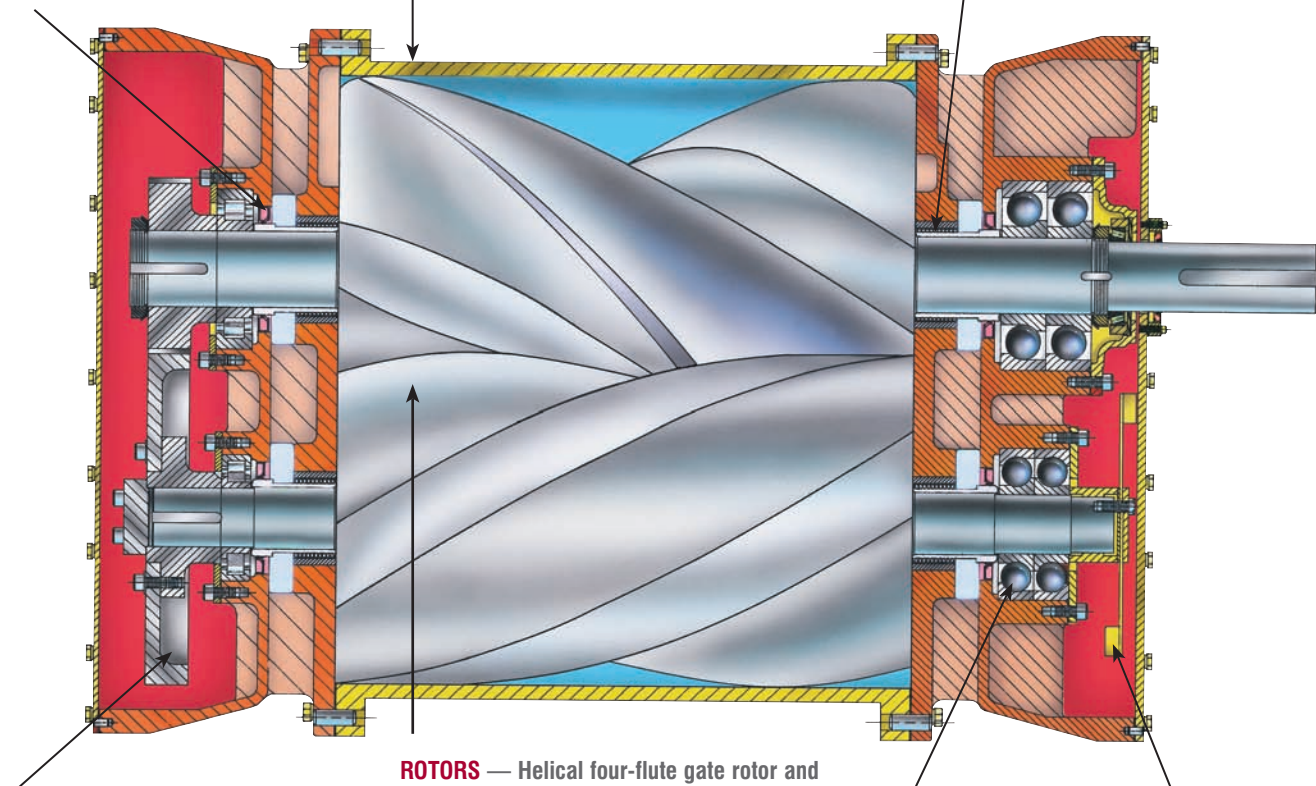
for increased flow capacities from a compact design. Blower performance efficiency is improved as a result of the higher operating speed capabilities of these blowers. The CycloBlower XP's simple design assures clean air or gas delivery, efficient shock-free compression, and dependable operation.

Unique CycloBlower® Design Features

OIL SEALS — Hydrodynamic oil seals automatically push lubricant back towards reservoir for superior sealing

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

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.



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

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

BEARINGS — Anti-friction bearings carry the shaft loads in all models. All models use pairs of angular-contact ball bearings on the discharge end and cylindrical roller bearings or single-row ball bearings on the gear end.

LUBRICATION — Basic design requires no lubrication of rotors. Gears and bearings are lubricated by a splash oil system. An oil pump is not required.



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



All CycloBlowers are manufactured to ISO 9001:2000 standards in our Sedalia, MO plant.

Warranty – CycloBlower Industrial XP Series Blowers/ Vacuum Pumps are warranted to be free of defects in materials and workmanship for a period of one (1) year from date of shipment.



CycloBlower® XP Service & Parts



- Factory Trained Service Professionals
- On-site, On-Demand Service
- System Optimization
- Re-manufacturing
- Training, Troubleshooting, and Consulting
- Preventative Maintenance Agreements
- Warranty Renewal Programs
- Genuine GD Quality Replacement Parts
- Highest Quality Lubricants & Accessories

Contact Your CycloBlower Representative

Other Gardner Denver Products Available

Sutorbilt Legend Series Blowers/Vacuum Pumps



DuroFlow Industrial Series Blowers/Vacuum Pumps



Sutorbilt Methane Gas Blowers/Vacuum Pumps



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For additional information contact your local representative or Gardner Denver, 1800 Gardner Expressway, Quincy, IL 62305
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Specification subject to change without notice.
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