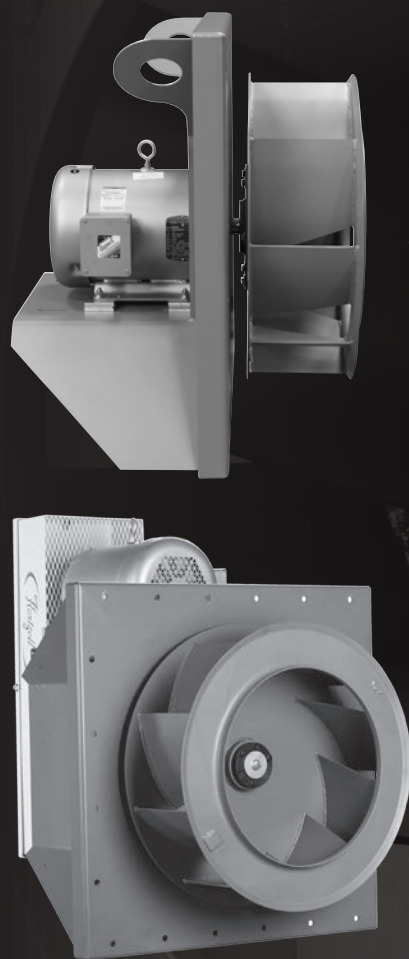


Hartzell

AIR MOVEMENT



Plug Fan
SERIES 12

**QUALITY AT
EVERY TURN**

The Hartzell Difference

Combine Hartzell QUALITY with your PRODUCT
for a BETTER CHOICE for your customers!

QUALITY AT EVERY TURN.

Hartzell Air Movement is the industrial fan manufacturer that produces high-quality, efficient and innovative air movement solutions for a wide variety of tough and demanding industries and applications. We're the choice for discerning customers, who know when it comes to industrial air movement there's – QUALITY AT EVERY TURN.

Customers choose Hartzell for our:

- Durability and high performance
- Low cost of ownership
- Leadership in performance testing and certification
- Advanced engineering and manufacturing processes
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Experienced Hartzell team to assist you
from design to shipping

ISO 9001:2008 Certification
AMCA Accredited Laboratory
Complete Fans and Blowers
Centrifugal Wheels
Airfoil Propellers

Hartzell Air Movement Advantages:

- A lifetime of value
 - Industrial fans are field proven, 100% tested, and virtually no incident of return
 - Energy efficient designs that provide a lower total cost of ownership
- Leadership in performance
 - Products certified by AMCA that meet DOE recommended efficiencies
 - Highly efficient industrial fan designs that are the quietest in the market
 - Airfoil shape wheels with industry leading measured efficiencies
 - Fiberglass products with a unique one piece wheel design that delivers consistent operational results
- Advanced engineering and manufacturing
 - Proven manufacturer techniques on state of the art equipment in ISO 9001:2008 manufacturing facilities
 - Engineering team utilizes the latest design tools in 3D CAD and other modeling software
 - Manufacturing
 - Powder coat paint system
 - Robotic welding
- Creative design and manufacturing team
 - Offering the greatest number of industrial fan design choices
 - Building products to meet your rigorous application instead of being limited to a catalog
 - Use of Hartzell-FLOW[®] fan selection software
 - FEA analysis capabilities
- Trusted brand name
 - Extensive talent pool bringing over 87 years of knowledge and experience to you
- 5-year warranty
 - The industry's first manufacturer that stands behind their products for a full 5-years



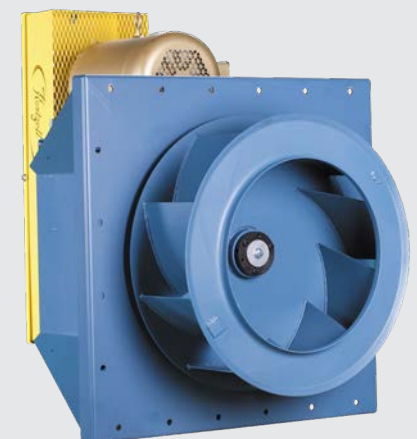
Series 12

Plug Fan

The Hartzell Series 12 Plug Fans incorporate the tested and proven Hartzell PL type wheel in an unboxed configuration. Plug fans are typically in a plenum as the fan enclosure, to be used primarily as air circulators in ovens, paint booths, evaporators, kilns, or other types of industrial dryers. The plug fan's self-contained mounting panel, with or without insulated plug, accommodates ease of installation to a properly supported plenum wall. Plug fans afford efficient air circulation with motor and drives outside the air stream in an easy to install and maintain configuration.

Features:

- Performance – 50,000 CFM; static pressure up to 12" W.G.
- Arrangements – Series 12 Plug Fans are available in arrangement 4 or 9, with or without motor and drives.
- Temperature – Three standard temperature ranges; up to 300°F, 300°F – 450°F, 450°F – 800°F. Higher temperature ranges, up to 1000°F available, please consult the factory. Maximum operating temperature for arrangement 4 is 200°F.
- Coating – Hartzell standard powder coat and high temperature powder coat.
- Sizes – 12" through 36" wheel diameters. Larger sizes available, please consult the factory.
- Standard Construction – The Hartzell Series 12 Plug Fans incorporate heavy industrial duty construction – designed for industrial service with ruggedness, use, long life, reliability, and performance taken together. Heavy-duty steel, welded and finished with an industrial grade powder coating, provides a durable and reliable finish.
- Construction Class – Class I, II, and III constructions are available at standard conditions. For Class IV construction, please consult the factory.
- Plug Panel – Industrial standard mounting panel. For non-standard mounting panel, consult factory.
- Wheel Design – Type PL wheels have single thickness airfoil blades. The heavy-duty steel construction is reinforced depending on size and class of construction. The wheel's inlet cone is a tapered spun orifice. The inlet cone is to be overlapped by the wheel's inlet rim with closely held tolerances to ensure maximum performance and efficiency.
- Rotation – Clockwise or counterclockwise rotations are available.
- Motors – Standard motors are totally enclosed fan cooled. Other motors are available, please consult the factory.
- Bearings – Fan bearings are heavy-duty, self-aligning, shielded and mechanically sealed, ball or roller type, in cast iron or malleable pillow block housing bearings. Bearings are selected for minimum L-50 life of 250,000 hours for horizontal shaft applications.
- Shaft and Drive Assembly – Shafts are turned, ground, polished, keyed at both ends, and sized to operate well below critical speed. Belts are oil, heat, and static resistant type, oversized for continuous duty.
- Balancing – Fans are electronically statically and dynamically balanced to the requirements of Fan Application Category BV-3 of AMCA/ANSI Std. 204-96 and all fans ship with an operation test and inspection report.
- Spark Resistant Construction – AMCA Type A, B, and C is available. Explosion proof motors are also available.



Options and Accessories

Shaft seal and extended lube for fan bearing is included in the standard construction.

High Temperature Construction

For temperatures 300°F through 450°F, fan package includes standard construction features, plus:

- Shaft Seal
- Heat Slinger
- High Temperature Powder Coat
- Motor Heat Shield

For temperatures 450°F through 800°F, add to the above features:

- Minimum 4" Insulated Plug
- High Temperature Grease

High Temperature Options:

- Motor Heat Shield (Above 300°F)
- Bearing Heat Shield (Above 450°F)
- Extended Shaft
- 2" Insulated Plug (Up to 450°F)
- 4" Insulated Plug
- 6" Insulated Plug

High temperature construction and insulated plug is available in arrangement 9 only.

Spark Resistant Construction

For safely handling of fumes and vapors, Hartzell offers three types of spark resistant construction. Types A, B, and C as outlined in AMCA Standard 99-0401-86.

Type A – All aluminum wheel and inlet cone with a ground and polished steel shaft covered with an aluminum sleeve. Aluminum cover plate on the face of the mounting panel. Temperature limitations of 250°F.

Type B – Aluminum wheel and aluminum sleeve on the shaft where the shaft passes through. Temperature limitations of 250°F.

Type C – Aluminum inlet cone and aluminum sleeve on the shaft where the shaft passes through. Temperature limitations of 500°F.

Notes: No bearings, drive components, or electrical components shall be placed in the air or gas stream. The user shall electrically ground all fan parts.

The use of the above standard in no way implies a guarantee of safety for any level of spark resistance. Spark resistant construction also does not protect against any airstream material that may be present in a system which might cause ignition of explosive gases.

Other Available accessories

- Belt guard – Covers motor and fan sheave and belts outside the fan, steel construction. (Arrangement 9 only)
- Shaft guard – Enclose the shaft assembly while permitting circulation of ambient air. (Arrangement 9 only)
- Mounted inlet cone.
- Customer specific mounting panel, plug size and mounting hole.



Belt Guard

Wheel Design

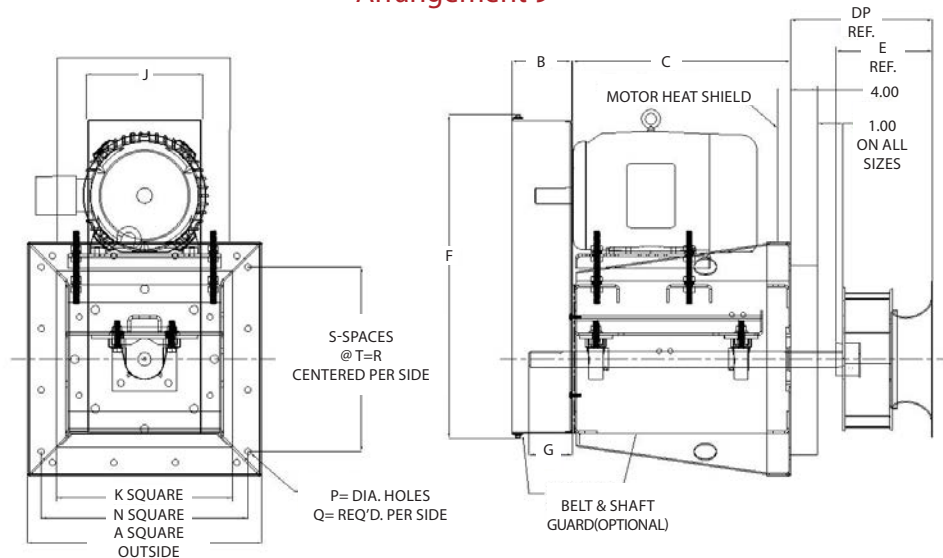
Type PL Wheel

The Hartzell Series 12 Plug Fans with type PL backward curved centrifugal wheels, have single thickness airfoil blades. The heavy-duty steel construction is reinforced depending on the size and class of construction. The blades are continuously welded on the backplate and the inlet rim. The inlet cone is to be overlapped by the wheel's inlet rim, inlet cone ships loose. The inlet cone should be installed with closely held tolerances to insure maximum performance and efficiency. Each wheel is individually precision balanced prior to assembly.



Dimensions

Arrangement 9



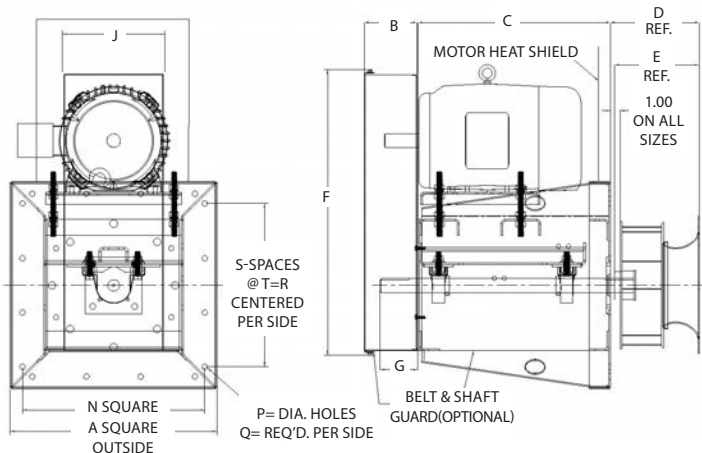
Refer to inlet cone mounting dimensions for mounting information page 4.

Principal Dimensions (inches)

Fan Size	A	B	C	D	E	F	G	J	N	P	Q	R	S	T
12.25	21	5 5/16	19 1/2	8 7/8	8 7/16	28 7/8	3 7/8	14	18 1/2	9/16	4	16 1/2	3	5 1/2
13.5	21	5 5/16	19 1/2	9 11/16	9 1/4	28 7/8	3 7/8	14	18 1/2	9/16	4	16 1/2	3	5 1/2
15	21	5 5/16	19 1/2	10 5/8	10 1/4	28 7/8	3 7/8	14	18 1/2	9/16	4	16 1/2	3	5 1/2
16.5	28	5 5/16	25 5/8	11 9/16	11 3/16	36 7/8	3 7/8	16	25 3/8	9/16	5	22	4	5 1/2
18.5	28	5 5/16	25 5/8	12 7/8	12 7/16	36 7/8	3 7/8	16	25 3/8	9/16	5	22	4	5 1/2
20	28	5 5/16	25 5/8	13 7/8	13 7/16	36 7/8	3 7/8	16	25 3/8	9/16	5	22	4	5 1/2
22	28	5 5/16	25 5/8	15 1/8	14 11/16	36 7/8	3 7/8	16	25 3/8	9/16	5	22	4	5 1/2
24.5	33	6 15/16	28 11/16	16 13/16	16 3/8	36 15/16	3 7/8	24	30 1/16	3/4	6	27 1/2	5	5 1/2
27	33	6 15/16	28 11/16	18 1/2	18	36 15/16	3 7/8	24	30 1/16	3/4	6	27 1/2	5	5 1/2
30	39	7 15/16	28 11/16	20 3/8	19 15/16	48 15/16	5	24	30 1/16	3/4	7	33	5	5 1/2

Dimension and specifications are subject to change. Certified prints are available.

Arrangement 9 with 2", 4", or 6" Insulated Plug

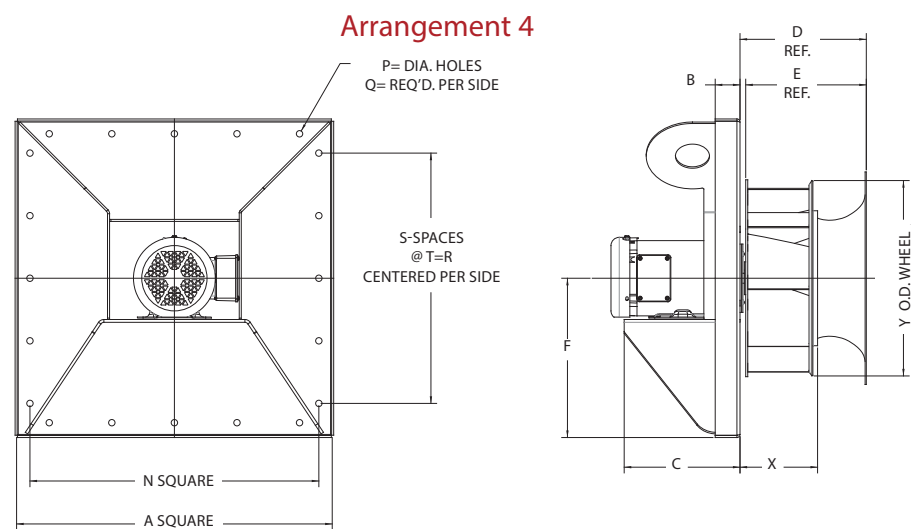


Principal Dimensions (inches)

Fan Size	K	Dp-2"	Dp-4"	Dp-6"
12.25	16 3/8	10 7/8	12 7/8	14 7/8
13.5	16 3/8	11 11/16	13 11/16	15 11/16
15	16 3/8	12 5/8	14 5/8	16 5/8
16.5	23 5/16	13 9/16	15 9/16	17 9/16
18.5	23 5/16	14 7/8	16 7/8	18 7/8
20	23 5/16	15 13/16	17 13/16	19 13/16
22	23 5/16	17 1/8	19 1/8	21 1/8
24.5	27 13/16	18 13/16	20 13/16	22 13/16
27	27 13/16	20 1/2	22 1/2	24 1/2
30	33 13/16	22 3/8	24 3/8	26 3/8

Dimension and specifications are subject to change. Certified prints are available.

Dimensions

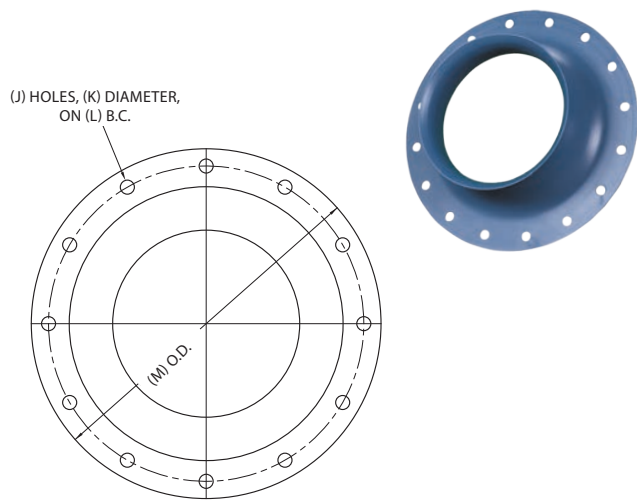


Principal Dimensions (inches)

Fan Size	A	B	C	D	E	F	P	Q	R	S	T	X	Y	N
12.25	21	2 1/8	10 1/8	8 7/16	7 7/8	10 1/2	9/16	4	16 1/2	3	5 1/2	5 3/8	12 3/4	18 1/2
13.5	21	2 1/8	10 1/8	9 3/16	8 11/16	10 1/2	9/16	4	16 1/2	3	5 1/2	5 3/4	14	18 1/2
15	21	2 1/8	10 1/8	10 1/8	9 5/8	10 1/2	9/16	4	16 1/2	3	5 1/2	6 5/16	15 5/8	18 1/2
16.5	28	2 3/16	10 3/16	11 1/8	10 5/8	14	9/16	5	22	4	5 1/2	6 13/16	17 3/16	25 3/8
18.5	28	2 3/16	10 3/16	12 7/16	11 7/8	14	9/16	5	22	4	5 1/2	7 1/2	19 1/4	25 3/8
20	28	2 3/16	10 3/16	13 7/8	12 7/8	14	9/16	5	22	4	5 1/2	8 5/8	20 13/16	25 3/8
22	28	2 3/16	10 3/16	15 1/8	14 1/8	14	9/16	5	22	4	5 1/2	9 5/16	22 15/16	25 3/8
24.5	33	2 1/4	16 1/4	16 9/16	15 9/16	16 1/2	3/4	6	27 1/2	5	5 1/2	10 1/4	25 1/2	30
27	33	2 1/4	16 1/4	18 1/4	17 1/4	16 1/2	3/4	6	27 1/2	5	5 1/2	11 1/4	28 1/8	30
30	39	2 1/4	18 1/4	20 3/8	19 7/16	19 1/2	3/4	7	33	6	5 1/2	12 5/16	31 1/4	36
33	39	2 1/4	20 1/4	23 3/16	21 5/16	19 1/2	3/4	7	33	6	5 1/2	14 1/4	34 3/8	36
36.5	46	2 1/4	20 1/4	25 3/8	23 9/16	23	3/4	8	38 1/2	7	5 1/2	15 1/2	38	43

Dimension and specifications are subject to change. Certified prints are available.

Inlet Cone Dimensions



Principal Dimensions (inches)

Fan Size	J	K	L	M
12.25	8	3/4	12 1/2	13 7/8
13.5	8	3/4	13 3/4	15 1/4
15	12	3/4	15 1/4	17
16.5	12	3/4	16 13/16	18 11/16
18.5	12	3/4	18 3/4	20 15/16
20	12	3/4	20 7/16	22 11/16
22	12	3/4	22 1/2	24 15/16
24.5	16	3/4	25	27 3/4
27	16	3/4	27 1/2	30 9/16
30	16	3/4	30 5/8	34
33	16	1	33 11/16	37 3/8
36.5	16	1	36 3/4	41 5/16

Dimension and specifications are subject to change. Certified prints are available.

Plug Fan Selection

When a fan operates in ambient conditions, generally it is handling standard air at 70°, 29.92" barometric pressure, weighing 0.075 lbs./cu. ft. For an application where the fan operates at other than ambient conditions (temperature, altitude, or both), correction factors must be applied to the selection of the fan. In addition, the standard construction of the fan must be modified.

Correction factors for temperatures and altitudes are provided in Table 1. When a fan operates at other than ambient conditions, the correction factors in Table 1 will be required to correct static pressure and horsepower.

Table 1: Altitude/Temperature Correction Factors

Temperature																
Temp (°F)	-25	0	25	50	70	100	150	200	250	300	350	400	450	500	550	600
Factor	0.82	0.87	0.91	0.96	1.00	1.06	1.15	1.25	1.34	1.43	1.53	1.62	1.72	1.81	1.91	2.00

Altitude										
Alt (Ft)	0	1000	2000	3000	4000	5000	6000	7000	8000	9000
Factor	1.00	1.04	1.08	1.12	1.16	1.20	1.25	1.30	1.35	1.40

Above table has inverted values. Actual density is the reciprocal of the above values. At sea level. At 70°F. For corrections involving both temperature and altitude, correction factors should be multiplied.

Example: 150°F at 7000 ft. Temperature factor 1.15 x altitude factor 1.30 = 1.50 combined correction factor.

Table 2: Speed Correction and Derating Factors

Temp (F)	Derating Factor			
	Steel	Corten	SST	Aluminum
0	1	1	1	0.97
70	1	1	1	0.95
200	1	1	1	0.84
300	0.96	1	0.94	0.73
400	0.93	1	0.90	
500	0.89	1	0.85	
600	0.86	1	0.83	
700	0.82	1	0.81	
800	0.77	0.96	0.79	

Table 4 shows the maximum safe operating speeds for each size fan wheel, at each class of construction.

At high temperatures, these maximum safe operating speeds should be derated. Deration varies according to material of construction. Table 2 provides maximum safe speed correction factors by temperature and material construction.

An example on the use of these tables appears at the bottom of this page.

Table 3: Belt Center Distance

Fan Size	Series 12		
	Max CD	Min CD	Motor Frame
12	11.68"	8"	56-215T
13	11.68"	8"	56-215T
15	11.68"	8"	56-215T
16	12.21"	9"	56-256T
18	12.21"	9"	56-256T
20	12.21"	9"	56-256T
22	12.21"	9"	56-256T
24	12.21"	9.19"	56-284T
27	11.85"	9.77"	143T-284T
30	16.08"	13.63"	143T-286T

Note: Measured from the Motor Base plate to the Fan Shaft

Example Plug Fan Selection:

Use of Altitude – Temperature Correction

Table First select size, RPM and BHP of the blower needed. If temperature or altitude is involved, correct to standard air. Example: Assume the required performance to be 22,000 CFM at 6.7" SP, 150°F and 7000 feet altitude.

- 1 Temperature factor 1.15 x altitude factor 1.30 = 1.50 combine correction factor.
- 2 6.7" SP x 1.50 = 10" SP for 70°F at sea level.
- 3 A Series 12, Class III, 30" Plug Fan, selected from the performance data tables for the new condition shows 22,000 CFM at 10" SP, 2,103 RPM and 51.14 BHP.
- 4 Correct the horsepower and static pressure in item 3 to nonstandard performance by dividing by factor: 10" SP

divided by 1.50 = 6.7" SP; 48.87 BHP divided by 1.50 = 34.09 BHP.

- 5 Check the maximum safe speed. Maximum speed at 70°F for fan size 30", Class III is 2,152 RPM. Using the maximum safe speed factor table and interpolating at 150°F for aluminum construction yields a safe speed factor of .985. The maximum safe speed is 2152 x 0.98 = 2120 RPM; thus operation at 2,103 RPM at 150°F is satisfactory.
- 6 Final performance of the unit at the assumed conditions: 22,000 CFM at 6.7" SP, 2,103 RPM, 34.09 BHP at 150°F and 7000 feet altitude.
- 7 Size motor for cold startups and use a special high altitude motor if altitude exceeds 3300 feet.

Material Specifications/Weights

Table 4: Safe Speed, Wheel Weight, and WR² (Arrangement 9)

Class	Fan Size	Maximum RPM				Wheel WT. (LBS)	WR ² (LBS-FT ²)	Maximum Frame	Installation Weight (Arr#9)	
		STD	2" PLUG	4" PLUG	6" PLUG				Bare Fan	4" Plug
I	12.25	3430	3430	3087	2709	16	2	215T	146	24
	13.5	3114	3114	2802	2460	19	2.5	215T	148	24
	15	2712	2712	2441	2142	23	4	215T	152	24
	16.5	2550	2550	2295	2014	27	5	256T	280	40
	18.5	2272	2272	2044	1795	36	11	256T	289	40
	20	2102	2102	1892	1660	45	14	256T	301	40
	22	1911	1911	1720	1510	54.5	19.5	256T	310	40
	24.5	1716	1716	1545	1355	78	48	284T	460	53
	27	1557	1557	1401	1230	121	60	284T	513	53
	30	1404	1401	1261	1107	148	91	286T	610	70
II	12.25	4212	4212	3791	3327	16	2	215T	149	24
	13.5	3822	3822	3435	3020	19	2.5	215T	151	24
	15	3440	3440	3096	2717	26	5	215T	155	24
	16.5	3127	3127	2814	2470	33	6	256T	294	40
	18.5	2789	2789	2510	2203	40	9	256T	300	40
	20	2580	2580	2322	2038	51	14	256T	312	40
	22	2345	2345	2110	1853	60.5	20	256T	322	40
	24.5	2106	2106	1895	1664	78	48	284T	480	53
	27	1911	1911	1720	1510	121	60	284T	532	53
	30	1720	1720	1548	1359	148	91	286T	630	70

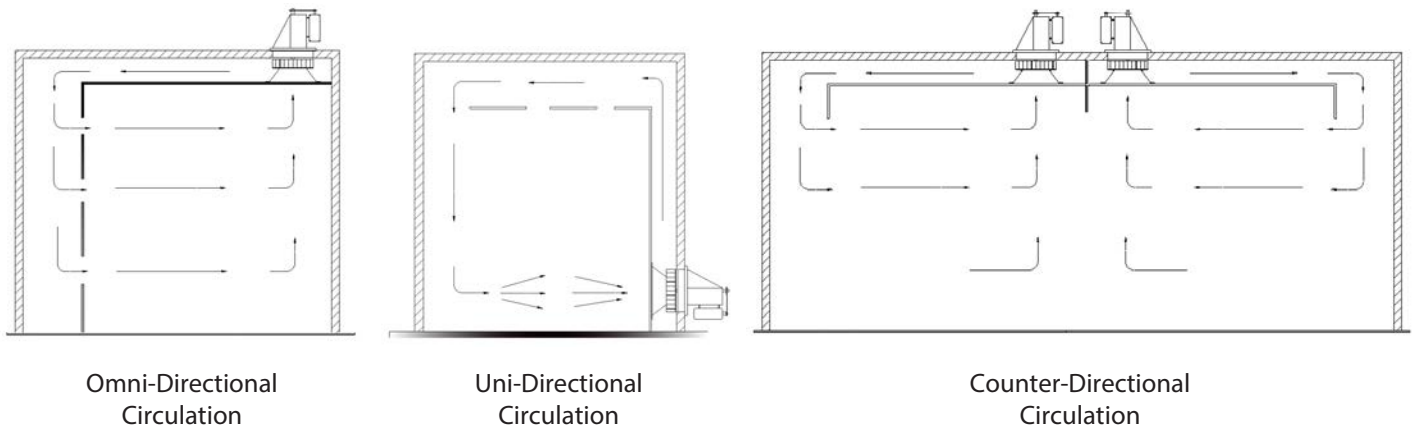
Installation weight (lbs.) is approximate.

Table 5: Maximum RPM, Wheel Weight, and WR² (Arrangement 4)

Fan Size	Maximum RPM		Wheel WT. (LBS)	WR ² (LBS-FT ²)	Motor	Fan Weight Less Motor (LBS)
	CL - I	CL - II				
12.25	3430	4212	16	2	143T-182T	60
13.5	3114	3822	19	2.5	143T-184T	64
15	2712	3440	23	4	143T	85
16.5	2550	3127	27	5	143T-145T	117
18.5	2272	2789	36	11	143T-184T	125
20	2102	2580	45	14	182T-184T	139
22	1911	2345	54.5	19.5	184T-213T	151
24.5	1716	2106	78	48	184T-215T	229
27	1557	1911	121	60	215T-256T	285
30	1404	1720	148	91	215T-256T	366
33	1274	1563	160	190	256T-286T	426
36	1152	1413	203	278	284T-324T	538

Installation weight (lbs.) is approximate.

Typical Plug Fan Installation



Performance Tables - Arrangement 4

A12-4-__PL100-__-__-__

Size	Model	Fan (Motor)		Peak Fan BHP	Cubic Feet Per Minute vs. Static Pressure															
		HP	RPM		0"	1/2"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"
12	12-4-121PL100ST__ F3	1/2	1750	0.36	1807	1592	1286													
	12-4-122PL100ST__ K2	3	3450	2.72	3563	3464	3360	3247	3122	2984	2833	2497	2156							
13	12-4-131PL100ST__ H3	1	1750	0.58	2419	2189	1879	1518												
	12-4-132PL100ST__ L2	5	3450	4.42	4769	4661	4548	4428	4300	4159	4006	3664	3294	2920						
15	12-4-151PL100ST__ I3	1 1/2	1750	1.00	3431	3177	2881	2527	2162											
	12-4-153PL100ST__ M2	7 1/2	3450	7.63	6763	6641	6515	6384	6249	6107	5959	5641	5293	4917	4553	4164				
16	12-4-161PL100ST__ K3	3	1750	1.60	4566	4291	3979	3618	3210	2802										
	12-4-163PL100ST__ O2	15	3450	12.28	9002	8868	8730	8588	8443	8292	8137	7806	7450	7066	6655	6240	5848	5356		
18	12-4-181PL100ST__ L3	5	1750	3.15	6575	6303	6025	5745	5450	5105	4653									
	12-4-183PL100ST__ Q2	25	3450	24.13	12962	12826	12688	12550	12411	12271	12130	11844	11562	11277	10982	10673	10334	9950	9510	8971
20	12-4-201PL100ST__ L3	5	1750	4.65	8308	8014	7715	7413	7106	6775	6383									
	12-4-203PL100ST__ S2	40	3450	35	16378	15632	15480	15174	14865	15632	15480	15174	14865	14561	14253	13935	13605	13255	12864	12431
22	12-4-221PL100ST__ M3	7 1/2	1750	7.49	11057	10735	10408	10074	9743	9402	9037	8116								
24	12-4-242PL100ST__ N3	10	1750	9.90	14762	14393	14011	13613	13204	12780	12326	11248								
27	12-4-272PL100ST__ P3	20	1750	16.09	19758	19352	18935	18505	18060	17608	17140	16113	14846							
30	12-4-301PL100ST__ N4	10	1160	7.94	17966	17278	16550	15787	14959	13995										
	12-4-303PL100ST__ R3	30	1750	27.25	27103	26654	26194	25723	25240	24744	24242	23192	22027	20648						
33	12-4-331PL100ST__ P4	20	1160	14.82	24353	23632	22879	22089	21273	20387	19346	16219								
	12-4-333PL100ST__ T3	50	1750	50.89	36739	36267	35787	35297	34797	34286	33764	32699	31582	30364	28911	27089	24756	20826		
36	12-4-361PL100ST__ Q4	25	1160	24.53	32952	32158	31336	30481	29597	28684	27706	25256	21419							
	12-4-363PL100ST__ W3	100	1750	84.24	49712	49191	48663	48125	47579	47024	46460	45299	44118	42884	41563	40088	38306	36158	33530	29698

Performances certified for installation Type A: free inlet/free outlet. Power ratings (BHP) do not include transmission losses.

Performance ratings do not include the effects of appurtenances (accessories). Performance data is based on standard air conditions (0.075 lb/cu. ft.).

Class I	Class II	Class III
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Performance Tables- Arrangement 9

A12-9-12_PL100_ _ _ _ _

Wheel Diameter – 12.25 in | Outlet Area – 1.068 sq. ft

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
800	749	1163	0.11														
1100	1030	1368	0.16	1624	0.30												
1400	1311	1594	0.24	1826	0.40	2024	0.57	2202	0.76								
1700	1592	1841	0.35	2039	0.53	2227	0.72	2394	0.93	2543	1.14						
2000	1873	2102	0.51	2271	0.70	2437	0.91	2597	1.14	2746	1.38	2876	1.62	3002	1.88	3125	2.16
2300	2154	2371	0.71	2516	0.92	2663	1.15	2807	1.40	2947	1.65	3080	1.92	3202	2.20	3315	2.49
2600	2434	2644	0.96	2772	1.19	2902	1.44	3032	1.70	3160	1.99	3284	2.27	3404	2.57	3519	2.88
2900	2715	2922	1.27	3036	1.52	3151	1.78	3268	2.07	3385	2.37	3499	2.69	3612	3.01	3721	3.33
3200	2996	3201	1.65	3305	1.92	3409	2.20	3514	2.50	3620	2.82	3725	3.16	3830	3.50	3932	3.85
3500	3277	3483	2.11	3577	2.39	3672	2.70	3768	3.01	3865	3.35	3961	3.70	4058	4.07	4153	4.44
3800	3558	3766	2.64	3853	2.95	3940	3.27	4028	3.61	4116	3.96	4205	4.33				
4100	3839	4050	3.26	4131	3.59												
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		6.5" S.P		7" S.P		7.5" S.P		8" S.P	
2100	1966	3303	2.55														
2175	2037	3346	2.64														
2250	2107	3392	2.72	3502	3.03												
2325	2177	3440	2.82	3547	3.13	3653	3.45										
2400	2247	3489	2.91	3594	3.23	3697	3.55										
2475	2317	3540	3.02	3642	3.33	3743	3.66	3843	4.00								
2550	2388	3591	3.12	3692	3.44	3790	3.78	3888	4.12	3984	4.47						
2625	2458	3643	3.23	3742	3.56	3839	3.89	3934	4.24	4029	4.59	4123	4.96				
2700	2528	3694	3.35	3794	3.68	3889	4.02	3982	4.36	4075	4.72	4166	5.09				
2775	2598	3744	3.47	3846	3.80	3940	4.14	4032	4.49	4122	4.86						
2850	2669	3794	3.59	3897	3.93	3991	4.28	4082	4.63	4171	4.99						
2925	2739	3844	3.71	3946	4.06	4043	4.41	4133	4.77								
3000	2809	3895	3.84	3996	4.19	4094	4.55	4185	4.92								
3075	2879	3946	3.98	4046	4.33	4144	4.70										
3150	2949	3998	4.11	4097	4.48	4194	4.84										
3225	3020	4050	4.26	4148	4.62												
3300	3090	4103	4.40	4200	4.78												

A12-9-13_PL100_ _ _ _ _

Wheel Diameter – 13.5 in | Outlet Area – 1.297 sq. ft

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1000	771	1070	0.14														
1300	1002	1222	0.19	1457	0.35												
1600	1234	1388	0.26	1607	0.44	1788	0.65	1961	0.87								
1900	1465	1568	0.36	1761	0.57	1939	0.79	2090	1.02	2233	1.28	2385	1.57				
2200	1696	1757	0.49	1927	0.71	2090	0.96	2242	1.21	2374	1.49	2499	1.78	2623	2.08	2756	2.43
2500	1927	1954	0.66	2103	0.90	2250	1.16	2392	1.44	2526	1.73	2646	2.04	2758	2.36	2867	2.69
2800	2159	2156	0.86	2287	1.12	2420	1.40	2551	1.70	2677	2.02	2798	2.34	2909	2.68	3011	3.03
3100	2390	2360	1.11	2478	1.38	2598	1.68	2718	2.01	2836	2.34	2950	2.69	3060	3.05	3165	3.42
3400	2621	2567	1.41	2674	1.70	2783	2.02	2893	2.36	3002	2.72	3109	3.09	3213	3.47	3314	3.86
3700	2853	2775	1.76	2873	2.07	2973	2.40	3074	2.76	3175	3.14	3274	3.53	3373	3.94	3469	4.35
4000	3084	2985	2.17	3076	2.50	3167	2.85	3260	3.22	3353	3.62	3446	4.03	3539	4.46	3630	4.89
4300	3315	3195	2.64	3280	2.99	3365	3.36	3450	3.75	3537	4.16	3624	4.59	3711	5.04	3796	5.50
4600	3546	3407	3.18	3486	3.55	3565	3.94	3645	4.35	3725	4.78	3807	5.22				
4900	3778	3619	3.79	3693	4.18	3768	4.59										
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		6.5" S.P		7" S.P		7.5" S.P		8" S.P	
2500	1927	2976	3.04	3092	3.43												
2600	2005	3018	3.15	3124	3.53	3237	3.93										
2700	2082	3063	3.27	3164	3.64	3267	4.04	3377	4.46								
2800	2159	3110	3.39	3208	3.77	3305	4.16	3406	4.58	3512	5.02						
2900	2236	3159	3.52	3254	3.90	3348	4.30	3442	4.71	3541	5.14	3643	5.60				
3000	2313	3209	3.66	3302	4.04	3393	4.44	3484	4.85	3575	5.28	3671	5.73	3770	6.21		
3100	2390	3260	3.80	3351	4.19	3441	4.59	3529	5.00	3617	5.43	3705	5.88	3799	6.35		
3200	2467	3312	3.95	3402	4.34	3489	4.75	3576	5.17	3661	5.60	3746	6.04				
3300	2544	3363	4.10	3453	4.50	3539	4.91	3624	5.34	3707	5.77	3790	6.22				
3400	2621	3412	4.26	3505	4.67	3590	5.08	3673	5.51	3755	5.95						
3500	2698	3462	4.42	3555	4.84	3642	5.26	3724	5.70	3804	6.14						
3600	2775	3512	4.59	3604	5.01	3694	5.45	3775	5.89								
3700	2853	3563	4.77	3654	5.20	3743	5.64										
3800	2930	3615	4.95	3705	5.39	3792	5.83										
3900	3007	3667	5.14	3756	5.58												
4000	3084	3719	5.33	3807	5.78												
4100	3161	3773	5.54														

Performances certified for installation Type A: free inlet/free outlet. Power ratings (BHP) do not include transmission losses.
Performance ratings do not include the effects of appurtenancaces (accessories). Performance data is based on standard air conditions (0.075 lb/cu. ft.).

A12-9-15_PL100

Wheel Diameter – 15 in | Outlet Area – 1.602 sq. ft

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1000	624	851	0.12														
1500	936	1025	0.20	1229	0.36												
2000	1248	1222	0.31	1406	0.51	1559	0.73	1702	0.96	1860	1.23						
2500	1561	1439	0.50	1595	0.70	1740	0.97	1869	1.24	1984	1.51	2098	1.80	2221	2.12		
3000	1873	1667	0.76	1801	1.00	1929	1.25	2051	1.56	2165	1.90	2266	2.22	2362	2.55	2457	2.89
3500	2185	1903	1.11	2019	1.39	2132	1.66	2242	1.95	2347	2.31	2448	2.70	2544	3.09	2629	3.47
4000	2497	2144	1.56	2245	1.88	2346	2.19	2444	2.50	2540	2.83	2634	3.23	2725	3.66	2812	4.10
4500	2809	2388	2.12	2478	2.49	2568	2.85	2657	3.19	2745	3.54	2830	3.90	2914	4.33	2997	4.79
5000	3121	2634	2.81	2715	3.22	2796	3.63	2877	4.02	2957	4.40	3036	4.79	3114	5.19	3190	5.62
5500	3433	2881	3.64	2956	4.09	3030	4.55	3103	4.99	3177	5.41	3249	5.83	3321	6.26	3392	6.69
6000	3745	3130	4.63	3199	5.13	3267	5.62	3334	6.11	3401	6.59						
6500	4057	3380	5.80														
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		6.5" S.P		7" S.P		7.5" S.P		8" S.P	
2900	1810	2531	3.15	2640	3.53												
3050	1904	2566	3.30	2667	3.68	2770	4.08										
3200	1998	2612	3.47	2701	3.84	2797	4.24	2896	4.67								
3350	2091	2661	3.65	2746	4.03	2831	4.42	2923	4.85	3017	5.29	3113	5.75				
3500	2185	2713	3.84	2794	4.23	2876	4.63	2957	5.04	3045	5.48	3135	5.94	3226	6.41		
3650	2278	2766	4.05	2845	4.44	2924	4.85	3002	5.27	3080	5.70	3164	6.15	3250	6.63	3337	7.12
3800	2372	2821	4.26	2899	4.67	2975	5.08	3050	5.51	3124	5.94	3200	6.39	3280	6.86	3362	7.35
3950	2466	2877	4.48	2953	4.90	3027	5.33	3100	5.76	3173	6.20	3244	6.65	3317	7.11	3393	7.60
4100	2559	2931	4.69	3009	5.14	3082	5.58	3153	6.02	3223	6.47	3293	6.93	3362	7.40	3431	7.88
4250	2653	2985	4.90	3064	5.38	3137	5.84	3207	6.30	3275	6.76	3343	7.22	3410	7.70		
4400	2747	3040	5.12	3118	5.62	3193	6.11	3262	6.58	3329	7.05	3395	7.53				
4550	2840	3095	5.35	3172	5.85	3247	6.37	3318	6.88	3384	7.36						
4700	2934	3151	5.60	3227	6.10	3301	6.63	3372	7.16								
4850	3027	3208	5.85	3282	6.36	3355	6.90	3426	7.44								
5000	3121	3265	6.12	3338	6.64	3410	7.18										
5150	3215	3323	6.40	3395	6.92												
5300	3308	3382	6.70														

A12-9-16_PL100

Wheel Diameter – 16.5 in | Outlet Area – 1.938 sq. ft

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	774	846	0.19														
2000	1032	985	0.27	1163	0.49	1325	0.72										
2500	1290	1136	0.40	1300	0.65	1438	0.92	1564	1.20	1699	1.52						
3000	1548	1299	0.60	1443	0.84	1575	1.16	1692	1.49	1798	1.81	1902	2.16	2016	2.54		
3500	1806	1470	0.85	1596	1.12	1716	1.43	1829	1.80	1932	2.19	2025	2.57	2115	2.96	2204	3.36
4000	2064	1646	1.17	1757	1.48	1865	1.79	1969	2.17	2068	2.59	2162	3.04	2247	3.47	2327	3.91
4500	2321	1826	1.56	1925	1.93	2022	2.27	2117	2.63	2210	3.06	2299	3.53	2384	4.03	2464	4.54
5000	2579	2007	2.05	2097	2.46	2185	2.85	2273	3.23	2358	3.63	2441	4.10	2522	4.62	2600	5.17
5500	2837	2191	2.63	2272	3.08	2353	3.52	2433	3.94	2512	4.37	2590	4.81	2666	5.32	2740	5.88
6000	3095	2376	3.32	2451	3.82	2525	4.31	2599	4.77	2672	5.23	2744	5.69	2815	6.18	2885	6.71
6500	3353	2561	4.13	2631	4.66	2700	5.20	2768	5.72	2836	6.22	2904	6.71	2970	7.22	3036	7.74
7000	3611	2748	5.07	2813	5.64	2877	6.22	2940	6.79	3004	7.34	3067	7.87				
7500	3869	2936	6.14	2996	6.76	3056	7.37	3115	7.99								
8000	4127	3123	7.36														
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		6.5" S.P		7" S.P		7.5" S.P		8" S.P	
3300	1702	2274	3.62														
3500	1806	2300	3.80	2399	4.26												
3700	1909	2335	4.00	2426	4.46	2520	4.95										
3900	2012	2381	4.23	2461	4.68	2547	5.17	2636	5.68								
4100	2115	2431	4.48	2507	4.94	2584	5.42	2665	5.92	2749	6.46	2834	7.01				
4300	2218	2483	4.74	2557	5.21	2629	5.70	2702	6.20	2779	6.72	2859	7.28	2940	7.85		
4500	2321	2538	5.01	2609	5.50	2679	6.00	2749	6.51	2818	7.03	2890	7.57	2966	8.15	3043	8.74
4700	2425	2593	5.30	2663	5.81	2731	6.31	2798	6.83	2865	7.36	2931	7.91	2999	8.47	3071	9.06
4900	2528	2648	5.59	2718	6.12	2785	6.65	2850	7.18	2914	7.72	2978	8.27	3042	8.84	3106	9.41
5100	2631	2702	5.87	2774	6.45	2840	6.99	2904	7.54	2966	8.09	3028	8.66	3090	9.23		
5300	2734	2757	6.16	2828	6.76	2896	7.35	2959	7.92	3020	8.49	3080	9.06				
5500	2837	2812	6.47	2882	7.08	2950	7.69	3015	8.31	3075	8.89						
5700	2941	2868	6.79	2937	7.41	3004	8.04	3069	8.68								
5900	3044	2925	7.13	2993	7.76	3059	8.40	3123	9.06								
6100	3147	2983	7.49	3049	8.13	3114	8.78										
6300	3250	3041	7.88	3106	8.51												
6500	3353	3100	8.29														

Performances certified for installation Type A: free inlet/free outlet. Power ratings (BHP) do not include transmission losses.
 Performance ratings do not include the effects of appurtenances (accessories). Performance data is based on standard air conditions (0.075 lb/cu.ft.).

Most efficient selections in bold face

Class I	Class II	Class III
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CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	985	806	0.30	971	0.55												
3200	1313	983	0.49	1101	0.77	1224	1.09	1352	1.47								
4000	1641	1174	0.78	1270	1.11	1365	1.46	1462	1.85	1561	2.28	1664	2.74	1767	3.24		
4800	1970	1371	1.18	1455	1.56	1533	1.96	1612	2.38	1692	2.83	1774	3.31	1857	3.82	1942	4.37
5600	2298	1571	1.72	1647	2.15	1716	2.60	1783	3.07	1850	3.56	1919	4.07	1988	4.60	2057	5.16
6400	2626	1775	2.43	1842	2.91	1906	3.41	1966	3.92	2025	4.46	2083	5.02	2142	5.59	2202	6.18
7200	2954	1980	3.32	2041	3.85	2100	4.40	2155	4.97	2208	5.55	2261	6.15	2313	6.77	2365	7.40
8000	3283	2187	4.41	2242	5.00	2296	5.60	2348	6.22	2397	6.85	2445	7.50	2493	8.16	2540	8.84
8800	3611	2395	5.74	2446	6.38	2495	7.04	2543	7.71	2590	8.39	2635	9.08	2679	9.80	2722	10.52
9600	3939	2603	7.32	2650	8.02	2696	8.72	2741	9.45	2785	10.18	2828	10.93	2869	11.69	2909	12.46
10400	4268	2813	9.18	2856	9.93	2899	10.69	2941	11.46	2982	12.25	3022	13.05	3062	13.86	3100	14.68
11200	4596	3022	11.34	3063	12.15	3103	12.96	3142	13.79	3181	14.62	3219	15.47	3257	16.34	3293	17.21
12000	4924	3233	13.83	3271	14.68	3308	15.55	3345	16.43	3382	17.32	3418	18.22	3453	19.13	3488	20.06
12800	5252	3443	16.66	3479	17.57												
		5" S.P		6" S.P		7" S.P		8" S.P		9" S.P		10" S.P		11" S.P		12" S.P	
4800	1970	2114	5.55														
5200	2134	2152	5.94	2311	7.23												
5600	2298	2200	6.37	2347	7.69	2495	9.09										
6000	2462	2258	6.86	2393	8.19	2530	9.63	2669	11.12								
6400	2626	2324	7.41	2448	8.75	2574	10.20	2703	11.74	2833	13.34						
6800	2790	2395	8.03	2510	9.38	2628	10.84	2747	12.39	2868	14.03	2990	15.72	3114	17.43		
7200	2954	2471	8.71	2579	10.09	2688	11.54	2799	13.11	2912	14.76	3027	16.50	3142	18.29	3259	20.09
7600	3119	2551	9.44	2652	10.86	2754	12.34	2858	13.90	2964	15.56	3071	17.31	3179	19.14	3288	21.02
8000	3283	2633	10.24	2729	11.69	2826	13.20	2923	14.78	3022	16.44	3123	18.20	3224	20.04	3327	21.95
8400	3447	2719	11.09	2809	12.59	2901	14.13	2993	15.74	3086	17.42	3180	19.17	3276	21.03	3373	22.95
8800	3611	2807	12.01	2892	13.55	2979	15.14	3067	16.78	3155	18.48	3244	20.25	3334	22.09	3426	24.03
9200	3775	2897	12.99	2978	14.58	3060	16.21	3144	17.89	3228	19.62	3312	21.41	3398	23.27	3484	25.20
9600	3939	2988	14.04	3066	15.67	3144	17.35	3224	19.07	3304	20.84	3384	22.66	3465	24.54		
10000	4103	3081	15.16	3156	16.84	3231	18.56	3306	20.33	3382	22.14	3459	24.00				
10400	4268	3174	16.36	3247	18.08	3319	19.85	3391	21.67	3463	23.52						
10800	4432	3268	17.63	3339	19.40	3409	21.21	3478	23.07								
11200	4596	3363	18.98	3432	20.80	3499	22.66										

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	702	637	0.23														
3000	1053	778	0.39	918	0.68	1067	1.04										
4000	1404	958	0.65	1060	1.00	1164	1.38	1273	1.82	1385	2.31						
5000	1755	1149	1.06	1233	1.46	1314	1.89	1397	2.36	1482	2.86	1569	3.41	1658	4.01	1748	4.63
6000	2107	1345	1.62	1419	2.09	1488	2.58	1555	3.10	1624	3.64	1694	4.21	1764	4.82	1836	5.46
7000	2458	1545	2.39	1611	2.92	1672	3.47	1731	4.05	1789	4.65	1847	5.27	1906	5.91	1966	6.58
8000	2809	1747	3.39	1806	3.98	1862	4.60	1915	5.23	1967	5.89	2017	6.57	2068	7.27	2119	7.98
9000	3160	1951	4.65	2004	5.31	2056	5.99	2105	6.69	2152	7.41	2198	8.14	2243	8.90	2288	9.67
10000	3511	2156	6.21	2205	6.94	2252	7.68	2297	8.44	2341	9.23	2383	10.02	2425	10.83	2466	11.67
11000	3862	2363	8.10	2407	8.89	2450	9.70	2492	10.53	2534	11.38	2573	12.24	2612	13.11	2650	14.00
12000	4213	2570	10.35	2610	11.21	2650	12.09	2690	12.98	2728	13.89	2766	14.82	2802	15.75	2838	16.70
13000	4564	2777	13.00	2815	13.93	2852	14.88	2889	15.83	2925	16.81	2960	17.80	2995	18.80	3029	19.81
14000	4915	2985	16.08	3020	17.08	3055	18.09	3089	19.11	3123	20.16	3156	21.21	3189	22.27	3221	23.35
15000	5266	3193	19.62	3226	20.69												
		5" S.P		6" S.P		7" S.P		8" S.P		9" S.P		10" S.P		11" S.P		12" S.P	
6000	2107	1984	6.87	2134	8.36												
6450	2265	2025	7.34	2163	8.88												
6900	2423	2075	7.87	2202	9.43	2331	11.10	2463	12.82								
7350	2581	2132	8.48	2249	10.04	2369	11.73	2490	13.52	2614	15.36						
7800	2739	2194	9.15	2303	10.72	2414	12.42	2527	14.24	2642	16.14	2758	18.09				
8250	2897	2261	9.89	2362	11.49	2466	13.19	2571	15.02	2679	16.95	2787	18.96	2896	21.02		
8700	3055	2330	10.69	2426	12.33	2523	14.05	2622	15.87	2722	17.82	2824	19.85	2926	21.97	3030	24.14
9150	3213	2403	11.56	2493	13.24	2585	14.99	2678	16.82	2772	18.77	2867	20.82	2964	22.96	3061	25.18
9600	3371	2478	12.49	2564	14.21	2651	16.00	2738	17.87	2826	19.81	2916	21.87	3008	24.03	3100	26.27
10050	3529	2556	13.49	2636	15.26	2719	17.09	2802	18.99	2886	20.96	2971	23.01	3057	25.18	3144	27.44
10500	3687	2635	14.55	2712	16.38	2790	18.26	2869	20.20	2949	22.20	3029	24.28	3110	26.43	3193	28.70
10950	3845	2715	15.69	2789	17.57	2863	19.50	2939	21.48	3015	23.53	3092	25.63	3169	27.81	3247	30.06
11400	4003	2797	16.90	2868	18.83	2939	20.82	3011	22.85	3084	24.93	3157	27.08	3231	29.29		
11850	4161	2880	18.20	2948	20.18	3017	22.21	3085	24.30	3155	26.42	3225	28.61				
12300	4319	2963	19.57	3030	21.60	3096	23.68	3161	25.82	3227	28.01						
12750	4476	3047	21.03	3112	23.11	3176	25.25	3239	27.43								
13200	4634	3132	22.57	3195	24.71												

Performances certified for installation Type A: free inlet/free outlet. Power ratings (BHP) do not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories). Performance data is based on standard air conditions (0.075 lb/cu.ft.).

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	696	577	0.27														
3600	1045	703	0.46	832	0.82	969	1.26										
4800	1393	865	0.78	958	1.19	1055	1.66	1154	2.19	1257	2.78						
6000	1741	1037	1.25	1114	1.74	1189	2.26	1265	2.82	1343	3.43	1423	4.10	1504	4.81	1587	5.56
7200	2089	1214	1.92	1281	2.48	1344	3.08	1406	3.70	1469	4.35	1533	5.04	1598	5.77	1664	6.55
8400	2437	1394	2.83	1454	3.47	1510	4.13	1564	4.82	1617	5.55	1670	6.29	1725	7.07	1780	7.87
9600	2786	1576	4.01	1630	4.72	1681	5.46	1730	6.23	1777	7.02	1823	7.84	1870	8.68	1917	9.54
10800	3134	1760	5.50	1809	6.29	1856	7.11	1900	7.95	1943	8.81	1985	9.70	2027	10.61	2068	11.54
12000	3482	1945	7.34	1989	8.22	2032	9.11	2074	10.03	2114	10.97	2153	11.92	2191	12.90	2228	13.90
13200	3830	2131	9.57	2171	10.53	2211	11.50	2250	12.50	2287	13.51	2324	14.54	2359	15.59	2394	16.66
14400	4178	2317	12.23	2355	13.27	2391	14.32	2427	15.40	2462	16.49	2497	17.60	2530	18.72	2563	19.87
15600	4527	2504	15.36	2539	16.48	2573	17.61	2607	18.77	2640	19.93	2672	21.12	2704	22.32	2735	23.54
16800	4875	2692	18.99	2724	20.20	2756	21.41	2787	22.64	2818	23.89	2849	25.15	2879	26.43	2908	27.73
18000	5223	2879	23.18	2910	24.46	2940	25.75										
		5" S.P		6" S.P		7" S.P		8" S.P		9" S.P		10" S.P		11" S.P		12" S.P	
7000	2031	1788	8.06														
7600	2205	1826	8.66	1955	10.51	2087	12.42										
8200	2379	1874	9.34	1992	11.22	2111	13.23	2233	15.29								
8800	2553	1929	10.12	2037	12.02	2147	14.06	2259	16.22	2372	18.42						
9400	2728	1991	11.01	2090	12.91	2192	14.97	2295	17.16	2400	19.47	2505	21.81				
10000	2902	2057	12.00	2149	13.93	2243	15.99	2339	18.20	2436	20.54	2534	22.97	2634	25.47	2734	27.99
10600	3076	2127	13.07	2214	15.06	2301	17.14	2390	19.35	2480	21.71	2572	24.17	2665	26.74	2758	29.39
11200	3250	2200	14.25	2282	16.29	2364	18.42	2447	20.64	2531	22.99	2617	25.48	2703	28.08	2791	30.77
11800	3424	2276	15.51	2353	17.62	2430	19.80	2508	22.07	2587	24.43	2667	26.91	2749	29.53	2831	32.26
12400	3598	2355	16.88	2426	19.05	2500	21.29	2574	23.61	2648	26.01	2724	28.50	2800	31.12	2877	33.86
13000	3772	2435	18.34	2503	20.59	2572	22.89	2642	25.27	2713	27.72	2784	30.25	2856	32.87	2929	35.60
13600	3946	2516	19.92	2582	22.23	2647	24.61	2714	27.04	2781	29.55	2849	32.13	2917	34.78		
14200	4120	2599	21.61	2662	23.99	2724	26.44	2787	28.94	2851	31.51	2916	34.14				
14800	4294	2682	23.42	2743	25.87	2803	28.38	2863	30.96	2924	33.59						
15400	4469	2766	25.35	2825	27.87	2883	30.45	2941	33.10								
16000	4643	2851	27.41	2908	30.00												
16600	4817	2937	29.60														

A12-9-24_PL100_-----

Wheel Diameter – 24.5 in | Outlet Area – 4,274 sq. ft

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	1404	812	0.91	907	1.43	1008	2.05										
7200	1685	939	1.31	1019	1.91	1098	2.55	1181	3.28	1285	4.23						
8400	1965	1070	1.83	1139	2.52	1207	3.23	1275	3.99	1345	4.81	1422	5.75	1518	6.96		
9600	2246	1203	2.49	1265	3.28	1325	4.07	1384	4.89	1444	5.75	1504	6.67	1568	7.65	1639	8.80
10800	2527	1338	3.31	1395	4.19	1449	5.08	1501	5.98	1554	6.91	1607	7.87	1660	8.87	1715	9.93
12000	2808	1475	4.32	1526	5.29	1576	6.28	1624	7.26	1671	8.27	1719	9.29	1766	10.35	1813	11.44
13200	3088	1612	5.52	1659	6.59	1705	7.67	1750	8.75	1793	9.84	1836	10.95	1879	12.07	1922	13.23
14400	3369	1751	6.95	1794	8.11	1836	9.28	1878	10.47	1918	11.65	1958	12.84	1998	14.04	2037	15.26
15600	3650	1890	8.62	1930	9.87	1969	11.14	2008	12.42	2046	13.70	2083	14.98	2120	16.26	2156	17.57
16800	3931	2029	10.55	2066	11.90	2103	13.26	2139	14.63	2175	16.01	2210	17.39	2245	18.76	2279	20.15
18000	4212	2169	12.76	2204	14.20	2238	15.65	2272	17.12	2306	18.59	2339	20.08	2372	21.55	2404	23.03
19200	4492	2309	15.28	2342	16.81	2374	18.36	2406	19.92	2438	21.48	2469	23.06	2500	24.65	2531	26.22
20400	4773	2449	18.12	2480	19.74	2511	21.38	2541	23.03	2571	24.69	2601	26.36	2630	28.04		
21600	5054	2590	21.30	2619	23.02	2648	24.75										
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		7" S.P		8" S.P		9" S.P		10" S.P	
11500	2691	1822	11.91	1875	13.10	1932	14.39	1998	15.95								
12000	2808	1862	12.58	1911	13.77	1963	15.03	2017	16.39	2149	19.77						
12500	2925	1904	13.31	1950	14.50	1998	15.76	2048	17.07	2161	20.17	2293	23.90				
13000	3042	1947	14.08	1992	15.29	2037	16.55	2083	17.86	2181	20.70	2300	24.29				
13500	3159	1993	14.91	2035	16.14	2078	17.41	2121	18.72	2212	21.51	2315	24.79	2435	28.72		
14000	3276	2039	15.78	2079	17.03	2120	18.32	2162	19.64	2247	22.43	2337	25.46	2445	29.21	2564	33.42
14500	3393	2086	16.70	2125	17.98	2164	19.28	2204	20.62	2285	23.42	2369	26.42	2462	29.82	2571	33.91
15000	3510	2134	17.66	2172	18.97	2210	20.31	2248	21.66	2325	24.48	2404	27.47	2488	30.69	2585	34.52
15500	3627	2183	18.68	2219	20.01	2256	21.37	2293	22.75	2367	25.61	2442	28.61	2521	31.80	2604	35.27
16000	3744	2232	19.74	2268	21.11	2303	22.50	2339	23.90	2410	26.80	2482	29.82	2557	33.01	2634	36.40
16500	3861	2282	20.86	2317	22.25	2351	23.67	2386	25.10	2455	28.05	2524	31.10	2595	34.30		
17000	3978	2333	22.02	2366	23.45	2400	24.90	2433	26.36	2500	29.36	2567	32.45	2635	35.67		
17500	4095	2384	23.24	2417	24.70	2449	26.18	2482	27.67	2546	30.73	2611	33.86				
18000	4212	2436	24.51	2467	26.00	2499	27.51	2531	29.04	2594	32.15						
18500	4328	2488	25.83	2519	27.37	2549	28.91	2580	30.47	2641	33.64						
19000	4445	2540	27.22	2570	28.78	2600	30.36	2630	31.95								
19500	4562	2593	28.65	2622	30.25												

Performances certified for installation Type A: free inlet/free outlet. Power ratings (BHP) do not include transmission losses.

Performance ratings do not include the effects of appurtenances (accessories). Performance data is based on standard air conditions (0.075 lb/cu.ft.).

Most efficient selections in bold face

Class I	Class II	Class III
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CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7000	1349	715	1.02	804	1.64												
8500	1638	832	1.50	907	2.21	981	2.98	1060	3.86								
10000	1927	954	2.12	1018	2.95	1081	3.80	1144	4.71	1210	5.71	1285	6.90				
11500	2215	1078	2.93	1136	3.87	1190	4.82	1245	5.81	1300	6.85	1356	7.95	1414	9.16	1483	10.59
13000	2504	1204	3.93	1256	5.00	1305	6.06	1354	7.15	1402	8.27	1450	9.43	1499	10.64	1549	11.93
14500	2793	1332	5.17	1379	6.35	1424	7.55	1468	8.74	1511	9.95	1554	11.19	1597	12.47	1641	13.80
16000	3082	1460	6.67	1503	7.97	1545	9.28	1585	10.59	1625	11.91	1664	13.25	1703	14.61	1742	16.02
17500	3371	1590	8.45	1629	9.86	1667	11.29	1705	12.73	1741	14.16	1778	15.61	1813	17.07	1849	18.56
19000	3660	1719	10.55	1755	12.07	1791	13.62	1826	15.17	1861	16.74	1894	18.29	1928	19.86	1961	21.45
20500	3949	1850	12.98	1883	14.62	1916	16.28	1949	17.95	1981	19.64	2013	21.33	2044	23.00	2075	24.69
22000	4238	1980	15.78	2012	17.54	2043	19.31	2073	21.10	2104	22.90	2134	24.71	2163	26.52	2192	28.32
23500	4527	2111	18.96	2140	20.84	2170	22.73	2198	24.63	2227	26.55	2255	28.48	2283	30.42	2311	32.35
25000	4816	2242	22.57	2270	24.57	2297	26.57	2324	28.59	2351	30.63	2378	32.67	2405	34.73		
26500	5105	2373	26.62	2400	28.73												
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		7" S.P		8" S.P		9" S.P		10" S.P	
13800	2659	1644	14.25	1693	15.70	1747	17.33										
14400	2774	1679	15.04	1725	16.48	1772	18.02	1825	19.73								
15000	2890	1716	15.89	1759	17.34	1803	18.86	1849	20.47								
15600	3005	1755	16.81	1795	18.27	1837	19.79	1880	21.39	1972	24.91						
16200	3121	1795	17.78	1834	19.26	1873	20.80	1913	22.39	1997	25.79	2095	29.90				
16800	3237	1836	18.81	1873	20.32	1911	21.87	1949	23.47	2028	26.85	2112	30.60				
17400	3352	1878	19.89	1914	21.43	1950	23.01	1986	24.62	2061	28.02	2139	31.67	2228	35.94		
18000	3468	1921	21.03	1956	22.60	1990	24.21	2025	25.85	2096	29.26	2170	32.90	2247	36.83		
18600	3583	1964	22.22	1998	23.83	2032	25.47	2065	27.14	2133	30.58	2203	34.22	2276	38.11	2356	42.47
19200	3699	2008	23.48	2041	25.12	2074	26.79	2106	28.49	2172	31.99	2238	35.64	2307	39.51	2379	43.65
19800	3814	2053	24.79	2085	26.47	2116	28.18	2148	29.91	2211	33.46	2275	37.15	2341	41.03		
20400	3930	2098	26.16	2129	27.88	2160	29.62	2190	31.39	2252	35.00	2314	38.74	2376	42.63		
21000	4046	2144	27.60	2174	29.35	2204	31.13	2233	32.93	2293	36.62	2353	40.40				
21600	4161	2190	29.09	2219	30.89	2248	32.71	2277	34.55	2335	38.29	2393	42.14				
22200	4277	2236	30.66	2265	32.49	2293	34.35	2321	36.23	2378	40.04						
22800	4392	2283	32.28	2311	34.16	2338	36.06	2366	37.98								
23400	4508	2330	33.98	2357	35.91	2384	37.84										

CFM	OV	0.5" S.P		1" S.P		1.5" S.P		2" S.P		2.5" S.P		3" S.P		3.5" S.P		4" S.P	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	936	507	0.70														
8000	1248	608	1.10	696	1.83												
10000	1560	720	1.68	790	2.52	861	3.46	943	4.61								
12000	1873	838	2.46	897	3.45	955	4.48	1014	5.59	1076	6.82						
14000	2185	958	3.50	1011	4.64	1061	5.81	1110	7.02	1160	8.29	1212	9.65	1266	11.14	1331	12.98
16000	2497	1081	4.82	1127	6.13	1172	7.44	1216	8.78	1259	10.15	1303	11.59	1347	13.08	1392	14.67
18000	2809	1205	6.48	1247	7.94	1287	9.42	1327	10.90	1365	12.40	1404	13.94	1443	15.53	1481	17.17
20000	3121	1330	8.51	1368	10.12	1405	11.76	1441	13.41	1476	15.05	1511	16.72	1546	18.43	1580	20.16
22000	3433	1456	10.95	1490	12.72	1524	14.52	1558	16.33	1590	18.13	1622	19.94	1654	21.78	1685	23.64
24000	3745	1582	13.86	1614	15.78	1645	17.73	1676	19.70	1706	21.68	1736	23.63	1765	25.61	1795	27.60
26000	4057	1709	17.26	1738	19.34	1767	21.44	1796	23.56	1824	25.69	1852	27.84	1880	29.97	1907	32.10
28000	4369	1836	21.20	1863	23.44	1890	25.70	1917	27.97	1943	30.26	1970	32.56	1996	34.87	2021	37.16
30000	4681	1963	25.72	1988	28.11	2014	30.53	2039	32.95	2064	35.40	2089	37.85	2113	40.33	2138	42.80
32000	4994	2090	30.87	2114	33.42	2138	35.98	2162	38.57								
		4.5" S.P		5" S.P		5.5" S.P		6" S.P		7" S.P		8" S.P		9" S.P		10" S.P	
16000	2497	1440	16.37	1494	18.36												
16750	2614	1468	17.23	1514	19.04	1567	21.16										
17500	2731	1499	18.19	1541	19.97	1585	21.88	1636	24.12								
18250	2848	1532	19.23	1572	21.01	1612	22.89	1655	24.89								
19000	2965	1567	20.34	1604	22.14	1643	24.02	1682	25.99	1769	30.49						
19750	3082	1603	21.54	1639	23.36	1675	25.24	1712	27.21	1789	31.43	1882	36.66				
20500	3199	1640	22.80	1674	24.65	1709	26.56	1744	28.53	1816	32.71	1896	37.47				
21250	3316	1678	24.13	1711	26.02	1744	27.95	1777	29.94	1845	34.13	1917	38.65	2001	44.09		
22000	3433	1717	25.53	1749	27.46	1780	29.43	1812	31.45	1877	35.65	1944	40.14	2016	45.08	2103	51.14
22750	3550	1756	27.00	1787	28.98	1818	30.99	1848	33.03	1910	37.27	1974	41.77	2041	46.57	2116	52.12
23500	3667	1797	28.55	1826	30.57	1856	32.62	1885	34.71	1945	39.00	2006	43.51	2069	48.29	2134	53.41
24250	3784	1837	30.17	1866	32.24	1894	34.33	1923	36.45	1981	40.82	2039	45.36	2099	50.15	2161	55.22
25000	3901	1878	31.87	1906	33.98	1934	36.12	1962	38.29	2017	42.73	2073	47.32	2131	52.12		
25750	4018	1920	33.64	1947	35.80	1974	37.98	2001	40.20	2055	44.72	2109	49.38	2164	54.21		
26500	4135	1962	35.50	1988	37.70	2014	39.94	2040	42.20	2093	46.80	2146	51.54				
27250	4252	2004	37.43	2030	39.69	2055	41.98	2081	44.28	2132	48.97						
28000	4369	2046	39.45	2071	41.76	2096	44.10	2121	46.44								

Performances certified for installation Type A: free inlet/free outlet. Power ratings (BHP) do not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories). Performance data is based on standard air conditions (0.075 lb/cu. ft.).

Most efficient selections in bold face

Class I

Class II

Class III

Model Code Explanation

The Hartzell model code system is designed to aid customers in completely identifying the selected unit. Be sure to include all applicable information to ensure proper order placement. Informational fields that do not apply must be filled in with hyphens or dashes. Also include a list of any options and/or accessories.

Contact your local Hartzell Sales Representative for selection or ordering assistance – **800.336.3267**.

Sample Model Code

Type _____	A	12	-	9	-	12	1	PL	100	ST	FC	M	3
A – Production Item													
S – Stock Item													
Q – Special Quote													
Product Series _____													
Arrangement (centrifugals only) _____													
Size (nominal wheel diameter, inches) _____													
Class / No. of Blades _____													
Wheel or Blade Code _____													
Wheel Width Blade Angle (width in % for centrifugals / angle for axials) _____													
Material of Construction _____													
Motor Enclosure _____													
Motor Horsepower _____													
Motor RPM/Phase _____													

Motor RPM/Phase Code

3 Phase	1 Phase
2 = 3450	B = 3450
3 = 1750	C = 1750
4 = 1140	D = 1140
5 = 870	E = 870
6 = 690	F = 690
7 = 575	G = 575

Motor Horsepower

Horsepower	1/4	1/3	1/2	3/4	1	1 1/2	2	3	5		10	15	20	25	30	40	50	60	75	100	125	150	200
Code Letter	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Performance Guaranteed



Your products are only as good as the components that go into them. We know you have high expectations, so does Hartzell Air Movement. We know you expect the most reliable and durable industrial air movement products available, so we're holding ourselves to a higher standard. We're so sure that our products will out-perform industry standards, we're backing that promise with the industry's first - and only - five-year warranty.

**QUALITY AT
EVERY TURN**

At Hartzell, these are words we live by. They guide us every day. Good enough isn't how you design your products. It's not how we engineer, build and support our products — or provide ongoing service to our customers. When we looked at the industry standard two-year warranty, we knew we had to do better. And we did — by offering the Hartzell **FIVE-YEAR WARRANTY**.



AIR MOVEMENT

OTHER PRODUCTS INCLUDE:



TURBO PRESSURE
BLOWERS



INDUSTRIAL EXHAUSTERS



DUCT FANS



DUCT AXIAL FANS



VANEAXIAL BLOWERS



COOL BLAST &
UTILITY FANS



STEEL CENTRIFUGAL
BLOWERS



PROP FANS &
ROOF VENTILATORS

More than 50 Hartzell representative offices can provide specific performance and installation data to meet your requirements. Call your Hartzell Air Movement representative for assistance. Visit www.hartzellairmovement.com or call 800.336.3267 for the name of your representative.

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www.hartzellairmovement.com