

Backward Curved Centrifugal Fans

Series 03
Series 03S

Series 03P
Series 03Q

Series 03U
Series 03F

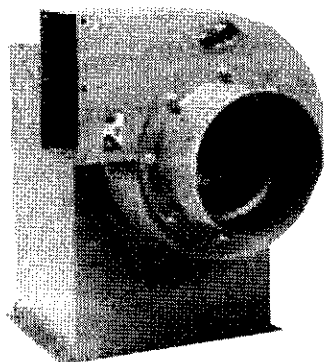
Series 13
Series 11



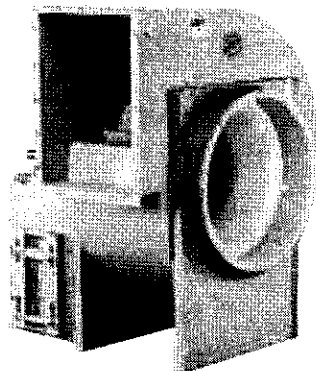
HARTZELL®

Hartzell Fan, Inc., Piqua, Ohio 45356
www.hartzellfan.com

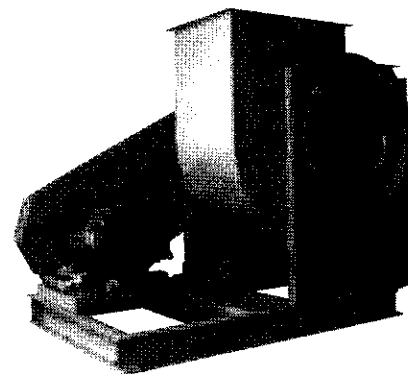
Backward Curved Centrifugal Fans



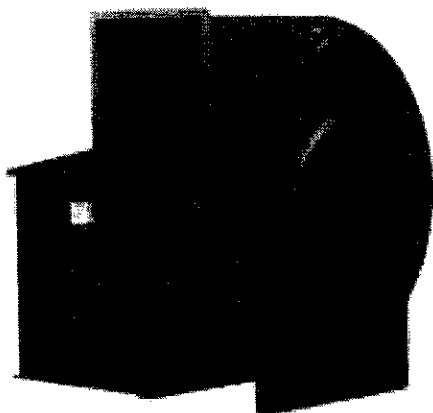
**Series 03U
Backward Curved
Utility Set
Page 8**



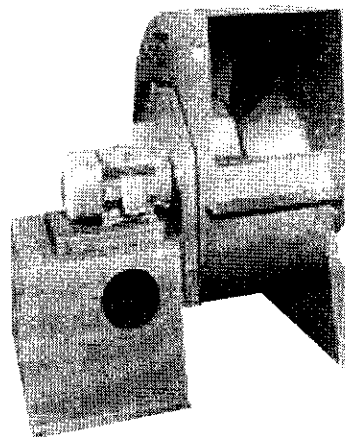
**Series 03 - Type BA & BC
Backward Curved
Centrifugals
Page 9**



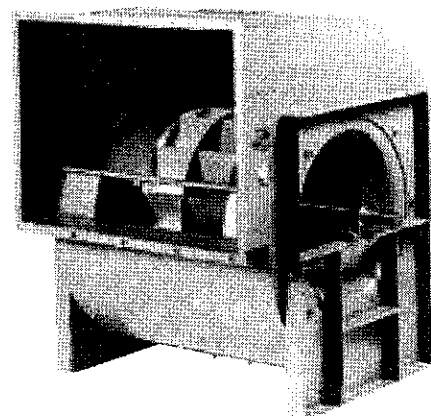
**Series 03, Arrg. 1
Backward Curved
Centrifugals
Page 9**



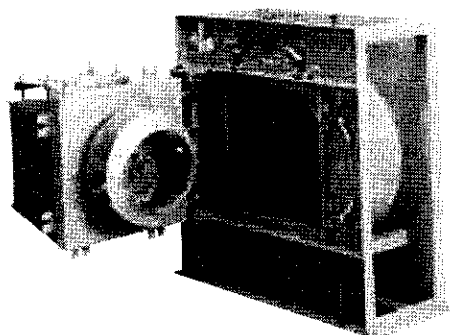
**Series 03P
Packaged Centrifugals
Page 12**



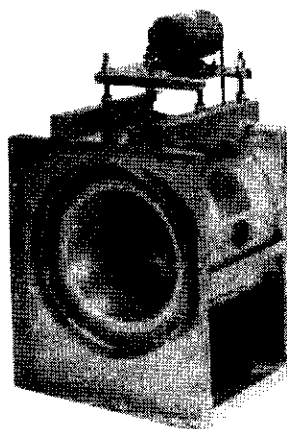
**Series 03
Direct Drive Centrifugals
Page 14**



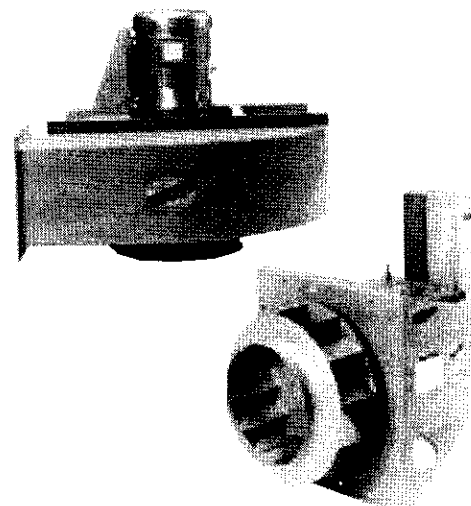
**Series 13
Double Width Centrifugal Fan
Page 28**



**Series 03S
Swing Out Type
Page 30**



**Series 03Q
Square Type Fans
Page 31**



**Series 03F, Series 11
Flange Mount and Plug Fans
Page 32**





General Construction Features

The Hartzell backward curved centrifugal fans are designed to provide maximum performance and efficiency for clean air applications. These blowers are available in direct drive and belt drive configurations in a variety of arrangements and construction to meet your requirements. Air delivery ranges from 500 CFM to 186,000 CFM (depending on series), with static pressure capabilities to 14" and higher.

The Hartzell Type BC and BA (airfoil) wheels have non-overloading horsepower characteristics. Efficient airflow is provided over a broad range of pressures (maximum total efficiencies exceeding 80%). Designed for quiet operation, the Hartzell backward curved centrifugal blowers provide lower sound levels in the highest efficiency ranges.

Standard Construction – Our standard construction is built for reliable service in standard applications with continuously welded hot rolled steel housings. Bearing base/motor pedestal is constructed of hot rolled steel and structural steel. Standard construction also includes precision balancing and shafts, long life bearings and drives, industrial duty enamel finish, motor out of the airstream, easy installation, maintenance and system access.

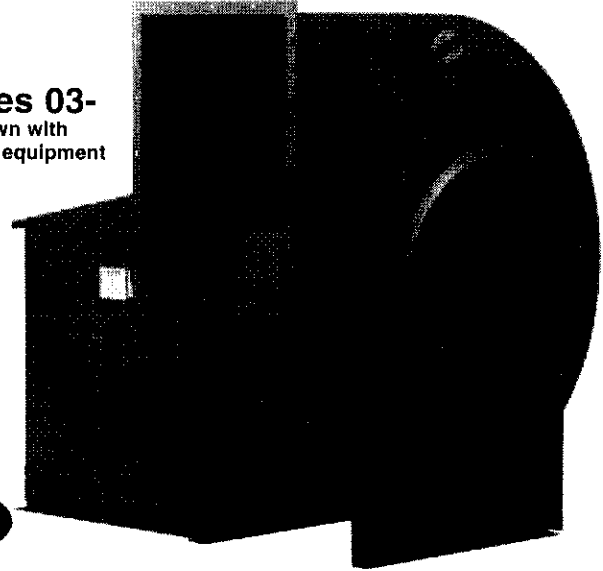
Stock – Many sizes of the Series 03P and Series 03U are available from stock.

Your Special Features and Options – Hartzell Fan has a wide range of designs, configurations, performances, sizes, materials, finishes, and motors in-stock and from production to fit your ventilation requirements. Construction is available for high temperature, spark resistance, leak resistant, and special materials. Accessories including guards, companion flanges, dampers, louvers, inlet bells, sub-bases, vibration isolators, lifting lugs, and sound mufflers are available.

Series 03-
Shown with
optional equipment



ABS Certificate
of Design Assessment
Received



Series, Sizes, Classes, Arrangements, and Features

Series 03 – Backward Curved Centrifugal Fans (SWSI), incorporate Heavy Industrial Duty Construction and are available in single width, single inlet wheel diameter sizes 12"–60", in Class I, II, or III, Arrangements 1, 3, 4, 8, 9, 9M, or 10. See page 9 for details.

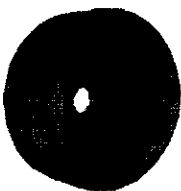
Series 03P – Backward Curved Centrifugal Fans, Packaged, incorporate Industrial Duty Construction and are available in wheel diameter sizes 12"–36", (SWSI), Class II, Arrangement 10 packaged with guards and covers. See page 12 for details.

Series 03U – Backward Curved Utility Set is designed for General Industrial Service with value, application, and performance range taken together and is available in wheel diameter sizes 10"–30" (SWSI), Arrangement 10. Applications are limited by selection point and motor horsepower, see page 8 for details.

Series 13 – Backward Curved Centrifugal Fans (DWDI), incorporate Heavy Industrial Duty Construction and are available in double width, double inlet wheel diameter sizes 10"–60", in Class I, II, or III, Arrangements 1 or 3. See page 28 for details.

Series 03S, Series 03Q, Series 03F, Series 11 – Hartzell fan offers backward curved centrifugal fans in a variety of configurations to meet your requirements. See pages 30–32 for additional details on these series.

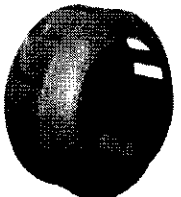
Wheel Design



Type BC Wheel

Type BC Wheel

The Hartzell backward curved centrifugal Type BC wheels have single thickness airfoil blades. The heavy-duty steel construction is reinforced depending on size and class of construction. The wheel's inlet rim is a tapered spun orifice. The inlet rim is overlapped by the fan's spun inlet cone with closely held tolerances to ensure maximum performance and efficiency.



Type BA Wheel

Type BA Wheel (Airfoil)

The Hartzell backward curved centrifugal Type BA wheels have double thickness hollow airfoil blades. These blades are die formed in a true airfoil shape. The backplate and inlets on the Type BA wheels are the same configuration as the Type BC.

The wheels are individually precision balanced prior to assembly. Below illustrates the dynamic balance operation on a Hartzell Series 03 Type BC wheel. Equipment at this Hartzell Quality Assurance Station balances in two places.



Hartzell Centrifugal Fan Classifications

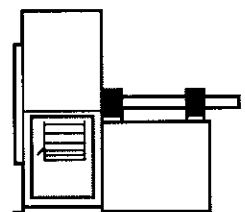
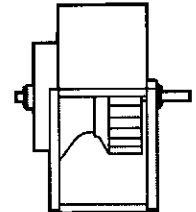
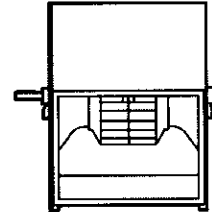
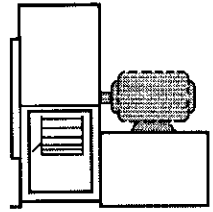
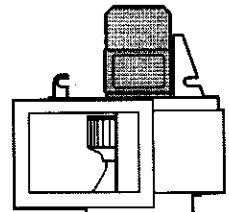
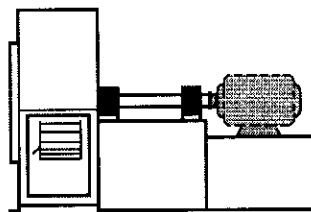
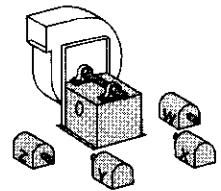
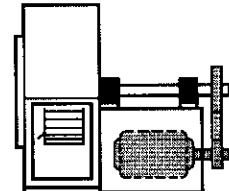
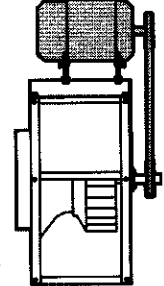
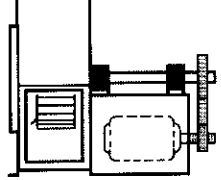
Hartzell Series 03 Backward Curved Centrifugal Fans are designed and classified to perform within the centrifugal fan classification parameters established by AMCA Standard No. 2408; AMCA

Publication 99. Hartzell Series 03 Backward Curved Centrifugal Fans are available in Class I, II and III construction. These parameters are explained in the following table.

FAN CLASS	PERFORMANCE RANGE*	TABLE SHADING
I	5" @ 2300 FPM To 2 1/2" @ 3200 FPM	
II	8 1/2" @ 3000 FPM To 4 1/4" @ 4175 FPM	
III	13 1/2" @ 3780 FPM To 6 3/4" @ 5260 FPM	

* At standard air conditions (70°F, 29.92 in. HG barometric pressure, .075 lbs./ft.3). Static pressure shown in inches of water; outlet velocity shown in feet per minute.

Centrifugal Fan Arrangements

 <p>Arrangement 1 Unit furnished with shaft and bearings, less motor and drive. Designed to be driven by a separately mounted motor. Impeller is overhung – two bearings on base. Temperature limitations: Standard fan to 300°F, heat fan to 800°F.</p>	 <p>Arrangement 3 Series 03 – Unit furnished with shaft and bearings, for belt drive configuration. One bearing on each side and supported by fan housing. Temperature limitations: Standard fan to 150° F.</p>	 <p>Arrangement 3 Series 13 – Double Width, Double Inlet Unit furnished with shaft and bearings, for belt drive configuration. One bearing on each side and supported by fan housing. Temperature limitations: Standard to 200° F.</p>	 <p>Arrangement 4 Direct drive packaged unit, wheel is overhung and attached to the shaft of the electric motor. No bearings on fan. Temperature limitations: Standard fan to 200°F.</p>
 <p>Arr. 4 Flange Mount Series 03F – Direct drive unit for mounting on fan inlet flange, wheel is overhung and attached to the shaft of the electric motor. No bearings on fan. Temperature limitations: Standard fan to 200° F.</p>	 <p>Arrangement 8 Direct Coupled configuration with motor mounted to common fan base. Impeller is overhung and supported by two bearings on fan base. Temperature Limitations: 800°F.</p>	<p>Motor Position Designation Motor position designation is necessary when ordering the following for Arrangement 1 fans –</p> <ol style="list-style-type: none"> 1 – V Belt Drive. 2 – Vibration Bases. 3 – Belt Guards. <p>Note: Location of motor is determined by facing the drive side of the fan and designating the motor position by letters W, X, Y, or Z.</p> 	
 <p>Arrangement 9 Series 03 – Belt drive configuration with motor mounted on outside of bearing base support. Packaged unit, wheel is overhung, slide rail motor base permits easy adjustment of belt tension. Available on either left or right hand side of base (when facing drive end of shaft). Temperature limitations: Standard fan to 300°F, heat fan to 800°F.</p>	 <p>Arrangement 9 Series 03Q – Belt drive configuration with motor mounted and fan housing. Bearings are out of airstream, (Arrangement 2), wheel is overhung, motor base permits easy adjustment of belt tension. See page 31 for motor positions. Temperature limitations: Standard fan to 200° F.</p>	 <p>Arrangement 10 Series 03, 03P, 03U – Belt drive configuration with motor mounted inside base. Packaged unit, wheel is overhung. Temperature limitations: Standard fan to 250°F, heat fan to 600°F.</p>	

Adapted from AMCA Standard 99-2404-03, Drive Arrangements for Centrifugal Fans, and AMCA Standard 99-2407-03, Motor Positions for Belt or Chain Drive Centrifugal Fans, with written permission from Air Movement and Control Association International, Inc.



Temperature/Altitude Applications

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. These modifications are explained on page 7 and illustrated as options on page 34-35.

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 2 shows the maximum safe operating speeds for each size fan wheel, at each class of construction. In addition, this table also shows the maximum safe operating temperature for each fan arrangement.

At high temperatures, these maximum safe operating speeds should be derated. Deration varies according to material of construction. Table 3 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 1 Altitude/Temperature Correction Factors

Temp. ① (°F)	-25	0	25	50	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
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	2.09	2.19	2.29	2.38

Alt. ② (Ft.)	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Factor	1.00	1.04	1.08	1.12	1.16	1.20	1.25	1.30	1.35	1.40	1.46	1.51	1.57

Above table has inverted values. Actual density is the reciprocal of the above values. ① At sea level. ② 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 Maximum Safe Speeds @ 70°F

Size	Maximum Speed (RPM)		
	Class I	Class II	Class III
12	3430	4365	5610
15	2730	3480	4470
18	2270	2890	3715
22	1855	2365	3040
24	1705	2170	2790
27	1520	1935	2490
30	1400	1780	2290
33	1275	1620	2085
36	1165	1485	1910
40	1045	1330	1710
44	945	1200	1545
49	855	1090	1405
54	775	985	1265
60	700	890	1145

NOTE: Maximum safe speeds are usually different than AMCA defined limits (see page 3). Tabular performance table shadings reflect AMCA limits. Hartzell Fanslect (Computer Fan Selection Software) reflects maximum RPM's shown in Table 2.

Table 3 Maximum Safe Speed Correction Factors*

Material Code	Spark Resistance	Material of Construction	Temperature °F.									
			0°F	70°F	200°F	300°F	400°F	500°F	600°F	700°F	800°F	
ST	None	Steel Wheel & Housing	1.000	1.000	1.000	0.966	0.930	0.890	0.860	0.820	0.77	
AA	AMCA "A"	Aluminum Wheel, Aluminum Housing	0.966	0.948	0.837	0.733	-	-	-	-	-	
AB	AMCA "B"	Aluminum Wheel, Steel Housing	0.966	0.948	0.837	0.733	-	-	-	-	-	
AC	AMCA "C"	Steel Wheel & Housing Aluminum Buffer	1.000	1.000	1.000	0.966	0.930	0.890	0.860	0.820	0.77	
CT	None	Corten Wheel, Steel Housing	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.96	
S4	None	304SS Wheel & Housing	1.000	1.000	1.000	0.938	0.896	0.852	0.830	0.806	0.792	
S6	None	316SS Wheel & Housing	1.000	1.000	1.000	0.987	0.950	0.913	0.894	0.876	0.861	
4L	None	304LSS Wheel & Housing	1.000	1.000	1.000	0.938	0.896	0.852	0.830	0.806	0.792	
6L	None	316LSS Wheel & Housing	1.000	1.000	1.000	0.987	0.950	0.913	0.894	0.876	0.861	

*NOTES: To correct maximum operating speeds (Table 2) for high temperatures, multiply those speeds by correction factor from Table 3. See also: Arrangement & Accessory Maximum Temperatures and High Temperature modifications shown on page 7.

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 24,000 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 03, Class III, 36" belt drive backward curved centrifugal, selected from the rating tables (page 22) for the new condition shows 24,000 CFM at 10" SP, 1,476 RPM and 48.6 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; 48.6 BHP divided by 1.50 = 32.4 BHP.

5. Check the maximum safe speed. Maximum speed at 70°F for fan size 36", Class III is 1740 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 1740 x .985 = 1714 RPM; thus operation at 1,476 RPM at 150°F is satisfactory.
6. Final performance of the unit at the assumed conditions: 24,000 CFM at 6.7" SP, 1,476 RPM, 32.4 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/Weight

Material Specifications – Gauge – All Sizes

Class	Size	Housing (Thickness)					Shaft & Bearings		*Maximum Motor Frame		BC Wheel		BA Wheel		Installation Weights (Lbs.) (Less Motor)		
		Scroll	Side	Side Angle	Flanges		Size & Type Arr. #1 & #9 & #10	Arr. #4	Arr. #9 & #10	(Lb.- Ft.) ² WR ²	(Lbs.) Wgt.	(Lb.- Ft.) ² WR ²	(Lbs.) Wgt.	Arr.#1	Arr.#4	Arr.#9 & #10	
					⊕ Inlet	⊕ Outlet											TEFC
I	12	12GA	12GA	—	2 x 1/2	1 1/2 x 7GA	1	P3U-216	184T	182T	2.8	16.0			183	159	193
	15	12GA	12GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-219	256T	184T	6.0	23.9			256	263	269
	18	12GA	12GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-219	286T	184T	12.0	37.7	12.5	39.2	377	390	390
	22	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-223	286T	213T	28.0	61.4	29.1	63.9	562	566	580
	24	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-223	286T	215T	50.0	89.2	52.0	92.8	699	667	717
	27	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-227	286T	254T	81.0	112	84.2	116.5	838	794	856
	30	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-231	326T	254T	112	138	116.5	143.5	1053	1007	1077
	33	12GA	10GA	—	2 1/2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-231	365T	254T	173	196	179.9	203.8	1286	1242	1310
	36	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	P3U-235	—	256T	277	250	288.1	260.0	1787	—	1811
	40	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	P3U-235	—	284T	438	312	455.5	324.5	2152	—	2179
	44	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	P3U-239	—	286T	651	377	677.0	392.1	2654	—	2681
	49	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22439	—	324T	1233	583	1282.3	606.3	3160	—	3187
54	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 1/2 x 1/2	2 1/2	PB-22439	—	364T	1290	720	1340	760	3550	—	3580	
60	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 1/2 x 1/2	2 1/2	PB-22443	—	364T	2300	920	2390	990	3940	—	3970	
II	12	12GA	12GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-219	184T	184T	2.8	16.0			189	159	202
	15	12GA	12GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-223	256T	215T	6.0	23.9			262	261	275
	18	12GA	12GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-227	286T	254T	12.0	37.7	12.5	39.2	377	387	390
	22	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-227	286T	256T	28.0	61.4	29.1	63.9	572	566	595
	24	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-231	286T	284T	50.0	89.2	52.0	92.8	719	669	742
	27	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	2 1/2	P3U-235	286T	286T	81.0	112	84.2	116.5	858	765	881
	30	12GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	PB-22431	326T	286T	122	148	126.9	153.9	1071	1019	1095
	33	12GA	10GA	—	2 1/2 x 1/2	1 1/2 x 7GA	2 1/2	PB-22435	365T	324T	189	208	196.6	216.3	1294	1241	1318
	36	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22435	—	326T	299	268	311.0	278.7	1854	—	1880
	40	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22439	—	364T	472	335	490.9	348.4	2219	—	2246
	44	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22439	—	365T	700	405	728.0	421.2	2727	—	2754
	49	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22447	—	365T	1310	616	1362.4	640.6	3281	—	3308
54	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 1/2 x 1/2	2 1/2	PB-22447	—	405T*	1410	800	1470	850	3770	—	3800	
60	10GA	10GA	3 x 3 x 3/16	2 1/2 x 3/8	2 1/2 x 1/2	3 1/2	PB-22451	—	405T*	2500	1050	2610	1110	3940	—	3970	
III	12	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-227	184T	184T	3.0	17.2			200	160	213
	15	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-227	256T	215T	6.0	26.3			286	277	301
	18	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	P3U-231	286T	256T	12.0	40.1	12.5	41.7	420	408	435
	22	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	PB-22431	286T	256T	30.0	67.4	31.2	70.1	613	591	636
	24	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	PB-22431	286T	286T	53.0	95.2	55.1	99.0	744	694	769
	27	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	2 1/2	PB-22435	286T	286T	87.0	120	90.5	124.8	904	799	929
	30	10GA	10GA	—	2 x 1/2	1 1/2 x 7GA	1 1/2	PB-22443	326T	286T	122	148	126.9	153.9	1134	1015	1160
	33	7GA	7GA	—	2 1/2 x 1/2	1 1/2 x 7GA	2 1/2	PB-22447	365T	326T	189	208	196.6	216.3	1471	1409	1497
	36	7GA	7GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22447	—	326T	299	268	311.0	278.7	2017	—	2043
	40	7GA	7GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22447	—	364T	472	335	490.9	348.4	2421	—	2453
	44	7GA	7GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22447	—	365T	700	405	728.0	421.2	2869	—	2901
	49	7GA	7GA	3 x 3 x 3/16	2 1/2 x 3/8	2 x 7GA	2 1/2	PB-22447	—	365T	1310	616	1362.4	640.6	3636	—	3668
54	7GA	7GA	3 x 3 x 3/16	2 1/2 x 3/8	2 1/2 x 1/2	3 1/2	PB-22451	—	405T*	1410	800	1470	850	4100	—	4140	
60	7GA	7GA	3 x 3 x 3/16	2 1/2 x 3/8	2 1/2 x 1/2	3 1/2	PB-22455	—	405T*	2500	1050	2610	1110	4800	—	4840	

⊕ Inlet and outlet flanges are optional, with or without holes. *Arrangement #10 maximum frame size is 365T. Motor frames exceeding these values must be Arrangement 9M, Arrangement 1, or Arrangement 8. For other Arrangement maximum motor frame size and dimensions please contact factory. Dimensions and specifications are subject to change. Certified prints are available.

Arrangement & Accessory Maximum Temperatures*

Description	Maximum Temperature
Arrangement 1, 8, & 9	800° F
Arrangement 3	150° F
Arrangement 4	200° F
Arrangement 10	600° F
Aluminum Spark Resistant Construction	350° F
Weather Cover Arrangement 9	500° F
Weather Cover Arrangement 10, Arrangement 9M	250° F

*Use in conjunction with High Temperature Modifications table.

High Temperature Modifications**

Maximum Design Temperature	High Temperature Modifications Required
70 - 300° F	Standard Construction, none required.
301 - 600° F	Heat Slinger (must be supplied with heat slinger guard or shaft guard), high temperature shaft seal, high temperature paint, special bearing lubricant, fiberglass gasket material, motor heat shield on arrangement 9 or 10.
601 - 800° F	In addition to above, bearing heat shield.
801 - 1000° F	Contact Factory

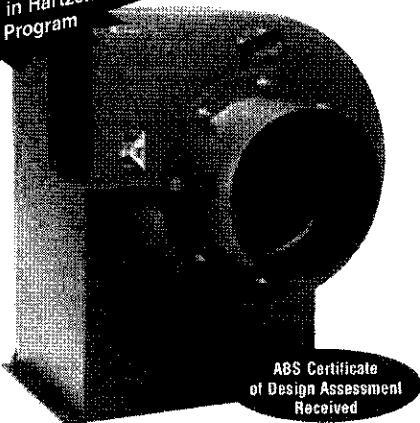
**Use in conjunction with Arrangement & Accessory Maximum Temperatures table.

NOTE: High temperature applications require air density correction and fan accessory items. See pages 6 and 34-35.



Series 03U Backward Curved Utility Set

Stock Models Available in Hartzell's HRS Program



ABS Certificate of Design Assessment Received



Hartzell Fan, Inc. certifies that the Backward Curved Utility Set, Series 03U with type BU wheels shown here in a licensed to bear the AMCA seal for air and sound performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Sound and Air Performance Data is available in Hartzell ESP (Electronic Support Package). Please visit www.hartzellfan.com to request a copy.

The Hartzell Series 03U Backward Curved Utility Set with single thickness airfoil blades has been designed for clean air applications. The wheel's inlet rim is a tapered spun orifice. The inlet rim is overlapped by the fan's spun inlet cone with closely held tolerances to provide maximum performance and efficiency. The Series 03U Utility Set, like all Hartzell products, is test run and balanced prior to shipment. In addition, the wheels are individually precision balanced prior to assembly.

Features

- **Sizes** – 10", 12", 13", 15", 16", 18", 20", 22", 24", 27" and 30" wheel diameters. SWSI only.
- **Arrangement** 10 packaged unit only.
- **Temperature Limitations** – suitable for temperatures up to 200°F.
- **Performance** – 530 CFM to 15,600 CFM; static pressures to 4" W.G.
- **Rotation and Discharge** – Clockwise or counterclockwise rotation in all eight discharge positions. Drawings and dimensions on page 4. Rotatable housing.
- **Wheels** – Type "BU" non-overloading backward curved, aluminum with single thickness airfoil blades.
- **Drive Assembly** – Belts are oil, heat and static resistant type. Shafts are turned, ground and polished, keyed at both ends.
- **Easy installation and maintenance** – Motor, drive and bearings are readily accessible for ease in wiring, installation, adjustment and lubrication.
- **AMCA Type "B" spark resistant construction** – Units are built to meet AMCA Type "B" construction as standard. AMCA Type "A" construction is available as an option.
- **Fan inlets and outlets** – Straight inlet and outlet connections are provided for easy "slip-fit" connection to ducting. Optional drilled or undrilled outlet flanges are available.
- **Neoprene shaft seal** standard on all sizes.
- **Options and Accessories** – See page 34-35.

Application Range – Series 03U

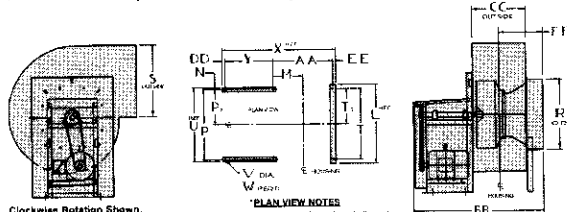
Size	Model	Max BHP	Max Motor Frame	Fan RPM Range	CFM @ S.P.					Ship Weight Less Motor and Acc.
					1/2"	1"	2"	3"	4"	
10	03U0-10-BU100BN---	1 1/2	145T	1375-3500	520-1755	515-1690	520-1495	520-1300	585-1105	137
12	03U0-12-BU100BN---	2	145T	1100-2835	700-2440	700-2440	780-2175	960-1910	1045-1475	147
13	03U0-13-BU100BN---	2	145T	985-2570	850-3050	850-3000	950-2650	1050-2350	1250-1800	153
15	03U0-15-BU100BN---	3	182T	900-2265	1095-3700	1095-3700	1235-3560	1510-3014	1780-2465	194
16	03U0-16-BU100BN---	3	182T	810-2100	1250-4600	1260-4400	1400-4100	1750-3500	2050-2850	218
18	03U0-18-BU100BN---	5	184T	800-1885	1590-5950	1590-5950	1785-5550	2180-4960	2580-3970	256
20	03U0-20-BU100BN---	5	184T	650-1740	1850-6950	1850-6950	2100-6250	2550-5550	3000-4400	287
22	03U0-22-BU100BN---	7 1/2	184T	700-1535	2375-8900	2375-8900	2670-8300	3265-7120	3855-5930	319
24	03U0-24-BU100BN---	7 1/2	213T	600-1410	2810-10550	2810-10550	3160-10200	3870-9140	4570-7380	351
27	03U0-27-BU100BN---	10	215T	500-1260	3540-13270	3540-13270	3890-12830	4870-11500	5750-9290	497
30	03U0-30-BU100BN---	10	215T	415-1150	4200-15600	4200-15600	4700-15150	5750-13550	6800-10950	555

Sound and Air Performance Data is available in Hartzell ESP (Electronic Support Package). Please visit www.hartzellfan.com to request a copy. Performance certified is for Installation Type D: Ducted Inlet/Ducted Outlet. Power ratings (BHP) do not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). Shaded units are available from stock. To complete model code, add class of construction, motor enclosure code, motor horsepower code and motor speed code. Refer to page 2 for more information.

Principal Dimensions (Inches)

FAN SIZE	A	B	C	D	R	S	U	X	BB	CC	FF
10	18 1/16	11 3/8	12 1/4	10 7/16	11 1/16	11 3/8	21 1/4	27 3/16*	35 1/8	8 7/16	10 1/4
12	18 7/16	13 1/4	14 1/4	11 1/16	12 1/16	13 1/4	21 1/4	28 7/16*	36 1/2	9 11/16	10 3/16
13	18 1/16	14 9/16	15 3/4	12 7/8	14 1/8	14 3/8	21 1/4	29 1/2*	37 1/16	10 11/16	11 1/16
15	23	16 9/16	16 9/16	14 1/16	16 1/16	16 7/8	22 1/4	31 1/16*	38 13/16	12 1/16	12 1/16
16	23	17 1/16	17 1/4	15 3/4	17 1/4	17 7/8	22 1/4	31 11/16*	39 13/16	12 15/16	12 7/16
18	23	20	18 3/4	17 11/16	19 3/8	20 1/16	22 1/4	33 1/2	41 3/8	14 1/2	13 3/8
20	29	21 5/8	20 7/16	19 7/8	20 7/8	21 11/16	22 1/4	34 3/4	42 3/8	15 3/4	14
22	29	24 3/8	22	21 1/16	23 5/8	24 1/2	22 1/4	36 3/4	44 3/8	17 11/16	15
24	29	26 7/16	23 3/16	23 7/16	25 1/16	26 11/16	22 1/4	38 3/16	46 3/16	19 3/8	15 3/16
27	36	29 3/4	25 3/4	26 7/16	28 7/8	29 7/8	33 1/2	43 9/16	51 1/2	21 1/16	16 3/16
30	36	32 7/16	27 1/2	28 3/16	31 5/16	32 3/8	33 1/2	45 1/2	53 3/8	23 3/16	17 3/8

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

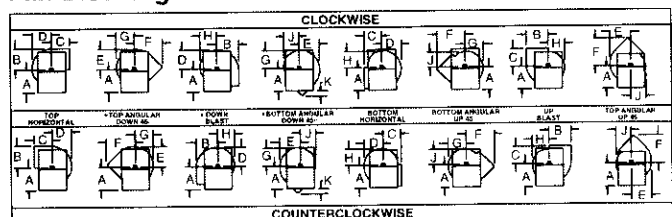


Clockwise Rotation Shown. Counterclockwise Opposite.

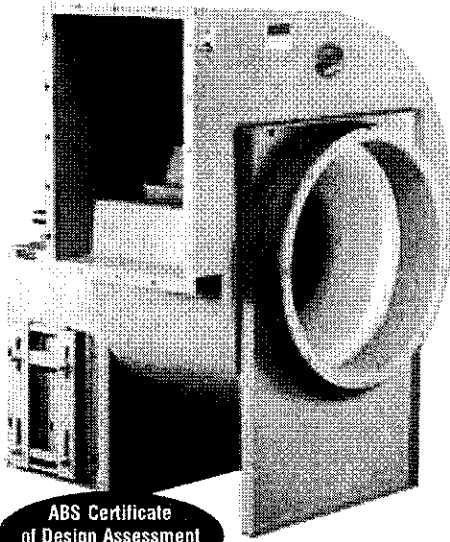
CLASSIFICATION NOTES
An inlet support and its dimensions indicated by an asterisk (*) are not standard for sizes 10-16 except when vibration isolators are specified. All dimensions listed for "R thru 30" are standard with or without vibration isolators.

Refer to sales drawings for additional dimensions.

Fan Discharges



Series 03 Backward Curved Centrifugal Fan Type BA and Type BC



ABS Certificate
of Design Assessment
Received

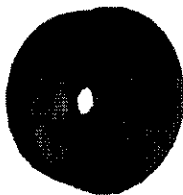


Hartzell Fan, Inc. certifies that the Backward Curved Centrifugal Fan, Series 03 with type BC wheels shown herein is licensed to bear the AMCA seal for air and sound performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Sound performance data is available upon request. Please contact the factory and ask for Engineering Publication #SD-147.



Hartzell Fan, Inc. certifies that the Backward Curved Centrifugal Fans, Series 03, shown herein, is authorized to bear CE Marking in accordance with Machinery Safety Directive 98/37/EC of the European Union. Reference Technical File E.S. 13.2.1.



Type BC –
SWSI Backward Curved Wheel



Type BA –
SWSI Backward Curved
Airfoil Wheel

The Hartzell Series 03 Backward Curved Centrifugal Fans are designed to provide maximum performance and efficiency. These versatile and dependable units are suited for handling clean air and industrial fumes. These blowers are available in direct drive and belt drive configurations.

The Hartzell Type BC and BA (airfoil) wheels have non-overloading horsepower characteristics. Efficient airflow is provided over a broad range of pressures (maximum total efficiencies exceeding 80%). Designed for quiet operation, the Hartzell backward curved centrifugal fans provide lower sound levels in the highest efficiency ranges. Accurate and reliable air performance and sound power rating, in eight octave bands, in accordance with industry standards, tests, and procedures is available. Air delivery ranges from 700 CFM to 104,000 CFM; static pressure capabilities to 14" and higher.

Features

- **Sizes, Classes, and Arrangements** – available in single width, single inlet wheel diameter sizes 12" - 60", in C class I, II, or III, Belt Drive Arrangements #1, #9, #9M, and #10, Direct Drive Arr. #4 and Direct Coupled Arr. #8. Contact Factory for others.
- **Rotation and Discharge Positions** – Available in both clockwise and counterclockwise rotations and in standard discharge positions. Housing discharge position can be changed on fan sizes 12" through 33". Size 36" through 60" are fixed position and are non-rotatable.
- **Standard Construction** – The Hartzell Series 03 Backward Curved Centrifugal Fans, (SWSI), incorporate Heavy Industrial Duty Construction - Designed for Heavyweight Service with ruggedness, use, long life, reliability, and performance taken together. Housings are continuously welded rolled steel and bearing base/motor pedestal bases are built of heavy gauge hot rolled steel and structural steel. See material specification tables for construction details.
- **Fan Inlets and Outlets** – Straight inlet and outlet connections are provided for easy "slip-fit" connection to ducting. Optional continuously welded flanges are available.
- **Wheels** – Type BC wheels have single thickness airfoil blades, and Type BA wheels have double thickness hollow airfoil blades. The heavy-duty steel construction is reinforced depending on size and class of construction. The wheel's inlet rim is a tapered spun orifice. The inlet rim is overlapped by the fan's spun inlet cone with closely held tolerances to ensure maximum performance and efficiency.
- **Balancing** – Fans are electronically statically and dynamically balanced to the requirements of Fan Application Category BV-3 of AMCA/ANSI Std. 204-96 and whenever possible receive an Operational Test and Inspection prior to shipment.
- **Bearings** – Fan Bearings are heavy-duty, self-aligning, shielded and mechanically sealed, ball or roller type, in cast iron or malleable pillow block housings. Bearings are selected for minimum L-50 Life of 250,000 hours at maximum catalog speed, horsepower, and static pressure. Lubrication fittings are extended as standard for easy re lubrication.
- **Shafts and Drives** – Shafts are turned, ground, polished, keyed at both ends, and sized to operate well below critical speed. V-Belt Drives are oversized for long life and continuous duty and are fixed pitch as standard option. Variable pitch drives are available upon request. Belts are oil, heat, and static resistant type.
- **Standard Finish** – Standard fans and accessories are pretreated and painted with blue industrial duty air dry enamel. Alternate coatings are available for high temperature and corrosive environments.
- **Motor Out of the Airstream** – Exterior motor mounting for easy electrical connection, adjustment of belts, and lubrication is standard. An adjustable motor slide base in belt drive models is standard. Motors can be furnished as TEFC, ODP, Mill and Chemical Duty, or to specifications upon request. Motor HP and frame size limits are identified in Dimensions and Material Specifications table.
- **High Temperature Fans and Systems** – Standard construction operates to 300°F (except Arrangement 4). Construction is available for operation up to 800°F in most arrangements. (See Pages 6-7).
- **Spark Resistant Construction** – AMCA Type A, B, and C is available, Membrane Type shaft seal is standard with AMCA Spark Resistant Construction. Explosion Proof Motors are also available.
- **Special Materials of Construction** – Alternate materials of construction; stainless steel, aluminum, fiberglass housing, and other materials are available upon request.
- **Your Special Features and Options** – Hartzell Fan has a wide range of designs, configurations, performances, sizes, materials, finishes, and motors in-stock and from production to fit your ventilation requirements. Accessories including guards, companion flanges, dampers, louvers, inlet bells, sub-bases, vibration isolators, lifting lugs, leak resistant construction, and sound mufflers are available.

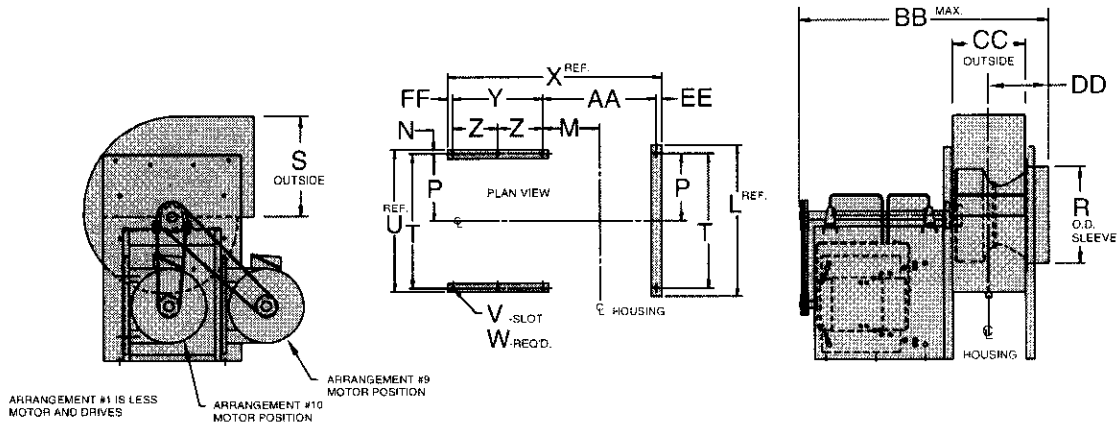
Dimensions – Arrangements 1, 9, or 10

SERIES 03

Sizes 12 BC Through 33 BC, Rotatable Housing

Standard Construction – Classes I, II and III, Maximum Temperature – 800°F.

Clockwise Shown. Counterclockwise Opposite.



Principal Dimensions (Inches) – Sizes 12" – 33"

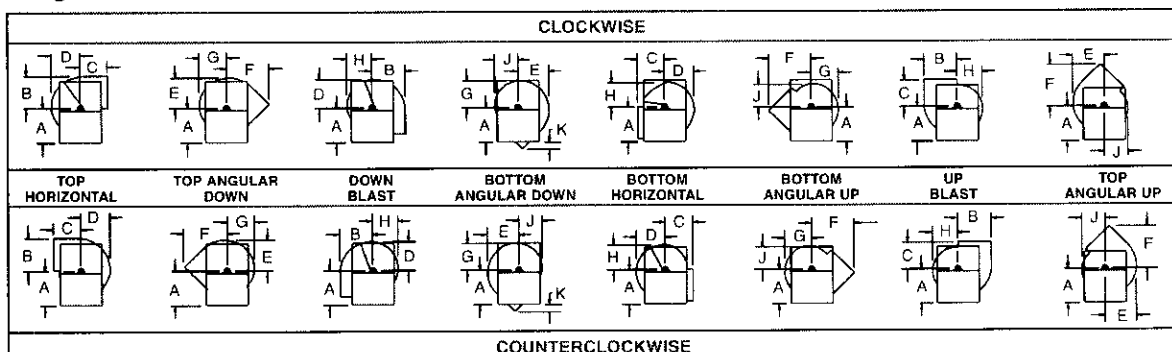
FAN SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N
12	18 ¹ / ₂	13 ³ / ₁₆	14 ¹ / ₄	11 ³ / ₄	12 ⁹ / ₁₆	19 ¹ / ₂	11	10 ¹ / ₄	9 ¹ / ₂	1	*18 ³ / ₄	7 ¹ / ₄	1
15	21 ¹ / ₂	16 ¹¹ / ₁₆	16 ³ / ₁₆	14 ³ / ₄	15 ³ / ₄	23 ¹ / ₂	13 ¹³ / ₁₆	12 ¹³ / ₁₆	11 ¹ / ₈	2	*20 ¹ / ₄	8 ³ / ₂	1
18	24 ¹ / ₄	20	18 ¹ / ₈	17 ¹¹ / ₁₆	18 ¹ / ₈	27 ¹ / ₂	16 ⁹ / ₁₆	15 ³ / ₈	14 ¹ / ₄	3 ¹ / ₄	27 ¹ / ₄	11 ³ / ₁₆	1 ¹³ / ₁₆
22	30	24 ⁷ / ₁₆	22	21 ⁵ / ₈	23 ¹ / ₁₆	32 ⁷ / ₁₆	20 ¹ / ₁₆	18 ³ / ₁₆	17 ³ / ₈	2 ¹ / ₈	28 ¹ / ₈	11 ¹ / ₄	1
24	33 ¹⁵ / ₁₆	26 ³ / ₂	23 ⁷ / ₁₆	23 ¹ / ₂	25 ¹ / ₁₆	35 ¹ / ₂	22	20 ⁷ / ₁₆	18 ⁵ / ₁₆	1 ¹ / ₁₆	30	12	1
27	32 ⁵ / ₈	29 ¹³ / ₁₆	25 ³ / ₄	26 ³ / ₈	28 ¹ / ₄	39 ³ / ₁₆	24 ³ / ₈	22 ³ / ₁₆	21 ¹ / ₁₆	6 ¹ / ₁₆	33 ¹ / ₈	13 ³ / ₁₆	1
30	37	32 ³ / ₈	27 ¹ / ₂	28 ³ / ₁₆	30 ¹ / ₂	42 ⁵ / ₁₆	26 ¹¹ / ₁₆	24 ¹³ / ₁₆	22 ¹⁵ / ₁₆	5 ⁵ / ₁₆	43 ¹ / ₄	16 ⁷ / ₁₆	2 ¹ / ₈
33	40	35 ⁹ / ₁₆	30	31 ⁷ / ₁₆	33 ¹ / ₂	46 ³ / ₈	29 ³ / ₈	27 ³ / ₁₆	25 ¹ / ₄	6 ³ / ₈	47 ¹ / ₄	18 ¹ / ₁₆	2 ¹ / ₈

FAN SIZE	P	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF
12	8 ¹ / ₈	12 ¹⁵ / ₁₆	13 ³ / ₈	16 ¹ / ₄	18 ¹ / ₄	1 ¹ / ₁₆ X 1 ¹ / ₁₆	4	*28 ³ / ₁₆	12 ³ / ₄	-	*13 ⁹ / ₁₆	36 ³ / ₁₆	9 ³ / ₄	11 ³ / ₁₆	*1	1 ¹ / ₄
15	9 ¹ / ₈	16 ⁷ / ₁₆	16 ³ / ₄	18 ¹ / ₄	20 ¹ / ₄	1 ¹ / ₁₆ X 1 ¹ / ₁₆	4	*33 ¹ / ₁₆	15 ³ / ₄	-	*15 ¹¹ / ₁₆	41 ¹¹ / ₁₆	12 ⁵ / ₃₂	12 ⁹ / ₁₆	*1	1 ¹ / ₄
18	12 ¹¹ / ₁₆	19 ¹ / ₂	20 ¹ / ₁₆	25 ³ / ₈	27 ¹ / ₄	1 ¹ / ₁₆ X 1 ¹ / ₁₆	8	40 ³ / ₄	18 ³ / ₄	9 ³ / ₈	19 ¹ / ₄	49 ¹ / ₄	14 ¹⁹ / ₃₂	13 ³ / ₈	1	1 ¹ / ₄
22	12 ¹¹ / ₁₆	23 ³ / ₄	24 ¹ / ₂	25 ³ / ₈	27 ³ / ₈	1 ¹ / ₁₆ X 1 ¹ / ₁₆	8	43 ³ / ₄	20 ¹ / ₄	10 ¹ / ₈	21 ¹ / ₄	52 ¹ / ₄	17 ¹ / ₈	15 ¹ / ₄	1	1 ¹ / ₄
24	12 ¹¹ / ₁₆	25 ¹¹ / ₁₆	26 ¹¹ / ₁₆	25 ³ / ₈	27 ³ / ₈	1 ¹ / ₁₆ X 1 ¹ / ₁₆	8	47 ³ / ₈	22 ¹ / ₂	11 ¹ / ₄	22 ¹ / ₄	56 ³ / ₈	19 ¹ / ₁₆	16	1	1 ¹ / ₄
27	11	28 ¹¹ / ₁₆	30 ¹ / ₁₆	22	24	1 ¹ / ₁₆ X 1 ¹ / ₁₆	8	49 ⁹ / ₁₆	22 ¹ / ₂	11 ¹ / ₄	25 ¹ / ₁₆	61 ¹ / ₁₆	21 ³ / ₄	17 ¹ / ₁₆	1	1 ¹ / ₄
30	16 ⁷ / ₈	31 ³ / ₈	32 ¹ / ₁₆	33 ³ / ₄	38	1 ¹³ / ₁₆ X 1 ¹ / ₄	9	56 ⁵ / ₁₆	22 ¹ / ₄	11 ³ / ₈	30 ¹ / ₁₆	64 ¹ / ₄	23 ³ / ₁₆	18 ³ / ₃₂	1 ¹ / ₂	2
33	16 ⁷ / ₈	34 ¹ / ₂	35 ¹¹ / ₁₆	33 ³ / ₄	38	1 ¹³ / ₁₆ X 1 ¹ / ₄	9	61 ¹³ / ₁₆	25 ³ / ₄	12 ⁷ / ₈	32 ³ / ₁₆	70 ¹⁷ / ₁₆	26 ¹ / ₃₂	19 ⁹ / ₁₆	1 ¹ / ₂	2

PLAN VIEW NOTES: An Inlet support and the dimensions indicated by an asterisk () are not standard for sizes 12-15 except when vibration isolators are specified. All dimensions listed for 18 thru 33 are standard with or without vibration isolators.

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

Fan Discharges



NOTE: For bottom angular down, top angular down, and/or down blast, contact factory when discharge flanges are required.

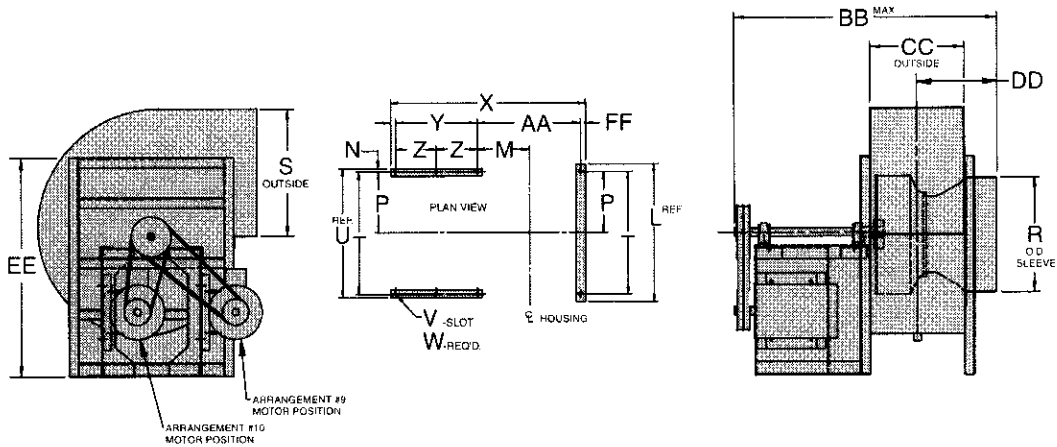
Dimensions – Arrangements 1, 9, or 10

SERIES 03-

Sizes 36 Through 60

Standard Construction – Classes I, II and III, Maximum Temperature – 800°F.

Clockwise Shown. Counterclockwise Opposite.



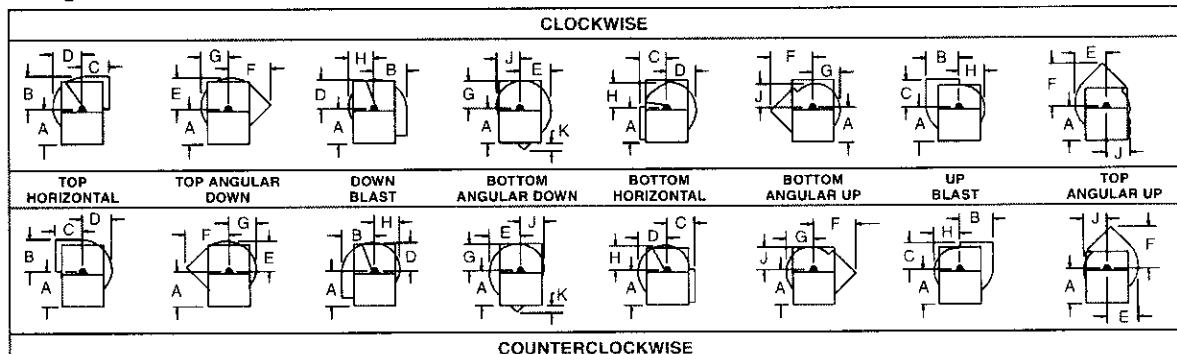
Principal Dimensions (Inches) – Sizes 36" – 60"

FAN SIZE	A			B	C	D	E	F	G	H	J	K	L	M
	TAD/TH	TAU/UB	BAU/BH/DB											
36	42	42	42	38 ^{3/4}	38	34 ^{5/16}	36 ^{9/16}	54 ^{5/16}	32 ^{1/32}	29 ^{13/16}	27 ^{9/16}	12 ^{1/16}	50 ^{3/4}	19 ^{1/8}
40	47	47	47	43 ^{3/8}	41 ^{3/4}	38 ^{9/16}	40 ^{7/8}	60 ^{9/16}	35 ^{7/16}	33 ^{3/16}	30 ^{13/16}	13 ^{1/16}	55 ^{1/4}	20 ^{3/16}
44	51 ^{1/4}	51 ^{1/4}	51 ^{1/4}	47 ^{9/16}	44 ^{1/32}	42 ^{3/8}	45 ^{1/8}	65 ^{1/16}	39 ^{5/8}	36 ^{13/16}	34	13 ^{13/16}	59 ^{5/8}	22 ^{7/16}
49	56	56	56	52 ^{3/4}	48 ^{1/32}	46 ^{5/8}	49 ^{11/16}	71 ^{1/4}	43 ^{3/16}	40 ^{1/2}	37 ^{7/16}	15 ^{1/4}	64 ^{1/2}	24 ^{1/16}
54	47 ^{1/4}	54 ^{1/4}	61	60 ^{15/16}	53 ^{1/16}	51 ^{11/16}	55 ^{1/16}	78 ^{7/8}	48 ^{3/16}	44 ^{5/16}	41 ^{1/2}	---	69 ^{1/2}	27
60	52 ^{1/2}	60	67 ^{1/2}	67 ^{1/8}	58 5/8	57 ^{1/4}	60 ^{7/8}	87 ^{1/4}	53 ^{3/8}	49 ^{9/8}	45 ^{7/8}	---	75 ^{1/2}	29 ^{1/4}

FAN SIZE	N	P	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE*	FF
36	2 ^{1/8}	16 ^{7/8}	37 ^{7/8}	38 ^{15/16}	33 ^{3/4}	38	1 ^{13/16} X 1 ^{1/4}	9	64	25 ^{3/4}	12 ^{7/8}	34 ^{3/4}	73 ^{9/16}	28 ^{3/4}	20 ^{3/4}	---	1 ^{1/2}
40	2	22	42 ^{1/8}	43 ^{1/2}	44	48	1 ^{13/16} X 1 ^{1/4}	9	69 ^{5/16}	27 ^{3/4}	13 ^{1/8}	38 ^{1/16}	78 ^{7/8}	31 ^{1/16}	21 ^{15/16}	---	1 ^{1/2}
44	2	22	46 ^{5/8}	48 ^{1/16}	44	48	1 ^{13/16} X 1 ^{1/4}	9	72 ^{5/8}	27 ^{3/4}	13 ^{1/8}	41 ^{1/8}	82 ^{1/16}	34 ^{1/8}	23 ^{3/8}	---	1 ^{1/2}
49	2	22	51 ^{3/16}	52 ^{1/8}	44	48	1 ^{13/16} X 1 ^{1/4}	9	76 ^{1/8}	27 ^{3/4}	13 ^{1/8}	44 ^{1/8}	86 ^{13/16}	38 ^{3/8}	25 ^{3/8}	---	1 ^{1/2}
54	2	27	56 ^{3/4}	58 ^{5/8}	54	58	1 ^{13/16}	9	85 ^{9/16}	32	16	49 ^{9/16}	97 ^{1/16}	42 ^{9/16}	27 ^{3/8}	91 ^{1/4}	1 ^{3/8}
60	2	27	62 ^{1/4}	64 ^{13/16}	54	58	1 ^{13/16}	9	89 ^{1/4}	32	16	54 ^{3/4}	101 ^{1/2}	47	29 ^{3/8}	101 ^{3/8}	1 ^{3/8}

NOTE: *For top angular up discharge only 54" and 60", dimension is for location of removable split scroll to allow for shipping. Assembly required in field. Dimensions and specifications are subject to change. Certified prints are available.

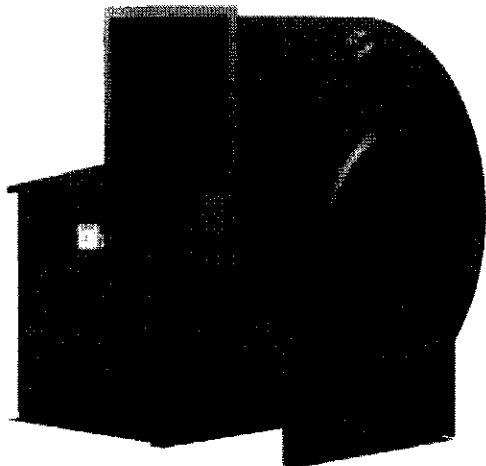
Fan Discharges



NOTE: For bottom angular down, top angular down, and/or down blast, contact factory when discharge flanges are required.



Series 03P Backward Curved Centrifugal Fan, Packaged



Series 03P

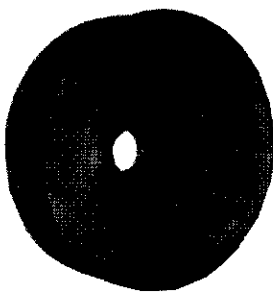
Shown with optional equipment



Hartzell Fan, Inc. certifies that the Backward Curved Centrifugal Fan, Packaged, Series 03P, with type BC wheels shown herein is licensed to bear the AMCA seal for air and sound performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Sound performance data is available upon request. Please contact the factory and ask for Engineering Publication #SD-147.

ABS Certificate
of Design Assessment
Received



Type BC Wheel

Type BA Wheel also available

Series 03P – Backward Curved Centrifugal Fans, Packaged, is built for reliable service in standard applications and is designed to provide maximum performance and efficiency in a compact, packaged, Class II design. These versatile and dependable units are suited for handling clean air and industrial fumes, and incorporate Industrial Duty Construction.

Developed to perform throughout the entire Class II Performance Range, the Series 03P utilize the Hartzell Type BC And BA (airfoil) wheels and have non-overloading horsepower characteristics. Efficient airflow is provided over a broad range of pressures (maximum total efficiencies exceeding 80%). Designed for quiet operation, the Series 03P provides lower sound levels in the highest efficiency ranges.

Sizes and Performance – wheel diameter sizes 12" – 36", (SWSI), Class II, Arrangement 10. Air delivery ranges from 700 CFM to 35,000 CFM; static pressure capabilities to 10" W.G.

Features

- **Construction** – Housings are continuously welded rolled steel and bearing base/motor pedestal bases are built of heavy gauge hot rolled steel. Base is sized to accept maximum motor frame size required for Class II operation. See material specification tables construction details.
- **Rotation and Discharge Positions** – Available in both clockwise and counter-clockwise rotations and in all standard discharge positions. Housing discharge position can be changed on all sizes.
- **Stock** – Most sizes of the Series 03P are available from stock.
- **Standard Shaft Seal** – A shaft seal is placed where the shaft leaves the housing to minimize leakage. Seal is not gas tight.
- **Bearings** – Bearings are heavy duty, self-aligning, ball or roller type, in cast iron pillow block housings, selected for long life at maximum class II construction limits, and include extended lubrication fittings as standard.
- **Shafts and Drives** – Shafts are turned, ground, polished, keyed at both ends, and sized to operate well below critical speed. V-Belt Drives are oversized for long life and continuous duty and are fixed pitch as standard option. Variable pitch drives for sizes 24" through 36" are available upon request. Belts are oil, heat, and static resistant type. Weather cover is standard.
- **Balancing** – Fans are electronically statically and dynamically balanced to the requirements of Fan Application Category BV-3 of AMCA ANSI Std. 204-96 and whenever possible receive an Operational Test and Inspection prior to shipment.
- **Fan Inlets and Outlets** – Straight inlet and outlet connections are provided for easy "slip-fit" connection to ducting. Optional continuously welded flanges are available. Flange bolt holes are optional.
- **Motor Out of the Airstream** – Exterior motor mounting for easy electrical connection, adjustment of belts, and lubrication of Drip Proof Protected motor on an adjustable motor pivot base is standard. Motors can be furnished as TEFC, Mill and Chemical Duty, or to specifications upon request. Motor HP and frame size limits are identified in Dimensions and Material Specifications table.
- **Easy Installation and Maintenance** – Motor, drives and bearings are readily accessible for ease in wiring, installation, adjustment, and lubrication.
- **Standard Finish** – Standard fans and accessories are pretreated and painted with blue industrial duty air dry enamel. Alternate coatings are available for high temperature and corrosive environments.
- **High Temperature Fans and Systems** – Standard construction operates to 250°F. Construction is available for operation up to 600°F with high temperature options. (See Pages 6-7).
- **Spark Resistant Construction** – AMCA Type A, B, and C is available, Membrane Type shaft seal is standard with AMCA Spark Resistant Construction. Explosion Proof Motors are also available.
- **Options and Accessories** – Accessories including companion flanges, dampers, louvers, inlet bells, sub-bases, vibration isolators, lifting lugs, leak resistant construction, and sound mufflers are available. See pages 34 and 35.

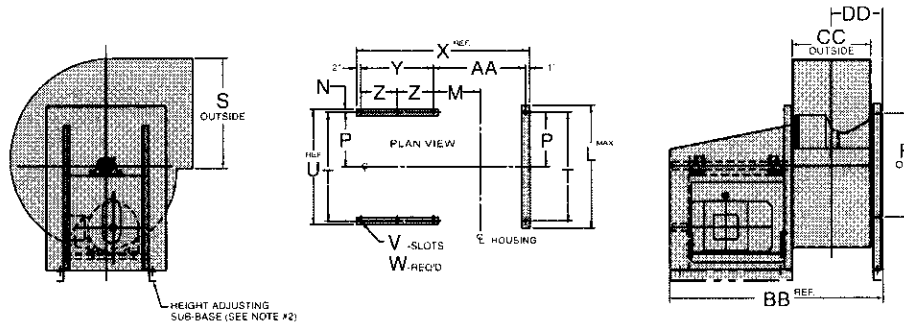
Dimensions – Arrangement 10

SERIES 03P

Sizes 12 Through 36

Standard Construction – Class II, Standard Maximum Temperature – 250°F.

Maximum Temperature – 600°F. Clockwise Shown. Counterclockwise Opposite.



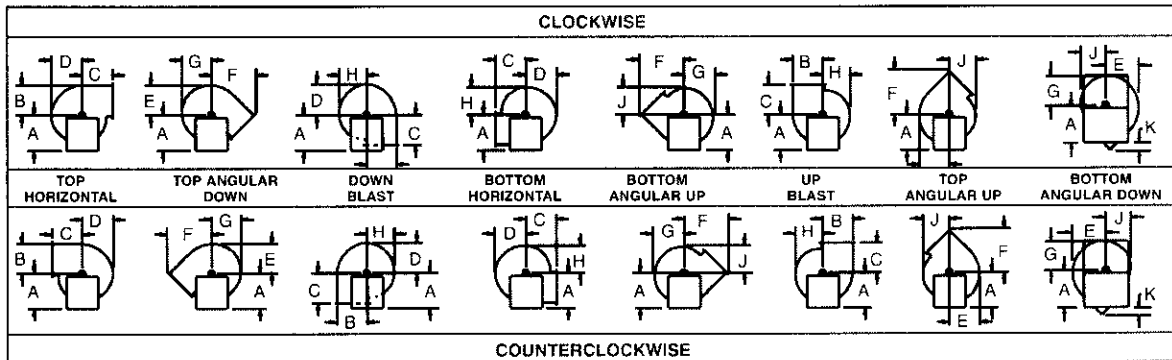
Refer to sales drawings for additional dimensions.

Principal Dimensions (Inches) – Sizes 12" – 33"

FAN SIZE	A	B	C	D	H	R	S	BB	CC	DD	Max Mtr Frame
12	17	13 ^{5/16}	14 ^{1/4}	11 ^{3/4}	10 ^{1/4}	12 ^{15/16}	13 ^{7/16}	40 ^{3/4}	9 ^{3/4}	11 ^{1/2}	215T
15	17	16 ^{11/16}	16 ^{9/16}	14 ^{3/4}	12 ^{13/16}	16 ^{7/16}	16 ^{3/4}	43 ^{1/4}	12 ^{1/4}	12 ^{7/8}	215T
18	20	20	18 ^{7/8}	17 ^{11/16}	15 ^{9/8}	19 ^{7/16}	20 ^{3/4}	50 ^{1/4}	14 ^{5/8}	13 ^{3/16}	254T
22	24 ^{1/4}	24 ^{7/16}	22	21 ^{5/8}	18 ^{13/16}	23 ^{3/4}	24 ^{7/16}	53 ^{7/16}	17 ^{13/16}	15 ^{5/32}	256T
24	27	26 ^{5/8}	23 ^{9/16}	23 ^{1/2}	20 ^{7/16}	25 ^{13/16}	26 ^{11/16}	55	19 ^{3/8}	16	256T
27	28 ^{1/2}	29 ^{13/16}	25 ^{3/4}	26 ^{3/8}	22 ^{15/16}	28 ^{15/16}	29 ^{15/16}	61 ^{13/16}	21 ^{1/4}	17 ^{7/16}	286T
30	30 ^{1/2}	32 ^{3/4}	27 ^{1/2}	28 ^{7/16}	24 ^{13/16}	31 ^{3/8}	32 ^{1/2}	67 ^{7/16}	23 ^{3/16}	18 ^{3/4}	324T
33	37	35 ^{7/16}	30	31 ^{7/16}	27 ^{9/16}	34 ^{7/16}	35 ^{11/16}	69 ^{7/16}	25 ^{15/16}	19 ^{9/16}	324T
36	37	38 ^{3/4}	38	34 ^{9/16}	29 ^{17/16}	37 ^{11/16}	38 ^{15/16}	71 ^{3/4}	28 ^{1/4}	20 ^{7/16}	326T

1. Clockwise rotation shown, counter clockwise rotation is opposite as shown.
2. Scrolls are rotatable. BH and BAU rotations require a 3" tall height adjusting sub-base. B.A.D. requires special consideration. Contact factory.

Fan Discharges



NOTE: For bottom angular down, top angular down, and/or down blast, contact factory when discharge flanges are required.

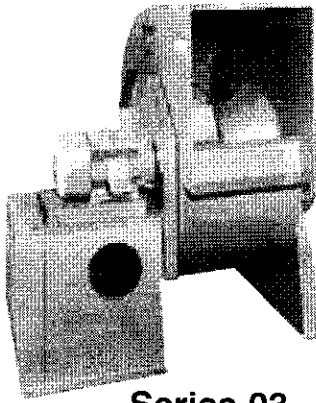
Series 03P – Material Specifications

FAN SIZE	HOUSING		FLANGES*		SHAFTS AND BEARINGS			BC WHEEL		BA WHEEL		MAX FRAME SIZE	INST WGT
	SCROLL	SIDE	INLET	OUTLET	SIZE	DRIVE SIDE	WHEEL SIDE	(LB.-FT.) WR	(LBS.) WGT.	(LB.-FT.) WR	(LBS.) WGT.		
12	12GA	12GA	2 x 1/4	1 1/2 x 7GA	1 1/16	P3-U223	P3-U223	2.8	16	---	---	215T	249
15	12GA	12GA	2 x 1/4	1 1/2 x 7GA	1 7/16	P3-U223	P3-U223	6	23.9	---	---	215T	295
18	12GA	12GA	2 x 1/4	1 1/2 x 7GA	1 11/16	P3-U227	P3-U227	12	37.7	12.5	39.2	254T	403
22	12GA	10GA	2 x 1/4	1 1/2 x 7GA	1 13/16	P3-U227	P3-U227	28	61.4	29.1	63.9	256T	546
24	12GA	10GA	2 x 1/4	1 1/2 x 7GA	1 14/16	P3-U227	P3-U227	50	89.2	52	92.8	256T	631
27	12GA	10GA	2 x 1/4	1 1/2 x 7GA	1 15/16	P3-U231	P3-U231	81	112	84.2	116.5	286T	845
30	12GA	10GA	2 x 1/4	1 1/2 x 7GA	2 1/16	P-B22435	P3-U235	122	148	126.9	153.9	324T	1002
33	12GA	10GA	2 1/2 x 1/4	1 1/2 x 7GA	2 1/16	P3-U235	P3-U235	189	208	196.6	216.3	324T	1173
36	10GA	10GA	2 1/2 x 1/4	2 x 7GA	2 7/16	P3-U235	P3-U235	299	268	311	278.7	326T	1464

*Inlet and outlet flanges are optional, with or without holes. Dimensions and specifications are subject to change. Certified prints are available.



Series 03, Direct Drive Centrifugal, Arrg. 4



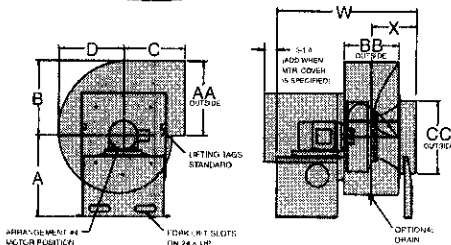
Series 03
Arrangement 4 Construction



Hartzell Fan, Inc. certifies that the Backward Curved Centrifugal Fan, Series 03 with type BC wheels shown herein is licensed to bear the AMCA seal for air and sound performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Sound performance data is available upon request. Please contact the factory and ask for Engineering Publication #SD-147.

ABS Certificate of Design Assessment Received



Applications – Compact direct drive applications handling clean air and industrial fumes requiring performance from **750 CFM to 24,000 CFM** and pressures to **10"SP** at temperatures not exceeding 200°F, designed for foot mounting in horizontal position. Available in **sizes 12" to 33"**, in clockwise or counterclockwise rotations, and in all standard discharge positions. Housing discharge position can be changed on all sizes.

Housings – Are continuously welded heavy gauge, hot rolled steel with **Internal cone** designed to ensure maximum efficiency with minimal turbulence and finished with blue industrial duty enamel.

Wheels – Centrifugal wheels are Type BC or Type BA (airfoil) and have non-overloading horsepower characteristics. Efficient airflow is provided over a broad range. Fans are electronically statically and dynamically balanced to BV-3 and receive an Operational Test and Inspection prior to shipment. Type BC performance is shown below.

Motor Out of the Airstream – Exterior motor mounting for easy electrical connection and lubrication of motor is standard. Motors can be furnished as Drip Proof Protected, TEFC, Mill and Chemical Duty, or to specifications upon request. Motors supplied with re-lubricable bearings include extended lubrication tubes when required for access as standard. Fractional HP and small motors are supplied with permanently lubricated bearings for maintenance free installation.

Fan Inlets and Outlets – Straight inlet and outlet connections are standard. Optional continuously welded flanges are available. Flange bolt holes are optional.

Special Features and Options – Accessories including guards, companion flanges, dampers, louvers, inlet bells, sub-bases, vibration isolators, lifting lugs, special coatings, Spark Resistant Construction, leak resistant construction, and sound mufflers are available. See pages 34 and 35.

Principal Dimensions (Inches) – Sizes 12" – 33"

FAN SIZE	A	B	C	D	W	X	AA	BB	CC	FRAME SIZE		WT. # LESS MOTOR
										MIN.	MAX.	
12	16	13 ¹ / ₄	14 ¹ / ₄	11 ³ / ₄	30 ³ / ₁₆	10 ¹ / ₈	13 ³ / ₈	9 ¹ / ₄	12 ¹¹ / ₁₆	56	184T	160
15	18 ³ / ₄	16 ⁵ / ₈	16 ¹ / ₁₆	14 ³ / ₄	39 ⁹ / ₁₆	12 ¹ / ₁₆	16 ¹³ / ₁₆	12 ³ / ₁₆	16 ¹ / ₁₆	143T	256T	277
18	22	20	18 ¹ / ₈	17 ¹¹ / ₁₆	44 ⁷ / ₁₆	13 ⁵ / ₁₆	20 ¹ / ₈	14 ³ / ₁₆	19 ¹ / ₂	143T	286T	408
22	26 ³ / ₄	24 ¹ / ₁₆	22	21 ¹ / ₁₆	47 ⁷ / ₁₆	14 ¹⁵ / ₁₆	24 ¹ / ₁₆	17 ¹ / ₈	23 ³ / ₄	213T	286T	591
24	28 ¹ / ₂	26 ¹ / ₁₆	23 ¹ / ₁₆	23 ¹ / ₂	49 ⁷ / ₁₆	15 ¹¹ / ₁₆	26 ³ / ₄	19 ¹ / ₁₆	25 ³ / ₁₆	213T	286T	694
27	32 ¹ / ₄	29 ¹³ / ₁₆	25 ¹ / ₄	26 ⁵ / ₈	51 ¹ / ₄	16 ¹ / ₈	29 ¹⁹ / ₁₆	21 ³ / ₄	28 ¹ / ₁₆	213T	286T	799
30	34 ³ / ₄	32 ¹ / ₈	27 ¹ / ₂	28 ³ / ₈	56 ¹ / ₄	17 ¹ / ₁₆	32 ¹ / ₂	23 ³ / ₈	31 ¹ / ₈	254T	326T	1019
33	38	35 ¹ / ₈	30	31 ¹ / ₂	60 ¹ / ₈	19	35 ¹³ / ₁₆	25 ¹ / ₁₆	34 ¹ / ₂	254T	365T	1409

NOTE: Dimensions and specifications are subject to change. Certified prints are available. Inlet support leg is optional on sizes 12 and 15. Weight is approximate.

Rating Table – Series 03 – Direct Drive Centrifugal, A03-4-__ BC100ST__ _ _ _ _

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"		
12	03-4-121BC100ST__ F3	1/2	1750	0.39	1700	1482	1285	970												
	03-4-121BC100ST__ K2	3	3450	2.95	3351	3217	3102	3003	2912	2819	2719	2508	2239	1851						
15	03-4-151BC100ST__ I3	1 1/2	1750	1.22	3620	3366	3084	2759	2391	1875										
	03-4-152BC100ST__ N2	10	3450	9.35	7136	7012	6885	6755	6621	6484	6342	6045	5725	5376	4987	4634	4154	3535		
18	03-4-181BC100ST__ G4	3/4	1160	0.83	4070	3681	3216	2513												
	03-4-181BC100ST__ K3	3	1750	2.86	6139	5891	5629	5337	5035	4682	4224	2829								
22	03-4-221BC100ST__ J4	2	1160	2.28	7444	6980	6455	5876	5072	3863										
	03-4-221BC100ST__ M3	7 1/2	1750	7.83	11230	10929	10617	10294	9946	9568	9203	8285	7095	5131						
24	03-4-241BC100ST__ L4	5	1160	3.83	10023	9499	8923	8358	7633	6669	5430									
	03-4-242BC100ST__ O3	15	1750	13.1	15121	14768	14425	14072	13673	13289	12933	12095	10959	9641	7809					
27	03-4-271BC100ST__ K5	3	870	2.87	10613	9818	8961	7852	6311											
	03-4-271BC100ST__ M4	7 1/2	1160	6.80	14150	13560	12940	12302	11643	10809	9745	6796								
30	03-4-272BC100ST__ Q3	25	1750	23.3	21346	20952	20562	20179	19769	19319	18894	18068	17112	15890	14447	12869	10534			
	03-4-301BC100ST__ L5	5	870	4.33	13592	12741	11808	10795	9329	7389										
33	03-4-301BC100ST__ N4	10	1160	10.3	18123	17479	16835	16113	15440	14682	13733	11328	7209							
	03-4-302BC100ST__ S3	40	1750	35.3	27341	26910	26484	26069	25648	25182	24692	23793	22866	21795	20465	18913	17270	15175		
33	03-4-331BC100ST__ M5	7 1/2	870	6.87	18169	17258	16256	15192	13964	12332	10607									
	03-4-331BC100ST__ O4	15	1160	16.3	24225	23554	22851	22105	21323	20528	19692	17619	15008	10630						
	03-4-333BC100ST__ U3	60	1750	55.9							34257	33785	32746	31898	30634	29507	28217	26745	25020	

Performance certified for Installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 12 A03- -12 BC100

or A03PO-122BC100

Wheel Diameter - 12.25 in.
Outlet Area - 0.87 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
600	690	1033	0.08	1338	0.15												
900	1034	1231	0.13	1490	0.23	1712	0.33	1912	0.45	2097	0.57	2270	0.69				
1200	1379	1488	0.23	1682	0.32	1875	0.45	2067	0.60	2230	0.74	2386	0.89	2534	1.05	2676	1.20
1500	1724	1767	0.39	1931	0.49	2084	0.62	2233	0.76	2395	0.94	2549	1.13	2684	1.31	2811	1.49
1800	2069	2056	0.62	2197	0.74	2333	0.87	2461	1.02	2585	1.18	2711	1.36	2847	1.58	2981	1.81
2100	2414	2349	0.93	2479	1.08	2597	1.22	2713	1.37	2824	1.54	2931	1.72	3036	1.91	3144	2.12
2400	2759	2642	1.32	2767	1.52	2873	1.67	2976	1.83	3078	2.00	3177	2.19	3271	2.39	3364	2.60
2700	3103	2938	1.80	3058	2.06	3158	2.24	3250	2.41	3342	2.59	3433	2.79	3522	2.99	3608	3.21
3000	3448	3235	2.39	3351	2.70	3447	2.94	3534	3.13	3617	3.32	3699	3.52	3782	3.74	3862	3.96
3300	3793	3533	3.10	3644	3.46	3739	3.76	3822	3.99	3900	4.20	3975	4.41	4050	4.63	4125	4.86
3600	4138	3833	3.94	3939	4.36	4032	4.71	4112	4.99	4187	5.24	4258	5.47	4326	5.70	4395	5.93
3900	4483	4134	4.92	4235	5.39	4324	5.80	4405	6.16	4478	6.43	4544	6.69	4607	6.95	4673	7.19
4200	4828	4435	6.03	4335	6.53	4422	6.95	4500	7.30	4569	7.59	4634	7.86	4697	8.12	4757	8.34
4500	5172	4642	7.28	4435	7.78	4522	8.20	4600	8.55	4669	8.84	4734	9.10	4797	9.36	4857	9.54
1500	1724	3057	1.86	3289	2.25	3508	2.64	3716	3.05								
1750	2011	3184	2.18	3399	2.60	3606	3.04	3805	3.49	4178	4.42	4527	5.36				
2000	2299	3326	2.51	3535	2.99	3727	3.47	3915	3.97	4271	4.98	4609	5.92	4927	7.11		
2250	2586	3456	2.82	3673	3.39	3870	3.94	4048	4.48	4384	5.46	4704	6.51	5009	7.84	5297	9.08
2500	2874	3622	3.24	3806	3.77	4002	4.38	4192	5.02	4517	6.01	4818	7.14	5111	8.58	5383	9.87
2750	3161	3814	3.79	3976	4.29	4141	4.85	4319	5.51	4648	6.59	4954	7.84	5240	9.34	5495	10.53
3000	3448	4019	4.43	4168	4.94			4478	6.28	4800	7.41	5098	8.64	5381	10.11	5629	11.28
3250	3736	4229	5.18					4678	7.06	5000	8.24	5286	9.44	5561	10.91		
3500	4023							4878	7.87	5200	9.06	5464	10.24				
3750	4310							5078	8.71	5300	9.91	5642	11.11				
4000	4598							5278	9.58	5400	10.78	5820	12.01				
4250	4885							5478	10.48	5500	11.68	6000	12.94				
4500	5172							5678	11.40	5600	12.60	6180	13.90				
4750	5460							5878	12.34	5700	13.54	6360	14.88				

Size 15 A03- -15 BC100

or A03PO-152BC100

Wheel Diameter - 15.375 in.
Outlet Area - 1.371 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1000	729	818	0.12	1065	0.23												
1500	1094	978	0.21	1178	0.37	1367	0.52	1525	0.69	1669	0.86	1806	1.06				
2000	1459	1165	0.35	1343	0.55	1492	0.75	1636	0.96	1779	1.17	1904	1.39	2021	1.61	2131	1.84
2500	1823	1370	0.55	1520	0.79	1661	1.04	1787	1.30	1899	1.55	2016	1.81	2132	2.07	2244	2.34
3000	2188	1587	0.83	1716	1.10	1838	1.39	1957	1.70	2068	2.01	2168	2.32	2260	2.62	2356	2.92
3500	2553	1810	1.21	1923	1.52	2032	1.84	2136	2.18	2237	2.53	2337	2.90	2431	3.27	2515	3.62
4000	2918	2038	1.70	2138	2.05	2235	2.41	2329	2.78	2421	3.17	2510	3.57	2599	3.98	2685	4.40
4500	3282	2268	2.31	2358	2.70	2446	3.10	2532	3.51	2615	3.94	2697	4.37	2777	4.81	2856	5.26
5000	3647	2501	3.07	2583	3.50	2663	3.94	2741	4.39	2818	4.85	2893	5.32	2967	5.80	3040	6.28
5500	4012	2735	4.00	2810	4.46	2883	4.94	2955	5.43	3026	5.92	3096	6.43	3165	6.94	3232	7.47
6000	4376	2971	5.09	3040	5.60	3107	6.11	3174	6.64	3240	7.17	3305	7.72	3369	8.27	3432	8.83
6500	4741	3207	6.38	3271	6.93	3334	7.48	3396	8.05	3457	8.62	3517	9.20	3576	9.79	3634	10.37
7000	5106	3445	7.88					3657	9.64	3716	10.24	3774	10.84	3831	11.45	3887	12.07
7500	5470							3857	10.88	3916	11.44	3974	12.04	4031	12.65	4087	13.27
2400	1751	2417	2.76	2600	3.31	2775	3.91										
2800	2042	2510	3.28	2687	3.86	2851	4.50	3008	5.14	3307	6.55						
3200	2334	2595	3.85	2776	4.53	2943	5.21	3095	5.90	3377	7.34	3643	8.86	3895	10.46		
3600	2626	2706	4.49	2866	5.23	3029	5.99	3186	6.76	3469	8.23	3719	9.81	3959	12.10	4183	13.84
4000	2918	2842	5.23	2983	6.02	3125	6.84	3272	7.67	3567	9.23	3803	11.41	4001	13.23	4262	15.52
4400	3209	2978	6.01	3120	6.91	3249	7.79			3667	10.06	3900	12.41	4131	14.41	4348	16.22
4800	3501	3113	6.84	3255	7.85			3767	10.91	3999	10.92	4096	13.42	4272	15.63	4440	17.33
5200	3793	3254	7.77					3867	11.78	4096	11.82	4192	14.44	4372	16.65		
5600	4085							3967	12.66	4192	12.74	4288	15.46	4468	17.67		
6000	4376							4067	13.56	4288	13.66	4384	16.48	4564	18.69		
6400	4668							4167	14.46	4384	14.58	4480	17.50				
6800	4960							4267	15.38	4480	15.50	4576	18.52				
7200	5252							4367	16.30	4576	16.42						
7600	5543							4467	17.24	4672	17.34						

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.



Performance Data

Size 18 A03- -18 BC100 or A03PO-182BC100

Wheel Diameter - 18.5 in.
Outlet Area - 1.984 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1400	706	663	0.15	874	0.31												
2100	1058	784	0.26	954	0.46	1110	0.66	1247	0.90	1371	1.17	1485	1.46				
2800	1411	942	0.44	1076	0.66	1205	0.93	1326	1.20	1443	1.48	1551	1.78	1652	2.10	1747	2.45
3500	1764	1114	0.71	1223	0.97	1331	1.26	1438	1.59	1536	1.93	1633	2.27	1729	2.60	1821	2.95
4200	2117	1295	1.06	1391	1.40	1479	1.72	1568	2.06	1659	2.44	1746	2.84	1827	3.25	1908	3.66
4900	2470	1481	1.57	1563	1.95	1644	2.33	1719	2.69	1795	3.08	1873	3.51	1951	3.96	2025	4.43
5600	2823	1671	2.24	1742	2.62	1814	3.09	1885	3.52	1950	3.93	2016	4.36	2083	4.82	2152	5.32
6300	3175	1862	3.10	1927	3.47	1990	3.98	2054	4.50	2117	4.98	2175	5.44	2233	5.91	2292	6.41
7000	3528	2055	4.16	2114	4.55	2171	5.05	2228	5.65	2286	6.20	2343	6.74	2395	7.25	2447	7.76
7700	3881	2249	5.45	2303	5.87	2355	6.33	2407	6.95	2455	7.61	2512	8.23	2564	8.82	2612	9.39
8400	4234	2445	6.98	2494	7.44	2542	7.92	2590	8.50	2637	9.20	2685	9.92	2733	10.6	2781	11.2
9100	4587	2640	8.79	2686	9.29	2731	9.79	2775	10.9	2819	11.0						
9800	4940	2836	10.9	2879	11.4												
10500	5292																
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
3500	1764	1990	3.72	2147	4.56	2294	5.46	2433	6.41								
4000	2016	2045	4.22	2198	5.07	2340	5.99	2475	6.97	2726	9.07						
4500	2268	2106	4.85	2254	5.72	2394	6.64	2525	7.64	2770	9.78	2996	12.7	3208	14.6		
5000	2520	2181	5.52	2317	6.49	2451	7.45	2581	8.43	2819	10.6	3041	13.0	3243	15.5	3444	17.2
5500	2772	2268	6.22	2393	7.29	2516	8.35	2639	9.42	2875	11.8	3091	13.6	3284	16.3	3485	18.5
6000	3024	2357	6.99	2480	8.14	2594	9.30	2707	10.5	2932	13.8	3140	15.2	3334	17.8	3533	20.6
6500	3276	2451	7.86	2569	9.05	2682	10.3			3077	16.1	3191	16.6	3384	18.9	3582	22.0
7000	3528	2553	8.86	2662	10.1					3227	18.5	3242	18.6	3434	20.3	3632	23.5
7500	3780	2662	10.0							3374	21.0	3287	20.7	3484	21.8	3682	25.0
8000	4032									3520	23.5	3332	22.8	3534	23.1	3732	26.5
8500	4284									3666	26.0	3377	24.9	3584	24.4		
9000	4536									3812	28.5	3422	26.0				
9500	4788									3958	31.0	3467	27.1				
10000	5040									4104	33.5	3512	28.2				

Size 18 A03- -18 BA100 or A03PO-182BA100

Wheel Diameter - 18.5 in.
Outlet Area - 1.984 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1400	706	690	0.16	915	0.33												
2100	1058	807	0.27	995	0.48	1154	0.69	1303	0.96	1439	1.25						
2800	1411	961	0.44	1109	0.70	1256	1.00	1381	1.25	1500	1.53	1615	1.86	1725	2.22	1830	2.61
3500	1764	1128	0.69	1255	0.99	1371	1.33	1491	1.70	1603	2.06	1702	2.37	1797	2.69	1892	3.07
4200	2117	1307	1.04	1415	1.40	1518	1.76	1615	2.16	1713	2.60	1813	3.05	1906	3.48	1991	3.85
4900	2470	1491	1.50	1583	1.92	1676	2.33	1764	2.76	1848	3.22	1930	3.71	2016	4.23	2101	4.76
5600	2823	1678	2.10	1761	2.56	1841	3.05	1922	3.52	1999	4.01	2073	4.53	2145	5.06	2217	5.62
6300	3175	1868	2.86	1943	3.36	2014	3.91	2086	4.45	2158	4.98	2227	5.53	2293	6.10	2358	6.69
7000	3528	2059	3.81	2128	4.34	2193	4.93	2257	5.55	2322	6.14	2387	6.73	2449	7.33	2510	7.95
7700	3881	2251	4.95	2315	5.52	2376	6.15	2434	6.81	2492	7.50	2551	8.15	2610	8.79	2668	9.44
8400	4234	2444	6.32	2503	6.92	2560	7.58	2615	8.29	2668	9.02	2721	9.77	2775	10.5	2829	11.2
9100	4587	2638	7.93	2693	8.57	2746	9.26	2798	10.00	2848	10.8						
9800	4940	2833	9.80	2884	10.5												
10500	5292																
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
3500	1764	2075	3.92	2246	4.85	2407	5.83										
4000	2016	2125	4.38	2298	5.31	2443	6.34	2591	7.42	2862	9.62						
4500	2268	2195	5.07	2342	5.91	2489	6.92	2631	8.02	2898	10.4	3145	13.3				
5000	2520	2275	5.90	2413	6.80	2548	7.69	2682	8.76	2936	11.3	3185	14.2	3407	16.8		
5500	2772	2352	6.68	2496	7.80	2624	8.79	2747	9.77	2974	12.3	3225	15.1	3447	17.8	3653	20.6
6000	3024	2433	7.44	2573	8.74	2705	9.98	2825	11.1	2993	13.4	3265	16.0	3487	18.7	3693	21.0
6500	3276	2525	8.29	2653	9.64	2782	11.0			3031	14.5	3305	17.0	3527	19.6	3733	21.1
7000	3528	2628	9.26	2743	10.6					3069	15.6	3345	18.0	3567	20.6		
7500	3780	2735	10.3							3107	16.7	3385	19.0	3607	21.6		
8000	4032									3145	17.8	3425	20.0	3647	22.6		
8500	4284									3183	18.9	3465	21.0				
9000	4536									3221	20.0	3505	22.0				
9500	4788									3259	21.1	3545	23.0				
10000	5040									3297	22.2	3585	24.0				

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 22 A03- -22 BC100

or A03PO-222BC100

Wheel Diameter - 22.625 in.
Outlet Area - 2.967 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	674	536	0.21	710	0.44												
3000	1011	626	0.36	769	0.65	899	0.95	1012	1.30	1115	1.70						
4000	1348	746	0.60	861	0.93	968	1.32	1071	1.70	1168	2.11	1257	2.56	1341	3.04	1420	3.55
5000	1685	879	0.96	971	1.33	1064	1.76	1153	2.24	1236	2.73	1319	3.21	1399	3.69	1474	4.22
6000	2022	1018	1.43	1100	1.91	1175	2.36	1252	2.86	1329	3.43	1400	4.01	1469	4.59	1539	5.17
7000	2359	1163	2.08	1233	2.64	1301	3.18	1365	3.70	1431	4.27	1498	4.91	1563	5.57	1624	6.25
8000	2696	1310	2.96	1371	3.53	1433	4.19	1492	4.79	1547	5.38	1604	6.02	1663	6.71	1722	7.45
9000	3033	1459	4.08	1514	4.64	1568	5.40	1624	6.11	1675	6.77	1724	7.44	1775	8.14	1826	8.88
10000	3370	1610	5.47	1659	6.03	1708	6.80	1757	7.64	1807	8.42	1853	9.17	1898	9.90	1943	10.7
11000	3707	1761	7.15	1806	7.75	1851	8.48	1895	9.40	1940	10.3	1985	11.2	2028	12.0	2069	12.8
12000	4044	1913	9.16	1955	9.81	1996	10.5	2037	11.4	2077	12.4	2119	13.4	2160	14.4	2200	15.3
13000	4382	2066	11.5	2105	12.2	2143	13.0	2181	13.8	2218	14.9	2255	16.0	2294	17.0	2332	18.1
14000	4719	2219	14.3	2255	15.0	2291	15.8	2326	16.6	2362	17.5	2397	18.5	2432	19.5	2466	20.5
15000	5056	2372	17.4	2402	18.0	2437	18.8	2472	19.7	2507	20.6	2542	21.6	2577	22.6	2612	23.6
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
4800	1618	1603	5.20	1734	6.44	1857	7.76										
5600	1887	1649	5.91	1775	7.17	1893	8.53	2005	9.97								
6400	2157	1699	6.83	1823	8.09	1937	9.48	2046	11.0	2248	14.1						
7200	2427	1759	7.88	1874	9.27	1986	10.7	2093	12.1	2290	15.4						
8000	2696	1832	8.98	1936	10.5	2040	12.1	2143	13.6	2337	17.0	2538	21.5	2743	26.5	2952	32.4
8800	2966	1911	10.2	2011	11.9	2105	13.6	2200	15.3	2394	19.7	2592	24.5	2798	29.5	2998	35.4
9600	3236	1991	11.5	2089	13.3	2181	15.1	2276	17.0	2462	21.7	2662	27.5	2868	32.5	3072	38.4
10400	3505	2079	13.1	2169	14.9	2259	16.8	2353	18.8	2532	23.7	2732	29.5	2938	35.5	3144	41.4
11200	3775	2174	14.9	2256	16.8	2343	18.8	2437	20.8	2616	25.7	2816	31.5	3024	37.5	3216	43.4
12000	4044																
12800	4314																
13600	4584																
14400	4853																
15200	5123																

Size 22 A03- -22 BA100

or A03PO-222BA100

Wheel Diameter - 22.625 in.
Outlet Area - 2.967 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	674	557	0.22	745	0.47												
3000	1011	645	0.38	802	0.67	936	1.00	1060	1.39	1170	1.80						
4000	1348	762	0.60	888	0.99	1010	1.40	1114	1.76	1215	2.20	1312	2.70	1403	3.23	1489	3.79
5000	1685	891	0.94	998	1.38	1098	1.87	1200	2.41	1290	2.88	1372	3.32	1454	3.83	1534	4.41
6000	2022	1029	1.40	1121	1.91	1208	2.44	1290	3.03	1376	3.67	1459	4.31	1533	4.86	1603	5.40
7000	2359	1172	2.00	1251	2.61	1329	3.20	1403	3.83	1474	4.50	1546	5.22	1619	5.97	1691	6.72
8000	2696	1317	2.79	1387	3.47	1456	4.15	1524	4.83	1589	5.55	1652	6.30	1713	7.09	1777	7.93
9000	3033	1465	3.79	1528	4.52	1589	5.31	1651	6.07	1711	6.83	1769	7.63	1825	8.46	1880	9.33
10000	3370	1613	5.02	1672	5.80	1727	6.66	1782	7.54	1838	8.37	1892	9.22	1945	10.1	1996	11.0
11000	3707	1763	6.52	1817	7.35	1869	8.26	1918	9.22	1968	10.2	2019	11.1	2069	12.0	2117	13.0
12000	4044	1913	8.31	1964	9.18	2012	10.1	2058	11.2	2104	12.2	2149	13.3	2196	14.3	2242	15.3
13000	4382	2066	10.4	2111	11.3	2157	12.3	2200	13.4	2243	14.5	2284	15.7	2327	16.8	2370	17.9
14000	4719	2216	12.9	2260	13.8	2303	14.9	2344	16.0	2384	17.2	2424	18.4	2464	19.5	2504	20.6
15000	5056	2369	15.7	2411	16.8	2452	17.8	2492	19.0	2532	20.2	2572	21.4	2612	22.5	2652	23.6
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
4800	1618	1677	5.63	1820	6.88												
5600	1887	1715	6.17	1852	7.58	1982	9.08	2104	10.7								
6400	2157	1767	7.06	1894	8.42	2017	9.94	2136	11.6	2358	15.1						
7200	2427	1835	8.35	1951	9.62	2064	11.0	2176	12.7								
8000	2696	1905	9.65	2020	11.2	2126	12.6	2228	14.1	2432	17.4	2622	21.6	2805	25.8	2970	30.4
8800	2966	1973	10.9	2089	12.8	2197	14.5	2295	16.1	2488	19.2	2672	23.2	2841	27.5	2998	33.2
9600	3236	2052	12.2	2158	14.2	2265	16.3	2363	17.7	2538	21.1	2714	25.2	2882	29.4	3046	35.2
10400	3505	2141	13.7	2235	15.8	2334	18.3	2432	19.2	2616	23.1	2796	27.2	2954	31.4	3096	37.2
11200	3775	2234	15.4														
12000	4044																
12800	4314																
13600	4584																
14400	4853																
15200	5123																

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 24 A03- -24 BC100

or A03PO-242BC100

Wheel Diameter - 24.625 in.
Outlet Area - 3.516 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	683	482	0.26	639	0.49												
3600	1024	563	0.44	693	0.79	809	1.09	912	1.45	1004	1.86						
4800	1365	667	0.71	775	1.14	874	1.60	965	2.05	1052	2.43	1132	2.88	1207	3.37	1279	3.90
6000	1706	788	1.13	871	1.59	958	2.16	1040	2.71	1115	3.32	1188	3.88	1259	4.36	1327	4.85
7200	2048	913	1.71	984	2.25	1054	2.82	1127	3.50	1197	4.18	1263	4.85	1326	5.59	1386	6.31
8400	2389	1040	2.46	1106	3.13	1164	3.75	1224	4.42	1286	5.19	1349	6.02	1408	6.79	1465	7.57
9600	2730	1171	3.47	1230	4.23	1283	4.94	1335	5.66	1387	6.42	1441	7.26	1496	8.19	1550	9.13
10800	3072	1304	4.74	1356	5.54	1407	6.41	1453	7.20	1498	8.01	1545	8.86	1592	9.76	1641	10.8
12000	3413	1438	6.31	1484	7.15	1532	8.13	1576	9.06	1617	9.93	1658	10.8	1699	11.8	1742	12.7
13200	3754	1573	8.20	1615	9.12	1657	10.1	1701	11.2	1740	12.2	1777	13.2	1814	14.1	1851	15.2
14400	4096	1708	10.5	1747	11.5	1785	12.5	1826	13.7	1865	14.8	1900	15.9	1934	16.9	1968	18.0
15600	4437	1844	13.1	1881	14.2	1916	15.3	1952	16.5	1989	17.8	2024	19.0	2057	20.2	2088	21.4
16800	4778	1980	16.2	2015	17.4	2048	18.5	2080	19.7	2114	21.1	2149	22.5	2181	23.8	2211	25.1
18000	5119	2117	19.7	2148	21.4	2178	22.7	2206	24.1	2234	25.5	2261	27.0	2286	28.5	2315	29.9
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
6300	1792	1466	6.30	1581	7.58	1690	8.98	1792	10.5								
7200	2048	1506	7.49	1619	8.69	1724	10.1	1823	11.6	2009	14.9						
8100	2304	1553	8.89	1660	10.3	1763	11.5	1860	13.0	2040	16.3	2207	19.9	2361	23.6		
9000	2560	1611	10.0	1709	11.9	1806	13.5	1900	14.9	2077	18.0	2246	21.6	2391	25.5	2547	29.8
9900	2816	1673	11.4	1767	13.3	1857	15.3	1945	17.2	2124	20.2	2271	23.4	2416	27.4	2564	32.0
10800	3072	1738	12.9	1830	14.9	1916	16.9	1999	19.1	2180	22.2	2327	25.4	2474	29.4	2624	34.0
11700	3328	1805	14.4	1895	16.6	1979	18.8	2062	21.1	2245	24.1	2392	27.4	2540	31.4	2692	37.0
12600	3584	1877	16.0	1961	18.4												
13500	3840	1955	18.0														
14400	4096																
15300	4352																
16200	4608																
17100	4863																
18000	5119																

Size 24 A03- -24 BA100

or A03PO-242BA100

Wheel Diameter - 24.625 in.
Outlet Area - 3.516 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	683	499	0.25	679	0.53												
3600	1024	575	0.41	716	0.75	846	1.14	965	1.58	1068	2.02						
4800	1365	678	0.67	791	1.08	898	1.52	999	1.99	1097	2.52	1190	3.09	1277	3.68	1358	4.27
6000	1706	795	1.05	888	1.52	978	2.04	1065	2.59	1148	3.15	1229	3.73	1308	4.38	1386	5.05
7200	2048	920	1.59	997	2.12	1074	2.69	1150	3.32	1224	3.98	1295	4.63	1364	5.30	1432	6.00
8400	2389	1049	2.32	1115	2.90	1182	3.54	1248	4.22	1313	4.94	1377	5.69	1440	6.46	1501	7.22
9600	2730	1181	3.25	1239	3.91	1297	4.60	1356	5.35	1413	6.12	1470	6.93	1527	7.77	1583	8.64
10800	3072	1315	4.43	1367	5.19	1418	5.91	1470	6.72	1522	7.56	1573	8.42	1624	9.32	1675	10.3
12000	3413	1450	5.87	1497	6.73	1543	7.54	1590	8.37	1636	9.28	1683	10.2	1729	11.2	1775	12.1
13200	3754	1585	7.61	1629	8.56	1671	9.48	1713	10.4	1755	11.3	1798	12.3	1840	13.3	1882	14.4
14400	4096	1721	9.69	1762	10.7	1801	11.8	1840	12.7	1878	13.7	1917	14.7	1956	15.8	1995	16.9
15600	4437	1858	12.1	1896	13.2	1933	14.4	1968	15.6	2004	16.6	2039	17.5	2073	18.7	2107	19.8
16800	4778	1995	15.0	2031	16.1	2066	17.4	2099	18.6	2132	19.7	2165	20.8	2197	22.0	2228	23.1
18000	5119	2133	18.2														
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
6300	1792	1538	6.73	1672	8.27	1795	9.83	1907	11.4								
7200	2048	1565	7.50	1693	9.14	1814	10.9	1930	12.6	2136	16.2						
8100	2304	1603	8.44	1722	10.1	1838	11.9	1949	13.6	2158	17.7	2346	21.7				
9000	2560	1654	9.37	1763	11.3	1869	13.1	1975	15.0	2178	19.2	2366	23.1	2541	28.0	2724	33.0
9900	2816	1711	10.8	1814	12.6	1914	14.5	2011	16.4	2203	20.7	2387	24.5	2564	29.0	2749	34.5
10800	3072	1774	12.2	1871	14.1	1966	16.1	2058	18.2	2236	22.4	2412	27.1	2581	32.3	2751	37.0
11700	3328	1843	13.7	1934	15.8	2024	17.9	2113	19.6	2300	24.1	2474	29.1	2646	34.3	2763	39.6
12600	3584	1915	15.3	2002	17.5												
13500	3840	1992	17.1														
14400	4096																
15300	4352																
16200	4608																
17100	4863																
18000	5119																

Performance certified for Installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 27 A03- -27 BC100

or A03PO-272BC100

Wheel Diameter - 27.625 in.
Outlet Area - 4.425 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	678	429	0.32	569	0.61												
4500	1017	501	0.55	617	0.98	721	1.36	812	1.81	895	2.33						
6000	1356	592	0.88	689	1.42	777	2.00	858	2.56	936	3.03	1008	3.60	1075	4.22	1139	4.88
7500	1695	699	1.40	773	1.98	852	2.69	925	3.38	992	4.14	1057	4.84	1121	5.43	1181	6.05
9000	2034	809	2.12	873	2.79	935	3.51	1001	4.36	1064	5.21	1123	6.05	1179	6.98	1233	7.87
10500	2373	922	3.05	980	3.88	1033	4.66	1087	5.50	1143	6.47	1199	7.50	1252	8.47	1302	9.44
12000	2712	1038	4.29	1091	5.24	1138	6.13	1184	7.03	1231	7.99	1280	9.04	1329	10.2	1378	11.4
13500	3051	1155	5.85	1202	6.86	1248	7.95	1289	8.93	1329	9.94	1371	11.0	1414	12.1	1458	13.4
15000	3390	1274	7.79	1315	8.85	1358	10.1	1397	11.2	1434	12.3	1471	13.4	1508	14.6	1546	15.8
16500	3729	1393	10.1	1431	11.3	1469	12.5	1508	13.9	1543	15.1	1576	16.3	1609	17.6	1643	18.8
18000	4068	1513	12.9	1548	14.2	1582	15.4	1618	16.9	1653	18.4	1684	19.7	1715	21.0	1745	22.4
19500	4407	1633	16.2	1666	17.5	1697	18.9	1730	20.4	1763	22.0	1795	23.6	1824	25.0	1852	26.4
21000	4746	1754	20.0	1785	21.4	1814	22.9	1843	24.4	1871	26.0	1898	27.6	1924	29.0	1949	30.4
22500	5085	1875	24.3	1903	25.8	1929	27.3	1954	28.9	1978	30.5	2001	32.1	2023	33.5	2044	35.0
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
7200	1627	1286	7.23	1391	8.84												
8400	1898	1321	8.47	1423	10.1	1518	11.8	1608	13.7								
9600	2169	1361	10.3	1460	11.8	1553	13.5	1640	15.4	1803	19.5						
10800	2441	1411	12.0	1502	14.1	1591	15.8	1677	17.5	1836	21.6	1987	26.2	2120	31.1		
12000	2712	1469	13.6	1554	16.0	1635	18.4	1717	20.5	1875	24.3	2018	29.8	2155	33.7	2278	39.1
13200	2983	1529	15.5	1612	18.0	1689	20.6	1764	23.5	1921	27.7	2062	32.1	2194	37.0	2309	42.3
14400	3254	1592	17.5	1672	20.3	1748	22.9			1977	30.2	2118	34.5	2242	39.4	2364	45.2
15600	3525	1658	19.7	1735	22.7					2032	32.8	2172	36.9	2294	41.8	2418	48.0
16800	3797	1730	22.2							2087	35.4	2224	39.3	2344	44.2	2471	50.8
18000	4068									2142	38.0	2274	41.7	2394	46.6	2523	53.6
19200	4339									2197	40.6	2322	44.1	2442	49.0	2574	56.4
20400	4610									2252	43.2	2368	46.5	2488	51.4	2624	59.2
21600	4881									2307	45.8	2412	48.9	2538	53.8	2673	62.0
22800	5153									2362	48.4	2454	51.2	2584	56.0		

Size 27 A03- -27 BA100

or A03PO-272BA100

Wheel Diameter - 27.625 in.
Outlet Area - 4.425 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	678	445	0.31	605	0.67												
4500	1017	511	0.52	637	0.94	754	1.43	860	1.98	952	2.53						
6000	1356	601	0.83	703	1.35	799	1.90	889	2.49	977	3.16	1060	3.87	1138	4.60	1210	5.35
7500	1695	705	1.30	788	1.89	869	2.54	947	3.23	1022	3.93	1094	4.67	1165	5.47	1234	6.33
9000	2034	815	1.97	885	2.63	954	3.35	1022	4.14	1088	4.96	1152	5.78	1214	6.62	1274	7.49
10500	2373	930	2.87	989	3.59	1049	4.40	1108	5.25	1166	6.16	1224	7.10	1280	8.06	1334	9.01
12000	2712	1047	4.02	1099	4.84	1151	5.71	1203	6.65	1255	7.62	1306	8.63	1357	9.69	1407	10.8
13500	3051	1165	5.47	1212	6.42	1257	7.33	1304	8.35	1350	9.40	1396	10.5	1442	11.6	1488	12.8
15000	3390	1284	7.25	1327	8.33	1368	9.33	1410	10.4	1452	11.5	1493	12.7	1535	13.9	1576	15.1
16500	3729	1404	9.40	1443	10.6	1481	11.7	1519	12.8	1557	14.0	1595	15.3	1633	16.5	1671	17.8
18000	4068	1524	12.0	1561	13.3	1596	14.6	1631	15.7	1665	16.9	1700	18.3	1735	19.6	1770	21.0
19500	4407	1645	15.0	1680	16.4	1712	17.6	1745	19.1	1776	20.4	1808	21.7	1839	23.0	1869	24.3
21000	4746	1767	18.5	1799	20.0					1807	22.0	1837	23.3	1866	24.6	1894	25.8
22500	5085									1837	23.3	1866	24.6	1894	25.8	1921	27.0
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
7200	1627	1360	7.88	1479	9.67												
8400	1898	1380	8.85	1498	10.9	1608	12.9	1709	15.0								
9600	2169	1409	9.95	1520	12.1	1626	14.3	1728	16.6	1915	21.4						
10800	2441	1492	11.4	1593	13.5	1652	15.7	1749	18.2	1933	23.3	2101	28.6				
12000	2712	1504	13.0	1598	15.2	1689	17.5	1778	19.9	1954	25.3	2124	30.5	2275	36.8	2420	42.5
13200	2983	1562	14.7	1650	17.1	1735	19.6	1819	22.1	1982	27.3	2144	32.3	2292	39.1	2438	45.3
14400	3254	1625	16.6	1708	19.2	1789	21.9			2008	29.6	2170	34.0	2314	41.3	2457	48.0
15600	3525	1692	18.8	1770	21.6					2034	31.9	2201	35.8	2344	43.4	2481	50.8
16800	3797	1764	21.2							2060	34.2	2231	38.1	2374	45.7	2504	53.6
18000	4068									2086	36.5	2261	40.4	2404	48.0	2527	56.4
19200	4339									2112	38.8	2291	42.7	2434	50.3	2549	59.2
20400	4610									2138	41.1	2321	45.0	2464	52.6		
21600	4881									2164	43.4	2351	47.3	2494	54.9		
22800	5153									2190	45.7	2381	49.6	2524	57.2		

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 30 A03- -30 BC100

or A03PO-302BC100

Wheel Diameter - 30.0 in.
Outlet Area - 5.218 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	767	410	0.44	534	0.80	636	1.25										
6000	1150	491	0.77	592	1.34	681	1.90	763	2.40	837	3.01	906	3.68				
8000	1533	596	1.33	673	1.99	750	2.75	820	3.54	886	4.29	951	4.90	1011	5.62	1068	6.40
10000	1916	710	2.18	771	2.93	833	3.77	897	4.74	956	5.66	1011	6.66	1065	7.67	1118	8.52
12000	2300	826	3.33	881	4.27	931	5.17	982	6.16	1036	7.30	1088	8.45	1138	9.56	1185	10.7
14000	2683	946	4.92	996	6.03	1039	7.06	1082	8.12	1126	9.25	1172	10.5	1218	11.9	1262	13.2
16000	3066	1069	7.00	1111	8.19	1154	9.48	1191	10.6	1228	11.8	1267	13.1	1306	14.4	1346	15.9
18000	3450	1192	9.64	1229	10.9	1268	12.4	1305	13.8	1338	15.1	1377	16.4	1405	17.8	1439	19.3
20000	3833	1317	12.9	1350	14.3	1384	15.8	1420	17.5	1451	19.0	1481	20.4	1511	21.9	1541	23.4
22000	4216	1442	16.8	1473	18.4	1503	19.9	1535	21.7	1567	23.5	1595	25.2	1622	26.8	1650	28.4
24000	4599	1567	21.8	1596	23.2	1624	24.9	1652	26.6	1681	28.6						
26000	4983	1693	27.1	1720	28.9												
28000	5366																
30000	5749																
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
		9000	1725	1195	9.00	1291	10.9	1381	13.0								
10500	2012	1232	10.8	1324	12.6	1411	14.7	1493	16.9	1546	21.8						
12000	2300	1274	13.2	1362	15.2	1447	17.0	1526	19.2	1674	24.1	1831	28.8				
13500	2587	1328	15.1	1408	17.9	1486	20.3	1563	22.5	1708	27.4	1874	32.4	2048	38.3	2216	44.6
15000	2875	1385	17.4	1462	20.2	1535	23.3	1606	26.2	1748	31.1	1924	37.1	2108	44.6	2284	52.8
16500	3162	1446	19.9	1520	23.0	1591	26.0										
18000	3450	1509	22.4	1581	26.0												
19500	3737	1578	25.5														
21000	4025																
22500	4312																
24000	4599																
25500	4887																
27000	5174																
28500	5462																

Size 30 A03- -30 BA100

or A03PO-302BA100

Wheel Diameter - 30.0 in.
Outlet Area - 5.218 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	767	422	0.42	562	0.86												
6000	1150	501	0.74	608	1.28	706	1.87	800	2.55	886	3.29	963	4.03				
8000	1533	603	1.24	687	1.90	768	2.62	844	3.36	917	4.15	990	5.02	1059	5.95	1125	6.91
10000	1916	715	2.02	783	2.77	850	3.60	916	4.49	979	5.40	1040	6.33	1100	7.29	1158	8.30
12000	2300	833	3.13	890	3.96	946	4.90	1002	5.88	1057	6.93	1112	8.02	1164	9.11	1216	10.2
14000	2683	954	4.62	1003	5.57	1051	6.59	1100	7.68	1148	8.82	1196	10.0	1243	11.2	1289	12.5
16000	3066	1077	6.54	1120	7.67	1162	8.74	1205	9.94	1248	11.2	1290	12.5	1332	13.8	1373	15.2
18000	3450	1202	8.96	1240	10.3	1278	11.5	1315	12.7	1353	14.1	1391	15.5	1429	16.9	1466	18.3
20000	3833	1327	12.0	1362	13.4	1396	14.8	1430	16.1	1464	17.5	1498	19.0	1532	20.6	1566	22.1
22000	4216	1452	15.6	1485	17.2	1516	18.8	1547	20.2	1578	21.7	1609	23.2	1640	24.9	1671	26.6
24000	4599	1579	19.9	1609	21.6	1636	23.4	1666	25.1	1695	26.7						
26000	4983	1705	25.0	1733	26.8												
28000	5366																
30000	5749																
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
		9000	1725	1258	9.70	1369	11.9	1468	14.1								
10500	2012	1281	11.0	1387	13.4	1487	15.9	1582	18.5	1751	23.7						
12000	2300	1316	12.5	1413	15.0	1508	17.6	1600	20.4	1771	26.3	1924	32.8				
13500	2587	1362	14.4	1451	16.9	1538	19.6	1624	22.5	1790	28.7	1974	35.1	2158	42.6	2316	48.6
15000	2875	1416	16.5	1499	19.3	1580	22.1	1669	25.0	1834	32.7	2024	39.1	2208	46.3	2386	52.7
16500	3162	1476	18.8	1554	21.8	1630	24.8										
18000	3450	1540	21.4	1613	24.6												
19500	3737	1609	24.3														
21000	4025																
22500	4312																
24000	4599																
25500	4887																
27000	5174																
28500	5462																

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 33 A03- -33 BC100

or A03PO-332BC100

Wheel Diameter - 33.0 in.
Outlet Area - 6.314 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	950	403	0.68	499	1.18	588	1.79	669	2.46								
8000	1267	472	1.08	556	1.79	629	2.46	696	3.14	763	3.95	825	4.82	885	5.73	942	6.68
10000	1584	552	1.68	620	2.47	687	3.38	749	4.30	803	5.04	856	5.88	911	6.88	963	7.92
12000	1901	637	2.49	694	3.41	750	4.39	806	5.46	861	6.63	910	7.64	954	8.53	998	9.46
14000	2217	724	3.57	775	4.65	823	5.72	871	6.87	919	8.10	967	9.43	1013	10.8	1055	12.0
16000	2534	813	4.97	859	6.18	903	7.41	944	8.64	986	9.96	1028	11.3	1070	12.8	1112	14.3
18000	2851	904	6.74	945	8.07	985	9.46	1023	10.8	1060	12.2	1097	13.7	1135	15.2	1172	16.8
20000	3168	995	8.91	1033	10.4	1069	11.9	1105	13.4	1139	14.9	1172	16.5	1205	18.1	1239	19.8
22000	3484	1088	11.5	1122	13.1	1155	14.7	1188	16.4	1220	18.1	1251	19.8	1281	21.5	1311	23.2
24000	3801	1181	14.7	1212	16.3	1243	18.1	1274	19.9	1304	21.8	1333	23.6	1361	25.5	1389	27.3
26000	4118	1274	18.3	1303	20.1	1332	22.0	1360	24.0	1388	26.0	1416	28.0	1443	30.0	1469	31.9
28000	4435	1368	22.6	1395	24.5	1421	26.5	1448	28.6	1474	30.7	1500	32.9	1526	36.0	1551	37.2
30000	4751	1462	27.5	1487	29.6	1512	31.7	1537	33.8	1562	36.0	1587	38.2	1612	40.7	1637	43.0
32000	5068	1556	33.1	1580	35.3	1607	37.9	1632	39.8	1657	42.0	1682	44.5	1707	47.5	1733	49.5
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
10500	1663	1067	10.5	1159	12.9	1245	15.4										
12000	1901	1089	11.8	1176	14.3	1258	16.9	1337	19.7								
13500	2138	1118	13.3	1199	15.9	1278	18.7	1353	21.5	1496	27.6	1529	34				
15000	2376	1160	15.6	1230	17.9	1303	20.6	1375	23.6	1511	29.9	1540	36.7	1572	43.8		
16500	2613	1204	18.1	1272	20.7	1337	23.1	1402	25.9	1533	32.2	1557	39.4	1582	46.5	1637	54.6
18000	2851	1246	20.2	1317	23.7	1380	26.5	1439	29.1	1553	34.5	1579	42.2	1602	49.2	1651	58
19500	3088	1291	22.4	1359	26.2	1424	29.9	1483	33.0	1569	36.9	1593	45.1	1619	52.1	1661	62.0
21000	3326	1339	25.0	1403	28.8	1466	32.5	1522	35.9	1583	39.9	1607	48.0	1638	55.2	1681	65.0
22500	3564	1390	27.9	1450	31.8			1572	38.9	1603	42.9	1633	51.0	1659	58.3	1701	68.0
24000	3801	1444	31.1					1620	42.0	1650	46.0	1678	54.1	1703	61.4	1746	71.0
25500	4039							1668	45.1	1698	49.1	1728	57.2	1731	64.5	1789	74.0
27000	4276							1716	48.2	1748	52.2	1758	60.3	1781	67.6	1831	77.0
28500	4514							1764	51.3	1798	55.3	1808	63.4	1804	70.7	1881	80.0
30000	4751							1812	54.4	1848	58.4	1858	66.5	1821	73.8		

Size 33 A03- -33 BA100

or A03PO-332BA100

Wheel Diameter - 33.0 in.
Outlet Area - 6.314 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	950	410	0.64	510	1.18	610	1.83	698	2.57								
8000	1267	486	1.04	563	1.66	638	2.36	715	3.16	789	4.03	858	4.96	924	5.98	983	7.01
10000	1584	571	1.64	635	2.36	696	3.14	756	3.98	816	4.90	878	5.91	939	6.97	997	8.09
12000	1901	660	2.46	715	3.31	768	4.19	819	5.12	869	6.10	918	7.13	969	8.24	1021	9.42
14000	2217	752	3.53	801	4.54	847	5.53	892	6.56	937	7.64	980	8.76	1023	9.91	1064	11.1
16000	2534	844	4.90	890	6.08	931	7.22	972	8.35	1011	9.52	1050	10.7	1088	12.0	1126	13.3
18000	2851	937	6.61	980	7.96	1019	9.25	1055	10.5	1091	11.8	1126	13.1	1161	14.5	1195	15.9
20000	3168	1030	8.70	1072	10.2	1108	11.7	1141	13.1	1174	14.5	1206	16.0	1238	17.4	1270	18.9
22000	3484	1124	11.2	1164	12.9	1199	14.6	1230	16.1	1260	17.7	1290	19.3	1320	20.8	1348	22.4
24000	3801	1218	14.2	1257	16.1	1290	17.9	1320	19.6	1349	21.4	1376	23.1	1404	24.8	1431	26.5
26000	4118	1313	17.7	1350	19.7	1363	21.7	1411	23.7	1439	25.5	1465	27.4	1490	29.3	1515	31.1
28000	4435	1408	21.7	1443	24.0	1475	26.1	1503	28.2	1529	30.3	1554	32.3	1578	34.3	1602	36.2
30000	4751	1503	26.3	1537	28.8	1567	31.1	1596	33.4	1623	35.6	1650	37.8	1676	40.0	1699	42.1
32000	5068	1598	31.5	1631	34.2	1650	36.2	1688	39.2	1713	41.6	1736	44.0	1758	46.5	1780	48.6
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
10500	1663	1109	10.8	1210	13.4												
12000	1901	1122	11.9	1219	14.6	1310	17.5	1396	20.6								
13500	2138	1143	13.2	1232	16.1	1321	19.0	1405	22.1	1561	28.9						
15000	2376	1173	14.8	1255	17.6	1337	20.7	1418	23.9	1570	30.8	1712	44.2	1669	46.0		
16500	2613	1215	16.6	1287	19.5	1361	22.6	1436	26.0	1583	33.0	1725	46.2	1682	48.7	1821	57.2
18000	2851	1263	18.7	1329	21.7	1394	24.9	1463	28.2	1600	35.2	1738	48.5	1695	51.5	1838	60.2
19500	3088	1314	21.1	1376	24.2	1437	27.5	1497	30.9	1623	38.2	1749	50.7	1707	54.7	1854	63.5
21000	3326	1368	23.7	1427	27.0	1484	30.4	1533	33.9	1644	41.3	1762	53.0	1720	58.1	1871	67.2
22500	3564	1425	26.7	1480	30.1			1562	37.4	1664	44.8	1775	55.5	1731	61.6	1888	71.1
24000	3801	1484	29.9					1592	40.9	1684	48.2	1788	58.0	1741	64.9	1904	75.4
25500	4039							1622	44.0	1704	51.6	1801	60.5	1751	68.3	1921	79.8
27000	4276							1652	47.1	1724	54.4	1811	63.0	1761	71.6	1938	84.2
28500	4514							1682	50.2	1744	57.2	1821	65.5	1771	74.9	1955	88.7
30000	4751							1712	53.3	1764	60.0	1831	68.0	1781	78.2		

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.



Performance Data

Size 36 A03- -36 BC100

or A03PO-362BC100

Wheel Diameter - 36.0 in.
Outlet Area - 7.514 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	665	323	0.49	433	1.03												
7500	998	378	0.87	465	1.51	543	2.22	615	3.03	682	3.92						
10000	1331	447	1.41	520	2.27	587	3.17	645	3.94	705	4.92	761	5.96	815	7.07	866	8.22
12500	1664	526	2.22	584	3.19	643	4.28	700	5.49	749	6.48	795	7.42	843	8.57	890	9.85
15000	1996	608	3.32	658	4.47	707	5.66	756	6.96	805	8.39	851	9.82	891	11.0	930	12.1
17500	2329	692	4.79	738	6.14	780	7.47	821	8.87	864	10.4	905	11.9	947	13.7	986	15.3
20000	2662	779	6.71	819	8.21	858	9.75	894	11.3	930	12.9	967	14.6	1004	16.3	1040	18.1
22500	2994	866	9.13	903	10.8	938	12.5	971	14.2	1004	15.9	1036	17.7	1069	19.6	1102	21.5
25000	3327	955	12.1	988	13.9	1020	15.8	1051	17.7	1081	19.6	1110	21.5	1139	23.5	1169	25.5
27500	3660	1044	15.7	1074	17.7	1103	19.7	1132	21.8	1161	23.9	1188	26.0	1215	28.1	1241	30.2
30000	3993	1134	20.0	1161	22.1	1188	24.3	1215	26.5	1242	28.9	1268	31.2	1293	33.5	1317	35.7
32500	4325	1224	25.1	1249	27.3	1274	29.6	1299	32.0	1324	34.5	1348	37.0	1372	39.6	1394	42.0
35000	4658	1315	30.9	1338	33.3	1361	35.8	1384	38.3	1408	41.0	1430	43.8	1452	46.4	1473	49.0
37500	4991	1405	37.7	1427	40.2	1449	42.7	1471	45.3	1492	48.3	1513	51.1	1533	54.0	1552	56.6
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
14000	1863	995	13.8	1075	16.7	1151	19.8	1224	23.1								
16000	2129	1024	15.8	1098	18.8	1170	22.1	1240	25.5	1370	32.8						
18000	2396	1067	18.8	1131	21.5	1196	24.7	1262	28.3	1387	35.9	1507	43.3	1618	52.0		
20000	2662	1112	22.0	1175	25.3	1233	28.3	1291	31.5	1410	39.2	1522	47.7	1633	56.5	1735	63.4
22000	2928	1155	24.8	1220	29.1	1278	32.9	1332	36.1	1457	43.2	1572	52.7	1684	62.0	1787	70.5
24000	3194	1202	28.0	1263	32.5	1323	37.2			1504	45.8	1624	55.9	1744	65.1	1841	74.9
26000	3460	1254	31.7	1310	36.2					1557	48.5	1681	59.2	1804	68.8	1902	79.8
28000	3726	1308	35.8							1610	51.3	1742	62.8	1864	72.8	1964	84.5
30000	3993									1663	54.2	1802	66.2	1924	76.2	2024	90.5
32000	4259									1716	57.2	1864	69.8	1984	79.8	2084	96.5
34000	4525									1770	60.2	1924	73.2	2044	83.2	2144	102.5
36000	4791									1824	63.2	1984	76.8	2104	86.8	2204	108.5
38000	5057									1878	66.2	2044	80.2	2164	90.2	2264	114.5
40000	5323									1932	69.2	2104	83.8	2224	93.8	2324	120.5

Size 36 A03- -36 BA100

or A03PO-362BA100

Wheel Diameter - 36.0 in.
Outlet Area - 7.514 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	665	330	0.49	452	1.08												
7500	998	385	0.82	473	1.47	561	2.26	641	3.15	712	4.12						
10000	1331	461	1.37	529	2.12	593	2.96	660	3.93	727	4.99	790	6.11	849	7.32	904	8.61
12500	1664	544	2.17	600	3.06	654	4.02	706	5.05	758	6.15	812	7.36	866	8.64	918	10.00
15000	1996	630	3.27	679	4.35	725	5.42	771	6.57	815	7.77	858	9.02	901	10.3	946	11.8
17500	2329	719	4.74	763	6.00	803	7.25	843	8.50	882	9.83	920	11.2	958	12.6	995	14.1
20000	2662	808	6.60	849	8.08	885	9.51	921	10.9	956	12.4	990	13.9	1024	15.4	1057	17.0
22500	2994	897	8.93	937	10.6	971	12.3	1003	13.9	1034	15.5	1065	17.1	1096	18.7	1126	20.4
25000	3327	987	11.8	1025	13.7	1057	15.6	1087	17.4	1116	19.1	1144	20.9	1172	22.7	1200	24.5
27500	3660	1078	15.2	1114	17.4	1145	19.4	1173	21.4	1200	23.4	1226	25.4	1252	27.3	1278	29.3
30000	3993	1169	19.3	1204	21.7	1234	24.0	1261	26.2	1286	28.4	1310	30.5	1334	32.6	1358	34.8
32500	4325	1260	24.1	1293	26.7	1323	29.2	1349	31.6	1373	34.0	1396	36.4	1419	38.7	1441	41.0
35000	4658	1352	29.6	1383	32.5	1412	35.2	1438	37.9	1461	40.5	1483	43.0	1504	45.5	1525	48.0
37500	4991	1444	35.9	1474	39.0	1502	42.0	1526	45.0	1549	48.0	1571	50.5	1592	53.2	1613	56.5
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
14000	1863	1027	14.0	1116	17.2	1200	20.6	1278	24.2								
16000	2129	1047	15.7	1130	19.0	1211	22.5	1287	26.2	1431	34.3						
18000	2396	1078	17.7	1153	21.2	1228	24.8	1301	28.7	1440	36.8	1520	45.0	1636	54.0		
20000	2662	1122	20.3	1187	23.7	1253	27.5	1321	31.4	1453	39.3	1537	48.5	1650	58.5	1808	68.5
22000	2928	1172	23.2	1232	26.8	1290	30.6	1350	34.6	1472	41.5	1556	51.5	1668	62.5	1828	73.5
24000	3194	1226	26.5	1282	30.3	1336	34.2	1398	38.8	1490	42.1	1612	55.2	1722	66.2	1848	78.5
26000	3460	1283	30.2	1335	34.2			1456	42.8	1536	45.3	1634	58.2	1742	71.2	1864	82.5
28000	3726	1343	34.3					1512	46.5	1596	48.3	1694	61.2	1762	74.2	1884	88.5
30000	3993							1568	50.2	1662	50.8	1752	64.2	1812	77.2	1904	94.5
32000	4259							1624	53.8	1716	53.8	1802	68.2	1862	80.2	1954	100.5
34000	4525							1680	57.5	1770	56.8	1852	72.2	1912	83.2	2004	106.5
36000	4791							1736	61.2	1824	59.8	1902	76.2	1962	86.2	2054	112.5
38000	5057							1792	64.8	1878	62.8	1952	79.2	2012	89.2	2104	118.5
40000	5323							1848	68.5	1932	65.8	2002	82.2	2062	92.2	2154	124.5

Performance certified for Installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 40 A03- -40 BC100

Wheel Diameter - 40.25 in.
Outlet Area - 9.393 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	958	332	1.03	410	1.78	483	2.68	548	3.68								
12000	1278	389	1.63	457	2.69	517	3.71	572	4.70	626	5.92	677	7.21	726	8.57	772	9.99
15000	1597	456	2.54	510	3.72	565	5.07	616	6.47	660	7.60	703	8.83	748	10.3	790	11.9
18000	1916	526	3.78	572	5.16	618	6.62	663	8.22	708	9.97	748	11.5	785	12.9	821	14.2
21000	2236	598	5.42	640	7.03	679	8.64	718	10.4	757	12.2	795	14.2	833	16.2	868	18.0
24000	2555	672	7.55	709	9.37	744	11.2	778	13.1	812	15.0	847	17.1	881	19.2	915	21.5
27000	2874	747	10.2	780	12.2	813	14.3	844	16.4	874	18.5	904	20.6	934	22.9	965	25.3
30000	3194	822	13.6	853	15.7	883	18.0	911	20.3	939	22.6	966	24.9	993	27.3	1021	29.8
33000	3513	899	17.6	926	19.9	954	22.4	981	24.9	1007	27.5	1032	30.0	1056	32.5	1081	35.1
36000	3833	976	22.3	1001	24.8	1026	27.5	1051	30.2	1076	33.0	1099	35.8	1122	38.5	1145	41.3
39000	4152	1053	27.9	1076	30.6	1100	33.4	1123	36.4	1146	39.3	1168	42.4	1190	45.4	1211	48.3
42000	4471	1130	34.4	1152	37.3	1174	40.3	1196	43.4	1217	46.6	1238	49.8	1259	53.1	1279	56.3
45000	4791	1208	41.9	1229	45.0	1249	48.1	1269	51.4	1288	54.7	1307	58.0	1326	61.3	1344	65.1
48000	5110	1286	50.4	1309	53.7	1328	57.0	1346	60.4	1363	63.9	1381	67.5	1398	71.1	1415	74.9
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
17500	1863	890	17.2	961	20.9	1030	24.8	1095	28.9								
20000	2129	916	19.7	982	23.5	1047	27.7	1109	31.9	1226	41.0						
22500	2395	954	23.6	1011	26.9	1070	30.9	1129	35.4	1240	44.8						
25000	2662	994	27.6	1051	31.7	1103	35.4	1155	39.4	1269	49.2	1351	59.5	1432	69.5	1513	79.5
27500	2928	1033	31.0	1091	36.4	1143	41.1	1191	45.2	1288	54.0	1362	64.3	1442	74.3	1523	84.3
30000	3194	1075	35.0	1130	40.6	1183	45.8			1305	58.0	1387	69.0	1467	79.0	1548	89.0
32500	3460	1121	39.6	1172	45.5					1345	63.5	1427	74.5	1507	84.5	1587	94.5
35000	3726	1170	44.7							1385	69.0	1467	80.0	1547	90.0	1627	100.0
37500	3992									1425	74.5	1507	85.5	1587	95.5	1667	105.5
40000	4258									1465	80.0	1547	91.0	1627	101.0	1707	111.0
42500	4525									1505	85.5	1587	96.5	1667	106.5	1747	116.5
45000	4791									1545	91.0	1627	102.0	1707	112.0	1787	122.0
47500	5057									1585	96.5	1667	107.5	1747	117.5	1827	127.5
50000	5323									1625	102.0	1707	113.0			1867	133.0

Size 40 A03- -40 BA100

Wheel Diameter - 40.25 in.
Outlet Area - 9.393 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	958	337	0.96	419	1.77	500	2.74	573	3.85								
12000	1278	400	1.58	463	2.50	524	3.54	587	4.73	647	6.04	704	7.42	758	8.94	807	10.5
15000	1597	471	2.48	523	3.56	573	4.73	621	5.98	671	7.36	721	8.85	770	10.4	818	12.1
18000	1916	545	3.72	590	5.01	633	6.31	675	7.71	715	9.18	755	10.7	796	12.4	838	14.1
21000	2236	621	5.36	661	6.87	699	8.37	735	9.89	771	11.5	807	13.2	841	14.9	875	16.7
24000	2555	697	7.45	734	9.21	768	10.9	801	12.6	833	14.4	865	16.2	896	18.1	927	20.0
27000	2874	774	10.0	809	12.1	840	14.0	870	15.9	899	17.9	928	19.8	956	21.8	984	23.9
30000	3194	851	13.2	885	15.5	915	17.7	942	19.9	969	22.0	995	24.1	1021	26.3	1046	28.5
33000	3513	928	17.0	962	19.6	990	22.1	1015	24.5	1040	26.8	1064	29.2	1088	31.5	1112	33.9
36000	3833	1006	21.6	1038	24.4	1065	27.2	1090	29.8	1113	32.4	1136	34.9	1158	37.5	1180	40.1
39000	4152	1085	26.9	1115	30.0	1142	33.0	1165	35.9	1187	38.7	1209	41.5	1229	44.3	1250	47.1
42000	4471	1163	33.0	1192	36.4	1218	39.7	1241	42.9	1262	45.9	1283	49.0	1302	52.0	1322	55.0
45000	4791	1242	40.0	1270	43.7	1295	47.3	1318	50.7	1338	54.0	1358	57.0	1377	60.0	1395	63.5
48000	5110	1321	48.0	1347	52.0	1370	55.3	1391	58.5	1411	61.5	1430	64.5	1448	67.5	1465	71.0
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
17500	1863	918	17.5	998	21.5	1073	25.7	1143	30.3								
20000	2129	936	19.6	1011	23.8	1083	28.2	1152	32.8	1280	42.8						
22500	2395	964	22.2	1031	26.5	1098	31.0	1164	35.9	1288	46.0	1334	57.2	1399	68.5		
25000	2662	1004	25.3	1061	29.6	1121	34.3	1181	39.3	1303	49.5	1365	61.3	1431	73.2	1506	89.1
27500	2928	1049	29.0	1102	33.5	1154	38.2	1208	43.2	1317	54.0	1379	65.4	1445	77.1	1520	93.9
30000	3194	1097	33.1	1146	37.8	1195	42.8	1249	47.9	1331	58.8	1393	70.3	1459	81.0	1535	98.9
32500	3460	1148	37.7	1194	42.7			1283	52.5	1345	63.5	1407	75.0	1473	85.5	1550	103.5
35000	3726	1201	42.9					1327	57.0	1359	68.0	1421	80.0	1487	90.0	1565	108.5
37500	3992							1371	61.5	1375	72.5	1435	85.0	1501	95.0	1580	113.5
40000	4258							1415	66.0	1379	77.0	1449	90.0	1515	100.0	1595	118.5
42500	4525							1459	70.5	1383	81.5	1463	95.0	1529	105.0	1610	123.5
45000	4791							1503	75.0	1387	86.0	1477	100.0	1543	110.0	1625	128.5
47500	5057							1547	79.5	1391	90.5	1491	105.0	1557	115.0	1640	133.5
50000	5323							1591	84.0	1395	95.0	1505	110.0			1655	138.5

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 44 A03- -44 BC100

Wheel Diameter - 44.5 in.
Outlet Area - 11.481 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	697	265	0.80	352	1.62												
12000	1045	313	1.42	382	2.48	443	3.54	500	4.81	554	6.18						
16000	1394	373	2.35	430	3.69	484	5.20	529	6.40	575	7.84	620	9.48	662	11.2	703	13.0
20000	1742	441	3.74	486	5.28	532	6.99	576	8.90	617	10.6	653	12.1	689	13.8	726	15.7
24000	2090	511	5.65	551	7.49	588	9.36	626	11.4	664	13.6	700	15.9	734	18.0	765	19.8
28000	2439	583	8.21	618	10.3	651	12.5	683	14.7	716	17.0	748	19.5	780	22.1	812	24.8
32000	2787	657	11.5	688	13.9	718	16.4	747	18.8	775	21.3	803	24.0	831	26.7	860	29.5
36000	3136	731	15.8	759	18.4	787	21.1	813	23.9	838	26.6	863	29.4	888	32.3	914	35.3
40000	3484	807	21.0	832	23.8	857	26.8	881	29.9	905	33.0	928	36.0	950	39.1	972	42.2
44000	3832	882	27.3	905	30.4	928	33.6	951	36.9	973	40.3	994	43.7	1015	47.1	1036	50.4
48000	4181	959	34.8	980	38.1	1001	41.6	1021	45.2	1042	48.8	1062	52.6	1082	56.2	1101	59.9
52000	4529	1035	43.6	1055	47.2	1074	50.9	1093	54.7	1112	58.6	1131	62.5	1150	66.3	1168	70.2
56000	4878	1112	53.9	1130	57.7	1148	61.8	1166	65.9	1184	69.8	1202	73.8	1220	77.8	1237	81.8
60000	5226	1190	65.8	1206	69.8	1224	74.1	1241	78.4	1258	82.6	1275	86.7	1293	90.6	1309	94.8
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
21000	1829	802	20.7	868	25.2	930	29.9	989	34.8								
24000	2090	824	23.6	885	28.3	944	33.3	1001	38.4	1107	49.4						
27000	2352	857	28.0	910	32.0	964	37.0	1018	42.5	1119	54.0						
30000	2613	893	32.9	944	37.6	991	42.1	1040	47.1	1137	59.1	1215	65.9	1294	74.2		
33000	2874	927	37.1	980	43.5	1026	48.8	1070	53.7	1155	64.1	1240	71.6	1320	81.8	1401	89.9
36000	3136	964	41.7	1014	48.5	1062	55.5	1106	61.5	1184	72.2	1267	78.6	1350	89.8	1441	100.0
39000	3397	1004	47.0	1051	53.9	1097	61.3	1142	68.4	1212	79.1	1294	84.2	1380	92.7	1481	111.4
42000	3658	1047	53.0	1090	60.1	1134	69.5	1184	76.3	1250	85.3	1337	91.1	1420	107.1	1521	123.3
45000	3920	1091	59.7														
48000	4181																
51000	4442																
54000	4703																
57000	4965																
60000	5226																

Size 44 A03- -44 BA100

Wheel Diameter - 44.5 in.
Outlet Area - 11.481 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
8000	697	270	0.78	367	1.69												
12000	1045	320	1.35	387	2.36	456	3.58	520	4.94	578	6.47						
16000	1394	385	2.29	438	3.48	488	4.80	539	6.27	591	7.91	641	9.67	688	11.5	733	13.5
20000	1742	456	3.67	500	5.09	542	6.60	583	8.21	623	9.91	664	11.8	705	13.8	747	15.9
24000	2090	530	5.57	568	7.30	604	9.01	639	10.8	674	12.7	708	14.7	741	16.7	774	18.9
28000	2439	605	8.10	640	10.1	672	12.1	702	14.1	733	16.2	762	18.4	792	20.6	821	22.9
32000	2787	681	11.3	714	13.7	742	16.0	770	18.3	797	20.6	823	22.9	850	25.3	876	27.8
36000	3136	757	15.4	788	18.2	815	20.8	840	23.3	864	25.9	888	28.5	912	31.0	936	33.7
40000	3484	833	20.4	863	23.5	889	26.5	912	29.3	934	32.2	957	35.0	978	37.9	1000	40.7
44000	3832	910	26.4	939	29.9	964	33.2	986	36.4	1007	39.6	1027	42.7	1047	45.8	1067	48.9
48000	4181	987	33.5	1015	37.4	1039	41.1	1060	44.6	1080	48.1	1099	51.6	1118	55.0	1136	58.4
52000	4529	1065	41.8	1091	46.1	1114	50.1	1135	54.1	1154	57.9	1172	61.6	1190	65.4	1207	69.1
56000	4878	1143	51.5	1167	56.1	1190	60.5	1210	64.8	1229	69.0	1247	73.1	1264	77.1	1280	81.2
60000	5226	1222	62.2	1244	67.6	1264	72.4	1282	77.0	1299	81.5	1316	86.0	1332	90.4	1348	84.7
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
21000	1829	829	21.1	901	25.9	970	31.1	1033	36.6								
24000	2090	844	23.6	912	28.6	978	34.0	1040	39.6	1156	51.8						
27000	2352	867	26.6	929	31.8	990	37.3	1050	43.2	1163	55.5						
30000	2613	901	30.2	954	35.5	1010	41.2	1065	47.2	1174	60.1	1252	78.2	1370	89.9	1481	104.1
33000	2874	940	34.5	989	39.9	1037	45.7	1087	51.8	1186	64.7	1266	82.2	1380	93.1	1491	110.0
36000	3136	982	39.3	1028	45.0	1072	51.0	1118	57.2	1206	70.2	1290	88.2	1390	97.1	1501	115.9
39000	3397	1027	44.7	1070	50.7	1112	57.0	1154	62.4	1226	76.4	1320	94.8	1405	109.1	1511	121.8
42000	3658	1074	50.8	1114	57.1												
45000	3920	1123	57.6														
48000	4181																
51000	4442																
54000	4703																
57000	4965																
60000	5226																

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 49 A03- -49 BC100

Wheel Diameter - 49.0 in.
Outlet Area - 13.921 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10000	718	243	1.02	320	2.01												
15000	1078	289	1.81	351	3.15	404	4.41	456	5.97	504	7.66	549	9.45				
20000	1437	346	3.03	396	4.68	445	6.59	486	8.13	526	9.80	566	11.8	604	13.9	641	16.1
25000	1796	410	4.84	450	6.77	490	8.87	530	11.2	567	13.5	600	15.4	631	17.3	663	19.6
30000	2155	476	7.36	511	9.66	544	12.0	578	14.5	611	17.2	644	20.1	675	22.9	702	25.2
35000	2514	544	10.7	575	13.4	604	16.1	633	18.8	661	21.7	690	24.7	718	27.9	746	31.3
40000	2873	613	15.2	641	18.1	667	21.2	693	24.2	717	27.3	742	30.6	767	33.9	792	37.4
45000	3233	683	20.8	708	24.0	732	27.4	756	30.9	778	34.3	800	37.8	822	41.3	844	45.0
50000	3592	754	27.7	776	31.2	798	34.9	820	38.7	841	42.6	861	46.4	881	50.2	901	54.1
55000	3951	825	36.0	845	39.8	865	43.8	885	48.0	905	52.3	924	56.5	942	60.7	961	64.9
60000	4310	896	46.0	915	50.1	933	54.4	952	58.9	970	63.4	988	68.1	1006	72.7	1024	77.1
65000	4669	968	57.7	985	62.2	1002	66.7	1019	71.5	1036	76.2	1053	81.1	1070	86.0	1086	91.1
70000	5028	1040	71.3	1056	76.1	1072	81.6	1088	87.1	1103	92.8	1119	98.2	1134	103.6	1149	109.0
75000	5388	1112	87.0	1127	92.2	1142	97.6	1157	103.1	1171	108.6	1186	114.1	1200	119.6	1214	125.1
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
24000	1724	722	23.8	783	29.2	846	34.8										
28000	2011	742	27.4	799	33.1	853	39.0	905	45.2	1003	58.4						
32000	2299	772	32.7	821	37.6	871	43.9	921	50.5	1014	64.3						
36000	2586	808	39.3	854	44.6	897	50.2	942	56.5	1036	71.0	1114	86.2	1184	103	1250	123
40000	2873	842	44.9	890	52.7	932	59.1	972	65.0	1053	81.4	1131	96.8	1208	114	1281	139
44000	3161	879	51.1	924	59.4	968	68.0	1009	73.9	1089	92.4	1163	104	1236	121	1306	150
48000	3448	919	58.3	961	65.8	1002	78.3	1042	82.2	1121	103.6	1193	113	1264	131	1333	161
52000	3735	962	66.5	1000	74.2	1038	86.6	1078	91.5	1152	115.1	1222	123	1294	142	1363	174
56000	4023	1008	74.8	1040	82.6	1078	95.2	1119	100.0	1184	127.0	1252	134	1324	153	1393	188
60000	4310	1056	83.4	1082	91.2	1122	104.0	1164	108.0	1224	139.0	1296	146	1368	165	1423	202
64000	4597	1106	92.2	1126	99.8	1168	108.0	1212	117.0	1272	151.0	1344	158	1416	177	1483	217
68000	4885	1158	101.2	1172	108.6	1212	117.0	1254	126.0	1324	163.0	1396	170	1468	189	1543	232
72000	5172	1212	110.4	1218	118.2	1258	127.0	1302	136.0	1374	175.0	1456	182	1528	201	1603	247
76000	5459	1268	120.0	1266	128.8	1308	138.0	1354	146.0	1428	187.0	1512	194	1584	213	1663	262

Size 49 A03- -49 BA100

Wheel Diameter - 49.0 in.
Outlet Area - 13.921 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
10000	718	247	0.98	333	2.08												
15000	1078	295	1.72	355	2.96	416	4.45	473	6.13	526	7.99						
20000	1437	357	2.95	404	4.42	449	6.05	493	7.85	539	9.85	584	12.0	627	14.3	667	16.6
25000	1796	425	4.76	463	6.54	501	8.40	537	10.4	572	12.5	608	14.7	644	17.2	681	19.7
30000	2155	494	7.27	528	9.43	560	11.6	591	13.8	621	16.1	651	18.5	681	21.1	710	23.7
35000	2514	564	10.6	595	13.2	624	15.7	651	18.1	678	20.7	704	23.4	730	26.1	756	29.0
40000	2873	635	14.9	665	17.9	690	20.8	715	23.6	739	26.4	762	29.3	785	32.3	808	35.4
45000	3233	706	20.2	735	23.7	759	27.0	781	30.2	803	33.4	824	36.6	845	39.8	866	43.1
50000	3592	778	26.8	805	30.7	828	34.5	849	38.1	869	41.7	888	45.2	908	48.8	927	52.3
55000	3951	850	34.7	876	39.1	898	43.3	918	47.3	937	51.3	955	55.3	973	59.2	990	63.1
60000	4310	923	44.2	947	49.0	969	53.7	988	58.1	1006	62.5	1023	66.8	1039	71.1	1056	75.4
65000	4669	995	55.2	1019	60.5	1039	65.7	1058	70.6	1076	75.4	1092	80.1	1107	84.8	1123	89.4
70000	5028	1068	68.0	1090	73.8	1109	79.4	1129	84.9	1148	90.1	1167	95.2	1185	100.0	1199	105
75000	5388	1142	82.3	1162	89.0	1182	96.0	1199	101	1216	107	1231	112	1246	118	1260	123
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
24000	1724	749	24.4	816	30.3	878	36.5										
28000	2011	761	27.6	825	33.7	885	40.1	943	46.8	1047	61.3						
32000	2299	783	31.4	840	37.7	897	44.4	952	51.5	1055	66.2	1151	81.7				
36000	2586	815	36.1	864	42.5	915	49.4	966	56.7	1064	71.1	1159	86.8	1248	107	1324	125
40000	2873	854	41.8	898	48.4	941	55.3	987	62.8	1079	78.1	1168	92.0	1258	114	1334	133
44000	3161	896	48.2	937	55.2	977	62.5	1017	70.0	1098	86.5	1185	101	1268	123	1343	142
48000	3448	941	55.6	979	63.0	1018	70.8	1057	78.5	1127	94.9	1204	111	1278	132	1352	151
52000	3735	988	63.9	1024	71.8	1062	79.6	1108	87.8	1166	103.6	1248	121	1308	143	1377	161
56000	4023	1038	73.2	1072	80.6	1110	89.2	1154	97.5	1214	113.0	1296	132	1358	154	1423	171
60000	4310	1090	82.6	1122	89.6	1164	98.0	1206	106.0	1264	123.0	1344	144	1406	166	1483	181
64000	4597	1144	92.2	1174	99.2	1212	108.0	1254	115.0	1314	133.0	1396	156	1458	177	1543	191
68000	4885	1200	101.2	1228	108.6	1262	117.0	1302	124.0	1374	143.0	1456	168	1518	189	1603	201
72000	5172	1258	110.4	1288	118.2	1312	127.0	1344	134.0	1428	153.0	1512	180	1574	201	1663	211
76000	5459	1318	120.0	1348	128.8	1368	138.0	1404	146.0	1494	163.0	1576	192	1636	213	1723	221

Performance certified for Installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.



Performance Data

Size 54 A03- -54 BC100

Wheel Diameter - 54.25 in
Outlet Area - 17.026 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
12000	705	218	1.37	287	2.60												
18000	1057	260	2.39	315	4.19	365	5.84	410	7.73	451	9.85	489	12.0				
24000	1410	312	3.97	357	6.16	398	8.57	437	10.9	475	13.1	511	15.4	543	18.0	574	20.8
30000	1762	369	6.36	406	8.90	442	11.7	475	14.6	507	17.7	538	20.7	569	23.4	599	26.1
36000	2114	428	9.72	460	12.6	491	15.8	521	19.1	550	22.5	577	26.2	603	29.8	629	33.5
42000	2467	490	14.3	517	17.6	544	21.1	570	24.7	596	28.6	621	32.5	646	36.6	669	40.8
48000	2819	552	20.1	577	23.9	600	27.8	624	31.8	647	36.0	670	40.3	692	44.7	714	49.3
54000	3172	615	27.6	637	31.8	659	36.0	680	40.4	700	45.0	721	49.6	741	54.4	761	59.4
60000	3524	679	36.8	699	41.4	718	46.1	738	50.9	756	55.8	775	60.8	793	65.9	812	71.2
66000	3877	743	47.9	761	52.9	779	58.0	797	63.3	814	68.6	831	74.0	848	79.5	865	85.1
72000	4229	808	61.1	824	66.6	841	72.2	857	77.8	873	83.5	889	89.3	905	95.2	920	101
78000	4581	872	76.7	888	82.6	903	88.6	918	94.7	933	101	948	107	962	113	977	120
84000	4934	937	94.7	951	101	966	108	980	115	994	123	1008	130	1021	137	1034	145
90000	5286	1002	115	1015	122	1028	130	1041	138	1054	146	1067	154	1080	162	1093	170
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
30000	1762	655	32.0	706	38.8	754	46.0	800	53.2								
35000	2056	676	38.6	727	45.1	773	52.4	816	60.3	896	77.0	973	95.2				
40000	2349	702	46.5	749	53.8	794	61.1	837	68.8	916	85.9	993	105	1068	124	1100	132
45000	2643	734	54.0	776	63.2	818	71.8	859	80.0	938	96.4	1015	115	1086	134	1139	143
50000	2937	770	62.2	809	72.3	847	82.5	885	92.5	964	107	1040	125	1094	145	1157	153
55000	3230	808	71.5	846	82.2	881	93.3	917	104	993	117	1054	137	1104	157	1177	164
60000	3524	848	82.1	884	93.4	918	99.3	953	112	1024	130	1072	145	1119	167	1199	176
65000	3818	890	94.1	924	105	954	111	998	122	1044	144	1092	155	1138	179	1221	188
70000	4111																
75000	4405																
80000	4699																
85000	4993																
90000	5286																
95000	5580																

Size 54 A03- -54 BA100

Wheel Diameter - 54.25 in
Outlet Area - 17.026 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
12000	705	237	1.41	313	2.67												
18000	1057	280	2.38	341	4.28	395	6.00	445	7.89	492	10.2	534	12.5				
24000	1410	338	3.98	383	6.14	430	8.68	474	11.2	514	13.5	551	15.7	589	18.4	625	21.3
30000	1762	403	6.45	437	8.87	475	11.6	512	14.7	549	18.0	584	21.2	617	24.1	648	26.6
36000	2114	470	9.90	500	12.7	529	15.7	559	19.0	591	22.5	622	26.3	653	30.3	683	34.3
42000	2467	538	14.5	566	17.8	590	21.1	614	24.6	641	28.4	668	32.4	694	36.6	721	41.1
48000	2819	605	20.4	632	24.3	655	28.1	676	31.9	697	35.8	720	40.1	743	44.5	767	49.2
54000	3172	672	27.7	700	32.3	721	36.6	740	40.8	759	45.1	778	49.5	798	54.2	818	59.1
60000	3524	740	36.7	767	42.0	788	46.9	806	51.6	824	56.3	841	61.0	857	65.8	875	70.9
66000	3877	808	47.6	834	53.5	856	59.1	873	64.3	890	69.5	905	74.6	921	79.8	936	85.1
72000	4229	877	60.5	902	67.1	923	73.3	940	79.2	956	84.8	971	90.5	986	96.1	1000	102
78000	4581	945	75.6	969	82.9	990	89.8	1009	96.9	1023	103	1038	107	1052	113	1065	121
84000	4934																
90000	5286																
CFM	OV FPM	5"		6"		7"		8"		10"		12"		14"		16"	
30000	1762	708	32.7	767	39.8	828	47.4	874	55.3								
35000	2056	732	39.7	785	46.3	836	53.4	887	61.8	962	79.6						
40000	2349	762	47.6	812	55.4	859	62.8	904	70.3	994	87.8	1060	106	1158	129		
45000	2643	793	54.5	842	64.5	887	73.8	930	82.2	1012	98.6	1092	114	1170	140	1244	63
50000	2937	828	62.1	873	72.9	917	83.9	960	94.9	1037	111	1112	133	1184	158	1256	175
55000	3230	868	71.3	909	82.2	950	93.9	993	108	1069	130	1143	146	1206	171	1271	192
60000	3524	912	81.7	949	93.1												
65000	3818	958	93.7														
70000	4111																
75000	4405																
80000	4699																
85000	4993																
90000	5286																
95000	5580																

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Performance Data

Size 60 A03- -60 BC100

Wheel Diameter - 60.0 in.
Outlet Area - 20.826 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
14000	672	195	1.57	258	3.06												
21000	1008	230	2.71	280	4.80	327	6.73	368	9.08	405	11.6						
28000	1344	273	4.43	315	7.03	353	9.87	390	12.5	425	15.1	457	18.0	487	21.2	516	24.5
35000	1681	321	7.01	356	10.0	390	13.3	421	16.8	451	20.4	480	23.7	509	26.8	536	30.0
42000	2017	372	10.6	402	14.1	431	17.8	459	21.7	486	25.8	511	30.1	536	34.4	561	38.4
49000	2353	425	15.5	451	19.4	476	23.5	501	27.8	525	32.4	549	37.1	571	42.0	593	46.9
56000	2689	478	21.8	501	26.2	524	30.7	546	35.5	568	40.4	589	45.5	610	50.8	630	56.2
63000	3025	533	29.7	553	34.6	573	39.6	593	44.8	613	50.2	632	55.7	651	61.4	670	67.2
70000	3361	587	39.5	606	44.9	624	50.4	643	56.1	660	61.8	678	67.8	695	73.9	713	80.1
77000	3697	642	51.3	660	57.2	676	63.2	693	69.4	709	75.6	725	82.0	742	88.5	757	95.1
84000	4033	698	65.4	714	71.9	729	78.3	745	85.0	760	91.7	775	98.5	789	105	804	113
91000	4370	754	82.0	768	88.9	783	95.9	797	103	811	110	825	118	839	125	852	132
98000	4706	809	101	823	109	836	116	850	124	863	131	875	139	889	147	902	155
105000	5042	865	123	878	131	890	139	903	147	915	156	928	164	939	172	950	181
CFM	OV FPM	STATIC PRESSURE															
		5"		6"		7"		8"		10"		12"		14"		16"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
36000	1729	590	38.5	636	46.8	680	55.4	722	63.9								
42000	2017	609	46.1	654	53.8	696	62.9	736	72.6	811	92.8						
48000	2305	631	58.4	674	64.2	715	72.9	754	81.9	825	103	892	126	905	144		
54000	2593	659	64.4	697	75.4	736	85.5	773	95.3	844	113	894	139	889	164	1027	190
60000	2881	690	74.0	726	86.2	761	98.5	795	110	863	132	924	154	865	180	1042	207
66000	3169	724	84.9	758	97.9	790	111	823	122	886	151	946	171	880	198	1056	225
72000	3457	759	97.4	791	111	823	122	856	134	918	161	978	191	902	216	1070	243
78000	3745	795	111	823	122	856	134	889	146	950	171	1010	210	934	235	1083	262
84000	4033	831	123	856	134	889	146	922	158	982	181	1042	229	966	254	1096	281
90000	4322	867	135	889	146	922	158	955	170	1017	191	1077	240	1000	273	1109	300
96000	4610	903	147	922	158	955	170	988	182	1049	201	1109	250	1032	282	1122	319
102000	4898	939	159	955	170	988	182	1022	194	1082	211	1142	260	1064	291	1135	338
108000	5186	975	171	988	182	1022	194	1055	206	1115	221	1175	270	1096	300	1148	357
114000	5474	1011	183	1022	194	1055	206	1088	218	1148	231	1205	280	1128	309	1161	376

Size 60 A03- -60 BA100

Wheel Diameter - 60.0 in.
Outlet Area - 20.826 sq. ft.

CFM	Outlet Velocity FPM	STATIC PRESSURE															
		½"		1"		1½"		2"		2½"		3"		3½"		4"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
14000	672	211	1.61	282	3.15												
21000	1008	247	2.70	304	4.94	353	6.90	400	9.30	443	12.0						
28000	1344	295	4.43	339	7.02	383	10.1	423	12.9	459	15.5	495	18.3	530	21.7	563	25.2
35000	1681	351	7.09	383	9.97	419	13.3	454	17.0	489	20.8	521	24.3	551	27.6	579	30.8
42000	2017	408	10.8	436	14.1	464	17.7	493	21.6	523	25.9	552	30.5	581	35.1	608	39.5
49000	2353	466	15.7	492	19.6	515	23.5	539	27.7	564	32.2	589	37.0	615	42.1	640	47.5
56000	2689	524	22.0	549	26.6	570	31.0	590	35.4	611	40.2	633	45.3	655	50.7	677	56.2
63000	3025	582	29.9	607	35.2	627	40.2	645	45.1	662	50.1	681	55.5	700	61.1	720	66.9
70000	3361	641	39.6	665	45.7	684	51.2	701	56.7	718	62.2	733	67.8	750	73.6	767	79.8
77000	3697	700	51.2	723	58.0	742	64.4	759	70.4	774	76.4	789	82.5	803	88.6	817	94.9
84000	4033	758	64.9	781	72.6	801	79.6	817	86.4	831	93.0	845	99.6	859	106	872	113
91000	4370	818	81.1	840	89.5	858	97.4	875	105	889	112	902	119	915	126	927	133
98000	4706	877	99.7	898	109	915	116	932	124	945	131	958	138	971	146	984	153
105000	5042	935	121	957	131	974	139	991	147	1005	156	1018	163	1030	170	1041	178
CFM	OV FPM	STATIC PRESSURE															
		5"		6"		7"		8"		10"		12"		14"		16"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
36000	1729	638	39.3	693	48.0	743	57.3	788	66.7								
42000	2017	659	47.4	707	55.2	754	64.3	801	74.4	886	96.2						
48000	2305	685	56.9	730	66.0	773	74.9	814	84.0	897	106	977	130	1044	155		
54000	2593	712	65.2	756	77.1	798	87.9	837	98.0	918	122	994	142	1058	183	1121	191
60000	2881	743	74.1	784	87.2	824	100	863	113	944	136	1009	164	1068	193	1133	212
66000	3169	777	84.7	815	98.0	853	112	892	126	973	150	1024	186	1083	204	1146	230
72000	3457	815	96.9	850	111	888	125	927	139	1008	172	1059	206	1119	229		
78000	3745	856	111	889	125	927	139	966	151	1047	185	1098	224	1150	256		
84000	4033	897	123	931	141	970	154	1009	165	1089	207	1140	244				
90000	4322	941	135	974	158	1013	168	1052	179	1132	221	1183	262				
96000	4610	985	147	1013	170	1052	182	1091	191	1173	231	1224	270				
102000	4898	1031	159	1054	182	1093	194	1132	201	1214	241	1265	279				
108000	5186	1077	171	1095	194	1135	206	1175	211	1255	251	1306	288				
114000	5474	1123	183	1137	206	1177	218	1217	221	1296	261	1347	297				

Performance certified for installation Type D: ducted inlet/ducted 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.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

Series 13, Backward Curved Centrifugal Fan, DWDI

The Hartzell Series 13 Double Width, Double Inlet (DWDI) centrifugal blowers have been designed to provide maximum performance and efficiency. For clean air applications, these blowers are available in belt drive configuration. Air delivery ranges from 1200 CFM to 186,000 CFM; static pressure capabilities to 14". Efficient air flow is provided over a broad range of pressures (maximum total efficiencies exceeding 80%). Designed for quiet operation, the Hartzell "Double Width, Double Inlet" centrifugal provides lower sound levels in the highest efficiency ranges.

Features

Sizes – 10" to 60" wheel diameters, Double Width, Double Inlet construction (DWDI). For Single Width, Single Inlet see Page 9.

Arrangements – Series 13 blowers are available in Arrangement 3 as standard with or without a sub-base for motor mounting.

Rotation and Discharge – Clockwise and counterclockwise rotations are available in four discharge positions. Dimensional drawings are shown on Page 29.

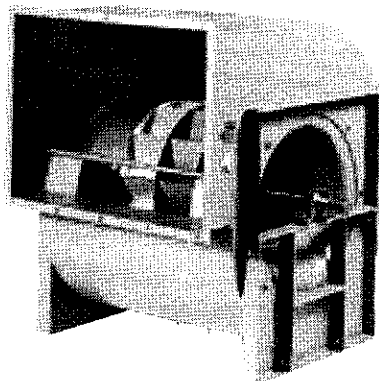
Motors – Are available to your specifications, mounted and test run at the factory prior to shipment.

Bearings – Heavy-duty, pillow block bearings. Minimum L-10 bearing life of 50,000 hours. For size and type, please contact factory.

Drive Assembly (Belt Drive Fans) – Belts are oil, heat and static resistant type, oversized for continuous duty. Shafts are turned, stepped, polished, and keyed at the drive end.

Easy Installation and Maintenance – Motor, drive and bearings are readily accessible for ease in wiring, installation, adjustment and lubrication.

Fan Inlets and Outlets – Open non-ducted inlet is standard. "Slip-fit" outlet connections are provided for easy connection to ducting. Optional outlet flanges are available.



Series 13

Shown with optional equipment



Hartzell Fan, Inc. certifies that the Series 13, Backward Curved Centrifugal Fans, air and sound performance ratings shown herein are reliable and accurate and in accordance with industry standards. The ratings shown are based on tests and procedures performed in accordance with AMCA Standard 210, Standard 300, and Standard 301.

Sound Performance data is available upon request. Please contact the factory and ask for Engineering Publication SD-149. Sound and Air Performance data is available in ESP.

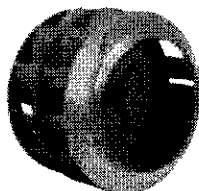
Housings – Heavy-duty carbon steel housings, supported and braced with plate and structural steel are provided as standard construction. Housing sizes 12" through 27" are rotatable; larger sizes have fixed construction.

Lifting Lugs – For ease of handling and installation, lifting tabs, or lugs, are provided as standard features.

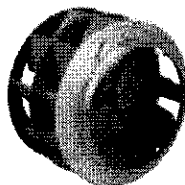
Surface Coatings – Standard finish is an industrial grade enamel. Other special coatings are available upon request.

Accessories – See Page 34.

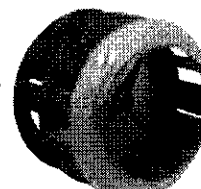
Type BC
DWDI
Wheel



Type BI
DWDI
Wheel



Type BA
DWDI
Wheel



Rating Table – Series 13, DWDI, Wheel Type BC and Type BI shown Type BA available

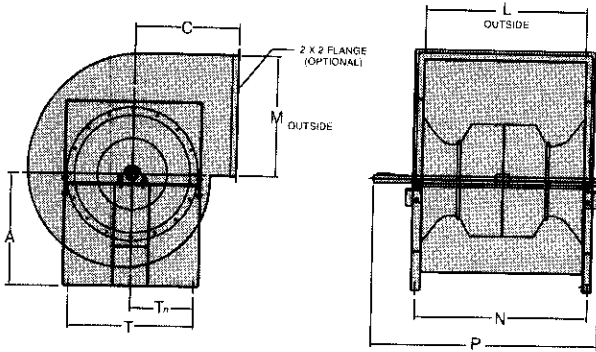
Model	CFM Range at Static Pressure							
	2" S.P.	3" S.P.	4" S.P.	6" S.P.	8" S.P.	10" S.P.	12" S.P.	14" S.P.
13-3-10_BC100ST	1,200 - 3,800	1,200 - 3,800	1,430 - 3,800	2,150 - 5,230	2,150 - 5,230	2,150 - 4,760	2,390 - 4,280	2,620 - 3,800
13-3-12_BC100ST	1,630 - 5,180	1,630 - 5,180	1,950 - 5,180	2,920 - 7,130	2,920 - 6,480	3,250 - 5,830	3,250 - 5,180	3,570 - 0,000
13-3-13_BC100ST	1,970 - 6,280	1,970 - 6,280	2,360 - 6,280	3,540 - 9,430	3,540 - 9,430	3,940 - 8,640	3,940 - 7,860	4,330 - 7,070
13-3-15_BC100ST	2,550 - 8,150	3,060 - 8,150	3,570 - 8,150	4,600 - 12,200	4,600 - 12,200	5,100 - 12,200	5,700 - 12,200	6,200 - 11,200
13-3-16_BC100ST	2,940 - 9,400	3,530 - 9,400	4,120 - 9,400	5,300 - 14,100	5,300 - 14,100	5,900 - 14,100	6,500 - 14,100	7,100 - 12,900
13-3-18_BC100ST	3,700 - 11,800	4,500 - 11,800	5,200 - 11,800	6,700 - 17,700	6,700 - 17,700	7,400 - 16,200	8,200 - 14,700	8,900 - 13,300
13-3-20_BC100ST	4,400 - 13,800	5,200 - 13,800	6,100 - 13,800	7,800 - 20,700	7,800 - 20,700	8,700 - 19,000	9,600 - 15,500	10,400 - 0,000
13-3-22_BC100ST	5,600 - 17,600	6,700 - 17,600	7,800 - 17,600	10,000 - 26,500	11,100 - 26,500	12,200 - 26,500	13,300 - 24,300	15,500 - 19,900
13-3-24_BC100ST	6,800 - 20,900	7,900 - 20,900	9,200 - 20,900	11,800 - 31,400	13,100 - 31,400	14,500 - 28,800	15,800 - 26,100	18,400 - 23,500
13-3-27_BC100ST	9,900 - 26,300	11,600 - 26,300	13,200 - 26,300	14,900 - 39,500	18,200 - 39,500	19,800 - 39,500	21,500 - 36,200	23,100 - 29,600
13-3-30_BC100ST	11,700 - 31,000	13,600 - 31,000	15,600 - 31,000	17,500 - 46,600	21,400 - 46,600	23,400 - 46,600	25,300 - 42,700	27,200 - 34,900
13-3-33_BC100ST	16,500 - 37,500	21,200 - 37,500	23,500 - 37,500	28,200 - 56,300	32,900 - 56,300	35,300 - 56,300	42,300 - 51,600	42,300 - 42,200
13-3-36_BC100ST	19,600 - 44,700	25,200 - 44,700	28,000 - 44,700	33,600 - 67,000	39,200 - 67,000	42,000 - 67,000	50,300 - 61,400	50,300 - 50,200
13-3-40_BC100ST	24,500 - 55,900	31,500 - 55,900	35,000 - 55,900	42,000 - 83,800	49,000 - 83,800	52,500 - 83,800	63,000 - 76,800	63,000 - 62,900
13-3-44_BC100ST	29,900 - 68,300	38,500 - 68,300	42,800 - 68,300	51,300 - 102,400	59,800 - 102,400	64,100 - 102,400	76,900 - 93,900	76,900 - 76,800
13-3-49_BC100ST	31,100 - 82,800	41,500 - 82,800	46,600 - 82,800	57,000 - 124,200	62,200 - 124,200	72,500 - 124,200	77,700 - 113,800	82,900 - 93,100
13-3-54_BC100ST	38,100 - 101,400	50,800 - 101,400	57,100 - 101,400	69,800 - 152,100	76,100 - 152,100	88,800 - 152,100	95,200 - 139,500	101,500 - 114,100
13-3-60_BC100ST	46,600 - 124,100	62,100 - 124,100	69,900 - 124,100	85,400 - 186,200	93,200 - 186,200	108,700 - 186,200	116,500 - 170,700	124,200 - 139,700

Performance certified for Installation Type D: ducted inlet/ducted outlet. Power ratings (BHP) do not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories) in the airstream. Performance data is based on standard air conditions (0.075 lb/cu. ft.). To complete model code, add motor enclosure code. Refer to page 2 for additional model code information.

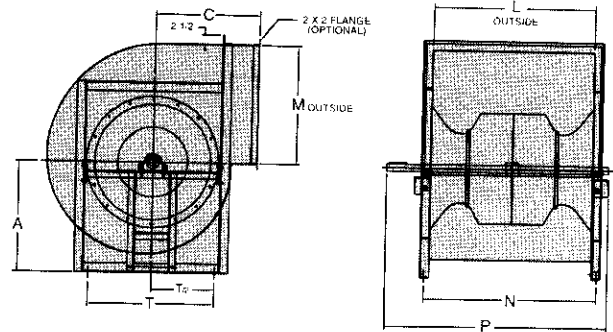
Dimensions – Series 13, DWDI

Arrangement 3 –

Standard Construction – Classes I, II, III, Maximum Temperature – 200°F.
 Clockwise Rotation Shown. Counterclockwise Opposite.



Sizes 10-27 Rotatable Housing



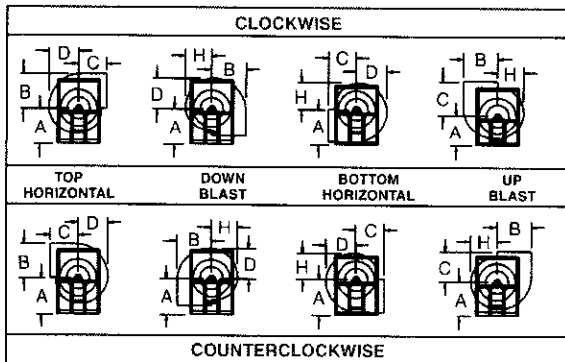
Sizes 30-60 Fixed Housing

Principal Dimensions (Inches)

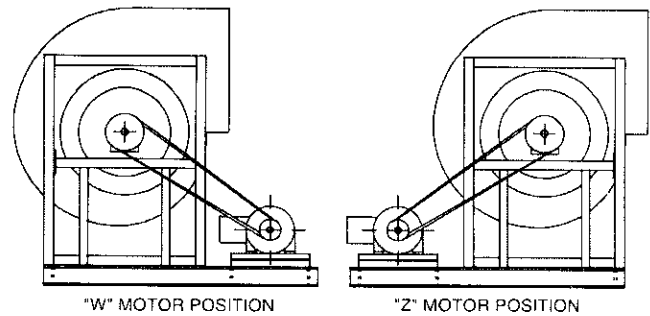
Fan Size	A				B	C	D	H	L	M	N	P	T
	Top Horiz.	Down Blast	Upblast	Bottom Horiz.									
10	10 ¹ / ₈	12 ⁷ / ₃₂	14 ¹ / ₄	14 ¹ / ₄	11 ³ / ₈	12 ³ / ₁₆	10 ¹ / ₁₆	8 ³ / ₄	15.471	11.545	18.851	23 ¹ / ₈	19 ¹ / ₄
12	12	14 ¹ / ₄	16 ¹ / ₄	16 ¹ / ₄	13 ¹ / ₄	14 ¹ / ₄	11 ¹¹ / ₁₆	10 ⁹ / ₁₆	18.022	13.424	21.372	26 ¹ / ₈	16 ¹ / ₂
13	13 ³ / ₈	15 ¹¹ / ₁₆	17 ¹ / ₂	17 ¹ / ₂	14 ⁹ / ₁₆	15 ¹¹ / ₁₆	12 ⁷ / ₈	11 ¹ / ₁₆	19.793	14.766	23.173	27 ¹ / ₈	19 ¹ / ₄
15	13 ¹ / ₂	16 ⁹ / ₁₆	19 ¹ / ₂	19 ¹ / ₂	16 ⁹ / ₁₆	16 ⁹ / ₁₆	14 ³ / ₈	12 ³ / ₄	22.494	16.780	24.861	31 ¹ / ₂	18 ¹ / ₄
16	15 ¹ / ₂	17 ³ / ₄	20 ³ / ₄	20 ³ / ₄	17 ¹³ / ₁₆	17 ³ / ₄	15 ³ / ₄	13 ¹¹ / ₁₆	24.145	17.988	27.525	33 ³ / ₈	20 ¹ / ₄
18	17 ¹ / ₄	18 ¹ / ₈	13	13	19 ³ / ₁₆	18 ⁷ / ₈	17 ⁷ / ₈	15 ⁵ / ₁₆	27.055	20.136	30.406	36 ¹ / ₂	25 ³ / ₈
20	18 ¹ / ₂	20 ⁷ / ₁₆	14 ¹ / ₂	14 ¹ / ₂	21 ¹ / ₈	20 ³ / ₈	19 ³ / ₈	16 ⁷ / ₈	29.261	21.747	31.620	38 ¹ / ₄	20 ¹ / ₄
22	20 ³ / ₄	22	27 ¹ / ₂	27 ¹ / ₂	24 ³ / ₈	22	21 ¹ / ₁₆	18 ³ / ₄	33.043	24.566	36.409	42 ³ / ₄	25 ³ / ₈
24	22 ³ / ₈	23 ⁹ / ₁₆	29 ¹ / ₂	29 ¹ / ₂	26 ⁹ / ₁₆	23 ⁹ / ₁₆	23 ⁷ / ₁₆	20 ³ / ₈	35.924	26.713	38.431	46	25 ¹ / ₂
27	24 ¹ / ₈	25 ³ / ₄	32 ³ / ₄	32 ³ / ₄	29 ³ / ₄	25 ³ / ₄	26 ³ / ₁₆	22 ⁷ / ₈	40.246	29.934	43.610	50	22
30	25 ¹ / ₈	25 ¹ / ₈	31	35	32 ⁹ / ₁₆	25 ⁷ / ₈	28 ⁹ / ₁₆	24 ¹³ / ₁₆	43.667	32.486	46.608	55 ¹ / ₄	33 ¹ / ₄
33	30	28 ¹ / ₃₂	34	38	35 ⁹ / ₁₆	28 ¹ / ₃₂	31 ⁷ / ₁₆	27 ¹ / ₁₆	48.079	35.798	50.989	59 ³ / ₄	33 ¹ / ₄
36	31 ¹ / ₂	33 ¹ / ₁₆	37	42	38 ³ / ₁₆	33 ⁷ / ₁₆	34 ³ / ₁₆	29 ¹³ / ₁₆	52.401	39.018	55.311	64 ¹ / ₈	33 ¹ / ₄
40	34 ¹ / ₄	36 ¹ / ₂	46	46	43 ³ / ₈	36 ¹ / ₂	38 ⁷ / ₁₆	33 ³ / ₁₆	58.573	43.582	61.483	74 ¹ / ₂	44
44	37	39 ¹ / ₁₆	45	51	47 ³ / ₈	39 ¹ / ₁₆	42 ³ / ₈	36 ³ / ₁₆	64.696	48.147	67.606	78 ¹ / ₂	44
49	42 ¹ / ₂	38 ²⁹ / ₃₂	50	56	52 ¹ / ₄	38 ²⁹ / ₃₂	46 ³ / ₈	40 ¹ / ₂	71.199	52.977	74.039	87 ¹ / ₈	44
54	46 ³ / ₈	45	55	61	58 ³ / ₈	45	51 ¹ / ₁₆	44 ⁷ / ₈	78.742	58.613	81.902	95	54
60	51 ¹ / ₂	45 ³ / ₄	60	68	64 ³ / ₁₆	45 ³ / ₄	57 ¹ / ₈	49 ¹ / ₂	87.109	64.788	90.269	103 ¹ / ₂	54

NOTE: Dimensions and specifications are subject to change. Certified prints are available.

Fan Discharges



NOTE: For downblast, contact factory.



Consider discharge location and motor height when specifying.

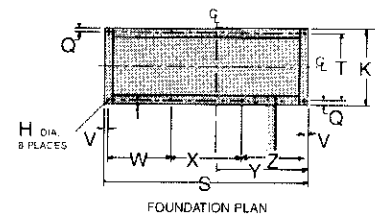
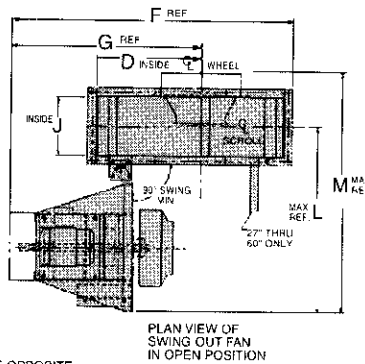
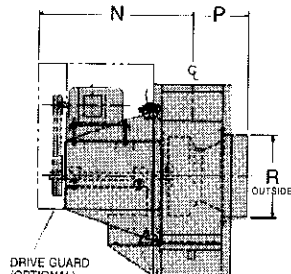
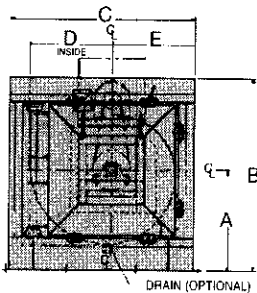
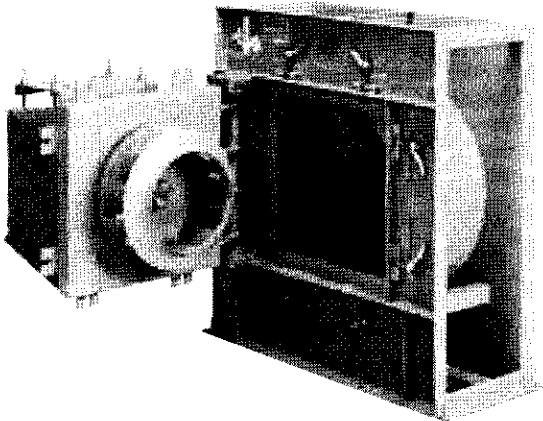


Construction Options – Series 03S

SERIES 03S – Backward Curved Centrifugal Fan, Swingout Type, Single Width Arrangement 9
 Maximum Temperature – 300°F.
 600°F available with heat slinger and guard

Construction Features

- **Sizes** – 12" - 49" wheel diameters . . . Type BC.
- **Sizes** – 18" - 49" wheel diameters . . . Type BA.
- **Rotation** – Clockwise or counterclockwise in four discharge positions (TH, BH, UB, DB).
- **Construction** – Heavy gauge hot rolled steel. Also available in stainless or aluminum.
- **Finish** – Industrial grade enamel. Other special coatings available.
- **Performance** – Refer to rating tables in this bulletin.
- **Options & Accessories** –
 - Food grade welding
 - Inlet flanges
 - Bolted access door
 - Drive guard
 - Weather guard
 - Inlet guard
 - AMCA non-sparking construction
 - Drain connection



NOTE: CLOCKWISE SHOWN. COUNTER-CLOCKWISE OPPOSITE.

Principal Dimensions

FAN SIZE	A		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
	UB, TH	BH, DB														
12	18 ⁷ / ₈	18 ⁷ / ₈	37 ¹ / ₄	37 ¹ / ₄	13 ¹ / ₈	18 ⁷ / ₈	55 ¹¹ / ₁₆	35 ⁷ / ₁₆	1/2	9 ¹ / ₂	13 ³ / ₄	32 ¹ / ₄	43 ¹ / ₄	29 ⁷ / ₁₆	11	1/2
15	20 ³ / ₄	19 ¹ / ₈	39 ⁷ / ₈	39 ⁷ / ₈	16 ¹ / ₂	20 ⁷ / ₄	58	35 ⁷ / ₁₆	1/2	11 ¹ / ₁₆	16 ⁷ / ₁₆	33 ¹ / ₂	45 ⁷ / ₈	30 ⁷ / ₁₆	12 ¹ / ₄	1
18	24 ¹ / ₂	24	48 ¹ / ₂	48 ¹ / ₂	19 ¹ / ₈	24 ¹ / ₂	72 ¹ / ₁₆	45 ¹³ / ₁₆	1/2	14 ³ / ₈	18 ³ / ₈	44 ³ / ₈	58 ³ / ₈	36 ³ / ₈	13 ⁷ / ₁₆	1/2
22	28 ³ / ₈	26 ⁷ / ₈	55 ¹ / ₂	55 ¹ / ₂	24 ¹ / ₄	28 ³ / ₈	76 ⁷ / ₁₆	45 ¹³ / ₁₆	5/8	17 ⁷ / ₁₆	21 ¹³ / ₁₆	46 ³ / ₈	61 ³ / ₈	38 ⁷ / ₁₆	15	1
24	25 ¹ / ₂	29 ¹ / ₄	54 ³ / ₄	54 ³ / ₄	26 ⁷ / ₁₆	25 ¹ / ₂	73 ⁷ / ₁₆	45 ¹³ / ₁₆	5/8	19 ¹ / ₈	23 ³ / ₈	47 ⁷ / ₁₆	63	39 ¹ / ₄	15 ¹³ / ₁₆	1/2
27	32 ¹ / ₄	32 ¹ / ₄	65	65	29 ³ / ₈	32 ¹ / ₄	95 ³ / ₁₆	60 ¹ / ₄	3/4	21 ¹ / ₁₆	27 ¹ / ₄	65 ¹ / ₂	82 ¹ / ₂	46 ³ / ₁₆	17	1 ¹ / ₄
30	32 ³ / ₈	35 ³ / ₈	68	68	32 ¹ / ₄	32 ³ / ₈	95 ¹ / ₂	60 ¹ / ₄	3/4	23 ¹ / ₁₆	29 ¹ / ₁₆	66 ⁷ / ₁₆	84 ⁷ / ₁₆	47 ¹ / ₂	17 ⁷ / ₁₆	1 ¹ / ₈
33	32 ³ / ₈	38 ³ / ₈	71 ¹ / ₄	71 ¹ / ₄	35 ⁷ / ₁₆	32 ³ / ₈	95 ¹ / ₂	60 ¹ / ₄	3/4	25 ¹⁵ / ₁₆	31 ¹⁵ / ₁₆	67 ⁷ / ₁₆	86 ³ / ₈	48 ³ / ₄	19 ³ / ₈	1 ¹ / ₂
36	40 ⁷ / ₁₆	41 ¹³ / ₁₆	82	82	38 ³ / ₈	40 ⁷ / ₁₆	103 ⁷ / ₁₆	60 ¹ / ₄	3/4	28	34 ³ / ₄	68 ³ / ₄	89	49 ¹³ / ₁₆	20 ³ / ₄	1 ¹ / ₂
40	45 ³ / ₈	46 ³ / ₈	92 ¹ / ₄	92 ¹ / ₄	43 ³ / ₄	45 ³ / ₈	119	70 ³ / ₈	3/4	31 ¹ / ₁₆	37 ¹¹ / ₁₆	79	100 ⁷ / ₈	57 ³ / ₈	21 ⁷ / ₁₆	1 ¹ / ₄
44	46 ⁷ / ₁₆	50 ¹³ / ₁₆	97 ¹ / ₄	97 ¹ / ₄	47 ³ / ₄	46 ⁷ / ₁₆	119 ³ / ₈	70 ³ / ₈	3/4	34 ⁷ / ₁₆	40 ¹⁵ / ₁₆	80 ³ / ₈	104 ¹ / ₄	59 ⁷ / ₁₆	23 ³ / ₈	1 ¹ / ₄
49	50 ⁷ / ₁₆	55 ¹³ / ₁₆	106	106	52 ³ / ₈	50 ⁷ / ₁₆	124 ¹ / ₄	71 ³ / ₈	3/4	38 ⁷ / ₈	44 ⁷ / ₁₆	84 ³ / ₈	109 ³ / ₄	60 ¹³ / ₁₆	25 ³ / ₈	1 ¹ / ₄

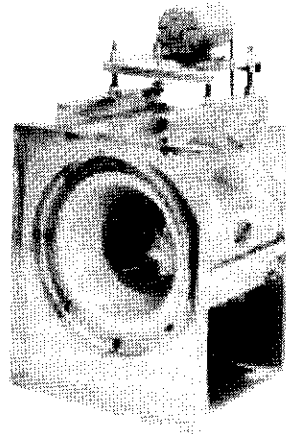
Specifications and dimensions are subject to change. Certified prints are available.

Do not attempt to open door unless fan is securely fastened to sufficient foundation and power is locked out.

FAN SIZE	R	S	T	V	W	X	Y	Z	MAXIMUM MOTOR FRAME SIZE
12	12 ¹⁵ / ₁₆	40 ³ / ₄	12 ³ / ₄	1/2	13	13 ³ / ₄	20 ³ / ₈	13	215T
15	16 ³ / ₁₆	43 ³ / ₈	14 ³ / ₁₆	1/2	14	14 ³ / ₈	22 ¹ / ₂	14	215T
18	19 ¹ / ₂	52	17 ³ / ₈	1/2	17	17	26 ¹ / ₄	17	256T
22	23 ³ / ₄	59	19 ¹³ / ₁₆	1/2	19	20	30 ³ / ₄	19	256T
24	25 ³ / ₁₆	58 ³ / ₄	22 ³ / ₈	1/2	20	17 ¹ / ₄	27 ¹ / ₄	20	256T
27	28 ¹⁵ / ₁₆	70 ³ / ₈	25 ³ / ₄	1 ¹ / ₄	18	31 ⁷ / ₈	34 ¹³ / ₁₆	18	364T - 365T ODP ONLY
30	31 ³ / ₈	73 ³ / ₈	27 ¹ / ₁₆	1 ¹ / ₄	23	24 ⁷ / ₈	35 ⁷ / ₁₆	23	364T - 365T ODP ONLY
33	34 ¹ / ₂	76 ³ / ₈	29 ⁷ / ₁₆	1 ¹ / ₄	23	28 ³ / ₈	35 ⁷ / ₁₆	23	364T - 365T ODP ONLY
36	37 ¹¹ / ₁₆	87 ³ / ₈	31 ³ / ₈	1 ¹ / ₄	26	32 ³ / ₈	42 ⁷ / ₈	26	364T - 365T ODP ONLY
40	42 ³ / ₈	97 ³ / ₈	35 ⁷ / ₁₆	1 ¹ / ₄	28	39 ³ / ₈	48 ⁷ / ₁₆	28	364T - 365T ODP ONLY
44	46 ¹ / ₃₂	102 ³ / ₈	38 ⁷ / ₁₆	1 ¹ / ₄	32	36 ³ / ₈	49	32	364T - 365T ODP ONLY
49	51 ⁷ / ₁₆	111 ³ / ₈	42	1 ¹ / ₄	32	44 ⁷ / ₈	52 ³ / ₈	32	364T - 365T ODP ONLY

Construction Options – Series 03Q

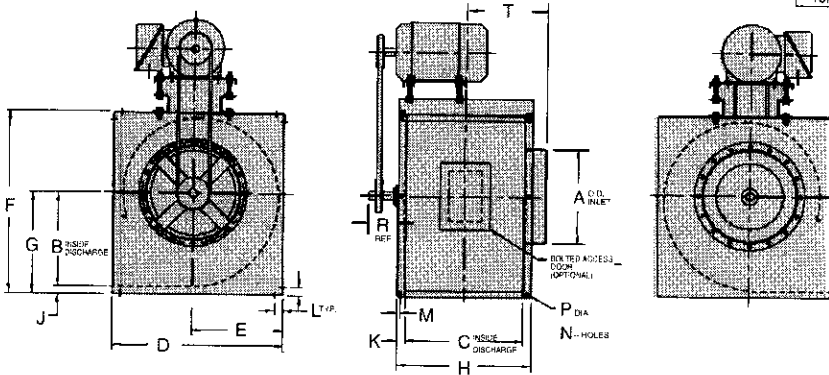
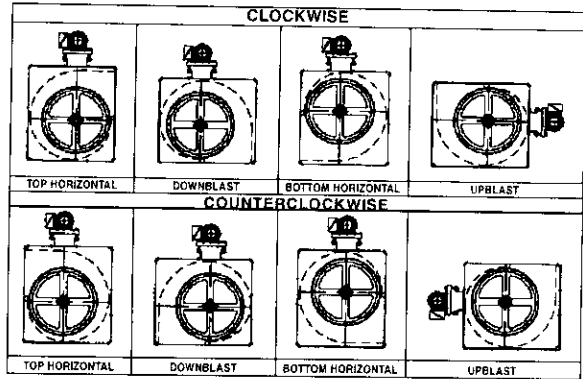
SERIES 03Q – Backward Curved Centrifugal Fan, Square Type, Single Width Arrangement 2, Belt Drive (Shown)
 Maximum Temperature – 200°F.
 Contact factory for high temperature applications.



ABS Certificate of Design Assessment Received

Construction Features

- **Sizes** – 12" - 49" wheel diameters . . . Type BC.
- **Sizes** – 18" - 49" wheel diameters . . . Type BA.
- **Rotation** – Clockwise or counterclockwise in four discharge positions.
- **Construction** – Heavy gauge hot rolled steel. Also available in stainless or aluminum.
- **Finish** – Industrial grade enamel. Other special coatings available.
- **Performance** – Refer to rating tables in this bulletin. – Add 3% to RPM/6% to BHP.
- **Options & Accessories** –
 - Food grade welding
 - Inlet flanges
 - Inlet adapters
 - Bolted access door
 - Drive guard
 - Weather cover
 - Inlet guard
 - AMCA non-sparking construction



Principal Dimensions

FAN SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	MAXIMUM FRAME
10	11 ^{1/2} / ₁₆	11 ^{1/4}	10 ⁹ / ₁₆	23 ¹³ / ₁₆	11 ¹⁹ / ₃₂	23 ^{1/4}	12 ⁹ / ₁₆	14 ⁹ / ₁₆	1 ^{1/8}	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	11 ^{1/2}	184T
12	12 ¹⁵ / ₁₆	13 ³ / ₁₆	11 ¹⁵ / ₁₆	27 ^{1/2}	13 ³ / ₄	26 ⁷ / ₁₆	14 ¹³ / ₁₆	15 ¹⁵ / ₁₆	1 ^{1/8}	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	12 ⁹ / ₃₂	184T
13	14 ^{1/8}	14 ^{1/2}	13 ³ / ₁₆	30 ⁷ / ₁₆	14 ⁷ / ₁₆	28 ⁷ / ₈	16 ^{1/2}	17 ³ / ₁₆	1 ^{1/8}	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	12 ¹³ / ₁₆	184T
15	16 ⁷ / ₁₆	16 ^{1/2}	14 ^{1/2}	32 ¹³ / ₁₆	16 ^{1/4}	32 ⁷ / ₁₆	18 ^{1/2}	18 ^{1/8}	1 ⁵ / ₈	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	13 ³ / ₄	215T
16	17 ^{1/4}	17 ^{3/4}	15 ¹⁵ / ₁₆	35 ^{1/16}	17 ^{1/16}	34 ⁷ / ₁₆	19 ⁷ / ₈	19 ¹⁵ / ₁₆	1 ⁵ / ₈	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	14 ³ / ₁₆	184T
18	19 ^{1/2}	19 ^{1/8}	17 ⁵ / ₈	38 ⁷ / ₁₆	19 ³ / ₁₆	38 ⁷ / ₈	21 ^{1/2}	21 ⁵ / ₈	1 ⁵ / ₈	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	15 ^{1/4}	256T
20	20 ⁷ / ₈	21 ^{1/2}	20	41 ^{1/16}	20 ⁹ / ₈	41 ^{1/4}	23 ^{1/8}	24	1 ⁵ / ₈	2	1 ^{1/2}	³ / ₄	16	² / ₁₆	4	16 ^{1/4}	256T
22	23 ³ / ₄	24 ⁷ / ₁₆	22	45 ^{1/8}	23 ³ / ₈	46 ^{1/4}	25 ¹⁵ / ₁₆	26	1 ⁵ / ₈	2	2	³ / ₄	16	² / ₁₆	4	17 ⁵ / ₁₆	256T
24	25 ¹³ / ₁₆	26 ^{1/2}	23 ³ / ₈	48 ⁷ / ₁₆	25	50 ^{1/16}	28 ^{1/2}	27 ⁷ / ₈	1 ⁵ / ₈	2	2	³ / ₄	16	² / ₁₆	4 ⁵ / ₈	18 ^{1/4}	286T
27	28 ⁵ / ₁₆	29 ¹¹ / ₁₆	27	53 ⁵ / ₈	27 ⁷ / ₈	55 ³ / ₄	31 ⁵ / ₁₆	31	1 ⁵ / ₈	2	2	³ / ₄	16	² / ₁₆	4 ⁵ / ₈	19 ¹³ / ₁₆	286T
30	31 ³ / ₈	32 ⁷ / ₁₆	29 ³ / ₈	57 ^{1/16}	30 ¹ / ₁₆	60 ^{1/8}	33 ¹³ / ₁₆	33 ³ / ₈	1 ⁵ / ₈	2	3	³ / ₄	16	¹¹ / ₁₆	4 ⁵ / ₈	21 ^{1/16}	286T
33	34 ^{1/2}	35 ⁷ / ₁₆	32 ^{1/4}	62 ¹⁹ / ₁₆	32 ¹⁵ / ₁₆	65 ⁷ / ₈	37 ^{1/16}	36 ³ / ₄	1 ⁵ / ₈	2	3	³ / ₄	16	¹¹ / ₁₆	5 ¹ / ₄	22 ^{1/2}	326T
36	37 ³ / ₈	38 ¹¹ / ₁₆	35	73 ¹¹ / ₁₆	35 ¹¹ / ₁₆	71 ³ / ₈	40 ⁷ / ₁₆	39	1 ⁵ / ₈	2	4	³ / ₄	32	¹³ / ₁₆	5 ¹ / ₄	23 ⁷ / ₈	326T
40	42 ^{1/8}	43 ¹ / ₄	39 ¹ / ₄	81 ¹ / ₁₆	39 ¹ / ₁₆	79 ¹¹ / ₁₆	44 ⁷ / ₈	43 ³ / ₄	1 ⁵ / ₈	2	4	³ / ₄	32	¹³ / ₁₆	5 ¹ / ₄	26	364T
44	46 ³ / ₈	47 ¹ / ₁₆	43 ³ / ₄	87 ¹ / ₈	43 ³ / ₈	87 ¹ / ₄	49 ¹ / ₁₆	47 ³ / ₈	1 ⁵ / ₈	2	5	³ / ₄	32	¹³ / ₁₆	5 ¹ / ₄	28 ¹ / ₁₆	365T
49	51 ¹ / ₁₆	52 ⁷ / ₁₆	48	96 ¹ / ₈	48 ¹ / ₈	96 ¹ / ₄	54 ¹ / ₄	52	1 ⁵ / ₈	2	5	³ / ₄	32	¹³ / ₁₆	5 ¹ / ₄	30 ¹ / ₄	365T

Note: Typical dimensions for Class I fan shown. Dimensions are subject to change. Certified prints are available.



Specifications

Backward Curved Centrifugal Fan, SWSI (Belt Drive)

The belt drive Backward Curved Centrifugal Fan, Single Width shall be manufactured by Hartzell Fan, Inc.[®], Series 03, ARRG. 1, 9, 9M, or 10, Class I, II, or III.

Wheels available are the backward curved (BC, 12" – 60") or the airfoil (BA, 18" – 60"). Rotation as determined by the drive side of the fan, shall be clockwise or counterclockwise.

Fan housing, for sizes 12" through 33", shall be field rotatable and the discharge shall be any of the eight AMCA standard positions. Sizes 36" through 60" shall be a fixed construction for the rotation and discharge specified. The fan shall be packaged, completely assembled and ready to install, except for ARRG.1, which is less motor and drive.

The fan housing and base shall be a heavy gauge commercial quality carbon steel suitable for temperatures up to 300°F and with modifications up to 800°F (ARRG. 10 limited 250°F to 600°F). The housing and wheels shall be continuously welded in compliance with AWS D1.1 standard.

The wheels shall be commercial quality carbon steel with single thickness airfoil blades or double thickness hollow airfoil blades and have non-overloading horsepower characteristics. The wheel shall be mounted to the fan shaft with a split taper bushing.

The shafts shall be ground and polished. The fan bearings shall be heavy duty, self-aligning ball or roller type (depending on fan size, motor HP, and performance) relubricatable for continuous service. They shall have a minimum L10 life of 50,000 hours. The belts shall be an oil, heat, and static-resistant type, oversized for continuous duty.

Lifting lugs are a standard feature, for ease of handling and installation.

The fan assembly shall be dynamically balanced at the Hartzell factory prior to shipping. Fans shall be balanced in accordance with AMCA Standard 204-96, fan application category BV-3 (comparable to Grade G6.3).

Fans shall be manufactured in accordance with Hartzell's standard quality assurance procedures.

The fan performance shall be based on tests conducted in Hartzell's AMCA accredited laboratory in accordance with the latest revision of AMCA Standard 210 for air performance and AMCA Standard 300 for sound and published in accordance with AMCA Publication 211 (Air) and AMCA Publication 311 (Sound). Fans shall be licensed to bear the AMCA Certified Sound and Air Performance Rating Seal for the BC wheel only.

Backward Curved Centrifugal Fan, SWSI (Direct Drive)

The Direct Drive Backward Curved Centrifugal fan shall be manufactured by Hartzell Fan, Inc., Piqua, Ohio. Series 03 ____ (Arrangement 4) ____ (Size), ____ (Class I, II, or III), SWSI.

The fan shall have a capacity of ____ CFM at ____ inch(es) static pressure, standard air. The fan shall be supplied with a ____ horsepower, ____ RPM, industrial continuous duty (or alternate electrical specification) ____ (ODP, TEFC explosion proof) motor to operate on ____ volts, ____ cycles, ____ phase.

Rotation as determined by the drive side of the fan shall be ____ (clockwise or counterclockwise). Discharge shall be ____ (any of the eight AMCA standard positions). The fan shall be packaged, completely assembled, inspected for adherence to specifications and test run at the factory, and ready to install.

The fan housing and base shall be a heavy gauge commercial quality carbon steel suitable for temperatures of up to 200°F. The housing and wheel shall be continuously welded in compliance with AWS D1.1 and D1.2 standards.

The wheels shall be commercial quality, carbon steel, with ____ (single thickness, Type BC or airfoil, Type BA backward curved blades), having non-overloading horsepower characteristics.

Lifting lugs shall be supplied as a standard design feature for ease of handling and installation.

The fan assembly shall be dynamically balanced at the Hartzell factory prior to shipping. All fans shall meet the balance requirements of the Acoustical Society of America Standard ASASTD2-1975 (ANSI S2 19-1975), Grade G6.3.

Fans shall be manufactured in accordance with Hartzell standard, published quality assurance procedures and shipped complete with installation, operation, and maintenance instructions.

The fan performance shall be based on tests conducted in Hartzell's AMCA accredited laboratory in accordance with the latest revision of AMCA Standard 210 for air performance and AMCA Standard 300 for sound and published in accordance with AMCA Publication 211 (Air) and AMCA Publication 311 (Sound). Fans shall be licensed to bear the AMCA Certified Sound and Air Performance Rating Seal for the BC wheel only.

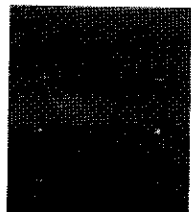
Options and Accessories

Drain Pipe Coupling

A standard pipe coupling welded to housing at its lowest point; female pipe has threaded plug.

Access Door

For maintenance and clean-out of internal fan housing. Bolted and gasketed. A hinged, quick release type also available for Class I only.



Vibration Isolator

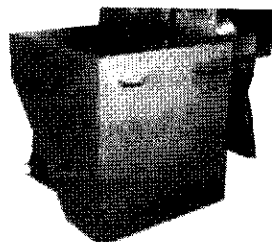
Rubber-in-shear or spring-type isolators are available.

Combination Drive Guard and Weather Cover

Covers motor and shaft sheaves as well as belts. Combines guarding of the drive as well as protection from the weather.



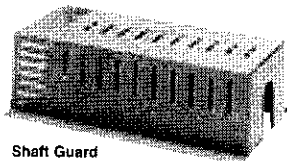
Arrangement 4



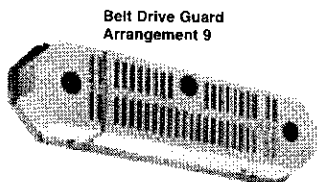
Arrangement 9

Drive Guards

Encloses the drive assembly while permitting circulation of ambient air. Standard features include: tach opening, belt tension openings and adjustable length.



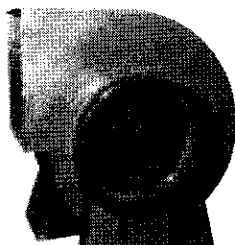
Shaft Guard
Arrangement 9 or 1



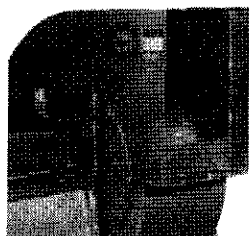
Belt Drive Guard
Arrangement 9

Inlet and Outlet Guards

Spiral ring guard offers protection on inlet side and a wire mesh guard can be furnished for the outlet side.



Inlet Guard



Outlet Guard

Flanged Inlet and Outlet

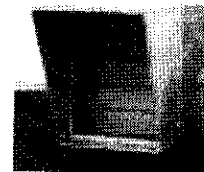
Welded flanges. Drilled flanges can be furnished, if specified.

Neoprene Shaft Seal and Slinger

Shaft seal limits contaminants from the airstream passing through shaft hole in the housing. Seals are not gas tight. A neoprene shaft seal and slinger are required when stainless steel shaft and hardware are specified. For temperatures to 300°F.

Discharge Backdraft Damper

Automatic gravity operated backdraft damper eliminates backflow of air when fan is not operating. Class I only.

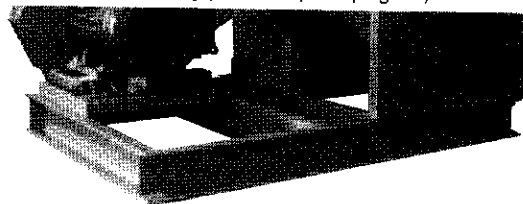


Arrangements

Arrangement 8 and other arrangements not shown are available. (see page 6). Contact factory.

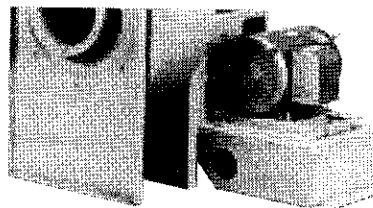
Arrangement 1 Sub-Base

Common structural support for Arrangement 1 fan and motor. Specify motor mounting position (See page 3).



Arrangement 9M Motor Base

Accommodates a larger frame size motor than the standard Arrangement 9 base.



Heat Fan Accessories – Series 03

Heat Slinger

Draws cool air over inboard bearing and reduces heat conduction from wheel through shaft. Heat slinger guard included.



Motor Heat Shield (Arr. 9 Fans)

Aluminum plate attached to base between fan scroll and motor assists in heat deflection and dissipation. Aluminum shaft plate is standard on all Series 03 blowers.

High Temperature Shaft Seal

Shaft seal encased between housing drive side and metal retaining plate. Required for temperatures from 300°F to 800°F.

CAUTION: The drive assembly or the periphery of the wheel of a fan less than seven (7) feet above the floor or working level must be guarded to be in accordance with OSHA regulations.

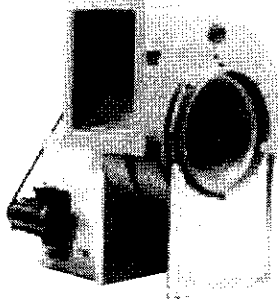
Corrosive Applications Protective Coatings

An epoxy coating is available for mildly corrosive atmospheres. The finish is chemical, moisture and abrasion resistant, providing a very tough and durable coating. Surfaces are phosphatized prior to coating. Finish air dries to 6 mils. Temperatures range up to 250°F.

Inorganic zinc coating is also available. This finish is a very hard coating with exceptional abrasion resistance. Offers excellent weathering characteristics and resistance to alcohols, solvents, and petroleum products. Also, resistant to temperatures up to 600°F. Surfaces are sandblasted prior to application. Finish air dries to 2½ mil thickness.

Fiberglass Units

Where extreme corrosive fumes are encountered, Hartzell Fiberglass Backward Curved Blowers, Series 41, give unsurpassed resistance to a wide variety of corrosive elements at a cost substantially below that of corrosive resistant metals. Size range of 12" to 60" wheel diameter. For complete details on Hartzell Fiberglass Centrifugal Fans, See Bulletin A-160.



Series 41
Arrangement 9

Spark Resistant Construction

For safely handling 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 fan housing, inlet cone and wheel with a ground and polished steel shaft covered with an aluminum sleeve. Temperature limitation of 350°F, with high temperature construction. Material Code AA.

Type B – Aluminum wheel and aluminum wear plate where the shaft passes through the housing. Temperature limitation of 350°F, with high temperature construction. Material Code AB.

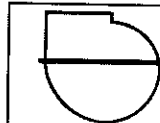
Type C – Aluminum inlet cone and aluminum wear plate where the shaft passes through the housing. Temperature limitation of 350°F, with high temperature construction. Material Code AC.

NOTES: No bearings, drive components, or electrical devices shall be placed in the air or gas stream.

The user shall electrostatically 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.

Split Housing



Type 1 – Available on top angular up, down blast, bottom horizontal, upblast, bottom angular down fans. Allows removal of section without disturbing inlet.



Type 2 – Available top horizontal, top angular down and bottom angular up fans. Allows removal of pie-shaped section without disturbing inlet or outlet.

Heavy-Duty Control Dampers Inlet Control Damper

Increases the efficiency of the blower and permits control of air volume.

Outlet Dampers

Dampers are mounted directly on the blower outlet to control the volume of air delivered to the system. Opposed and parallel blades are available constructed of standard gauge steel and available with a variety of finishes.

Parallel Blade Type

Best suited for applications requiring accurate air volume in a range from wide open to 75% of wide open. Usually used for balancing the system or for modulated control when pressure drop is variable.

Opposed Blade Type

Best suited for control over a broad range of air volume with more precise control.

Both types of outlet control dampers are available in three classifications:

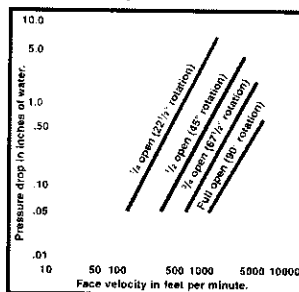
Classification:

Class I – Maximum static pressure: 5" SP
Maximum velocity: 3900 FPM

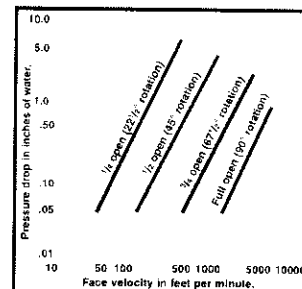
Class II – Maximum static pressure: 8-1/2" SP
Maximum velocity: 5100 FPM

Class III – Maximum static pressure: 20" SP
Maximum velocity: 6000 FPM

NOTE: Class III dampers must be used on installation with temperatures above 250°F.



Typical performance curve for parallel blade dampers.



Typical performance curve for opposed blade dampers.

SAFETY ACCESSORIES, APPLICATION AND USE WARNING

The safe application and use of equipment supplied by Hartzell Fan, Inc. is the responsibility of the installer, the user, the owner, and the employer. Since the application and use of its equipment can vary greatly, Hartzell Fan, Inc. offers various product types, optional safety accessories, and sound performance data per laboratory tests. Hartzell Fan, Inc. sells its equipment with and without safety accessories, and accordingly, it can supply such safety accessories only upon receipt of an order. The need for safety accessories will frequently depend upon the type of system, fan location and operating procedures being employed. The proper protective safety accessories to meet company standards, local codes, and the requirements of the Occupation Safety and Health Act must be determined by the user since safety requirements vary depending on the location and use of the equipment. If applicable local conditions, standards, codes or OSHA rules require the addition of the safety accessories, the user should specify and obtain the required safety accessories from Hartzell Fan, Inc. and should not allow the operation of the equipment without them.

Owners, employers, users and installers should read "RECOMMENDED SAFETY PRACTICES FOR USERS AND INSTALLERS OF INDUSTRIAL AND COMMERCIAL FANS" published by the Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, Illinois 60004. A copy of this publication is enclosed with each fan shipped from Hartzell Fan, Inc., and is available upon request at Hartzell's office in Piqua, Ohio 45356.

Please contact Hartzell Fan, Inc. or your local Hartzell representative for more information on product types, safety accessories, and sound performance estimates. Remember, the selection of safety accessories and the safe application and use of equipment supplied by Hartzell Fan, Inc. is your responsibility.

Hartzell Warranty

LIMITED WARRANTIES

Hartzell represents to Buyer that any goods to be delivered hereunder will be produced in compliance with the requirements of the Fair Labor Standards Act of 1938 as amended.

Hartzell also warrants to Buyer its goods to be free from defects in workmanship and material under normal use and service for one (1) year after tender of delivery by Hartzell, plus six (6) months allowance for shipment to approved stocking dealers & distributors. No warranty extends to future performance of goods and any claims for breach of warranty or otherwise accrues upon tender of delivery. The foregoing constitute Hartzell's sole and exclusive warranties in lieu of all other warranties, whether written, oral, express, implied or statutory.

LIMITATION OF LIABILITY FOR BREACH OF WARRANTY

Hartzell's obligation for any breach of warranty is limited to repairing or replacing, at its option, without cost to Buyer at its factory any goods which shall, within such a warranty period, be returned to it with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been defective. Any request for repair or replacement should be directed to Hartzell Fan, Inc., P.O. Box 919, Piqua, Ohio 45356. Hartzell will not pay for any repairs made outside its factory without its prior written consent. This does not apply to any such Hartzell goods which have failed as a result of faulty installation or abuse, or incorrect electrical connections or alterations, made by others, or use under abnormal operating conditions or misapplication of the goods.

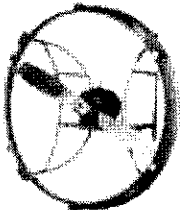
LIMITATION OF LIABILITY

To the extent the above limitation of liability for breach of warranty is not applicable, the liability of Hartzell on any claim of any kind, including negligence, for any loss or damage arising out of or connected with, or resulting from the sale and purchase of the goods or services covered by these Terms and Conditions of Sale or from the performance or breach of any contract pertaining to such sale or purchase or from the design manufacture, sale, delivery, resale, installation, technical direction installation, inspection repair, operation or use of any goods or services covered by these Terms and Conditions shall, in no case exceed the price allocable to the goods or services which gave rise to the claim and shall terminate one year after tender of delivery of said goods or services.

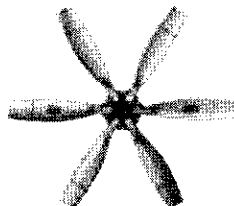
In no event whether as a result of breach of contract, or warranty or alleged negligence, defects incorrect advice or other causes, shall Hartzell be liable for special or consequential damages, including, but not limited to, loss of profits or revenue, loss of use of the equipment or any associated equipment, cost of substitute equipment, facilities or services, down time costs, or claims of customers of the Buyer for such damages. Hartzell neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its goods or services.

NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS.

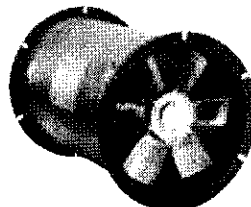
HARTZELL DOES NOT WARRANT THAT SAID GOODS ARE OF MERCHANTABILITY QUALITY OR THAT THEY ARE FIT FOR ANY PARTICULAR PURPOSE. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY AND THERE IS NO IMPLIED WARRANTY OF FITNESS.



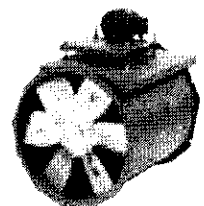
Propeller Fans



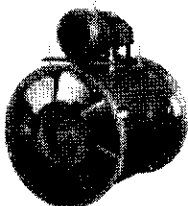
Cooling Tower &
Heat Exchanger Fans



Duct Fans



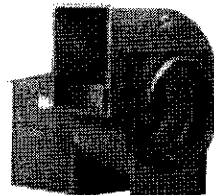
Duct Axial Fans



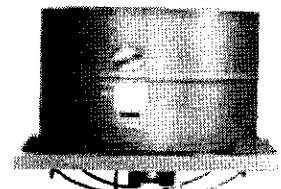
Vaneaxial Blowers



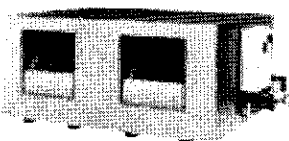
Cool Blast & Utility Fans



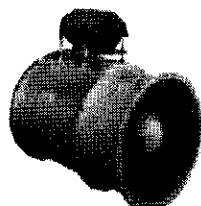
Steel Centrifugal Blowers



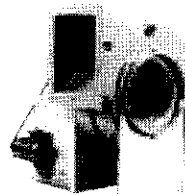
Roof Ventilators -
Steel & Fiberglass



Heating Equipment -
Gas & Steam



Fiberglass
Axial Flow Fans



Fiberglass
Centrifugal Blowers



Marine -
Mine Duty Blowers

Hartzell Fan, Inc., Piqua, Ohio 45356 • Plants in Piqua, Ohio and Portland, Indiana.