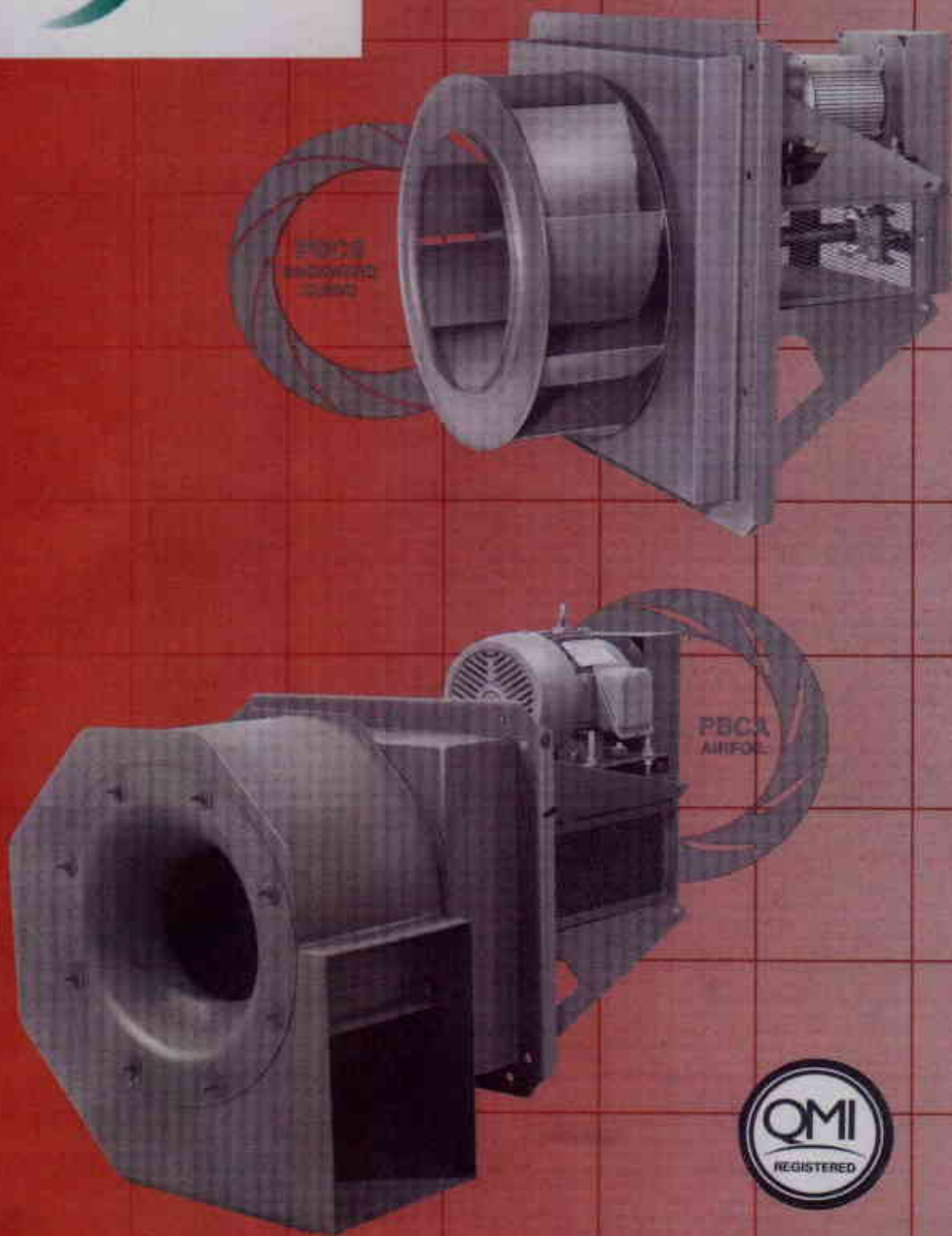




**American
Fan Company**

Bulletin PBCS1201

SINGLE WIDTH SINGLE INLET
12¹/₄" THROUGH
54¹/₄" DIAMETER
HIGH TEMPERATURE
CONSTRUCTION
UP TO 1000°F



BACKWARDLY INCLINED PLUG FANS

WHEELS



PBCA - Airfoil Wheel

High efficiency backwardly inclined airfoil bladed wheel designed for clean, dry air applications. BCA wheels exhibit non-overloading horsepower characteristics and stable performance over the entire pressure curve. Noise levels are lowest in the peak efficiency range of the performance curve. Class 3 wheels utilize internal blade stiffeners for higher tip speed and temperature capability.



PBCS - Backward Curve Wheel

High efficiency backward curved wheel has blade shape similar to the convex shape of the BCA airfoil wheel. This shape provides nearly identical performance characteristics at a given speed at a slightly lower efficiency. BCS wheels also exhibit the same non-overloading horsepower characteristics and stable performance over the entire pressure curve. BCS wheels should be specified in moist or lightly contaminated air systems. Noise levels are lowest in the peak efficiency range of the performance curve. Class 3 wheels utilize a circumferential blade stiffener for higher tip speed and temperature capability.

BEARINGS



200 Series normal duty ball bearings used on class 1 and 2 on sizes 122 through 445. Eccentric cam locking collars hold the bearings securely to the shaft and further tightens with bearing rotation. Bearings are grease relubricable with steel-clad lip seals. Sizes 2-7/16" diameter and larger feature spring locking collars.



300 Series heavy duty ball bearings used on class 3 on sizes 122 through 365. The spring locking collar design provides a secure grip of the wide inner ring bearing to the shaft. Bearings are grease relubricable with molded rubber seals.



22400 Series heavy duty double row spherical roller bearings used on class 1 and 2 on sizes 490 through 542 and on class 3 on sizes 402 through 542. The spring locking collar design provides a secure grip of the wide inner ring bearing to the shaft. Bearings are grease relubricable with floating labyrinth seals which feature multiple self-centering rings held securely in a steel carrier.

TABLE OF CONTENTS

	PAGE		PAGE
Accessories/Options.....	3	High-Temperature Construction.....	4
Applications.....	3	Selecting Fans.....	7
Bearings.....	2	Temperature and Altitude Corrections.....	6
Capacity tables.....	8-21	Wheel Types.....	2
Construction Materials.....	4	Wheel Weight and WR ²	4
Dimensional Data.....	22-24		
Features.....	3		

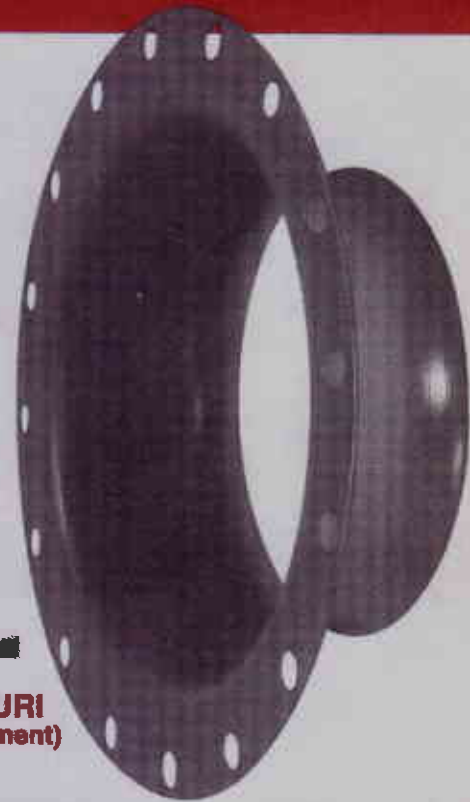
QUALITY ASSURANCE

American Fan Company's Quality Management System is certified to ISO-9001 standards (Registration Number AQC-19201).



FEATURES

- 16 fan sizes, 12 $\frac{1}{4}$ " thru 54 $\frac{1}{4}$ " diameter wheels
- Class 1, 2, or 3 construction
- Capacity selections to 90,000 CFM, Pressure selections to 12" SP w.g.
- High efficiency, non overloading backward inclined curved or airfoil bladed wheels
- Close tolerance 1045 turned, ground, and polished shafting
- Heavy-duty four-bolt grease lubricated flange mounted ball or roller bearings
- Available with continuously welded insulated plug for high or low temperature applications
- Available with and without fan housing
- Vertical or horizontal mounting- Bolt on or weld in place
- Spun steel inlet venturi for smooth, efficient airflow



INLET VENTURI
(Standard Equipment)

OPTIONS



HEAT SLINGER

- Insulated plug 2", 3", or 4" thick. For 6" thick insulated Plug, contact factory.
- Adjustable motor base
- High temperature construction up to 1000° F
- Shaft seal



HOUSING

- Housing
- Drive guards
- Inlet venturi screen
- Venturi support frame

TYPICAL APPLICATIONS

- | | | | |
|----------------------|----------------|----------------|-----------|
| ■ Ovens | ■ Dryers | ■ Air curtains | ■ Plenums |
| ■ Freezers | ■ Spray booths | ■ Panel walls | ■ Kilns |
| ■ Floors or Ceilings | | | |

CONSTRUCTION MATERIALS

Fan Size	Plug Panel Ga.	Bearing support Ga.	Bearing plates Ga.	Insulated Plug Ga.	Motor Plate Ga.	Inlet Venturi Ga.	Hug Sides Ga.	Hug Scrub Ga.	Wheel Spinning Ga.	CLASS 1 AND 2					CLASS 3					
										BCS Blade	BCA Blade	Wheel Hgpt.	Shaft Dia.	Bearings	BCS Blade	BCA Blade	Wheel Hgpt.	Shaft Dia.	Bearings	
122	12	12	10	14	7	14	10	12	14	14	-	12	1 1/8	F3-Y223N	12	-	10	1 1/8	FU-327	
135	12	12	10	14	7	14	10	12	14	14	-	12	1 1/8	F3-Y223N	12	-	10	1 1/8	FU-327	
150	10	10	10	14	7	14	10	12	14	14	-	12	1 1/8	F3-Y223N	12	-	10	1 1/8	FU-327	
165	10	10	10	12	7	14	10	10	12	14	-	12	1 1/8	F3-Y227N	12	-	10	1 5/8	FU-331	
182	10	10	10	12	7	12	10	10	12	12	18	12	1 1/8	F3-Y227N	10	18	10	1 5/8	FU-331	
200	10	10	10	12	7	12	10	10	12	12	18	12	1 1/8	F3-Y227N	10	18	10	1 5/8	FU-331	
222	7	7	7	10	7	12	10	10	12	12	18	10	1 5/8	F3-Y231N	10	18	7	2 3/8	FU-335	
245	7	7	7	10	7	12	10	10	10	10	16	10	1 5/8	F3-Y231N	7	16	7	2 3/8	FU-335	
270	7	7	7	10	7	12	10	10	10	10	16	10	1 5/8	F3-Y231N	7	16	7	2 3/8	FU-335	
300	7	7	7	10	7	12	10	10	10	10	16	7	2 3/8	F3-Y235N	7	16	7	2 3/8	FU-339	
330	7	7	7	10	7	12	7	7	7	7	10	16	7	2 3/8	F3-Y235N	7	16	7	2 3/8	FU-339
365	7	7	7	10	7	12	7	7	7	7	10	16	7	2 3/8	F3-Y235N	7	16	7	2 3/8	FU-339
402	7/8	7/8	7/8	10	7	12	7	7	7	7	10	16	7	2 3/8	F3-Y239N	7	16	7	2 1/2	F-B22443H
445	7/8	7/8	7/8	10	7	12	7	7	7	7	10	16	7	2 3/8	F3-Y239N	7	16	7	2 1/2	F-B22443H
490	7/8	7/8	7/8	7	7	10	7	7	7	7	14	7	2 1/2	F-B22447H	7	14	7	3 3/8	F-B22451H	
542	7/8	7/8	7/8	7	7	10	7	7	7	7	14	7	2 1/2	F-B22447H	7	14	7	3 3/8	F-B22451H	

NOTE: Bearings are Link-Belt or equivalent.

WHEEL WEIGHTS AND WR²

PBCA AIRFOIL WHEELS

SIZE	DIA. (INCHES)	CLASS 3		CLASS 3	
		WEIGHT (LBS)	WR ² (LBS-FT ²)	WEIGHT (LBS)	WR ² (LBS-FT ²)
182	18 1/4	32	9.6	34	10.2
200	20	36	13.0	39	14.0
222	22 1/4	51	22.7	57	25.4
245	24 1/2	64	34.6	71	38.4
270	27	74	48.6	83	54.5
300	30	110	89.1	124	100
330	33	135	132	154	151
365	36 1/2	159	191	183	219
402	40 1/4	223	325	251	366
445	44 1/2	258	460	294	524
490	49	407	882	445	962
542	54 1/4	419	1110	532	1409

PBCS BACKWARD CURVE WHEELS

SIZE	DIA. (INCHES)	CLASS 3		CLASS 3	
		WEIGHT (LBS)	WR ² (LBS-FT ²)	WEIGHT (LBS)	WR ² (LBS-FT ²)
122	12 1/4	13	1.8	16	2.2
135	13 1/2	15	2.5	19	3.1
150	15	17	3.4	22	4.5
165	16 1/2	27	6.6	33	8.1
182	18 1/4	34	10.2	41	12.3
200	20	38	13.7	46	16.6
222	22 1/4	54	24.1	67	29.9
245	24 1/2	68	36.7	87	47.0
270	27	80	52.5	102	66.9
300	30	116	94.0	147	119
330	33	143	140	183	179
365	36 1/2	168	201	218	261
402	40 1/4	233	340	291	424
445	44 1/2	271	483	342	610
490	49	434	938	539	1165
542	54 1/4	514	1361	644	1706

$$\left(\text{Equivalent WR}^2 \text{ At Motor Shaft} \right) = \text{WR}^2 \left(\frac{\text{Fan RPM}}{\text{Motor RPM}} \right)^2 \times 1.05$$

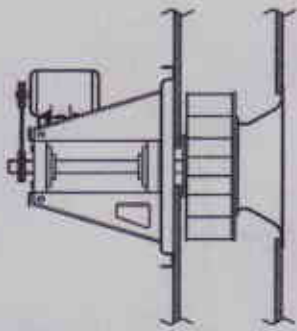
HIGH TEMPERATURE CONSTRUCTION

- 250°F - 400°F — Heat Slinger, high-temperature paint.
- 401°F - 700°F — Heat Slinger, high-temperature paint, high-temperature shaft seal.
- 701°F - 900°F — Heat Slinger, high-temperature paint, high-temperature shaft seal, Corten wheel material, fins on back of wheel. (Also requires 4" thick insulated plug or customer provided 4" insulated wall.)
- 901°F - 1000°F — Heat Slinger, high-temperature paint, high-temperature shaft seal, 316L S.S. wheel, shaft, and inlet venturi, fins on back of wheel, fixed and floating bearings, high temperature grease. (Also requires 4" thick insulated plug or customer provided 4" insulated wall.)

CORROSION RESISTANT AND SPECIAL ALLOYS

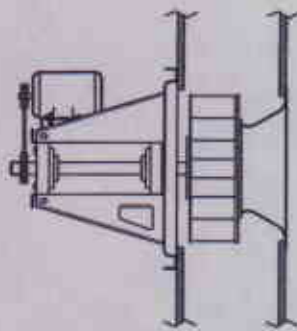
For applications involving handling of corrosive fumes, a wide variety of protective coatings and special alloy metals are available. Consult your American Fan representative or factory for full details.

TYPICAL INSTALLATIONS



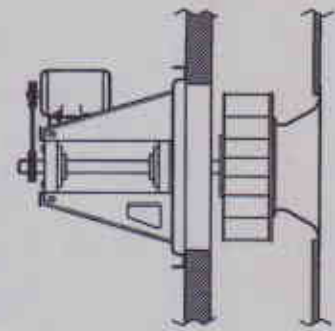
Mounting type 1

Plug fan is mounted to wall or ceiling with small hole in wall for shaft to pass through. Wheel must be removed and re-mounted from inside.



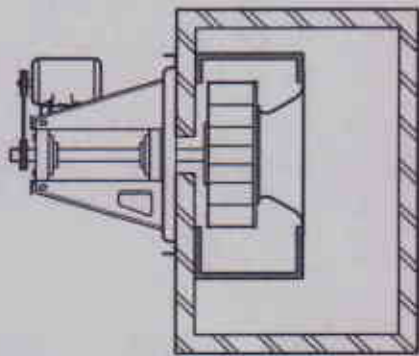
Mounting type 2

Plug fan is mounted to wall or ceiling with large round hole in wall for wheel to pass through from outside. Wheel does not have to be removed for mounting fan.



Mounting type 3

Plug fan is mounted to wall or ceiling with large square hole in wall for insulated plug. Wheel does not have to be removed for mounting fan.



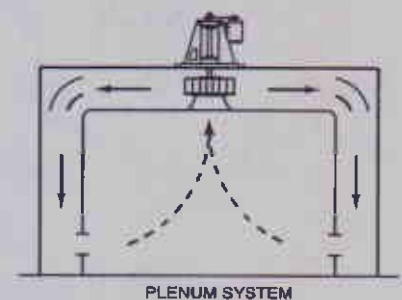
Mounting type 4

Housed plug fans can be mounted in any of the ways shown. Housing must be mounted from inside and is mounted either to insulated plug or to interior of wall.



Mounting type 5

Plug fan is mounted vertically or horizontally in packaged air handling unit. Fan pulls air in from system and discharges into plenum containing filters, coils, dampers, etc. and supplies conditioned air back to building.

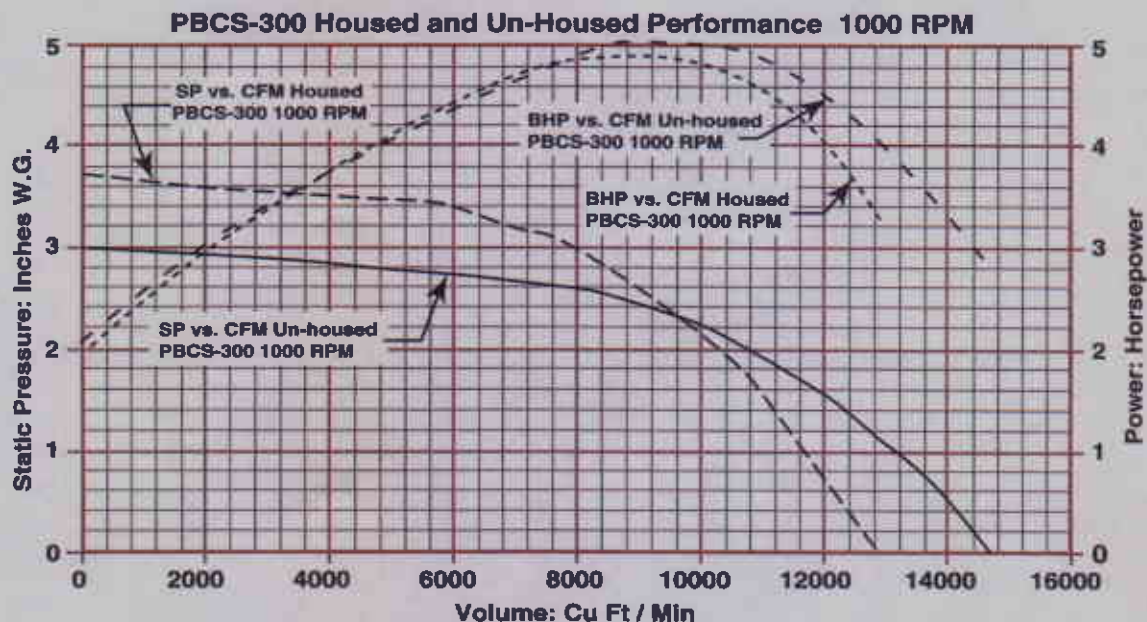


Mounting type 6

Plug fan is mounted vertically to ceiling with large square hole in wall for insulated plug or with small hole for shaft to pass through. Fan pulls air up inside plenum and discharges back to bottom of plenum through peripheral ducting.

DIFFERENCES OF HOUSED AND UN-HOUSED PLUG FAN PERFORMANCE

The curves below show the performance differences of a housed and an un-housed plug fan (without wall proximity effects). As can be seen, an un-housed plug fan can be more efficient at lower static pressures than a housed plug fan. Housings should be utilized in applications where all of the air needs to be discharged in one direction only.



TEMPERATURE AND ALTITUDE CORRECTIONS

USING DENSITY CORRECTION FACTORS

The Capacity Tables in this bulletin are based on fans handling standard air at a density of .075 pounds per cubic foot equivalent to air at 70°F and 29.92" Hg barometric pressure. Therefore, when a fan handles air or other gases at other than standard density due to temperature, altitude or the type of gas, the published tables should be used in the following manner.

EXAMPLE: Determine RPM and BHP for a PBCS-122, 2923 CFM, 2" SP, 350° F, 3000' elevation.

- 1) Determine the equivalent static pressure in the following manner: SP = required SP x density factor for conditions from the table below, ie equivalent SP = 2 x 1.5 = 3"
- 2) Using the required CFM and the equivalent SP, obtain the RPM and BHP from the capacity table, interpolating when necessary. From capacity table for size BCS-122, RPM = 3518, Equivalent BHP = 2.72

- 3) The RPM obtained is the correct value.
- 4) The BHP obtained must be corrected for the actual density as follows:

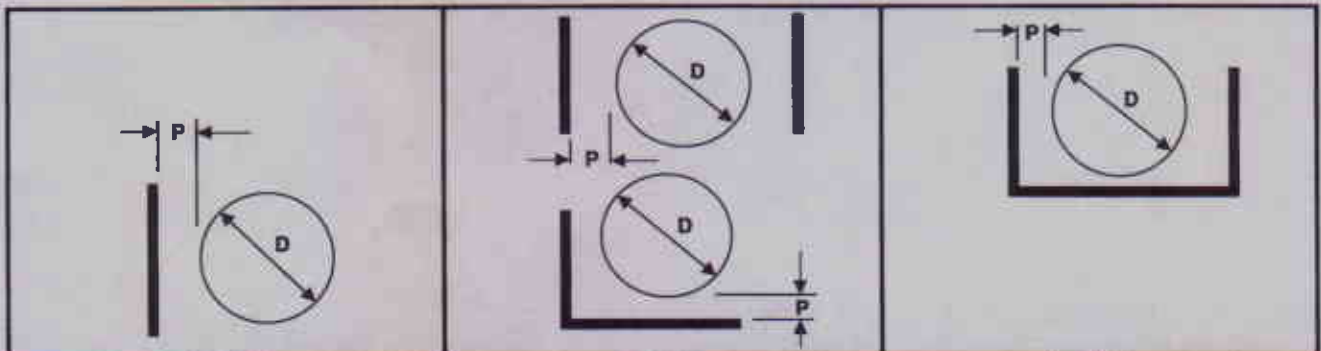
$$\begin{aligned} \text{BHP at conditions} &= \text{Equivalent BHP} \\ &\quad \text{Density Factor} \\ &= \frac{2.72}{1.50} \end{aligned}$$

Therefore, BHP at conditions = 1.81

DENSITY CORRECTION FACTORS

AIR TEMP DEG. F	ALTITUDE IN FEET ABOVE SEA LEVEL																			
	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000
-60°	.76	.77	.78	.80	.81	.83	.84	.86	.87	.89	.91	.92	.94	.96	.98	1.00	1.02	1.04	1.06	1.10
-40°	.79	.81	.82	.84	.85	.87	.88	.90	.92	.93	.95	.97	.99	1.01	1.03	1.05	1.07	1.09	1.11	1.15
-20°	.83	.85	.86	.88	.89	.91	.93	.94	.96	.98	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.21
0°	.87	.89	.91	.92	.94	.96	.98	.99	1.01	1.03	1.05	1.06	1.09	1.10	1.13	1.15	1.17	1.19	1.22	1.26
40°	.94	.96	.98	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.26	1.28	1.30	1.32	1.36
70°	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.18	1.20	1.22	1.25	1.27	1.30	1.32	1.35	1.37	1.40	1.45
80°	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.26	1.28	1.30	1.33	1.36	1.38	1.41	1.43	1.48
100°	1.06	1.08	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.25	1.28	1.30	1.33	1.35	1.38	1.41	1.43	1.46	1.48	1.54
120°	1.09	1.12	1.14	1.16	1.18	1.20	1.23	1.25	1.28	1.30	1.32	1.35	1.38	1.40	1.43	1.46	1.48	1.51	1.53	1.58
140°	1.13	1.15	1.18	1.20	1.22	1.25	1.27	1.29	1.32	1.34	1.37	1.40	1.42	1.45	1.48	1.51	1.54	1.57	1.58	1.65
160°	1.17	1.19	1.22	1.24	1.26	1.29	1.31	1.34	1.36	1.39	1.42	1.44	1.47	1.50	1.53	1.56	1.59	1.62	1.64	1.70
180°	1.21	1.23	1.26	1.28	1.30	1.33	1.36	1.38	1.41	1.43	1.46	1.49	1.52	1.55	1.58	1.61	1.64	1.67	1.70	1.75
200°	1.25	1.27	1.29	1.32	1.34	1.37	1.40	1.42	1.45	1.48	1.51	1.54	1.57	1.60	1.63	1.66	1.69	1.72	1.75	1.81
250°	1.34	1.36	1.39	1.42	1.45	1.47	1.50	1.53	1.56	1.59	1.62	1.65	1.68	1.71	1.74	1.78	1.82	1.85	1.88	1.94
300°	1.43	1.46	1.49	1.52	1.55	1.58	1.61	1.64	1.67	1.70	1.74	1.77	1.80	1.84	1.87	1.91	1.94	1.98	2.00	2.08
350°	1.53	1.56	1.59	1.62	1.65	1.68	1.72	1.75	1.78	1.81	1.85	1.88	1.92	1.96	2.00	2.04	2.07	2.11	2.14	2.22
400°	1.62	1.65	1.69	1.72	1.75	1.79	1.82	1.85	1.89	1.93	1.96	2.00	2.04	2.08	2.12	2.16	2.20	2.25	2.27	2.35
450°	1.72	1.75	1.79	1.82	1.86	1.89	1.93	1.96	2.00	2.04	2.08	2.12	2.16	2.20	2.24	2.29	2.33	2.38	2.41	2.50
500°	1.81	1.85	1.88	1.92	1.96	1.99	2.03	2.07	2.11	2.15	2.19	2.23	2.28	2.32	2.36	2.41	2.46	2.51	2.54	2.62
550°	1.91	1.94	1.98	2.02	2.06	2.10	2.14	2.18	2.22	2.26	2.30	2.35	2.40	2.44	2.49	2.54	2.58	2.63	2.68	2.77
600°	2.00	2.04	2.08	2.12	2.16	2.20	2.24	2.29	2.33	2.38	2.42	2.47	2.50	2.56	2.61	2.66	2.71	2.77	2.80	2.90
650°	2.10	2.14	2.18	2.22	2.26	2.31	2.35	2.40	2.44	2.49	2.54	2.58	2.63	2.68	2.74	2.79	2.84	2.90	2.94	3.04
700°	2.19	2.23	2.27	2.32	2.36	2.41	2.45	2.50	2.55	2.60	2.65	2.70	2.75	2.80	2.86	2.91	2.97	3.03	3.08	3.18
750°	2.28	2.33	2.37	2.42	2.47	2.51	2.56	2.61	2.66	2.71	2.76	2.81	2.87	2.92	2.98	3.04	3.10	3.16	3.19	3.31
800°	2.38	2.43	2.48	2.52	2.57	2.62	2.66	2.72	2.76	2.81	2.86	2.90	2.96	3.02	3.10	3.14	3.21	3.26	3.33	3.45
850°	2.47	2.52	2.57	2.62	2.67	2.72	2.76	2.82	2.87	2.92	2.97	3.02	3.09	3.14	3.21	3.26	3.33	3.38	3.46	3.58
900°	2.57	2.62	2.67	2.72	2.76	2.83	2.88	2.93	2.98	3.03	3.08	3.14	3.21	3.26	3.34	3.39	3.47	3.52	3.60	3.73
950°	2.66	2.72	2.77	2.82	2.87	2.92	2.96	3.03	3.08	3.14	3.19	3.24	3.32	3.38	3.46	3.51	3.58	3.64	3.72	3.86
1000°	2.76	2.82	2.87	2.92	2.96	3.04	3.09	3.14	3.20	3.26	3.31	3.37	3.45	3.50	3.59	3.64	3.72	3.78	3.86	4.00

WALL PROXIMITY CORRECTION FACTORS



% WOV	One Wall						Two Walls						Three Walls					
	P/D = 1/4		P/D = 1/2		P/D = 3/4		P/D = 1/4		P/D = 1/2		P/D = 3/4		P/D = 1/4		P/D = 1/2		P/D = 3/4	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
98	1.010	1.035	1.010	1.020	1.005	1.005	1.020	1.055	1.010	1.020	1.005	1.005	1.060	1.190	1.030	1.080	1.015	1.040
80	1.010	1.030	1.005	1.015	1.005	1.005	1.020	1.050	1.010	1.020	1.005	1.005	1.055	1.170	1.025	1.075	1.010	1.030
70	1.010	1.030	1.000	1.010	1.000	1.005	1.015	1.045	1.005	1.020	1.000	1.005	1.045	1.150	1.020	1.065	1.010	1.030
60	1.010	1.025	1.000	1.010	1.000	1.005	1.010	1.035	1.000	1.020	1.000	1.000	1.040	1.130	1.020	1.055	1.005	1.020
50	1.010	1.020	1.000	1.010	1.000	1.000	1.010	1.030	1.000	1.015	1.000	1.000	1.035	1.105	1.015	1.045	1.005	1.015
40	1.010	1.020	1.000	1.010	1.000	1.000	1.005	1.025	1.000	1.010	1.000	1.000	1.030	1.090	1.010	1.035	1.005	1.010

SELECTING PBCA AND PBCS PLUG FANS (without fan housing)

The performance data shown in this catalog is based on standard air, which is defined as 70°F air at sea level with a density of 0.075 lbs./ft.³. Elevations other than sea level and gas temperatures other than 70°F must be accounted for in the selection process.

Performance data shown is for un-housed applications. When one, two, or three walls are adjacent to the fan impeller, their proximity must also be taken into account in the selection process. For housed applications, refer to Bulletin AS0952.

For a copy of AFC/Woods USA Fan Selection Software, contact your local sales representative or the factory.

SELECTION EXAMPLE (for un-housed application)

Requirement is for 20,000 ACFM at 2" SP at 850°F operating temperature at sea level and a maximum temperature of 900°F. There are two parallel walls that are 60" apart.

Step 1: Determine the equivalent SP at standard air density so selection tables can be used. From the Density Correction Factor table, the factor for 850°F air at sea level is 2.47. Therefore the equivalent SP is:

$$2" \text{ SP} \times 2.47 = 4.94" \text{ equivalent SP.}$$

Step 2: Select a fan size. Looking at performance tables, we see that a PBCS-330 will produce 21204 CFM at 5" SP at 1455 RPM and 24.20 BHP. Interpolating, it will produce 20000 CFM at 4.94" SP at 1412 RPM and 22.36 BHP at 0.075 lbs./ft.³ density.

Step 3: Correct BHP for 850°F operating temperature.

$$\frac{22.36 \text{ BHP}}{2.47 \text{ Correction factor}} = 9.05 \text{ BHP at } 850^\circ\text{F operating temperature}$$

Step 4: Correct for two walls. From top of performance table, wheel diameter is 33". Since wheel will be centered between walls, determine distance from wall to wheel, $\frac{60" - 33"}{2} = 13.5"$, therefore **P = 13.5"**.

Determine P/D ratio: $\frac{13.5}{33} = 0.41$, use P/D ratio of 1/2 for two walls.

Step 5: Determine % WOV. From WOV formula shown below,

$$\text{WOV} = \text{RPM} \times 19.026, \text{ therefore } \text{WOV} = 1412 \times 19.026 = 26865$$

$$\% \text{WOV} = \frac{\text{Required CFM}}{\text{WOV}} = \frac{20000}{26865} = 74\% \text{ WOV}$$

From Wall Proximity Correction factors for two walls, P/D=1/2, and 70% WOV, correct RPM by multiplying by 1.005, $1412 \times 1.005 = 1419 \text{ RPM}$ and correct BHP by multiplying by 1.020, $9.05 \times 1.020 = 9.23 \text{ BHP}$.

Step 6: Determine fan class, wheel material, and maximum RPM. From top of performance table, standard wheel material for 900°F is Corten. Fan operating speed is 1419 RPM, therefore, minimum fan class is class 3 and maximum RPM is 1514 RPM.

Step 7: Summarize selection.

Requirement is for 20,000 ACFM at 2" SP at 850°F operating temperature at sea level and a maximum temperature of 900°F. There are two parallel walls that are 60" apart.

Selection: PBCS-330, 20,000 ACFM @ 2" SP (4.94" SP equivalent at 70°F)
 850° F air at sea level, 1419 RPM
 9.23 BHP at conditions, 22.36 BHP at standard air, 25 HP motor for cold start
 701°F to 900°F construction, Wheel material - Corten
 Class 3, Max. RPM = 1514 RPM

WOV = RPM x Q

Fan Model & Size	Q	Fan Model & Size	Q	Fan Model & Size	Q	Fan Model & Size	Q
PBCS-122	0.973	PBCS-270	10.420	PBCA-182	3.186	PBCA-330	18.835
PBCS-135	1.303	PBCS-300	14.295	PBCA-200	4.193	PBCA-365	25.486
PBCS-150	1.787	PBCS-330	19.026	PBCA-222	5.773	PBCA-402	34.176
PBCS-165	2.378	PBCS-365	25.745	PBCA-245	7.708	PBCA-445	46.185
PBCS-182	3.218	PBCS-402	34.523	PBCA-270	10.316	PBCA-490	61.661
PBCS-200	4.235	PBCS-445	48.245	PBCA-300	14.151	PBCA-542	83.679
PBCS-222	5.831	PBCS-490	62.288				
PBCS-245	7.785	PBCS-542	84.531				

PBCS-122

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.
 WHEEL DIAMETER: 12.25"
 WHEEL CIRCUMFERENCE: 3.21'
 TIP SPEED (FPM) = 3.21 x RPM
 MAX BHP = 0.066 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS *(Indicates std. material for this temperature range)
	CLASS 1	CLASS 2	CLASS 3	
UP TO 250°F	3952	5155	5700	Mild steel*, Aluminum, Corten, 304L S.S., 316L S.S.
251°F TO 400°F	3754	4897	5415	Mild steel*, Corten, 304L S.S., 316L S.S.
401°F TO 700°F	3241	4227	4674	Mild steel*, Corten, 304L S.S., 316L S.S.
701°F TO 900°F	2687	3506	3876	Corten*, 304L S.S., 316L S.S.
901°F TO 1000°F	2450	3196	3534	316L S.S.*

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1043	1000	1601	0.27	2126	0.59														
1252	1200	1719	0.33	2173	0.67														
1461	1400	1861	0.42	2257	0.76	2645	1.18												
1670	1600	2017	0.52	2370	0.88	2715	1.32	3050	1.81	3366	2.34								
1879	1800	2189	0.64	2500	1.02	2811	1.47	3115	1.98	3412	2.53	3698	3.13						
2087	2000	2365	0.77	2646	1.19	2928	1.66	3201	2.18	3477	2.75	3745	3.36	4252	4.71				
2296	2200	2543	0.93	2799	1.39	3059	1.88	3314	2.41	3563	3.00	3813	3.63	4298	5.01				
2505	2400	2724	1.12	2970	1.61	3205	2.13	3439	2.68	3672	3.28	3899	3.93	4345	5.32	4792	6.89		
2714	2600	2915	1.34	3144	1.87	3353	2.41	3575	2.98	3791	3.59	4006	4.26	4429	5.70	4839	7.27	5243	8.99
2923	2800	3110	1.61	3319	2.15	3518	2.72	3721	3.33	3920	3.96	4123	4.62	4514	6.10	4906	7.71	5289	9.45
3131	3000	3306	1.91	3497	2.45	3690	3.08	3870	3.70	4065	4.37	4250	5.05	4624	6.55	4991	8.20	5346	9.94
3340	3200	3504	2.25	3676	2.79	3864	3.47	4034	4.12	4212	4.81	4390	5.52	4739	7.03	5083	8.72	5431	10.52
3549	3400	3702	2.63	3858	3.17	4039	3.88	4205	4.58	4362	5.29	4536	6.03	4867	7.59	5196	9.28	5516	11.12
3758	3600	3902	3.06	4048	3.61	4216	4.33	4378	5.08	4529	5.82	4685	6.59	5000	8.19	5313	9.89	5621	11.77
3967	3800	4102	3.53	4242	4.11	4395	4.82	4554	5.62	4700	6.40	4839	7.19	5146	8.85	5440	10.60		
4175	4000	4303	4.06	4437	4.66	4576	5.35	4730	6.19	4874	7.02	5009	7.84	5293	9.56	5573	11.35		
4384	4200			4633	5.27	4758	5.93	4907	6.80	5049	7.70	5181	8.55	5442	10.31				
4593	4400			4831	5.92	4949	6.60	5086	7.46	5224	8.39	5355	9.30	5598	11.12				

PBCS-135

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.
 WHEEL DIAMETER: 13.50"
 WHEEL CIRCUMFERENCE: 3.53'
 TIP SPEED (FPM) = 3.53 x RPM
 MAX BHP = 0.108 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS *(Indicates std. material for this temperature range)
	CLASS 1	CLASS 2	CLASS 3	
UP TO 250°F	3586	4678	5172	Mild steel*, Aluminum, Corten, 304L S.S., 316L S.S.
251°F TO 400°F	3407	4444	4913	Mild steel*, Corten, 304L S.S., 316L S.S.
401°F TO 700°F	2941	3836	4241	Mild steel*, Corten, 304L S.S., 316L S.S.
701°F TO 900°F	2438	3182	3517	Corten*, 304L S.S., 316L S.S.
901°F TO 1000°F	2224	2900	3206	316L S.S.*

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1267	1000	1452	0.33	1929	0.71														
1521	1200	1560	0.41	1971	0.81														
1775	1400	1688	0.51	2048	0.93	2400	1.43												
2028	1600	1830	0.63	2150	1.07	2464	1.60	2767	2.19	3054	2.85								
2282	1800	1987	0.77	2269	1.24	2550	1.79	2827	2.40	3096	3.08	3356	3.81						
2535	2000	2146	0.94	2401	1.45	2657	2.01	2905	2.65	3156	3.34	3398	4.09	3858	5.72				
2789	2200	2308	1.13	2540	1.69	2776	2.28	3008	2.92	3233	3.64	3460	4.41	3900	6.08				
3042	2400	2472	1.36	2695	1.96	2908	2.58	3120	3.25	3332	3.98	3538	4.77	3943	6.46	4348	8.36		
3296	2600	2645	1.63	2853	2.27	3043	2.92	3244	3.62	3440	4.36	3635	5.17	4019	6.92	4391	8.83	4757	10.91
3550	2800	2822	1.95	3012	2.61	3192	3.31	3377	4.04	3557	4.81	3741	5.61	4096	7.41	4452	9.36	4799	11.47
3803	3000	3000	2.32	3173	2.98	3348	3.74	3512	4.50	3689	5.30	3857	6.13	4196	7.95	4529	9.96	4851	12.08
4057	3200	3179	2.73	3336	3.39	3506	4.21	3660	5.00	3822	5.84	3983	6.71	4301	8.53	4612	10.59	4928	12.78
4310	3400	3359	3.20	3501	3.85	3665	4.71	3816	5.56	3958	6.42	4116	7.33	4416	9.22	4715	11.27	5006	13.51
4564	3600	3540	3.72	3673	4.39	3826	5.26	3973	6.17	4110	7.07	4251	8.00	4537	9.95	4821	12.02	5101	14.30
4818	3800	3722	4.29	3849	4.99	3988	5.85	4132	6.83	4265	7.77	4391	8.73	4669	10.75	4937	12.87		
5071	4000	3905	4.93	4026	5.66	4152	6.50	4292	7.52	4422	8.53	4545	9.52	4803	11.61	5057	13.79		
5325	4200			4204	6.40	4317	7.20	4453	8.26	4581	9.35	4701	10.38	4938	12.52				
5578	4400			4383	7.20	4490	8.02	4615	9.06	4740	10.19	4859	11.30	5080	13.50				

PBCS-150

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.

WHEEL DIAMETER: 15.00"

WHEEL CIRCUMFERENCE: 3.93'

TIP SPEED (FPM) = 3.93 x RPM

MAX BHP = 0.169 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS	
	CLASS 1	CLASS 2	CLASS 3	*(Indicates std. material for this temperature range)	
UP TO 250°F	3046	3673	4655	Mild steel* Aluminum, Corten, 304L S.S., 316L S.S.	
251°F TO 400°F	2894	3774	4422	Mild steel* Corten, 304L S.S., 316L S.S.	
401°F TO 700°F	2498	3258	3817	Mild steel* Corten, 304L S.S., 316L S.S.	
701°F TO 900°F	2071	2702	3165	Corten* 304L S.S., 316L S.S.	
901°F TO 1000°F	1889	2463	2886	316L S.S.*	

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1564	1000	1307	0.37	1736	0.81														
1877	1200	1404	0.47	1774	0.91														
2190	1400	1519	0.58	1843	1.05														
2503	1600	1647	0.72	1935	1.22														
2816	1800	1787	0.88	2041	1.43														
3129	2000	1931	1.07	2161	1.67														
3442	2200	2076	1.30	2285	1.94														
3755	2400	2224	1.56	2425	2.24														
4068	2600	2380	1.89	2567	2.58														
4381	2800	2539	2.26	2710	2.97														
4693	3000	2699	2.69	2855	3.41														
5006	3200	2860	3.18	3002	3.89														
5319	3400	3023	3.72	3150	4.44														
5632	3600	3186	4.33	3305	5.07														
5945	3800	3349	5.00	3463	5.78														
6258	4000	3513	5.75	3623	6.56														
6571	4200			3783	7.42														
6884	4400			3944	8.35														
						2160	1.62												
						2217	1.80	2491	2.48	2749	3.22								
						2295	2.02	2544	2.71	2787	3.48	3020	4.30						
						2391	2.30	2614	2.99	2840	3.77	3058	4.61	3472	6.46				
						2498	2.62	2706	3.32	2910	4.11	3114	4.98	3510	6.87				
						2616	2.97	2808	3.73	2998	4.52	3184	5.39	3548	7.30	3913	9.45		
						2738	3.37	2919	4.17	3096	4.99	3271	5.86	3616	7.82	3951	9.98	4281	12.33
						2872	3.79	3039	4.65	3201	5.53	3366	6.40	3686	8.38	4006	10.57	4319	12.96
						3012	4.26	3160	5.18	3319	6.10	3471	7.05	3776	9.02	4076	11.25	4365	13.64
						3155	4.78	3293	5.74	3439	6.72	3584	7.72	3870	9.72	4150	11.97	4435	14.43
						3298	5.36	3433	6.35	3561	7.39	3704	8.43	3974	10.56	4242	12.80	4505	15.26
						3443	6.00	3575	7.02	3698	8.11	3825	9.21	4089	11.45	4338	13.70	4590	16.20
						3589	6.71	3718	7.75	3838	8.87	3951	10.04	4201	12.37	4442	14.76		
						3736	7.47	3862	8.56	3979	9.70	4090	10.91	4321	13.36	4550	15.87		
						3885	8.31	4007	9.44	4122	10.59	4230	11.84	4443	14.41				
						4040	9.26	4153	10.38	4265	11.58	4372	12.85	4571	15.52				

PBCS-165

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.

WHEEL DIAMETER: 16.50"

WHEEL CIRCUMFERENCE: 4.32'

TIP SPEED (FPM) = 4.32 x RPM

MAX BHP = 0.272 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS	
	CLASS 1	CLASS 2	CLASS 3	*(Indicates std. material for this temperature range)	
UP TO 250°F	2769	3612	4232	Mild steel* Aluminum, Corten, 304L S.S., 316L S.S.	
251°F TO 400°F	2631	3431	4020	Mild steel* Corten, 304L S.S., 316L S.S.	
401°F TO 700°F	2271	2962	3470	Mild steel* Corten, 304L S.S., 316L S.S.	
701°F TO 900°F	1883	2457	2878	Corten* 304L S.S., 316L S.S.	
901°F TO 1000°F	1717	2239	2624	316L S.S.*	

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1893	1000	1188	0.45	1578	0.98														
2271	1200	1276	0.56	1613	1.10														
2650	1400	1381	0.70	1676	1.27														
3029	1600	1497	0.87	1759	1.47														
3407	1800	1625	1.06	1856	1.73														
3786	2000	1755	1.29	1964	2.02														
4165	2200	1888	1.57	2078	2.35														
4543	2400	2022	1.89	2204	2.71														
4922	2600	2163	2.28	2333	3.12														
5301	2800	2308	2.74	2464	3.59														
5679	3000	2454	3.26	2595	4.12														
6058	3200	2600	3.84	2729	4.71														
6437	3400	2748	4.50	2864	5.37														
6815	3600	2896	5.24	3004	6.13														
7194	3800	3045	6.05	3148	6.99														
7572	4000	3194	6.95	3293	7.94														
7951	4200			3439	8.98														
8330	4400			3585	10.11														
						1963	1.96												
						2016	2.18	2264	3.00	2499	3.89								
						2086	2.45	2312	3.28	2533	4.21	2745	5.20						
						2173	2.78	2376	3.62	2582	4.56	2780	5.58	3157	7.82				
						2271	3.17	2460	4.02	2645	4.98	2831	6.02	3191	8.32				
						2379	3.60	2552	4.51	2725	5.46	2894	6.52	3226	8.83	3557	11.43		
						2489	4.07	2654	5.05	2814	6.03	2973	7.09	3288	9.46	3592	12.07	3892	14.92
						2611	4.59	2762	5.63	2910	6.69	3060	7.75	3351	10.13	3642	12.79	3927	15.68
						2739	5.16	2873	6.26	3017	7.38	3155	8.53	3432	10.91	3705	13.61	3968	16.50
						2868	5.78	2994	6.95	3126	8.13	3259	9.34	3518	11.76	3773	14.49	4031	17.46
						2998	6.48	3121	7.69	3237	8.95	3367	10.21	3613	12.78	3857	15.49	4095	18.47
						3130	7.26	3250	8.49	3361	9.81	3477	11.14	3712	13.86	3944	16.58	4173	19.60
						3262	8.11	3380	9.37	3489	10.74	3592	12.14	3819	14.97	4038	17.86		
						3396	9.04	3511	10.36	3617	11.74	3718	13.20	3929	16.16	4136	19.20		
						3531	10.05	3642	11.42	3747	12.82	3846	14.33	4039	17.43				
						3673	11.21	3775	12.56	3878	14.02	3974	15.55	4155	18.78				

PBCS-182

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.

WHEEL DIAMETER: 18.25"

WHEEL CIRCUMFERENCE: 4.78'

TIP SPEED (FPM) = 4.78 x RPM

MAX BHP = 0.432 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS
	CLASS 1	CLASS 2	CLASS 3	*(Indicates std. material for this temperature range)
UP TO 250°F	2346	361	3825	Mild steel*, Aluminum, Corten, 304L S.S., 316L S.S.
251°F TO 400°F	2229	2908	3634	Mild steel*, Corten, 304L S.S., 316L S.S.
401°F TO 700°F	1924	2510	3137	Mild steel*, Corten, 304L S.S., 316L S.S.
701°F TO 900°F	1595	2082	2601	Corten*, 304L S.S., 316L S.S.
901°F TO 1000°F	1455	1898	2372	316L S.S.*

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2314	1000	1074	0.54	1427	1.18														
2777	1200	1153	0.65	1458	1.33														
3240	1400	1248	0.78	1515	1.50	1775	2.37												
3702	1600	1353	0.95	1590	1.72	1822	2.61	2047	3.62	2259	4.69								
4165	1800	1468	1.15	1677	1.97	1886	2.89	2090	3.94	2290	5.08	2482	6.27						
4628	2000	1586	1.38	1775	2.24	1964	3.23	2148	4.28	2334	5.48	2513	6.74	2854	9.42				
5091	2200	1705	1.64	1877	2.56	2052	3.61	2224	4.72	2391	5.90	2559	7.23	2885	10.04				
5554	2400	1827	1.93	1992	2.94	2150	4.02	2307	5.20	2463	6.43	2616	7.73	2916	10.68	3216	13.79		
6017	2600	1955	2.28	2108	3.37	2249	4.47	2398	5.72	2543	7.01	2687	8.35	2972	11.32	3247	14.59	3519	18.00
6480	2800	2085	2.68	2226	3.83	2359	4.99	2496	6.27	2630	7.64	2766	9.05	3029	12.01	3292	15.39	3550	18.94
6942	3000	2217	3.13	2345	4.33	2475	5.59	2596	6.87	2727	8.30	2851	9.79	3102	12.85	3349	16.22	3587	19.91
7405	3200	2349	3.64	2465	4.88	2591	6.24	2705	7.56	2825	9.01	2945	10.56	3179	13.77	3410	17.12	3644	20.88
7868	3400	2482	4.20	2587	5.49	2709	6.93	2820	8.34	2926	9.78	3043	11.39	3265	14.74	3486	18.22	3702	21.90
8331	3600	2616	4.82	2714	6.17	2828	7.66	2937	9.18	3038	10.67	3142	12.27	3354	15.76	3564	19.38	3771	23.12
8794	3800	2751	5.52	2844	6.93	2948	8.46	3054	10.09	3152	11.64	3246	13.24	3452	16.83	3650	20.59		
9257	4000	2885	6.28	2975	7.75	3069	9.32	3172	11.01	3269	12.69	3360	14.35	3550	17.96	3738	21.87		
9720	4200			3107	8.65	3191	10.25	3291	12.01	3386	13.82	3475	15.53	3650	19.16				
10182	4400			3239	9.63	3318	11.29	3411	13.09	3504	14.96	3591	16.81	3755	20.47				

PBCS-200

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.

WHEEL DIAMETER: 20.00"

WHEEL CIRCUMFERENCE: 5.24'

TIP SPEED (FPM) = 5.24 x RPM

MAX BHP = 0.683 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS
	CLASS 1	CLASS 2	CLASS 3	*(Indicates std. material for this temperature range)
UP TO 250°F	2134	2785	3475	Mild steel*, Aluminum, Corten, 304L S.S., 316L S.S.
251°F TO 400°F	2027	2646	3301	Mild steel*, Corten, 304L S.S., 316L S.S.
401°F TO 700°F	1750	2284	2850	Mild steel*, Corten, 304L S.S., 316L S.S.
701°F TO 900°F	1451	1894	2363	Corten*, 304L S.S., 316L S.S.
901°F TO 1000°F	1323	1727	2154	316L S.S.*

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2779	1000	980	0.64	1302	1.41														
3335	1200	1052	0.78	1331	1.60														
3891	1400	1139	0.94	1382	1.80	1620	2.84												
4447	1600	1234	1.14	1451	2.07	1663	3.13	1868	4.35	2061	5.63								
5002	1800	1340	1.38	1530	2.37	1721	3.47	1907	4.73	2090	6.10	2265	7.53						
5558	2000	1447	1.65	1620	2.70	1792	3.89	1960	5.14	2129	6.58	2293	8.10	2604	11.31				
6114	2200	1556	1.96	1713	3.07	1872	4.34	2029	5.67	2182	7.09	2335	8.68	2632	12.05				
6670	2400	1667	2.32	1818	3.53	1961	4.82	2105	6.25	2248	7.72	2387	9.29	2661	12.82	2935	16.57		
7226	2600	1784	2.74	1924	4.04	2052	5.36	2188	6.86	2321	8.42	2452	10.03	2712	13.60	2963	17.52	3211	21.61
7782	2800	1903	3.22	2031	4.60	2153	5.99	2278	7.53	2400	9.18	2524	10.87	2764	14.42	3004	18.48	3239	22.75
8338	3000	2023	3.76	2140	5.20	2258	6.71	2369	8.25	2488	9.97	2602	11.75	2831	15.44	3056	19.48	3273	23.91
8894	3200	2144	4.37	2250	5.86	2365	7.49	2469	9.08	2578	10.82	2687	12.68	2901	16.54	3112	20.56	3325	25.08
9450	3400	2265	5.04	2361	6.59	2472	8.32	2573	10.01	2670	11.74	2777	13.68	2979	17.71	3181	21.88	3378	26.30
10005	3600	2387	5.79	2477	7.41	2580	9.20	2680	11.02	2772	12.82	2867	14.74	3061	18.93	3252	23.28	3441	27.77
10561	3800	2510	6.62	2595	8.32	2690	10.15	2787	12.11	2877	13.98	2962	15.90	3150	20.21	3330	24.73		
11117	4000	2633	7.54	2715	9.31	2800	11.19	2894	13.23	2983	15.24	3066	17.23	3240	21.57	3411	26.27		
11673	4200			2835	10.39	2911	12.31	3003	14.43	3090	16.60	3171	18.66	3331	23.01				
12229	4400			2956	11.56	3028	13.55	3112	15.71	3197	17.97	3277	20.18	3426	24.58				

PBCS-222

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.

WHEEL DIAMETER: 22.25"

WHEEL CIRCUMFERENCE: 5.83'

TIP SPEED (FPM) = 5.83 x RPM

MAX BHP = 1.134 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS *(indicates std. material for this temperature range)
	CLASS 1	CLASS 2	CLASS 3	
UP TO 250°F	1885	2460	3303	Mild steel*, Aluminum, Corten, 304L S.S., 316L S.S.
251°F TO 400°F	1791	2337	3138	Mild steel*, Corten, 304L S.S., 316L S.S.
401°F TO 700°F	1546	2017	2708	Mild steel*, Corten, 304L S.S., 316L S.S.
701°F TO 900°F	1282	1673	2246	Corten*, 304L S.S., 316L S.S.
901°F TO 1000°F	1168	1525	2048	316L S.S.*

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3443	1000	881	0.78	1170	1.70	1416	2.80										
4132	1200	946	0.94	1196	1.93	1431	3.09	1639	4.39								
4820	1400	1024	1.14	1243	2.18	1456	3.43	1654	4.79	1836	6.28	2002	7.87				
5509	1600	1110	1.37	1304	2.50	1495	3.78	1679	5.24	1853	6.78	2017	8.45				
6198	1800	1205	1.66	1376	2.86	1547	4.19	1715	5.71	1879	7.35	2036	9.08	2325	12.83	2583	16.90
6886	2000	1302	1.98	1457	3.25	1612	4.69	1762	6.21	1914	7.94	2062	9.77	2341	13.62	2599	17.87
7575	2200	1400	2.35	1541	3.71	1684	5.24	1824	6.85	1962	8.56	2099	10.48	2367	14.53	2614	18.85
8264	2400	1500	2.77	1635	4.25	1764	5.82	1893	7.55	2021	9.33	2146	11.21	2392	15.47	2638	19.96
8952	2600	1605	3.30	1731	4.86	1846	6.47	1968	8.29	2087	10.18	2205	12.12	2438	16.42	2664	21.12
9641	2800	1712	3.91	1827	5.51	1936	7.22	2049	9.08	2158	11.08	2269	13.13	2485	17.41	2701	22.30
10330	3000	1820	4.61	1925	6.22	2031	8.07	2131	9.95	2238	12.03	2340	14.19	2545	18.65	2748	23.51
11018	3200	1929	5.39	2024	7.00	2127	9.01	2221	10.94	2319	13.06	2417	15.31	2609	19.98	2798	24.84
11707	3400	2038	6.27	2124	7.87	2224	9.98	2315	12.05	2401	14.17	2497	16.50	2679	21.38	2860	26.43
12396	3600	2148	7.25	2228	8.89	2321	11.02	2410	13.26	2493	15.44	2579	17.78	2753	22.86	2925	28.12
13084	3800	2258	8.33	2335	10.05	2420	12.15	2507	14.55	2587	16.84	2664	19.17	2833	24.39	2995	29.87
13773	4000	2369	9.53	2442	11.33	2519	13.37	2604	15.87	2683	18.34	2758	20.76	2914	26.03	3068	31.72
14462	4200			2551	12.72	2619	14.69	2701	17.28	2779	19.95	2852	22.46	2996	27.76	3147	33.61
15150	4400			2659	14.24	2724	16.25	2800	18.80	2876	21.57	2948	24.28	3082	29.65	3228	35.62

PBCS-245

UNHOUSED PLUG FAN PERFORMANCE

AIR DENSITY: 0.075 LBS./CU. FT.

WHEEL DIAMETER: 24.50"

WHEEL CIRCUMFERENCE: 6.41'

TIP SPEED (FPM) = 6.41 x RPM

MAX BHP = 1.836 x (RPM/1000)³



TEMPERATURE	MAXIMUM SPEEDS - RPM			AVAILABLE IMPELLER MATERIALS *(indicates std. material for this temperature range)
	CLASS 1	CLASS 2	CLASS 3	
UP TO 250°F	1712	2234	3000	Mild steel*, Aluminum, Corten, 304L S.S., 316L S.S.
251°F TO 400°F	1626	2122	2850	Mild steel*, Corten, 304L S.S., 316L S.S.
401°F TO 700°F	1404	1832	2450	Mild steel*, Corten, 304L S.S., 316L S.S.
701°F TO 900°F	1164	1519	2040	Corten*, 304L S.S., 316L S.S.
901°F TO 1000°F	1061	1385	1860	316L S.S.*

CFM	OV	1.00" SP		2.00" SP		3.00" SP		4.00" SP		5.00" SP		6.00" SP		8.00" SP		10.00" SP		12.00" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4175	1000	800	0.94	1063	2.06	1286	3.39												
5010	1200	860	1.14	1086	2.34	1300	3.75	1488	5.33										
5845	1400	930	1.38	1129	2.64	1322	4.16	1502	5.80	1668	7.62	1818	9.54						
6680	1600	1008	1.66	1185	3.03	1358	4.59	1525	6.35	1683	8.22	1832	10.25						
7515	1800	1095	2.01	1250	3.46	1405	5.08	1557	6.92	1706	8.92	1849	11.00	2112	15.55	2346	20.49		
8350	2000	1182	2.41	1323	3.94	1464	5.69	1601	7.53	1739	9.63	1872	11.84	2126	16.51	2360	21.66	2572	27.13
9185	2200	1271	2.85	1399	4.49	1529	6.35	1657	8.31	1781	10.38	1907	12.70	2149	17.61	2374	22.86	2586	28.54
10020	2400	1362	3.36	1485	5.15	1602	7.06	1719	9.15	1836	11.31	1949	13.60	2173	18.76	2396	24.20	2600	29.97
10855	2600	1457	4.00	1572	5.90	1676	7.84	1787	10.05	1895	12.34	2003	14.70	2214	19.90	2419	25.61	2621	31.57
11690	2800	1555	4.74	1659	6.69	1759	8.76	1860	11.01	1960	13.44	2061	15.91	2257	21.11	2453	27.04	2645	33.25
12525	3000	1653	5.59	1748	7.54	1845	9.79	1935	12.06	2032	14.59	2125	17.21	2312	22.61	2495	28.51	2673	34.97
13360	3200	1752	6.54	1838	8.49	1932	10.92	2017	13.27	2106	15.83	2195	18.57	2369	24.23	2541	30.11	2715	36.70
14195	3400	1851	7.60	1929	9.54	2019	12.10	2102	14.62	2181	17.17	2268	20.01	2433	25.93	2598	32.05	2758	38.51
15030	3600	1951	8.79	2023	10.78	2108	13.36	2189	16.08	2264	18.73	2342	21.56	2500	27.72	2656	34.09	2810	40.67
15865	3800	2051	10.10	2121	12.19	2197	14.73	2277	17.65	2350	20.41	2419	23.25	2572	29.58	2720	36.22	2867	43.04
16700	4000	2151	11.55	2218	13.73	2288	16.21	2365	19.24	2437	22.23	2504	25.17	2646	31.55	2786	38.45	2927	45.52
17535	4200			2316	15.42	2378	17.82	2453	20.96	2524	24.19	2590	27.23	2720	33.65	2858	40.76	2991	48.10
18370	4400			2415	17.26	2474	19.71	2543	22.80	2612	26.15	2677	29.43	2799	35.94	2932	43.19		