



INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

PLUG FANS

MODEL BCPL



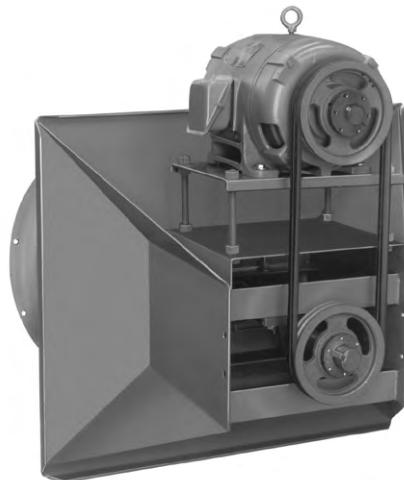
BCPL Plug Fans

BCPL plug fans from Twin City Fan & Blower are compact and versatile. Their versatility allows them to be used for air circulation in a variety of commercial and industrial applications including air curtains, air heaters, ceiling, wall, and floor panel plenums, degreasers, dryers, dust collectors, evaporators, freezers, kilns, ovens, packaged air handlers, parts washers, penthouses, smoke houses, space heaters, spray booths, and other high temperature applications.

Plug fans are housed in the customer's enclosure in applications where the system plenum acts as the fan housing. This configuration saves space since connecting ductwork and motor support pedestals are generally not needed. More space savings can be obtained by utilizing the wheel compartment as a pressurized chamber in lieu of a fan scroll. The use of multiple discharges from the pressurized chamber allows for additional savings by reducing ducting requirements.

BCPL plug fans feature SWSI flat-blade backward inclined, non-overloading wheels. An airfoil wheel (model AFPL) is available as an option. For AFPL performance refer to the Twin City Fan Selector Program.

The unit's welded construction can withstand most industrial applications. The plug fan's motor and drive are protected from high temperatures by the customer's



chamber wall or the optional insulated plug. The motor and drive are mounted to the plug panel which may be bolted or welded in place. The plug assembly may be mounted with the shaft in either the vertical or horizontal position for maximum flexibility. An all welded housing is available as an option. Standard fan is suitable for both horizontal and vertical mounting.

Typical Installations

Mounting is accomplished by providing a hole larger than the wheel diameter through the chamber wall. The wheel, shaft, motor, and drive assembly is then positioned to the inlet cone (mounted in opposite wall) and secured in place. See Figure A.

Another method is to provide a hole sized only for the wheel drive shaft. The wheel is then positioned through the opening for the inlet cone after the drive and panel assembly has been securely mounted. See Figure B.

Plug fans may be applied with open wheel (unhoused) or with a housing as shown in Figure C. Performance data in this catalog is for unhoused wheel application. For housed performance data refer to Catalog 300.

Walls must be designed to support the dynamic loads of the fan without resonance.

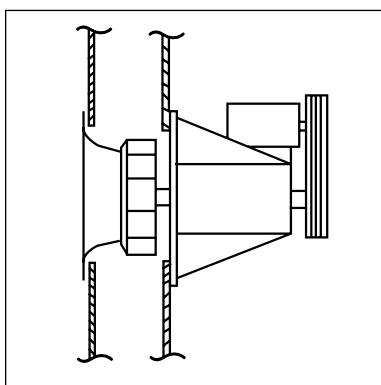


Figure A

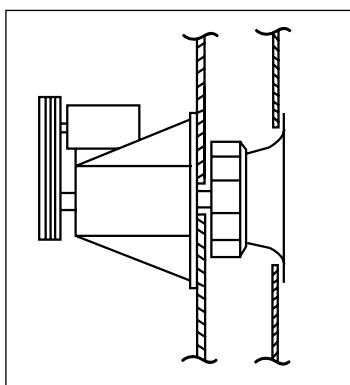
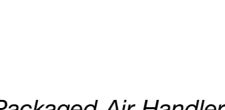
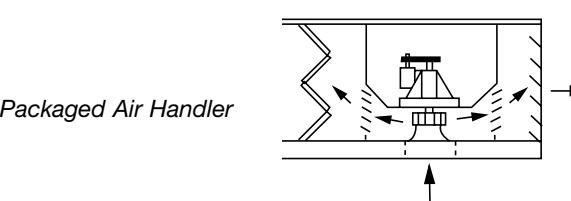


Figure B



Packaged Air Handler



Packaged Air Handler

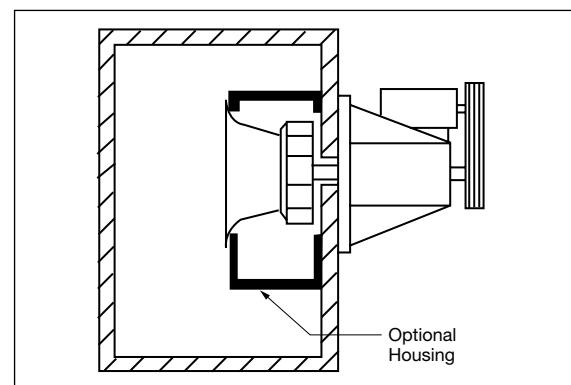


Figure C

Construction Features

Plug Panel

Constructed of minimum 7-gauge steel with formed flanges to maintain flatness and rigidity. Panel is prepunched for bolt mounting. Panel assembly may also be welded in place. The "cross frame" bearing support is designed for maximum stability and load spreading. Bearings are serviceable without disassembly of panel or frame.

Plug Assembly

Available for both horizontal and vertical applications. Horizontal and vertical up construction is standard. Vertical down construction must be specified.

Adjustable Motor Base

The motor base is standard with four point leveling and positive tension adjustment to ensure proper drive belt alignment. The motor base is heavy-gauge steel and prepunched to accept the standard motor frame specified.

Optional Construction

High Temperature Construction

- 301-500°F: Includes a shaft seal, shaft cooler, high temperature grease, and high temperature bearings.
- 501-800°F: Includes the modifications above plus high temperature aluminum paint.
- 801-1000°F: Consult factory.

Insulated Plug

Protects motor and drive components from heat. An insulated plug is recommended for temperatures above 300°F. Available in 4" and 6" thicknesses. Special thicknesses to match customer's insulated wall are available. Plug is assembled to mounting panel when ordered. See the table on page 6 for maximum RPMs.

All Welded Housing

Heavy-gauge steel housing is provided with wheel opening on each side and weld studs on the inlet side for cone mounting. Specify rotation and discharge as viewed from drive side to insure proper stud placement. Housing supports and attachments for wall mounting to be provided by others. See page 14 for dimensions.

Variable Inlet Vanes

Vane blades are cantilever design with supports equipped with permanently lubricated needle bearings and ball joints for smooth and easy operation. Vane assemblies are external type for sizes 122 through 150 and nested for sizes 165 through 490. Standard inlet vanes are applicable to 300°F. Consult factory for dimensions and higher temperatures.

Wheels

Wheels are constructed of heavy gauge steel using flat single thickness blades, solid welded to both back plate and rim. Wheels are statically and dynamically balanced. Both backward inclined and airfoil type wheels are available. Performance shown on pages 7 through 11 is for backward inclined wheels, model BCPL. Clockwise (standard) or counterclockwise rotation is available. Specify rotation as viewed from drive side.

Inlet Cones

Heavy-gauge and spun to match the wheel intake rim to insure smooth airflow. Inlet cone flange is prepunched for mounting. Inlet cones are shipped loose as standard. An integral inlet cone with mounting panel is optional.

Bearings

Either ball or spherical roller, heavy duty, self-aligning, pillow block type bearings are provided. Bearing selection is based on L-10 minimum life of 40,000 hours or average life of 200,000 hours.

Spark Resistant Construction

Fan applications may involve the handling of potentially explosive or flammable particles, fumes or vapors. Such applications require careful consideration by the system designer to insure the safe handling of such gases. Twin City Fan & Blower offers the following classifications of spark resistant construction per AMCA Standard 99-0401-86. It is the specifier or the user's responsibility to specify the type of spark resistant construction with full recognition of the potential hazards and the degree of protection required.

Type A: All parts of the fan in contact with the air-stream must be made of non-ferrous material – usually aluminum and limited to 250° F.

Type B: The fan shall have a non-ferrous wheel and non-ferrous ring about the opening through which the shaft passes – usually aluminum wheel and rub ring and limited to 250° F.

Type C: The fan shall be so constructed that a shift of the wheel or shaft will not permit two ferrous parts of the fan to rub or strike. This is accomplished with an aluminum inlet cone and rub ring and is limited to 500°F. Construction to 800°F is available using a steel inlet cone with copper/bronze lining. Contact factory for construction to 1000°F.

Additional Options

- Airfoil wheel (AFPL)
- OSHA type belt guard
- OSHA shaft and bearing guard
- Integral inlet cone with mounting panel
- Stainless steel construction
- Fan sizes larger than 490

Plug Fan Selection

The performance tables in this catalog are based on fans handling standard air at a density of 0.075 pounds per cubic foot. This is equivalent to air at 70°F at sea level (29.92 Hg barometric pressure). When specified performance is at a density different than standard, it must be converted to the equivalent standard conditions before the fan can be selected from the performance tables. The performance data and examples in this catalog are for unhoused BCPL plug fans.

Example 1. Standard Density

Given: 10894 CFM at 2.5" TSP (system). Installation is a two-wall arrangement with a wheel-to-wall clearance of 6 $\frac{3}{4}$ ".

Step 1. Entering the performance tables we find that a 270 BCPL plug fan will deliver 10894 CFM at 2.5" SP operating at 1178 RPM with 6.84 BHP.

Step 2. Catalog performance must be corrected for wheel-to-wall arrangement. Determine the wheel and plenum type from the arrangements shown in Figure 1 on page 5. Determine the clearance "C" based upon the closest wall. Performance will not be affected by any additional walls spaced greater than C x 3 from the wheel.

The selected 270 BCPL fan has a wheel diameter of 27" ("D"). Application is two walls with 6 $\frac{3}{4}$ " clearance ("C"). Therefore, $C \div D = 6.75 \div 27 = 0.25$ or $\frac{1}{4}$ " which is equivalent to $D \div 4$.

Step 3. Next, determine the Percent of Wide Open Volume (% WOV) at which the fan is to operate. From Table 2 on page 5 find that the WOV factor is 12.58 for a 270 BCPL fan.

$$\% \text{ WOV} = \frac{10894 \times 100}{1178 \times 12.48} = 73.5$$

Step 4. By interpolation from Table 1 on page 5, for the two wall column of $D \div 4$ at 73.5% WOV, we find the RPM factor of 1.02 and the BHP factor of 1.05.

Corrected unhoused performance for 10894 CFM at 2.5" SP standard air is:

$$\begin{aligned} \text{RPM} &= 1178 \times 1.02 = 1201 \\ \text{BHP} &= 6.84 \times 1.05 = 7.18 \end{aligned}$$

Example 2. Nonstandard Density

Given: 10894 CFM at 2.5" TSP (system), 300°F, 3000 ft. altitude. Installation is a two-wall arrangement with a wheel-to-wall clearance of 6 $\frac{3}{4}$ ".

Step 1. To enter the performance tables the operating SP must be corrected to equivalent standard conditions. From Table 3 on page 5 find the correction factor of 0.624 for 300°F and 3000 feet altitude. The corrected equivalent static pressure is equal to:

$$\text{SP (Catalog)} = \frac{2.5" \text{ TSP (system)}}{0.624} = 4.0$$

Fan selection is then made for 10894 CFM at 4" SP. Entering the performance tables, we find that a 270 BCPL fan will deliver 10894 CFM at 1355 RPM with 10.18 BHP. It must be remembered that this BHP is catalogued at standard 70°F air at sea level.

Steps 2, 3, & 4. Continue the correction procedure with Steps 2, 3 and 4 as shown in Example 1. Wall arrangement = $D \div 4$, % WOV = 63.9, RPM = 1368, and BHP = 10.58.

Step 5. Standard air BHP must now be converted to the design conditions BHP. The BHP at 300°F and 3000 ft. altitude equals $10.58 \times$ the density factor of 0.624 = 6.6 BHP.

It must be remembered to provide consideration to motor HP for 70°F air at 3000 ft. altitude to avoid motor overload at startup. Multiplying the altitude factor of 0.896 (for 70°F at 3000 ft.) x BHP (10.58) gives us 9.47.

Therefore, performance for the 270 BCPL fan for 10894 CFM at 2.5" SP, 300°F, and 3000 ft. altitude is 1368 RPM, 6.6 operating BHP, and 9.47 startup BHP.

Step 6. Maximum wheel RPMs must be checked for all elevated temperature applications. The derating factors for high temperature listed in Table 4 on page 5 must be applied to the maximum Class I and Class II RPMs listed in Table 5 on page 6. In this example the derating factor for 300°F is 0.96 and the maximum RPM for a Class I Size 270 BCPL is 1397 RPM. Therefore, the maximum RPM for this wheel is $1397 \times 0.96 = 1341$ RPM. The fan as selected is to operate at 1368 RPM which does not fall within this derated Class I maximum RPM, so a Class II fan must be considered. The maximum speed for a Class II size 270 BCPL is 1803 RPM. $1803 \times$ the derating factor of 0.96 = 1730 RPM. 1368 RPM falls within this range so a Class II fan may be used.

Engineering Data

Figure 1. Wheel and Plenum Arrangement

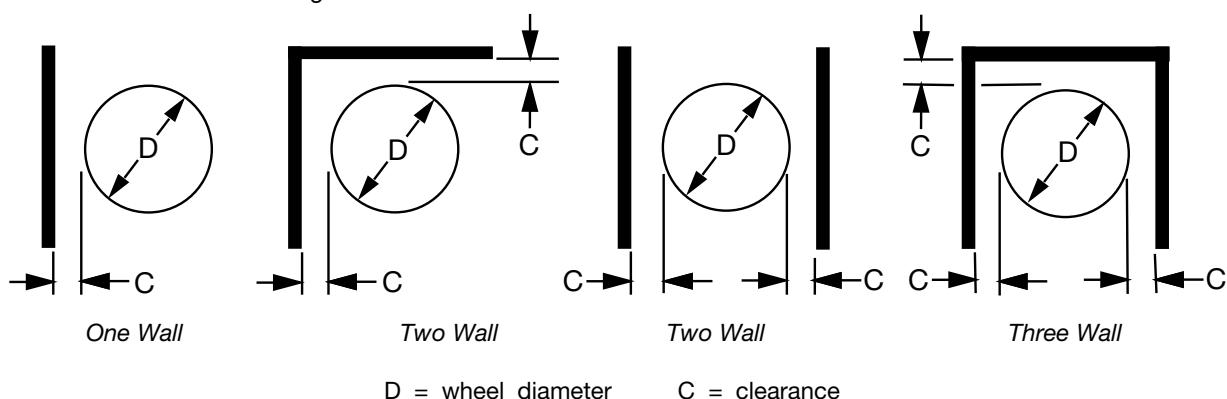


Table 1. Wall Proximity Factors

% WOV	FACTOR	C = D/8			C = D/4			C = D/2		
		ONE WALL	TWO WALL	THREE WALL	ONE WALL	TWO WALL	THREE WALL	ONE WALL	TWO WALL	THREE WALL
95	RPM	1.02	1.03	1.09	1.01	1.02	1.06	1.01	1.01	1.03
	BHP	1.06	1.08	1.29	1.04	1.06	1.20	1.02	1.02	1.08
85	RPM	1.02	1.02	1.08	1.01	1.02	1.06	1.01	1.01	1.03
	BHP	1.05	1.07	1.26	1.03	1.05	1.18	1.02	1.02	1.08
75	RPM	1.01	1.02	1.07	1.01	1.02	1.05	1.00	1.01	1.02
	BHP	1.04	1.06	1.23	1.03	1.05	1.16	1.01	1.02	1.07
65	RPM	1.01	1.02	1.06	1.01	1.01	1.04	1.00	1.01	1.02
	BHP	1.04	1.06	1.19	1.03	1.04	1.14	1.01	1.02	1.06
55	RPM	1.01	1.02	1.05	1.01	1.01	1.04	1.00	1.01	1.02
	BHP	1.03	1.05	1.16	1.02	1.03	1.12	1.01	1.02	1.05
45	RPM	1.01	1.01	1.04	1.01	1.01	1.03	1.00	1.00	1.01
	BHP	1.02	1.04	1.13	1.02	1.03	1.09	1.01	1.01	1.04

Table 2. WOV Factors

SIZE	WOV FACTOR	D
122	1.18	12.25
135	1.58	13.50
150	2.16	15.00
165	2.88	16.50
182	3.87	18.25
200	5.09	20.00
222	7.01	22.25
245	9.36	24.50
270	12.58	27.00
300	17.26	30.00
330	22.97	33.00
365	31.40	36.50
402	42.11	42.25
445	56.91	44.50
490	75.97	49.00

Table 3. Temperature and Altitude Correction Factors

AIR TEMP °F	ALTITUDE IN FEET ABOVE SEA LEVEL												
	BAROMETRIC PRESSURE IN INCHES OF MERCURY												
	29.92	28.86	27.82	26.82	25.84	24.90	23.98	23.09	22.22	21.39	20.58	16.89	13.75
70	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.714	0.688	0.564	0.460
100	0.946	0.912	0.880	0.848	0.818	0.787	0.758	0.730	0.703	0.676	0.651	0.534	0.435
150	0.869	0.838	0.808	0.770	0.751	0.723	0.696	0.671	0.646	0.620	0.598	0.490	0.400
200	0.803	0.774	0.747	0.720	0.694	0.668	0.643	0.620	0.596	0.573	0.552	0.453	0.360
250	0.747	0.720	0.694	0.669	0.645	0.622	0.598	0.576	0.555	0.533	0.514	0.421	0.344
300	0.697	0.672	0.648	0.624	0.604	0.580	0.558	0.538	0.518	0.498	0.480	0.393	0.321
350	0.654	0.631	0.608	0.586	0.565	0.544	0.524	0.505	0.486	0.467	0.450	0.369	0.301
400	0.616	0.594	0.573	0.552	0.532	0.513	0.493	0.476	0.458	0.440	0.424	0.347	0.283
450	0.582	0.561	0.542	0.522	0.503	0.484	0.466	0.449	0.433	0.416	0.401	0.328	0.268
500	0.552	0.532	0.513	0.495	0.477	0.459	0.442	0.426	0.410	0.394	0.380	0.311	0.254
550	0.525	0.506	0.488	0.470	0.454	0.437	0.421	0.405	0.390	0.375	0.361	0.296	0.242
600	0.500	0.482	0.469	0.448	0.432	0.416	0.400	0.386	0.372	0.352	0.344	0.282	0.230
650	0.477	0.460	0.444	0.427	0.412	0.397	0.382	0.368	0.354	0.341	0.328	0.269	0.219
700	0.457	0.441	0.425	0.410	0.395	0.380	0.366	0.353	0.340	0.326	0.315	0.258	0.210
800	0.420	0.404	0.389	0.375	0.362	0.350	0.336	0.323	0.311	0.300	0.290	0.237	0.193

Table 4. Derating Factors For High Temperature

TEMP. (°F)	DERATING FACTOR	
	STANDARD STEEL	STAINLESS STEEL
70	1.00	1.00
200	0.98	0.95
300	0.96	0.91
400	0.95	0.88
500	0.90	0.84
600	0.86	0.81
700	0.82	0.78
800	0.75	0.75

When operating fans at elevated temperatures, the maximum RPMs of the fan from Table 5 on page 6 must be corrected to the safe operating RPM limit for the application using the factors listed in the Table 4.

Engineering Data

To insure proper motor selection, consideration must be given to starting torque requirements (fan wheel inertia WR^2) along with the operating BHP. Table 5 lists the WR^2 factors for different wheel sizes to be used in

evaluating the capability of a selected motor. In some cases it may be necessary to provide a larger horsepower motor, even though it may not be dictated by the operating BHP, to bring the fan to speed.

Table 5. Maximum RPMs, Wheel Weights and WR^2

FAN SIZE	CLASS I					CLASS II				
	MAXIMUM RPM			WHEEL WT. (LBS.)	WR ² (LBS-FT ²)	MAXIMUM RPM			WHEEL WT. (LBS.)	WR ² (LBS-FT ²)
	STD.	4" PLUG	6" PLUG			STD.	4" PLUG	6" PLUG		
122	3167	3167	2512	15	1.7	4119	4119	3087	15	1.7
135	2874	2874	2364	17	2.4	3738	3738	2899	18	2.7
150	2587	2587	1908	20	3.7	3364	3364	2316	21	4.1
165	2352	2352	1779	24	5.7	3058	3058	2090	28	7.0
182	2118	2118	1520	31	8.8	2729	2729	2180	39	10.8
200	1932	1932	1800	38	12.5	2490	2490	2045	49	17.4
222	1737	1737	1419	66	23.6	2238	2238	1659	74	28.8
245	1577	1577	1247	81	38.3	2033	2033	1523	87	42.9
270	1397	1397	1397	94	56.4	1803	1803	1668	103	64.6
300	1257	1257	1257	113	88.8	1623	1623	1496	125	101
330	1143	1143	1097	151	149	1475	1475	1303	167	158
365	995	995	967	198	245	1283	1283	1283	214	260
402	903	903	903	244	361	1163	1163	1163	254	382
445	817	817	817	340	566	1052	1052	1052	392	692
490	742	742	742	393	816	956	956	956	455	1001

Table 6. Bare Fan and Accessory Weights

FAN SIZE	APPROXIMATE WEIGHTS (LBS.)				
	BARE FAN		INSULATED PLUG	HOUSING	INLET VANES
CLASS I	CLASS II				
122	140	151	25	24	45
135	145	156	25	30	45
150	151	162	25	37	52
165	185	196	32	44	24
182	208	230	32	65	29
200	221	233	32	79	33
222	235	247	35	97	38
245	240	252	35	117	40
270	323	341	40	143	45
300	330	348	40	236	45
330	388	406	55	287	50
365	430	478	55	350	50
402	575	636	75	428	55
445	639	710	75	522	60
490	950	1040	95	634	65

Table 7. High Temperature Applications

TEMP. RANGE	BEARING TYPE	LUBRICATION	OTHER REQUIREMENTS
TO 300°F	BALL OR ROLLER	GREASE	STANDARD CONSTRUCTION
301 TO 500°F	EXPANSION AND NON-EXPANSION	HIGH TEMPERATURE GREASE	SHAFT SEAL, SHAFT COOLER
501 TO 800°F	EXPANSION AND NON-EXPANSION	HIGH TEMPERATURE GREASE	HIGH TEMP. ALUMINUM PAINT SHAFT SEAL, SHAFT COOLER
801 TO 1000°F		CONSULT FACTORY	

Performance Data

122 BCPL

12.25" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
688	1064 0.09	1393 0.19											
860	1140 0.12	<u>1456</u> 0.23	1711 0.36	1941 0.50									
1032	1234 0.15	1530 0.28	<u>1774</u> 0.42	1988 0.57	2187 0.73	2373 0.91							
1204	1338 0.19	1606 0.33	1848 0.49	2054 0.65	2240 0.82	2416 1.01	2583 1.20	2742 1.41	2895 1.62				
1376	1448 0.24	1697 0.39	<u>1922</u> 0.56	2128 0.74	2309 0.93	2475 1.12	2634 1.33	2786 1.54	2932 1.76	3072 1.99			
1548	1563 0.30	1797 0.47	2004 0.64	<u>2201</u> 0.84	2383 1.04	2547 1.25	2699 1.47	2843 1.69	2982 1.92	3117 2.16	3375 2.67	3619 3.20	
1720	1683 0.37	1904 0.55	2098 0.74	2280 0.94	<u>2456</u> 1.16	2621 1.39	<u>2772</u> 1.62	2912 1.86	3045 2.10	3174 2.35	3422 2.87	3658 3.43	3882 4.01
1892	1809 0.46	2013 0.65	2199 0.85	2369 1.06	2534 1.29	2694 1.53	2846 1.78	<u>2987</u> 2.04	3118 2.29	<u>3243</u> 2.56	3480 3.10	3707 3.67	3924 4.27
2064	1938 0.56	2126 0.76	2305 0.98	2467 1.21	2621 1.44	2772 1.69	<u>2919</u> 1.95	3060 2.22	<u>3192</u> 2.50	<u>3317</u> 2.78	<u>3549</u> 3.35	3767 3.94	3976 4.56
2236	2069 0.68	2242 0.89	2414 1.13	2570 1.36	2717 1.61	2858 1.87	2997 2.14	<u>3133</u> 2.42	<u>3265</u> 2.71	<u>3391</u> 3.01	<u>3623</u> 3.61	<u>3836</u> 4.23	4038 4.87
2408	2203 0.82	2363 1.04	2525 1.28	2677 1.54	2818 1.80	2953 2.07	3083 2.34	3213 2.63	<u>3340</u> 2.94	<u>3463</u> 3.25	<u>3697</u> 3.89	<u>3910</u> 4.54	4108 5.20
2580	2339 0.98	2487 1.20	2639 1.46	2786 1.73	2923 2.01	3052 2.28	3177 2.57	3299 2.87	3420 3.18	3539 3.50	<u>3769</u> 4.17	<u>3984</u> 4.86	
2752	2475 1.15	2615 1.39	2756 1.65	2897 1.94	3031 2.23	3156 2.53	3277 2.83	3393 3.13	3508 3.45	3621 3.78	<u>3844</u> 4.47	<u>4057</u> 5.19	
2924	2613 1.35	2744 1.60	2876 1.87	3010 2.17	3140 2.48	3263 2.79	3380 3.10	<u>3492</u> 3.42	3602 3.75	3710 4.08	3922 4.78		
3096	2752 1.57	2876 1.83	3000 2.11	3126 2.42	3251 2.74	3371 3.07	3485 3.40	3595 3.73	3701 4.07	3805 4.42	4008 5.14		
3268	2891 1.82	3009 2.09	3126 2.38	3245 2.63	3365 3.03	3482 3.37	3593 3.72	3700 4.07	3803 4.42	3904 4.78	4099 5.51		
3440	3032 2.10	3143 2.37	3254 2.67	3366 2.99	3480 3.33	3593 3.70	3703 4.06	3808 4.43	3908 4.80	4006 5.17			
3612	3172 2.40	3278 2.69	3384 2.99	3491 3.32	3599 3.67	3707 4.04	3814 4.43	3917 4.81	4015 5.20	4111 5.58			

135 BCPL

13.5" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
840	967 0.11	1265 0.23	1516 0.38										
1050	1036 0.14	<u>1323</u> 0.28	1554 0.44	1762 0.61									
1260	1122 0.18	<u>1390</u> 0.34	<u>1612</u> 0.51	1806 0.69	1986 0.89	2154 1.11							
1470	1218 0.24	1460 0.40	<u>1680</u> 0.59	1866 0.79	2035 1.00	2194 1.23	2345 1.47	2490 1.72	2628 1.98				
1680	1319 0.30	1543 0.48	<u>1747</u> 0.68	1934 0.90	2098 1.13	2249 1.37	2392 1.62	2530 1.88	2662 2.15	2789 2.43	3033 3.03		
1890	1423 0.37	1635 0.57	1822 0.78	2001 1.02	2166 1.27	2315 1.53	<u>2452</u> 1.79	2582 2.06	2709 2.35	2831 2.64	3064 3.25	3285 3.90	
2100	1533 0.46	1733 0.68	1908 0.91	2073 1.15	2233 1.42	2382 1.69	<u>2519</u> 1.98	<u>2646</u> 2.27	<u>2767</u> 2.56	<u>2883</u> 2.86	3108 3.51	3321 4.18	3524 4.88
2310	1648 0.57	1833 0.80	2001 1.05	2155 1.30	2304 1.58	<u>2449</u> 1.87	<u>2586</u> 2.18	<u>2714</u> 2.49	<u>2833</u> 2.80	<u>2946</u> 3.12	3161 3.78	3367 4.48	3563 5.21
2520	1766 0.69	1936 0.94	2098 1.21	2245 1.48	2384 1.76	2520 2.06	<u>2653</u> 2.38	<u>2781</u> 2.71	<u>2901</u> 3.05	<u>3014</u> 3.39	<u>3224</u> 4.08	3422 4.81	3611 5.56
2730	1886 0.84	2042 1.09	2197 1.38	2339 1.67	2472 1.97	2599 2.28	2725 2.61	<u>2848</u> 2.95	<u>2967</u> 3.31	<u>3081</u> 3.67	<u>3292</u> 4.41	<u>3485</u> 5.16	3668 5.93
2940	2008 1.01	2152 1.27	2299 1.57	2436 1.89	2564 2.20	2686 2.53	2804 2.86	2921 3.22	<u>3036</u> 3.59	<u>3148</u> 3.97	<u>3359</u> 4.74	<u>3553</u> 5.54	3733 6.35
3150	2132 1.20	2266 1.47	2403 1.79	2536 2.12	2660 2.46	2777 2.80	2890 3.15	3008 3.51	3109 3.88	<u>3217</u> 4.28	<u>3426</u> 5.09	<u>3620</u> 5.93	
3360	2257 1.42	2382 1.70	2510 2.03	2637 2.38	2758 2.74	2872 3.10	2981 3.46	3087 3.84	3190 4.22	<u>3292</u> 4.62	<u>3494</u> 5.46	<u>3687</u> 6.34	
3570	2382 1.66	2501 1.96	2620 2.29	2741 2.66	2858 3.04	2970 3.42	3075 3.80	3177 4.19	<u>3276</u> 4.58	<u>3374</u> 4.99	<u>3566</u> 5.85		
3780	2509 1.94	2621 2.25	2733 2.59	2847 2.96	2960 3.36	3069 3.77	3172 4.17	3271 4.57	<u>3367</u> 4.98	<u>3461</u> 5.41	3644 6.28		
3990	2636 2.24	2742 2.57	2848 2.92	2955 3.30	3063 3.71	3169 4.13	3271 4.56	3367 4.99	<u>3461</u> 5.42	<u>3551</u> 5.85	3728 6.74		
4200	2764 2.58	2865 2.92	2965 3.28	3067 3.67	3169 4.09	3271 4.53	3371 4.98	<u>3465</u> 5.43	<u>3557</u> 5.88	<u>3645</u> 6.33			
4410	2893 2.95	2988 3.31	3084 3.68	3180 4.08	3278 4.51	3375 4.96	3472 5.43	<u>3565</u> 5.90	<u>3655</u> 6.37				

150 BCPL

15" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
1032	869 0.14	1138 0.29	1364 0.47										
1290	931 0.18	<u>1189</u> 0.35	1398 0.54	1585 0.75									
1548	1008 0.23	<u>1249</u> 0.42	<u>1449</u> 0.63	1624 0.85	1786 1.10	1938 1.36							
1806	1093 0.29	1312 0.49	<u>1510</u> 0.73	1678 0.98	1829 1.23	1973 1.51	2110 1.81	2240 2.11	2365 2.43				
2064	1183 0.36	1386 0.59	<u>1570</u> 0.84	1738 1.11	1886 1.39	2022 1.68	2151 1.99	<u>2275</u> 2.31	<u>2394</u> 2.64	<u>2509</u> 2.99	<u>2728</u> 3.72		
2322	1277 0.45	1468 0.70	1798 1.25	1947 1.56	2080 1.87	2204 2.20	<u>2322</u> 2.54	<u>2436</u> 2.88	<u>2546</u> 3.25	<u>2756</u> 4.00	<u>2956</u> 4.81		
2580	1375 0.56	1555 0.83	1713 1.11	1862 1.41	2006 1.74	2141 2.08	<u>2264</u> 2.43	<u>2379</u> 2.79	<u>2487</u> 3.15	<u>2592</u> 3.52	<u>2795</u> 4.31	<u>2987</u> 5.14	3170 6.01
2838	1477 0.69	1645 0.98	1796 1.28	1935 1.60	2070 1.94	2201 2.30	<u>2324</u> 2.67	<u>2439</u> 3.05	<u>2547</u> 3.44	<u>2649</u> 3.83	<u>2842</u> 4.65	<u>3028</u> 5.51	<u>3205</u> 6.41
3096	1583 0.84	1737 1.15	1883 1.48	2015 1.81	2141 2.16	2264 2.53	<u>2384</u> 2.93	<u>2499</u> 3.33	<u>2607</u> 3.75	<u>2709</u> 4.16	<u>2898</u> 5.02	<u>3076</u> 5.90	<u>3248</u> 6.84
3354	1691 1.02	1832 1.34	1972 1.69	2100 2.05	2219 2.41	2335 2.80	<u>2448</u> 3.20	<u>2559</u> 3.63	<u>2667</u> 4.07	<u>2769</u> 4.51	<u>2959</u> 5.42	<u>3133</u> 6.34	<u>3298</u> 7.30
3612	1800 1.23	1930 1.55	2062 1.92	2187 2.31	2302 2.70	2412 3.10	<u>2519</u> 3.51	<u>2624</u> 3.95	<u>2728</u> 4.40	<u>2829</u> 4.87	<u>3019</u> 5.83	<u>3193</u> 6.80	<u>3355</u> 7.80
3870	1911 1.46	2032 1.80	2155 2.19	2276 2.60	2388 3.01	2493 3.43	<u>2595</u> 3.86	<u>2695</u> 4.30	<u>2793</u> 4.77	<u>2891</u> 5.25	<u>3079</u> 6.26	<u>3254</u> 7.29	
4128	2022 1.73	2136 2.08	2251 2.48	2366 2.91	2476 3.35	2578 3.79	<u>2676</u> 4.24	<u>2772</u> 4.70	<u>2865</u> 5.17	<u>2958</u> 5.67	<u>3139</u> 6.70	<u>3313</u> 7.78	
4386	2135 2.03	2242 2.40	2350 2.80	2459 3.25	2565 3.72	2665 4.18	<u>2761</u> 4.66	<u>2853</u> 5.14	<u>2942</u> 5.62	<u>3030</u> 6.12	<u>3204</u> 7.18		
4644	2248 2.36	2349 2.75	2450 3.16	2554 3.63	2651 4.04	2748							

Performance Data

165 BCPL

16.5" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
1256	791 0.17	1035 0.35	1241 0.57										
1570	848 0.22	<u>1083</u> <u>0.42</u>	1272 0.66	1442 0.91									
1884	919 0.28	1138 0.51	1319 0.76	1478 1.04	1625 1.34	1763 1.66							
2198	997 0.35	1195 0.60	<u>1375</u> <u>0.89</u>	<u>1527</u> <u>1.19</u>	1665 1.50	1796 1.84	1919 2.19	2037 2.56	2150 2.95				
2512	1079 0.44	1263 0.72	<u>1430</u> <u>1.02</u>	1583 1.35	1717 1.69	1840 2.05	1957 2.42	2070 2.81	2178 3.21	2283 3.64	2481 4.52		
2826	1163 0.55	1339 0.86	1491 1.17	<u>1637</u> <u>1.53</u>	1773 1.90	<u>1894</u> <u>2.28</u>	<u>2006</u> <u>2.67</u>	2113 3.08	2216 3.50	2317 3.95	2508 4.87	2688 5.83	
3140	1255 0.69	1418 1.01	1562 1.36	1697 1.72	<u>1827</u> <u>2.12</u>	<u>1949</u> <u>2.53</u>	<u>2062</u> <u>2.96</u>	2166 3.39	<u>2264</u> <u>3.83</u>	2360 4.29	2543 5.24	2718 6.25	2884 7.30
3454	1349 0.85	1500 1.20	1638 1.57	1764 1.95	1886 2.36	<u>2004</u> <u>2.80</u>		2116 3.25	2221 3.72	2319 4.19	2411 4.66	2587 5.65	2755 6.69
3768	1446 1.04	1585 1.40	1717 1.80	1837 2.21	1951 2.63	2063 3.09	<u>2171</u> <u>3.56</u>	<u>2276</u> <u>4.06</u>	<u>2374</u> <u>4.56</u>	<u>2467</u> <u>5.07</u>	<u>2639</u> <u>6.11</u>	2800 7.18	2955 8.31
4082	1544 1.25	1672 1.63	1799 2.07	1915 2.50	2023 2.95	2128 3.41	2230 3.90	<u>2331</u> <u>4.42</u>	<u>2428</u> <u>4.95</u>	<u>2522</u> <u>5.49</u>	<u>2694</u> <u>6.59</u>	2852 7.71	3002 8.88
4396	1644 1.51	1762 1.90	1882 2.35	1994 2.82	2099 3.30	2198 3.78	2295 4.28	2390 4.81	<u>2485</u> <u>5.36</u>	<u>2576</u> <u>5.93</u>	<u>2749</u> <u>7.09</u>	2908 8.28	3055 9.49
4710	1746 1.80	1855 2.21	1967 2.67	2076 3.18	2178 3.68	2273 4.18	2366 4.71	2456 5.25	2545 5.81	2633 6.40	<u>2804</u> <u>7.62</u>	2963 8.87	
5024	1848 2.12	1951 2.55	2055 3.03	2159 3.56	2258 4.09	2351 4.63	2440 5.18	2526 5.73	2611 6.31	2695 6.91	<u>2859</u> <u>8.16</u>		
5338	1951 2.49	2048 2.94	2145 3.43	2244 3.98	2340 4.54	2431 5.11	2517 5.68	2601 6.27	2682 6.86	2762 7.47	2919 8.75		
5652	2055 2.90	2146 3.37	2237 3.88	2331 4.44	2423 5.03	2512 5.63	2597 6.24	2678 6.84	2756 7.46	2833 8.09	2983 9.39		
5966	2159 3.36	2245 3.85	2332 4.37	2420 4.94	2508 5.55	2595 6.19	2677 6.82	2756 7.46	2833 8.10	2907 8.75	3052 10.09		
6280	2264 3.87	2346 4.38	2428 4.92	2511 5.50	2595 6.13	2678 6.78	2759 7.45	2837 8.12	2912 8.80	2984 9.47			
6594	2369 4.42	2447 4.95	2525 5.51	2604 6.11	2683 6.74	2763 7.42	2842 8.12	2918 8.82	2992 9.53				

182 BCPL

18.25" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
1536	706 0.19												
1920	743 0.23	979 0.48	1174 0.75										
2304	800 0.30	<u>1008</u> <u>0.56</u>	1195 0.86	<u>1359</u> <u>1.18</u>									
2688	870 0.38	<u>1047</u> <u>0.65</u>	1224 0.98	<u>1382</u> <u>1.33</u>	1525 1.71	1659 2.10							
3072	948 0.49	1101 0.78	<u>1257</u> <u>1.11</u>	1411 1.50	1550 1.90	1678 2.32	1799 2.75						
3456	1030 0.62	1166 0.93	1304 1.27	<u>1443</u> <u>1.67</u>	1579 2.10	1705 2.56	<u>1821</u> <u>3.02</u>	1932 3.50	2038 3.99	2141 4.50			
3840	1116 0.77	1238 1.11	1361 1.47	<u>1486</u> <u>1.87</u>	<u>1611</u> <u>2.32</u>	<u>1734</u> <u>2.80</u>	<u>1849</u> <u>3.30</u>	<u>1957</u> <u>3.81</u>	2060 4.33	2159 4.87	2347 5.97		
4224	1204 0.96	1315 1.31	1426 1.70	<u>1539</u> <u>2.11</u>	<u>1653</u> <u>2.57</u>	<u>1766</u> <u>3.06</u>	<u>1879</u> <u>3.59</u>	1986 4.13	2087 4.69	2183 5.25	2366 6.42	2538 7.63	
4608	1294 1.17	1396 1.55	1497 1.96	1600 2.40	1704 2.86	1808 3.36	<u>1912</u> <u>3.89</u>	<u>2016</u> <u>4.47</u>	<u>2117</u> <u>5.06</u>	<u>2212</u> <u>5.66</u>	<u>2390</u> <u>6.87</u>	<u>2558</u> <u>8.14</u>	2718 9.46
4992	1386 1.42	1480 1.83	1574 2.26	1667 2.71	1763 3.20	1859 3.71	<u>1955</u> <u>4.25</u>	<u>2051</u> <u>4.83</u>	<u>2147</u> <u>5.43</u>	<u>2241</u> <u>6.06</u>	<u>2418</u> <u>7.36</u>	<u>2583</u> <u>8.69</u>	
5376	1478 1.71	1566 2.14	1653 2.59	1740 3.07	1827 3.57	1916 4.10	<u>2006</u> <u>4.66</u>	<u>2095</u> <u>5.24</u>	<u>2183</u> <u>5.84</u>	<u>2273</u> <u>6.49</u>	<u>2448</u> <u>7.85</u>	<u>2611</u> <u>9.25</u>	
5760	1571 2.04	1654 2.50	1735 2.97	1816 3.47	1897 3.99	1979 4.54	<u>2063</u> <u>5.11</u>	<u>2146</u> <u>5.70</u>	<u>2229</u> <u>6.32</u>	<u>2312</u> <u>6.97</u>	<u>2479</u> <u>8.36</u>	<u>2641</u> <u>9.83</u>	
6144	1665 2.41	1743 2.89	1820 3.40	1896 3.92	1971 4.46	2047 5.02	<u>2125</u> <u>5.62</u>	<u>2203</u> <u>6.22</u>	<u>2281</u> <u>6.85</u>	<u>2359</u> <u>7.51</u>	<u>2514</u> <u>8.90</u>	<u>2671</u> <u>10.41</u>	
6528	1760 2.82	<u>1833</u> <u>3.33</u>	1905 3.86	1977 4.41	<u>2048</u> <u>4.97</u>	<u>2120</u> <u>5.56</u>	<u>2192</u> <u>6.17</u>	<u>2265</u> <u>6.80</u>	<u>2338</u> <u>7.44</u>	<u>2412</u> <u>8.11</u>	<u>2558</u> <u>9.51</u>	<u>2705</u> <u>11.03</u>	
6912	1855 3.29	1924 3.82	1993 4.38	2061 4.95	2128 5.54	2196 6.15	<u>2263</u> <u>6.77</u>	<u>2331</u> <u>7.42</u>	<u>2400</u> <u>8.09</u>	<u>2470</u> <u>8.78</u>	<u>2609</u> <u>10.21</u>		
7296	1951 3.80	2016 4.36	2081 4.94	2146 5.54	2210 6.16	2274 6.79	<u>2338</u> <u>7.44</u>	<u>2402</u> <u>8.10</u>	<u>2466</u> <u>8.78</u>	<u>2532</u> <u>9.50</u>	<u>2663</u> <u>10.95</u>		
7680	2047 4.38	2109 4.96	2171 5.57	2232 6.19	2294 6.83	2354 7.48	<u>2415</u> <u>8.15</u>	<u>2475</u> <u>8.83</u>	<u>2536</u> <u>9.54</u>	<u>2598</u> <u>10.27</u>	<u>2722</u> <u>11.76</u>		
8064	2143 5.00	2202 5.61	2261 6.25	2320 6.90	2378 7.56	2436 8.23	<u>2494</u> <u>8.93</u>	<u>2552</u> <u>9.64</u>	<u>2610</u> <u>10.37</u>	<u>2668</u> <u>11.11</u>			

200 BCPL

20" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
1840	644 0.22												
2300	677 0.28	893 0.57	1071 0.90	1240 1.42									
2760	729 0.36	<u>919</u> <u>0.67</u>	1090 1.03	1241 1.60	1391 2.04	1513 2.51							
3220	793 0.46	955 0.78	1117 1.18	1261 1.60									
3680	863 0.58	1004 0.93	1146 1.33	1287 1.79	1414 2.28	1531 2.78	1641 3.30						
4140	938 0.74	1062 1.11	1189 1.53	<u>1316</u> <u>2.00</u>	1440 2.52	1555 3.06	1662 3.62	1763 4.19	1860 4.79	1953 5.39			
4600	1017 0.93	1128 1.32	1241 1.76	1355 2.24	<u>1469</u> <u>2.78</u>	<u>1582</u> <u>3.36</u>	<u>1687</u> <u>3.96</u>	<u>1785</u> <u>4.56</u>	<u>1879</u> <u>5.19</u>	<u>1970</u> <u>5.84</u>	<u>2142</u> <u>7.17</u>	<u>2159</u> <u>7.70</u>	<u>2316</u> <u>9.15</u>
5060	1097 1.14	1198 1.57	1299 2.03	1403 2.53	<u>1507</u> <u>3.08</u>	<u>1611</u> <u>3.67</u>	<u>1714</u> <u>4.30</u>	<u>1812</u> <u>4.96</u>	<u>1904</u> <u>5.62</u>	<u>1992</u> <u>6.30</u>	<u>2159</u> <u>7.70</u>		
5520	1178 1.40	1272 1.86	1364 2.34	1458 2.87	1554 3.43	<u>1648</u> <u>4.02</u>	<u>1744</u> <u>4.67</u>	<u>1839</u> <u>5.35</u>	<u>1931</u> <u>6.06</u>	<u>2017</u> <u>6.77</u>	<u>2181</u> <u>8.25</u>	<u>2334</u> <u>9.77</u>	<u>2480</u> <u>11.35</u>
5980	1262 1.70	1348 2.18	1434 2.70	1519 3.24	1607 3.83	1695 4.44	<u>1782</u> <u>5.08</u>	<u>1870</u> <u>5.78</u>	<u>1958</u> <u>6.51</u>	<u>2044</u> <u>7.26</u>	<u>2206</u> <u>8.82</u>	<u>2356</u> <u>10.41</u>	
6440	1346 2.04	1426 2.56	1506 3.10	1585 3.67	1665 4.27	1747 4.91	<u>1829</u> <u>5.57</u>	<u>1910</u> <u>6.27</u>	<u>1991</u> <u>7.00</u>	<u>2073</u> <u>7.78</u>	<u>2233</u> <u>9.41</u>	<u>2382</u> <u>11.09</u>	
6900	1431 2.43	1506 2.98	1581 3.55	1655 4.15	1729 4.78	1804 5.43	<u>1880</u> <u>6.11</u>	<u>1956</u> <u>6.82</u>	<u>2032</u> <u>7.56</u>	<u>2108</u> <u>8.35</u>	<u>2261</u> <u>10.02</u>	<u>2409</u> <u>11.78</u>	
7360	1516 2.87	1587 3.45	1657 4.05	1727 4.68	1796 5.33	1866 6.01	<u>1936</u> <u>6.71</u>	<u>2008</u> <u>7.45</u>	<u>2080</u> <u>8.21</u>	<u>21</u>			

Performance Data

222 BCPL

22.25" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
2280	579 0.28												
2850	609 0.35	803 0.71	963 1.11										
3420	656 0.44	827 0.83	980 1.28	1115 1.76									
3990	713 0.57	859 0.97	1004 1.46	1133 1.98	1251 2.54	1360 3.11							
4560	777 0.73	903 1.15	1031 <u>1.65</u>	1157 2.22	1271 2.82	1376 3.44	1475 4.09						
5130	844 0.92	955 1.37	1069 1.89	1183 <u>2.48</u>	1295 3.12	1398 3.80	1494 4.49	1585 5.20	1672 5.93	1756 6.68			
5700	915 1.15	1014 1.64	1116 2.18	1218 2.78	<u>1321</u> <u>3.44</u>	<u>1422</u> <u>4.16</u>	1516 4.89	1605 5.65	1690 6.43	1771 7.23	1925 8.87		
6270	987 1.42	1078 1.95	1169 2.52	1262 3.14	<u>1355</u> <u>3.81</u>	<u>1448</u> <u>4.54</u>	<u>1541</u> <u>5.33</u>	1629 6.14	1711 6.95	1791 7.80	1941 9.53	2082 11.33	
6840	1060 1.74	1144 2.30	1227 2.90	1312 3.56	1397 4.24	<u>1482</u> <u>4.98</u>	<u>1568</u> <u>5.78</u>	<u>1653</u> <u>6.63</u>	1736 7.51	1814 8.40	1960 10.21	2098 12.10	2229 14.05
7410	1135 2.11	1213 2.71	1290 3.35	1367 4.03	1445 4.74	1524 5.50	1603 6.31	1681 7.15	1761 8.07	1838 9.01	1983 10.92	2118 12.90	
7980	1211 2.53	1283 3.17	1355 3.85	1426 4.56	1498 5.30	1571 6.09	1644 6.90	<u>1717</u> <u>7.76</u>	<u>1790</u> <u>8.67</u>	<u>1864</u> <u>9.64</u>	2008 11.67	2141 13.73	
8550	1287 3.02	1355 3.70	1422 4.41	1488 5.14	1555 5.92	1622 6.73	1691 7.58	1759 8.46	1828 9.39	<u>1895</u> <u>10.34</u>	2033 12.42	2166 14.60	
9120	1364 3.56	1428 4.28	1491 5.03	1553 5.80	1615 6.61	1678 7.45	1742 8.33	1806 9.24	1870 10.17	1934 11.14	2062 13.22	2190 15.45	
9690	1442 4.18	1502 4.94	1561 5.72	1620 6.53	1679 7.38	1737 8.24	1796 9.14	1856 10.07	1917 11.05	1977 12.03	2097 14.12	2218 16.38	
10260	1520 4.87	1576 5.66	1633 6.49	1689 7.34	<u>1744</u> <u>8.21</u>	1799 9.11	1855 10.05	1911 11.01	1967 11.99	2024 13.01	2139 15.15		
10830	1598 5.63	1652 6.47	1705 7.33	1758 8.21	1811 9.13	1863 10.05	1916 11.03	1968 12.01	2021 13.02	2075 14.08	2183 16.25		
11400	1677 6.48	1728 7.35	1778 8.24	1829 9.17	1879 10.12	1929 11.09	1979 12.09	2029 13.11	2079 14.16	2129 15.23	2232 17.47		
11970	1756 7.41	1804 8.32	1853 9.26	1901 10.22	1949 11.21	1997 12.22	2044 13.24	2091 14.29	2139 15.37	2186 16.46			

245 BCPL

24.5" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
2760	525 0.34												
3450	553 0.42	729 0.86	874 1.34										
4140	595 0.54	<u>750</u> <u>1.00</u>	890 1.55	1012 2.13									
4830	647 0.69	<u>779</u> <u>1.17</u>	911 <u>1.76</u>	1029 2.40	1136 3.07	1235 3.77							
5520	705 0.88	819 1.39	<u>936</u> <u>2.00</u>	1051 2.70	1154 3.42	1250 4.17	1340 4.96						
6210	766 1.11	867 1.66	971 2.29	1074 3.00	1176 3.79	1269 4.59	1356 5.42	1439 6.29	1518 7.18	1594 8.08	1748 10.74		
6900	830 1.39	920 1.98	1013 2.64	1106 3.36	<u>1199</u> <u>4.17</u>	<u>1291</u> <u>5.04</u>	1377 5.93	1457 6.84	1534 7.78	1608 8.75	1762 11.54	1890 13.71	
7590	895 1.71	978 2.35	1061 3.05	1155 3.80	1230 <u>4.61</u>	1315 <u>5.50</u>	1399 <u>6.45</u>	1479 7.43	1554 8.43	1626 9.44			
8280	962 2.10	1038 2.78	1113 3.51	1190 4.30	1268 5.14	1345 <u>6.02</u>	1423 6.99	1501 8.03	1576 9.09	1647 10.17	1780 12.37	1905 14.65	2024 17.01
8970	1029 2.54	1100 3.27	1170 4.05	1240 4.87	1311 5.73	1383 6.65	<u>1455</u> <u>7.63</u>	<u>1526</u> <u>8.66</u>	<u>1598</u> <u>9.76</u>	<u>1669</u> <u>10.91</u>	1801 13.24	1923 15.61	
9660	1098 3.06	1164 3.83	1229 4.65	1294 5.51	1359 6.41	1426 7.37	1492 8.35	1559 9.40	1625 <u>10.50</u>	1692 11.67	1823 14.12	1944 16.63	
10350	1167 3.64	1229 4.47	1290 5.33	1350 6.22	1411 7.16	1472 8.14	1534 9.16	1597 10.24	1659 11.35	<u>1721</u> <u>12.53</u>	<u>1845</u> <u>15.02</u>	1966 17.66	
11040	1237 4.30	1295 5.17	1352 6.07	1409 7.02	1466 8.00	1523 9.02	1580 10.06	1639 11.17	1697 12.30	1756 13.50	<u>1872</u> <u>16.01</u>	1988 18.70	
11730	1308 5.05	1362 5.96	1416 6.91	1470 7.90	1523 8.91	1576 9.96	1630 11.06	1685 12.20	1740 13.37	1795 14.57	1904 17.10	2014 19.84	
12420	1378 5.88	1430 6.85	1481 7.84	1532 8.87	1582 9.92	1632 11.01	1683 12.15	1734 13.32	1785 14.50	1837 15.74	1941 18.32		
13110	1449 6.80	1498 7.81	1547 8.86	1595 9.93	1643 11.03	1690 12.15	1738 13.32	1786 14.53	1834 15.76	1883 17.03	1982 19.68		
13800	1520 7.81	1567 8.88	1613 9.96	1659 11.09	1705 12.24	1750 13.41	1795 14.60	1841 15.86	1886 17.11	1932 18.42	2025 21.12		
14490	1592 8.94	1636 10.04	1680 11.18	1724 12.35	1768 13.55	1811 14.76	1854 16.00	1897 17.27	1940 18.57	1984 19.92			

270 BCPL

27" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
3352	462 0.39												
4190	493 0.50	636 0.98	755 1.54										
5028	535 0.64	<u>662</u> <u>1.17</u>	776 1.78	874 2.42									
5866	584 0.83	695 1.39	<u>802</u> <u>2.05</u>	898 2.76	983 3.50	1068 4.34							
6704	637 1.06	736 1.67	<u>831</u> <u>2.35</u>	924 3.12	1008 3.93	1084 4.76	1158 5.66						
7542	692 1.34	781 1.99	868 2.72	<u>952</u> <u>3.52</u>	<u>1034</u> <u>4.38</u>	<u>1111</u> <u>5.30</u>	<u>1181</u> <u>6.23</u>	1247 7.19	1312 8.20	1378 9.31			
8380	750 1.68	831 2.38	910 3.15	987 3.98	1062 4.88	1137 5.85	1207 6.85	1272 7.87	1333 8.90	1392 9.98	1510 12.32		
9218	809 2.07	883 2.83	956 3.65	1027 4.52	1097 5.46	1165 6.44	<u>1233</u> <u>7.50</u>	1299 8.61	1360 9.72	1418 10.85	1526 13.16	<u>1633</u> <u>15.70</u>	
10056	870 2.55	938 3.36	1005 4.22	1071 5.14	1136 6.11	1199 7.12	<u>1262</u> <u>8.20</u>	1325 9.35	1386 10.54	<u>1444</u> <u>11.74</u>	1552 14.21	1651 16.72	1749 19.43
10894	931 3.09	994 3.95	1057 4.88	1118 5.84	1178 6.84	1238 7.91	1297 9.02	1355 <u>10.18</u>	<u>1413</u> <u>11.40</u>	<u>1470</u> <u>12.67</u>	1578 15.28	1677 17.94	1769 20.65
11732	993 3.71	1052 4.63	1110 5.60	1168 6.62	1224 7.67	1280 8.77	1336 9.93	1390 11.11	1444 <u>12.36</u>	<u>1498</u> <u>13.65</u>	1604 16.38	1704 <u>19.22</u>	1795 22.05
12570	1056 4.42	1111 5.40	1166 6.43	1220 7.50	1273 8.60	1325 9.74	1378 10.94	1429 12.16	1480 13.43	<u>1531</u> <u>14.76</u>	1631 <u>17.53</u>	1729 <u>20.47</u>	
13408	1119 5.22	1171 6.26	1222 7.34	1273 8.46	1323 9.61	1373 10.81	1422 12.04	1471 13.31	1520 14.64	1568 15.99	1662 18.80	1756 21.81	
14246	1182 6.12	1232 7.23	1280 8.36	1328 9.53	1376 10.74	1423 11.99	1469 13.25	1516 14.59	1562 15.94	1607 17.31	1697 20.20	<u>1786</u> <u>23.26</u>	
15084	1246 7.12	1293 8.29	1339 9.49	1384 10.70	1430 11.98	1474 13.25	1518 14.57	1562 15.94	1606 17.34	1650 18.79	1736 21.76		
15922	1310 8.24	1355 9.47	1398 10.71	1442 12.01	1485 13.32	1527 14.65	1569 16.02	1611 17.43	1653 18.89	1694 20.35	1776 23.39		
16760	1375 9.49	1417 10.76	1459 12.08	1500 13.41	1541 14.79	1581 16.16	1622 17.61	1661 19.03	1701 20.53	1741 22.07			
17598	1439 10.83	1479 12.16	1519 13.54	1559 14.95	1598 16.37	1637 17.83	1675 19.29	1713 20.78	1751 22.32	1789 23.89			

Performance Data

300 BCPL 30" Wheel Diameter

CFM	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		6" SP		7" SP		8" SP		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP																	
4136	416	0.48																									
5170	444	0.61	572	1.21	680	1.90			787	3.00																	
6204	482	0.79	596	1.44	698	2.19			808	3.41	885	4.33	961	5.35													
7238	525	1.02	626	1.72	722	2.53																					
8272	573	1.31	662	2.05	748	2.90	831	3.85	907	4.85	976	5.88	1042	6.98													
9306	623	1.65	703	2.46	781	3.36	857	4.34	931	5.42	1000	6.54	1062	7.67	1122	8.86	1180	10.10	1240	11.48							
10340	675	2.07	747	2.93	819	3.89	888	4.91	956	6.02	1023	7.22	1086	8.45	1145	9.72	1200	11.00	1253	12.32	1359	15.21					
11374	728	2.56	795	3.50	860	4.50	924	5.58	987	6.73	1049	7.96															
12408	782	3.13	844	4.14	904	5.20	963	6.33	1022	7.54	1079	8.79	1136	10.13	1192	11.53	1247	13.00	1300	14.51	1396	17.51	1486	20.64	1574	23.98	
13442	837	3.80	895	4.89	951	6.02	1006	7.20	1060	8.44	1114	9.75	1167	11.13	1219	12.55	1272	14.08	1323	15.64	1420	18.85	1509	22.14	1592	25.49	
14476	893	4.57	947	5.73	999	6.91	1050	8.15	1101	9.46	1152	10.83	1202	12.25	1251	13.72	1300	15.27	1348	16.85	1443	20.19	1533	23.70	1616	27.24	
15510	950	5.45	1000	6.67	1049	7.93	1097	9.23	1145	10.6	1192	12.01	1239	13.47	1286	15.01	1332	16.58	1377	18.19	1468	21.65	1556	25.26			
16544	1006	6.43	1053	7.71	1100	9.07	1145	10.42	1190	11.84	1235	13.32	1280	14.87	1324	16.44	1367	18.03	1411	19.73	1496	23.22	1580	26.91			
17578	1063	7.53	1108	8.91	1152	10.32	1195	11.76	1238	13.25	1280	14.77	1322	16.36	1364	17.99	1405	19.64	1446	21.35	1527	24.92	1607	28.70			
18612	1121	8.79	1163	10.22	1204	11.68	1246	13.23	1286	14.76	1326	16.34	1366	17.98	1406	19.68	1445	21.39	1484	23.15	1562	26.84					
19646	1179	10.17	1218	11.65	1258	13.22	1297	14.80	1336	16.43	1374	18.08	1412	19.77	1449	21.48	1487	23.29	1524	25.10	1598	28.86					
20680	1237	11.70	1274	13.25	1312	14.88	1349	16.53	1386	18.22	1423	19.96	1459	21.71	1495	23.50	1531	25.35	1566	27.20							
21714	1295	13.37	1331	15.01	1367	16.71	1402	18.41	1438	20.21	1472	21.95	1507	23.79													

330 BCPL 33" Wheel Diameter

CFM	0.5" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP		6" SP		7" SP		8" SP		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP																	
5008	378	0.58																									
6260	404	0.74	521	1.47	618	2.30																					
7512	438	0.96	542	1.75	635	2.65			715	3.62																	
8764	478	1.24	569	2.08	656	3.06			735	4.13	804	5.23	873	6.47													
10016	521	1.58	602	2.49	680	3.51	756	4.66			825	5.88	887	7.11	947	8.44											
11268	566	2.00	639	2.98	710	4.06	779	5.25			846	6.55	909	7.92	966	9.30			1020	10.73	1073	12.24	1127	13.89			
12520	614	2.51	680	3.56	744	4.70	807	5.94			869	7.29	930	8.73	988	10.25			1041	11.76	1091	13.32	1139	14.91	1236	18.43	
13772	662	3.10	723	4.24	782	5.45	840	6.75			897	8.14	953	9.62	1009	11.21			1062	12.83	1113	14.53	1160	16.20	1249	19.68	
15024	712	3.81	768	5.03	822	6.30	876	7.68			929	9.12	981	10.64	1033	12.27			1084	13.97	1134	15.74	1182	17.57	1269	21.19	
16276	762	4.62	814	5.92	865	7.29	915	8.73			964	10.23	1013	11.81	1061	13.47			1109	15.22	1156	17.03	1203	18.94	1291	22.81	
17528	812	5.53	861	6.93	909	8.39	955	9.87			1002	11.48	1048	13.13	1093	14.83			1138	16.63	1182	18.48	1226	20.41	1312	24.45	
18780	864	6.61	909	8.07	954	9.61	998	11.20			1041	12.83	1084	14.54	1127	16.33			1169	18.15	1211	20.06	1252	22.02	1335	26.22	
20032	915	7.79	958	10.36	1000	10.97	1042	12.65	1083	14.37	1123	16.13	1164	18.01	1204	19.91	1243	21.83	1283	23.89	1360	28.10	1437	32.61			
21284	967	9.13	1008	10.80	1048	12.51	1087	14.25	1126	16.06	1164	17.89	1202	19.80	1240	21.77	1278	23.81	1315	25.87	1389	30.21	1461	34.73			
22536	1020	10.66	1058	12.39	1096	14.19	1133	16.01	1170	17.90	1206	19.80	1242	21.77	1278	23.81	1314	25.91	1350	28.07	1420	32.48					
23788	1072	12.31	1108	14.13	1144	16.00	1180	17.95	1215	19.90	1250	21.92	1284	23.95	1318	26.03	1352	28.19	1386	30.40	1453	34.94					
25040	1125	14.17	1159	16.06	1193	18.01	1227	20.03	1261	22.10	1294	24.17	1327	26.30	1360	28.49	1392	30.69	1424	32.94							
26292	1178	16.21	1211	18.21	1243	20.23	1275	22.30	1308	24.49	1339	26.61	1371	28.85	1402	31.07	1433	33.36	1464	35.71							

Underlined figures indicate maximum static efficiency.

Power rating (BHP) does not include belt drive losses.

Regular type face = Class I

Bold type face = Class II

Performance Data

402 BCPL

40.25" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
7448	297 0.83												
9310	316 1.04	413 2.13	496 3.31										
11172	344 1.35	425 2.47	504 3.84	574 5.26									
13034	377 1.74	446 2.93	516 4.37	583 5.97	643 7.58	702 9.32							
14896	412 2.21	472 3.49	533 4.96	595 6.68	654 8.51	708 10.35	759 12.21						
16758	450 2.82	503 4.18	556 5.70	611 7.44	666 9.39	719 11.43	768 13.48	815 15.57	861 17.74	906 19.98			
18620	489 3.55	536 4.98	584 6.60	633 8.39	681 10.29	731 12.46	780 14.76	826 17.06	869 19.33	911 21.67	993 26.56		
20482	529 4.42	572 5.95	615 7.64	659 9.50	703 11.47	747 13.60	792 15.93	837 18.42	880 20.94	921 23.48	998 28.56	1073 33.91	
22344	570 5.46	609 7.07	648 8.83	688 10.76	728 12.80	769 15.01	810 17.36	851 19.87	892 22.50	932 25.21	1008 30.73	1079 36.28	1147 41.95
24206	611 6.65	647 8.35	683 10.20	720 12.23	759 14.37	794 16.60	832 19.01	869 21.49	907 24.17	945 26.98	1020 32.91	1089 38.80	1155 44.82
26068	652 8.00	686 9.82	720 11.78	753 13.83	787 16.04	822 18.41	856 20.80	891 23.37	926 26.05	961 28.88	1032 34.96	1101 41.34	
27930	694 9.57	726 11.51	757 13.52	788 15.66	820 17.98	852 20.40	884 22.91	917 25.58	949 28.26	982 31.14	1047 37.17	1113 43.75	
29792	737 11.38	766 13.37	795 15.48	825 17.76	854 20.10	884 22.62	914 25.22	944 27.90	974 30.65	1005 33.59	1066 39.69	1127 46.23	
31654	779 13.36	807 15.49	834 17.68	862 20.03	890 22.51	918 25.10	946 27.78	974 30.54	1002 33.36	1031 36.36	1088 42.51	1146 49.19	
33516	822 15.61	848 17.83	874 20.14	900 22.56	926 25.09	952 27.72	979 30.54	1005 33.35	1032 36.33	1059 39.38	1113 45.70		
35378	865 18.11	889 20.39	914 22.83	939 25.37	963 27.93	988 30.68	1013 33.53	1038 36.47	1063 39.48	1089 42.68	1139 49.03		
37240	908 20.87	931 23.26	954 25.75	978 28.41	1001 31.07	1025 33.93	1049 36.89	1072 39.84	1096 42.98	1120 46.19	1153 50.06		
39102	951 23.89	973 26.40	995 29.00	1018 31.77	1040 34.54	1062 37.40	1085 40.46	1107 43.50	1130 46.74	1153 50.06			

445 BCPL

44.5" Wheel Diameter

CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
9112	269 1.02	367 2.19											
11390	286 1.28	373 2.60	449 4.06										
13668	311 1.64	385 3.04	456 4.70	519 6.42									
15946	341 2.12	403 3.57	467 5.35	527 7.29	582 9.29	635 11.40							
18224	373 2.71	427 4.26	482 6.06	538 8.16	591 10.38	640 12.63	687 14.97	733 17.42					
20502	407 3.45	455 5.11	503 6.97	552 9.07	602 11.45	650 13.96	695 16.51	737 19.03	778 21.64	820 24.49			
22780	443 4.36	485 6.09	528 8.06	572 10.22	616 12.59	661 15.22	705 18.00	747 20.85	786 23.64	824 26.50	898 32.47		
25058	479 5.43	517 7.26	556 9.33	596 11.60	636 14.03	676 16.65	717 19.53	757 22.52	796 25.61	833 28.71	903 34.96	970 41.41	
27336	516 6.69	551 8.64	587 10.84	623 13.20	659 15.68	696 18.38	732 21.17	770 24.32	807 27.54	843 30.83	912 37.61	976 44.38	1038 51.39
29614	553 8.14	585 10.19	618 12.48	651 14.93	685 17.59	718 20.28	752 23.19	786 26.27	820 29.51	855 33.02	922 40.16	986 47.59	1045 54.86
31892	591 9.84	621 12.03	651 14.38	682 16.97	713 19.71	744 22.55	775 25.50	807 28.68	838 31.90	869 35.28	933 42.69	996 50.57	
34170	629 11.77	657 14.08	685 16.54	714 19.24	742 22.00	771 24.97	800 28.05	829 31.22	859 34.62	888 38.04	947 45.45	1007 53.54	
36448	667 13.93	693 16.35	720 18.99	746 21.69	773 24.62	800 27.69	827 30.86	854 34.12	882 37.60	909 41.06	964 48.49	1020 56.63	
38726	705 16.35	730 18.94	755 21.66	780 24.51	805 27.51	830 30.63	856 33.99	881 37.33	907 40.87	933 44.51	985 52.11	1036 60.04	
41004	744 19.12	767 21.79	791 24.66	815 27.67	838 30.71	862 33.98	886 37.38	910 40.89	934 44.48	958 48.15	1007 55.91		
43282	783 22.19	805 25.00	827 27.93	850 31.08	872 34.25	895 37.67	917 41.08	940 44.73	962 48.33	985 52.17	1031 60.07		
45560	822 25.57	843 28.53	864 31.59	885 34.77	906 38.05	928 41.59	949 45.12	971 48.90	992 52.63	1014 56.61			
47838	861 29.28	881 32.37	901 35.56	921 38.86	941 42.26	962 45.91	982 49.54	1002 53.28	1023 57.28	1043 61.21			

490 BCPL

49" Wheel Diameter

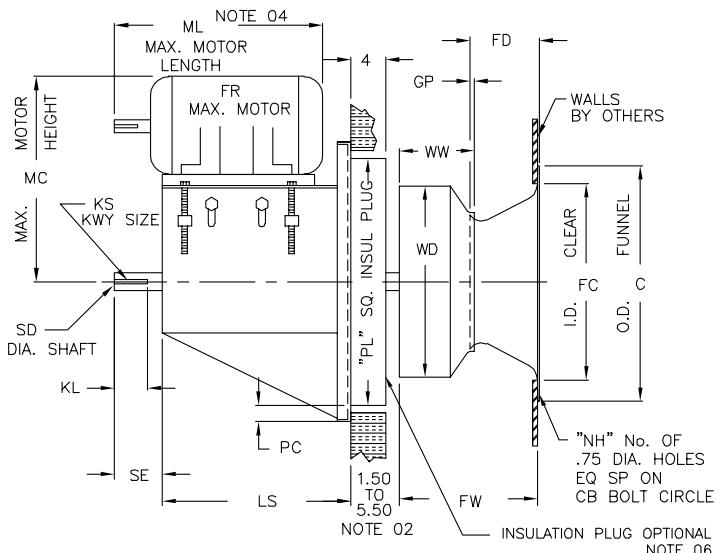
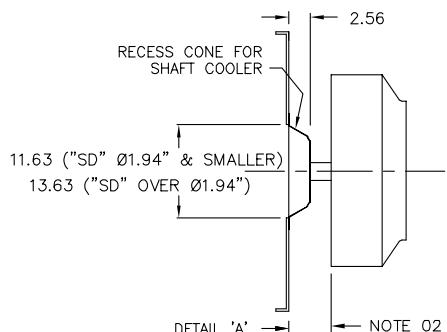
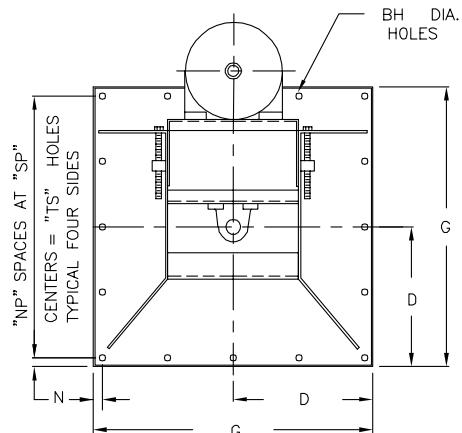
CFM	0.5" SP RPM BHP	1" SP RPM BHP	1.5" SP RPM BHP	2" SP RPM BHP	2.5" SP RPM BHP	3" SP RPM BHP	3.5" SP RPM BHP	4" SP RPM BHP	4.5" SP RPM BHP	5" SP RPM BHP	6" SP RPM BHP	7" SP RPM BHP	8" SP RPM BHP
11000	244 1.23												
13760	260 1.55	339 3.15	408 4.92										
16520	282 1.98	349 3.66	414 5.69	471 7.76									
19280	309 2.56	366 4.33	424 6.48	479 8.85	528 11.21	577 13.82							
22040	338 3.27	387 5.14	438 7.36	488 9.85	537 12.59	581 15.28	624 18.13						
24800	369 4.16	413 6.19	457 8.46	501 10.97	547 13.90	590 16.88	631 19.97	669 23.01	707 26.25	744 29.56			
27560	401 5.24	440 7.37	479 9.74	519 12.36	560 15.30	600 18.42	640 21.79	678 25.22	714 28.66	748 32.05	815 39.24		
30320	434 6.53	469 8.77	505 11.32	541 14.05	577 16.96	614 20.19	651 23.65	687 27.23	723 31.04	756 34.71	820 42.33	881 50.16	
33080	467 8.03	500 10.46	532 13.07	565 15.94	598 18.97	631 22.17	665 25.69	699 29.43	733 33.38	766 37.41	828 45.52	886 53.69	943 62.29
35840	501 9.80	531 12.34	561 15.11	591 18.09	621 21.21	652 24.58	683 28.12	714 31.86	745 35.81	776 39.93	837 48.61	895 57.57	949 66.44
38600	535 11.82	563 14.52	591 17.43	618 20.45	646 23.73	675 27.26	703 30.81	732 34.64	761 38.66	798 42.72	847 51.67	904 61.17	
41360	570 14.18	596 17.02	621 19.96	673 23.18	700 30.26	726 33.93	753 37.87	779 41.79	806 46.04	860 55.08	914 64.77		
44120	605 16.83	629 19.80	653 22.93	677 26.25	701 29.73	726 33.50	750 37.26	775 41.28	800 45.42	825 49.68	875 58.69	926 68.56	
46880	640 19.81	662 22.87	685 26.19	708 29.68	731 33.35	753 37.04	776 41.00	800 45.25	823 49.43	846 53.72	894 63.06	941 72.81	
49640	675 23.12	696 26.36	717 29.74	739 33.40	760 37.09	782 41.08	804 45.23	825 49.33	847 53.71	869 58.18	914 67.67		
52400	710 26.78	730 30.19	750 33.73	771 37.56	791 41.39	812 45.55	832 49.68	853 54.12	873 58.48	894 63.15	936 72.76		
55160	745 30.82	764 34.38	784 38.22	803 42.05	822 46.02	842 50.30	861 54.55	881 59.14	900 63.64	920 68.46			
57920	781 35.38	799 39.10	817 42.93	836 47.06	854 51.15	872 55.36	891 59.92	909 64.41	928 69.23	947 74.18			

Underlined figures indicate maximum static efficiency.
Power rating (BHP) does not include belt drive losses.

Regular type face = Class I
Bold type face = Class II

Dimensional Data

Arrangement 9



NOTES:

1. Dimensions apply to unhusked assembly only.
 2. The minimum clearance between the wheel and insulated plug or mounting panel is 1.50" shaft is selected to include up to a 4" thick insulated plug without shaft change. Consult factory for larger than 4" thick insulated plug. See Detail "A" for shaft cooler recess cone and shaft seal on fans over 300°F with 4" or larger insulation plug or wall thickness.
 3. CW rotation is standard. CCW rotation is optional.
 4. To ensure selected motor will fit standard assembly, compare the maximum motor length, dimension "ML," to overall motor length.
 5. Type BC wheel is standard on all sizes. Type BAF wheel is optional on sizes 182-490.
 6. Customer to provide wall opening with adequate clearance for installation of wheel and insulation plug when provided.

Fan Size	BH	C	CB	D	FC	FD	FR	FW	G	GP	KL	KS	
												CL I	CL II
122	0.56	15.75	14.75	11.38	13.25	4.38	213T	8.69	22.75	0.31	4.00	.38x.19	.38x.19
135	0.56	16.75	15.75	11.38	14.56	4.81	213T	9.69	22.75	0.38	4.00	.38x.19	.38x.19
150	0.56	18.25	17.25	11.38	16.19	5.38	215T	10.81	22.75	0.38	4.00	.38x.19	.38x.19
165	0.56	20.00	19.00	14.81	17.75	5.94	215T	11.81	29.63	0.44	4.00	.38x.19	.38x.19
182	0.56	22.00	21.00	14.81	19.50	6.56	254T	13.06	29.63	0.56	4.50	.38x.19	.50x.25
200	0.56	24.38	23.38	14.81	21.38	7.19	254T	14.25	29.63	0.63	4.50	.38x.19	.50x.25
222	0.56	26.63	25.50	16.00	23.75	8.00	256T	15.94	32.00	0.69	4.50	.38x.19	.50x.25
245	0.56	28.63	27.75	16.00	27.00	8.81	256T	17.50	32.00	0.75	4.50	.38x.19	.50x.25
270	0.69	31.00	29.75	18.31	29.00	9.69	284T	19.31	36.63	0.88	5.00	.50x.25	.50x.25
300	0.69	34.88	33.63	18.31	31.62	10.75	284T	21.44	36.63	1.00	5.00	.50x.25	.50x.25
330	0.69	38.50	37.25	21.81	34.75	11.81	286T	23.56	43.63	1.06	5.00	.50x.25	.50x.25
365	0.69	42.00	40.75	21.81	39.50	13.06	286T	26.25	43.63	0.94	5.50	.50x.25	.63x.31
402	0.69	45.38	44.13	27.50	42.50	14.44	326T	28.94	55.00	1.06	5.50	.50x.25	.63x.31
445	0.69	49.88	48.63	27.50	47.25	15.94	326T	32.00	55.00	1.13	5.50	.63x.31	.63x.31
490	0.69	54.38	53.13	27.50	52.00	17.56	326T	35.31	55.00	1.25	5.50	.63x.31	.63x.31

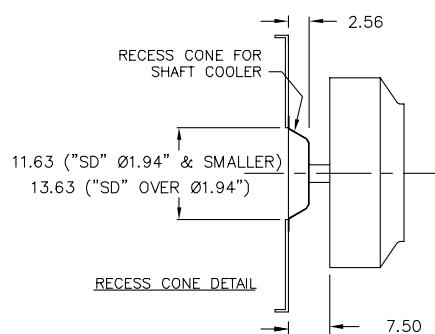
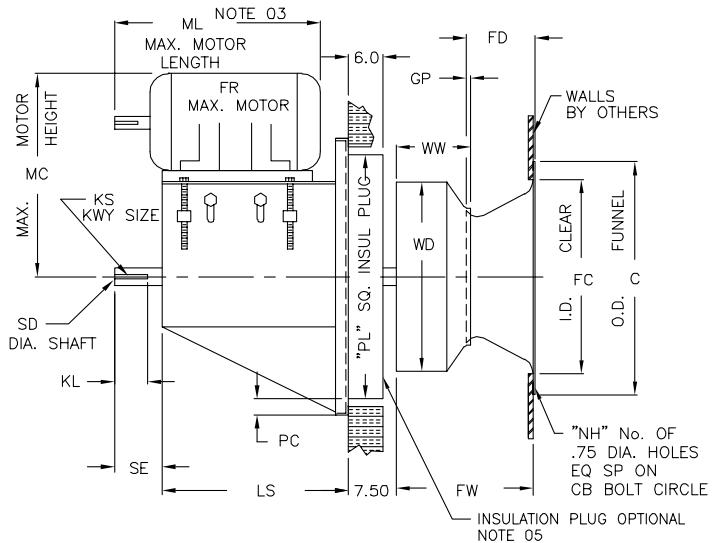
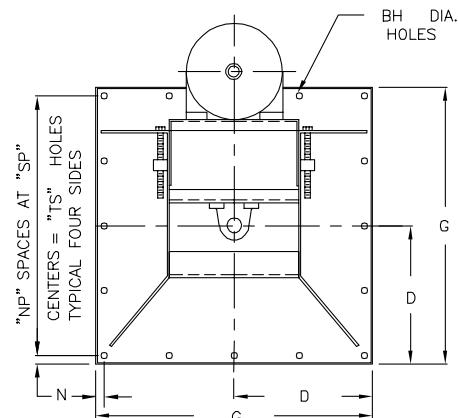
Fan Size	LS	MC	ML	N	NH	NP	PC	PL	SD		SE	SP	TS	WD	WW
									CL I	CL II					
122	17.50	24.25	19.13	1.00	8	4	1.75	19.25	1.437	1.687	5.00	5.19	20.75	12.25	4.69
135	17.50	24.25	19.13	1.00	8	4	1.75	19.25	1.437	1.687	5.00	5.19	20.75	13.50	5.31
150	18.50	24.25	20.13	1.00	8	4	1.75	19.25	1.437	1.687	5.00	5.19	20.75	15.00	5.88
165	18.50	24.25	20.13	1.06	8	4	1.81	26.00	1.437	1.687	5.00	6.88	27.50	16.50	6.38
182	21.00	27.50	24.13	1.06	8	4	1.81	26.00	1.437	1.937	5.50	6.88	27.50	18.25	7.13
200	21.00	27.50	24.13	1.06	8	4	1.81	26.00	1.687	1.937	5.50	6.88	27.50	20.00	7.75
222	22.50	27.50	25.50	1.13	8	4	1.88	28.25	1.687	1.937	5.50	7.44	29.75	22.25	8.69
245	22.50	27.50	25.50	1.13	8	4	1.88	28.25	1.687	1.937	5.50	7.44	29.75	24.50	9.50
270	23.00	29.50	26.63	1.25	8	6	2.25	32.13	1.937	2.187	6.00	5.69	34.13	27.00	10.56
300	23.00	29.50	26.63	1.25	16	6	2.25	32.13	1.937	2.187	6.00	5.69	34.13	30.00	11.75
330	24.50	29.50	28.13	1.38	16	6	2.38	38.88	1.937	2.187	6.00	6.81	40.88	33.00	12.88
365	24.50	29.50	28.13	1.38	16	6	2.38	38.88	1.937	2.437	6.50	6.81	40.88	36.50	14.19
402	27.50	33.00	31.25	1.25	16	6	3.38	48.25	2.187	2.437	6.50	8.75	52.50	40.25	15.63
445	27.50	33.00	31.25	1.25	16	6	3.38	48.25	2.437	2.687	6.50	8.75	52.50	44.50	17.25
490	27.50	33.00	31.25	1.25	16	6	2.50	50.00	2.437	2.687	6.50	8.75	52.50	49.00	19.00

Dimensions are not to be used for construction. Certified drawings are available upon request.

AC11107J

Dimensional Data

Arrangement 9



NOTES:

1. Dimensions apply to unhoused assembly only.
 2. CW rotation is standard. CCW rotation is optional.
 3. To ensure selected motor will fit standard assembly, compare the maximum motor length, dimension "ML," to overall motor length.
 4. Type BC wheel is standard on all sizes. Type BAF wheel is optional on sizes 182-490.
 5. Customer to provide wall opening with adequate clearance for installation of wheel and insulation plug when provided.

Fan Size	BH	C	CB	D	FC	FD	FR	FW	G	GP	KL	KS		LS
												CL I	CL II	
122	0.56	15.75	14.75	11.38	13.25	4.38	213T	8.69	22.75	0.31	4.00	.38x.19	.38x.19	17.50
135	0.56	16.75	15.75	11.38	14.56	4.81	213T	9.69	22.75	0.38	4.00	.38x.19	.38x.19	17.50
150	0.56	18.25	17.25	11.38	16.19	5.38	215T	10.81	22.75	0.38	4.00	.38x.19	.38x.19	18.50
165	0.56	20.00	19.00	14.81	17.75	5.94	215T	11.81	29.63	0.44	4.00	.38x.19	.38x.19	18.50
182	0.56	22.00	21.00	14.81	19.50	6.56	254T	13.06	29.63	0.56	4.50	.38x.19	.50x.25	21.00
200	0.56	24.38	23.38	14.81	21.38	7.19	254T	14.25	29.63	0.63	4.50	.38x.19	.50x.25	21.00
222	0.56	26.63	25.50	16.00	23.75	8.00	256T	15.94	32.00	0.69	4.50	.38x.19	.50x.25	22.50
245	0.56	28.63	27.75	16.00	27.00	8.81	256T	17.50	32.00	0.75	4.50	.38x.19	.50x.25	22.50
270	0.69	31.00	29.75	18.31	29.00	9.69	284T	19.31	36.63	0.88	5.00	.50x.25	.50x.25	23.00
300	0.69	34.88	33.63	18.31	31.62	10.75	284T	21.44	36.63	1.00	5.00	.50x.25	.50x.25	23.00
330	0.69	38.50	37.25	21.81	34.75	11.81	286T	23.56	43.63	1.06	5.00	.50x.25	.50x.25	24.50
365	0.69	42.00	40.75	21.81	39.50	13.06	286T	26.25	43.63	0.94	5.50	.50x.25	.63x.31	24.50
402	0.69	45.38	44.13	27.50	42.50	14.44	326T	28.94	55.00	1.06	5.50	.50x.25	.63x.31	27.50
445	0.69	49.88	48.63	27.50	47.25	15.94	326T	32.00	55.00	1.13	5.50	.63x.31	.63x.31	27.50
490	0.69	54.38	53.13	27.50	52.00	17.56	326T	35.31	55.00	1.25	5.50	.63x.31	.63x.31	27.50

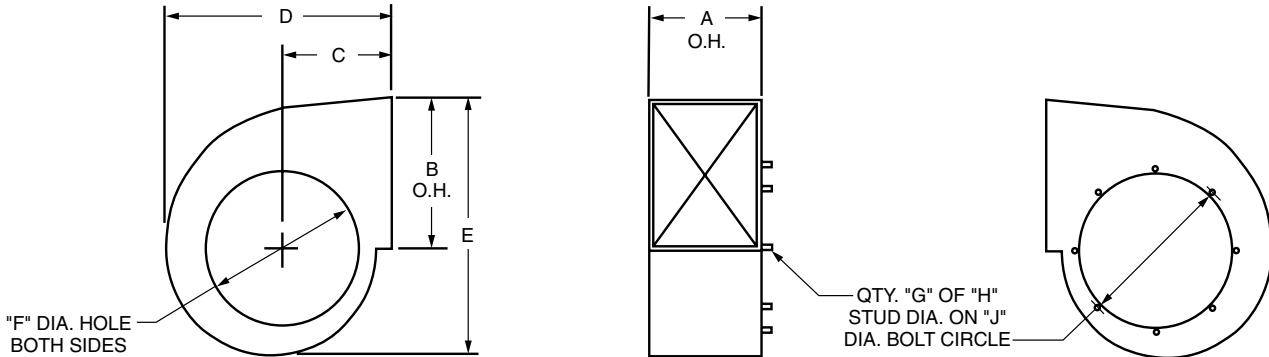
Fan Size	MC	ML	N	NH	NP	PC	PL	SD		SE	SP	TS	WD	WW	Max. Safe Shaft Speed	
								CL I	CL II						CL I	CL II
122	24.25	19.13	1.00	8	4	1.75	19.25	1.437	1.687	5.00	5.19	20.75	12.25	4.69	2512	3087
135	24.25	19.13	1.00	8	4	1.75	19.25	1.437	1.687	5.00	5.19	20.75	13.50	5.31	2364	2899
150	24.25	20.13	1.00	8	4	1.75	19.25	1.437	1.687	5.00	5.19	20.75	15.00	5.88	1908	2316
165	24.25	20.13	1.06	8	4	1.81	26.00	1.437	1.687	5.00	6.88	27.50	16.50	6.38	1779	2090
182	27.50	24.13	1.06	8	4	1.81	26.00	1.437	1.937	5.50	6.88	27.50	18.25	7.13	1520	2180
200	27.50	24.13	1.06	8	4	1.81	26.00	1.687	1.937	5.50	6.88	27.50	20.00	7.75	1800	2045
222	27.50	25.50	1.13	8	4	1.88	28.25	1.687	1.937	5.50	7.44	29.75	22.25	8.69	1419	1659
245	27.50	25.50	1.13	8	4	1.88	28.25	1.687	1.937	5.50	7.44	29.75	24.50	9.50	1247	1523
270	29.50	26.63	1.25	8	6	2.25	32.13	1.937	2.187	6.00	5.69	34.13	27.00	10.56	1397	1668
300	29.50	26.63	1.25	16	6	2.25	32.13	1.937	2.187	6.00	5.69	34.13	30.00	11.75	1257	1496
330	29.50	28.13	1.38	16	6	2.38	38.88	1.937	2.187	6.00	6.81	40.88	33.00	12.88	1097	1303
365	29.50	28.13	1.38	16	6	2.38	38.88	1.937	2.437	6.50	6.81	40.88	36.50	14.19	967	1283
402	33.00	31.25	1.25	16	6	3.38	48.25	2.187	2.437	6.50	8.75	52.50	40.25	15.63	903	1163
445	33.00	31.25	1.25	16	6	3.38	48.25	2.437	2.687	6.50	8.75	52.50	44.50	17.25	817	1052
490	33.00	31.25	1.25	16	6	2.50	50.00	2.437	2.687	6.50	8.75	52.50	49.00	19.00	742	956

Dimensions are not to be used for construction. Certified drawings are available upon request.

AC15384C

Dimensional Data

Fan Housing Details



NOTE: Rotation must be specified as viewed from drive side to insure proper location of inlet cone mounting studs.
Studs provided on inlet side only.

FAN SIZE	HOUSING DIMENSIONS (IN.)								
	A	B	C	D	E	F	G	H	J
122	9 ³ / ₄	13	9 ¹ / ₄	19 ¹³ / ₁₆	22 ¹ / ₄	13 ³ / ₄	8	3/8	14 ³ / ₄
135	10 ¹³ / ₁₆	14 ⁵ / ₁₆	10 ¹ / ₄	21 ⁷ / ₈	24 ¹ / ₂	14 ⁹ / ₁₆	8	3/8	15 ³ / ₄
150	11 ¹⁵ / ₁₆	15 ⁷ / ₁₆	11 ⁷ / ₁₆	24 ⁵ / ₁₆	27 ⁹ / ₁₆	16 ³ / ₁₆	8	3/8	17 ¹ / ₄
165	13 ³ / ₁₆	17 ⁷ / ₁₆	12 ⁵ / ₈	26 ³ / ₄	29 ⁷ / ₈	17 ³ / ₄	8	3/8	19
182	14 ⁹ / ₁₆	19 ¹ / ₈	14	29 ¹¹ / ₁₆	33 ¹ / ₈	19 ¹ / ₂	8	3/8	21
200	15 ¹⁵ / ₁₆	21 ³ / ₁₆	15 ⁵ / ₁₆	32 ⁵ / ₈	36 ⁵ / ₁₆	21 ¹ / ₈	8	3/8	23 ³ / ₈
222	17 ¹¹ / ₁₆	23 ⁹ / ₁₆	17 ³ / ₁₆	36 ¹ / ₄	40 ⁵ / ₁₆	23 ³ / ₄	8	3/8	25 ¹ / ₂
245	19 ⁷ / ₁₆	25 ¹⁵ / ₁₆	19	40	44 ³ / ₈	27	8	3/8	27 ³ / ₄
270	21 ³ / ₈	28 ⁵ / ₁₆	20 ⁵ / ₁₆	44 ¹ / ₈	49	29	8	3/8	29 ³ / ₄
300	23	31 ¹³ / ₁₆	23 ⁵ / ₁₆	49 ¹ / ₁₆	54 ⁷ / ₁₆	31 ¹ / ₈	16	3/8	33 ⁵ / ₈
330	25 ¹ / ₄	35 ¹ / ₈	25 ³ / ₄	54 ¹ / ₈	60	34 ³ / ₄	16	3/8	37 ¹ / ₄
365	27 ³ / ₄	38 ¹¹ / ₁₆	28 ¹ / ₂	60	66 ⁵ / ₁₆	39 ¹ / ₂	16	3/8	40 ³ / ₄
402	30 ³ / ₈	42 ⁵ / ₈	31 ¹ / ₂	66 ³ / ₁₆	73 ¹ / ₁₆	42 ¹ / ₂	16	3/8	44 ¹ / ₈
445	33 ¹³ / ₁₆	47 ¹ / ₈	34 ⁷ / ₈	73 ¹ / ₈	80 ³ / ₄	47 ¹ / ₄	16	3/8	48 ⁵ / ₈
490	36 ⁷ / ₁₆	51 ¹⁵ / ₁₆	38 ¹ / ₂	80 ¹¹ / ₁₆	89	52	16	3/8	53 ¹ / ₈

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.

Belt Centers

MOTOR FRAME SIZE	FAN SIZE							
	122-165		182-245		270-365		402-490	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
143T	13	16 ¹ / ₂	14	17 ¹ / ₂	14 ¹ / ₂	18	16	19 ¹ / ₂
145T								
182T	14	17 ¹ / ₂	15	18 ¹ / ₂	15 ¹ / ₂	19	17	20 ¹ / ₂
184T								
213T	14 ³ / ₄	18 ¹ / ₄	15 ³ / ₄	19 ¹ / ₄	16 ¹ / ₄	19 ³ / ₄	17 ³ / ₄	21 ¹ / ₄
215T								
254T			16 ³ / ₄	20 ¹ / ₄	17 ¹ / ₄	20 ³ / ₄	18 ³ / ₄	22 ¹ / ₄
256T								
284T					18	21 ¹ / ₂	19 ¹ / ₂	23
286T								
324T							20 ¹ / ₂	24
326T								

Typical Specifications

Fans shall be Type BCPL Flat Blade BI SWSI Plug Fans, as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Fans shall be tested and rated in accordance with industry accepted test codes and shall be guaranteed by the manufacturer to deliver rated published performance levels.

PLUG PANEL — Plug panel shall be of minimum 7 gauge steel with formed flanges to maintain flatness and rigidity. Panel shall be prepunched for bolt mounting. Panel assembly may also be welded in place. The "Cross Frame" bearing support is designed for maximum stability and load spreading. Bearings are serviceable without disassembly of panel or frame. Plug assembly is available for both horizontal and vertical application. Horizontal construction is standard. Vertical construction must be specified.

WHEEL — BCPL wheels shall be backward inclined, non-overloading, single thickness plate type, designed for maximum efficiency and quiet operation. Wheels shall be constructed of heavy gauge steel, solid welded to both the back plate and rim. Wheels shall have tapered spun wheel cones or shrouds, providing stable flow and high rigidity.

Optional backward inclined airfoil blade wheels shall use die-formed airfoil blades continuously welded to the rim and back plate. Partial welding will not be acceptable.

Clockwise or counterclockwise rotation is available. Specify rotation as viewed from drive side.

SHAFT — Shafts shall be AISI 1040 or 1045 hot rolled steel accurately turned, ground, polished, and ring gauged for accuracy. Shafts shall be sized for a first critical speed of at least 1.43 times the maximum speed for the class.

BEARINGS — Bearings shall be either ball or spherical roller, heavy duty, self-aligning, pillow block type. Bearing selection is based upon L-10 minimum life of 40,000 hours or average life of 200,000 hours.

OPTIONAL ALL WELDED HOUSING — Housing shall be of heavy gauge steel. Housing shall be provided with wheel opening on each side and weld studs on inlet side for cone mounting. Specify rotation and discharge as viewed from drive side to insure proper stud placement. Housing supports and attachments for wall mounting to be provided by others.

ADJUSTABLE MOTOR BASE — Adjustable motor base is standard and shall have a four point leveling and tension adjustment to insure proper drive belt alignment. The motor base shall be heavy gauge steel and prepunched to accept standard motor frame specified.

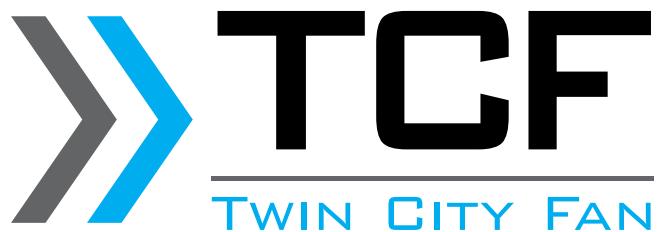
OPTIONAL INLET VANES — Inlet vane blades are cantilever design with supports equipped with permanently lubricated needle bearings and ball joints for smooth and easy operation. Vane assemblies are external type for sizes 122 through 150 and nested for sizes 165 through 490. Standard inlet vanes are applicable to 300°F. Consult factory for higher temperatures and dimensions.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at the specified operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its BCPL Flat Blade BI SWSI Plug Fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS
MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | PROPELLER WALL FANS | PROPELLER ROOF VENTILATORS
CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS
RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS
LABORATORY EXHAUST FANS | FILTERED SUPPLY FANS | MANCOOLERS | FIBERGLASS FANS | CUSTOM FANS



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