



PLUG FANS



ACOUSTAFOIL®



PLR



ECF-9



THE NEW YORK BLOWER COMPANY
7660 Quincy Street
Willowbrook, IL 60527-5530

Visit us on the Web: <http://www.nyb.com>
Phone: (800) 208-7918 Email: nyb@nyb.com

PLUG FANS

...for a wide variety of OEM applications.

DESIGN FEATURES

- **Capacities**—to 125,000 CFM.
- **Pressures**—Class 3 to 14"WG, Class 4 to 20"WG.
- **Sizes**—unhoused AcoustaFoil wheels available in diameters of 12" through 60"...PLR wheels in diameters of 12" through 60"...ECF-9 wheels in diameters of 12" through 60".
- **Temperature**—four standard temperature ranges available; 200/450°F., 800°F., 1000°F., and 1300°F.
- **Wheel design**—choice of AcoustaFoil, PLR or ECF-9 wheels.

CONSTRUCTION FEATURES

- **Construction**—heavy-gauge welded components provide structural strength and durability.
- **Bearings**—selected to provide long service life through the entire operating range of the fan.
- **Standard coating**—high-temperature paint system on all mild-steel surfaces...stainless-steel components are not painted.
- **Installation and maintenance**—mounting panel allows assembled unit installation in horizontal or vertical shaft positions. Unit construction provides access to motor, drive, and bearings.
- **Positive screw-type adjustment**—for ease in adjusting motor and setting proper belt tension.
- **Shaft cooler with guard**—standard on all sizes (450°F. and above).
- **Balance**—all wheels are dynamically balanced to specification before assembly in the fan. After assembly, all fans are test-run. If motor and drive are mounted by **nyb**, the test run includes a final "trim balance" of the total assembly.

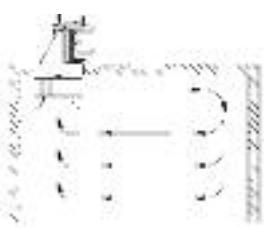
If motor and drive are NOT mounted by **nyb**, it is not trim-balanced at the factory. In those cases, it is recommended that after motor and drive are mounted, the total assembly be trim-balanced to provide smoothest operation. For additional information, see **nyb** Engineering Letter 13—Fan Balance and Vibration.



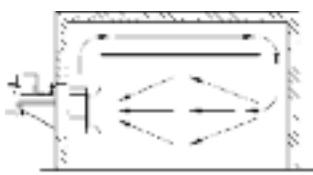
Size 228 PLR Plug Fan, with motor, drives, and belt guard.

TYPICAL APPLICATIONS

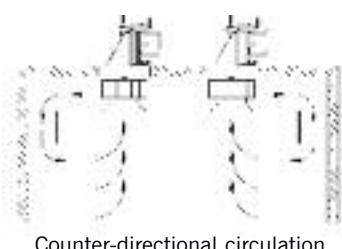
Plug Fans, used in applications where the system plenum acts as the fan housing, combine versatility with compact design to reduce overall system costs. This is achieved while maintaining operating efficiencies nearly equal to conventional housed fan equipment. The Plug Fan eliminates the need for connecting ductwork; its mounting panel permits assembled-unit installation to any well-supported plenum wall. These fans, which are literally plugged into a system, are a natural for supply, exhaust, or recirculating-air applications such as those shown below.



Multiple-path circulation



Uni-directional circulation



Counter-directional circulation

CHOICE OF THREE WHEEL DESIGNS

Designs feature a non-overloading horsepower curve...horsepower reaches a peak and then decreases as flow increases...allows calculation of the maximum brake horsepower at a given fan speed so a motor can be selected that will not overload if system pressure changes.



ACOUSTAFOIL AND ECF-9

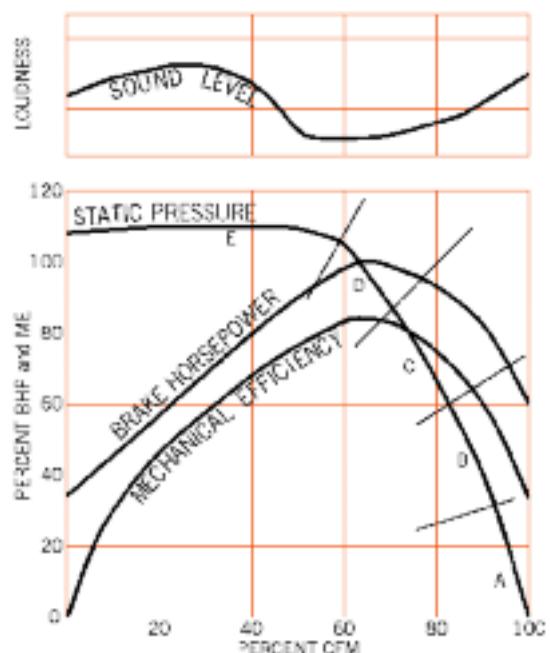
Design—the airfoil-blade design is the most efficient and quiet selection for clean, dry airstreams. The AcoustaFoil wheel has a completely stable pressure curve from wide-open to closed-off.

Efficiency—the mechanical efficiency curve offers a broad selection range with little horsepower variation.

Sound—the superior efficiency of the AcoustaFoil and ECF-9 wheel provides a low sound level over a wide performance range.

Construction—AcF available in Sizes 12" through 60" and ECF-9 available in Sizes 12" through 60" in mild-steel construction for temperatures to 800°F. and stainless-steel construction for temperatures to 1000°F (AcF only).

TYPICAL ACOUSTAFOIL PERFORMANCE



NOTE: Five regions [A,B,C,D,E] shown above correspond to points of operation on capacity tables.



PLR

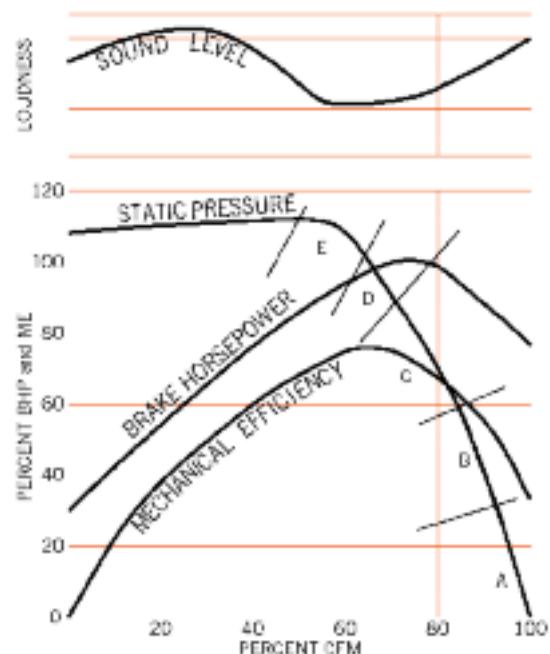
Design—a flat, backwardly inclined blade is best-suited for the efficient movement of moist or mildly contaminated airstreams. The PLR wheel's single-thickness blades handle airstreams not suited to hollow airfoil shapes.

Efficiency—area of peak mechanical efficiency is on the steeply rising portion of the static pressure curve, the best selection range.

Sound—the sound levels are lowest with the most efficient fan selections.

Construction—available in Sizes 12" through 60" in mild-steel construction for temperatures to 800°F. and in Sizes 18" through 49" in stainless-steel construction for temperatures to 1300°F.

TYPICAL PLR PERFORMANCE



NOTE: Five regions [A,B,C,D,E] shown above correspond to points of operation on capacity tables.

ACCESSORIES

- **SHAFT SEAL**

Ceramic felt seal element located by mounting/insulation panel...insert may be easily split for field installation and maintenance...standard on all 800°F., 1000°F., and 1300°F. Plug Fans.

- **AMCA C [BUFFER] SRC**

To include a spark-resistant alloy inlet cone, ring-welded to drive-side plate and buffer at shaft-hole opening...maximum temperature: 650°F.

- **REDUCED DEPTH INLET CONE**

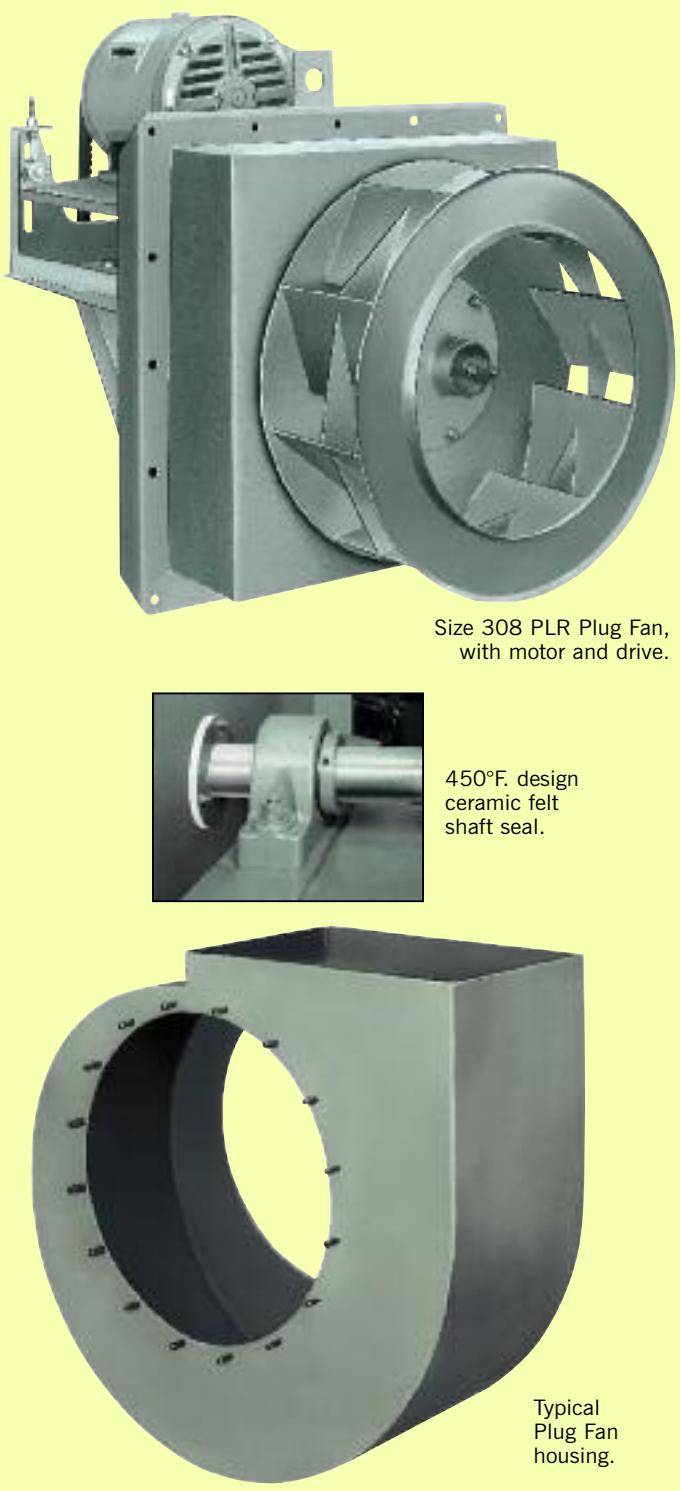
Reduced depth inlet cones are available for applications where space is restricted. From 2" on the smaller sizes to 6" on the larger sizes.

- **HOUSINGS**

Housings are designed to maximize performance with AcoustaFoil, PLR, or ECF wheels and to direct the airflow to a specific location in the system. Housings are continuously welded and furnished with mounting studs on inlet side, large cutouts on both sides for wheel removal, and flat surface on drive side for easy installation. Housings are rotatable and available in clockwise or counterclockwise design. For selection use SWSI capacity tables. Housing widths are modified to accommodate the standard 1½" "Y" dimension for Plug Fans.

- **OTHER ACCESSORIES**

Also available from **nyb** are drive components such as motors and v-belt drives as well as a variety of preventative-maintenance products including vibration detectors, bearing-temperature detectors, and zero-speed switches.



SAFETY EQUIPMENT

Belt guards, inlet guards, and shaft and bearing guards are available from The New York Blower Company. Contact your **nyb** representative for further information.

Safety accessories are available from **nyb**, but selection of the appropriate devices is the responsibility of the system-designer who is familiar with the particular installation, or application, and can provide for guards for all exposed moving parts as well as protection from access to high-velocity airstreams. Neither **nyb** nor its sales representatives is in a position to make such determination. Users and/or installers should read "Recommended Safety Practices for Air Moving Devices" as published by the Air Movement and Control Association International, Arlington Heights, Illinois.

MODIFICATIONS

- **INTEGRAL INLET-CONE ASSEMBLY**

Factory located and set inlet-cone assembly to assure proper wheel-to-cone fit for optimum performance. See page 22 and 25 for additional information.

- **STAINLESS STEEL**

Stainless steel and other special alloys are available for performance at temperature and to combat corrosion problems. 1000°F. Plug Fans utilize stainless-steel wheels and shafts as standard. 1300°F. Plug Fans use 1000°F. designs with PLR wheels and the addition of a stainless-steel insulation panel and inlet cone.

- **WHEEL BACK PRESSURE BLADES**

Radial fins can be welded to the backplate to generate a negative pressure at the shaft hole.

- **BREATHER PORT**

Pipe nipple with vent cap can be specified to relieve pressure build-up in insulation panel due to heat.

- **CUSTOM PLUG FANS**

nyb can make numerous modifications to its Plug Fan designs to meet the space and performance needs of OEM customers, including special mounting, panel dimensions, or insulate panel dimensions and depths. For capacities beyond 125,000 CFM, **nyb** can modify conventional Arrangement 1 and 9 fans with plug-style panels with or without housings.

- **TECHNICAL SUPPORT**

nyb has developed numerous engineering and application support tools for system designers and operators. For further information, contact your local **nyb** sales representative or visit our web site at www.nyb.com.



Size 187
AcoustaFoil Plug Fan,
800°F. insulated design
with integral inlet-cone
assembly and motor.

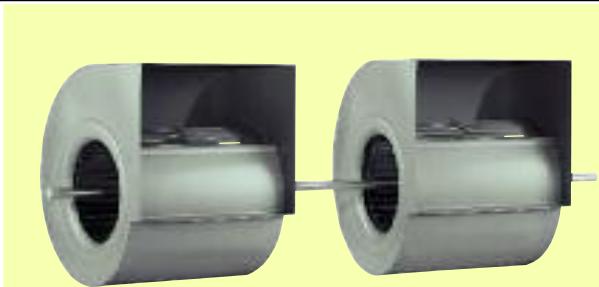


Size 278 PLR Plug Fan,
800°F. insulated design, with motor,
belt guard, and shaft and bearing guard.

AIR KITS

Capacities to 100,000 CFM, 6"WG.

Forward-curve wheels in one-fan or two-fan designs...preselected housing, shaft, and bearing combinationsto suit a wide range of air performance, temperature, and dimensional requirements. Ideal for use in ovens, dryers, air handlers, and built-up plenum systems...static pressures to 6"WG...temperatures to 1000°F.



PLUG FAN ENGINEERING AND SELECTION

GENERAL

Plug Fans are an integral part of the ovens and dryers in which they are applied. As such, New York Blower sales representatives work closely with OEM project engineers in assessing requirements and meeting critical performance and dimensional specifications. Because of a wide variety of choices available, it is recommended that final selection be made using New York Blower's Electronic Catalog software and that a New York Blower sales representative assist in optimizing the selection.

CORRECTION FACTORS

Fan performance is based on actual cubic feet per minute [ACFM] at the fan inlet at standard density [.075 lbs./ft.³] and static pressure at the fan outlet. Static pressure capabilities are shown in inches water gauge ["WG].

Air-density corrections are necessary for proper selection when air density varies from the standard .075 lbs./ft.³ at 70°F. at sea level. Multiply the required static pressure at operating conditions by the appropriate factors in Charts I and II to obtain the corrected static pressure for standard conditions. Pressure and BHP will be reduced at conditions by the inverse of these factors. Multiply one factor by the other if temperature and altitude are non-standard. For example: if the installation is located at an altitude of 4000 feet and the gas temperature is 300°F. the correction factor is 1.66 [1.16 x 1.43].

CHART I ALTITUDE [ft.] CORRECTIONS	
Alt.	Factor
0	1.00
500	1.02
1000	1.04
1500	1.06
2000	1.08
2500	1.10
3000	1.12
3500	1.14
4000	1.16
4500	1.18
5000	1.20
5500	1.23
6000	1.25
7000	1.30
8000	1.35

CHART II TEMPERATURE CORRECTIONS			
Temp.°F.	Factor	Temp.°F.	Factor
0	.87	450	1.72
20	.91	500	1.81
40	.94	550	1.91
60	.98	600	2.00
70	1.00	650	2.10
100	1.06	700	2.19
120	1.09	750	2.28
140	1.13	800	2.38
160	1.17	850	2.47
180	1.21	900	2.56
200	1.25	950	2.66
250	1.34	1000	2.76
300	1.43	1100	2.94
350	1.53	1200	3.13
400	1.62	1300	3.32

HEAT FANS

Fans handling hot airstreams must be kept in operation after system shutdown until the airstream cools below 200°F. to prevent damage to the fan. The fan wheel or shaft might otherwise distort due to "heat-soaking". The shaft cooler is only effective while rotating. Burners should be located so that the air is thoroughly mixed before entering the fan inlet. Improper placement could cause hot spots on the fan wheel which exceed maximum design temperatures. Contact nyb when the application involves temperature changes greater than 20°F. per minute.

Refer to the selection example on page 7 for the effect of temperature on the maximum safe speed of wheels and the temperature derate factors in Chart IV.

MAXIMUM SAFE SPEEDS

Plug Fan operation at temperatures above 70°F. primarily affects the strength of rotating components, which declines as temperature increases. Chart III provides maximum safe speeds for Class 2, 3 and 4 AcoustaFoil, PLR and ECF-9 wheels at 70°F. When alloy construction is specified or when temperatures are involved, multiply the appropriate wheel safe speed shown in Chart III by the factor shown in Chart IV.

Chart V provides maximum safe speeds for Class 2 and Class 3 Plug Fans at 70°F. In no case should these unit safe speeds be exceeded. The final unit safe speed at temperature is the lesser of the unit safe speed at 70°F. and the wheel safe speed calculated at operating temperature and with the correct materials of construction.

CAPACITY CONTROL

The rising cost of energy requires that air-handling systems be operated efficiently at less than maximum design airflow. The high efficiency and inherent stability of the AcoustaFoil wheel is particularly well-suited to variable airflow systems. The AcoustaFoil wheel design ensures not only maximum operating efficiency at design CFM but also at reduced airflow regardless of the control method applied. This higher efficiency allows quieter operation throughout the modulation range.

The New York Blower Company's nationwide network of trained sales representatives is familiar with each of these control alternatives and can offer further assistance in selecting the best control for a particular application.

DETERMINING MAXIMUM SAFE SPEED

PROCEDURES	STEPS	EXAMPLE
Select fan.	1	Using a Model 187 AcoustaFoil Plug Fan operating at 2688 RPM and 600°F. from the example on page 8, the 800°F. design is required and a 4" panel is assumed.
Determine wheel safe speed at temperature.	2	The maximum wheel safe speed for a Model 187 Class 2 AcoustaFoil wheel at 70°F. is 3005 RPM [Chart III]. The maximum wheel safe speed at 600°F. is [3005 x .92] = 2764 RPM, above the required 2688 RPM.
Determine unit safe speed at temperature.	3	The unit safe speed at 70°F. is 3005 RPM [Chart V]. The unit safe speed at 600°F. is the lesser of wheel safe speed and unit safe speed. 2688 RPM selection is acceptable.

MAXIMUM UNIT OPERATING SPEEDS [RPM] AT 70°F. FOR CLASS 4 PLUG FANS

Size	450°F. AcF/PLR	800°F. AcF/PLR 4" panel	800°F. AcF/PLR 5" panel	800°F. AcF/PLR 6" panel	1000°F. PLR 6" panel
18	4290	4295	3935	4295	3700
20	3580	3580	3280	3600	3535
22	3520	3520	3365	3520	3080
24	3185	3170	2920	3205	3115
27	2905	2825	2615	2905	2905
30	2610	2610	2610	2545	2155

CHART III

MAXIMUM WHEEL OPERATING SPEEDS [RPM]* ACOUSTAFOIL AND PLR AT 70°F.

Size	AcoustaFoil				PLR		AcF/PLR	ECF-9				
	Class 2		Class 3		Class 2	Class 3		Class 2		Class 3		
	Carbon steel	SST	Carbon steel	SST				Carbon steel	SST	Carbon steel	SST	
12	4900†	NA	NA	NA	4270	NA	NA	4730+	NA	NA	NA	
15	3800†	NA	NA	NA	3360	NA	NA	3670+	NA	NA	NA	
18	3005	3005	3790	3600	2735	3525	4300	2900	2380	3660	3010	
20	2780	2780	3510	3160	2510	3200	3895	2685	2225	3390	2810	
22	2570	2570	3240	2945	2305	2900	3520	2480	2065	3130	2610	
24	2335	2335	2940	2685	2090	2635	3205	2255	1885	2840	2375	
27	2010	2010	2530	2430	1850	2325	2905	1940	1700	2440	2140	
30	1805	1805	2275	1995	1665	2095	2610	1770	1590	2195	1975	
33	1650	1650	2080	1815	1515	1905	2375	1590	1430	2010	1810	
36	1450	1395	1825	1640	1360	1715	NA	1400	1300	1770	1645	
40	1315	1265	1655	1490	1235	1555	NA	1270	1170	1600	1480	
44	1190	1145	1495	1375	1120	1410	NA	1170	1065	1440	1315	
49	1105	1065	1395	1225	1020	1280	NA	1065	910	1345	1150	
54	975	940	1230	1105	920	1178	NA	940	830	1190	1050	
60	880	850	1110	1000	830	1045	NA	880	785	1070	960	

*Maximum safe speeds apply only to wheels operated at or below stated temperature and free of material build-up, corrosion, or wear. NA—Not Available.

† Aluminum Wheel for 200°F. Maximum Operation.

CHART IV

TEMPERATURE CORRECTION

FACTORS FOR WHEEL OPERATING SPEEDS

* SST derates are for PLR wheels only. Consult ES-135 for AcoustaFoil derates. AcoustaFoil and ECF-9 wheels are only available to 1000°F.

Temp. °F.	Wheel material				Temp. °F.	Wheel material			
	Steel	Stainless 304*	Stainless 316*	Stainless 347*		Steel	Stainless 304*	Stainless 316*	Stainless 347*
70	1.00	1.00	1.00	1.00	800	.80	—	.79	.86
200	.97	.88	.95	.95	850	—	—	.77	.85
300	.95	.82	.92	.93	900	—	—	.76	.84
400	.94	.78	.89	.90	1000	—	—	.75	.83
500	.93	.75	.86	.90	1100	—	—	.63	.66
600	.92	.73	.84	.90	1200	—	—	.53	.54
700	.87	.68	.80	.87	1300	—	—	.42	.39

CHART V MAXIMUM UNIT SAFE SPEEDS [RPM] AT 70°F.

CLASS 2 AND 3 PLUG FANS WITH ACOUSTAFOIL WHEELS

Size	200°F./450°F. design		800°F. design				1000°F. design			
			4" panel		6" panel		6" panel		8" panel	
	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3
127*	4900	NA	NA	NA	NA	NA	NA	NA	NA	NA
157*	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA
187	3005	3790	3005	3790	3005	3790	3005	3600	2565	3090
207	2780	3510	2780	3510	2780	3060	2780	3005	2780	2530z
227	2570	3240	2570	3000	2570	3000	2570	2945	2570	2945
247	2335	2940	2335	2940	2335	2940	2315	2685	1955	2460
277	2010	2530	2010	2530	2010	2530	2010	2430	1780	2225
307	1805	2275	1805	2275	1805	2275	1700	1995	1455	1995
337	1650	2080	1650	2080	1650	2080	1500	1815	1280	1815
367	1450	1825	1450	1825	1450	1825	1395	1640	1215	1450
407	1315	1655	1315	1655	1315	1620	1265	1490	1120	1335
447	1190	1495	1190	1495	1190	1495	1145	1375	1145	1375
497	1105	1395	1105	1395	1105	1310	1065	1225	1065	1110
547	975	1230	975	1230	975	1230	975	1230	975	‡
607	880	1110	880	1110	880	1110	880	1110	880	‡

* 200°F. Only.

NA-Not Available.

‡ - See bottom of page

CLASS 2 AND 3 PLUG FANS WITH PLR WHEELS

Size	200°F./450°F. design		800°F. design				1000°F. design				1300°F. design	
			4" panel		6" panel		6" panel		8" panel		6" panel	8" panel
	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3	Class 3	Class 3
128	4270	NA	4270	NA	3900	NA	NA	NA	NA	NA	NA	NA
158	3360	NA	3360	NA	3160	NA	NA	NA	NA	NA	NA	NA
188	2735	3525	2735	3525	2735	3525	2735	3525	2705	3320	3525	3320
208	2510	3200	2510	3200	2510	3060	2510	3005	2510	2530	3005	2530
228	2305	2900	2305	2900	2305	2900	2305	2900	2305	2900	2900	2900
248	2090	2635	2090	2635	2090	2635	2090	2635	2015	2520	2635	2520
278	1850	2325	1850	2325	1850	2325	1850	2325	1850	2300	2325	2300
308	1665	2095	1665	2095	1665	2095	1665	2095	1540	2095	2095	2095
338	1515	1905	1515	1905	1515	1905	1515	1905	1385	1905	1905	1905
368	1360	1715	1360	1715	1360	1715	1360	1715	1285	1490	1715	1490
408	1235	1555	1235	1555	1235	1555	1235	1540	1150	1330	1540	1330
448	1120	1410	1120	1410	1120	1410	1120	1410	1120	1240	1410	1240
498	1020	1280	1020	1280	1020	1280	1020	1230	1020	1085	1230	1085
548	920	1175	920	1175	920	1175	920	1175	920	‡	1175	‡
648	830	1045	830	1045	830	1045	830	1045	830	‡	1045	‡

‡ - See bottom of page

CLASS 2 AND 3 PLUG FANS WITH ECF WHEELS

Size	200°F./450°F. design		800°F. design			
			4" panel		6" panel	
	Class 2	Class 3	Class 2	Class 3	Class 2	Class 3
18	2900	3660	2900	3660	2900	3460
20	2685	3390	2685	3390	2685	3290
22	2480	3130	2480	3130	2480	3130
24	2255	2840	2255	2840	2255	2840
27	1940	2440	1940	2440	1940	2440
30	1770	2195	1770	2195	1770	2195
33	1590	2010	1590	2010	1590	2010
36	1375	1770	1400	1770	1400	1670
40	1270	1600	1270	1600	1270	1460
44	1170	1440	1170	1440	1170	1440
49	1065	1345	1065	1330	1065	1170
54	940	1190	940	1190	940	‡
60	880	1070	880	1070	880	‡

† CLASS 3 PLUG FANS SIZES 54 AND 60

Size	Motor Frame	Class 3			
		800°F.	1000°F.	1000°F.	1300°F.
		6" panel	8" panel	8" panel	8" panel
54	≤405T	1160	1190	1175	1175
	444T/445T	1160	1120	1175	1120
	447T	1160	1230	1175	1175
60	≤405T	1070	1110	1045	1045
	444T/445T	1070	1110	1045	1045
	447T/449T	1070	1050	1045	1045

PLENUM PERFORMANCE FACTORS

Plug Fan selection and performance has been greatly simplified. By illustrating regions corresponding to required points of operation in the capacity tables and on the typical performance curves shown on page 3, selection can be made in three simple steps.

PLENUM CORRECTION		
PROCEDURES	STEPS	EXAMPLE
Select fan size, model, RPM, and BHP from tables.	1	Design is 7000 CFM at 4.0"WG, at standard conditions. A Model 187 Plug Fan is selected at 2610 RPM at 6.66 BHP. Selection is in Region C.
Determine the plenum performance factors.	2	The plenum is two walls perpendicular with a d/D of .15. RPM factor = 1.03, BHP factor = 1.08.
Determine the required RPM and BHP for operation in the plenum.	3	RPM = $2610 \times 1.03 = 2688$ RPM, BHP = $6.66 \times 1.08 = 7.19$ BHP, at 70°F. and sea level.

LEGEND	
A	B
In the capacity tables, for pages 9 through 18:	
Region A = white area, lower left. Region B = gray area. Region C = white area, middle. Region D = colored area. Region E = white area, top right.	
Make sure to review additional speed corrections for wheel class, unit design, and temperature.	

CHART VI CORRECTION FACTORS FOR PLENUM TYPE

PLENUM TYPE		ONE WALL		TWO WALLS Parallel		TWO WALLS Perpendicular		THREE WALLS Wheel centered		THREE WALLS With 3/2d and 1/2d spacing	
Region	d/D ratio	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
A	.1 to .2	1.01	1.04	1.01	1.10	1.03	1.14	1.10	1.67	1.11	1.70
	.2 to .3	1.01	1.01	1.00	1.00	1.01	1.02	1.06	1.33	1.06	1.33
	.3 to .5	1.00	.97	1.00	.97	1.00	.97	1.02	1.10	1.02	1.10
	.5 to .7	1.00	1.00	.99	.94	1.01	.99	1.02	1.10	1.01	1.03
	more than .7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
B	.1 to .2	1.01	1.03	1.02	1.10	1.03	1.10	1.09	1.47	1.09	1.44
	.2 to .3	1.01	1.01	1.00	1.00	1.00	.96	1.05	1.22	1.04	1.18
	.3 to .5	1.00	.99	1.00	1.00	1.00	.96	1.02	1.07	1.02	1.07
	.5 to .7	1.00	1.00	1.00	1.00	1.00	.96	1.02	1.07	1.01	1.03
	more than .7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C	.1 to .2	1.01	1.02	1.01	1.03	1.03	1.08	1.07	1.28	1.07	1.27
	.2 to .3	1.01	1.01	1.01	1.02	1.01	1.01	1.04	1.15	1.03	1.09
	.3 to .5	1.00	.99	1.00	.99	1.01	.97	1.01	1.02	1.01	1.02
	.5 to .7	1.00	1.00	1.00	.99	1.00	.98	1.02	1.04	1.01	1.01
	more than .7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
D	.1 to .2	1.01	1.02	1.01	1.03	1.02	1.06	1.07	1.23	1.05	1.16
	.2 to .3	1.01	1.00	1.01	1.03	1.01	1.03	1.04	1.12	1.03	1.08
	.3 to .5	1.00	1.00	1.00	.99	1.00	.99	1.02	1.05	1.01	1.02
	.5 to .7	1.00	1.00	1.00	.98	1.00	.98	1.02	1.05	1.00	.99
	more than .7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
E	.1 to .2	1.01	1.02	1.00	.99	1.01	1.01	1.03	1.08	1.01	1.02
	.2 to .3	1.00	1.00	1.00	.99	.99	.95	1.00	1.00	1.00	.98
	.3 to .5	1.00	1.00	.99	.97	.98	.93	.99	.98	.99	.95
	.5 to .7	1.00	1.00	.99	.97	.99	.95	1.00	1.00	.99	.95
	more than .7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

PLUG FAN SELECTION

HOW TO SELECT A PLUG FAN

PROCEDURES	STEPS	EXAMPLE
For a given CFM and static pressure, capacity tables can be used to obtain fan size, wheel RPM, and BHP. If capacities are at conditions other than 70°F, sea level, or standard density [0.075 lbs./cu.ft.], correction factors must be applied to static pressure and BHP.	1	An oven application requires 25,000 CFM, at 4.0"SP operating at 600°F and sea level. Oven design is three walls, wheel centered with a d/D ratio of 0.6. Oven wall is 4" thick.
If temperature, altitude, or density corrections are required, determine the correction factor using Charts I and II from page 6.	2	Correction factor for 600°F is 2.0 from Chart II.
Multiply the required operating SP by the correction factor(s). This gives the equivalent SP at .075 lb./cu.ft. density.	3	The required fan SP at standard air is 4.0" x 2.0 = 8.0"
Select the Fan size, RPM and BHP from the capacity tables. Note: For a given performance, larger fans are generally more efficient and have lower operating cost over the life of the fan.	4	A Model 367 AcostaFoil Plug Fan is selected for 25,000 CFM at 8"SP, 1461 RPM, 39.94 BHP at [standard air] .075 lbs./cu.ft. density. Performance is in Region D.
Determine the plenum performance factors for actual plenum design.	5	For plenum design of three walls with wheel centered at d/D of 0.6 the RPM factor = 1.02 and the BHP factor = 1.05.
Calculate the required RPM and BHP for operation in the plenum.	6	RPM = 1461 x 1.02 = 1490 RPM BHP = 39.94 x 1.05 = 41.94 BHP
Confirm the maximum wheel safe speed at operating [or design] temperature from Charts III and IV. Confirm maximum unit safe speed from Chart V. The Plug Fan's maximum safe speed is the lesser of the wheel and unit safe speeds.	7	A 367 AcostaFoil Class 3 wheel has a maximum safe speed of 1825. Assuming steel construction and 600°F, the wheel correction factor is .91. The maximum safe wheel speed at 600°F is 1660 [1825 x .91]. from Chart V the unit safe speed for a 800°F, [4" panel] Class 3 367 fan is also 1825. The wheel is the limiting factor at 1679, well above the required speed of 1490 RPM.
Determine operating BHP by dividing the BHP from the capacity tables by the correction factor(s) used in step 3.	8	Operating BHP is 41.94 BHP ÷ 2.0 = 20.97 BHP
Final selection.	9	A Model 367, Class 3 AcostaFoil Plug Fan, 800°F. design operating at 20.97 BHP and 25,000 CFM.

MODEL 127 ACOUSTAFOIL								REGION A	REGION B	REGION C	REGION D	REGION E										
CFM	1"SP		2"SP		3"SP		4"SP		5"SP		6"SP		7"SP		8"SP		9"SP		10"SP		11"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1848	0.31	2299	0.59	2680	0.91	3031	1.27	3337	1.65	3634	2.07	3899	2.50	4164	2.97	4399	3.44	4637	3.96	4874	3.52
1500	2079	0.42	2477	0.75	2830	1.11	3148	1.50	3449	1.93	3716	2.36	3972	2.83	4220	3.32	4465	3.86	4683	4.38		
1800	2335	0.56	2692	0.94	3007	1.34	3306	1.78	3583	2.24	3841	2.72	4082	3.21	4318	3.75	4541	4.29	4758	4.86		
2100	2605	0.74	2923	1.16	3215	1.61	3486	2.08	3748	2.59	3984	3.10	4214	3.64	4441	4.21	4648	4.77	4862	5.40		
2400	2890	0.96	3174	1.43	3445	1.93	3697	2.45	3935	2.99	4170	3.57	4385	4.15	4588	4.73	4791	5.35				
2700	3183	1.24	3438	1.75	3686	2.29	3920	2.86	4145	3.45	4358	4.06	4573	4.71	4765	5.33						
3000	3483	1.57	3715	2.13	3941	2.72	4159	3.33	4366	3.96	4571	4.62	4760	5.27								
3300	3786	1.97	3997	2.57	4204	3.20	4405	3.85	4608	4.55	4800	5.26										
3600	4093	2.43	4286	3.07	4477	3.75	4671	4.47	4858	5.21												
3900	4402	2.97	4583	3.67	4760	C 4.39																
4200	4715	3.60	4884	B 4.34																		
	A		B																			

MODEL 128 PLR								REGION A	REGION B	REGION C	REGION D	REGION E										
CFM	1"SP		1.5"SP		2"SP		2.5"SP		3"SP		3.5"SP		4"SP		5"SP		6"SP		7"SP		8"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1622	0.30	1855	0.45	2072	0.62	2281	0.79	2475	E 0.98	2667	1.17	2844	1.38	3194	2.06	3482	2.56	3754	3.08		
1500	1818	0.41	2008	0.58	2191	0.75	2369	0.94	2544	E 1.15	2716	1.37	2878	1.59	3127	2.89	3527	3.23	3787	3.46	4035	4.05
1800	2036	0.55	2199	0.73	2359	0.93	2513	1.14	2671	1.37	2818	1.59	2967	1.84	3248	2.34	3593	3.23	3844	3.85	4068	4.46
2100	2273	0.74	2416	0.94	2556	1.15	2690	1.37	2828	1.61	2959	1.86	3089	2.11	3344	2.65	3593	3.23	3934	4.29	4140	4.92
2400	2522	0.97	2649	1.19	2773	1.42	2891	D 1.65	3010	1.91	3130	2.17	3247	2.44	3480	3.02	3704	3.62	4047	4.74	4256	5.47
2700	2776	1.27	2889	1.50	3002	1.74	3111	2.00	3219	2.27	3325	2.55	3434	2.84	3639	3.44	3845	4.08	4202	5.32		
3000	3037	1.62	3139	1.87	3240	2.13	3341	2.41	3439	2.69	3535	2.98	3635	3.30	3824	3.93	4010	4.59	4202	5.22		
3300	3301	2.06	3395	2.32	3486	C 2.59	3578	2.88	3671	3.19	3760	3.50	3850	3.83	4023	4.49	4235	5.12				
3600	3567	2.56	3656	2.85	3742	C 3.14	3825	3.44	3909	3.76	3992	4.09	4075	4.43	4230	5.12						
3900	3836	3.15	3917	3.45	3998	3.77	4076	4.09	4153	4.42	4230	4.76										
4200	A 3.84		B 4.16		4257	4.48																

CLASS 2/3/4 PERFORMANCE TABLES PLR WHEEL

MODEL 158 PLR

CFM	REGION											
	A		B		C		D		E			
	1"SP	1.5"SP	2"SP	2.5"SP	3"SP	3.5"SP	4"SP	5"SP	6"SP	7"SP	8"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	1479	0.69	1624	0.95	1768	1.22	1909	1.52	2048	1.83	2183	2.17
2800	1636	0.90	1761	1.18	1886	1.48	2009	1.80	2134	2.14	2247	2.47
3200	1802	1.16	1914	1.47	2022	1.79	2131	2.14	2239	2.49	2343	2.85
3600	1974	1.47	2073	1.81	2173	2.17	2267	2.52	2366	2.91	2464	3.32
4000	2150	1.84	2242	2.22	2331	2.60	2420	3.00	2504	3.39	2594	3.82
4400	2329	2.28	2414	2.69	2496	3.11	2576	3.53	2658	3.97	2736	4.41
4800	2512	2.80	2589	3.24	2665	3.69	2739	4.14	2887	5.08	2963	5.58
5200	2694	3.38	2768	3.87	2839	4.35	2910	4.85	2977	5.33	3048	5.85
5600	2880	4.07	2949	4.58	3016	5.10	3082	5.63	3144	6.14	3209	6.68
6000	3067	4.84	3131	B	3194	5.94	3256	6.50	3316	7.06		
6400	3254	A	3315	6.30								

MODEL 188 PLR

CFM	REGION											
	A		B		C		D		E			
	1"SP	2"SP	4"SP	6"SP	8"SP	10"SP	12"SP	14"SP	16"SP	18"SP	20"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	1081	0.68	1367	1.33								
4300	1334	1.18	1541	1.96	1934	3.78	2313	6.02	2658	8.55	2984	E 13.0
5600	1622	1.98	1786	2.90	2097	4.96	2403	7.34	2703	10.1	3070	15.2
6900	1924	3.13	2066	4.25	2322	6.57	2576	9.19	2829	12.1	3015	14.7
8200	2232	4.72	2359	6.04	2586	8.73	2802	11.6	3224	18.0	3436	21.6
9500	2544	6.80	2659	8.33	2864	11.4	3053	14.6	3235	17.9	3423	21.5
10800	2861	9.48	2965	11.2	3155	14.7	3325	18.2	3490	D 21.8	3658	25.8
12100	3180	12.8	3277	14.8	3450	18.7	3611	C 22.6	3762	26.6	3908	30.7
13400	3502	17.0	3590	19.1	3754	23.5	3902	27.7	4056	35.0	4199	36.4
14700	3824	21.9	3906	A 24.3	4060	29.0	4042	32.1	4175	36.4		
16000	4148	27.8	4224	B 30.3								

MODEL 208 PLR

CFM	REGION											
	A		B		C		D		E			
	1"SP	2"SP	4"SP	6"SP	8"SP	10"SP	12"SP	14"SP	16"SP	18"SP	20"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4000	1026	0.93	1264	1.75	1709	3.85	2110	7.60	2421	10.8		
5500	1253	1.58	1431	2.54	1774	4.81	2194	9.15	2461	12.5	2717	16.1
7000	1503	2.55	1648	3.69	1923	6.23	2349	11.4	2569	14.8	2961	20.1
8500	1764	3.93	1890	5.28	2124	8.18	2545	14.2	2794	18.7	3014	22.8
10000	2028	5.76	2144	7.38	2347	10.6	2760	17.6	2925	21.9	3113	26.2
11500	2298	8.18	2403	10.0	2588	13.7	2931	21.7	3098	26.0	3261	30.4
13000	2570	11.2	2666	13.3	2838	17.5	2995	21.8	3145	26.1	3441	35.5
14500	2844	15.0	2933	17.3	3093	22.0	3239	26.7	3374	31.4	3512	36.4
16000	3121	A 19.6	3202	22.2	3351	27.3	3489	C 32.5	3618	37.7	3743	43.0
17500	3398	25.1	3474	27.9	3614	33.5	3745	39.2	3864	48.4		
19000	3677	31.6	3747	34.6	3879	B 40.8						

MODEL 228 PLR

CFM	REGION											
	A		B		C		D		E			
	1"SP	2"SP	4"SP	6"SP	8"SP	10"SP	12"SP	14"SP	16"SP	18"SP	20"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	1113	1.74	1281	2.81	1596	5.36	1902	8.59	2177	12.3		
7500	1310	2.69	1451	3.95	1713	6.76	1962	9.99	2212	13.9	2442	18.0
9000	1514	3.98	1640	5.48	1866	8.64	2082	12.1	2290	16.0	2502	20.4
10500	1722	5.66	1838	7.45	2039	11.0	2229	14.8	2599	23.4	2410	18.8
12000	1933	7.81	2042	9.89	2227	13.9	2396	18.1	2563	D 22.5	2722	27.1
13500	2145	10.4	2248	12.9	2421	17.4	2575	21.9	2727	26.7	3011	36.7
15000	2360	13.7	2457	B 16.4	2620	21.5	2764	26.5	2902	31.6	3036	36.9
16500	2575	A 17.6	2666	20.6	2821	C 26.3	2959	31.8	3167	42.4	3298	48.2
18000	2793	22.2	2879	25.5	3028	31.8	3158	37.8	3280	43.9	3451	54.8
19500	3011	27.6	3092	31.2	3236	38.2	3360	44.8	3475	51.2	3509	56.1
21000	3230	33.9	3306	37.7	3443	45.3						

Refer to pages 6 and 7 for determination of fan class. Use the New York Blower Electronic Catalog software for performance to 20"WG.

CLASS 2/3/4 PERFORMANCE TABLES ACF WHEEL

MODEL 247 AcoustaFoil								REGION A		REGION B		REGION C		REGION D		REGION E						
CFM	1"SP		2"SP		3"SP		4"SP		5"SP		7"SP		9"SP		11"SP		13"SP		15"SP		17"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	983	1.39	1168	2.58	1351	3.97	1526	5.51	1689	7.15	1988	10.7	2253	14.7	2491	18.9	2712	23.5	2922	28.4	3104	33.2
7700	1167	2.07	1314	3.45	1459	5.00	1603	6.70	1744	8.53	2009	E 12.4	2259	16.8	2490	21.4	2714	26.5	2913	31.6	3098	36.9
9400	1364	3.04	1485	4.58	1606	6.30	1725	8.17	1843	10.1	2074	F 14.4	2297	19.1	2510	24.0	2720	29.5	2916	35.1	3094	40.7
11100	1570	4.37	1675	6.09	1775	7.95	1878	10.0	1978	12.1	2179	G 16.8	2375	21.7	2569	27.1	2759	32.8	2944	38.9	3108	44.7
12800	1780	6.07	1872	7.99	1962	10.1	2051	12.3	2137	H 14.6	2315	I 19.6	2485	24.8	2658	30.5	2830	36.6	2997	42.9	3151	49.1
14500	1993	8.25	2075	10.4	2153	I 12.6	2232	14.9	2310	J 17.4	2465	K 22.7	2620	L 28.4	2775	M 34.5	2925	O 40.7	3079	P 47.4	3188	52.6
16200	2207	10.9	2281	13.2	2354	C 15.7	2424	18.2	2494	20.8	2634	26.5	2774	32.6	2909	38.8	3053	45.7	3190	50.9		
17900	2424	14.2	2492	16.7	2558	D 19.4	2621	22.0	2687	E 24.9	2814	F 30.9	2940	G 37.3	3065	H 43.9						
19600	2641	A 18.1	2705	B 20.9	2764	23.6	2825	26.6	2884	29.6	3001	35.9	3115	42.6								
21300	2860	A 22.7	2918	B 25.7	2975	28.7	3030	31.8	3085	35.0	3192	41.6										
23000	3079	28.0	3133	31.2	3186	34.4																

MODEL 277 AcoustaFoil								REGION A		REGION B		REGION C		REGION D		REGION E						
CFM	1"SP		2"SP		3"SP		4"SP		5"SP		8"SP		10"SP		12"SP		14"SP		16"SP		19"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7000	816	1.5	994	2.9	1172	4.5	1336	6.3	1491	E 8.2	1873	14.4	2094	19.1	2293	24.2	2476	29.5	2642	35.0	2877	43.9
9100	966	2.2	1101	3.8	1240	5.5	1379	7.5	1516	F 9.7	1886	16.8	2098	21.9	2299	27.5	2481	33.2	2650	39.3	2886	48.9
11200	1134	3.3	1242	5.0	1354	7.0	1465	9.1	1580	G 11.5	1908	19.2	2115	24.9	2305	30.8	2483	37.0	2657	43.8	2896	54.3
13300	1309	4.8	1401	6.6	1494	8.8	1586	H 11.1	1680	I 13.6	1966	J 22.0	2147	K 27.9	2336	L 34.8	2505	M 41.5	2665	N 48.3	O 59.4	P 2897
15400	1488	6.7	1568	8.8	1647	11.1	1727	I 13.6	1805	J 16.1	2052	K 25.1	2213	L 31.4	2377	M 38.4	2541	N 45.9	2698	O 53.6	P 2897	
17500	1671	9.1	1742	11.5	1810	13.9	1881	16.6	1949	19.3	2163	28.7	2308	35.6	2452	42.8	2591	50.3	2741	58.7		
19600	1855	12.2	1918	14.7	1981	C 17.4	2043	20.2	2106	23.2	2293	33.0	2418	40.0	2547	47.7	2680	55.9	2803	64.0		
21700	2040	15.9	2098	18.7	2155	D 21.6	2212	24.6	2267	E 27.7	2438	F 38.2	2550	G 45.5	2664	H 53.4	2778	I 61.6	2892	J 70.1		
23800	2246	20.4	2281	23.5	2333	26.5	2384	29.7	2434	33.0	2589	43.9	2690	51.6	2795	60.0	2899	68.6				
25900	2414	A 25.7	2464	B 29.0	2512	32.3	2560	35.7	2607	39.3	2748	50.6	2843	58.9								
28000	2601	32.0	2648	35.4	2692	39.0	2738	42.7	2780	46.3												

MODEL 307 AcoustaFoil								REGION A		REGION B		REGION C		REGION D		REGION E						
CFM	1"SP		2"SP		3"SP		4"SP		6"SP		8"SP		10"SP		12"SP		14"SP		16"SP		18"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	751	1.93	906	3.66	1058	5.64	1205	7.88	1465	I 12.8	1685	18.2	1887	24.3	2067	30.8	2226	37.4	2379	44.5	2526	52.3
11700	896	2.94	1013	4.88	1134	7.14	1252	9.59	1483	E 15.1	1699	17.7	1891	27.7	2067	34.6	2236	42.1	2384	49.6	2526	57.6
14400	1055	4.40	1149	6.57	1242	8.98	1340	11.7	1538	F 17.8	1725	24.3	1907	31.4	2080	39.0	2245	47.2	2389	55.1	2531	63.6
17100	1221	6.41	1298	8.78	1378	11.5	1458	H 14.4	1622	I 20.9	1788	28.0	1950	35.7	2107	43.7	2262	52.5	2403	61.0	2545	70.4
19800	1391	9.09	1458	11.7	1524	14.6	1593	J 17.7	1734	K 24.7	1874	32.1	2015	40.2	2158	M 48.9	2292	N 57.6	2431	O 67.3	2565	P 77.2
22500	1562	12.5	1623	15.4	1681	18.5	1740	21.8	1861	29.1	1985	37.1	2109	45.7	2231	54.5	2362	64.6	2486	74.5		
25200	1736	16.7	1790	20.0	1842	23.3	1895	26.9	2001	34.5	2112	43.1	2220	51.9	2330	61.4	2442	71.4	2555	81.9		
27900	1910	A 21.9	1959	B 25.4	2008	C 29.1	2055	32.9	2152	E 41.2	2249	49.9	2346	59.2	2448	69.4	2549	80.0				
30600	2086	A 28.2	2131	B 32.0	2176	36.0	2219	40.0	2306	48.6	2395	57.9	2483	67.7	2574	78.2						
33300	2262	35.6	2305	39.7	2346	44.0	2386	48.4	2466	57.5	2544	66.9										
36000	2439	44.2	2478	48.7	2516	53.2	2554	57.8														

MODEL 337 AcoustaFoil								REGION A		REGION B		REGION C		REGION D		REGION E					
CFM	1"SP		2"SP		3"SP		4"SP		6"SP		8"SP		10"SP		12"SP						

CLASS 2/3/4 PERFORMANCE TABLES PLR WHEEL

MODEL 248 PLR

CFM	1"SP		2"SP		3"SP		4"SP		6"SP		8"SP		10"SP		12"SP		14"SP		16"SP		18"SP		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
6000	893	1.51	1078	2.74	1255	4.22	1421	5.90	1724	9.79	E	16.1	2227	21.4	2456	30.0	2635	36.1	2819	43.1	2998	54.3	
8000	1080	2.49	1222	3.91	1361	5.53	1493	7.28	1754	11.4		18.5	2257	24.0		2504	33.6	2681	40.4	2839	47.0	3044	59.6
10000	1280	3.93	1400	5.60	1515	7.42	1623	9.33	1843	13.7		21.8	2331	27.5		2439	31.9	2598	38.4	2751	45.2	2894	51.9
12000	1486	5.91	1596	7.93	1694	9.97	1787	12.1	1972	16.8		20.6	2289	26.2		2448	31.4	2584	37.6	2719	44.1	2991	58.5
14000	1697	8.55	1796	10.9	1884	13.2	1967	15.6	2128	20.6		25.5	2260	37.6		2740	44.0	2868	51.2	2985	58.2	3113	66.2
16000	1909	11.9	2002	14.6	2084	17.3	2161	20.0	2305	23.0		28.2	2802	44.9		2914	51.8	3026	59.1	3136	66.7	3122	66.1
18000	2124	16.2	2210	19.2	2287	22.2	2358	25.2	2490	31.2		35.5	2620	40.0		2740	44.0	2868	51.2	2985	58.2		
20000	2341	21.4	2420	B 24.8	2493	28.1	2561	C 31.5	2686	38.2		41.4	2702	44.9		2995	53.5	3099	61.0	3202	68.7		
22000	2559	A 27.7	2634	31.4	2703	35.2	2767	38.8	2884	46.1		53.5	3086	55.3		3191	63.3						
24000	2778	A 35.2	2847	39.2	2913	43.3	2975	47.4															
26000	2997	43.9	3062	48.3	3124	52.7	3183	57.2															

MODEL 278 PLR

CFM	1"SP		2"SP		4"SP		6"SP		8"SP		10"SP		12"SP		14"SP		16"SP		18"SP		20"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7000	742	1.64	933	3.16	1269	6.87	1568	13.7	1794	19.2	2003	E 25.2	2198	36.1	2373	43.6	2535	51.4	2696	66.4	2837	75.3
9700	896	2.76	1038	4.51	1315	8.77		1624	16.7	1828	22.8	2020	29.3	2242	41.8	2398	49.6	2551	57.9	2862		
12400	1074	4.48	1185	6.51	1409	11.3		1541	14.6	1900	27.1	2071	34.1	2156	40.1	2268	47.1	2403	55.7			
15100	1264	6.99	1355	9.31	1692	18.9		1850	25.4	2131	D 38.9	2242	41.8	2450	56.4	2593	65.3	2729	74.3			
17800	1460	10.5	1537	13.1	1727	18.0		1861	24.3		1999	31.5	2130	48.0	2403	55.7	2532	64.5	2663	74.0		
20500	1659	15.0	1727	18.0	1921	24.1		2039	31.1		2161	38.8	2157	64.4	2365	73.8	2754	83.8	2872	94.1		
23200	1860	20.9	1921	24.1	2118	31.8		2225	39.4		2330	47.4	2438	56.1	2655	75.0	2757	84.5	2867	95.1		
25900	2063	28.1	2118	31.8	2317	41.0		2413	49.2		2510	C 57.9	2607	67.2	2707	77.1	2802	86.9	2898	97.3		
28600	2267	37.0	2317	41.0	2413	49.2		2510	57.9		2695	C 70.2	2785	80.1	2874	90.4						
31300	2471	47.7	2517	A 52.0	2608	61.0		2784	74.5													
34000	2676	60.2	2720	A 64.9	2802	B 74.5																

MODEL 308 PLR

CFM	1"SP		2"SP		4"SP		6"SP		8"SP		10"SP		12"SP		14"SP		16"SP		18"SP		20"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	681	2.16	848	4.06	1144	8.71	1390	14.2	1613	E 23.6	1795	30.9	1977	43.8	2125	52.5	2277	62.5	2406	71.8	2541	89.8
11900	802	3.35	932	5.55	1181	10.8	1407	16.8		1640	27.4	1815	35.4	2001	49.4	2151	59.2	2284	68.7	2415		79.0
14800	940	5.12	1045	7.62	1253	13.4	1453	20.1		1690	32.0	1848	40.4	2049	56.2	2178	65.7	2311	76.4	2437		87.2
17700	1089	7.65	1174	10.4	1350	16.8	1523	24.1	1763	37.4	1905	46.3	2114	63.8	2235	74.1	2358	85.3	2482	97.3		
20600	1242	11.1	1313	14.0	1464	21.0	1614	28.8	1856	43.8	1987	53.7	2196	72.5	2312	84.0	2419	95.1	2536	108		
23500	1398	15.5	1460	18.7	1589	26.1	1724	34.7	1843	41.6	1961	51.3	2288	82.1	2397	94.5	2497	106	2604	120		
26400	1556	21.0	1612	24.6	1725	32.5	1843	41.6	1970	49.6	2079	60.1	2234	81.7	2342	94.0	2588	107	2701	120		
29300	1715	27.8	1765	B 31.7	1867	C 40.2	1974	59.2	2106	70.1	2299	81.4	2394	93.4	2490	106	2588	119				
32200	1875	A 36.1	1921	40.3	2012	C 49.2	2162	60.0	2247	70.4	2334	81.7	2514	107	2601	120						
35100	2036	45.9	2078	50.4	2134	72.5	2392	83.4	2472	95.3	2550	107										
38000	2197	57.3	2236	62.2	2314	72.5	2522	111	2321	126	2381	138										

MODEL 338 PLR

CFM	1"SP		2"SP		4"SP		6"SP		8"SP		10"SP		12"SP		14"SP		16"SP		18"SP		20"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP								
11000	621	2.64	774	4.99	1042	10.6	1266	17.1	1465	28.6	1636	37.6	1789									

CLASS 2/3 PERFORMANCE TABLES ECF-9

MODEL 40 ECF-9

REGION
AREGION
BREGION
CREGION
DREGION
E

CFM	1"SP		2"SP		3"SP		4"SP		6"SP		7"SP		8"SP		9"SP		10"SP		11"SP		12"SP		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP															
14000	516	3.06	650	6.03	797	9.59	910	13.3	1093	21.6	1179	26.4	1256	31.3	1327	36.3	1397	41.7	1465	47.4	1529	53.1	
17500	584	4.20	691	7.44	798	11.3	915	15.5	1121	24.9	1201	29.9	1275	35.0	1345	40.4	1408	45.7	1478	52.0	1537	57.8	
21000	657	5.63	753	9.40	840	13.4	928	17.9	1121	28.1	1217	33.7	1299	39.5	1369	45.1	1435	51.0	1494	56.8	1558	63.5	
24500	736	7.50	821	11.7	900	16.2	975	20.9	1127	31.6	1207	37.4	1295	43.7	1378	50.0	1449	56.2	1517	62.9	1578	69.5	
28000	820	9.84	892	14.4	966	19.4	1034	24.6	1165	35.6	1231	41.8	1298	48.1	1368	54.8	1447	62.1	1525	69.6	1589	76.2	
31500	910	12.8	967	17.6	1037	23.2	1100	28.9	1219	40.7	1276	46.9	1335	53.6	1392	60.3	1450	67.3	1518	75.4	1582	83.1	
35000	1001	16.4	1048	21.5	1109	27.4	1168	33.5	1280	46.4	1332	52.9	1382	59.5	1436	66.8	1487	74.0	1541	81.9	1595	90.0	
38500	1094	20.7	1133	26.2	1183	32.3	1239	38.8	1345	52.8	1393	59.7	1442	66.9	1491	74.4	1536	81.7	1587	90.3			
42000	1187	25.8	1221	31.7	1264	38.2	1313	45.0	1415	60.0	1462	67.7	1507	75.3	1549	82.5	1596	91.0					
45500	1281	31.7	1311	38.0	1347	44.8	1390	52.0	1484	67.5	1529	75.5	1573	83.9									
49000	1375	A	38.5	1403	B	45.3	1434	52.3	1470	59.8	1556	76.0											

MODEL 44 ECF-9

REGION
AREGION
BREGION
CREGION
DREGION
E

CFM	1"SP		2"SP		3"SP		4"SP		6"SP		7"SP		8"SP		9"SP		10"SP		11"SP		12"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
15000	441	3.19	587	6.71	713	10.6	815	15.1	986	25.1	1062	30.7	1131	36.3	1201	42.7	1265	49.1	1326	55.7	1382	62.2
20000	508	4.65	610	8.48	715	13.0	832	18.2	1004	28.9	1076	E 34.8	1148	41.3	1210	47.6	1271	54.4	1332	61.6	1389	69.1
25000	583	6.56	672	11.1	752	15.9	836	21.4	1017	33.9	1100	E 40.5	1172	47.4	1233	54.0	1294	61.3	1349	68.5	1402	76.0
30000	666	9.18	744	14.4	815	19.9	861	25.5	1020	38.7	1090	45.6	1171	53.4	1246	61.2	1311	68.9	1373	77.1	1429	85.3
35000	757	12.6	820	18.3	885	24.5	945	30.9	1061	44.6	1118	51.9	1179	60.0	1238	68.0	1309	77.3	1374	85.9	1435	94.5
40000	852	17.1	900	23.1	960	30.0	1017	37.3	1121	52.0	1166	59.5	1220	67.7	1271	76.3	1323	85.3	1376	94.5	1428	104
45000	949	22.7	988	29.3	1037	36.4	1089	44.2	1187	D 60.6	1232	68.7	1278	77.3	1323	86.3	1369	95.7	1414	105		
50000	1047	29.5	1079	36.6	1119	C 44.2	1165	52.4	1259	70.4	1303	79.7	1345	88.9	1384	97.6	1424	107				
55000	1146	37.6	1175	45.4	1208	G 53.6	1247	62.2	1334	81.4	1376	91.4	1411	93.6								
60000	1246	A	47.3	1271	55.5	1299	64.3	1332	73.5													
65000	1346	B	58.6	1369	B	67.5	1393	76.7	1422	86.6												

MODEL 49 ECF-9

REGION
AREGION
BREGION
CREGION
DREGION
E

CFM	1"SP		2"SP		3"SP		4"SP		6"SP		7"SP		8"SP		9"SP		10"SP		11"SP		12"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
20000	408	4.31	522	8.57	646	14.1	754	20.4	908	32.9	976	39.8	1036	46.6	1095	54.1	1152	62.0	1205	70.0	1252	77.7
26500	470	6.15	561	11.3	645	16.8	736	23.1	921	39.0	997	47.2	1063	55.4	1121	63.6	1175	71.9	1228	80.6	1280	90.0
33000	539	8.56	621	14.7	690	21.0	759	27.8	901	43.0	977	51.8	1052	E 61.6	1125	71.9	1190	82.3	1245	91.8	1301	103
39500	610	11.7	685	18.8	751	26.2	810	33.8	923	49.9	981	58.5	1043	68.0	1105	78.0	1165	88.2	1233	100	1292	112
46000	684	15.7	755	23.8	815	32.0	871	40.8	972	58.7	1020	77.7	1069	87.9	1120	87.9	1168	97.7	1221	109	1274	120
52500	760	20.6	826	29.6	883	39.0	934	48.3	1030	68.5	1073	78.5	1117	89.2	1158	99.6	1202	111	1246	122	1286	132
59000	839	26.8	898	36.7	954	47.1	1002	57.5	1092	79.5	1135	D 90.9	1175	102	1214	114	1250	125	1288	137	1328	150
65500	921	34.3	972	45.0	1025	56.3	1073	67.9	1157	91.7	1197	104	1236	116	1272	128	1310	142	1343	154		
72000	1004	43.2	1048	B 54.6	1096	66.7	1143	79.3	1225	105	1263	118	1299	132	1334	145						
78500	1087	53.8	1126	B 65.8	1170	79.0	1215	C 92.5	1287	108	1331	134										
85000	1171	A	66.2	1206	79.0	1246	93.0	1287	107													

MODEL 54 ECF-9

REGION
AREGION
BREGION
CREGION
DREGION
E

CFM	1"SP		2"SP		3"SP		4"SP		6"SP		7"SP		8"SP		9"SP		10"SP		11"SP		12"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP														
21000	370	4.76	481	9.76	590	16.0	679	22.8	822	37.5	887	46.0	944	54.4	1001	63.6	1055	73.2	1105	82.9	1154	93.2
28500	425	6.87	515	12.9	597	19.4																

MODEL 60 ECF-9

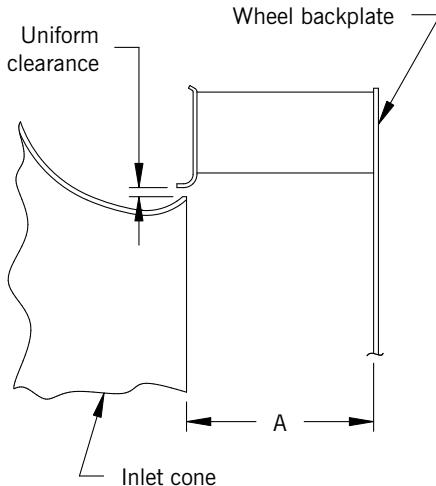
CFM	1"SP		2"SP		3"SP		4"SP		6"SP		7"SP		8"SP		9"SP		10"SP		11"SP		12"SP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
25000	331	5.64	434	11.7	531	19.1	614	27.5	743	45.4	801	55.5	854	66.0	903	76.7	953	88.7	995	99.5	1040	112
33500	376	7.97	460	15.1	536	23.0	615	32.2	751	52.5	812	64.1	865	75.5	914	87.1	961	99.6	1006	113	1048	125
42000	427	11.0	502	19.4	566	28.3	629	38.0	752	59.9	811	71.9	867	84.4	921	98.1	972	112	1017	126	1060	140
50500	477	14.6	550	24.6	610	34.9	665	45.7	767	68.6	816	80.8	869	94.6	922	109	972	124	1018	139	1063	154
59000	531	19.3	601	30.7	657	42.2	708	54.5	799	79.5	845	93.1	886	106	931	121	974	136	1017	151	1064	169
67500	588	25.1	651	37.8	708	51.1	755	64.3	842	92.3	882	10.7	921	121	960	137	999	153	1034	168		
76000	646	32.2	703	46.1	758	60.8	805	75.7	888	107	925	122	962	138	997	154	1034	172	1067	188		
84500	706	40.7	758	55.8	809	72.1	855	88.1	935	122	971	139	1008	157	1041	174						
93000	767	50.8	815	67.4	862	84.9	907	103	985	139	1021	D										
101500	829	62.7	872	80.4	916	99.2	958	118	1035	157												
110000	892	A 76.4	931	B 95.4	972	115	1011	C 136														

INSTALLATION

WHEEL-INLET CONE CLEARANCES

For optimum Plug Fan performance the wheel-to-inlet cone positioning must be uniform around the wheel inlet and conform to the dimensions listed here. Use of the integral inlet cone assembly as described on pages 5 and 20 will ensure that this spacing is maintained.

Size	DIMENSIONS [INCHES]	
	A	AcF/PLR
12	4 1/2	NA
15	5 1/2	NA
18	7	7 7/16
20	7 7/16	8 1/8
22	8 1/4	9
24	9 5/16	9 15/16
27	10 3/16	10 7/8
30	11 1/4	12
33	12 1/4	13 3/16
36	13 3/8	14 1/4
40	14 13/16	15 13/16
44	16 1/4	17 3/8
49	17 15/16	19 3/16
54	19 13/16	21 1/8
60	21 13/16	23 7/16

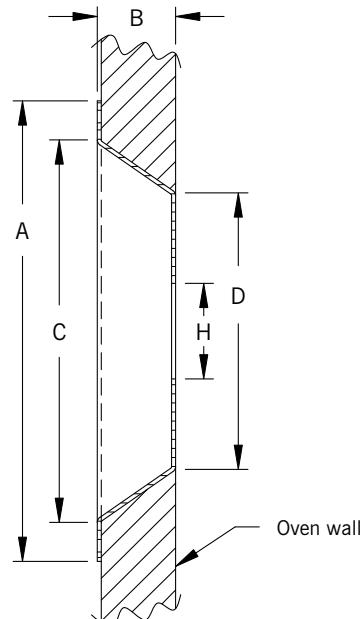


SHAFT-SEAL CONE

800°F. Plug Fans* are available without insulation panels but in all cases are furnished with recessed shaft-seal cone assemblies. In order to operate correctly, the shaft-seal operates in a recessed cone. Customer's oven wall must provide sufficient space for insertion of the recessed cone. The assembly is an integral part of Plug Fans furnished with insulated panels.

*Option for Sizes 44 and 49 450°F.

DIMENSIONS [INCHES]					
Size	Shaft Seal Size	A	B	C	D
18-40	All	18 3/4	3 1/8	15 1/4	11
44-49	All	12 1/4	5/8	10 1/4	9
54,60	2 15/16 3 7/16 3 15/16 4 7/16	16 5/8	1 3/4	14 1/4	11



MATERIAL SPECIFICATIONS [POUNDS, WR² IN LB.-FT.²]

WHEEL WEIGHTS													
Size	Acoustafoil					PLR			ECF-9				
	Class 2		Class 3		Class 4	Class 2	Class 3	Class 4	Class 2	Class 3	Class 3	Class 3	
	Carbon Steel	SST	Carbon Steel	SST	Carbon Steel				Carbon Steel	SST	Carbon Steel	SST	
12	7	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	
15	12	NA	NA	NA	NA	21	NA	NA	NA	NA	NA	NA	
18	31	47	44	50	49	32	43	48	32	47	44	46	
20	47	57	56	64	61	50	58	61	37	55	49	54	
22	54	64	63	74	73	59	63	67	54	70	57	69	
24	71	101	95	101	100	74	87	100	70	97	79	98	
27	91	116	114	116	115	91	103	117	82	114	91	115	
30	103	153	142	153	151	115	127	152	98	139	121	140	
33	117	175	157	182	180	137	147	173	115	161	140	162	
36	174	263	251	271	268	206	268	261	178	240	256	241	
40	194	305	304	313	310	214	325	339	188	294	310	295	
44	252	391	349	414	410	289	372	438	258	358	356	359	
49	347	621	551	638	631	377	589	661	347	563	556	564	
54	415	691	727	745	788	517	825	824	416	759	698	760	
60	529	897	877	906	916	647	978	953	538	911	851	912	

WHEEL WR ²													
Size	Acoustafoil					PLR			ECF-9				
	Class 2		Class 3		Class 4	Class 2	Class 3	Class 4	Class 2	Class 3	Class 3	Class 3	
	Carbon Steel	SST	Carbon Steel	SST	Carbon Steel				Carbon Steel	SST	Carbon Steel	SST	
12	1	NA	NA	NA	NA	2	NA	NA	NA	NA	NA	NA	
15	3	NA	NA	NA	NA	4	NA	NA	NA	NA	NA	NA	
18	10	13	12	14	14	10	11	12	10	14	12	16	
20	17	21	21	26	26	19	24	27	15	20	17	22	
22	22	29	26	36	36	26	28	32	23	33	25	35	
24	38	55	43	55	54	43	46	53	38	53	42	55	
27	63	79	65	79	78	64	69	78	56	98	59	100	
30	91	121	115	121	120	104	110	120	86	122	104	124	
33	121	174	154	187	185	146	155	170	117	175	149	177	
36	232	304	259	319	316	278	275	298	233	298	262	300	
40	306	446	407	508	503	355	461	514	308	457	412	459	
44	501	755	597	823	814	568	628	860	504	703	604	705	
49	833	1251	976	1321	1307	903	1059	1362	842	1165	990	1167	
54	1240	1777	1782	2003	2125	1608	2138	2200	1252	2036	1781	2038	
60	1910	2972	2777	3121	3103	2433	3238	3205	1930	3148	2790	3150	

COMBUSTION AIR CHOICES

Sizes 12 and 15 General Purpose Fans with aluminum AcoustaFoil wheels have a maximum operating temperature of 200°F. Sizes 18 through 36 General Purpose Fans with AcoustaFoil wheels and all General Purpose Fans with BC and PLR wheels can be modified to handle airstream temperatures to 650°F. . . air temperature surrounding the bearings must not exceed 120°F. or the motor's rated ambient temperature.

Heat-fan construction includes a shaft cooler with guards, an insulating motor heat shield, and an industrial-grade coating capable of withstanding temperatures from 201°F. to 650°F.



MATERIAL SPECIFICATIONS [INCHES, POUNDS, WR² IN LB.FT.²]

CLASS 2 PLUG FANS												
Size	Motor Frame Size	Bare Fan Weight (Less Motor and Shaft)						B†	Shaft diameter			
		200°F./450°F.	800°F. Uninsulated (4")	800°F. Uninsulated (6")	800°F. Insulated (4")	800°F. Insulated (6")	800°F./1000°F. Insulated (8")		200°F./450°F.	800°F.	1000°F.	
		at wheel	at bearings	at wheel	at bearings	at wheel	at bearings		at wheel & at bearings	at wheel & at bearings	at wheel & at bearings	
12	All	127	144	146	167	--	--	A	17/16	17/16	115/16	115/16
15		127	144	146	167	--	--	A	111/16	111/16	115/16	115/16
18		202	223	225	260	277	279	A	115/16	115/16	115/16	23/16
20		206	241	244	278	286	289	A	115/16	115/16	115/16	27/16
22		206	241	244	278	286	289	A	115/16	115/16	27/16	27/16
24		315	342	345	392	415	418	B	23/16	23/16	27/16	27/16
27		315	342	345	392	415	418	B	23/16	23/16	27/16	27/16
30		390	426	429	493	523	526	B	23/16	23/16	27/16	27/16
33		390	426	429	493	523	526	B	23/16	23/16	27/16	27/16
36		482	513	516	604	867	870	B	23/16	23/16	211/16	211/16
40		482	513	516	604	867	870	B	27/16	27/16	211/16	211/16
44		993	1073	1078	1133	1223	1228	D	211/16	37/16	211/16	37/16
49		993	1073	1078	1133	1223	1228	D	215/16	37/16	215/16	37/16
54	405T	1660	1730	1740	1830	1860	1890	D	215/16	215/16	37/16	37/16
54		444T/445T	1830	1910	1910	2010	2040	D	215/16	215/16	37/16	37/16
60	405T	1840	1910	1910	2030	2060	2100	D	215/16	215/16	37/16	37/16
60	444T/445T	2020	2090	2100	2210	2250	2290	D	215/16	215/16	37/16	37/16

Bearing Type: A- Standard Duty Ball, Concentric Lock B- Medium Duty Ball, Concentric Lock D-Spherical Roller, 2 Bolt

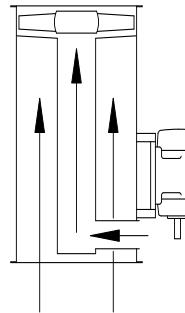
CLASS 3 PLUG FANS												
Size	Motor Frame Size	Bare Fan Weight (Less Motor and Shaft)						Bearing Type†			Shaft diameter	
		200°F./450°F.	800°F. Uninsulated (4")	800°F. Uninsulated (6")	800°F. Insulated (4")	800°F./1000°F. Insulated (8")	800°F./1000°F. Insulated (8")	200°F./450°F.	800°F./1000°F.	1300°F.*	200°F./450°F.	800°F./1000°F.
		at wheel	at bearings	at wheel	at bearings	at wheel	at bearings	at wheel & at bearings	at wheel & at bearings	at wheel & at bearings	at wheel & at bearings	
18	All	262	286	288	323	356	359	A	A	C	23/16	27/16
20		262	286	288	323	356	359	A	A	C	23/16	27/16
22		268	329	332	366	428	431	A	B	C	27/16	211/16
24		420	454	457	503	537	540	B	B	C	27/16	211/16
27		420	454	457	503	537	540	B	B	C	27/16	211/16
30		589	622	625	708	808	812	C	C	C	211/16	215/16
33		589	622	625	708	808	812	C	C	C	211/16	215/16
36		650	680	683	771	817	821	C	C	C	211/16	215/16
40		650	680	683	771	817	821	C	C	C	211/16	215/16
44		968	1013	1018	1053	1128	1133	D	D	D	37/16	37/16
49		968	1013	1018	1053	1128	1133	D	D	D	37/16	37/16
54	405T	1730	1810	1810	1910	1940	1970	D	D	D	37/16	315/16
54		1910	1990	2000	2090	2120	2150	D	D	D	37/16	315/16
54	447T	2040	2250	2250	2350	2380	2410	D	E	E	37/16	47/16
60	405T	1910	2100	2110	2220	2260	2300	D	E	E	37/16	47/16
60	444T/445T	2090	2300	2310	2420	2460	2500	D	E	E	37/16	47/16
60	447T/449T	2470	2600	2610	2720	2760	2800	D	E	E	315/16	47/16

Bearing Type: A- Standard Duty Ball, Concentric Lock B- Medium Duty Ball, Concentric Lock
C-Heavy Duty Ball, Concentric Lock D-Spherical Roller, 2 Bolt E- Spherical Roller, 4 Bolt

EXHAUST FAN CHOICES

New York Blower Duct Fans, with heat-fan construction, are ideal for industrial oven and dryer exhaust systems where pressure requirements are minimal and compact, lightweight designs are advantageous. With heat-fan construction, Duct Fans are capable of handling airstream temperatures to 350°F in ambient environments up to 120°F.

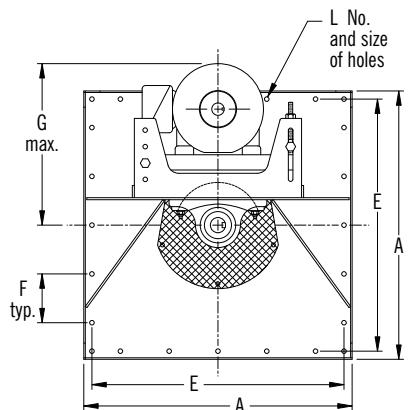
For higher temperature applications, the Duct Fan, with heat-fan construction, induces a flow of cooler, ambient air through the belt well and inner tube, cooling the fan's internal components. Depending on temperature requirements, modifications include high-temperature fan wheel, special drive components, and modifications to provide internal ambient air cooling.



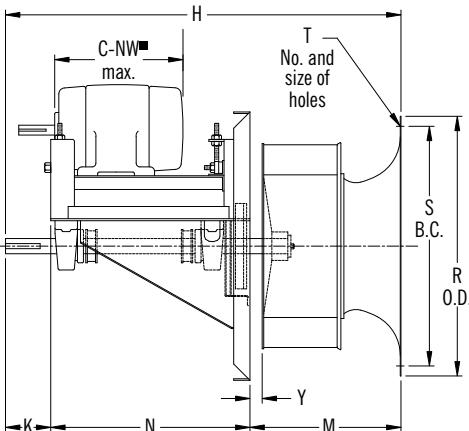
DRAWINGS

■ Plug Fan motors are mounted as space permits as measured by dimension C-NW. To determine fit, compare the desired motor's frame size with the frame size listed below. If the frame size and C-NW dimension are no larger than that shown, the combination is satisfactory. If the C-NW dimension is larger than that shown, a different motor or fan must be selected.

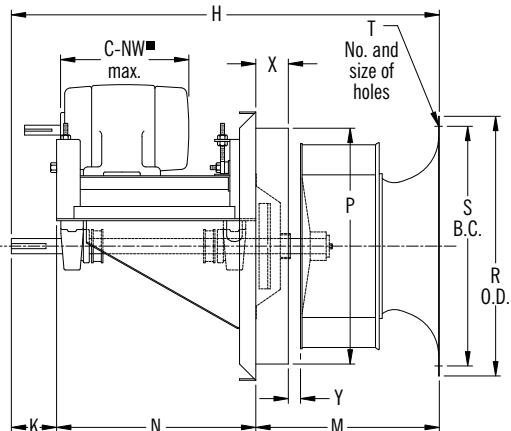
CLASS 2 SIZES 12-40



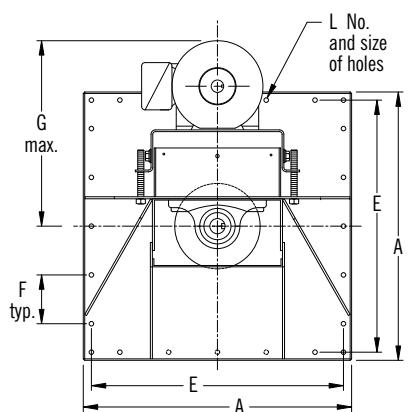
200°F./450°F.



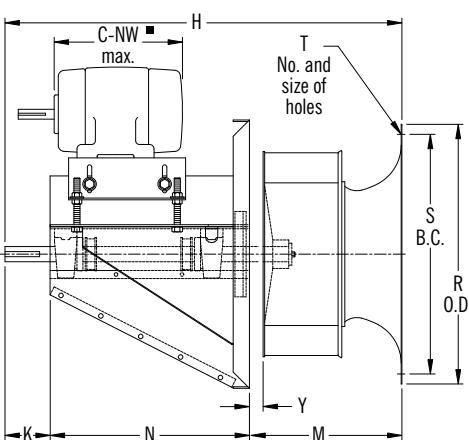
800°F.-1000°F.



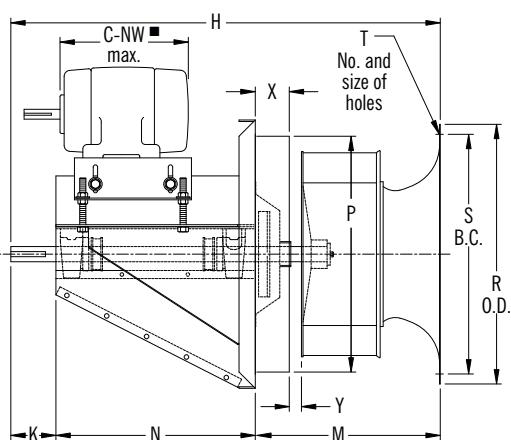
CLASS 3 SIZES 18-40



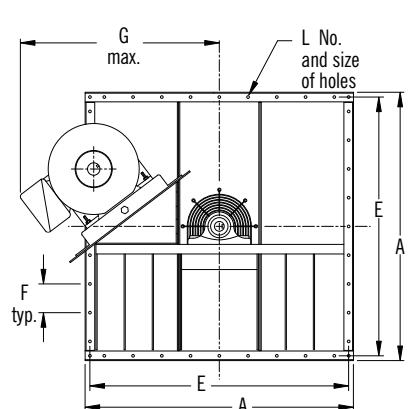
200°F./450°F.



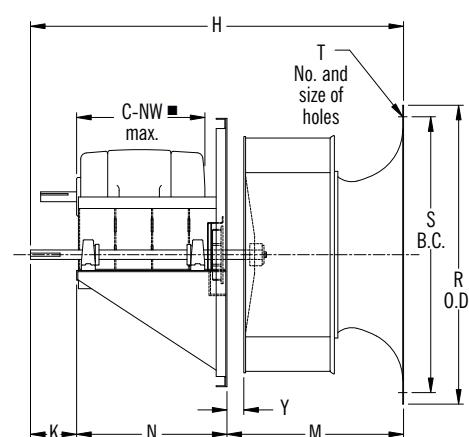
800°F.-1000°F.-1300°F.



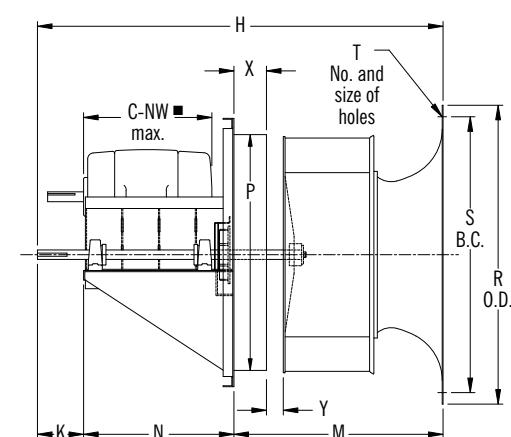
CLASS 2*/3 SIZES 44-60



200°F./450°F.



800°F.-1000°F.-1300°F.



*Class 2 Sizes 44-60 Plug Fans are only available to 1000°F.

Y = 1½" on sizes 12-49. Y = 2½" on sizes 54-60. X = 4" or 6" on 800°F. fans, 6" or 8" on 1000°F./1300°F. fans.

Dimensions not to be used for construction unless certified.

L = All holes 9/16" diameter and on centerline. Sizes 12-27, 24 holes; Sizes 30-40, 32 holes; Sizes 44-54, 40 holes. Size 60, 48 holes.

The New York Blower Company has a policy of continual product improvement and reserves the right to change designs and specifications without notice.

DIMENSIONS AND SPECIFICATIONS [INCHES, POUNDS, WR² IN LB.-FT.²]

DIMENSIONS [INCHES]—for drawings on page 24																										
Size	Wheel dia.*	A	E	F●	G max.		H (AcF, PLR Wheels)				K	M (AcF, PLR Wheels)				N	P†	R	S	T	Wheel cone clear.		Class 2		Class 3	
					Class		200°F./ 450°F.	800°F.	1000°F./1300°F.	6" panel		200°F./ 450°F.	800°F.	800°F.‡, 1000°F./1300°F.	4" panel	6" panel	8" panel				C-NW [■] max.	Max. motor frame	C-NW [■] max.	Max. motor frame		
							2	3																		
12	12½	21	19	4	18	—	34½	38½	—	—	3	10	14	—	—	21½	17	15½	14½	8-11/16	4½	17	215T	—	—	
15	15	21	19	4	18	—	35½	39¾	—	—	3	11½	15½	—	—	21½	17	18½	17½	8-11/16	5½	17	215T	—	—	
18	18½	28	26	6	26¾	25½	42½	46½	48½	50½	4	14	18	20	22	24½	21½	22½	21½	16-7/8	7	22½	284T	22½	284T	
20	20½	28	26	6	26¾	26	43½	47½	49½	51½	4	15½	19½	21½	23½	24½	23½	24½	23½	16-7/8	7½	22½	284T	22½	284T	
22	22½	28	26	6	26¾	26	44½	48½	50½	52½	4	16½	20½	22½	24½	24½	27½	26½	26½	16-7/8	8½	22½	284T	22½	284T	
24	24½	33	31	6	29½	27½	50	54	56	58	5	18½	22½	24½	26½	26½	29½	30½	29½	16-1	9½	25½	324T	25½	324T	
27	27	33	31	6	29½	28½	51½	55½	57½	59½	5	19¾	23¾	25¾	27¾	26¾	29	33½	31¾	16-1	10½	25½	324T	25½	324T	
30	30	39	37	5½	30½	30½	57½	61½	63½	65½	6	21½	25½	27½	29½	29½	34	36½	35½	16-1	11½	27½	364T	27½	364T	
33	33	39	37	5½	30½	30½	59½	63½	65½	67½	6	23½	27½	29½	31½	29½	34	39½	38½	16-1	12½	27½	364T	27½	364T	
36	36½	46	44	6	31¾	31¾	63½	67½	69½	71½	7	26¾	30¾	32¾	34¾	30½	41	44½	42½	16-1	13¾	29	365T	29	365T	
40	40½	46	44	6	31¾	31¾	66¾	70½	72½	74½	7	28½	32½	34½	36½	30½	41	47½	46½	24-1	14¾	29	365T	29	365T	
44	44½	56	54	6	52	52	73½	77½	79½	81½	8	31¾	35¾	37½	39¾	34½	51	52½	51½	24-1	16½	31½	405T	31½	405T	
49	49	56	54	6	52	52	77	81	83	85	8	34½	38½	40½	42½	34½	51	57½	56½	24-1	17½	31½	405T	31½	405T	
54	54½	62	59	6	NA	NA					8	39½	43½	45½	47½	See below.	56	63	61½	24-1	19½	24-1	37½	24-1	37½	
60	60	69	66	6	NA	NA					8½	43½	47½	49½	51½		63	69½	68½	24-1	21½	37½	24-1	37½		

*O.D. of blades. ●Plus corner holes. ‡800° for 6" panel only. †P is square dimension of panel. Tolerance: ± 1/8"

Mounting panel thickness: Sizes 12-22, 10 gauge; Sizes 24-40, 7 gauge; Sizes 44/60, 1/4". Sizes 54/60, 3/8".

■In some cases, larger frame motors may fit. In all cases, maximum motor frame size is limited to C-NW maximum dimension.

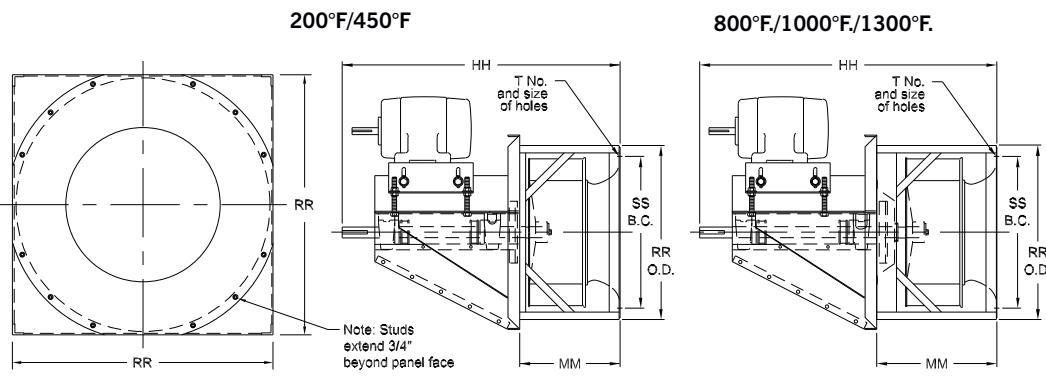
SIZE 54 AND 60 DIMENSIONS AND SPECIFICATIONS																				
Size	Motor Frame	H								HH								N	Max C-NW	
		200°F./ 450°F.		800°F.		1000°F. & 1300°F.				200°F./ 450°F.		800°F.		1000°F. & 1300°F.						
		4"	6"	4"	6"	6"	8"			4"	6"	4"	6"	6"	8"					
54	≤405T	84¾	88¾	90¾	90¾	90¾	92¾	78	82	84	84	84	86	86	86	86	37½	34¾	34¾	
54	444T/445T	91½	95½	97½	97½	97½	99½	84¾	88¾	90¾	90¾	90¾	92¾	92¾	92¾	92¾	44½	41¾	41¾	
54	447T	96¾	100¾	102¾	102¾	102¾	104¾	89½	93½	95½	95½	95½	97½	97½	97½	97½	49½	46¾	46¾	
60	≤405T	89½	93½	95½	95½	95½	97½	81½	85½	87½	87½	87½	89½	89½	89½	89½	37½	34¾	34¾	
60	444T/445T	95¾	99¾	101¾	101¾	101¾	103¾	88½	92½	94¾	94¾	94¾	96¾	96¾	96¾	96¾	44½	41¾	41¾	
60	447T/449T	106¼	110¼	112¼	112¼	112¼	114¼	98½	102¾	104¾	104¾	104¾	106¾	106¾	106¾	106¾	54½	51½	51½	

Size	Class	Motor Frame Size	Uninsulated						Insulated											
			200°F./ 450°F.		800°F.				6"		800°F.				6"		1000°F.			
					6"	8"	6"	8"			6"	8"	6"	8"			6"	8"		
54	2	405T	1760	1890	1900	1990	2020	2020	2050	-	-	-	-	-	-	-	-	-	-	
54	2	444T/445T	1930	2070	2070	2170	2200	2200	2230	-	-	-	-	-	-	-	-	-	-	
60	2	405T	1950	2100	2100	2220	2250	2250	2290	-	-	-	-	-	-	-	-	-	-	
60	2	444T/445T	2130	2280	2290	2400	2440	2440	2480	-	-	-	-	-	-	-	-	-	-	
54	3	405T	1820	1970	1980	2070	2100	2100	2130	2130	2130	2130	2130	2130	2130	2130	2130	2130	2130	
54	3	444T/445T	2000	2150	2160	2250	2280	2280	2320	2320	2320	2320	2320	2320	2320	2320	2320	2320	2320	
54	3	447T	2130	2410	2420	2510	2540	2540	2570	2570	2570	2570	2570	2570	2570	2570	2570	2570	2570	
60	3	405T	2020	2290	2300	2410	2450	2450	2490	2490	2490	2490	2490	2490	2490	2490	2490	2490	2490	
60	3	444T/445T	2210	2480	2490	2610	2650	2650	2690	2690	2690	2690	2690	2690	2690	2690	2690	2690	2690	
60	3	447T/449T	2590	2790	2800	2910	2950	2950	2990	2990	2990	2990	2990	2990	2990	2990	2990	2990	2990	

PLUG FANS WITH INTEGRAL INLET-CONE ASSEMBLIES

DERATES

The integral inlet-cone assembly incorporates reduced-depth inlet cones in Sizes 18 through 49 [not available Size 20] for substantial reduction in fan depths ranging from 2" on the Size 18 to 6" on the Size 49. Due to the shorter-length cone, air performance derates are required as follows: Size 18-8%, Size 22-4½%, and Size 24-3%. Size 20 and Sizes 27 and larger do not require a derate.



DIMENSIONS [INCHES] PLUG FANS WITH ACF AND PLR WHEELS																			
Size	HH Class 2				HH Class 3				MM								RR	SS	T
	200°F/ 450°F. 6" panel	800°F. 8" panel	1000°F. 200°F/ 450°F. 5" panel	200°F/ 450°F. 8" panel	800°F. 1000°F/1300°F. 6" panel	800°F. 1000°F/1300°F. 8" panel	200°F/ 450°F. 6" panel	800°F. 4" panel	800°F/1000°F. 6" panel	1000°F. 8" panel	1300°F. 6" panel	1300°F. 8" panel							
12	34½	38½	NA	NA	NA	NA	NA	NA	10½	14½	16½	NA	NA	NA	NA	17	14½	8½	
15	35½	39½	NA	NA	NA	NA	NA	NA	11½	15½	17½	NA	NA	NA	NA	17	17½	14½	
18	40½	44½	46½	48½	40½	44½	46½	48½	12½	16½	18½	20½	18½	20½	21½	24	19½	16½	
20	43½	47½	49½	51½	43½	47½	49½	51½	15½	19½	21½	23½	21½	23½	24½	24	23½	12½	
22	42½	46½	48½	50½	42½	46½	48½	50½	14½	18½	20½	22½	20½	22½	24½	24	24	12½	
24	47½	51½	53½	55½	47½	51½	53½	55½	15½	19½	21½	23½	21½	23½	24½	29	26½	16½	
27	48½	52½	54½	56½	48½	52½	54½	56½	16½	20½	22½	24½	22½	24½	24½	29	29½	12½	
30	53½	57½	59½	61½	53½	57½	59½	61½	18½	22½	24½	26½	24½	26½	26½	34	31½	16	
33	55½	59½	61½	63½	55½	59½	61½	63½	20½	24½	26½	28½	26½	28½	28½	35	35½	12½	
36	59½	63½	65½	67½	59½	63½	65½	67½	21½	25½	27½	29½	27½	29½	29½	41	38½	16	
40	61½	65½	67½	69½	61½	65½	67½	69½	24	28	30	32	30	32	32	42	42½	12	
44	68½	72½	74½	76½	68½	72½	74½	76½	26½	30½	32½	34½	32½	34½	34½	51	46½	24	
49	71	75	77	79	71	75	77	79	28½	32½	34½	36½	34½	36½	36½	51	51½	20	
54									32½	36½	38½	40½	38½	40½	40½	56½	56½	24	
60									35½	39½	41½	43½	41½	43½	43½	63½	61½	24	
	See page 25.																		

NA=Not available

Tolerance: $\pm 1/8"$

DIMENSIONS [INCHES] PLUG FANS WITH ECF WHEELS

Size	H	HH (Class 2 & 3)				M ▲	MM (Class 2 & 3)				RR	SS	T				
		200°F/ 450°F.		800°F			200°F/ 450°F.		800°F/1000°F								
		4"	6"	4"	6"		4"	6"	8"								
18	42½	40½	44½	46½	14½	12½	16½	18½	20½	24	24	19½	16½				
20	43½	43½	47½	49½	15½	15½	19½	21½	23½	24	24	23½	12½				
22	45½	42½	46½	48½	17½	14½	18½	20½	22½	24	24	24	12½				
24	50½	48	52	54	19	16½	20½	22½	24½	29	29	26½	16½				
27	52½	49½	53½	55½	20½	17½	21½	23½	25½	29	29	29½	12½				
30	57½	54½	58½	60½	22½	19½	23½	25½	27½	34	34	31½	16				
33	60½	56½	60½	62½	24½	21½	25½	27½	29½	35	35	35½	12½				
36	64½	60½	64½	66½	27½	22½	26½	28½	30½	41	41	38½	16				
40	67½	62½	66½	68½	29½	25	29	31	33	42	42	42½	12				
44	75	69½	73½	75½	32½	27½	31½	33½	35½	51	51	46½	24				
49	78½	72½	76½	78½	36½	30½	34½	36½	38½	51	51	51½	20				
54*	86½	79½	83½	85½	40½	33½	37½	39½	41½	56½	56½	56½	24				
54†	92½	86½	90½	92½	40½	33½	37½	39½	41½	56½	56½	56½	24				
54‡	97½	91	95	97	40½	33½	37½	39½	41½	56½	56½	56½	24				
60*	90½	83½	87½	89½	44½	37½	41½	43½	45½	63½	63½	63½	24				
60†	97½	90	94	96	44½	37½	41½	43½	45½	63½	63½	63½	24				
60‡	107½	100½	104½	106½	44½	37½	41½	43½	45½	63½	63½	63½	24				

Motor Sizes: *≤405T motor, † 444T/445T motor, ‡ 447T/449T motor.▲ Dimensions shown are for 200°F/450°F plug fans. For higher temp. fans add PAGE 26 "4", "6" or "8" per dimension "x" on pg.24 to accommodate panel/wall thickness

DIMENSIONS AND SPECIFICATIONS [INCHES, POUNDS, WR² IN LB.-FT.²]

CLASS 4 DIMENSIONS [INCHES]																					
Size	Wheel dia.*	A	E	F●	G max.			H			K	M			N	P†	R	S	Wheel cone clear.	C-NW max.	Max. motor frame■
					200°F./450°F.	800°F.	800°F./1000°F.	200°F./450°F.	800°F.	800°F./1000°F.		200°F./450°F.	800°F.	800°F./1000°F.							
18	18½	28	26	6	28¾	29¼	29½	43½	47½	49½	4½	14	18	20	25	24	22¾	21¾	7	24	286T
20	20½	28	26	6	28¾	29¼	29½	44½	48½	50½	4½	15½	19½	21½	25	24	24½	23½	7½	24	286T
22	22½	28	26	6	28¾	29¼	29½	46½	50½	52½	4½	16½	20½	22½	25	24	27½	26½	8½	24	286T
24	24½	33	31	6	33	33½	34½	54½	58½	60½	6	18½	22½	24½	30¼	29	30½	29½	9½	29½	365T
27	27	33	31	6	33½	33½	34½	56	60	62	6	19¾	23¾	25¾	30¼	29	33½	31¾	10½	29½	365T
30	30	39	37	5½	36	36½	36½	64½	68½	70½	7	21½	25½	27½	35¼	34	36½	35½	11½	34½	405T
33	33	39	37	5½	36	36½	36½	66½	70½	72½	7	23½	27½	29½	35¼	34	39¾	38½	12½	34½	405T

*O.D. of blades.

●Plus corner holes.

†P is square dimension of panel.

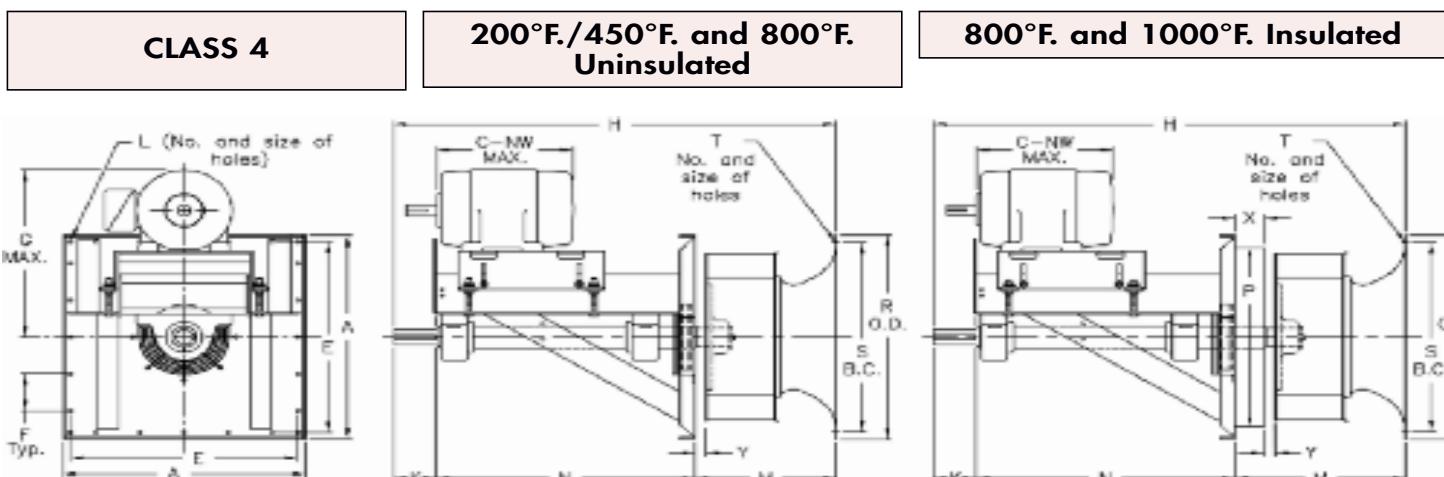
Mounting panel thickness is 1/4" for all sizes.

Tolerance: ± 1/8"

■In all cases, maximum motor frame size is limited to C-NW maximum dimension.

CLASS 4 PLUG FANS																				
Size	Bare Fan Weights				Wheel WR ²			Shaft diameter												
	AcF/PLR				AcF	PLR	SST PLR	200°F./450°F.			800°F. Uninsulated			800°F. Insulated/1000°F.						
	200°F./450°F. Uninsulated	800°F. Uninsulated	800°F. Insulated	1000°F. .				at wheel	at bearings	at drive	at wheel	at bearings	at drive	at wheel	at bearings	at drive	at wheel	at bearings	at drive	
18	435	525	550	555	14	12	15	1 15/16	2 3/16	1 15/16	27/16	2 11/16	27/16	27/16	2 15/16	27/16	2 15/16	27/16	2 15/16	27/16
20	448	538	532	567	26	27	27	1 15/16	2 3/16	1 15/16	27/16	2 11/16	27/16	27/16	2 15/16	27/16	2 15/16	27/16	2 15/16	27/16
22	460	550	570	575	36	32	32	1 15/16	2 3/16	1 15/16	27/16	2 11/16	27/16	27/16	2 15/16	27/16	2 15/16	27/16	2 15/16	27/16
24	615	710	830	835	54	53	53	2 3/16	27/16	23/16	27/16	2 15/16	27/16	2 15/16	27/16	2 15/16	27/16	3 7/16	27/16	
27	675	730	845	850	78	78	76	2 7/16	2 11/16	2 7/16	27/16	2 15/16	27/16	2 15/16	2 15/16	27/16	2 15/16	3 7/16	27/16	
30	880	1030	1050	1055	120	120	132	2 7/16	2 15/16	2 7/16	27/16	2 15/16	37/16	27/16	2 15/16	37/16	2 15/16	37/16	2 15/16	27/16
33	910	1055	1070	1075	185	170	189	2 7/16	2 15/16	2 7/16	27/16	2 15/16	37/16	27/16	2 15/16	37/16	2 15/16	37/16	2 15/16	27/16

Bearings: Heavy Duty Ball, Concentric Lock. nyb reserves the right to substitute bearings of equal ratings.



Y = 1 1/2" on all models. X = 4" on 800°F. fans, 6" on 1000°F. fans. Dimensions not to be used for construction unless certified.
L = All holes 9/16" diameter and on centerline. Sizes 18-27, 24 holes; Sizes 30-33, 32 holes.
T dimensions are the same as Class 2/3.

COMPLETE SELECTION OF AIR-MOVING EQUIPMENT

The New York Blower Company offers thousands of different types, models, and sizes of air-moving equipment. Contact your nyb representative for assistance in identifying the best fan for your application.



DUST/MATERIAL HANDLING

Wide range of duty available with unique fan lines capable of handling light dust to heavy material. Typical applications include dust-collection and high-pressure process along with material-conveying.



AIR-HANDLING [CENTRIFUGAL]

Designed for clean to moderately dirty gas streams. Commercial and industrial HVAC, process cooling, light material-conveying, heat removal, and dryer exhaust are just a few of the numerous sample applications



AIR-HANDLING [AXIAL]

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Industrial-duty steam unit heaters with steam heating coils are available for facility heating and process-heat transfer.



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Plug fans, plenum fans, wheels, inlet cones, and housings for a wide variety of OEM applications. Process/fan components are used in air-handling units, ovens, dryers, freezer tunnels, and filtration systems.