

LABORATORY FANS AND ACCESSORIES



CENTRAL BLOWER COMPANY

211 S. 7th Ave. • City of Industry, CA 91746 (626) 330-3182 Fax (626) 330-9406
www.centralblower.com

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Central Blower Company

Since 1964, Central Blower Company has been a major West Coast manufacturer of air moving equipment for both industrial and laboratory use. Unlike most laboratory equipment suppliers who purchase their blowers from outside suppliers, Central's only business is manufacturing blowers. This allows Central to offer a wide range of options with a minimum of lead time. Blowers with either steel or aluminum wheels and housings are available in either rotation and in any of eight different discharge positions. Stainless steel housings and stacks are an option with a minimal increase in lead time.

Central's factory in the City of Industry, California is well equipped to design and test blowers on it's own test chamber built to AMCA specifications.

Introducing Central Blowers

- ▲ **Superior Quality** for your laboratory exhaust requirements.
- ▲ **Airstream Integrity** isolated from fan exterior and motor housing compartment.
- ▲ **Airtight** inlet and discharge connections.
- ▲ **Shaft Seals** contain corrosive and/or hazardous fumes.
- ▲ **Steel Wheels** are standard. Spark-resistant AMCA "B" aluminum wheels or corrosion resistant stainless steel wheels are available when required.
- ▲ **Special Coatings** available:
 1. Epoxy for mild corrosive fumes and temperatures below 180° F.
 2. Phenolic for acidic fumes and higher temperatures.
 3. Cen-FP (fluoropolymer) for severe corrosive fumes such as nitric, sulfuric or perchloric acids.
- ▲ **Wheels** are balanced after coating
- ▲ **Belt Driven** fans are AMCA licensed for air performance.
- ▲ **All fasteners** in airstream are stainless steel.



Central Blower Co. certifies that the Belt Drive Blowers shown on pages 8 through 12 are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of AMCA Certified Ratings Program.

Standard Features . . .

Housings Constructed of heavy gauge, zinc-coated steel. The discharge can easily be changed in the field to any of eight different positions

Frames Heavy gauge, zinc coated steel frames provide rigid support for housing, wheel, motor, shaft and bearings.

Bearings Self-aligning ball bearing pillow blocks are supplied on all models. Bearings are pre-lubricated and sealed to retain lubricant and exclude dust. Both bearings are mounted out of the airstream for long life.

Shafts Ground and polished carbon steel, protected by a rust preventive coating.

Motor Base Heavy gauge, galvanized steel base, pivoted at one end and supported at the other by two threaded rods for easy belt adjustment. Hinge-type construction insures the motor shaft will remain parallel with the blower shaft when adjusting belt tension.

Motor & Drives Standard motors are NEMA, open drip-proof, 1725 RPM, single speed. TEFC, 2-speed and explosion-proof motors are also available. All Central Blowers are equipped with adjustable pitch motor pulleys. They are easily adjustable to provide approximately 10 percent variation in blower speeds. Factory installed motor and drives are checked for smooth operation and compliance with specified RPM.

Weather Hoods Rust resistant, galvanized steel construction protects the shaft, bearings, motor and drives. Also serves as an OSHA-approved belt guard.

Finishes Standard finish is baked enamel. Corrosion resistant coatings are also available. (See Optional Features.)

Shaft Seals While very effective, shaft seals do not seal 100%.

Optional Features . . .

Drain Fitting 3/4 inch pipe coupling welded to the low point of the housing for draining water. Weep hole also available without pipe connection.

Spark Resistant AMCA-Type "B" spark resistant construction is available on all blowers. AMCA-Type "A" can be supplied for special applications.

Vibration Isolation :

Rubber-in-Shear (RIS) Neoprene mounts are suitable for non-critical applications.

RIS Rails Rubber-in-Shear mounts on rails are available (needed when a stack is to be used).

Individual Spring Mounts provides approximately 1-inch vertical deflection. Designed for critical applications. Also available with "seismic" rating at an extra cost.

Spring Rails - Spring mounts attached to rails to provide more even distribution of weight.

Protective Screens - Inlet screens protect unit from debris when used on supply fan application. Outlet screens prevent entrance of birds and serve as safety guard for rotating blower wheel. (Not available with exhaust stack). Can be made of stainless steel, if applicable.

Clean Out Door - Provides access for cleaning or inspection of the interior of the housing. Cover bolted with stainless steel fasteners and fully gasketed.

Stacks - Rain cap (also known as zero static) stacks for normal hoods. Straight stacks available for perchloric acid hoods. See page 15.

Flanges - Inlet and outlet flanges available on special order. Allow extra delivery time. Companion Flanges available with matching holes.

Stainless Steel Housing and wheel (airstream parts) of 304 or 316 stainless steel. Allow six to eight weeks extra lead time for stainless steel wheels.

Stainless Steel Weather Hood for corrosive atmosphere and/or esthetic value.

Coatings - Central Blower Company is proud to offer a line of excellent chemical-resistant coatings. Our standard is a **Baked Epoxy**. This is an epoxy powder that is electrostatically applied and baked at 400 degrees for curing. All airstream blower parts are sandblasted prior to coating to provide a clean surface for maximum adhesion by the epoxy. This coating is recommended for most normal laboratory fume hood exhausts. Epoxy is not recommended for temperatures over 180° F.

In cases where certain conditions are involved, it may be advisable to use a **Baked Phenolic** coating. This coating is resistant to all common solvents and inorganic acids, but is not resistant to caustics, alkalis and oxidizing agents. Depending on the chemical present, it will service higher temperatures. For severe conditions we recommend **Cen-FP**, a fluoropolymer resin coating. This coating is especially resistant to highly corrosive chemicals, such as nitric, sulfuric or perchloric acids. In addition to its high degree of chemical resistance, **Cen-FP** withstands a wide range of temperatures.

Blower Selection . . .

Blower Terminology

CFM **Cubic Feet per Minute** The amount of air moving through a system. $CFM = FPM \times AREA$ in square feet.

S.P. **Static Pressure.** Resistance to air flow measured in inches of water gauge (WG). The static pressure is the total of the negative pressure on the suction side of the blower and the positive pressure on the discharge side. Resistance is caused by hoods, ductwork, elbows, stacks, filters, or anything else that impedes the free flow of air.

RPM **Revolutions per Minute.** Rotational speed of the blower impeller.

AMCA **Air Movement and Control Association.** Testing and certifying agency for air moving

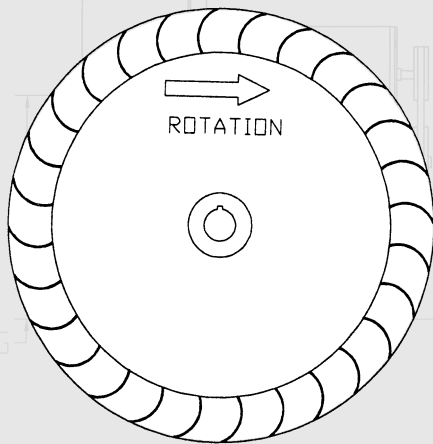
industry

FPM **Feet per Minute.** Velocity of the airflow measured at a certain point in the system. $FPM = CFM$ divided by Area in square feet.

VELOCITY Speed of the airflow measured past a certain point, measured in FPM. Velocity across the face of the hood is **the most important factor** in hood exhaust design. $VELOCITY \times FACE AREA$ (in square feet) = CFM required.

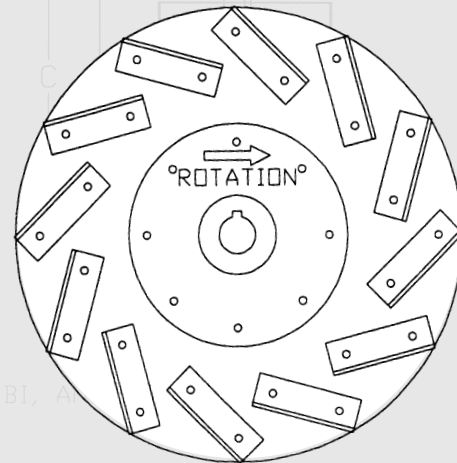
BHP **Brake Horsepower.** Horsepower required to turn the blower at a given RPM at a given CFM and static pressure. Usually determined from fan performance charts.

Forward Curved or Backward Inclined . . . ?



Forward Curved

Forward Curved (FC) Fans have narrow, cup-shaped blades with the cup facing toward the direction of rotation. These fans provide high volumes of air at lower static pressures (SP) up to 2.5-inch, W.G. Low operating speeds make these fans ideal for applications where noise may be a problem. Incorrect static pressure estimates or changes in static pressure may cause the motor to overload. For this reason, it is best to specify motors that have a safety margin over design requirements.



Backward Inclined

Backward Inclined (BI) Fans have wheels with large, flat blades, usually 10 to 15 in number. These blades are inclined 45 degrees to the radius, with the outer edge trailing the inner. Backward Inclined wheels work well at higher static pressures up to 5.0-inch W.G. Noise is a factor since BI wheels generally run at least 50 percent faster than a comparable Forward Curved wheel. They are non-overloading as the horsepower remains constant over a wide range of static pressure and CFM.

Rotation is always determined by looking at blower wheel from the drive end (usually opposite the inlet side).

Determining Static Pressure

When choosing an exhaust fan for a laboratory hood, there are two main factors to consider. These are CFM and Static Pressure. The CFM required is usually determined by the hood manufacturer to give a minimum air velocity in FPM across the face of the hood.

The static pressure (SP) is the combined resistance to airflow of the hood, straight ductwork, elbows, transitions, etc. Ductwork static pressure is figured as friction loss per 100 feet of duct at a certain CFM. Each elbow is figured as equivalent to a certain number of feet of straight duct. Use a duct calculator or the chart provided below to figure the static pressure of 100 feet of a given diameter of duct at a given CFM. Add total elbow equivalents to the length of straight duct to arrive at the total system duct length. Multiply the static pressure for 100 feet of duct by the percentage of 100 feet that you have. This will be the static pressure caused by the ductwork. Add this to the static pressure created by the hood to get the total static pressure of the system.

Example:

A four-foot hood with an opening of 48-inch wide by 15 inches high requires 100 FPM face velocity. There are 20 feet of 8-inch diameter duct with three (3) 90-degree elbows. Hood static loss as given by the manufacturer is 0.25 inch WG.

1. $CFM = 48 \times 15$ inches divided by 144 (sq. in. in one sq. ft.) = 5 sq. ft. x 100 FPM = 500 CFM.
2. Static pressure of the hood is given as 0.25 inch WG.
3. Using a duct calculator or the charts below, find the resistance for 500 CFM moving through 100 ft. of 8-in. diameter duct = 0.45 in. SP per 100 ft.
4. Find the resistance per elbow on back of duct calculator or on the charts below (one 8-in. diameter elbow is equivalent to 15 ft. of straight duct) 3 elbows at 15 equivalent feet each=45 equivalent feet
5. Add 20 feet for the straight duct to the 45 equivalent feet for the elbows = 65 feet.
6. 65 ft. is 65 percent of 100 feet. Multiply 0.65 times the resistance for 100 feet (0.45 inch WG) = 0.29 inch WG.
7. Add 0.29 inch SP WG for the ductwork to 0.25 inch SP WG for the hood = 0.54 inch WG total static pressure for the system.

The following charts are to be used with the above example. These are short, abbreviated tools to be used in absence of a more accurate and complete duct calculator. (Available from Central Blower Company on request.) Applying these factors to your laboratory blower calculations can assure you of getting the right fan for your exhaust requirements.

Friction Loss per 100 Feet of Duct

DUCT DIA., IN.	CFM																				
	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
4"	0.65	2.40	5.00	9.00																	
6"	0.10	0.30	0.70	1.20	1.80	2.60	3.50	4.50													
8"	0.02	0.08	0.16	0.30	0.45	0.60	0.80	1.00	1.30	1.60	2.30	3.00	4.00								
10"		0.03	0.05	0.10	0.14	0.20	0.30	0.35	0.45	0.55	0.80	1.00	1.30	1.60	2.00	2.40	2.80	3.20	3.70	4.20	4.80
12"		0.01	0.02	0.04	0.06	0.08	0.10	0.15	0.18	0.22	0.30	0.40	0.50	0.65	0.80	1.00	1.10	1.30	1.50	1.70	2.00
14"			0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10	0.12	0.20	0.24	0.30	0.37	0.45	0.50	0.60	0.70	0.80	0.90
16"				0.01	0.01	0.02	0.03	0.03	0.04	0.05	0.07	0.10	0.13	0.16	0.20	0.22	0.28	0.30	0.35	0.40	0.45

Equivalent Resistances per Elbow in Feet of Straight Pipe

Duct Diameter	90° Elbow	Duct Diameter	90° Elbow
6"	12'	12"	25'
8"	15'	16"	36'
9"	18'	18"	41'
10"	20'	20"	46'

60° Elbow=.67x90° 45° Elbow=.50x90° 30° Elbow=.33x90°

Engineering Data

The basic information needed to properly size a Central blower is the volume of air, in cubic feet per minute (CFM) and the static pressure (SP) in the duct system. The CFM is normally determined by health codes or accepted industry standards. Usually the SP is specified by the engineer, based on the length and size of duct and number of elbows in the system.

The rating tables for Central blowers are easy to use. The first column shows the volume in CFM. The second column shows the corresponding outlet velocity in feet per minute. The remaining columns show the RPM and brake horsepower (BHP) at the corresponding SP. Use the following steps to determine the RPM and BHP at required SP:

1. Choose the desired CFM.
2. Move over to the column for the specified SP.
3. Read the required RPM and BHP*

Example: Find 800 CFM at 3/8 SP (See Fig. 1)

VOLUME CFM	O.V. FPM	SP, in. WG							
		1/4"		3/8"		1/2"		5/8"	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
700	2077	2130	0.19	2210	0.22	2290	0.24	2380	0.26
800	2374	2389	0.28	2455	0.30	2530	0.33	2610	0.35
900	2671	2620	0.37	2700	0.41	2770	0.44	2850	0.46
1000	2967	2850	0.48	2940	0.52	3010	0.56	3089	0.60

Fig. 1. Sample performance chart.

* After determining the required BHP it is necessary to pick the suitable size of motor. The BHP shown in the rating tables does not include belt losses so choose a motor rated at least 10 percent higher than shown in rating table.

Each blower size is capable of operating over a wide range of CFM and static pressure, therefore there will be two or three different sizes that could qualify for a given application. Select a size where the CFM and SP falls in the shaded area on the rating tables. This assures that the selected blower is operating in the optimum range.

If the point in the rating table falls below the shaded area, it would be advisable to consider using the next larger size of blower, and, if the point falls above the shaded area, one should definitely consider using a smaller size of blower. Operating the fan outside the optimum efficiency range is not necessarily unsatisfactory. Other considerations such as noise level, brake horsepower, space limitations and engineering specifications may be governing factors.

Figure 2 shows the typical performance for the Central BI blowers, along with the curve of mechanical efficiency. The shaded area in this figure corresponds with the shaded area in the rating tables. (FC curves are available on request.)

Frequently specifications call for a maximum outlet velocity and tip speed. Outlet velocity, for volumes not shown, can be calculated by dividing the CFM by the outlet area of the blower. Tip speeds are determined by multiplying the RPM by the tip speed factor shown above each table.

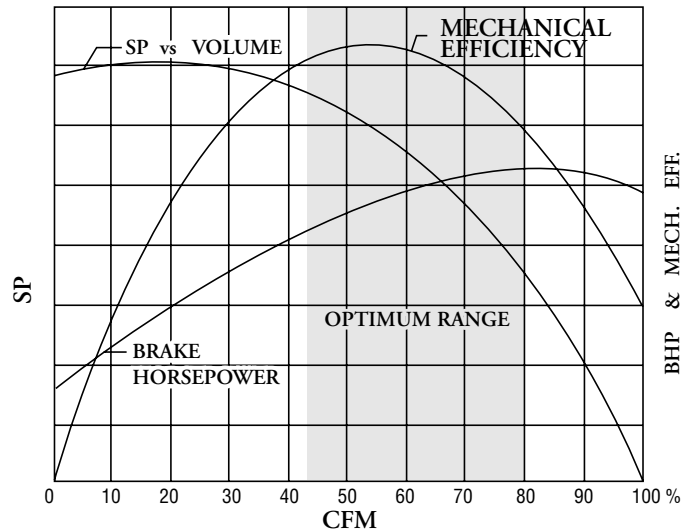


Fig. 2. Typical curves for backward inclined blower

AIR DENSITY CORRECTION FACTORS			
CORRECTION FACTORS FOR TEMPERATURE		CORRECTION FACTORS FOR ALTITUDE	
Temp, °F	Factor	Feet	Factor
0	0.87	0	1.00
40	0.94	500	1.02
70	1.00	1000	1.04
100	1.06	1500	1.06
140	1.13	2000	1.08
180	1.21	3000	1.12
200	1.25	4000	1.16
250	1.34	5000	1.20
300	1.43	6000	1.25
350	1.53	7000	1.30

Fig. 3.

Calculation of Blower Performance at Non-standard Temperatures and Elevations

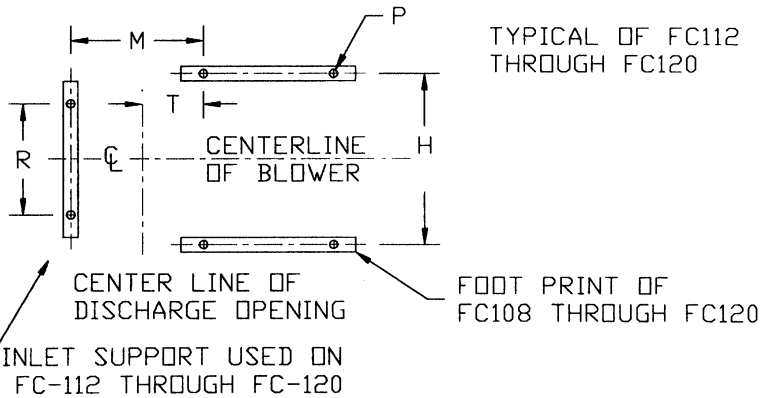
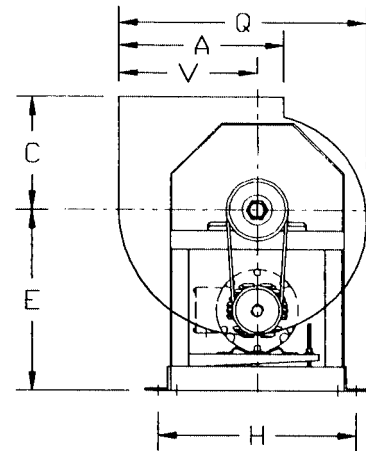
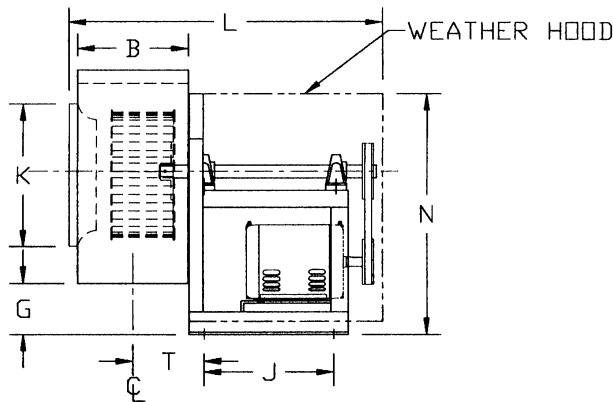
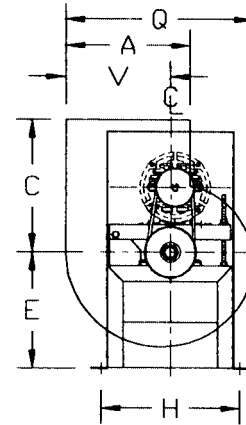
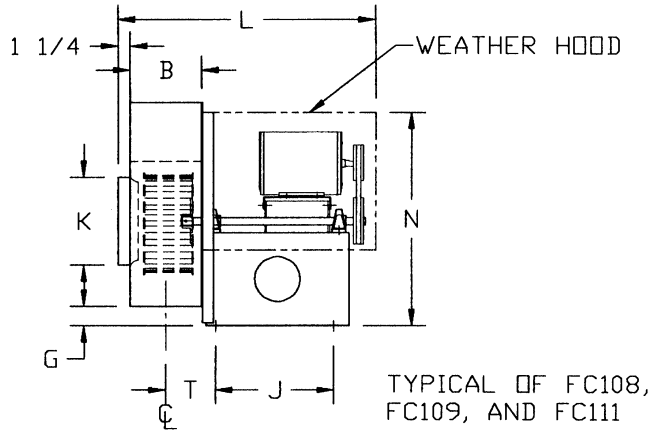
The performance tables in this catalog are based on handling air at 70° F and at sea level. These are considered to be standard conditions. For blowers operating at higher temperatures and elevations use the following procedure to determine correct CFM, static pressure and BHP.

1. Determine required CFM and static pressure at actual operating conditions.
2. Determine the combined correction factor by multiplying the temperature factor by the altitude factor for your application. See Fig. 3
3. Multiply the static pressure by combined factor.
4. Select blower from the performance table for the required CFM and corrected static pressure.
5. Blower RPM remains as shown in table.
6. Divide the brake horsepower shown on table by the combined density factor to obtain the required brake horsepower at operating conditions.

Example:

1. Blower required to handle 5800 CFM @ 2"; SP @ 200° F and at 5000 feet elevation.
2. Combined factor = 1.25 x 1.20 = 1.50
3. SP: 2 x 1.5 = 3"
4. Select Central model # BI-22 at 5800 CFM @ 3"; SP = 1413 RPM and 4.35 BHP
5. BHP = 4.35/1.50 = 2.80 @ 200 ° F & 5000 ft.

Forward Curve



DIMENSIONAL TABLE

MODEL NO.	WHEEL DIA. x W	A	B	C	E	G	H	J	K	L	M	N	P	Q	R	T	V	SHAFT DIA.
FC-109	9 1/8 x 4 5/8	10 1/8	6 3/8	10 3/4	9 3/8	1 3/4	11 1/8	10 1/2	8 7/8	23		19 1/4	3/8	15 1/2		4 1/2	8 3/4	5/8
FC-111	10 5/8 x 6	11 1/2	8 1/4	13	10 1/4	1 5/8	13	11	9 7/8	26		21 3/4	3/8	17 1/4		5 3/4	9 5/8	3/4
FC-112	12 5/8 x 6	13 3/8	8 1/4	9 1/8	14 5/8	4 1/2	16	11 1/2	11 7/8	27	10 3/8	21 7/8	7/16	20 1/2	16	5 3/8	11 1/2	3/4
FC-115	15 x 9	15 7/8	12 1/4	10 1/2	17 5/8	5 5/8	19	12 1/2	15 7/8	31 3/4	14 3/8	26 3/8	9/16	24 1/4	19	7 3/8	13 5/8	1
FC-118	18 x 9	18 7/8	12 1/4	12 3/8	21 1/2	6 7/8	22 5/8	15 3/8	17 7/8	35	14 1/2	32	9/16	29 1/4	22 5/8	7 3/8	16 3/8	1 3/16
FC-120	20 x 11	24	16 7/8	14	21 1/2	3 7/8	22 5/8	15 3/8	19 7/8	40 3/8	19 1/8	32	9/16	35 3/8	22 5/8	9 3/4	20 1/4	1 3/16

Larger sizes available through 30". Contact factory.

FC-109

9/18-INCH WHEEL DIAMETER

TIP SPEED (FPM) = 2.39 x RPM

VOLUME CFM	O.V. FPM	SP, in. WG										
		1/8" RPM BHP	1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP
300	670	438 0.01	561 0.02	688 0.03								
400	893	527 0.03	601 0.04	694 0.04	791 0.06	887 0.07						
500	1116	618 0.05	685 0.06	744 0.07	812 0.08	892 0.09	970 0.11	1102 0.14				
600	1339	705 0.08	777 0.10	827 0.11	877 0.11	927 0.12	990 0.14	1122 0.17	1248 0.20			
700	1563	792 0.12	867 0.14	919 0.16	962 0.17	1003 0.18	1046 0.19	1146 0.22	1261 0.26	1371 0.29	1478 0.33	
800	1786	881 0.18	956 0.20	1011 0.22	1053 0.23	1091 0.25	1127 0.26	1202 0.28	1289 0.32	1387 0.36	1486 0.40	1582 0.44
900	2009	972 0.24	1042 0.27	1100 0.30	1146 0.32	1183 0.33	1216 0.34	1281 0.37	1348 0.40	1423 0.44	1508 0.48	1597 0.53
1000	2232	1064 0.32	1129 0.36	1188 0.39	1235 0.42	1276 0.44	1309 0.45	1369 0.48	1427 0.51	1488 0.54	1550 0.58	1625 0.62
1100	2455	1158 0.42	1218 0.46	1274 0.50	1324 0.53	1366 0.56	1402 0.58	1460 0.61	1514 0.65	1567 0.68	1622 0.71	1678 0.75
1200	2679	1254 0.54	1308 0.59	1362 0.63	1410 0.66	1454 0.69	1492 0.73	1554 0.77	1605 0.80	1655 0.84	1702 0.88	1753 0.91
1300	2902	1350 0.68	1399 0.73	1450 0.82	1497 0.82	1541 0.85	1541 0.89	1645 0.95	1698 0.99			
1400	3125	1447 0.84	1491 0.89	1539 0.99	1585 0.99							

FC-111

10 5/8-INCH WHEEL DIAMETER

TIP SPEED (FPM) = 2.78 x RPM

VOLUME CFM	O.V. FPM	SP, in. WG										
		1/8" RPM BHP	1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP
600	910	445 0.04	545 0.06	635 0.08	710 0.10	785 0.11	857 0.13					
700	1062	480 0.06	580 0.08	661 0.10	734 0.12	799 0.14	864 0.16	990 0.21				
800	1214	521 0.09	617 0.11	690 0.13	760 0.15	825 0.18	882 0.20	998 0.25	1107 0.29			
900	1366	576 0.12	645 0.14	723 0.16	790 0.19	854 0.22	910 0.24	1017 0.30	1117 0.35	1218 0.40		
1000	1517	628 0.16	682 0.18	758 0.20	823 0.23	881 0.26	939 0.29	1040 0.35	1136 0.41	1223 0.47	1313 0.52	1400 0.59
1100	1669	682 0.21	722 0.23	791 0.25	858 0.28	917 0.32	968 0.35	1064 0.41	1159 0.48	1241 0.54	1322 0.60	1407 0.67
1200	1821	741 0.28	755 0.29	824 0.31	890 0.34	945 0.38	1000 0.41	1098 0.48	1183 0.55	1268 0.62	1342 0.69	1420 0.76
1300	1973	800 0.36	827 0.36	863 0.38	922 0.41	980 0.45	1037 0.48	1125 0.56	1217 0.63	1297 0.71	1370 0.79	1441 0.86
1400	2124	859 0.44	880 0.44	915 0.46	960 0.49	1017 0.52	1065 0.56	1160 0.64	1242 0.73	1321 0.81	1397 0.89	1465 0.98
1500	2276	917 0.54	938 0.54	962 0.56	1000 0.58	1050 0.61	1100 0.65	1192 0.74	1276 0.83	1352 0.92	1422 1.00	1495 1.09
1600	2428	975 0.65	994 0.66	1019 0.68	1044 0.69	1085 0.72	1136 0.76	1225 0.85	1308 0.94	1382 1.04	1456 1.13	1521 1.22
1700	2580	1035 0.78	1055 0.79	1075 0.79	1098 0.82	1130 0.84	1170 0.88	1260 0.96	1340 1.07	1418 1.16	1483 1.26	1555 1.36
1800	2731	1092 0.92	1110 0.94	1125 0.94	1150 0.97	1177 0.98	1210 1.01	1295 1.10	1377 1.20	1450 1.31	1518 1.41	
1900	2883	1150 1.09	1170 1.10	1180 1.11	1205 1.12	1225 1.15	1255 1.17	1330 1.25	1408 1.35	1481 1.46		
2000	3035	1210 1.27	1225 1.28	1240 1.28	1259 1.29	1279 1.33	1300 1.35	1365 1.41				

FC-112

12 5/8-INCH WHEEL DIAMETER

TIP SPEED (FPM) = 3.31 x RPM

VOLUME CFM	O.V. FPM	SP, in. WG										
		1/8" RPM BHP	1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP
800	1054	370 0.05	457 0.07	530 0.09	596 0.11	657 0.13	716 0.15	828 0.20				
1000	1318	417 0.08	468 0.11	564 0.13	624 0.16	679 0.18	732 0.21	830 0.26	923 0.32	1013 0.38		
1200	1581	473 0.13	535 0.16	604 0.19	660 0.22	711 0.25	760 0.28	850 0.34	935 0.41	1016 0.47	1093 0.54	1166 0.61
1400	1845	528 0.20	586 0.23	644 0.26	701 0.30	749 0.33	795 0.37	880 0.44	958 0.51	1033 0.59	1103 0.66	1174 0.74
1600	2108	585 0.29	643 0.32	686 0.36	740 0.40	791 0.44	834 0.48	915 0.56	989 0.64	1060 0.72	1126 0.80	1191 0.89
1800	2372	645 0.39	697 0.44	742 0.48	779 0.51	830 0.56	877 0.61	953 0.70	1025 0.79	1091 0.88	1156 0.97	1216 1.07
2000	2635	705 0.53	753 0.58	798 0.63	834 0.67	868 0.71	914 0.76	996 0.87	1063 0.96	1128 1.07	1188 1.17	1248 1.27
2200	2899	766 0.69	809 0.75	853 0.80	891 0.85	923 0.90	953 0.94	1036 1.06	1105 1.17	1166 1.28	1226 1.39	1282 1.50
2400	3162	827 0.89	868 0.95	908 1.01	946 1.07	979 1.12	1008 1.17	1071 1.27	1148 1.41	1209 1.53		
2600	3426	889 1.12	928 1.18	964 1.25	1001 1.31	1035 1.38	1064 1.43	1117 1.53				

Performance shown is for Type B - Free Inlet, Ducted Outlet.
 Power rating (BHP) does not include drive losses. Shaded area indicates optimum performance range.
 Performance ratings do not include the effects of appurtenances in the airstream.



FC-

15-INCH WHEEL DIAMETER

TIP SPEED (FPM) = 3.93 x RPM

VOLUME CFM	O.V. FPM	SP, in. WG										
		1/8" RPM BHP	1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP
1200	894	281 0.07	350 0.10	415 0.16								
1400	1043	300 0.10	362 0.13	420 0.19	479 0.21							
1600	1192	319 0.13	380 0.17	440 0.21	484 0.26	538 0.30	582 0.35					
1800	1341	340 0.17	403 0.21	460 0.24	489 0.32	545 0.36	589 0.41	675 0.54				
2000	1490	360 0.21	425 0.27	475 0.27	510 0.35	560 0.43	594 0.48	678 0.60	755 0.72			
2200	1639	382 0.27	440 0.33	498 0.41	540 0.39	580 0.52	618 0.57	683 0.69	758 0.80	825 0.95		
2400	1788	408 0.34	460 0.41	517 0.49	562 0.56	600 0.62	630 0.68	688 0.80	762 0.92	830 1.06	890 1.21	
2600	1937	430 0.43	480 0.50	536 0.58	580 0.66	620 0.73	650 0.81	718 0.92	767 1.05	834 1.20	896 1.34	956 1.51
2800	2086	458 0.54	502 0.60	556 0.69	599 0.77	639 0.86	670 0.94	736 1.08	772 1.20	850 1.35	901 1.52	958 1.70
3000	2235	482 0.64	525 0.72	576 0.80	619 0.90	652 0.99	693 1.08	752 1.22	804 1.36	860 1.52	912 1.70	963 1.89
3200	2385	510 0.77	550 0.84	597 0.93	638 1.03	674 1.13	712 1.23	772 1.41	828 1.54	875 1.71	928 1.90	968 2.02
3400	2534	538 0.92	570 1.00	619 1.08	658 1.18	692 1.27	731 1.39	795 1.60	848 1.74	894 1.95	940 2.16	980 2.25
3600	2683	570 1.10	595 1.17	642 1.25	679 1.35	715 1.37	750 1.59	813 1.62	866 1.99	900 2.26		
3800	2832	600 1.27	625 1.26	665 1.44	700 1.53	736 1.62	770 1.80	832 1.90	880 2.36			
4000	2981	632 1.50	650 1.52	689 1.65	723 1.75	756 1.92	790 2.10	851 2.23				

FC-118

18 1/2-INCH WHEEL DIAMETER

TIP SPEED (FPM) = 4.75 x RPM

VOLUME CFM	O.V. FPM	SP, in. WG										
		1/8" RPM BHP	1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP
1600	990	278 0.12	340 0.18	386 0.21	420 0.23	457 0.27	495 0.31					
1900	1176	306 0.19	364 0.24	412 0.29	450 0.33	484 0.38	513 0.41	572 0.49				
2200	1361	338 0.26	389 0.33	436 0.40	476 0.46	510 0.51	540 0.55	593 0.64	642 0.72	700 0.85		
2500	1547	369 0.37	416 0.44	459 0.52	500 0.59	535 0.66	566 0.72	621 0.82	667 0.92	710 1.01	756 1.13	809 1.28
2800	1733	402 0.41	445 0.55	485 0.65	523 0.75	560 0.83	591 0.92	646 1.03	694 1.14	737 1.25	775 1.36	812 1.47
3100	1918	437 0.64	476 0.73	512 0.83	548 0.92	583 1.02	615 1.12	671 1.28	719 1.41	763 1.54	803 1.66	838 1.78
3400	2104	473 0.91	508 0.97	542 1.00	575 1.12	607 1.23	638 1.34	696 1.55	745 1.71	788 1.86	828 2.00	866 2.13
3700	2290	510 1.19	538 0.99	573 1.22	603 1.36	634 1.48	663 1.59	720 1.83	770 2.05	814 2.23	854 2.38	891 2.54
4000	2475	546 1.48	573 1.21	605 1.57	633 1.60	661 1.77	690 1.89	743 2.14	794 2.40	840 2.63	880 2.81	917 2.99
4300	2661	583 1.77	608 1.66	636 1.89	664 1.92	690 2.06	717 2.23	768 2.48	817 2.77	864 3.05	905 3.27	943 3.48
4600	2847	619 2.06	644 2.19	667 1.82	696 2.39	721 2.39	745 2.58	795 2.88	841 3.17	887 3.48	929 3.75	968 4.01
4900	3032	655 2.36	680 2.74	701 2.23	727 2.85	752 2.85	775 2.94	822 3.33	866 3.61	910 3.94	932 4.26	992 4.55
5200	3218	691 2.65	716 3.30	736 2.90	758 2.82	784 3.46	806 3.40	846 3.80	893 4.12	934 4.44	975 4.77	1015 5.07

FC-120

20-INCH WHEEL DIAMETER

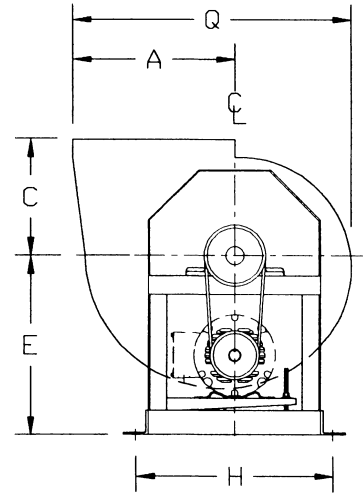
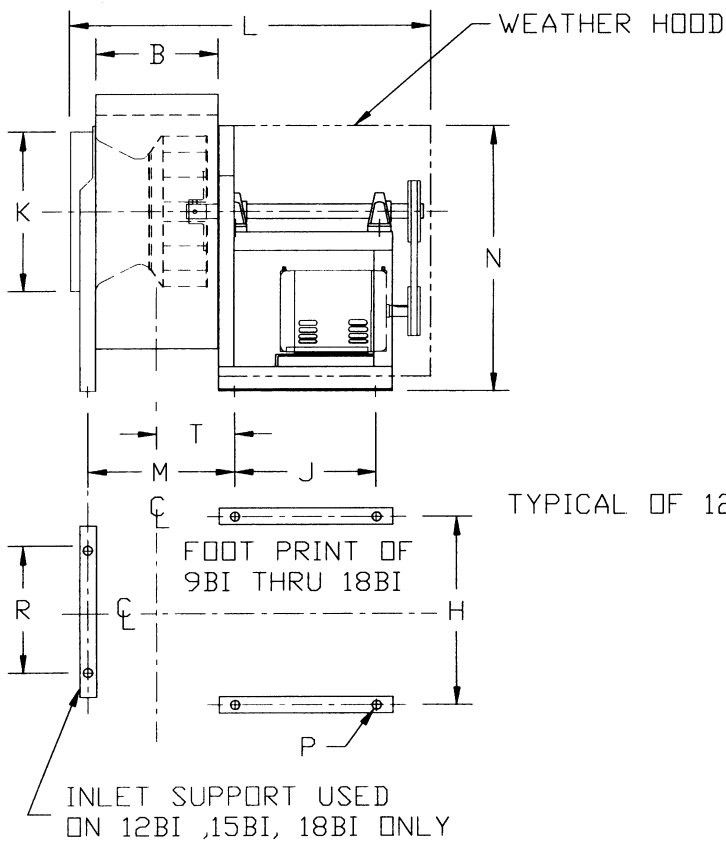
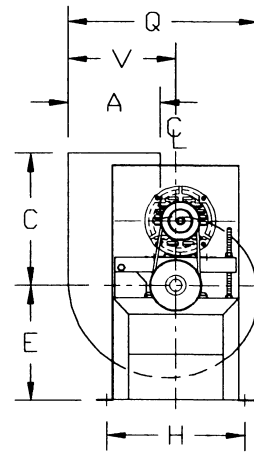
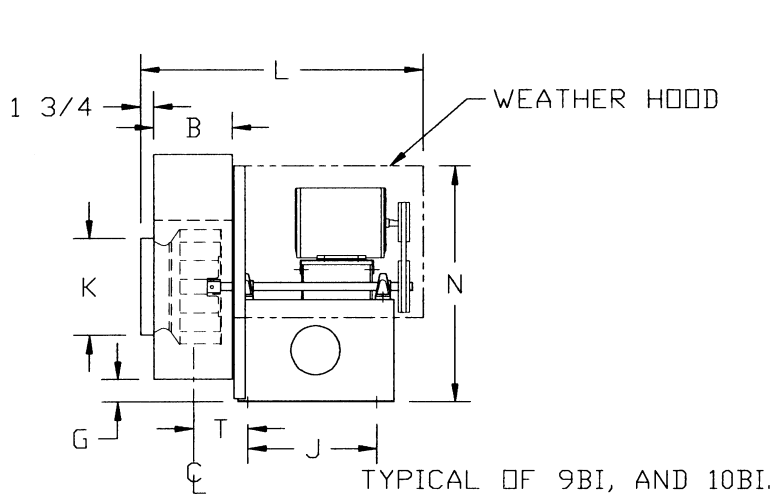
TIP SPEED (FPM) = 5.24 x RPM

VOLUME CFM	O.V. FPM	SP, in. WG													
		1/8" RPM BHP	1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP	2-1/4" RPM BHP	2-1/2" RPM BHP	3.0" RPM BHP
2500	902	230 0.17	289 0.25	334 0.31	371 0.36	415 0.45									
3000	1083	252 0.26	305 0.35	353 0.42	390 0.50	421 0.58	455 0.66								
3500	1263	276 0.38	324 0.47	368 0.56	408 0.67	442 0.76	470 0.84	525 1.02							
4000	1444	301 0.54	346 0.63	386 0.74	423 0.86	459 0.98	491 1.09	542 1.28	587 1.46	643 1.73					
4500	1624	327 0.70	368 0.84	406 0.97	441 1.09	474 1.20	507 1.34	562 1.59	607 1.81	647 2.01	695 2.29				
5000	1805	355 0.97	392 1.08	428 1.23	460 1.35	492 1.50	522 1.64	579 1.92	628 2.19	668 2.45	705 2.68	743 2.92	788 3.27		
5500	1985	383 1.22	418 1.41	451 1.52	482 1.68	511 1.81	540 1.99	594 2.30	642 2.61	689 2.90	725 3.19	760 3.44	793 3.69	831 4.01	
6000	2166	412 1.65	444 1.73	474 1.89	504 2.08	532 2.22	559 2.37	611 2.72	659 3.05	705 3.40	746 3.72	780 4.02	813 4.32	843 4.60	909 5.25
6500	2346	442 2.16	470 2.11	499 2.35	527 2.49	554 2.69	580 2.85	629 3.20	675 3.56	721 3.93	762 4.30	800 4.62	833 5.02	864 5.32	921 5.92
7000	2527	471 2.69	498 2.65	525 2.85	551 2.98	577 3.19	602 3.40	648 3.73	694 4.15	735 4.51	777 4.95	816 5.32	852 5.72	885 6.09	941 6.79
7500	2707	501 3.20	526 3.17	551 3.86	577 3.61	600 3.78	624 3.99	670 4.39	712 4.74	754 5.22	793 5.62	832 6.05	868 6.48	902 6.90	962 7.70
8000	2888	530 3.71	554 3.69	578 3.97	603 4.29	625 4.49	647 4.64	691 5.11	732 5.50	772 5.92	810 6.42	847 6.83	883 7.31	918 7.72	981 8.65
8500	3068	559 4.25	584 4.69	607 4.74	628 4.95	650 5.25	671 5.36	714 5.88	753 6.32	791 6.70	828 7.24	864 7.75	898 8.18	933 8.68	997 9.62
9000	3249	591 4.75	613 5.73	635 5.53	654 5.61	676 6.08	697 6.29	736 6.69	776 7.23	812 7.70	846 8.05	882 8.68	916 9.22	948 9.68	1013 10.70

Performance shown is for Type B - Free Inlet, Ducted Outlet.
 Power rating (BHP) does not include drive losses. Shaded area indicates optimum performance range.
 Performance ratings do not include the effects of appurtenances in the airstream.



Backward Inclined



Dimensional Table

MODEL NO.	WHEEL DIA.	A	B	C	E	G	H	J	K	L	M	N	P	Q	R	T	V	SHAFT DIA.
9-BI	9 3/16	7 1/2	6 3/8	10 3/4	9 3/8	1 3/4	11 3/8	10 1/2	7 7/8	23		19 1/4	3/8	15 3/8		4 1/2	8 3/4	5/8
10-BI	10 5/8	8 1/4	8 1/4	13	10 1/4	1 5/8	13	11	8 7/8	26 1/2		21 3/4	3/8	17 1/4		5 3/4	9 3/4	3/4
12-BI	12 1/4	13 1/8	9 7/8	9 1/2	14 5/8	3 3/4	16	11 1/2	13	29	11 3/4	21 7/8	7/16	23 1/8	11	6 1/4		1
15-BI	15	16 1/8	12	11 1/2	17 5/8	4 1/4	19	12 1/2	15 7/8	32	14 1/8	26 3/8	9/16	27 3/4	14	7 1/4		1
18-BI	18 1/4	19 5/8	14 5/8	14	21 1/2	5 1/4	22 5/8	15 3/8	19 3/8	38 1/8	16 7/8	32	9/16	33 3/4	16	8 5/8		1 3/16

Larger sizes available through 36" Dia.; Contact factory.

9-BI

9 3/16-INCH WHEEL DIAMETER
OUTLET AREA (SQ. FT.) .337

TIP SPEED (FPM) = 2.41 x RPM
MAX. BHP = .0205 x (RPM/1000)³

VOLUME CFM	O.V. FPM	SP, in. WG																											
		1/4"		3/8"		1/2"		5/8"		3/4"		1.0"		1-1/4"		1-1/2"		1-3/4"		2.0"		2-1/2"		3.0"		3-1/2"			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
100	297	850	0.01	1020	0.02	1179	0.02	1310	0.03	1435	0.04	1660	0.05	1839	0.07	2020	0.09	2181	0.11	2320	0.13	2609	0.18	2862	0.24	3095	0.29		
200	593	970	0.02	1120	0.03	1255	0.04	1380	0.04	1495	0.05	1696	0.07	1880	0.09	2050	0.11	2213	0.14	2341	0.16	2619	0.22	2875	0.28	3105	0.34		
300	890	1170	0.03	1289	0.04	1405	0.05	1550	0.06	1610	0.07	1799	0.10	1972	0.12	2130	0.15	2280	0.18	2410	0.21	2670	0.27	2910	0.34	3135	0.40		
400	1187	1390	0.05	1500	0.07	1600	0.08	1700	0.09	1775	0.11	1950	0.13	2103	0.16	2240	0.19	2380	0.23	2512	0.26	2755	0.33	2980	0.40	3200	0.48		
500	1481	1621	0.09	1730	0.10	1825	0.12	1905	0.13	1985	0.15	2120	0.18	2275	0.21	2400	0.25	2525	0.29	2640	0.32	2870	0.40	3080	0.48	3299	0.56		
600	1781	1880	0.13	1970	0.15	2050	0.16	2140	0.19	2210	0.21	2335	0.25	2470	0.28	2590	0.32	2710	0.36	2810	0.40	3010	0.49	3220	0.58	3410	0.67		
700	2077	2130	0.19	2210	0.22	2290	0.24	2380	0.26	2440	0.28	2560	0.33	2680	0.37	2790	0.41	2910	0.45	3010	0.50	3200	0.59	3390	.069	3550	0.79		
800	2374	2389	0.28	2455	0.30	2530	0.33	2610	0.35	2680	0.37	2785	0.43	2905	0.47	3015	0.53	3115	0.57	3203	0.63	3400	0.71	3570	0.83	3738	0.93		
900	2671	2620	0.37	2700	0.41	2770	0.44	2850	0.46	2920	0.49	3021	0.55	3130	0.60	3240	0.67	3335	0.71	3420	0.77	3600	0.88	3770	1.00	3925	1.10		
1000	2967	2850	0.48	2940	0.52	3010	0.56	3089	0.60	3160	0.64	3280	0.68	3375	0.75	3465	0.81	3550	0.88	3645	0.93	3800	1.06	3975	1.19	4110	1.30		
1100	3264	3080	0.60	3175	0.65	3230	0.69	3299	0.73	3380	0.79	3520	0.86	3610	0.92	3700	1.00	3770	1.05	3870	1.15	4000	1.29	4150	1.40				

10-BI

10 5/8-INCH WHEEL DIAMETER
OUTLET AREA (SQ. FT.) .452

TIP SPEED (FPM) = 2.78 x RPM
MAX. BHP = .0283 x (RPM/1000)³

VOLUME CFM	O.V. FPM	SP, in. WG																											
		1/4"		3/8"		1/2"		5/8"		3/4"		1.0"		1-1/4"		1-1/2"		1-3/4"		2.0"		2-1/2"		3.0"		3-1/2"			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
200	442	829	0.02	987	0.03	1110	0.03	1218	0.04	1324	0.05	1517	0.08	1686	0.10	1839	0.13	1980	0.16	2112	0.19	2352	0.25	2569	0.32	2774	0.40		
300	664	903	0.02	1044	0.03	1179	0.05	1303	0.06	1412	0.07	1586	0.10	1739	0.13	1880	0.16	2021	0.19	2152	0.23	2392	0.30	2608	0.37	2808	0.46		
400	885	1015	0.04	1141	0.05	1254	0.06	1360	0.08	1459	0.09	1665	0.11	1832	0.16	1974	0.20	2101	0.23	2220	0.27	2437	0.35	2649	0.43	2848	0.52		
500	1106	1142	0.05	1255	0.07	1360	0.08	1454	0.10	1545	0.12	1715	0.16	1876	0.20	2034	0.24	2179	0.28	2315	0.32	2532	0.41	2728	0.50	2908	0.60		
600	1327	1285	0.08	1382	0.09	1478	0.11	1567	0.13	1652	0.15	1806	0.19	1954	0.23	2089	0.28	2223	0.33	2358	0.38	2606	0.48	2825	0.59	3004	0.69		
700	1548	1438	0.11	1522	0.13	1606	0.15	1689	0.17	1767	0.19	1915	0.23	2049	0.28	2179	0.33	2303	0.38	2419	0.44	2649	0.55	2873	0.66	3079	0.79		
800	1720	1594	0.15	1673	0.17	1745	0.19	1818	0.21	1893	0.24	2030	0.29	2161	0.34	2281	0.39	2394	0.45	2508	0.50	2719	0.62	2917	0.75	3123	0.88		
900	1991	1755	0.20	1827	0.23	1895	0.25	1960	0.27	2023	0.30	2155	0.35	2276	0.40	2394	0.46	2504	0.52	2608	0.58	2809	0.71	3000	0.84	3177	0.98		
1000	2212	1918	0.27	1985	0.29	2049	0.32	2110	0.34	2168	0.37	2284	0.42	2401	0.48	2510	0.54	2618	0.61	2720	0.67	2909	0.81	3090	0.95	3265	1.09		
1200	2654	2252	0.43	2309	0.46	2363	0.50	2418	0.53	2471	0.56	2571	0.62	2665	0.68	2765	0.75	2863	0.82	2955	0.89	3135	1.05	3303	1.20	3460	1.36		
1400	3097	2590	0.66	2641	0.70	2690	0.74	2736	0.77	2784	0.81	2875	0.88	2962	0.95	3045	1.02	3124	1.09	3212	1.17	3378	1.34	3534	1.52	3686	1.70		
1600	3539	2886	0.91	2978	1.00	3022	1.04	3064	1.09	3105	1.13	3189	1.21	3269	1.29	3345	1.37	3420	1.46	3491	1.54	3636	1.71	3785	1.90	3925	2.10		

12-BI

12 1/4-INCH WHEEL DIAMETER
OUTLET AREA (SQ. FT.) .855

TIP SPEED (FPM) = 3.21 x RPM
MAX. BHP = .079 x (RPM/1000)³

VOLUME CFM	O.V. FPM	SP, in. WG																											
		1/4"		3/8"		1/2"		5/8"		3/4"		1.0"		1-1/4"		1-1/2"		1-3/4"		2.0"		2-1/2"		3.0"		3-1/2"			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
800	936	904	0.06	993	0.08	1077	0.10	1159	0.13	1240	0.16	1401	0.21	1548	0.27														
1000	1170	1055	0.10	1120	0.12	1190	0.14	1261	0.17	1329	0.20	1459	0.25	1593	0.32	1721	0.39	1840	0.46	1955	0.53								
1200	1404	1194	0.14	1260	0.16	1329	0.20	1389	0.23	1445	0.26	1560	0.32	1669	0.41	1775	0.46	1890	0.54	1999	0.62								
1400	1637	1352	0.20	1410	0.23	1469	0.27	1521	0.30	1578	0.33	1679	0.40	1779	0.48	1870	0.55	1965	0.63	2055	0.71	2200	0.79	2389	0.97				
1600	1871	1519	0.28	1566	0.31	1618	0.35	1667	0.39	1713	0.43	1809	0.52	1889	0.58	1989	0.67	2070	0.75	2150	0.84								
1800	2105	1680	0.39	1728	0.42	1770	0.45	1812	0.50	1860	0.54	1948	0.62	2030	0.71	2110	0.80	2190	0.89	2268	1.00	2313	1.02	2482	1.23	2648	1.44		
2000	2339	1850	0.48	1890	0.54	1930	0.59	1970	0.63	2010	0.67	2090	0.77	2169	0.86	2240	0.96	2315	1.06	2386	1.17	2410	1.18	2559	1.39	2700	1.60		
2200	2573	2021	0.62	2059	0.70	2091	0.74	2130	0.79	2165	0.83	2239	0.94	2310	1.03	2380	1.14	2450	1.25	2518	1.36	2529	1.38	2659	1.58	2789	1.80		
2400	2807	2195	0.84	2225	0.85	2260	0.93	2290	0.97	2323	1.03	2390	1.13	2458	1.23	2520	1.34	2588	1.46	2650	1.58	2641	1.58	2771	1.83	2890	2.05		
2600	3041	2369	1.08	2395	1.01	2425	1.15	2459	1.18	2485	1.24	2549	1.35	2610	1.46	2670	1.59	2730	1.70	2790	1.83	2719	1.83	2820	2.06	2919	2.23		
2800	3275	2540	1.34	2569	1.32	2590	1.32	2620	1.46	2650	1.48	2709	1.62	2761	1.73	2820	1.86	2878	2.00	2930	2.12	2810	2.00	2909	2.09	3020	2.26		
3000	3509	2711	1.58	2740	1.65	2761	1.55	2790	1.73	2818	1.79	2870	1.91	2920	2.04	2973	2.16	3029	2.30	3080	2.45	3041	2.39	3151	2.67	3258	2.95		

Shaded area indicates range of optimum performance.
Performance shown is for Type B - Free Inlet, Ducted Outlet.
Power rating (BHP) does not include drive losses. Shaded area indicates optimum performance range.
Performance ratings do not include the effects of appurtenances in the airstream.



15-BI

15-INCH WHEEL DIAMETER
OUTLET AREA (SQ. FT.) 1.282

TIP SPEED (FPM) = 3.93 x RPM
MAX. BHP = .217 x (RPM/1000)

VOLUME CFM	O.V. FPM	SP, in. WG													
		1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP	2-1/2" RPM BHP	3.0" RPM BHP	3-1/2" RPM BHP	
1000	780	730 0.08	809 0.11	872 0.13	934 0.16	996 0.19	1108 0.25	1217 0.32	1320 0.39	1418 0.47	1510 0.55	1682 0.72	1837 0.89	1980 1.07	
1100	858	767 0.10	847 0.13	912 0.15	969 0.18	1026 0.21	1131 0.27	1235 0.35	1334 0.42	1427 0.50	1519 0.58	1689 0.76	1843 0.94	1986 1.13	
1200	936	804 0.11	885 0.15	952 0.18	1007 0.21	1062 0.23	1160 0.30	1257 0.37	1351 0.45	1442 0.53	1529 0.62	1695 0.80	1848 1.00	1991 1.20	
1400	1092	879 0.14	959 0.19	1027 0.23	1086 0.27	1133 0.30	1229 0.37	1315 0.45	1401 0.52	1483 0.61	1564 0.70	1719 0.89	1865 1.10	2004 1.32	
1600	1248	960 0.19	1032 0.23	1101 0.28	1161 0.33	1210 0.38	1307 0.46	1386 0.54	1464 0.62	1539 0.71	1613 0.80	1756 1.00	1893 1.22	2025 1.44	
1800	1404	1046 0.24	1110 0.29	1174 0.34	1235 0.40	1285 0.46	1385 0.55	1466 0.64	1537 0.73	1607 0.82	1674 0.92	1806 1.12	1934 1.35	2057 1.59	
2000	1560	1136 0.31	1193 0.36	1251 0.42	1308 0.47	1360 0.52	1460 0.65	1543 0.76	1617 0.87	1683 0.96	1745 1.06	1867 1.28	1987 1.50	2101 1.74	
2200	1716	1227 0.39	1279 0.44	1332 0.50	1385 0.56	1435 0.62	1535 0.76	1619 0.89	1694 1.01	1763 1.13	1823 1.23	1938 1.45	2049 1.69	2158 1.93	
2400	1872	1319 0.48	1368 0.54	1417 0.60	1464 0.67	1511 0.74	1607 0.88	1693 1.02	1770 1.16	1839 1.29	1905 1.42	2015 1.56	2119 1.90	2221 2.15	
2600	2028	1413 0.58	1459 0.65	1503 0.72	1548 0.79	1592 0.86	1681 1.01	1767 1.17	1844 1.32	1915 1.47	1973 1.61	2096 1.89	2196 2.14	2292 2.40	
2800	2184	1508 0.71	1551 0.78	1593 0.85	1634 0.92	1675 0.99	1759 1.15	1839 1.32	1918 1.49	1989 1.66	2055 1.82	2172 2.12	2276 2.41	2368 2.69	
3000	2340	1603 0.85	1644 0.92	1684 1.00	1722 1.07	1760 1.14	1836 1.31	1915 1.67	1990 1.67	2063 1.85	2129 2.03	2248 2.37	2354 2.69	2448 3.00	
3200	2496	1699 1.00	1738 1.09	1776 1.17	1813 1.25	1849 1.33	1921 1.50	1993 1.68	2065 1.87	2135 2.06	2203 2.26	2323 2.63	2430 2.99	2527 3.33	
3400	2652	1796 1.18	1833 1.27	1869 1.36	1904 1.44	1938 1.52	2006 1.71	2070 1.89	2142 2.08	2209 2.29	2275 2.49	2397 2.90	2506 3.30	2603 3.66	
3600	2808	1892 1.38	1928 1.47	1962 1.57	1996 1.66	2028 1.75	2092 1.93	2157 2.12	2220 2.32	2285 2.53	2348 2.75	2471 3.19	2579 3.61	2680 4.03	
3800	2964	1990 1.60	2024 1.70	2056 1.80	2088 1.89	2119 1.98	2181 2.18	2242 2.38	2302 2.59	2362 2.80	2424 3.02	2543 3.48	2654 3.94	2753 4.38	
4000	3120	2087 1.84	2120 1.95	2151 2.05	2182 2.15	2211 2.25	2271 2.46	2328 2.66	2387 2.88	2442 3.09	2502 3.32	2616 3.80	2727 4.29	2828 4.76	
4200	3276	2185 2.11	2216 2.22	2247 2.33	2276 2.44	2304 2.55	2362 2.76	2416 2.97	2472 3.19	2527 3.42	2580 3.65	2692 4.14	2799 4.64	2902 5.16	

18-BI

18 1/4 -INCH WHEEL DIAMETER
OUTLET AREA (SQ. FT.) 1.898

TIP SPEED (FPM) = 4.78 x RPM
MAX. BHP = .580 x (RPM/1000)³

VOLUME CFM	O.V. FPM	SP, in. WG													
		1/4" RPM BHP	3/8" RPM BHP	1/2" RPM BHP	5/8" RPM BHP	3/4" RPM BHP	1.0" RPM BHP	1-1/4" RPM BHP	1-1/2" RPM BHP	1-3/4" RPM BHP	2.0" RPM BHP	2-1/2" RPM BHP	3.0" RPM BHP	3-1/2" RPM BHP	
1600	843	594 0.12	651 0.16	704 0.20	760 0.25	813 0.30	913 0.40	1000 0.51	1088 0.62	1169 0.74	1245 0.87	1387 1.14	1517 1.46	1637 1.80	
1800	948	641 0.15	692 0.19	742 0.24	789 0.28	840 0.34	935 0.45	1022 0.57	1100 0.68	1178 0.80	1254 0.94	1393 1.21	1520 1.51	1639 1.86	
2000	1054	690 0.19	737 0.23	783 0.28	827 0.33	869 0.38	959 0.50	1044 0.63	1123 0.75	1194 0.88	1263 1.01	1401 1.30	1527 1.61	1643 1.93	
2200	1159	739 0.23	784 0.28	826 0.33	868 0.38	907 0.43	987 0.55	1067 0.68	1144 0.83	1217 0.97	1284 1.11	1410 1.40	1535 1.72	1651 2.05	
2400	1264	789 0.28	833 0.33	872 0.38	911 0.44	948 0.49	1019 0.61	1095 0.75	1167 0.90	1238 1.05	1307 1.21	1428 1.51	1544 1.83	1659 2.18	
2600	1370	839 0.33	881 0.39	920 0.45	956 0.50	991 0.56	1060 0.69	1125 0.82	1195 0.97	1262 1.13	1327 1.30	1452 1.63	1561 1.96	1668 2.31	
2800	1475	890 0.39	931 0.46	969 0.52	1003 0.58	1036 0.64	1101 0.77	1163 0.91	1224 1.05	1290 1.22	1352 1.39	1474 1.75	1585 2.11	1685 2.47	
3000	1581	942 0.46	982 0.53	1017 0.60	1051 0.67	1082 0.73	1144 0.87	1204 1.01	1261 1.15	1318 1.31	1380 1.49	1494 1.86	1608 2.27	1709 2.64	
3200	1686	994 0.54	1032 0.61	1067 0.69	1100 0.76	1130 0.83	1189 0.97	1246 1.12	1301 1.27	1354 1.43	1408 1.60	1521 1.99	1626 2.39	1732 2.82	
3400	1791	1046 0.66	1083 0.71	1117 0.78	1149 0.86	1179 0.94	1235 1.09	1289 1.24	1342 1.40	1394 1.56	1433 1.73	1549 2.12	1652 2.54	1751 2.97	
3600	1897	1099 0.72	1134 0.81	1167 0.89	1198 0.97	1228 1.05	1282 1.21	1334 1.37	1385 1.54	1435 1.71	1483 1.88	1578 2.25	1679 2.69	1774 3.13	
3800	2002	1152 0.83	1186 0.92	1218 1.01	1248 1.09	1277 1.18	1331 1.35	1380 1.52	1429 1.69	1477 1.86	1524 2.04	1613 2.41	1708 2.85	1802 3.31	
4200	2213	1259 1.07	1291 1.17	1321 1.27	1350 1.37	1377 1.46	1428 1.66	1476 1.85	1521 2.03	1565 2.22	1608 2.41	1694 2.81	1774 3.21	1858 3.68	
4600	2424	1368 1.37	1397 1.47	1425 1.58	1452 1.69	1478 1.80	1527 2.01	1573 2.22	1617 2.43	1658 2.63	1698 2.83	1777 3.25	1856 3.69	1929 4.13	
5000	2634	1476 1.71	1504 1.83	1530 1.95	1556 2.06	1581 2.18	1628 2.41	1672 2.54	1714 2.87	1754 3.10	1792 3.31	1866 3.76	1939 4.22	2011 4.69	
5400	2845	1586 2.11	1612 2.24	1637 2.37	1661 2.49	1684 2.62	1729 2.88	1772 3.12	1812 3.37	1851 3.62	1888 3.86	1958 4.34	2027 4.82	2094 5.31	
5800	3056	1696 2.58	1720 2.71	1744 2.85	1767 2.98	1789 3.12	1832 3.40	1873 3.67	1912 3.93	1949 4.20	1986 4.48	2054 4.98	2117 5.49	2182 6.01	
6200	3267	1806 3.11	1829 3.25	1851 3.40	1873 3.54	1894 3.69	1936 3.98	1975 4.28	2013 4.56	2049 4.84	2084 5.13	2151 5.70	2213 6.24	2272 6.79	

Shaded area indicates range of optimum performance.
Performance shown is for Type B - Free Inlet, Ducted Outlet.
Power rating (BHP) does not include drive losses. Shaded area indicates optimum performance range.
Performance ratings do not include the effects of appurtenances in the airstream.



Direct Drive Blowers

General Features

Wheels

- ▲ Rugged industrial construction.
- ▲ Dynamically balanced for efficient operation with a minimum of noise.

Housings

- ▲ Made of heavy gauge, galvanized steel.
- ▲ Wide flange inlet collars facilitate easy connections of standard sized sheet metal pipe.
- ▲ Baked enamel finish withstands most atmospheric conditions.
- ▲ Field rotatable to eight different discharge positions.

Optional Features

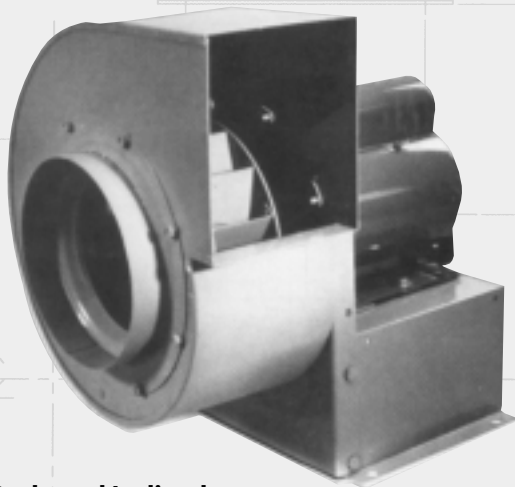
- ▲ Spark resistant construction.
- ▲ Chemical resistant coatings.
- ▲ Inlet & outlet screens.
- ▲ Automatic back draft dampers.
- ▲ Vibrations isolators, Rubber-in-Shear, Individual Spring Mounts or Spring Rails.
- ▲ Weather covers.
- ▲ Outlet transition to 8" dia. round.
- ▲ Drain fitting.
- ▲ Special motors such as TEFC, Explosion Proof, 2-speed and variable speed.

Special Features:

Forward Curve

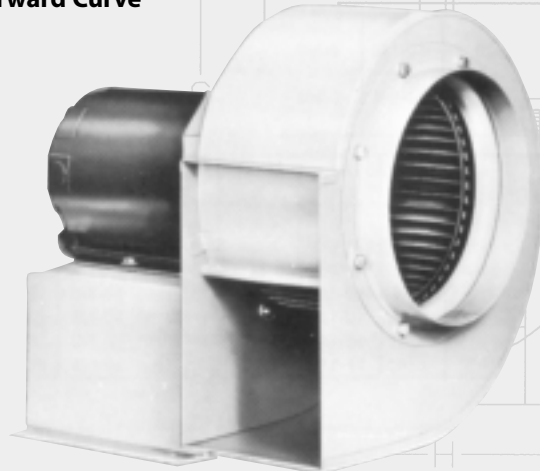
- ▲ Quiet operation for fresh air supply and exhausting air from washroom kitchens, hoods, grinders, etc.
- ▲ Use low speed unit for quietest operations and high speed for applications involving higher static pressures.
- ▲ Available in either CW or CCW rotation.

Note: Rotation is determined when viewed from the drive side . (usually opposite the inlet side) or as viewed from the motor (or closed) side of the wheel.



Backward Inclined

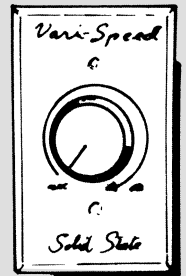
Forward Curve



TYPICAL OF 9BI, AND 10BI.

Variable Speed Motor Controls

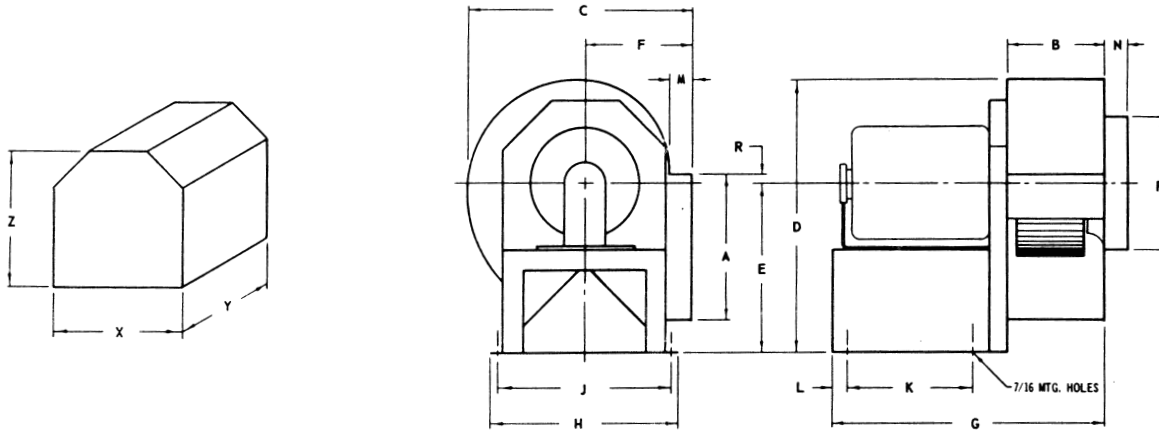
The full wave phase control circuitry minimizes power loss, reducing energy requirements. The controls provide infinitely variable speed adjustment which permits the consumer individual selection of air volume, motor speed, and noise level. The models cover a range of amperages from 2.5 through 10.0 amps , allowing selection of the most economical control for the application. Important features are standard: RFI filter, min.speed trim, and built-in on/off line switch. All models are U.L. recognized. Available on single phase, PSC motors only.



Backward Inclined

- ▲ Non-overloading horsepower curve makes it possible to match the power output of the motor to the power requirement of the blower so both motor and blower are operating near their points of peak efficiency.
- ▲ Backward inclined self-cleaning wheel.
- ▲ Operating at pressures up to 5 1/2" S.P.
- ▲ Use to exhaust air through duct systems at relatively high pressures.
- ▲ Ideal for many industrial uses, including exhausting heat or fumes from laboratory hoods and welding and brazing operations.
- ▲ 3450 rpm models are intended mainly for industrial uses where higher pressures are required.
- ▲ 1750 rpm models are designed for use in commercial or residential buildings where quieter operation is needed.

Direct Drive Forward Curve



MODEL NO.	WHEEL DIA. x W	BORE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	X	Y	Z
60	6 1/4 x 3	1/2	7	4 3/8	10 3/8	12 3/8	7 3/4	4 7/8	12 3/8	9 1/2	8 1/2	6	7/8	1	1 1/8	5 5/16	3/4	7 11/16	10 1/8	8
62	6 1/4 x 1 1/2	1/2	7	2 3/4	10 3/8	12 3/8	7 3/4	4 7/8	10 3/4	9 1/2	8 1/2	6	7/8	1	1 1/8	5 5/16	3/4	7 11/16	10 1/8	8
80	7 11/16 x 4	1/2	8 3/4	5 7/16	12 15/16	14 1/4	8 3/8	6 1/8	13 13/16	10 3/4	9 3/4	6	1	1 3/16	1 5/16	7 7/8	1	9	10 1/8	8 5/8
88	8 1/2 x 4	5/8	10 1/8	5 1/8	14 7/16	16 1/2	9 3/8	6 3/4	14 5/8	12 1/8	11	7	1 1/8	1 3/16	1 5/16	8 7/8	1 3/8	10 1/4	10 3/4	9 3/8
90	9 1/8 x 4 5/8	5/8	10 1/8	6 3/8	14 7/16	16 1/2	9 3/8	6 3/4	15 7/8	12 1/8	11	7	1 1/8	1 3/16	1 5/16	8 7/8	1 3/8	10 1/4	10 3/4	9 3/8
92	9 x 2 1/2	5/8	10 1/8	4 1/8	14 7/16	16 1/2	9 3/8	6 3/4	13 11/16	12 1/8	11	7	1 1/8	1 3/16	1 5/16	8 7/8	1 3/8	10 1/4	10 3/4	9 3/8
110	10 5/8 x 5	5/8	11 1/2	8 1/4	16 5/8	20 1/2	10 1/2	7 15/16	17 3/4	14 1/4	13 1/4	7	1 3/16	1 1/2	1 5/16	9 7/8	1 7/8	12	16 1/2	14 5/8

MODEL NO.	MOTOR H.P.	RPM	CUBIC FEET PER MINUTE																	
			FREE AIR	STATIC PRESSURE, INCHES W.G.																
				1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3				
60A	1/6	1725	620	590	565	540	515	480	440	300										
60B	1/6	1140	410	375	330	260														
62A‡	1/6	1725	205	203	195	190	160	106	25											
62B‡	1/6	1140	135	125	86															
62C‡	1/3	3450	405	402	400	399	397	396	394	390	382	375	355	340	280	125				
80A	1/3	1725	985	961	935	906	875	838	800	712	596									
80B	1/6	1140	648	609	562	503	428													
88A 3/4‡	3/4	1725	1300	1280	1260	1240	1220	1200	1180	1100	1000	850	805	600						
90A	1	1725	1790	1770*	1734*	1700	1668	1635	1590	1504	1420	1312	1200	1100						
90B	1/3	1140	1180	1132	1080	1020	952	877	793	572										
92A	1/2	1725	1106	1080	1050	1020	980	950	920	850	780	710	640	530						
110B‡	3/4	1140	2200	2140	2060	1960	1840	1700	1520	1240	800									

Performance with PSC-Type Motor and Speed Controller

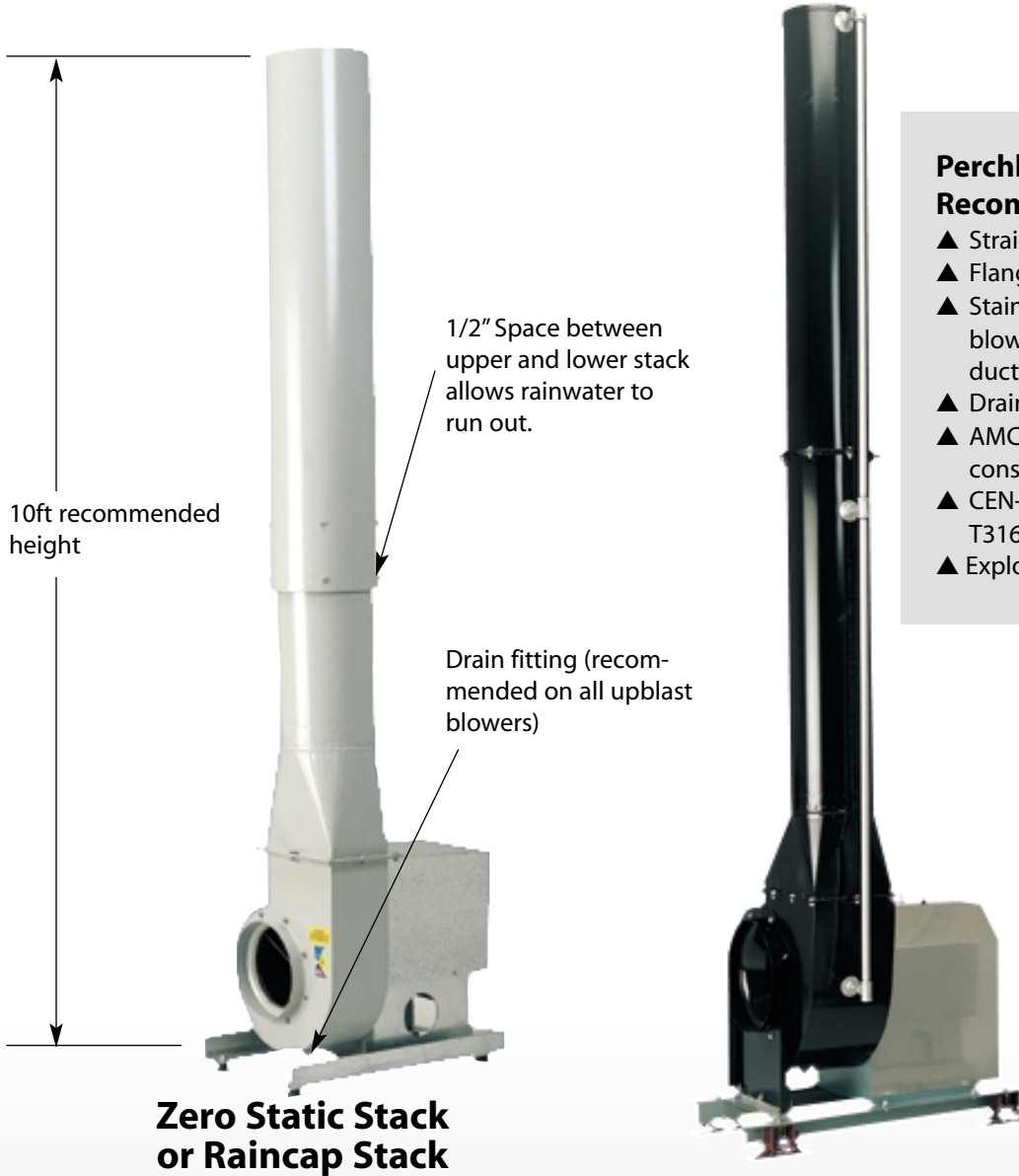
MODEL NO.	MOTOR H.P.	RPM	CUBIC FEET PER MINUTE																	
			FREE AIR	STATIC PRESSURE, INCHES W.G.																
				1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2°	3				
60AV	1/4	1625	570	550	525	500	470	430	375	—										
62AV‡	1/4	1625	193	190	182	163	125	55	—											
80AV	1/4	1625	770	765	760	750	735	710	700	640	510									
90BV	1/2	1100	1120	1080	1046	990	900	840	740	—	—									
110BV‡	1/2	1100	2000	1960	1800	1760	1660	1530	1370	1120	650									

While tested in accordance with AMCA standards, these blowers are not AMCA approved. Performance shown above for blower with speed controller is for the high setting of control. The speed control allows the motor speed to be reduced as much as 40% with the air flow dropping an equal percentage.

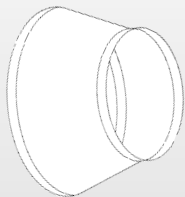
‡Available CCW rotation only.
*1 HP motor will be overloaded at these pressures — 1 1/2 HP motor recommended.

Vertical Stacks & Transitions

Exhaust stacks are supplied in either galvanized steel, coated steel or stainless steel to match the blower construction. Connections are either slip fit (stack and blower are steel or coated steel construction) or flanged (stainless steel construction). Inlet and outlet transitions are available for most popular duct sizes. Specify slip fit or flanged connection.



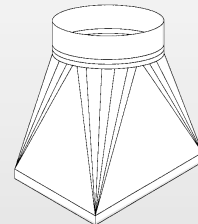
- Perchloric Acid System Recommendations**
- ▲ Straight stack
 - ▲ Flanged inlet and outlet
 - ▲ Stainless steel nozzles in stack and blower housing (also required in duct from hood to blower)
 - ▲ Drain fitting
 - ▲ AMCA type "B" spark resistant construction
 - ▲ CEN-FP Fluoropolymer coating or T316 stainless steel
 - ▲ Explosion proof motor



Inlet Adapter
Flanges Optional



Wash Down Nozzle

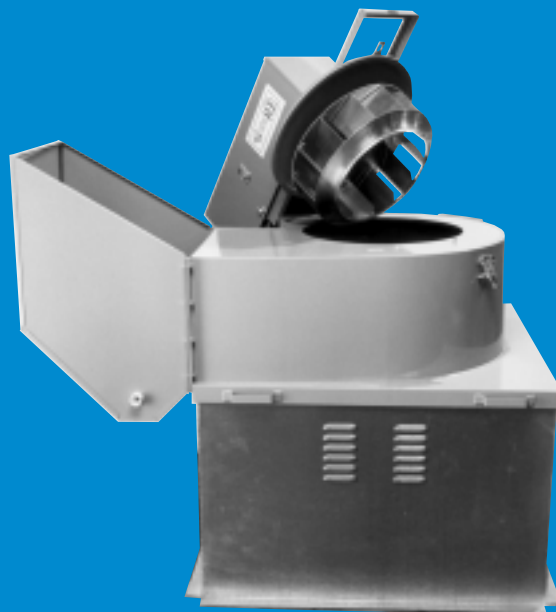


Transition
Flanges Optional

OTHER CENTRAL PRODUCTS



SERIES FCD
Double Inlet Forward Curved Blowers
Sizes: 18, 22, 26 and 30



SERIES RE
Restaurant Exhausters UL762 Approved
Sizes: 12, 15, 18, 22 and 24

WARRANTY

Central Blower Co. (the Company) warrants that each blower manufactured by the Company shall be free from defects in material and workmanship under normal use and service for a period of eighteen (18) months from the date of shipment or twelve (12) months from date of original installation, "whichever occurs first." If it appears within the warranty period that the blower does not meet the warranties specified above and the purchaser notifies the Company promptly, the Company agrees to remedy any such defect, at the Company's option, either by repairing any defective parts or by furnishing at the Company's factory a repair or replacement part.

This warranty shall not apply to any equipment which has been repaired or altered in any way so as, in the Company's judgement, to affect its performance or reliability, nor which has been improperly installed or subject to misuse, negligence or accident. This warranty does not apply to electric motors, which however, carry warranty of the motor manufacturer. Warranty does not apply to drive belts.

This warranty is expressed in lieu of all other warranties expressed or implied, and of all other obligations or liabilities on the Company's part. The Company neither assumes, nor authorizes any representative or other persons to assume for it, any other liability in connection with the sale of its equipment.



CENTRAL BLOWER CO.

211 S. 7th Ave. • City of Industry, CA 91746 (626) 330-3182 Fax (626) 330-9406
www.centralblower.com