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TECHNICAL DATA FOR SERIES 60 FANS

This document provides supplementary data concerning Series 60 Fan design, construction, performance and sound. A practical discussion of typical applications is included herein. Also, procedures for selection are outlined in detail.

I. Design Features

The Series 60 Fan is designed for volumes up to 60,000 CFM at static pressures up to 70" W.G. Typical applications in this high pressure range would include:

1. High pressure industrial process systems such as molding, drying, high velocity indirect pneumatic conveying.
2. Scrubbers, especially wet scrubbers or venture scrubbers due to moisture and/or particulate buildup on wheel blades causing imbalance.
3. Combustion supply air, either forced draft or induced draft, also boiler supply air applications.

The Series 60 is custom tailored for each specific application. "Custom manufacturing" means that the shaft and bearing sizes vary with each fan selection. Therefore, each bearing pedestal and motor pedestal is designed for each specific application.

Shaft and bearing selection is based on wheel thrust loads and rotational speed. Considerations also include the appropriate loads of the driving device, all torsional loads, and a maximum shaft speed of 75% of first critical speed. Unlike other New York Blower products, a standard shaft and bearing combination for each fan size cannot be established due to the extreme range of loads and speeds covered by each fan size.

II. Radial Tip (RT) Wheel

The radial tip wheel combines the ruggedness of the radial wheel and the efficiency of the backwardly inclined wheel. This combination allows the Series 60 to deliver high pressure at lower speeds and lower horsepowers while retaining the low entry loss of the backwardly inclined wheel and the strength and self-cleaning features of the radial wheel.

The combination of the radial tip wheel and the Series 60 Fan housing inherently involves high airstream velocities which place limitations on material handling capabilities. Intended applications for the Series 60 Fan include clean air or contaminants ranging from hot gases to light dust or some particulate loading. Maximum loading may be as great as 2 to 3 grains per cubic foot. However, this limitation may be adjusted downward depending upon velocity, moisture, temperature, and the abrasive characteristics of the particular material involved. Since a pound contains 7,000 grains, pounds per minute passing through the fan can be determined by multiplying CFM by the grains per cu.ft. and dividing by 7,000. For example, consider a fan operating at a volume of 7,000 CFM:

$$\left(\frac{30{,}000 \times 3 \text{ grn/ft}^3}{7{,}000 \text{ grn/lb.}} \right) = 12.86 \text{ lbs/min.}$$

Obviously, consideration must be given to the particular material involved when analyzing each application.

The Series 60 Fan is not intended for direct through-the-fan pneumatic conveying. In keeping with this limitation, Series 60 Fans are not available with wear plates or scroll liners. Such applications typically involve particulate loading far beyond the recommended limitations of the Series 60 Fan.

III. Performance

The typical performance range of the Series 60 Fan involves consideration of a number of factors. Rarefication and/or compression become major considerations and must be recognized along with temperature, altitude and gases other than standard air. In addition, resistance from various accessories must also be factored in to the fan selection.

The performance tables (see pages 7 through 10) and curves give fan performance based on air at 70°F. at sea level at a density of .075 lb./cu.ft. and equipping the fan with an evase. If the airstream density is other than .075 lb/cu.ft., corrections must be made to static pressure and brake horsepower.

IV. Density Corrections

Calculating Fans at Temperatures other than 70°F. Chart I gives factors for correcting pressure and brake horsepower for temperatures other than 70°F.

EXAMPLE:

1. Require 10,000 CFM at 20"SP at 600°F. at sea level.
2. Chart I indicates s 2.00 factor for 600°F.
3. Select the fan for 40" SP [20" x 2.00] at 70°F.
4. Divide 70°F. brake horsepower by 2.00 to determine BHP at conditions.

CHART I
SP AND BHP CORRECTION FACTORS FOR TEMPERATURE [°F.]

Temperature	Factor	Temperature	Factor
-50°	.77	225°	1.29
-25°	.82	250°	1.34
0°	.87	275°	1.39
20°	.91	300°	1.43
40°	.94	325°	1.48
60°	.98	350°	1.53
70°	1.00	375°	1.58
80°	1.02	400°	1.62
100°	1.06	450°	1.72
120°	1.09	500°	1.81
140°	1.13	550°	1.91
160°	1.17	600°	2.00
180°	1.21	700°	2.19
200°	1.25	800°	2.38

Calculating Fans at Altitudes other than Sea Level
Correction for altitudes is the same as for temperature except using the factors in Chart II.

EXAMPLE:

1. Require 10,000 CFM at 20" SP at 5000 feet above sea level.
2. Chart II indicates a 1.20 factor for 5000 FASL.
3. Select the fan for 24" SP [20" x 1.20] at 70° F. and seal level.
4. Divide the sea level brake horsepower by 1.20 to determine BHP at conditions.

CHART I
SP AND BHP CORRECTION FACTORS FOR ALTITUDE

Altitude	Factor	Altitude	Factor
0	1.00	5000	1.20
500	1.02	5500	1.22
1000	1.04	6000	1.25
1500	1.06	6500	1.27
2000	1.08	7000	1.30
2500	1.10	7500	1.32
3000	1.12	8000	1.35
3500	1.14	9000	1.40
4000	1.16	10000	1.45
4500	1.18		

Correction For Density Rarefication

When negative static pressure exists on the inlet side of a fan, additional correction for a lower density should be made. When negative pressure is less than 20", this factor is usually considered negligible unless the system designer is calculating to extremely close tolerances. Chart III shows correction factors for negative inlet pressure.

The factors apply to static pressure and brake horsepower in the same manner as temperature and altitude corrections.

CHART III
SP AND BHP Correction Factors Fore Rarefication [negative inlet pressure]

SP	Factor
5"	1.01
10"	1.03
15"	1.04
20"	1.05
25"	1.07
30"	1.08
35"	1.09
40"	1.11
45"	1.12
50"	1.14
55"	1.16
60"	1.17
65"	1.19
70"	1.21

CHART IV
Densities of Saturated Air

Temp. (°F)	Density (lbs./ft.^{3})	Temp. (°F)	Density (lbs./ft.^{3})
-20	.09027	100	.06919
-10	.08824	110	.06741
0	.08632	120	.06552
10	.08445	130	.06349
20	.08624	140	.06132
30	.08090	150	.05895
40	.07921	160	.05634
50	.07753	170	.05346
60	.07589	180	.05036
70	.07425	190	.04667
80	.07262	200	.04270
90	.07094	212	.03730

Handling Gases Other than Air

Whenever the fan airstream is made up of gases other than standard air, the density of the airstream must be determined for accurate fan selection. In addition to the type of gases in the airstream, the amount of moisture or material in the airstream affects density and needs to be taken into account. Engineering handbook reference is frequently required to calculate the densities in such applications. Consult your **nyb** representative for assistance.

Compression

Compression needs to be considered in high pressure supply systems only when ACFM is specified at the fan outlet. The air inside the fan is compressed and, there-fore, becomes more dense. The steps below show the correction formula for compression.

1. Calculate temperature rise as a result of compression. For every 2" of differential SP at conditions, there is approximately a 1°F. temperature rise within the fan.

2. Specify SP at inlet and SP at outlet. Differential SP = Outlet SP - Inlet SP.

3. Correct outlet ACFM to inlet ACFM in order to select a fan. Capacity tables and performance curves reflect inlet ACFM.

$$\text{Inlet ACFM} = \text{Outlet ACFM} \times \frac{460°\text{F.} + \text{inlet temperature}}{460°\text{ F.} + \text{inlet temp.} + \text{temp. rise}} \times \frac{408" + \text{SP at outlet}}{408" + \text{SP at inlet}}$$

4. Refer to "How to Select Belt Drive Series 60 Fans or "How to Select Direct Drive Series 60 Fans" for proper fan selection.

EXAMPLE:

Fan is required to handle 36541 ACFM at the fan outlet. The system was calculated to have -2" WG at the fan inlet and 42" WG differential SP at 160°F. at sea level.

1. 42" differential SP ÷ 2 = 21°F. temperature rise.

2. 42" SP = 40" SP [-2" SP].

3.

$$36541 \times \frac{460°F. + 160°F.}{460° + 160°F + 21°F.} \times \frac{408" WG + 40" WG}{408" WG + [-2"WG]} = 39000 \text{ Inlet ACFM}$$

4. Required capacity is 39000 ACFM at 42" SP at 160°F. at sea level. Using the temperature correction factor from Chart I for 160°F., select fan for 39000 ACFM at 49.1" SP [42 X 1.17] at 70°F. at sea level. Size 1340 Series 60 Fan at 1787 RPM at 446 BHP (see page 10).

   BHP [conditions] = 446 ÷ 1.17 = 381

NOTE: The steps shown in the examples consider compression and rarefication separately. If the fan must supply a specific volume at the outlet and significant inlet resistance is present, both compression and rarefication must be included in the performance corrections prior to selecting the fan from the published performance data.

V. Accessory Pressure Drop

The curves and capacity tables for Series 60 Fans reflect performance when a standard **nyb** outlet evase is furnished. This evase is offered and considered in rating because it provides static pressure regain and reduced air velocities at the fan outlet. If no evase is furnished, performance requirements must be adjusted to reflect the loss created by not utilizing this static pressure regain.

Resistance is also added to a system by the addition of an inlet box, an inlet damper, or an outlet damper. Each of these accessories, as well as the absence of an evase, changes the static pressure requirement for the fan and the corrected SP must be determined in order to make a proper selection. This change in SP is directly proportional to velocity pressure (VP) at standard conditions.

$$VP_{(std.)} = \left(\frac{\text{Velocity}}{4005}\right)^2$$

The formula for velocity in feet per minute (FPM) is V = Q ÷ A where "Q" is the ACFM and "A" is the area through which the air is passing. This velocity will differ at the inlet and outlet of each fan because of different areas and volumes. If resistance due to an outlet damper or lack of an evase is to be determined, the ACFM at the outlet must be calculated to find VP at the outlet. The formula for outlet ACFM is:

$$\text{Outlet ACFM} = \text{Inlet ACFM} \times \frac{\text{Absolute Inlet Temp.} + SP/2}{\text{Absolute Inlet Temperature}} \times \frac{\text{Absolute Inlet Pressure}}{\text{Absolute Outlet Pressure}}$$

The areas used in the velocity formula also differ. Refer to Table A for these areas and corresponding VP factors. Once VP has been determined at the appropriate location, it is multiplied by the corresponding VP factor to determine the additional SP at standard conditions.

For example, suppose a Size 1340 Series 60 was selected for a system requiring 20,000 ACFM at 600°F., handling clean dry air, -20" SP at the inlet, 5" SP at the outlet, and an inlet box and an outlet damper:

Differential SP (std.) = 25" x 1.05 x 2.00 = 52.5"

$$\text{Velocity}_{(\text{Inlet})} = \frac{20{,}000 \text{ ACFM}}{3.795 \text{ ft.}^2} = 5270 \text{ FPM}$$

$$VP_{(\text{Inlet})} = \left(\frac{5270}{4005}\right)^2 = 1.73"$$

Inlet Box Pressure Drop = 1.73" x .15 = .26"

$$\text{Outlet ACFM} = 20{,}000 \times \left(\frac{460 + 600 + 25/2}{460 + 600}\right) \times \left(\frac{408-20}{408 + 5}\right)$$

$$= 19{,}011 \text{ ACFM}$$

$$\text{Velocity}_{(\text{Outlet Damper})} = \frac{19{,}011 \text{ ACFM}}{3.795 \text{ ft.}^2} = 5009 \text{ FPM}$$

$$VP_{(\text{Outlet Damper})} = \left(\frac{5009}{4005}\right)^2 = 1.56"$$

Outlet Damper Pressure Drop = 1.56 x .816 = 1.27"

This additional resistance at standard conditions must be added to the 52.5" differential SP (std.) to determine the fan's point of operation:

52.5" + .26" + 1.27" = 54.03"

TABLE A
Accessory Areas and VP Loss Factors

Fan Size	Inlet Damper		Inlet Box		Outlet Damper		No Evase	
	Area	Factor	Area	Factor	Area	Factor	Area	Factor
670	1.896	.424	.948	.15	.948	1.43	.9	.55
750	2.376	.478	1.188	.15	1.188	1.02	1.18	.55
850	3.054	.489	1.527	.15	1.527	.841	1.52	.55
950	3.814	.424	1.907	.15	1.907	.947	1.90	.55
1060	4.750	.420	2.375	.15	2.375	1.13	2.37	.55
1200	6.086	.359	3.043	.15	3.043	1.00	3.04	.55
1340	7.590	.424	3.795	.15	3.795	.816	3.79	.55
1500	9.510	.421	4.755	.15	4.755	.717	4.75	.55

VI. Series 60 Fan Selection

The most common drive arrangement employs standard V-belt drives because of the flexibility provided through the use of various sheave sizes and the ability to adjust to a new performance requirement simply by changing sheaves and belts.

In the lower horsepower ranges, V-belt drive selection is relatively simple, but as horsepower requirements increase, V-belt drive selection becomes more complicated and requires more consideration of the drive's effect on fan and motor bearings.

A few general recommendations to remember are:

1. 3600 RPM motors are not generally recommended for belt drive above 20 HP.
2. 1800 RPM motors are not generally recommended for belt drive above 300 HP.
3. When motors 200 HP and larger are to be used with belt-drive fans, **nyb** requires that the motor manufacturer:
   a. Recommend the minimum diameter motor sheave that may be used.
   b. Recommend the maximum motor-sheave width that may be used.

With the above information from the motor manufacturer, the drive may be selected.

How to Select Belt Drive Series 60 Fans
Within the housings of Series 60 Fans, an internal phenomenon occurs knows as compressibility. Compressibility is reflected in direct drive performance curves; but due to the compression characteristics of gases, this phenomenon renders the fan laws useless for plotting new curves at varying speeds. Therefore, capacity tables (see pages 7 through 10) are used for selection of belt driven fans. However, speed becomes a critical factor once a selection has been determined. Not only the safe speed of the wheel, but also the maximum safe shaft speed and bearing speed must be considered. The tables on page 5 list these speeds.

Notice that the maximum speeds for grease lubricated bearings on the three largest size fans are limited by the safe shaft speeds. The following example illustrates a belt drive selection.

EXAMPLE:

18000 Inlet ACFM, -20" WG inlet SP, 40" WG differential SP (at conditions). Fan is handling clean, dry 200°F. air and is to have an outlet damper.

Differential SP (std.) = 40" SP x 1.25 x 1.05 = 52.5" where 1.25 is the correction factor for 200° F. from Chart I and 1.05 is the rarefication correction factor for -20" SP from Chart III.

The pressure drop through the outlet damper must be added to the differential static pressure (52.5" S)). To calculate the pressure drop, the outlet ACFM must be determined:

$$18000 \times \left(\frac{460 + 200+20}{460 + 200}\right) \times \left(\frac{408 -}{408 + 20}\right)$$

= 16812 Outlet ACFM

Since velocity pressure at the outlet damper is a function of the pressure drop calculation, a tentative fan selection must be made. The capacity tables for a Size 1200 show that a 100% width wheel will provide 18000 CFM at 52.5"SP at approximately 1932 RPM, 211 BHP. At 200°F., the maximum safe wheel speed is 2183 RPM . . . 2250 RPM maximum safe speed at 70°F. from Table C times 0.97 derate for 200°F. from Table E.

Table A indicates that the area of a Size 1200 outlet damper is 3.043 ft.^{2} and the VP factor is 1.000.

$$V = \frac{16812}{3.043} = 5525 \text{ FPM}$$

$$VP = \left(\frac{5525}{4005}\right)^2 = 1.90"$$

Corrected SP = 52.5" SP + (1.90" x 1.00) = 54.4" SP

Referring again to the capacity table for a 100% width Size 1200 Series 60 Fan, interpolate to determine required speed and BHP for 18000 CFM at 54.5"SP. . . 1970 RPM, 220 BHP. The required operating speed is less than the 2183 RPM maximum safe wheel speed st 200°F. The required shaft diameter must now be determined. Per Table B, the minimum recommended shaft diameter for use with a 250 HP motor and drive is 3-7/16". Table C indicates that the safe speed of a 3-7/16" diameter shaft on a Size 1200 Series 60 Fan is limited to the wheel safe speed and that the grease lubricated bearing safe speed is 2250 RPM which is greater than the required operating speed.

TABLE B
Minimum Fan Shaft Diameter For Required Motor Horsepower

Motor HP (@ 1800 RPM)	Maximum Belt Pull (lbs.)	Maximum Recommended Shaft Diameter
30	686	2-7/16”
40	793	2-7/16”
50	874	2-11/16”
60	964	2-11/16”
75	1036	2-11/16”
100	1382	2-15/16”
125	1415	2-15/16”
150	1698	2-15/16”
200	1801	2-15/16”
250	2252	3-7/16”
300	2701	3-7/16”
350	3152	3-7/16”

TABLE C
Maximum Fan Shaft Safe Speed and Maximum Speed for Grease Lubrication Per Fan Size

Fan Size	Shaft Diameter	Max. Wheel Safe Speed at 70°F.	Max. Shaft Safe Speed[1]	Max. Speed for grease lubricated bearings[2]
670	2-7/16*	4030	4030	3400†
	2-11/16		4030	3200
	2-15/16		4030	3000
750	2-7/16*	3600	3600	3400†
	2-11/16		3600	3200
	2-15/16		3600	3000
850	2-7/16*	3175	3145	3145
	2-11/16		3175	3175
	2-15/16		3175	3000
950	2-7/16*	2840	2708	2708
	2-11/16		2840	2840
	2-15/16		2840	2840
	3-7/16		2840	2300
1060	2-7/16*	2550	2016	2016
	2-11/16		2303	2303
	2-15/16		2550	2550
	3-7/16		2550	2300
1200	2-11/16*	2250	1800	1800
	2-15/16		2061	2061
	3-7/16		2250	2250
1340	2-15/16	2015	1684	1684
	3-7/16*		2015	2015
1500	2-15/16	1800	1414	1414
	3-7/16*		1800	1800

[1] Limited to maximum wheel safe speed at 70°F.

[2] Limited to maximum shaft and wheel safe speed at 70°F.

* Standard Direct Drive Shaft Sizes.

† P-300 bearing grease lube has maximum RPM of 3600 but but can only be used on Arrangement 8.

TABLE D
Maximum Wheel Safe Speed Factors

	70°F	200°F	300°F	400°F	500°F	600°F	700°F	800°F
Mild Steel	1.00	.97	.95	.93	.90	.87	.84	.75
304 SST	1.00	.89	.82	.78	.75	.73	.71	.70
316 SST	.95	.92	.88	.86	.83	.80	.78	.77
347 SST	1.00	1.00	.99	.97	.97	.97	.96	.96
Aluminum	1.00	1.00	--	--	--	--	--	--
950X-960X	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

NOTE: Use maximum temperature not operating temperature.

Direct Drive

Arrangement 4 and 8 fans are available for applications which require direct drive fans. When selecting a direct drive fan, the required performance may not be available at the desired driving speed when using a standard fan. In order to broaden the available performance range, special diameter and special width wheels are available.

Series 60 Fan housing width remains constant. Thus, even if a fan is originally furnished with narrow width and special diameter wheel construction, a new full width, full diameter wheel and shaft could be installed to increase performance at a later date. However, the motor pedestal may require modification if a larger motor is needed.

In most cases, flexible couplings should be selected since they are capable of compensating for small amounts of lateral and angular misalignment while in operation. They should be selected with a 1.5 service factor.

TABLE E - ACTUAL AREAS (Ft.^{2})

Size	Inlet Box and Damper	Fan Inlet	Fan Outlet	Outlet Evase and Damper
670	1.896	.948	.749	.948
750	2.376	1.188	.938	1.188
850	3.054	1.527	1.212	1.527
950	3.814	1.907	1.530	1.907
1060	4.750	2.375	1.907	2.375
1200	6.086	3.043	2.427	3.043
1340	7.590	3.795	3.020	3.795
1500	9.510	4.755	3.780	4.755

TABLE F - FAN WEIGHTS AND MATERIAL GAUGES

Size	Arr. 1 Bare Fan Weight	Housing	Bearing Pedestal	Support Structure
670	825	7	1/4	3 x 4 x 1/4
750	975	7	1/4	3 x 4 x 1/4
850	1225	7	3/8	3 x 4 x 1/4
950	1475	7	3/8	3 x 4 x 1/4
1060	1800	7	3/8	3 x 4 x 1/4
1200	2175	7	3/8	4 x 5.4#
1340	3025	1/4	3/8	4 x 5.4#
1500	3200	1/4	3/8	5 x 6.7#

TABLE G - WHEEL WEIGHTS AND MATERIAL GAUGES

Size	100% Dia. & Width Weight	WR^2	Blades		Backplate	Front Plate	
			Gauge	Number		Gauge	Number
670	96	58	10	12	7	1/4	10
750	118	89	10	12	7	1/4	10
850	150	145	10	12	7	1/4	10
950	198	241	10	12	7	1/4	10
1060	306	463	7	16	1/4	1/4	10
1200	380	737	7	16	1/4	1/4	10
1340	490	1186	7	16	1/4	1/4	10
1500	599	1812	7	16	1/4	1/4	10

BEARINGS

High speed, (above 3400 RPM) Arrangement 8 Size 670 and 750 fans use P-300 bearings. All other sizes and arrangements of Series 60 Fans use LinkBelt P-LB 6800 Series bearings or equal.

Size 670

Inlet Diameter: 13 3/16"
Outlet area: 0.948 ft.^{2}

Wheel diameter: 26 3/8"
Wheel circumference: 6.91 ft.

75% Width Wheel		30" SP		32" SP		34" SP		36" SP		38" SP		40" SP		42" SP		44" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3000	3165	2644	21.7	2737	23.5	2811	25.1	2897	26.8	2971	28.4	3050	30.2	3132	32.2		
3500	3692	2650	24.4	2738	26.2	2813	27.9	2901	30.0	2975	31.7	3059	33.9	3133	35.7		
4000	4219	2663	27.1	2746	29.1	2827	31.1	2913	33.3	2985	35.2	3061	37.3	3141	39.5	3203	41.4
4052	4274	2663	27.4	2753	29.6	2833	31.5	2909	33.5	2989	35.6	3064	37.7	3143	39.9	3205	41.8
6000	6329	2762	39.7	2842	42.4	2916	45.0	2983	47.4	3065	50.3	3126	52.7	3203	55.7		
7000	7384	2840	47.3	2909	50.0	2981	52.9	3058	56.0	3128	59.0	3191	61.8				
8000	8439	2925	55.7	3001	59.1	3066	62.9	3133	65.2								

100% Width Wheel		30" SP		32" SP		34" SP		36" SP		38" SP		40" SP		42" SP		44" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3500	3692	2600	23.8	2693	25.8	2770	27.5	2850	29.4	2935	31.3	3005	33.0				
4000	4219	2606	26.4	2694	28.5	2771	30.3	2852	32.4	2939	34.6	3009	36.5	3084	38.6	3150	40.5
5000	5274	2644	32.3	2720	34.4	2801	36.7	2872	38.9	2946	41.2	3025	43.7	3091	45.8	3160	48.2
6000	6329	2680	38.3	2764	41.0	2841	43.6	2911	46.1	2985	48.7	3050	51.1	3131	54.2		
7000	7384	2741	45.4	2822	48.4	2888	51.0	2968	54.2	3031	56.8	3108	60.1				
8000	8439	2819	53.6	2891	56.7	2958	59.7	3028	62.9	3092	65.9						
9000	9494	2897	62.4	2968	65.9	3036	69.3	3107	73.0								

Size 750

Inlet Diameter: 14 3/4"
Outlet area: 1.188 ft.^{2}

Wheel diameter: 29 1/2"
Wheel circumference: 7.723 ft.

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3751	3157	2366	27.2	2553	32.4	2735	38.1						
4500	3788	2367	31.0	2561	37.1	2729	42.9	2897	49.3	3050	55.5		
5250	4419	2384	35.3	2569	41.8	2734	48.2	2903	55.2	3051	61.9	3204	69.2
6250	5261	2419	41.5	2591	48.5	2761	56.0	2923	63.7	3071	71.3		
7500	6313	2472	49.8	2635	57.6	2797	66.0	2955	74.7				
8750	7365	2535	58.9	2700	68.1	2850	77.0						
10250	8628	2633	72.0	2792	82.4	2938	92.5						
12000	10101	2772	90.6	2913	101.6								

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		56" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4500	3788	2328	30.5	2516	36.3								
5500	4630	2338	35.8	2517	42.2	2690	49.0	2851	55.9	3011	63.3		
6500	5471	2368	41.8	2542	48.9	2707	56.4	2863	63.9	3013	71.7	3178	80.9
7751	6524	2412	49.9	2577	57.8	2742	66.4	2890	74.7	3041	83.7		
9250	7786	2478	60.7	2642	70.1	2799	79.7	2944	89.2	3080	98.6		
11000	9259	2576	75.8	2731	86.3	2881	97.2	3021	108	3154	119		
13250	11153	2736	99.9	2876	112	3011	124	3143	136				

Performance shown is for Series 60 Fans with evase discharges, with outlet ducts, and with or without inlet ducts.

Size 850

Inlet Diameter: 16 3/4"
Outlet area: 1.527 ft.²

Wheel diameter: 33 1/2"
Wheel circumference: 8.77 ft.

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4500	2947	2080	33.2	2251	39.9	2404	46.6	2554	53.8						
5500	3602	2086	38.6	2255	46.1	2405	53.4	2555	61.4						
6500	4257	2093	43.9	2259	52.2	2406	60.3	2556	69.2	2686	77.5	2819	86.6	2943	95.6
7750	5075	2116	51.2	2276	60.4	2423	69.6	2560	78.9	2698	88.8	2834	99.3	2945	108
9251	6058	2162	61.2	2315	71.6	2459	82.1	2585	91.9	2725	103	2851	114	2966	125
11001	7204	2225	74.1	2372	85.7	2502	96.9	2637	109	2766	121	2882	133	2996	145
12999	8513	2308	90.8	2442	103	2577	116	2701	130	2819	143	2938	157		
15501	10151	2435	116	2565	131	2689	146	2811	161	2919	176				
18500	12115	2614	155	2735	172	2845	188								

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	3929	2052	40.3	2213	47.9	2366	55.7	2511	63.8						
7250	4748	2065	47.2	2221	55.6	2374	64.6	2515	73.6	2646	82.5	2771	91.6	2897	101
8750	5730	2091	56.1	2240	65.4	2387	75.4	2528	85.7	2656	95.8	2781	106	2901	117
10500	6876	2137	67.7	2288	78.8	2420	89.4	2558	101	2688	113	2804	124	2930	137
12500	8186	2198	82.6	2341	95.0	2477	107	2603	120	2731	134	2849	147	2954	159
15000	9823	2309	106	2440	120	2564	134	2685	148	2801	163	2917	179		
18000	11788	2455	140	2580	156	2694	172	2805	188	2918	206				

Size 950

Inlet Diameter: 18 11/16"
Outlet area: 1.907 ft.²

Wheel diameter: 37 3/8"
Wheel circumference: 9.785 ft.

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60"		65" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5999	3146	1864	43.7	2012	52.0	2152	61.0	2285	70.0	2413	79.2	2523	88.7	2643	98.4		
7001	3671	1867	48.7	2015	58.0	2155	67.5	2287	77.5	2416	88.0	2525	97.6	2645	109	2749	119
8499	4457	1882	57.1	2026	67.4	2165	78.4	2295	90.0	2417	100	2530	112	2646	124	2752	136
10000	5244	1902	66.0	2042	77.4	2182	90.0	2303	102	2424	114	2535	126	2650	139	2754	153
12001	6293	1943	79.1	2086	93.0	2212	106	2333	120	2445	133	2555	147	2661	161	2762	175
14501	7604	2016	98.5	2144	113	2265	129	2383	144	2495	160	2596	175	2705	192		
17001	8915	2101	121	2220	138	2333	154	2451	173	2555	190						
20001	10488	2211	153	2329	172	2435	191										

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7500	3933	1836	50.2	1981	60.0	2119	69.4												
9001	4720	1847	58.3	1989	69.0	2127	80.2	2256	91.6	2375	103								
10500	5506	1870	67.6	2011	79.4	2141	91.4	2262	103	2384	116	2488	128	2601	142	2707	155	2802	167
12500	6555	1903	80.3	2038	93.6	2165	107	2286	121	2399	135	2510	149	2618	164	2720	179	2814	193
15000	7866	1957	98.6	2086	114	2208	129	2327	145	2439	161	2542	176	2642	192				
18000	9439	2047	125	2164	142	2282	160	2390	177	2501	196								
21500	11274	2168	163	2277	182														

Performance shown is for Series 60 Fans with evase discharges, with outlet ducts, and with or without inlet ducts.

Size 1060

Inlet Diameter: 20 7/8"
Outlet area: 2.375 ft.^{2}

Wheel diameter: 41 3/4"
Wheel circumference: 10.93 ft.

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP	
CFM	**OV**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**
9001	3790	1658	61.2	1789	72.6	1912	84.1								
10001	4211	1660	66.6	1793	79.0	1916	91.7	2034	105						
11500	4842	1671	75.2	1800	88.8	1922	103	2035	117	2142	131	2245	145	2342	160
13500	5684	1697	88.3	1816	103	1932	118	2044	133	2151	149	2256	166	2351	182
15499	6526	1723	102	1841	118	1960	135	2066	152	2164	169	2272	188		
18000	7579	1768	122	1884	140	1995	159	2094	177	2196	196	2298	217		
21000	8842	1826	149	1940	169	2043	190	2144	211	2239	232				
24500	10316	1911	186	2018	210	2115	232	2210	256	2300	279				
28500	12000	2021	238	2119	264	2212	290								

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP	
CFM	**OV**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**
9500	4000	1650	64.3												
11001	4632	1654	73.7	1782	86.2	1907	99.4								
13001	5474	1666	86.6	1791	101	1914	116	2022	131	2130	146	2235	161	2337	177
15000	6316	1695	101	1811	117	1927	134	2038	151	2141	167	2243	185		
17499	7368	1734	121	1848	139	1956	157	2059	176	2165	196	2262	215		
21000	8842	1798	151	1907	172	2018	195	2113	216	2210	238	2300	260		
24500	10316	1882	188	1985	212	2084	236	2180	261	2271	286				
28500	12000	1994	241	2090	267	2179	293	2271	322						
33499	14105	2148	324	2236	353										

Size 1200

Inlet Diameter: 23 5/8"
Outlet area: 3.043 ft.^{2}

Wheel diameter: 47 1/4"
Wheel circumference: 12.37 ft

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	**OV**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**
12002	3944	1468	81.1	1585	96.3	1690	111												
13499	4436	1471	89.2	1588	106	1692	122	1797	140	1889	156								
15501	5094	1483	101	1593	119	1701	137	1802	156	1893	174	1986	194	2075	214	2157	233		
17999	5915	1505	118	1614	137	1716	157	1812	178	1904	198	1995	220	2076	240	2165	264	2240	285
21000	6901	1535	139	1643	162	1737	183	1835	206	1927	230	2010	252	2089	275	2175	300		
24000	7887	1575	164	1676	188	1773	213	1860	236	1948	261	2036	288	2115	313	2190	338		
28002	9202	1631	201	1726	228	1822	256	1910	284	1994	312	2078	341	2154	369	2235	400		
32000	10516	1700	246	1792	276	1879	306	1964	337	2045	367	2119	397	2200	431				
36501	11995	1785	305	1871	338	1956	372	2034	405	2113	440	2186	431						

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	**OV**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**	**RPM**	**BHP**
12501	4108	1460	84.7	1575	99.3	1685	115												
14500	4765	1466	97.3	1577	114	1686	131	1786	148										
17001	5587	1476	113	1585	132	1694	152	1788	171	1883	190	1975	211	2064	231	2147	251		
20002	6573	1502	135	1609	157	1709	179	1805	201	1894	222	1982	245	2067	268	2148	290	2229	313
22999	7558	1538	159	1639	183	1733	207	1824	231	1917	257	2002	283	2086	308	2166	334	2241	359
27001	8873	1595	196	1689	222	1784	251	1869	278	1950	305	2038	336	2117	365	2194	394		
31501	10352	1666	243	1756	273	1845	305	1927	336	2010	369	2087	401	2163	434	2237	467		
36501	11995	1761	309	1844	342	1926	376	2005	411	2080	446	2154	482	2227	519				
42502	13967	1889	407	1968	445	2039	481	2112	520	2184	560								

Performance shown is for Series 60 Fans with evase discharges, with outlet ducts, and with or without inlet ducts.
For selections requiring motors 400 HP and greater, consult **nyb** prior to quotation.

Size 1340

Inlet Diameter: 26 3/8"
Outlet area: 3.795 ft.²

Wheel diameter: 52 3/4"
Wheel circumference: 13.8 ft

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
15002	3953	1314	101	1419	120														
17002	4480	1320	113	1421	133	1518	154	1607	175	1695	197								
19499	5138	1330	127	1428	149	1525	173	1612	195	1698	219	1776	243	1855	268	1928	292		
22501	5929	1346	147	1444	171	1536	196	1622	222	1706	248	1788	275	1861	301	1936	328	2003	354
26000	6851	1374	172	1467	199	1559	228	1642	255	1726	285	1802	313	1875	342	1943	370		
29999	7905	1412	206	1500	235	1587	265	1672	298	1746	327	1827	361	1898	393	1967	425		
34500	9091	1458	247	1546	281	1624	313	1705	348	1782	383	1853	417	1930	456	1998	492		
39498	10408	1517	302	1598	338	1678	376	1756	415	1826	451	1901	493	1963	528				
45502	11990	1600	380	1679	423	1753	465	1825	507	1893	549	1961	592						

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
15499	4084	1307	105	1411	123														
18000	4743	1311	121	1412	141	1511	163												
21002	5534	1323	141	1423	164	1515	188	1601	211	1687	236	1772	261						
24501	6456	1342	165	1441	192	1526	218	1615	246	1697	273	1779	302	1847	327	1922	356	1997	385
28500	7510	1378	197	1464	226	1557	258	1634	287	1712	317	1789	349	1865	381	1938	414	2007	446
33498	8827	1426	242	1512	276	1593	309	1672	344	1752	381	1819	414	1892	451	1962	488		
39001	10277	1491	301	1570	337	1647	375	1722	414	1799	456	1864	493	1933	535	2002	577		
45502	11990	1578	385	1651	425	1726	469	1799	514	1868	559	1931	602	1999	650				
53001	13966	1694	509	1763	555	1829	602	1896	652	1959	700								

Size 1500

Inlet Diameter: 29 1/2"
Outlet area: 4.755 ft.²

Wheel diameter: 59"
Wheel circumference: 15.446 ft

75% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
18002	3786	1174	123	1269	146	1353	168												
20000	4206	1177	134	1270	158	1355	183												
23000	4837	1185	151	1272	177	1357	204	1440	233	1512	260	1587	290	1658	319				
26999	5678	1200	176	1286	206	1372	237	1447	267	1521	298	1593	331	1663	364	1728	396		
31003	6520	1219	204	1306	237	1388	271	1459	303	1531	337	1602	373	1671	409	1737	446	1797	481
36000	7571	1250	244	1332	280	1409	316	1483	354	1552	391	1621	430	1688	470	1753	511		
42001	8833	1296	299	1373	339	1446	380	1516	421	1588	465	1654	509	1713	549	1775	594		
49000	10305	1354	373	1429	420	1498	466	1566	512	1630	559	1693	607	1756	657				
56998	11987	1430	476	1499	528	1567	581	1628	632	1695	689	1752	741						

100% Width Wheel		30" SP		35" SP		40" SP		45" SP		50" SP		55" SP		60" SP		65" SP		70" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
19001	3996	1165	128																
22001	4627	1169	147	1262	173	1348	199	1428	224										
26000	5468	1179	173	1270	203	1354	232	1433	262	1512	293	1580	322	1654	354				
30499	6414	1203	207	1287	239	1365	272	1446	307	1513	338	1587	374	1658	411	1717	442	1784	480
35501	7466	1231	246	1310	282	1389	320	1465	359	1536	398	1600	435	1669	476	1727	512	1790	552
41502	8728	1272	299	1347	339	1421	382	1493	426	1561	469	1628	515	1688	557	1752	604		
48501	10200	1327	371	1403	419	1470	465	1538	514	1603	564	1668	615	1726	664	1789	718		
56998	11987	1411	482	1481	537	1542	587	1609	644	1667	697	1730	757	1786	813				
66499	13985	1514	638	1577	697	1638	757	1695	817	1753	880								

Performance shown is for Series 60 Fans with evase discharges, with outlet ducts, and with or without inlet ducts.
For selections requiring motors 400 HP and greater, consult **nyb** prior to quotation.

SERIES 60 FAN SOUND RATINGS

The sound ratings shown are fan sound power levels (reference $1^{0\text{-}12}$ watts) by octave bands at known points of operation and speed. They are the results of laboratory tests based on reverberant room techniques as described in AMCA Bulletin 300 and processed by the procedures shown in AMCA Bulletin 301. The ratings include both inlet and outlet sound. For a know installation the ratings can be used to estimate either sound pressure levels by octave band at a particular location, or dBA . . . consult your **nyb** sales representative.

Point of rating does not change the acoustical output of Series 60 Fans within the catalog range so the effect of point of operation is not included in this supplement.

DETERMINING SOUND POWER LEVEL RATINGS

PROCEDURE	STEPS	EXAMPLE — Determine the Total and Outlet Sound Power Levels from a Size 1500 Series 60, with 75% width wheel, operating at 31,000 CFM at 55"SP,1602 RPM, 373 BHP, 6520 FPM OV.
Select the Total Sound Power Level from Chart VII at the speed nearest the fan's operating speed.	1	From Chart VII, list the Total Sound Power for the eight octave bands for a Size 1500 Series 60 Fan at 1600 RPM. See Line 1 below.
If the wheel is 75% of width, deduct 1 db from the Total Sound Power Levels in Step 1. If the wheel is reduced diameter, deduct the appropriate correction factor from Chart V.	2	The wheel is 75% width. Deduct 1 db from each octave band. See Line 2 below.
The Sound Power Level through the fan outlet is estimated as the Total Sound Power Level calculated in Step 2 minus 3 db. The Sound Power Level through the fan housing only (ducted inlet and outlet) is estimated as the Total Sound Power Level calculated in Step 2 minus 20 db.	3	To determine the OUtlet Sound Power Level for the fan, deduct 3 db from the Total Sound Power Level. The result is the Sound Power Level of the sound transmitted through the fan outlet. See Lines 4 and 5 below.

	Octave Band Number	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Line	**Center Frequency in HZ**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
1	Fan Sound Power Level	134	127	121	118	115	110	105	102
2	Wheel Width/Diameter Correction	-1	-1	-1	-1	-1	-1	-1	-1
3	Total Corrected Sound Power Level	133	126	120	117	114	109	104	101
4	Values for Separating Outlet Sound Power Level	-3	-3	-3	-3	-3	-3	-3	-3
5	Outlet Sound Power Level	130	123	117	114	111	106	101	98

CHART V
FACTORS FOR SPECIAL DIAMETER WHEELS

Percent Wheel Diameter	**88%**	**89%**	**90%**	**91%**	**92%**	**93%**	**94%**	**95%**	**96%**	**97%**	**98%**	**99%**
Special Diameter Correction	2.8	2.5	2.3	2.1	1.8	1.6	1.3	1.1	0.9	0.7	0.4	0.2

CHART VI
SILENCER ATTENUATION/DYNAMIC INSERTION LOSS (DECIBELS)

Octave Bands							
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
8	10	23	25	24	16	12	13

CHART VII
TOTAL SOUND POWER LEVELS FOR SERIES 60 FANS
WITH FULL WIDTH, FULL DIAMETER WHEELS

Fan Size	Fan RPM	Octave Bands							
		1	2	3	4	5	6	7	8
670	1700	107	100	100	97	91	86	81	79
	1800	108	102	100	100	93	87	83	81
	1900	109	103	100	103	94	89	85	83
	2000	110	104	101	104	95	90	87	85
	2200	112	106	103	107	98	93	90	88
	2400	114	109	105	109	100	95	92	90
	2600	116	112	107	110	102	97	94	92
	2800	118	115	109	112	104	99	96	93
	3000	119	117	110	114	106	101	98	95
	3200	121	119	112	114	110	103	100	97
	3400	122	121	114	114	113	105	101	98
	3600	123	122	115	114	117	107	103	99
850	1700	114	108	107	104	98	93	88	87
	1800	115	109	107	108	100	95	90	89
	1900	116	110	108	110	101	96	92	91
	2000	117	111	108	111	103	97	94	93
	2200	120	114	110	114	105	100	97	95
	2400	122	117	112	116	106	102	99	97
	2600	123	119	114	117	110	104	101	99
	2800	125	122	116	120	112	106	103	101
	3000	127	124	118	121	114	108	105	102
1060	1500	122	114	109	106	103	98	93	90
	1600	123	116	111	108	105	99	95	92
	1700	125	118	112	109	106	101	96	93
	1800	127	120	114	111	108	103	98	95
	1900	128	122	115	112	109	104	99	96
	2000	129	124	117	114	111	105	101	97
	2100	130	126	118	115	112	107	102	98
	2200	131	127	120	117	113	108	104	100
	2300	132	129	121	118	114	109	105	101
	2400	133	130	122	119	115	111	106	102
	2500	134	131	123	120	116	112	107	103
	2600	135	132	125	121	117	113	109	104
1340	1000	116	109	106	103	98	93	89	88
	1100	119	112	109	105	100	96	92	91
	1200	122	114	111	107	103	98	94	92
	1300	124	117	113	109	105	101	96	94
	1400	127	119	114	112	108	103	98	96
	1500	129	121	116	113	110	105	100	97
	1600	131	123	118	115	112	106	102	99
	1700	132	125	119	117	114	108	104	100
	1800	134	127	121	118	115	110	105	102
	1900	135	129	122	120	117	111	107	103
	2000	136	131	124	121	118	113	108	104

Fan Size	Fan RPM	Octave Bands							
		1	2	3	4	5	6	7	8
750	1700	110	104	103	101	94	89	85	83
	1800	111	105	103	104	96	91	87	85
	1900	112	106	104	106	98	92	88	87
	2000	113	107	104	107	99	94	90	89
	2200	116	110	106	110	101	96	93	91
	2400	118	113	108	112	104	98	95	93
	2600	120	116	110	113	106	100	98	95
	2800	121	118	112	116	108	102	100	97
	3000	123	120	114	117	110	104	101	98
	3200	124	122	115	117	113	106	103	100
	3400	125	124	117	117	117	109	105	101
	3600	127	126	118	118	121	111	106	103
950	1700	117	111	111	108	101	96	92	90
	1800	118	112	110	111	103	98	94	92
	1900	120	113	111	113	105	99	96	94
	2000	121	114	112	114	106	101	97	96
	2200	123	117	113	117	109	103	100	99
	2400	125	120	115	119	111	105	103	101
	2600	127	123	117	120	113	107	105	102
	2800	128	125	119	123	115	109	107	104
1200	1500	125	118	113	110	107	101	97	94
	1600	127	120	114	112	109	103	98	96
	1700	129	122	116	113	110	105	100	97
	1800	130	124	117	115	112	106	102	98
	1900	132	126	119	116	113	108	103	100
	2000	133	128	120	118	114	109	105	101
	2100	134	129	122	119	116	111	106	102
	2200	135	131	123	120	117	112	107	103
1500	1000	119	112	109	106	101	96	93	92
	1100	123	115	112	108	104	99	95	94
	1200	125	118	114	111	106	102	97	96
	1300	128	120	116	113	109	104	100	98
	1400	130	123	118	115	111	106	102	99
	1500	132	125	119	117	114	108	103	101
	1600	134	127	121	118	115	110	105	102
	1700	136	129	123	120	117	112	107	104
	1800	137	131	124	122	119	113	109	105

THE NEW YORK BLOWER COMPANY POLICY
REGARDING "SOUND" SPECIFICATIONS

NOTE: This policy statement is presented both as a guide to purchasers of fan equipment and as a resolution of **nyb**'s responsibility in cases where the purchaser has requested that **nyb** equipment meet certain noise level specifications.

nyb provides sound power level ratings in each of the eight octave bands, as tested and rated in accordance with Air Movement and Control Association (AMCA) Publication 300. These ratings are statements of the total sound energy levels emanating from the inlet and outlet of the fan itself.

These sound power ratings are considered the only truly accurate basis for comparison, or for further estimating the resultant noise levels within a given system or installation. Refer to **nyb** Engineering Letter 12 for a detailed explanation.

In some cases, **nyb** offers silencers for the fan inlet and/or outlet that can be used to attenuate sound power emanating through the fan inlet or outlet. Specific ratings are available to determine the revised sound levels resulting from the use of such silencers.

Though methods are available for estimating values of sound pressure levels by octave band or the single number dBA at points some distance from the fan, these result merely in estimates based on ideal situations that do not take into effect background noise, other sound producing equipment in an installation, the effective building configuration and construction and/or the effects of ductwork configuration and physical construction.

Specifications demanding guaranteed pressure levels in any form, either adjacent to the fan or at other points in the installation or system, can only be met through qualified analysis of the total system and physical environs by professional acoustical consultants or trained acoustical engineers - a professional service that is clearly beyond the responsibility of the fan manufacturer.

Consequently, **nyb** offers these sound power level ratings, as tested and rated in accordance with AMCA Publication 300, as the only qualified tool for meaningful evaluation by the purchaser or his agent. This constitutes an exception to any specification for sound data or guarantees in any form other than sound power level ratings.